NETAFIM™
An Orbia business.



Driplines, Drippers & Other Emitters

Products portfolio

2026 v2.0

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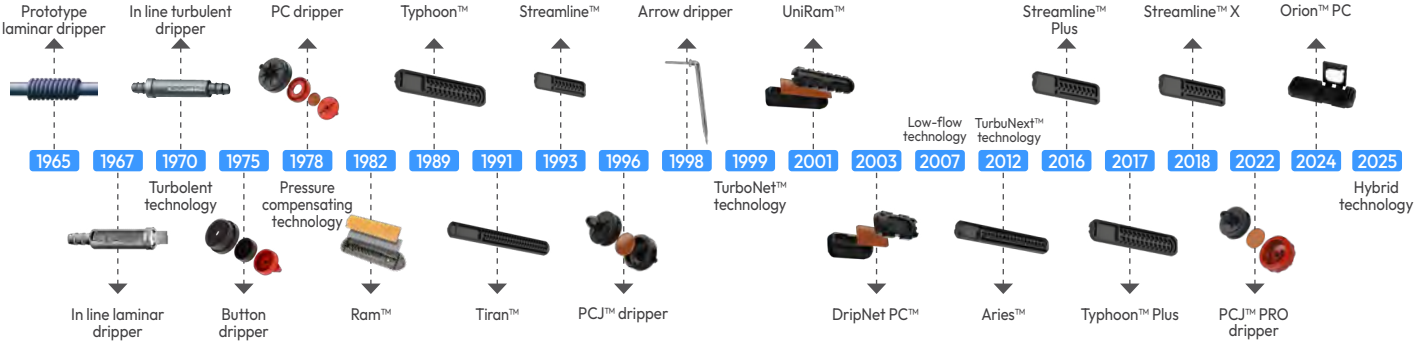
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Introduction

For more than 60 years, Netafim™ has led the evolution of drip irrigation through continuous innovation, agronomic expertise and advanced hydraulic technologies.

Since pioneering the first dripper in the 1960s, Netafim™ has continued developing irrigation solutions designed to improve water and nutrient use efficiency while supporting reliable crop performance across a wide range of agricultural applications.

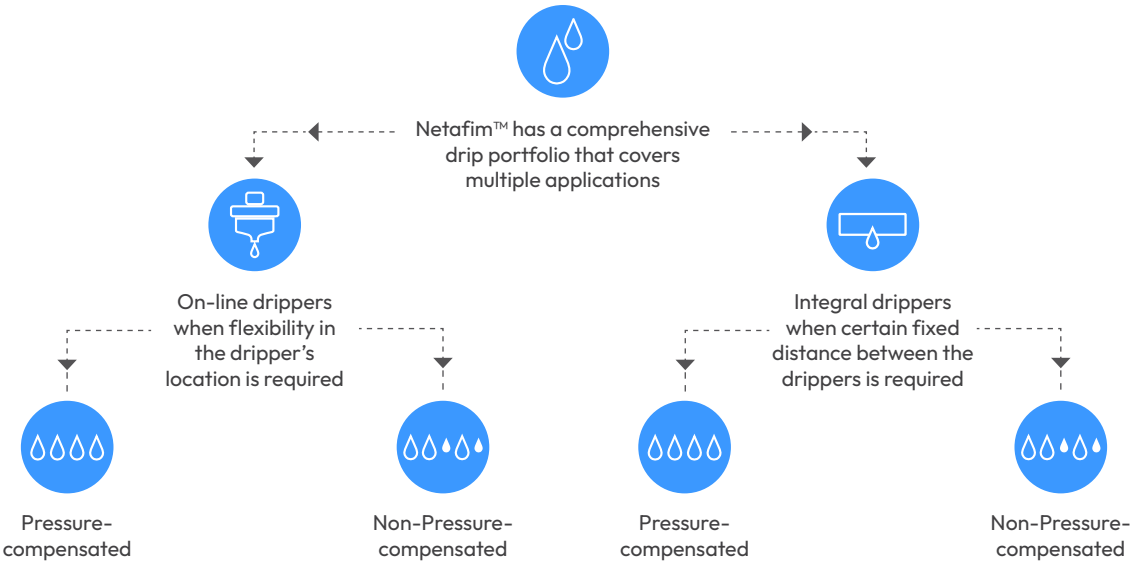


Today, Netafim™ offers a comprehensive portfolio of on-line drippers, integral driplines and related irrigation accessories for open-field agriculture, orchards, vineyards, greenhouses, nurseries, protected crops, mining applications and landscape irrigation systems.

The Netafim™ drip irrigation portfolio is divided into two main hydraulic categories:

- Pressure-compensated (PC) drippers and driplines.
- Non-pressure-compensated (NPC) drippers and driplines.

Pressure-compensated (PC) products are designed to maintain highly uniform flow rates across a wide operating pressure range. Non-pressure-compensated (NPC) products deliver flow rates that vary according to inlet pressure and are commonly selected for applications where pressure variation is limited or where specific hydraulic characteristics are preferred.



On-line PC drippers
PC dripper
PCJ™ dripper
PCJ™ PRO dripper
TechFlow™ Junior

On-line NPC drippers
Button dripper
Pot dripper
CapiNet™ dripper
Arrow dripper

Integral PC driplines
UniRam™
DripNet PC™
Orion™ PC
TechLine™
BioLine™
TechNet™

Integral NPC driplines
Aries™
Typhoon™ Plus
Streamline™ X
Microdrip
Lech Line™
LandLine™

Other Emitters
PCJ™ HF bubbler
Assembled Spiders
NetBow™
FlexBow™

Dripline wall thickness classification

Netafim™ driplines are further classified according to wall thickness and expected field application requirements.

Heavy Wall Driplines (HWD). Driplines with wall thickness of 0.90 mm and above, typically designed for long-term and multi-season applications.

Medium Wall Driplines (MWD). Driplines with wall thickness between 0.40 mm and 0.89 mm, commonly used for medium-term applications.

Thin Wall Driplines (TWD). Driplines with wall thickness of 0.39 mm and below, primarily intended for seasonal applications.

Additional technologies and features

Netafim™ drippers and driplines are available with additional hydraulic and agronomic technologies designed to address specific field conditions and irrigation requirements.

AS – Anti-siphon. Prevents contaminants from being drawn into the dripper, making it particularly important for sub-surface drip irrigation (SDI) applications.

CNL – Anti-drain. Anti-drain mechanism maintains dripline pressure by preventing drainage from emitters located in low areas, ensuring uniform water distribution and keeps driplines filled between irrigation cycles, improving irrigation uniformity and pulse irrigation performance.

HCNL – High shut-off anti-drain. Advanced anti-drain mechanism with higher shut-off pressure, designed for steep topographies and advanced pulse irrigation applications.

AS XR – Anti-siphon with eXtra Root resistance. Enhanced root intrusion protection through copper oxide incorporated into the dripper upper body, reducing the risk of root penetration into the flow path.

AS XRS – Anti-siphon with eXtra Root and Strangulation resistance. Advanced protection against root intrusion and root strangulation through combined internal and external protective barriers.

Flap outlet. Special outlet configuration used mainly in selected thin-wall driplines. During irrigation, water pressure opens the flap to allow flow discharge. When irrigation stops, the flap closes and acts as a physical barrier against root intrusion and sand ingress.

ReGen™. Driplines incorporating recycled materials without compromising hydraulic performance, durability or product quality.

HCR – High Chlorine Resistance. Designed for permanent drip applications using wastewater or continuous chlorine dosing, ensuring long-term hydraulic reliability and uniform water and nutrient distribution.

HYB – Hybrid outlet. Patented Hybrid outlet integrated into selected UniRam™ driplines, enabling connection to Netafim™ press-fit accessories while helping reduce drop migration on sloping installations.

Product selection guidance

Selecting the appropriate dripper or dripline requires consideration of several agronomic and hydraulic factors, including:

- Crop type
- Irrigation application
- Topography
- Water quality
- Irrigation method
- System operating pressure
- Pulse irrigation requirements
- Sub-surface or on-surface installation

Additional product technologies may also be considered according to specific field requirements:

- For sub-surface applications, the use of AS driplines is recommended.
- For pulse irrigation applications, particularly in soilless media, the use of CNL or HCNL driplines and drippers is recommended.
- For steep topographies or applications requiring higher shut-off pressure, HCNL products are recommended.
- For applications with risk of root intrusion, AS XR or AS XRS products are recommended.

For detailed hydraulic design and product selection support, please consult your local Netafim™ representative.

About this catalog

This catalog provides an overview of Netafim™ drippers, driplines and related irrigation solutions.

Each product sheet includes:

- Main applications
- Benefits and features
- Technical specifications
- Hydraulic data
- Product configuration guidance
- Packaging information

Standard product configurations are recommended whenever possible, including standard diameters, wall thicknesses, dripper spacing and coil lengths.
Non-standard configurations may require special manufacturing arrangements and may be subject to additional lead time or cost.
All technical information presented in this catalog is based on metric units.

Average weight disclaimer

Netafim™ maintains strict manufacturing quality standards to ensure high hydraulic uniformity and consistent product performance.
Average coil and package weights may vary slightly due to manufacturing tolerances and product configuration.
Refer to official Netafim™ disclaimers for additional details.



Agriculture products



UniRam™

UniRam™ RC

Premium integral pressure-compensated dripper featuring continuous self-flushing technology. Engineered for demanding row-crop applications and designed for effortless retrieval at the end of each crop cycle, ensuring long-term performance, superior operational efficiency and maximum return on investment.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier retrieval at crop-cycle completion. Also beneficial in regions prone to sub-zero temperatures.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation applications in row crops, orchards, greenhouses and nurseries.



Specifications

- Pressure-compensated operating range: 0.5–4.0 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.40	0.5 - 4.0	0.55 x 0.49 x 40	90	0.40	0	130/120
0.70		0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80

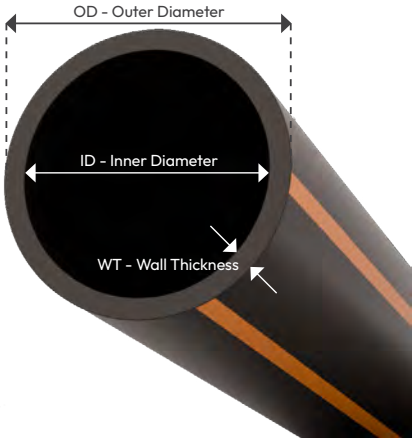


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



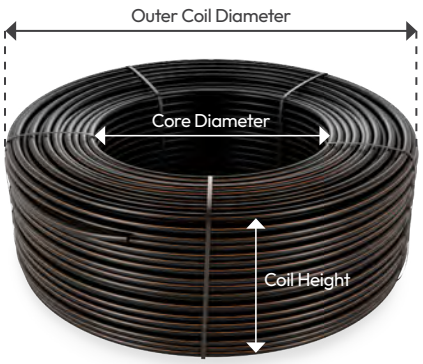
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniRam™ RC	URAM RC

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.4	0.4L/H
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

URAM RC 16012 1.6L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniRam™ RC flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniRam™ RC	0.40	0.18	0.30	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	113	147	171	189	201	211	218	223	228
	1.5	154	209	253	289	318	342	362	379	393
	2.0	183	251	309	358	400	435	466	493	517
	2.5	205	284	352	412	463	509	549	584	616
	3.0	224	312	389	457	517	570	618	661	700
	3.5	240	336	420	496	562	622	677	726	772
	4.0	254	357	448	530	603	669	730	785	836
Flat terrain	1.0	138	198	254	306	355	402	446	489	530
	1.5	175	251	322	389	452	512	569	624	676
	2.0	201	289	371	448	520	589	655	719	780
	2.5	222	319	410	495	575	652	725	795	863
	3.0	239	344	442	534	622	704	783	860	933
	3.5	255	367	471	569	662	750	835	916	995
	4.0	268	386	496	600	698	792	882	968	1050
Downhill 2%	1.0	164	252	342	434	527	621	716	809	892
	1.5	196	295	394	494	593	693	793	890	980
	2.0	219	327	434	540	646	750	855	958	1052
	2.5	238	354	467	579	690	799	908	1014	1114
	3.0	255	377	496	614	729	843	955	1066	1169
	3.5	269	397	522	644	764	881	998	1112	1219
	4.0	282	416	545	672	796	917	1037	1154	1264

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	166	196	214	224	231	235	238	240	242
	1.5	244	307	351	382	405	422	435	446	453
	2.0	297	384	449	499	538	568	594	614	631
	2.5	339	444	526	592	645	689	726	756	782
	3.0	373	494	591	670	736	791	838	878	913
	3.5	403	538	647	738	814	880	936	986	1029
	4.0	430	576	696	798	884	959	1024	1082	1133
Flat terrain	1.0	242	336	420	498	569	637	701	762	821
	1.5	307	428	536	636	728	815	897	976	1051
	2.0	354	493	618	733	840	941	1036	1127	1215
	2.5	391	545	684	812	930	1042	1148	1249	1346
	3.0	422	589	740	878	1007	1128	1242	1352	1457
	3.5	449	628	788	936	1073	1203	1326	1443	1555
	4.0	474	662	832	989	1133	1271	1400	1524	1643
Downhill 2%	1.0	322	491	662	830	977	1122	1265	1405	1542
	1.5	373	555	737	913	1072	1228	1380	1529	1675
	2.0	411	606	797	982	1150	1315	1474	1631	1785
	2.5	443	649	848	1041	1217	1389	1556	1719	1880
	3.0	471	686	894	1093	1277	1455	1629	1798	1964
	3.5	496	720	934	1140	1331	1516	1694	1869	2040
	4.0	518	750	972	1184	1380	1570	1754	1935	2110

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniRam™ AS

Premium integral pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism. Ideal for deciduous orchards, tree irrigation and permanent sub-surface row-crop applications. The ultimate solution for sub-surface drip irrigation (SDI).



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the ingress of contaminants into the dripper, making it especially suitable for sub-surface applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation applications in permanent and semi-permanent row crops and orchards.



Specifications

- Pressure-compensated operating range: 0.5–4.0 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	0.5 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80

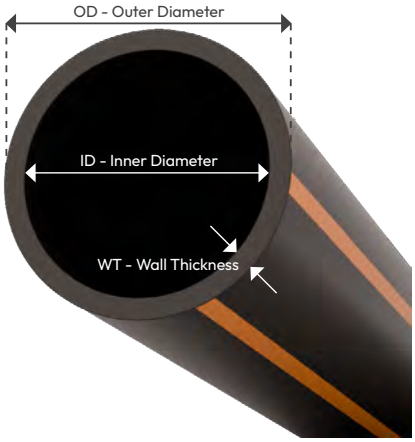


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



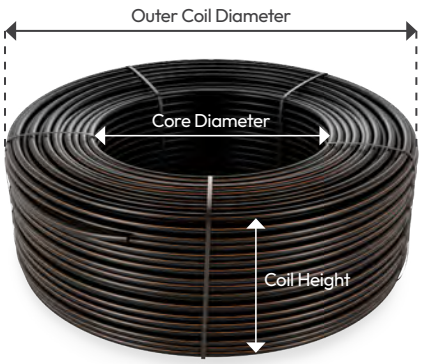
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniRam™ AS	URAM AS

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

URAM AS 16012 1.6L/H 0.30M 400M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniRam™ AS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniRam™ AS	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniRam™ AS XR

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon (AS), and enhanced root intrusion protection (XR). Ideal for permanent sub-surface crop applications.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the ingress of contaminants into the dripper, making it especially suitable for sub-surface applications.
Enhanced root intrusion resistance (XR)	Provides active root intrusion protection through a patented root-inhibiting barrier integrated into the dripper cover. Delivers long-term performance through non-migrating active ingredients, reducing reliance on chemical root control methods.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, complemented by an internal protective barrier, further enhances protection against root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in applications where water supply is restricted due to hydraulic limitations or crop requirements, and where there is a potential risk of root intrusion.



Specifications

- Pressure-compensated operating range: 0.5–4.0 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	0.5 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80

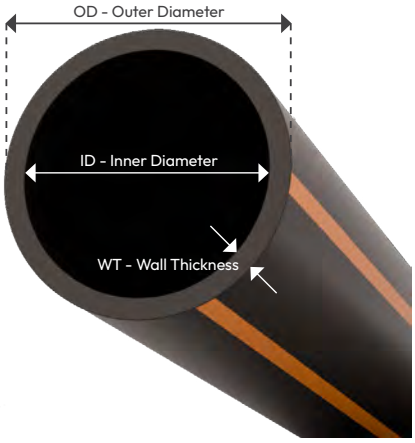


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



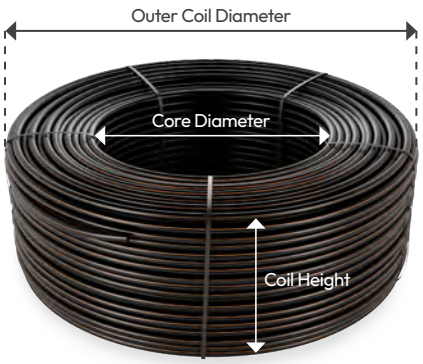
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniRam™ AS XR	URAM AS XR

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

URAM AS XR 20012 2.3L/H 0.50M 300M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniRam™ AS XR flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniRam™ AS XR	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XR 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniRam™ AS XRS

Premium integral pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism. Ideal for permanent sub-surface crop applications requiring enhanced root intrusion and root strangulation protection. The dripline incorporates dynamic root protection both within the dripper and along the pipe.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the ingress of contaminants into the dripper, making it especially suitable for sub-surface applications.
Maximum root intrusion protection (XRS)	Combines active root inhibition within the dripper with an external protective copper stripe, delivering enhanced protection both inside the emitter and along the dripline. Ensures long-term durability under high root intrusion conditions while minimizing the need for chemical treatments.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, complemented by an internal protective barrier, further enhances protection against root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in applications where water supply is restricted due to hydraulic limitations or crop requirements, and where there is a potential risk of root intrusion.



Specifications

- Pressure-compensated operating range: 0.5–4.0 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with a single wide copper stripe.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	0.5 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80

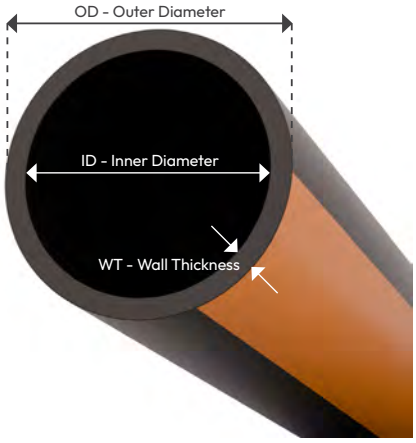


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



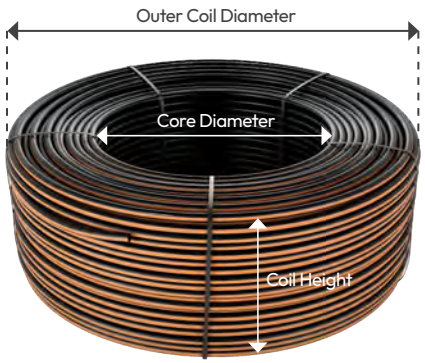
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniRam™ AS XRS	URAM AS XRS

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

URAM AS XRS 20012 2.3L/H 0.50M 300M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniRam™ AS XRS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniRam™ AS XRS	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ AS XRS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniRam™ CNL

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon and anti-drain (CNL) mechanisms. Ideal for greenhouses, deciduous orchards, tree irrigation and permanent applications requiring intensive irrigation scheduling.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents drainage (CNL)	The CNL (anti-drain) mechanism maintains dripline pressure by preventing drainage from emitters located in low areas, ensuring uniform water distribution. Eliminates the drainage and refill effect, improving irrigation efficiency in pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface or sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for intensive and precision irrigation in orchards, greenhouses and nurseries where maintaining a fully pressurized dripline and preventing drainage is required.



Specifications

- Pressure-compensated operating range: 1.0–4.0 bar.
- Dripper nominal shut-off pressure: 0.14 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	1.0 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80



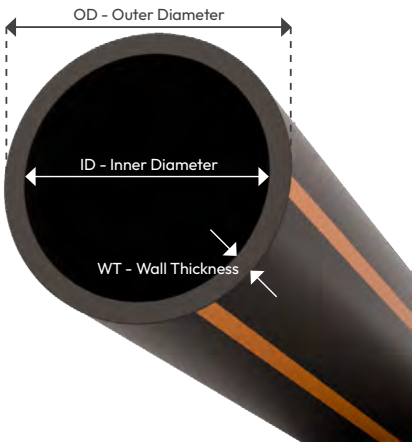
* Within working pressure range.

** Dripper nominal shut-off pressure: 0.14 bar, applicable to all flow rates.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



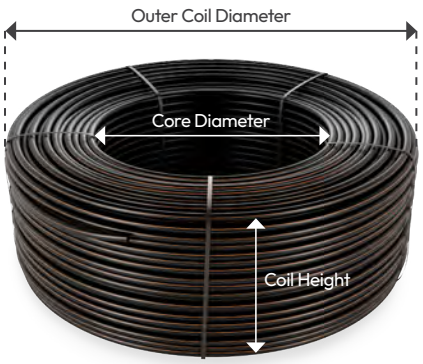
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniRam™ CNL	URAM CNL

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

URAM CNL 16010 0.7L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniRam™ CNL flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)						
		1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniRam™ CNL	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

In CNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	83	112	135	153	168	180	190	197	204
	2.0	111	154	190	221	248	271	291	310	326
	2.5	130	182	227	267	302	334	362	388	411
	3.0	145	204	256	303	345	383	418	449	478
	3.5	158	223	281	333	380	424	463	500	534
	4.0	169	239	302	359	412	459	503	545	583
Flat terrain	1.5	96	137	176	213	247	279	310	340	369
	2.0	121	174	224	270	314	356	395	434	471
	2.5	139	200	257	311	361	410	456	500	543
	3.0	153	221	284	343	400	453	504	554	600
	3.5	165	239	306	371	431	489	545	598	649
	4.0	176	254	326	395	460	522	581	637	692
Downhill 2%	1.5	108	163	219	275	331	387	443	500	557
	2.0	131	195	258	321	382	444	505	565	626
	2.5	148	218	288	355	422	488	553	617	681
	3.0	161	238	312	384	455	524	593	661	727
	3.5	173	254	332	409	483	557	628	698	768
	4.0	183	269	351	431	509	585	659	733	805

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	68	93	113	131	145	158	167	176	184
	2.0	90	125	156	183	207	228	247	265	280
	2.5	105	147	185	219	249	277	302	326	347
	3.0	116	164	208	247	282	315	345	373	399
	3.5	126	179	227	270	310	347	381	412	442
	4.0	135	192	243	291	334	375	412	447	480
Flat terrain	1.5	76	109	140	169	196	222	246	270	293
	2.0	96	138	177	214	249	282	314	345	374
	2.5	110	158	204	246	286	325	362	397	431
	3.0	121	175	225	272	317	359	400	439	477
	3.5	131	189	243	294	342	388	432	474	515
	4.0	139	201	258	313	364	414	461	506	549
Downhill 2%	1.5	83	125	166	208	248	290	330	372	412
	2.0	102	151	199	246	292	337	382	428	472
	2.5	115	170	223	274	325	374	422	471	518
	3.0	126	185	242	298	352	404	456	507	556
	3.5	135	198	259	318	374	430	484	537	590
	4.0	144	210	274	336	395	453	510	565	620

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	51	71	88	103	116	127	138	147	155
	2.0	67	95	119	141	160	179	195	210	224
	2.5	78	110	140	166	191	214	234	254	272
	3.0	86	123	156	187	214	241	265	288	309
	3.5	93	133	170	204	235	263	290	316	340
	4.0	100	143	182	218	251	284	313	341	367
Flat terrain	1.5	56	80	103	124	144	163	182	200	216
	2.0	70	101	130	158	184	208	231	254	276
	2.5	81	116	150	181	211	239	266	293	318
	3.0	89	128	165	200	233	265	294	324	352
	3.5	96	139	178	216	252	286	318	350	380
	4.0	102	147	190	230	268	305	339	373	405
Downhill 2%	1.5	60	89	117	145	173	200	228	255	282
	2.0	74	108	142	175	206	238	269	299	329
	2.5	84	122	160	197	232	266	300	333	365
	3.0	92	134	175	214	252	289	325	360	395
	3.5	98	144	187	229	269	309	346	384	421
	4.0	104	152	198	242	285	326	366	405	444

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	41	58	72	85	97	106	116	124	132
	2.0	53	76	96	114	130	146	160	174	186
	2.5	62	88	112	134	154	173	190	207	222
	3.0	68	98	124	150	172	194	214	233	251
	3.5	74	106	135	163	188	211	234	256	276
	4.0	79	113	145	174	202	228	251	275	297
Flat terrain	1.5	44	63	81	98	114	130	144	158	171
	2.0	55	80	103	125	145	165	183	201	218
	2.5	64	92	118	143	167	189	210	231	251
	3.0	70	101	130	158	184	209	233	256	278
	3.5	76	109	141	171	199	226	252	276	301
	4.0	80	116	150	182	212	241	268	294	320
Downhill 2%	1.5	46	68	90	111	132	153	173	193	212
	2.0	57	84	110	135	160	183	206	230	252
	2.5	65	95	124	153	179	206	231	257	281
	3.0	72	105	136	167	196	224	252	279	305
	3.5	77	113	146	179	209	240	270	298	326
	4.0	82	119	155	189	222	254	285	315	344

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	32	45	56	67	77	85	94	101	108
	2.0	41	58	74	89	102	114	126	137	147
	2.5	47	68	86	104	119	134	149	162	175
	3.0	52	75	96	115	133	151	166	182	196
	3.5	56	81	104	125	145	164	182	198	215
	4.0	60	86	111	134	155	175	194	213	230
Flat terrain	1.5	33	48	62	75	87	99	110	121	131
	2.0	42	61	78	95	110	125	139	153	166
	2.5	48	70	90	109	127	144	161	176	192
	3.0	53	77	99	120	140	159	178	195	212
	3.5	57	83	107	130	151	172	192	211	229
	4.0	61	88	114	138	161	183	204	224	244
Downhill 2%	1.5	35	51	67	82	97	112	126	140	154
	2.0	43	63	82	101	119	136	153	169	186
	2.5	49	72	94	114	134	153	173	191	209
	3.0	54	79	102	125	147	168	188	208	228
	3.5	58	85	110	134	158	180	202	223	244
	4.0	62	90	117	143	167	191	214	236	258

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	130	162	184	199	209	217	223	228	231
	2.0	182	238	280	313	340	361	378	393	406
	2.5	218	289	346	393	432	466	494	518	539
	3.0	246	329	398	456	505	548	586	618	648
	3.5	269	363	442	509	566	617	662	703	739
	4.0	289	392	479	554	620	678	730	777	819
Flat terrain	1.5	168	233	292	347	397	445	489	532	573
	2.0	213	297	373	443	507	568	626	681	734
	2.5	245	343	430	511	586	656	722	787	848
	3.0	271	379	476	565	648	727	801	871	939
	3.5	293	409	514	611	701	786	866	943	1017
	4.0	312	436	548	652	748	839	925	1006	1085
Downhill 2%	1.5	207	309	412	514	616	718	820	922	1024
	2.0	245	359	471	581	689	796	902	1008	1114
	2.5	273	397	517	634	748	860	970	1080	1189
	3.0	296	429	556	678	797	914	1029	1142	1254
	3.5	316	456	589	717	841	962	1081	1198	1313
	4.0	334	480	619	752	880	1005	1128	1248	1366

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	109	140	162	178	190	200	208	214	219
	2.0	149	198	236	268	295	316	335	352	366
	2.5	177	238	288	331	367	398	426	451	473
	3.0	199	269	328	380	424	463	498	530	558
	3.5	217	296	362	420	472	517	558	596	630
	4.0	233	318	392	456	512	564	610	653	692
Flat terrain	1.5	133	185	232	276	316	353	389	423	456
	2.0	169	236	296	352	403	452	498	542	583
	2.5	194	272	341	406	465	522	574	626	674
	3.0	215	300	378	449	515	577	636	693	747
	3.5	232	325	408	485	557	624	689	750	809
	4.0	247	346	435	518	594	666	734	800	863
Downhill 2%	1.5	157	233	308	382	455	528	601	673	745
	2.0	189	275	358	439	518	596	674	750	826
	2.5	212	306	396	483	568	650	731	812	891
	3.0	230	332	428	520	609	696	781	864	947
	3.5	247	354	455	552	645	736	824	911	996
	4.0	261	374	480	581	677	771	863	953	1041

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	85	111	132	148	161	173	182	190	196
	2.0	114	153	186	214	237	258	277	293	308
	2.5	134	182	222	258	289	317	342	365	386
	3.0	149	204	252	293	330	363	394	421	447
	3.5	162	223	276	323	364	402	437	469	499
	4.0	174	240	297	348	394	436	474	510	544
Flat terrain	1.5	98	137	171	203	233	261	287	313	337
	2.0	124	174	218	260	298	333	368	401	431
	2.5	143	200	252	299	343	385	425	463	498
	3.0	158	221	278	331	380	426	470	512	552
	3.5	170	239	301	358	411	461	509	554	598
	4.0	181	255	321	382	439	492	542	591	638
Downhill 2%	1.5	111	163	212	262	310	357	404	451	498
	2.0	135	195	252	307	361	412	464	515	564
	2.5	152	219	281	341	399	455	510	564	617
	3.0	166	238	306	370	431	491	549	606	661
	3.5	178	255	326	394	459	522	582	642	700
	4.0	189	270	345	416	484	550	613	674	735

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	69	92	110	126	139	150	159	167	175
	2.0	91	124	152	176	197	216	233	248	263
	2.5	107	146	181	211	238	262	284	304	323
	3.0	119	164	203	238	269	298	324	348	371
	3.5	129	179	222	261	296	328	358	385	411
	4.0	138	192	238	281	319	354	386	417	446
Flat terrain	1.5	77	108	136	161	184	207	228	248	267
	2.0	98	137	173	205	235	264	291	317	342
	2.5	113	158	199	237	272	305	336	366	395
	3.0	124	175	220	262	301	337	372	405	437
	3.5	134	189	238	283	325	365	402	439	473
	4.0	143	201	254	302	347	389	430	468	505
Downhill 2%	1.5	85	124	161	197	232	267	302	335	369
	2.0	105	150	194	235	275	314	351	389	425
	2.5	119	170	217	263	307	349	390	430	469
	3.0	130	185	237	286	332	378	422	464	506
	3.5	139	199	254	306	355	403	449	494	537
	4.0	148	210	268	323	375	425	474	520	566

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	54	73	89	102	114	124	133	141	149
	2.0	71	97	120	140	157	174	188	202	214
	2.5	82	114	141	166	187	207	226	243	259
	3.0	92	127	158	186	211	235	256	276	295
	3.5	99	138	172	203	231	257	281	303	325
	4.0	106	148	184	218	248	277	302	328	351
Flat terrain	1.5	59	82	103	123	141	158	174	189	204
	2.0	75	104	132	157	179	202	222	242	261
	2.5	86	120	152	181	207	232	257	280	302
	3.0	95	133	168	200	229	258	284	310	334
	3.5	102	144	181	216	248	279	307	335	361
	4.0	109	153	193	230	265	297	328	357	386
Downhill 2%	1.5	63	92	118	144	169	193	217	240	264
	2.0	78	112	144	174	202	230	258	284	310
	2.5	89	127	162	196	227	258	288	317	345
	3.0	98	139	177	214	248	281	313	344	374
	3.5	105	149	190	229	265	300	334	367	399
	4.0	111	158	202	243	281	318	354	388	421

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniRam™ HCNL

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon and high anti-drain (HCNL) mechanisms. Ideal for greenhouses, deciduous orchards, tree irrigation and permanent applications requiring highly intensive irrigation scheduling or installation in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents drainage (HCNL)	The HCNL (high anti-drain) mechanism maintains dripline pressure at a higher shut-off threshold, preventing drainage from emitters even on steep slopes and ensuring uniform water distribution. Eliminates the drainage and refill effect, improving irrigation efficiency in intensive pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface or sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for intensive and precision irrigation in orchards, greenhouses and nurseries where maintaining a fully pressurized dripline and preventing drainage is required.



Specifications

- Pressure-compensated operating range: 1.5–4.0 bar.
- Dripper nominal shut-off pressure: 0.25 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.85	1.5 - 4.0	0.70 x 0.65 x 40	110	0.85	0	130/120
1.25		0.83 x 0.74 x 40	130	1.25	0	130/120
2.00		1.09 x 0.76 x 40	130	2.00	0	200/80
2.90		1.26 x 0.93 x 40	130	2.90	0	200/80
4.40		1.59 x 1.07 x 40	150	4.40	0	200/80



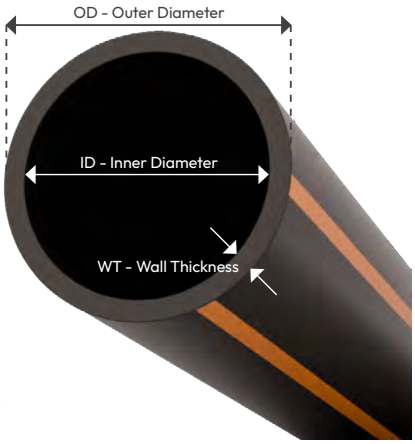
* Within working pressure range.

** Dripper nominal shut-off pressure: 0.25 bar, applicable to all flow rates.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



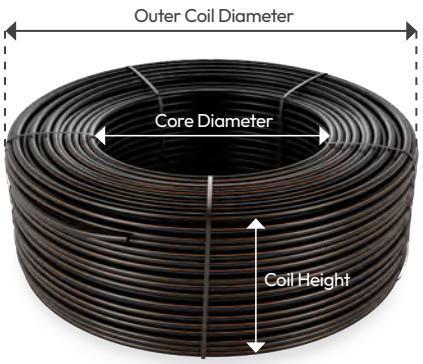
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniRam™ HCNL	URAM HCNL

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.85	0.85L/H
1.25	1.25L/H
2.00	2.00L/H
2.90	2.90L/H
4.40	4.40L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

URAN HCNL 16010 0.85L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniRam™ HCNL flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)					
		1.50	2.00	2.50	3.00	3.50	4.00
UniRam™ HCNL	0.85	0.70	0.70	0.70	0.70	0.70	0.70
	1.25	1.00	1.00	1.00	1.00	1.00	1.00
	2.00	1.60	1.60	1.60	1.60	1.60	1.60
	2.90	2.30	2.30	2.30	2.30	2.30	2.30
	4.40	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

In HCNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.85 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	2.0	75	101	123	141	155	167	178	186	194
	2.5	99	137	171	200	225	247	267	285	301
	3.0	116	162	203	240	272	302	329	353	375
	3.5	129	182	229	271	310	344	377	407	434
	4.0	140	198	250	298	341	380	417	451	483
Flat terrain	2.0	84	121	155	187	217	246	274	301	326
	2.5	107	153	197	238	277	314	349	383	415
	3.0	122	176	226	274	319	361	402	441	479
	3.5	135	194	250	303	352	399	444	488	530
	4.0	146	210	270	327	380	431	480	527	573
Downhill 2%	2.0	94	141	188	236	283	330	378	425	472
	2.5	114	170	224	277	330	382	434	485	536
	3.0	129	191	250	309	365	421	477	532	586
	3.5	141	207	272	334	395	454	514	572	628
	4.0	151	222	290	356	421	483	545	606	665

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.25 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	2.0	60	82	101	117	131	143	154	162	170
	2.5	78	110	137	162	184	204	222	238	253
	3.0	91	128	162	192	220	245	268	290	310
	3.5	101	143	181	216	248	277	305	330	354
	4.0	109	156	198	236	272	305	335	365	391
Flat terrain	2.0	65	94	121	146	169	192	214	234	254
	2.5	83	119	153	185	215	244	272	298	324
	3.0	95	137	176	213	248	281	313	344	373
	3.5	105	151	194	235	274	311	346	380	413
	4.0	113	163	210	254	296	335	374	410	446
Downhill 2%	2.0	71	106	140	175	209	243	277	311	344
	2.5	87	129	169	209	247	286	323	360	397
	3.0	99	146	190	234	276	318	358	399	438
	3.5	108	159	207	254	300	344	388	430	472
	4.0	116	170	222	272	320	367	413	458	502

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	45	63	78	92	104	114	124	133	141
	2.5	58	82	104	124	142	158	173	187	200
	3.0	67	96	122	146	167	188	206	224	240
	3.5	75	107	136	163	188	211	233	253	272
	4.0	81	116	148	177	205	230	254	277	299
Flat terrain	2.0	48	69	89	107	125	141	158	173	187
	2.5	61	88	112	136	158	180	200	220	239
	3.0	70	101	130	157	182	207	230	253	275
	3.5	77	111	143	173	202	229	255	280	304
	4.0	83	120	154	187	218	247	275	302	329
Downhill 2%	2.0	51	76	100	123	146	169	192	214	236
	2.5	63	93	121	149	176	202	228	254	279
	3.0	72	105	137	168	198	227	255	284	311
	3.5	79	115	150	184	215	247	278	308	337
	4.0	85	124	161	197	231	264	297	329	359

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.90 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	36	50	63	75	85	95	103	111	118
	2.5	46	65	83	99	114	127	141	152	164
	3.0	53	76	97	116	134	151	166	181	195
	3.5	59	84	108	130	149	169	186	203	220
	4.0	64	92	117	141	163	184	203	222	240
Flat terrain	2.0	38	54	70	84	98	111	124	136	147
	2.5	48	69	88	107	125	141	158	173	188
	3.0	55	79	102	123	143	162	182	199	216
	3.5	60	87	112	136	158	180	200	221	239
	4.0	65	94	121	147	171	194	217	238	259
Downhill 2%	2.0	40	58	76	94	111	128	145	161	178
	2.5	49	72	94	115	135	155	174	194	213
	3.0	56	82	106	130	153	175	197	218	238
	3.5	61	89	116	142	167	191	214	237	259
	4.0	66	96	125	153	179	204	230	254	277

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 4.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	28	39	49	59	67	75	82	89	96
	2.5	35	50	64	77	89	100	110	120	129
	3.0	41	58	74	90	104	117	130	141	153
	3.5	45	65	83	100	116	131	145	158	171
	4.0	49	70	90	108	125	142	158	173	187
Flat terrain	2.0	29	41	53	64	75	85	94	104	113
	2.5	36	52	67	82	95	108	120	132	144
	3.0	41	60	77	94	109	124	138	152	165
	3.5	46	66	85	104	121	137	153	168	183
	4.0	49	71	92	112	130	148	165	182	198
Downhill 2%	2.0	30	44	57	70	83	95	107	119	130
	2.5	37	54	70	86	101	116	130	144	158
	3.0	42	62	80	98	115	131	147	163	178
	3.5	46	68	88	107	125	144	161	178	194
	4.0	50	73	94	115	135	154	173	191	208

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.85 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	118	150	172	188	199	209	215	221	225
	2.5	164	215	256	289	315	337	355	372	385
	3.0	195	260	314	359	396	428	457	482	504
	3.5	219	296	359	413	460	501	538	570	599
	4.0	239	325	397	459	513	561	605	644	679
Flat terrain	2.0	148	206	258	306	350	392	432	470	506
	2.5	188	262	329	391	448	501	552	601	648
	3.0	216	302	379	451	517	579	638	694	748
	3.5	239	334	420	499	572	641	706	769	829
	4.0	258	361	454	539	619	694	765	833	898
Downhill 2%	2.0	178	265	351	437	521	607	691	776	860
	2.5	212	310	405	498	589	679	769	857	945
	3.0	238	344	447	546	643	738	831	923	1015
	3.5	258	373	481	586	688	787	885	980	1075
	4.0	276	397	512	621	727	831	932	1031	1129

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.25 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	97	126	147	164	177	188	196	203	209
	2.5	131	176	211	242	266	288	307	324	338
	3.0	155	210	255	295	329	358	386	410	431
	3.5	174	236	290	336	377	414	447	477	504
	4.0	189	259	319	371	418	460	498	533	566
Flat terrain	2.0	115	160	201	239	273	306	337	366	395
	2.5	146	204	256	304	349	391	431	469	506
	3.0	168	235	295	351	403	452	498	542	584
	3.5	185	260	327	389	446	500	551	600	647
	4.0	200	281	353	420	482	541	597	650	701
Downhill 2%	2.0	133	196	258	318	378	438	497	555	614
	2.5	161	233	302	370	435	500	563	626	688
	3.0	181	261	336	409	479	548	615	681	747
	3.5	197	283	364	442	516	589	659	729	797
	4.0	211	303	388	470	548	624	698	770	841

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	75	99	118	135	148	159	168	176	183
	2.5	99	135	164	190	212	232	250	266	280
	3.0	117	159	196	228	257	282	306	327	347
	3.5	130	179	221	258	292	322	350	375	399
	4.0	141	195	242	283	320	355	386	416	443
Flat terrain	2.0	85	118	148	176	202	226	249	271	292
	2.5	107	150	189	225	257	289	318	347	374
	3.0	124	173	218	259	297	333	368	401	432
	3.5	136	191	241	287	329	369	407	444	478
	4.0	147	207	260	310	356	400	441	480	518
Downhill 2%	2.0	94	137	179	220	259	298	337	375	413
	2.5	115	166	214	260	305	348	390	433	474
	3.0	131	187	240	291	339	386	432	477	521
	3.5	143	204	261	316	367	418	466	514	560
	4.0	153	219	279	337	392	445	496	546	595

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition.

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.90 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	60	81	98	113	125	135	145	153	160
	2.5	79	108	133	155	175	192	207	222	235
	3.0	93	128	158	185	209	230	250	269	287
	3.5	103	143	177	208	236	261	285	307	327
	4.0	112	155	193	227	258	287	314	338	361
Flat terrain	2.0	66	93	116	139	159	178	196	213	230
	2.5	84	118	148	177	203	228	251	274	295
	3.0	97	136	171	204	234	263	290	315	340
	3.5	107	150	189	226	259	291	321	349	377
	4.0	116	162	204	244	280	314	347	378	408
Downhill 2%	2.0	72	105	136	166	194	223	251	278	306
	2.5	89	128	164	199	232	264	296	327	357
	3.0	101	144	185	223	260	295	330	363	395
	3.5	111	158	202	243	283	321	357	392	428
	4.0	119	170	216	261	302	342	381	419	455

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition

Max. dripline length (meter) at different inlet pressure and different slopes

UniRam™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 4.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	47	64	78	91	101	111	119	127	134
	2.5	61	84	104	123	139	153	166	179	190
	3.0	71	99	123	145	164	182	198	214	229
	3.5	79	110	137	162	184	205	224	242	259
	4.0	86	119	149	177	201	224	246	266	285
Flat terrain	2.0	51	71	89	106	121	137	150	164	176
	2.5	64	90	113	135	155	174	192	209	225
	3.0	74	104	131	156	179	201	222	241	260
	3.5	81	115	144	172	198	222	245	267	288
	4.0	88	124	156	186	214	240	266	289	312
Downhill 2%	2.0	54	78	100	122	142	162	182	202	221
	2.5	67	96	122	148	172	195	218	240	262
	3.0	76	109	138	167	194	220	245	269	293
	3.5	84	119	152	183	212	239	266	293	318
	4.0	90	128	163	196	227	257	286	313	340

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition.

UniWine™ RC

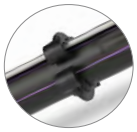
Premium integral pressure-compensated dripper with continuous self-flushing. Ideal for permanent on-surface vineyard applications in freezing climates.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier retrieval at crop-cycle completion. Also beneficial in regions prone to sub-zero temperatures.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.
Improves installation efficiency (optional)	Pre-assembled ring designed to facilitate and accelerate dripline installation and hanging on vineyard support wires. When the Hybrid configuration is not selected, it also helps prevent drop migration on sloped terrain.





Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation in vineyards.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in vineyards where the dripline is installed on the ground or suspended on vineyard support wires. Enables effective drainage and is particularly suitable for regions where temperatures may reach freezing conditions.



Specifications

- Pressure-compensated operating range: 0.5–4.0 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two purple stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.40	0.5 - 4.0	0.55 x 0.49 x 40	90	0.40	0	130/120
0.70		0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80

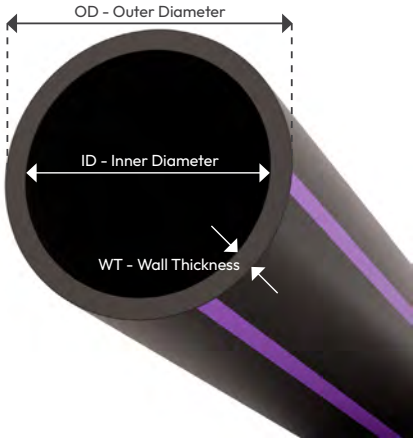


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



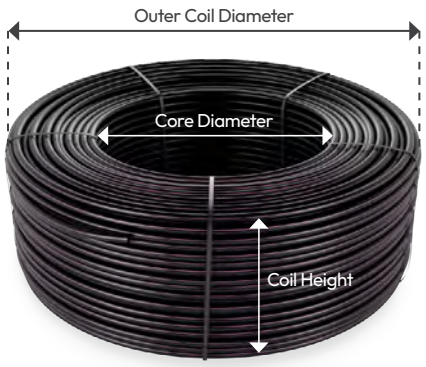
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniWine™ RC	UWINE RC

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
1.0	010
1.2	012

Flow rate (l/h)	
0.4	0.4L/H
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

UWINE RC 16012 1.6L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniWine™ RC flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniWine™ RC	0.40	0.18	0.30	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	113	147	171	189	201	211	218	223	228
	1.5	154	209	253	289	318	342	362	379	393
	2.0	183	251	309	358	400	435	466	493	517
	2.5	205	284	352	412	463	509	549	584	616
	3.0	224	312	389	457	517	570	618	661	700
	3.5	240	336	420	496	562	622	677	726	772
	4.0	254	357	448	530	603	669	730	785	836
Flat terrain	1.0	138	198	254	306	355	402	446	489	530
	1.5	175	251	322	389	452	512	569	624	676
	2.0	201	289	371	448	520	589	655	719	780
	2.5	222	319	410	495	575	652	725	795	863
	3.0	239	344	442	534	622	704	783	860	933
	3.5	255	367	471	569	662	750	835	916	995
	4.0	268	386	496	600	698	792	882	968	1050
Downhill 2%	1.0	164	252	342	434	527	621	716	809	892
	1.5	196	295	394	494	593	693	793	890	980
	2.0	219	327	434	540	646	750	855	958	1052
	2.5	238	354	467	579	690	799	908	1014	1114
	3.0	255	377	496	614	729	843	955	1066	1169
	3.5	269	397	522	644	764	881	998	1112	1219
	4.0	282	416	545	672	796	917	1037	1154	1264

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	166	196	214	224	231	235	238	240	242
	1.5	244	307	351	382	405	422	435	446	453
	2.0	297	384	449	499	538	568	594	614	631
	2.5	339	444	526	592	645	689	726	756	782
	3.0	373	494	591	670	736	791	838	878	913
	3.5	403	538	647	738	814	880	936	986	1029
	4.0	430	576	696	798	884	959	1024	1082	1133
Flat terrain	1.0	242	336	420	498	569	637	701	762	821
	1.5	307	428	536	636	728	815	897	976	1051
	2.0	354	493	618	733	840	941	1036	1127	1215
	2.5	391	545	684	812	930	1042	1148	1249	1346
	3.0	422	589	740	878	1007	1128	1242	1352	1457
	3.5	449	628	788	936	1073	1203	1326	1443	1555
	4.0	474	662	832	989	1133	1271	1400	1524	1643
Downhill 2%	1.0	322	491	662	830	977	1122	1265	1405	1542
	1.5	373	555	737	913	1072	1228	1380	1529	1675
	2.0	411	606	797	982	1150	1315	1474	1631	1785
	2.5	443	649	848	1041	1217	1389	1556	1719	1880
	3.0	471	686	894	1093	1277	1455	1629	1798	1964
	3.5	496	720	934	1140	1331	1516	1694	1869	2040
	4.0	518	750	972	1184	1380	1570	1754	1935	2110

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ RC 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniWine™ AS

Premium integral pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism. Ideal for permanent sub-surface vineyard applications. A preferred solution for organic sub-surface vineyards.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the ingress of contaminants into the dripper, making it especially suitable for sub-surface applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installations.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for permanent sub-surface vineyard applications.



Specifications

- Pressure-compensated operating range: 0.5–4.0 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two purple stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	0.5 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80

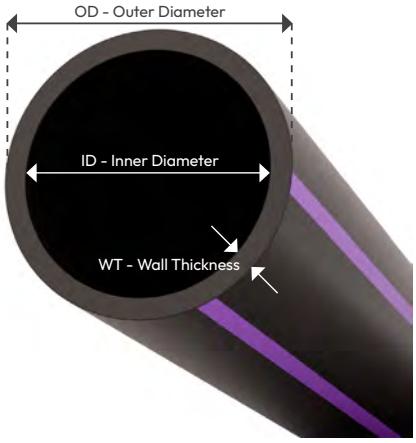


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



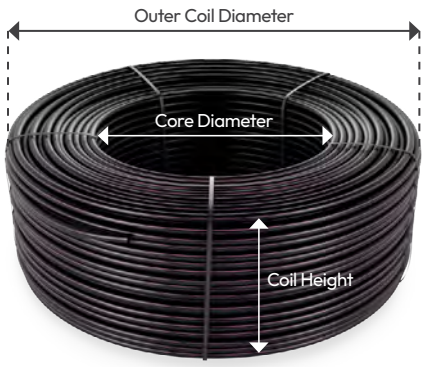
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniWine™ AS	UWINE AS

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

UWINE AS 16012 1.6L/H 0.30M 400M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniWine™ AS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniWine™ AS	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniGray™ CNL

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon and anti-drain (CNL) mechanisms. Ideal for greenhouses and permanent applications requiring intensive irrigation scheduling. Dripline manufactured with a light gray outer layer to reduce solar radiation absorption.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents drainage (CNL)	The CNL (anti-drain) mechanism maintains dripline pressure by preventing drainage from emitters located in low areas, ensuring uniform water distribution. Eliminates the drainage and refill effect, improving irrigation efficiency in pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation, primarily in greenhouses, nurseries and orchards.
- Delivers uniform hydraulic performance on flat terrain, sloping fields, and variable topographies.
- Ideal for intensive and precision irrigation in greenhouses, nurseries and orchards where minimizing solar energy absorption is required.



Specifications

- Pressure-compensated operating range: 1.0–4.0 bar.
- Dripper nominal shut-off pressure: 0.14 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with a light gray external layer.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	1.0 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80



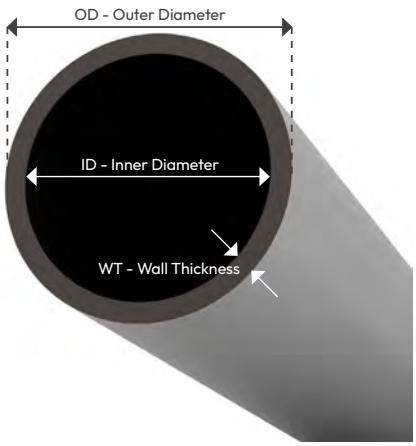
* Within working pressure range.

** Dripper nominal shut-off pressure: 0.14 bar, applicable to all flow rates.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



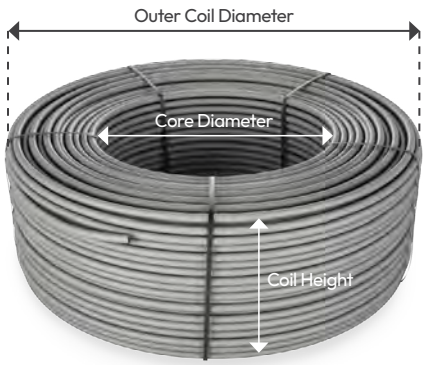
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniGray™ CNL	UGRAY CNL

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

UGRAY CNL 16010 0.7L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniGray™ CNL flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)						
		1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniGray™ CNL	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

In CNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	83	112	135	153	168	180	190	197	204
	2.0	111	154	190	221	248	271	291	310	326
	2.5	130	182	227	267	302	334	362	388	411
	3.0	145	204	256	303	345	383	418	449	478
	3.5	158	223	281	333	380	424	463	500	534
	4.0	169	239	302	359	412	459	503	545	583
Flat terrain	1.5	96	137	176	213	247	279	310	340	369
	2.0	121	174	224	270	314	356	395	434	471
	2.5	139	200	257	311	361	410	456	500	543
	3.0	153	221	284	343	400	453	504	554	600
	3.5	165	239	306	371	431	489	545	598	649
	4.0	176	254	326	395	460	522	581	637	692
Downhill 2%	1.5	108	163	219	275	331	387	443	500	557
	2.0	131	195	258	321	382	444	505	565	626
	2.5	148	218	288	355	422	488	553	617	681
	3.0	161	238	312	384	455	524	593	661	727
	3.5	173	254	332	409	483	557	628	698	768
	4.0	183	269	351	431	509	585	659	733	805

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	68	93	113	131	145	158	167	176	184
	2.0	90	125	156	183	207	228	247	265	280
	2.5	105	147	185	219	249	277	302	326	347
	3.0	116	164	208	247	282	315	345	373	399
	3.5	126	179	227	270	310	347	381	412	442
	4.0	135	192	243	291	334	375	412	447	480
Flat terrain	1.5	76	109	140	169	196	222	246	270	293
	2.0	96	138	177	214	249	282	314	345	374
	2.5	110	158	204	246	286	325	362	397	431
	3.0	121	175	225	272	317	359	400	439	477
	3.5	131	189	243	294	342	388	432	474	515
	4.0	139	201	258	313	364	414	461	506	549
Downhill 2%	1.5	83	125	166	208	248	290	330	372	412
	2.0	102	151	199	246	292	337	382	428	472
	2.5	115	170	223	274	325	374	422	471	518
	3.0	126	185	242	298	352	404	456	507	556
	3.5	135	198	259	318	374	430	484	537	590
	4.0	144	210	274	336	395	453	510	565	620

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	51	71	88	103	116	127	138	147	155
	2.0	67	95	119	141	160	179	195	210	224
	2.5	78	110	140	166	191	214	234	254	272
	3.0	86	123	156	187	214	241	265	288	309
	3.5	93	133	170	204	235	263	290	316	340
	4.0	100	143	182	218	251	284	313	341	367
Flat terrain	1.5	56	80	103	124	144	163	182	200	216
	2.0	70	101	130	158	184	208	231	254	276
	2.5	81	116	150	181	211	239	266	293	318
	3.0	89	128	165	200	233	265	294	324	352
	3.5	96	139	178	216	252	286	318	350	380
	4.0	102	147	190	230	268	305	339	373	405
Downhill 2%	1.5	60	89	117	145	173	200	228	255	282
	2.0	74	108	142	175	206	238	269	299	329
	2.5	84	122	160	197	232	266	300	333	365
	3.0	92	134	175	214	252	289	325	360	395
	3.5	98	144	187	229	269	309	346	384	421
	4.0	104	152	198	242	285	326	366	405	444

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	41	58	72	85	97	106	116	124	132
	2.0	53	76	96	114	130	146	160	174	186
	2.5	62	88	112	134	154	173	190	207	222
	3.0	68	98	124	150	172	194	214	233	251
	3.5	74	106	135	163	188	211	234	256	276
	4.0	79	113	145	174	202	228	251	275	297
Flat terrain	1.5	44	63	81	98	114	130	144	158	171
	2.0	55	80	103	125	145	165	183	201	218
	2.5	64	92	118	143	167	189	210	231	251
	3.0	70	101	130	158	184	209	233	256	278
	3.5	76	109	141	171	199	226	252	276	301
	4.0	80	116	150	182	212	241	268	294	320
Downhill 2%	1.5	46	68	90	111	132	153	173	193	212
	2.0	57	84	110	135	160	183	206	230	252
	2.5	65	95	124	153	179	206	231	257	281
	3.0	72	105	136	167	196	224	252	279	305
	3.5	77	113	146	179	209	240	270	298	326
	4.0	82	119	155	189	222	254	285	315	344

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	32	45	56	67	77	85	94	101	108
	2.0	41	58	74	89	102	114	126	137	147
	2.5	47	68	86	104	119	134	149	162	175
	3.0	52	75	96	115	133	151	166	182	196
	3.5	56	81	104	125	145	164	182	198	215
	4.0	60	86	111	134	155	175	194	213	230
Flat terrain	1.5	33	48	62	75	87	99	110	121	131
	2.0	42	61	78	95	110	125	139	153	166
	2.5	48	70	90	109	127	144	161	176	192
	3.0	53	77	99	120	140	159	178	195	212
	3.5	57	83	107	130	151	172	192	211	229
	4.0	61	88	114	138	161	183	204	224	244
Downhill 2%	1.5	35	51	67	82	97	112	126	140	154
	2.0	43	63	82	101	119	136	153	169	186
	2.5	49	72	94	114	134	153	173	191	209
	3.0	54	79	102	125	147	168	188	208	228
	3.5	58	85	110	134	158	180	202	223	244
	4.0	62	90	117	143	167	191	214	236	258

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	130	162	184	199	209	217	223	228	231
	2.0	182	238	280	313	340	361	378	393	406
	2.5	218	289	346	393	432	466	494	518	539
	3.0	246	329	398	456	505	548	586	618	648
	3.5	269	363	442	509	566	617	662	703	739
	4.0	289	392	479	554	620	678	730	777	819
Flat terrain	1.5	168	233	292	347	397	445	489	532	573
	2.0	213	297	373	443	507	568	626	681	734
	2.5	245	343	430	511	586	656	722	787	848
	3.0	271	379	476	565	648	727	801	871	939
	3.5	293	409	514	611	701	786	866	943	1017
	4.0	312	436	548	652	748	839	925	1006	1085
Downhill 2%	1.5	207	309	412	514	616	718	820	922	1024
	2.0	245	359	471	581	689	796	902	1008	1114
	2.5	273	397	517	634	748	860	970	1080	1189
	3.0	296	429	556	678	797	914	1029	1142	1254
	3.5	316	456	589	717	841	962	1081	1198	1313
	4.0	334	480	619	752	880	1005	1128	1248	1366

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	109	140	162	178	190	200	208	214	219
	2.0	149	198	236	268	295	316	335	352	366
	2.5	177	238	288	331	367	398	426	451	473
	3.0	199	269	328	380	424	463	498	530	558
	3.5	217	296	362	420	472	517	558	596	630
	4.0	233	318	392	456	512	564	610	653	692
Flat terrain	1.5	133	185	232	276	316	353	389	423	456
	2.0	169	236	296	352	403	452	498	542	583
	2.5	194	272	341	406	465	522	574	626	674
	3.0	215	300	378	449	515	577	636	693	747
	3.5	232	325	408	485	557	624	689	750	809
	4.0	247	346	435	518	594	666	734	800	863
Downhill 2%	1.5	157	233	308	382	455	528	601	673	745
	2.0	189	275	358	439	518	596	674	750	826
	2.5	212	306	396	483	568	650	731	812	891
	3.0	230	332	428	520	609	696	781	864	947
	3.5	247	354	455	552	645	736	824	911	996
	4.0	261	374	480	581	677	771	863	953	1041

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	85	111	132	148	161	173	182	190	196
	2.0	114	153	186	214	237	258	277	293	308
	2.5	134	182	222	258	289	317	342	365	386
	3.0	149	204	252	293	330	363	394	421	447
	3.5	162	223	276	323	364	402	437	469	499
	4.0	174	240	297	348	394	436	474	510	544
Flat terrain	1.5	98	137	171	203	233	261	287	313	337
	2.0	124	174	218	260	298	333	368	401	431
	2.5	143	200	252	299	343	385	425	463	498
	3.0	158	221	278	331	380	426	470	512	552
	3.5	170	239	301	358	411	461	509	554	598
	4.0	181	255	321	382	439	492	542	591	638
Downhill 2%	1.5	111	163	212	262	310	357	404	451	498
	2.0	135	195	252	307	361	412	464	515	564
	2.5	152	219	281	341	399	455	510	564	617
	3.0	166	238	306	370	431	491	549	606	661
	3.5	178	255	326	394	459	522	582	642	700
	4.0	189	270	345	416	484	550	613	674	735

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	69	92	110	126	139	150	159	167	175
	2.0	91	124	152	176	197	216	233	248	263
	2.5	107	146	181	211	238	262	284	304	323
	3.0	119	164	203	238	269	298	324	348	371
	3.5	129	179	222	261	296	328	358	385	411
	4.0	138	192	238	281	319	354	386	417	446
Flat terrain	1.5	77	108	136	161	184	207	228	248	267
	2.0	98	137	173	205	235	264	291	317	342
	2.5	113	158	199	237	272	305	336	366	395
	3.0	124	175	220	262	301	337	372	405	437
	3.5	134	189	238	283	325	365	402	439	473
	4.0	143	201	254	302	347	389	430	468	505
Downhill 2%	1.5	85	124	161	197	232	267	302	335	369
	2.0	105	150	194	235	275	314	351	389	425
	2.5	119	170	217	263	307	349	390	430	469
	3.0	130	185	237	286	332	378	422	464	506
	3.5	139	199	254	306	355	403	449	494	537
	4.0	148	210	268	323	375	425	474	520	566

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	54	73	89	102	114	124	133	141	149
	2.0	71	97	120	140	157	174	188	202	214
	2.5	82	114	141	166	187	207	226	243	259
	3.0	92	127	158	186	211	235	256	276	295
	3.5	99	138	172	203	231	257	281	303	325
	4.0	106	148	184	218	248	277	302	328	351
Flat terrain	1.5	59	82	103	123	141	158	174	189	204
	2.0	75	104	132	157	179	202	222	242	261
	2.5	86	120	152	181	207	232	257	280	302
	3.0	95	133	168	200	229	258	284	310	334
	3.5	102	144	181	216	248	279	307	335	361
	4.0	109	153	193	230	265	297	328	357	386
Downhill 2%	1.5	63	92	118	144	169	193	217	240	264
	2.0	78	112	144	174	202	230	258	284	310
	2.5	89	127	162	196	227	258	288	317	345
	3.0	98	139	177	214	248	281	313	344	374
	3.5	105	149	190	229	265	300	334	367	399
	4.0	111	158	202	243	281	318	354	388	421

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniGray™ HCNL

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon and high anti-drain (HCNL) mechanisms. Ideal for greenhouses, deciduous orchards, tree irrigation and permanent applications requiring highly intensive irrigation scheduling or installation in complex topographies. Dripline manufactured with a light gray outer layer to reduce solar radiation absorption.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents drainage (HCNL)	The HCNL (high anti-drain) mechanism maintains dripline pressure at a higher shut-off threshold, preventing drainage from emitters even on steep slopes and ensuring uniform water distribution. Eliminates the drainage and refill effect, improving irrigation efficiency in intensive pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for intensive and precision irrigation in orchards, greenhouses and nurseries where maintaining a fully pressurized dripline and preventing drainage is required.



Specifications

- Pressure-compensated operating range: 1.5–4.0 bar.
- Dripper shut-off pressure: 0.25 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with a light gray external layer.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.85	1.5 - 4.0	0.70 x 0.65 x 40	110	0.85	0	130/120
1.25		0.83 x 0.74 x 40	130	1.25	0	130/120
2.00		1.09 x 0.76 x 40	130	2.00	0	200/80
2.90		1.26 x 0.93 x 40	130	2.90	0	200/80
4.40		1.59 x 1.07 x 40	150	4.40	0	200/80



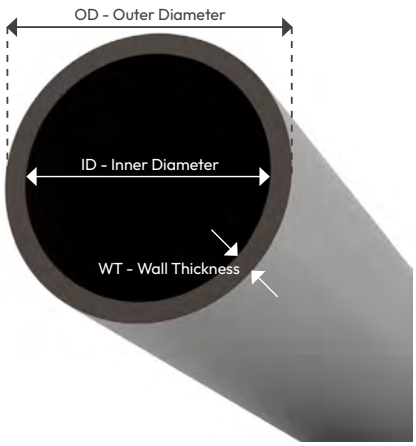
* Within working pressure range.

** Dripper nominal shut-off pressure: 0.25 bar, applicable to all flow rates.

Both the K constant and the X expo
nent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



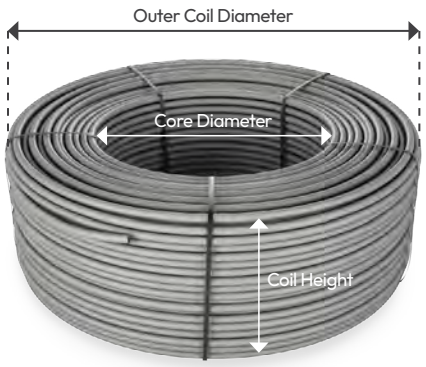
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniGray™ HCNL	UGRAY HCNL

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.85	0.85L/H
1.25	1.25L/H
2.00	2.00L/H
2.90	2.90L/H
4.40	4.40L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

UGRAY HCNL 16010 0.85L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniGray™ HCNL flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)					
		1.50	2.00	2.50	3.00	3.50	4.00
UniGray™ HCNL	0.85	0.70	0.70	0.70	0.70	0.70	0.70
	1.25	1.00	1.00	1.00	1.00	1.00	1.00
	2.00	1.60	1.60	1.60	1.60	1.60	1.60
	2.90	2.30	2.30	2.30	2.30	2.30	2.30
	4.40	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

In HCNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.85 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	75	101	123	141	155	167	178	186	194
	2.5	99	137	171	200	225	247	267	285	301
	3.0	116	162	203	240	272	302	329	353	375
	3.5	129	182	229	271	310	344	377	407	434
	4.0	140	198	250	298	341	380	417	451	483
Flat terrain	2.0	84	121	155	187	217	246	274	301	326
	2.5	107	153	197	238	277	314	349	383	415
	3.0	122	176	226	274	319	361	402	441	479
	3.5	135	194	250	303	352	399	444	488	530
	4.0	146	210	270	327	380	431	480	527	573
Downhill 2%	2.0	94	141	188	236	283	330	378	425	472
	2.5	114	170	224	277	330	382	434	485	536
	3.0	129	191	250	309	365	421	477	532	586
	3.5	141	207	272	334	395	454	514	572	628
	4.0	151	222	290	356	421	483	545	606	665

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.25 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	60	82	101	117	131	143	154	162	170
	2.5	78	110	137	162	184	204	222	238	253
	3.0	91	128	162	192	220	245	268	290	310
	3.5	101	143	181	216	248	277	305	330	354
	4.0	109	156	198	236	272	305	335	365	391
Flat terrain	2.0	65	94	121	146	169	192	214	234	254
	2.5	83	119	153	185	215	244	272	298	324
	3.0	95	137	176	213	248	281	313	344	373
	3.5	105	151	194	235	274	311	346	380	413
	4.0	113	163	210	254	296	335	374	410	446
Downhill 2%	2.0	71	106	140	175	209	243	277	311	344
	2.5	87	129	169	209	247	286	323	360	397
	3.0	99	146	190	234	276	318	358	399	438
	3.5	108	159	207	254	300	344	388	430	472
	4.0	116	170	222	272	320	367	413	458	502

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	45	63	78	92	104	114	124	133	141
	2.5	58	82	104	124	142	158	173	187	200
	3.0	67	96	122	146	167	188	206	224	240
	3.5	75	107	136	163	188	211	233	253	272
	4.0	81	116	148	177	205	230	254	277	299
Flat terrain	2.0	48	69	89	107	125	141	158	173	187
	2.5	61	88	112	136	158	180	200	220	239
	3.0	70	101	130	157	182	207	230	253	275
	3.5	77	111	143	173	202	229	255	280	304
	4.0	83	120	154	187	218	247	275	302	329
Downhill 2%	2.0	51	76	100	123	146	169	192	214	236
	2.5	63	93	121	149	176	202	228	254	279
	3.0	72	105	137	168	198	227	255	284	311
	3.5	79	115	150	184	215	247	278	308	337
	4.0	85	124	161	197	231	264	297	329	359

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.90 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	36	50	63	75	85	95	103	111	118
	2.5	46	65	83	99	114	127	141	152	164
	3.0	53	76	97	116	134	151	166	181	195
	3.5	59	84	108	130	149	169	186	203	220
	4.0	64	92	117	141	163	184	203	222	240
Flat terrain	2.0	38	54	70	84	98	111	124	136	147
	2.5	48	69	88	107	125	141	158	173	188
	3.0	55	79	102	123	143	162	182	199	216
	3.5	60	87	112	136	158	180	200	221	239
	4.0	65	94	121	147	171	194	217	238	259
Downhill 2%	2.0	40	58	76	94	111	128	145	161	178
	2.5	49	72	94	115	135	155	174	194	213
	3.0	56	82	106	130	153	175	197	218	238
	3.5	61	89	116	142	167	191	214	237	259
	4.0	66	96	125	153	179	204	230	254	277

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 4.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	2.0	28	39	49	59	67	75	82	89	96
	2.5	35	50	64	77	89	100	110	120	129
	3.0	41	58	74	90	104	117	130	141	153
	3.5	45	65	83	100	116	131	145	158	171
	4.0	49	70	90	108	125	142	158	173	187
Flat terrain	2.0	29	41	53	64	75	85	94	104	113
	2.5	36	52	67	82	95	108	120	132	144
	3.0	41	60	77	94	109	124	138	152	165
	3.5	46	66	85	104	121	137	153	168	183
	4.0	49	71	92	112	130	148	165	182	198
Downhill 2%	2.0	30	44	57	70	83	95	107	119	130
	2.5	37	54	70	86	101	116	130	144	158
	3.0	42	62	80	98	115	131	147	163	178
	3.5	46	68	88	107	125	144	161	178	194
	4.0	50	73	94	115	135	154	173	191	208

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.85 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	2.0	118	150	172	188	199	209	215	221	225
	2.5	164	215	256	289	315	337	355	372	385
	3.0	195	260	314	359	396	428	457	482	504
	3.5	219	296	359	413	460	501	538	570	599
	4.0	239	325	397	459	513	561	605	644	679
Flat terrain	2.0	148	206	258	306	350	392	432	470	506
	2.5	188	262	329	391	448	501	552	601	648
	3.0	216	302	379	451	517	579	638	694	748
	3.5	239	334	420	499	572	641	706	769	829
	4.0	258	361	454	539	619	694	765	833	898
Downhill 2%	2.0	178	265	351	437	521	607	691	776	860
	2.5	212	310	405	498	589	679	769	857	945
	3.0	238	344	447	546	643	738	831	923	1015
	3.5	258	373	481	586	688	787	885	980	1075
	4.0	276	397	512	621	727	831	932	1031	1129

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.25 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	97	126	147	164	177	188	196	203	209
	2.5	131	176	211	242	266	288	307	324	338
	3.0	155	210	255	295	329	358	386	410	431
	3.5	174	236	290	336	377	414	447	477	504
	4.0	189	259	319	371	418	460	498	533	566
Flat terrain	2.0	115	160	201	239	273	306	337	366	395
	2.5	146	204	256	304	349	391	431	469	506
	3.0	168	235	295	351	403	452	498	542	584
	3.5	185	260	327	389	446	500	551	600	647
	4.0	200	281	353	420	482	541	597	650	701
Downhill 2%	2.0	133	196	258	318	378	438	497	555	614
	2.5	161	233	302	370	435	500	563	626	688
	3.0	181	261	336	409	479	548	615	681	747
	3.5	197	283	364	442	516	589	659	729	797
	4.0	211	303	388	470	548	624	698	770	841

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	75	99	118	135	148	159	168	176	183
	2.5	99	135	164	190	212	232	250	266	280
	3.0	117	159	196	228	257	282	306	327	347
	3.5	130	179	221	258	292	322	350	375	399
	4.0	141	195	242	283	320	355	386	416	443
Flat terrain	2.0	85	118	148	176	202	226	249	271	292
	2.5	107	150	189	225	257	289	318	347	374
	3.0	124	173	218	259	297	333	368	401	432
	3.5	136	191	241	287	329	369	407	444	478
	4.0	147	207	260	310	356	400	441	480	518
Downhill 2%	2.0	94	137	179	220	259	298	337	375	413
	2.5	115	166	214	260	305	348	390	433	474
	3.0	131	187	240	291	339	386	432	477	521
	3.5	143	204	261	316	367	418	466	514	560
	4.0	153	219	279	337	392	445	496	546	595

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition.

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.90 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	60	81	98	113	125	135	145	153	160
	2.5	79	108	133	155	175	192	207	222	235
	3.0	93	128	158	185	209	230	250	269	287
	3.5	103	143	177	208	236	261	285	307	327
	4.0	112	155	193	227	258	287	314	338	361
Flat terrain	2.0	66	93	116	139	159	178	196	213	230
	2.5	84	118	148	177	203	228	251	274	295
	3.0	97	136	171	204	234	263	290	315	340
	3.5	107	150	189	226	259	291	321	349	377
	4.0	116	162	204	244	280	314	347	378	408
Downhill 2%	2.0	72	105	136	166	194	223	251	278	306
	2.5	89	128	164	199	232	264	296	327	357
	3.0	101	144	185	223	260	295	330	363	395
	3.5	111	158	202	243	283	321	357	392	428
	4.0	119	170	216	261	302	342	381	419	455

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition

Max. dripline length (meter) at different inlet pressure and different slopes

UniGray™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 4.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	47	64	78	91	101	111	119	127	134
	2.5	61	84	104	123	139	153	166	179	190
	3.0	71	99	123	145	164	182	198	214	229
	3.5	79	110	137	162	184	205	224	242	259
	4.0	86	119	149	177	201	224	246	266	285
Flat terrain	2.0	51	71	89	106	121	137	150	164	176
	2.5	64	90	113	135	155	174	192	209	225
	3.0	74	104	131	156	179	201	222	241	260
	3.5	81	115	144	172	198	222	245	267	288
	4.0	88	124	156	186	214	240	266	289	312
Downhill 2%	2.0	54	78	100	122	142	162	182	202	221
	2.5	67	96	122	148	172	195	218	240	262
	3.0	76	109	138	167	194	220	245	269	293
	3.5	84	119	152	183	212	239	266	293	318
	4.0	90	128	163	196	227	257	286	313	340

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition.

UniWhite™ CNL

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon and anti-drain (CNL) mechanisms. Ideal for greenhouses and permanent applications requiring intensive irrigation scheduling. Dripline manufactured with a white outer layer to reduce solar radiation absorption.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents drainage (CNL)	The CNL (anti-drain) mechanism maintains dripline pressure by preventing drainage from emitters located in low areas, ensuring uniform water distribution. Eliminates the drainage and refill effect, improving irrigation efficiency in pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation, primarily in greenhouses, nurseries and orchards.
- Delivers uniform hydraulic performance on flat terrain, sloping fields, and variable topographies.
- Ideal for intensive and precision irrigation in greenhouses, nurseries and orchards where minimizing solar energy absorption is required.



Specifications

- Pressure-compensated operating range: 1.0–4.0 bar.
- Dripper nominal shut-off pressure: 0.14 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with a white external layer.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	1.0 - 4.0	0.70 x 0.65 x 40	110	0.70	0	130/120
1.00		0.83 x 0.74 x 40	130	1.00	0	130/120
1.60		1.09 x 0.76 x 40	130	1.60	0	200/80
2.30		1.26 x 0.93 x 40	130	2.30	0	200/80
3.50		1.59 x 1.07 x 40	150	3.50	0	200/80



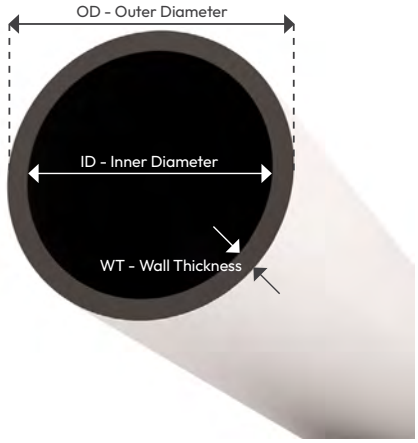
* Within working pressure range.

** Dripper nominal shut-off pressure: 0.14 bar, applicable to all flow rates.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



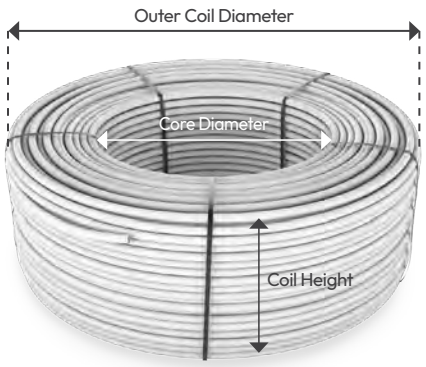
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniWhite™ CNL	UWHITE CNL

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.7	0.7L/H
1.0	1.0L/H
1.6	1.6L/H
2.3	2.3L/H
3.5	3.5L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

UWHITE CNL 16010 0.7L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniWhite™ CNL flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)						
		1.00	1.50	2.00	2.50	3.00	3.50	4.00
UniWhite™ CNL	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

In CNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	83	112	135	153	168	180	190	197	204
	2.0	111	154	190	221	248	271	291	310	326
	2.5	130	182	227	267	302	334	362	388	411
	3.0	145	204	256	303	345	383	418	449	478
	3.5	158	223	281	333	380	424	463	500	534
	4.0	169	239	302	359	412	459	503	545	583
Flat terrain	1.5	96	137	176	213	247	279	310	340	369
	2.0	121	174	224	270	314	356	395	434	471
	2.5	139	200	257	311	361	410	456	500	543
	3.0	153	221	284	343	400	453	504	554	600
	3.5	165	239	306	371	431	489	545	598	649
	4.0	176	254	326	395	460	522	581	637	692
Downhill 2%	1.5	108	163	219	275	331	387	443	500	557
	2.0	131	195	258	321	382	444	505	565	626
	2.5	148	218	288	355	422	488	553	617	681
	3.0	161	238	312	384	455	524	593	661	727
	3.5	173	254	332	409	483	557	628	698	768
	4.0	183	269	351	431	509	585	659	733	805

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	68	93	113	131	145	158	167	176	184
	2.0	90	125	156	183	207	228	247	265	280
	2.5	105	147	185	219	249	277	302	326	347
	3.0	116	164	208	247	282	315	345	373	399
	3.5	126	179	227	270	310	347	381	412	442
	4.0	135	192	243	291	334	375	412	447	480
Flat terrain	1.5	76	109	140	169	196	222	246	270	293
	2.0	96	138	177	214	249	282	314	345	374
	2.5	110	158	204	246	286	325	362	397	431
	3.0	121	175	225	272	317	359	400	439	477
	3.5	131	189	243	294	342	388	432	474	515
	4.0	139	201	258	313	364	414	461	506	549
Downhill 2%	1.5	83	125	166	208	248	290	330	372	412
	2.0	102	151	199	246	292	337	382	428	472
	2.5	115	170	223	274	325	374	422	471	518
	3.0	126	185	242	298	352	404	456	507	556
	3.5	135	198	259	318	374	430	484	537	590
	4.0	144	210	274	336	395	453	510	565	620

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	51	71	88	103	116	127	138	147	155
	2.0	67	95	119	141	160	179	195	210	224
	2.5	78	110	140	166	191	214	234	254	272
	3.0	86	123	156	187	214	241	265	288	309
	3.5	93	133	170	204	235	263	290	316	340
	4.0	100	143	182	218	251	284	313	341	367
Flat terrain	1.5	56	80	103	124	144	163	182	200	216
	2.0	70	101	130	158	184	208	231	254	276
	2.5	81	116	150	181	211	239	266	293	318
	3.0	89	128	165	200	233	265	294	324	352
	3.5	96	139	178	216	252	286	318	350	380
	4.0	102	147	190	230	268	305	339	373	405
Downhill 2%	1.5	60	89	117	145	173	200	228	255	282
	2.0	74	108	142	175	206	238	269	299	329
	2.5	84	122	160	197	232	266	300	333	365
	3.0	92	134	175	214	252	289	325	360	395
	3.5	98	144	187	229	269	309	346	384	421
	4.0	104	152	198	242	285	326	366	405	444

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	41	58	72	85	97	106	116	124	132
	2.0	53	76	96	114	130	146	160	174	186
	2.5	62	88	112	134	154	173	190	207	222
	3.0	68	98	124	150	172	194	214	233	251
	3.5	74	106	135	163	188	211	234	256	276
	4.0	79	113	145	174	202	228	251	275	297
Flat terrain	1.5	44	63	81	98	114	130	144	158	171
	2.0	55	80	103	125	145	165	183	201	218
	2.5	64	92	118	143	167	189	210	231	251
	3.0	70	101	130	158	184	209	233	256	278
	3.5	76	109	141	171	199	226	252	276	301
	4.0	80	116	150	182	212	241	268	294	320
Downhill 2%	1.5	46	68	90	111	132	153	173	193	212
	2.0	57	84	110	135	160	183	206	230	252
	2.5	65	95	124	153	179	206	231	257	281
	3.0	72	105	136	167	196	224	252	279	305
	3.5	77	113	146	179	209	240	270	298	326
	4.0	82	119	155	189	222	254	285	315	344

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	32	45	56	67	77	85	94	101	108
	2.0	41	58	74	89	102	114	126	137	147
	2.5	47	68	86	104	119	134	149	162	175
	3.0	52	75	96	115	133	151	166	182	196
	3.5	56	81	104	125	145	164	182	198	215
	4.0	60	86	111	134	155	175	194	213	230
Flat terrain	1.5	33	48	62	75	87	99	110	121	131
	2.0	42	61	78	95	110	125	139	153	166
	2.5	48	70	90	109	127	144	161	176	192
	3.0	53	77	99	120	140	159	178	195	212
	3.5	57	83	107	130	151	172	192	211	229
	4.0	61	88	114	138	161	183	204	224	244
Downhill 2%	1.5	35	51	67	82	97	112	126	140	154
	2.0	43	63	82	101	119	136	153	169	186
	2.5	49	72	94	114	134	153	173	191	209
	3.0	54	79	102	125	147	168	188	208	228
	3.5	58	85	110	134	158	180	202	223	244
	4.0	62	90	117	143	167	191	214	236	258

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.5	130	162	184	199	209	217	223	228	231
	2.0	182	238	280	313	340	361	378	393	406
	2.5	218	289	346	393	432	466	494	518	539
	3.0	246	329	398	456	505	548	586	618	648
	3.5	269	363	442	509	566	617	662	703	739
	4.0	289	392	479	554	620	678	730	777	819
Flat terrain	1.5	168	233	292	347	397	445	489	532	573
	2.0	213	297	373	443	507	568	626	681	734
	2.5	245	343	430	511	586	656	722	787	848
	3.0	271	379	476	565	648	727	801	871	939
	3.5	293	409	514	611	701	786	866	943	1017
	4.0	312	436	548	652	748	839	925	1006	1085
Downhill 2%	1.5	207	309	412	514	616	718	820	922	1024
	2.0	245	359	471	581	689	796	902	1008	1114
	2.5	273	397	517	634	748	860	970	1080	1189
	3.0	296	429	556	678	797	914	1029	1142	1254
	3.5	316	456	589	717	841	962	1081	1198	1313
	4.0	334	480	619	752	880	1005	1128	1248	1366

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	109	140	162	178	190	200	208	214	219
	2.0	149	198	236	268	295	316	335	352	366
	2.5	177	238	288	331	367	398	426	451	473
	3.0	199	269	328	380	424	463	498	530	558
	3.5	217	296	362	420	472	517	558	596	630
	4.0	233	318	392	456	512	564	610	653	692
Flat terrain	1.5	133	185	232	276	316	353	389	423	456
	2.0	169	236	296	352	403	452	498	542	583
	2.5	194	272	341	406	465	522	574	626	674
	3.0	215	300	378	449	515	577	636	693	747
	3.5	232	325	408	485	557	624	689	750	809
	4.0	247	346	435	518	594	666	734	800	863
Downhill 2%	1.5	157	233	308	382	455	528	601	673	745
	2.0	189	275	358	439	518	596	674	750	826
	2.5	212	306	396	483	568	650	731	812	891
	3.0	230	332	428	520	609	696	781	864	947
	3.5	247	354	455	552	645	736	824	911	996
	4.0	261	374	480	581	677	771	863	953	1041

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	85	111	132	148	161	173	182	190	196
	2.0	114	153	186	214	237	258	277	293	308
	2.5	134	182	222	258	289	317	342	365	386
	3.0	149	204	252	293	330	363	394	421	447
	3.5	162	223	276	323	364	402	437	469	499
	4.0	174	240	297	348	394	436	474	510	544
Flat terrain	1.5	98	137	171	203	233	261	287	313	337
	2.0	124	174	218	260	298	333	368	401	431
	2.5	143	200	252	299	343	385	425	463	498
	3.0	158	221	278	331	380	426	470	512	552
	3.5	170	239	301	358	411	461	509	554	598
	4.0	181	255	321	382	439	492	542	591	638
Downhill 2%	1.5	111	163	212	262	310	357	404	451	498
	2.0	135	195	252	307	361	412	464	515	564
	2.5	152	219	281	341	399	455	510	564	617
	3.0	166	238	306	370	431	491	549	606	661
	3.5	178	255	326	394	459	522	582	642	700
	4.0	189	270	345	416	484	550	613	674	735

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	69	92	110	126	139	150	159	167	175
	2.0	91	124	152	176	197	216	233	248	263
	2.5	107	146	181	211	238	262	284	304	323
	3.0	119	164	203	238	269	298	324	348	371
	3.5	129	179	222	261	296	328	358	385	411
	4.0	138	192	238	281	319	354	386	417	446
Flat terrain	1.5	77	108	136	161	184	207	228	248	267
	2.0	98	137	173	205	235	264	291	317	342
	2.5	113	158	199	237	272	305	336	366	395
	3.0	124	175	220	262	301	337	372	405	437
	3.5	134	189	238	283	325	365	402	439	473
	4.0	143	201	254	302	347	389	430	468	505
Downhill 2%	1.5	85	124	161	197	232	267	302	335	369
	2.0	105	150	194	235	275	314	351	389	425
	2.5	119	170	217	263	307	349	390	430	469
	3.0	130	185	237	286	332	378	422	464	506
	3.5	139	199	254	306	355	403	449	494	537
	4.0	148	210	268	323	375	425	474	520	566

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ CNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.5	54	73	89	102	114	124	133	141	149
	2.0	71	97	120	140	157	174	188	202	214
	2.5	82	114	141	166	187	207	226	243	259
	3.0	92	127	158	186	211	235	256	276	295
	3.5	99	138	172	203	231	257	281	303	325
	4.0	106	148	184	218	248	277	302	328	351
Flat terrain	1.5	59	82	103	123	141	158	174	189	204
	2.0	75	104	132	157	179	202	222	242	261
	2.5	86	120	152	181	207	232	257	280	302
	3.0	95	133	168	200	229	258	284	310	334
	3.5	102	144	181	216	248	279	307	335	361
	4.0	109	153	193	230	265	297	328	357	386
Downhill 2%	1.5	63	92	118	144	169	193	217	240	264
	2.0	78	112	144	174	202	230	258	284	310
	2.5	89	127	162	196	227	258	288	317	345
	3.0	98	139	177	214	248	281	313	344	374
	3.5	105	149	190	229	265	300	334	367	399
	4.0	111	158	202	243	281	318	354	388	421

Minimum design pressure: 1.0 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

UniWhite™ HCNL

Premium integral pressure-compensated dripper with continuous self-flushing, anti-siphon and high anti-drain (HCNL) mechanisms. Ideal for greenhouses, deciduous orchards, tree irrigation and permanent applications requiring highly intensive irrigation scheduling or installation in complex topographies. Dripline manufactured with a white outer layer to reduce solar radiation absorption.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents drainage (HCNL)	The HCNL (high anti-drain) mechanism maintains dripline pressure at a higher shut-off threshold, preventing drainage from emitters even on steep slopes and ensuring uniform water distribution. Eliminates the drainage and refill effect, improving irrigation efficiency in intensive pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure, combined with an internal protective barrier, helps reduce the risk of root intrusion into the flow path, ensuring long-term system durability. An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Hybrid (optional)	Optional patented configuration with an on-line saddle connection that combines the advantages of an integral dripper with compatibility for Netafim™ press-fit adaptors. Includes an advanced feature that helps reduce drop migration on slopes under specific operating conditions. *Contact your local Netafim™ representative for detailed guidance on drop-migration functionality.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for intensive and precision irrigation in orchards, greenhouses and nurseries where maintaining a fully pressurized dripline and preventing drainage is required.



Specifications

- Pressure-compensated operating range: 1.5–4.0 bar.
- Dripper nominal shut-off pressure: 0.25 bar.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Double TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with a white external layer.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.85	1.5 - 4.0	0.70 x 0.65 x 40	110	0.85	0	130/120
1.25		0.83 x 0.74 x 40	130	1.25	0	130/120
2.00		1.09 x 0.76 x 40	130	2.00	0	200/80
2.90		1.26 x 0.93 x 40	130	2.90	0	200/80
4.40		1.59 x 1.07 x 40	150	4.40	0	200/80



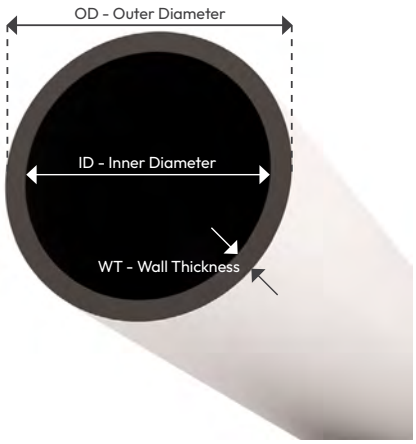
* Within working pressure range.

** Dripper nominal shut-off pressure: 0.25 bar, applicable to all flow rates.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	1.30
16010	14.20	1.0	16.20	3.5	4.6	1.30
16012	14.20	1.2	16.60	4.0	5.2	1.30
20010	17.50	1.0	19.50	3.5	4.6	0.40
20012	17.50	1.2	19.90	4.0	5.2	0.40



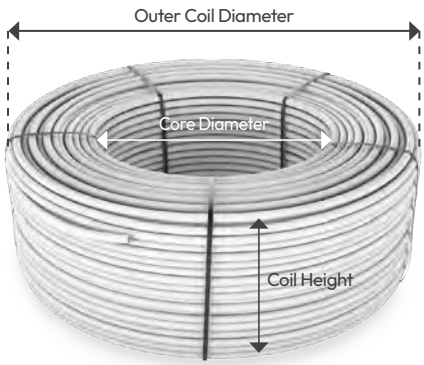
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length		Average* coil weight		Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
			smooth (m)	w/hybrid (m)	smooth (kg)	w/hybrid (kg)			
16009	0.9	0.15 to 1.00	500	N/R	20.3	N/R	84	41	27
16010	1.0	0.15 to 1.00	500	300	22.2	13.5	84	41	27
16012	1.2	0.15 to 1.00	400	300	21.2	16.0	78	41	28
20010	1.0	0.15 to 1.00	300	200	17.4	16.5	84	50	27
20012	1.2	0.15 to 1.00	300	200	20.2	19.0	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length		Coils in a 40 foot container (units)	Total in a 40 foot container	
	smooth (m)	w/hybrid (m)		smooth (m)	w/hybrid (m)
16009	500	N/R	330	165000	N/R
16010	500	300	330	165000	99000
16012	400	300	330	132000	99000
20010	300	200	330	99000	66000
20012	300	200	330	99000	66000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
UniWhite™ HCNL	UWHITE HCNL

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.85	0.85L/H
1.25	1.25L/H
2.00	2.00L/H
2.90	2.90L/H
4.40	4.40L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length (m) w/hybrid	
Model 16010	300M
Model 16012	300M
Model 20010	200M
Model 20012	200M

Special features	
No added	-
Hybrid	HYB
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

UWHITE HCNL 16010 0.85L/H 0.30M 300M HYB

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

UniWhite™ HCNL flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)					
		1.50	2.00	2.50	3.00	3.50	4.00
UniWhite™ HCNL	0.85	0.70	0.70	0.70	0.70	0.70	0.70
	1.25	1.00	1.00	1.00	1.00	1.00	1.00
	2.00	1.60	1.60	1.60	1.60	1.60	1.60
	2.90	2.30	2.30	2.30	2.30	2.30	2.30
	4.40	3.50	3.50	3.50	3.50	3.50	3.50

* Within working pressure range

In HCNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 0.85 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	75	101	123	141	155	167	178	186	194
	2.5	99	137	171	200	225	247	267	285	301
	3.0	116	162	203	240	272	302	329	353	375
	3.5	129	182	229	271	310	344	377	407	434
	4.0	140	198	250	298	341	380	417	451	483
Flat terrain	2.0	84	121	155	187	217	246	274	301	326
	2.5	107	153	197	238	277	314	349	383	415
	3.0	122	176	226	274	319	361	402	441	479
	3.5	135	194	250	303	352	399	444	488	530
	4.0	146	210	270	327	380	431	480	527	573
Downhill 2%	2.0	94	141	188	236	283	330	378	425	472
	2.5	114	170	224	277	330	382	434	485	536
	3.0	129	191	250	309	365	421	477	532	586
	3.5	141	207	272	334	395	454	514	572	628
	4.0	151	222	290	356	421	483	545	606	665

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 1.25 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	60	82	101	117	131	143	154	162	170
	2.5	78	110	137	162	184	204	222	238	253
	3.0	91	128	162	192	220	245	268	290	310
	3.5	101	143	181	216	248	277	305	330	354
	4.0	109	156	198	236	272	305	335	365	391
Flat terrain	2.0	65	94	121	146	169	192	214	234	254
	2.5	83	119	153	185	215	244	272	298	324
	3.0	95	137	176	213	248	281	313	344	373
	3.5	105	151	194	235	274	311	346	380	413
	4.0	113	163	210	254	296	335	374	410	446
Downhill 2%	2.0	71	106	140	175	209	243	277	311	344
	2.5	87	129	169	209	247	286	323	360	397
	3.0	99	146	190	234	276	318	358	399	438
	3.5	108	159	207	254	300	344	388	430	472
	4.0	116	170	222	272	320	367	413	458	502

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	45	63	78	92	104	114	124	133	141
	2.5	58	82	104	124	142	158	173	187	200
	3.0	67	96	122	146	167	188	206	224	240
	3.5	75	107	136	163	188	211	233	253	272
	4.0	81	116	148	177	205	230	254	277	299
Flat terrain	2.0	48	69	89	107	125	141	158	173	187
	2.5	61	88	112	136	158	180	200	220	239
	3.0	70	101	130	157	182	207	230	253	275
	3.5	77	111	143	173	202	229	255	280	304
	4.0	83	120	154	187	218	247	275	302	329
Downhill 2%	2.0	51	76	100	123	146	169	192	214	236
	2.5	63	93	121	149	176	202	228	254	279
	3.0	72	105	137	168	198	227	255	284	311
	3.5	79	115	150	184	215	247	278	308	337
	4.0	85	124	161	197	231	264	297	329	359

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 2.90 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	36	50	63	75	85	95	103	111	118
	2.5	46	65	83	99	114	127	141	152	164
	3.0	53	76	97	116	134	151	166	181	195
	3.5	59	84	108	130	149	169	186	203	220
	4.0	64	92	117	141	163	184	203	222	240
Flat terrain	2.0	38	54	70	84	98	111	124	136	147
	2.5	48	69	88	107	125	141	158	173	188
	3.0	55	79	102	123	143	162	182	199	216
	3.5	60	87	112	136	158	180	200	221	239
	4.0	65	94	121	147	171	194	217	238	259
Downhill 2%	2.0	40	58	76	94	111	128	145	161	178
	2.5	49	72	94	115	135	155	174	194	213
	3.0	56	82	106	130	153	175	197	218	238
	3.5	61	89	116	142	167	191	214	237	259
	4.0	66	96	125	153	179	204	230	254	277

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 16009/16010/16012 • ID 14.2 mm • Kd 1.30 • Flow rate 4.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	28	39	49	59	67	75	82	89	96
	2.5	35	50	64	77	89	100	110	120	129
	3.0	41	58	74	90	104	117	130	141	153
	3.5	45	65	83	100	116	131	145	158	171
	4.0	49	70	90	108	125	142	158	173	187
Flat terrain	2.0	29	41	53	64	75	85	94	104	113
	2.5	36	52	67	82	95	108	120	132	144
	3.0	41	60	77	94	109	124	138	152	165
	3.5	46	66	85	104	121	137	153	168	183
	4.0	49	71	92	112	130	148	165	182	198
Downhill 2%	2.0	30	44	57	70	83	95	107	119	130
	2.5	37	54	70	86	101	116	130	144	158
	3.0	42	62	80	98	115	131	147	163	178
	3.5	46	68	88	107	125	144	161	178	194
	4.0	50	73	94	115	135	154	173	191	208

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 0.85 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	118	150	172	188	199	209	215	221	225
	2.5	164	215	256	289	315	337	355	372	385
	3.0	195	260	314	359	396	428	457	482	504
	3.5	219	296	359	413	460	501	538	570	599
	4.0	239	325	397	459	513	561	605	644	679
Flat terrain	2.0	148	206	258	306	350	392	432	470	506
	2.5	188	262	329	391	448	501	552	601	648
	3.0	216	302	379	451	517	579	638	694	748
	3.5	239	334	420	499	572	641	706	769	829
	4.0	258	361	454	539	619	694	765	833	898
Downhill 2%	2.0	178	265	351	437	521	607	691	776	860
	2.5	212	310	405	498	589	679	769	857	945
	3.0	238	344	447	546	643	738	831	923	1015
	3.5	258	373	481	586	688	787	885	980	1075
	4.0	276	397	512	621	727	831	932	1031	1129

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 1.25 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	97	126	147	164	177	188	196	203	209
	2.5	131	176	211	242	266	288	307	324	338
	3.0	155	210	255	295	329	358	386	410	431
	3.5	174	236	290	336	377	414	447	477	504
	4.0	189	259	319	371	418	460	498	533	566
Flat terrain	2.0	115	160	201	239	273	306	337	366	395
	2.5	146	204	256	304	349	391	431	469	506
	3.0	168	235	295	351	403	452	498	542	584
	3.5	185	260	327	389	446	500	551	600	647
	4.0	200	281	353	420	482	541	597	650	701
Downhill 2%	2.0	133	196	258	318	378	438	497	555	614
	2.5	161	233	302	370	435	500	563	626	688
	3.0	181	261	336	409	479	548	615	681	747
	3.5	197	283	364	442	516	589	659	729	797
	4.0	211	303	388	470	548	624	698	770	841

Minimum design pressure: 1.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	75	99	118	135	148	159	168	176	183
	2.5	99	135	164	190	212	232	250	266	280
	3.0	117	159	196	228	257	282	306	327	347
	3.5	130	179	221	258	292	322	350	375	399
	4.0	141	195	242	283	320	355	386	416	443
Flat terrain	2.0	85	118	148	176	202	226	249	271	292
	2.5	107	150	189	225	257	289	318	347	374
	3.0	124	173	218	259	297	333	368	401	432
	3.5	136	191	241	287	329	369	407	444	478
	4.0	147	207	260	310	356	400	441	480	518
Downhill 2%	2.0	94	137	179	220	259	298	337	375	413
	2.5	115	166	214	260	305	348	390	433	474
	3.0	131	187	240	291	339	386	432	477	521
	3.5	143	204	261	316	367	418	466	514	560
	4.0	153	219	279	337	392	445	496	546	595

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition.

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 2.90 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	60	81	98	113	125	135	145	153	160
	2.5	79	108	133	155	175	192	207	222	235
	3.0	93	128	158	185	209	230	250	269	287
	3.5	103	143	177	208	236	261	285	307	327
	4.0	112	155	193	227	258	287	314	338	361
Flat terrain	2.0	66	93	116	139	159	178	196	213	230
	2.5	84	118	148	177	203	228	251	274	295
	3.0	97	136	171	204	234	263	290	315	340
	3.5	107	150	189	226	259	291	321	349	377
	4.0	116	162	204	244	280	314	347	378	408
Downhill 2%	2.0	72	105	136	166	194	223	251	278	306
	2.5	89	128	164	199	232	264	296	327	357
	3.0	101	144	185	223	260	295	330	363	395
	3.5	111	158	202	243	283	321	357	392	428
	4.0	119	170	216	261	302	342	381	419	455

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition

Max. dripline length (meter) at different inlet pressure and different slopes

UniWhite™ HCNL 20010/20012 • ID 17.5 mm • Kd 0.40 • Flow rate 4.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	2.0	47	64	78	91	101	111	119	127	134
	2.5	61	84	104	123	139	153	166	179	190
	3.0	71	99	123	145	164	182	198	214	229
	3.5	79	110	137	162	184	205	224	242	259
	4.0	86	119	149	177	201	224	246	266	285
Flat terrain	2.0	51	71	89	106	121	137	150	164	176
	2.5	64	90	113	135	155	174	192	209	225
	3.0	74	104	131	156	179	201	222	241	260
	3.5	81	115	144	172	198	222	245	267	288
	4.0	88	124	156	186	214	240	266	289	312
Downhill 2%	2.0	54	78	100	122	142	162	182	202	221
	2.5	67	96	122	148	172	195	218	240	262
	3.0	76	109	138	167	194	220	245	269	293
	3.5	84	119	152	183	212	239	266	293	318
	4.0	90	128	163	196	227	257	286	313	340

Minimum considered pressure 1.5 bar. Max. working pressure according the dripline wall thickness definition.



DripNet PC™

DripNet PC™ HWD

Compact pressure-compensated dripper for permanent drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier retrieval at crop-cycle completion. Also beneficial in regions prone to sub-zero temperatures.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.

Applications

Open field · Orchards · Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in row crops, orchards, greenhouses and nurseries.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.40	0.25 - 2.5	0.46 x 0.52 x 26	29	0.4	0	130/120
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

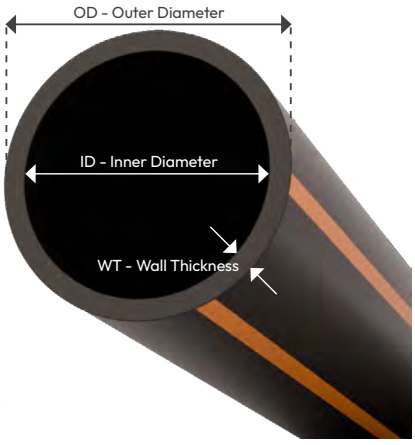


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12009	10.60	0.9	12.40	2.5/3.0/3.5*	3.9	2.85
12010	10.60	1.0	12.60	2.5/3.0/3.5*	4.6	2.85
16009	14.20	0.9	16.00	2.5/3.0/3.5*	3.9	0.72
16010	14.20	1.0	16.20	2.5/3.0/3.5*	4.6	0.72
16012	14.20	1.2	16.60	2.5/3.0/3.5*	5.2	0.72
20010	17.50	1.0	19.50	2.5/3.0/3.5*	4.6	0.25
20012	17.50	1.2	19.90	2.5/3.0/3.5*	5.2	0.25



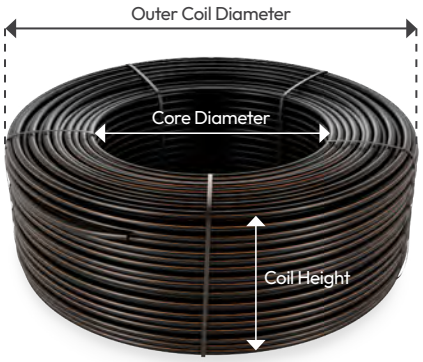
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
12009	0.9	0.15 to 1.00	500	16.8	78	41	26
12010	1.0	0.15 to 1.00	500	18.3	78	41	26
16009	0.9	0.15 to 1.00	500	18.5	84	41	27
16010	1.0	0.15 to 1.00	500	20.4	84	41	27
16012	1.2	0.15 to 1.00	400	22.4	78	41	28
20010	1.0	0.15 to 1.00	300	16.8	84	50	27
20012	1.2	0.15 to 1.00	300	20.3	84	50	27



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.

Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12009	500	384	192000
12010	500	384	192000
16009	500	330	165000
16010	500	330	165000
16012	400	330	132000
20010	300	330	99000
20012	300	330	99000



A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Special features	
DripNet PC™	DNPC	12	12	0.9	009	0.4	0.4L/H	0.2	0.20M	Model 12009	500M	No added	-
		16	16	1.0	010	0.6	0.6L/H	0.3	0.30M	Model 12010	500M	Other	XXX
		20	20	1.2	012	1.0	1.0L/H	0.4	0.40M	Model 16009	500M		
						1.6	1.6L/H	0.5	0.50M	Model 16010	500M		
						2.0	2.0L/H	0.6	0.60M	Model 16012	400M		
						3.0	3.0L/H	0.7	0.70M	Model 20010	300M		
						3.5	3.5L/H			Model 20012	300M		
						3.8	3.8L/H						

*Other distances between drippers can be ordered.

*Other features available upon request. Consult your local Netafim™ distributor.

DNPC 16010 1.6L/H 0.30M 500M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™	0.40	0.26	0.31	0.36	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	79	110	138	162	182	200	216	230	243
	1.5	96	136	172	204	232	258	282	303	323
	2.0	109	155	197	235	269	302	331	358	383
	2.5	120	171	218	261	300	337	370	402	432
Flat terrain	1.0	86	124	161	196	229	260	290	320	349
	1.5	102	148	192	233	272	311	347	383	416
	2.0	114	166	215	262	306	349	390	429	468
	2.5	124	181	234	285	334	381	426	469	511
Downhill 2%	1.0	92	138	184	231	277	323	369	415	461
	1.5	107	160	212	263	314	364	414	464	513
	2.0	119	176	233	289	343	397	450	503	555
	2.5	129	191	251	310	368	425	482	536	592

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	62	87	110	130	148	164	178	192	204
	1.5	75	106	135	162	185	207	228	247	264
	2.0	84	121	154	185	214	240	265	287	309
	2.5	92	133	170	204	236	266	294	320	346
Flat terrain	1.0	66	95	123	150	175	200	223	246	268
	1.5	78	113	147	179	209	239	266	293	320
	2.0	87	127	165	201	235	268	299	330	360
	2.5	95	138	180	219	256	292	326	360	393
Downhill 2%	1.0	69	104	137	171	203	237	270	302	334
	1.5	81	120	158	196	233	270	306	342	377
	2.0	90	133	175	217	257	296	335	374	411
	2.5	98	144	189	233	276	319	359	401	440

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	59	74	89	101	113	124	133	143
	1.5	52	74	94	113	131	147	162	176	190
	2.0	59	85	109	131	152	172	190	207	223
	2.5	65	94	120	145	169	190	212	231	250
	3.0	70	101	130	158	183	207	230	252	273
Flat terrain	1.0	43	63	82	100	116	133	148	164	178
	1.5	53	77	100	123	143	164	183	202	220
	2.0	60	88	114	139	163	186	208	230	250
	2.5	66	97	125	153	179	204	229	252	275
	3.0	71	104	135	165	193	220	246	272	296
Downhill 2%	1.0	46	68	89	111	132	153	174	194	215
	1.5	55	81	107	132	156	181	204	227	250
	2.0	62	91	120	148	175	201	227	252	277
	2.5	68	100	130	161	190	218	246	274	300
	3.0	72	107	140	172	202	232	262	292	320

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	31	44	56	67	77	87	96	104	112
	1.5	38	55	70	85	98	111	123	135	146
	2.0	44	63	81	98	114	129	143	157	170
	2.5	48	69	89	108	126	143	159	175	189
	3.0	51	75	96	117	136	155	173	189	206
Flat terrain	1.0	32	47	60	73	86	98	110	121	131
	1.5	39	57	74	90	106	120	134	149	162
	2.0	44	65	84	103	120	137	154	169	184
	2.5	49	71	92	113	132	151	168	185	203
	3.0	52	76	99	121	142	162	182	200	218
Downhill 2%	1.0	33	49	64	80	94	109	123	137	151
	1.5	40	59	77	95	112	130	146	163	179
	2.0	45	66	87	107	126	145	163	182	199
	2.5	49	73	95	117	137	158	178	197	216
	3.0	53	78	102	125	147	169	190	211	231

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	27	38	49	59	68	76	85	92	99
	1.5	33	48	61	74	86	97	108	118	128
	2.0	38	55	70	85	99	113	125	137	149
	2.5	41	60	78	94	110	125	138	152	165
	3.0	45	65	84	102	119	135	150	165	179
	3.5	47	69	89	108	127	144	160	176	192
Flat terrain	1.0	28	40	52	64	74	85	94	104	114
	1.5	34	49	64	78	91	104	117	129	140
	2.0	38	56	72	89	104	118	133	147	160
	2.5	42	61	80	97	114	130	146	161	175
	3.0	45	66	86	105	122	140	157	173	189
	3.5	48	70	91	111	130	148	166	184	201
Downhill 2%	1.0	28	42	55	68	80	93	105	117	129
	1.5	34	51	66	82	97	111	125	139	153
	2.0	39	57	75	92	109	125	140	156	171
	2.5	42	62	82	100	118	136	153	169	185
	3.0	46	67	88	107	127	145	163	181	198
	3.5	48	71	92	114	134	153	173	192	210

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	46	53	60	67	73	79
	1.5	25	37	48	58	67	76	85	93	101
	2.0	29	42	54	66	77	88	98	107	116
	2.5	32	46	60	73	85	97	108	119	129
	3.0	34	50	64	79	92	104	117	129	140
	3.5	36	53	68	84	98	111	124	137	149
Flat terrain	1.0	21	31	40	49	57	65	73	80	88
	1.5	26	38	49	60	70	80	90	99	108
	2.0	29	43	56	68	80	91	102	113	123
	2.5	32	47	61	75	88	100	112	123	135
	3.0	34	50	66	80	94	107	121	133	145
	3.5	37	53	70	85	100	114	128	141	154
Downhill 2%	1.0	22	32	42	52	61	70	79	87	96
	1.5	26	39	50	62	73	84	94	105	115
	2.0	30	44	57	70	82	95	106	118	129
	2.5	32	48	62	77	90	103	116	129	141
	3.0	35	51	67	82	97	111	124	138	151
	3.5	37	54	71	87	102	117	131	146	159

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	16	23	30	36	41	47	52	57	61
	1.5	21	31	40	49	56	64	71	78	85
	2.0	25	36	47	57	67	76	84	93	101
	2.5	28	41	52	64	74	85	94	104	113
	3.0	30	44	57	69	81	92	102	113	123
	3.5	32	47	61	74	86	99	110	122	132
Flat terrain	1.0	17	24	32	39	45	51	58	63	69
	1.5	22	32	41	51	59	68	76	84	91
	2.0	25	37	48	59	69	78	88	97	106
	2.5	28	41	53	65	76	88	98	108	118
	3.0	30	44	58	71	83	95	106	117	128
	3.5	32	47	62	75	88	101	113	125	136
Downhill 2%	1.0	17	25	33	41	49	56	63	70	77
	1.5	22	33	43	53	62	71	80	89	97
	2.0	26	38	49	61	71	82	92	102	112
	2.5	28	42	54	67	79	90	102	113	123
	3.0	31	45	59	72	85	97	109	121	132
	3.5	33	48	62	77	90	104	116	129	141

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	15	22	28	34	40	45	50	54	58
	1.5	20	29	38	46	54	61	68	75	81
	2.0	24	35	44	54	63	72	80	88	96
	2.5	26	38	50	61	71	81	90	99	107
	3.0	29	41	54	66	77	88	98	107	117
	3.5	30	44	58	70	82	94	105	115	125
Flat terrain	1.0	16	23	30	37	43	48	54	60	65
	1.5	21	30	39	48	56	64	72	79	86
	2.0	24	35	46	56	65	75	83	92	101
	2.5	27	39	50	62	73	83	93	103	112
	3.0	29	42	55	67	79	90	101	111	121
	3.5	31	45	58	71	83	96	107	119	129
Downhill 2%	1.0	16	24	31	39	46	53	59	66	73
	1.5	21	31	40	50	59	67	76	84	92
	2.0	24	36	46	57	67	77	87	96	106
	2.5	27	39	52	63	74	85	96	106	116
	3.0	29	43	56	68	80	92	103	114	125
	3.5	31	45	59	73	85	98	110	122	133

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	152	197	231	257	277	292	305	314	323
	1.5	191	255	306	347	381	410	434	454	471
	2.0	220	297	361	414	460	498	533	563	588
	2.5	244	332	406	469	523	571	614	651	685
Flat terrain	1.0	182	256	323	385	443	498	550	599	647
	1.5	217	305	386	461	530	596	658	718	775
	2.0	243	343	434	518	597	671	742	809	874
	2.5	265	374	474	566	652	733	810	884	955
Downhill 2%	1.0	212	316	420	518	610	700	788	875	960
	1.5	242	357	469	576	676	774	869	962	1054
	2.0	266	390	509	623	730	834	935	1034	1131
	2.5	286	418	544	663	776	886	992	1096	1198

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.0	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.0	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.0	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.0	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.0	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.0	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.0	94	133	167	198	226	253	278	301	322
	3.5	101	141	178	212	242	271	298	323	347
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.0	97	138	175	210	242	272	302	329	356
	3.5	103	146	186	223	257	290	321	351	379
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.0	99	143	183	221	257	293	326	359	391
	3.5	105	151	194	234	272	309	345	379	412

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.0	73	103	130	154	177	198	218	237	254
	3.5	78	110	138	165	189	212	234	254	273
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.0	74	106	134	161	186	210	232	254	275
	3.5	79	112	143	171	198	223	247	270	292
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.0	76	109	139	168	196	222	247	271	295
	3.5	80	115	147	178	206	235	261	287	312

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	33	46	57	66	74	82	89	95	101
	1.5	45	63	79	93	106	118	129	139	149
	2.0	53	74	93	111	127	141	155	168	180
	2.5	59	83	105	125	143	160	175	190	204
	3.0	64	90	114	136	156	175	192	209	225
	3.5	69	97	122	146	167	188	207	225	242
Flat terrain	1.0	35	50	64	76	88	99	109	119	129
	1.5	47	66	84	101	116	131	145	158	171
	2.0	54	77	98	118	136	153	169	185	200
	2.5	60	86	109	131	151	170	188	206	223
	3.0	65	93	118	142	164	185	205	223	242
	3.5	70	99	126	152	175	197	218	239	258
Downhill 2%	1.0	38	54	70	86	101	116	130	144	158
	1.5	48	70	90	109	127	144	162	178	194
	2.0	56	80	103	125	145	165	183	203	220
	2.5	62	89	113	137	159	181	202	221	241
	3.0	67	95	122	148	172	195	217	239	259
	3.5	71	101	130	157	182	207	230	253	275

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	44	54	63	71	78	85	91	97
	1.5	43	60	75	89	101	112	123	133	142
	2.0	50	71	89	105	121	134	148	160	172
	2.5	56	79	100	118	136	152	167	181	195
	3.0	61	86	108	129	148	166	183	199	214
	3.5	65	92	116	139	159	179	197	214	231
Flat terrain	1.0	34	47	60	72	83	94	103	113	122
	1.5	44	63	80	96	110	124	138	150	162
	2.0	51	73	93	112	128	145	161	176	190
	2.5	57	81	103	124	143	161	178	195	211
	3.0	62	88	112	135	155	175	194	212	229
	3.5	66	94	120	144	166	187	207	227	245
Downhill 2%	1.0	35	51	66	81	95	109	122	135	148
	1.5	46	66	85	103	119	137	152	167	183
	2.0	53	76	97	118	137	155	174	191	208
	2.5	58	84	107	130	151	171	190	210	228
	3.0	63	90	116	140	162	184	205	225	245
	3.5	67	96	123	149	172	195	218	239	260

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	220	266	295	314	327	337	344	349	353
	1.5	289	362	415	454	482	505	523	537	549
	2.0	340	435	506	562	605	641	670	695	715
	2.5	381	494	581	651	708	755	795	830	859
Flat terrain	1.0	300	411	509	598	681	759	833	903	970
	1.5	359	492	610	718	817	911	999	1085	1165
	2.0	403	554	687	809	921	1027	1127	1223	1315
	2.5	440	605	751	884	1007	1124	1234	1338	1439
Downhill 2%	1.0	384	559	720	875	1025	1171	1314	1455	1594
	1.5	431	621	796	963	1124	1280	1434	1583	1730
	2.0	469	671	858	1035	1205	1371	1531	1688	1843
	2.5	501	714	910	1097	1276	1448	1616	1780	1940

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	183	227	259	282	298	312	322	329	336
	1.5	234	300	351	391	422	448	470	487	502
	2.0	272	355	420	473	517	554	586	613	637
	2.5	303	399	476	540	594	641	682	717	749
Flat terrain	1.0	231	316	392	461	525	585	642	697	748
	1.5	276	378	469	553	629	702	770	836	899
	2.0	310	426	529	623	710	792	869	943	1014
	2.5	338	465	578	681	776	866	950	1031	1109
Downhill 2%	1.0	280	410	531	642	749	854	956	1056	1154
	1.5	318	459	590	712	828	941	1050	1157	1262
	2.0	348	499	638	768	892	1012	1128	1241	1352
	2.5	374	533	680	817	947	1072	1194	1313	1429

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	126	161	185	205	219	231	241	248	255
	1.5	167	218	258	291	319	342	362	379	394
	2.0	195	258	310	353	390	423	451	476	499
	2.5	218	291	351	403	448	487	522	554	584
	3.0	238	319	386	445	496	542	583	621	655
Flat terrain	1.0	153	210	260	307	349	389	427	464	498
	1.5	189	260	323	380	433	483	530	576	619
	2.0	215	296	368	434	495	552	606	658	708
	2.5	237	326	406	478	545	608	668	725	780
	3.0	255	352	437	516	589	657	722	783	842
Downhill 2%	1.0	180	262	340	418	494	568	643	713	777
	1.5	212	303	390	474	555	635	714	788	858
	2.0	236	335	429	518	605	689	772	850	924
	2.5	256	362	461	556	647	735	822	904	981
	3.0	273	385	490	589	683	776	866	950	1032

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	98	128	150	169	184	197	208	217	225
	1.5	127	169	203	232	256	278	298	315	330
	2.0	148	198	240	276	308	336	362	385	407
	2.5	164	221	270	312	349	383	414	442	468
	3.0	179	241	295	342	384	422	457	490	519
Flat terrain	1.0	113	155	192	227	258	288	316	343	369
	1.5	139	192	238	281	320	357	393	426	458
	2.0	159	219	272	321	366	408	449	487	524
	2.5	174	241	299	353	403	450	494	536	577
	3.0	188	259	323	381	435	485	534	580	623
Downhill 2%	1.0	128	183	236	288	337	386	435	483	531
	1.5	152	215	275	332	387	440	493	545	595
	2.0	170	240	305	367	426	483	539	594	647
	2.5	185	260	330	396	458	519	578	635	692
	3.0	197	278	351	421	487	550	612	672	731

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	87	113	135	153	167	180	191	201	209
	1.5	111	149	180	206	229	250	268	284	300
	2.0	129	174	211	244	274	300	323	345	365
	2.5	143	194	237	275	308	340	367	393	418
	3.0	155	211	258	301	338	373	405	434	462
	3.5	166	226	278	323	365	403	438	470	500
Flat terrain	1.0	98	134	166	196	224	250	274	297	320
	1.5	120	166	206	243	277	309	340	369	397
	2.0	137	189	236	278	317	354	389	422	454
	2.5	151	208	259	306	349	390	428	465	500
	3.0	163	224	280	330	377	421	462	502	540
	3.5	173	239	297	351	401	448	492	535	575
Downhill 2%	1.0	109	155	199	242	283	324	364	403	442
	1.5	130	184	234	282	328	372	416	458	500
	2.0	145	205	260	312	362	410	457	502	547
	2.5	158	223	282	338	391	442	491	539	586
	3.0	170	238	301	360	416	469	522	572	621
	3.5	179	251	318	380	438	494	548	601	652

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	91	109	125	139	151	161	170	179
	1.5	87	117	143	165	185	203	219	234	248
	2.0	101	136	167	194	218	240	261	279	297
	2.5	111	152	186	217	245	270	294	316	336
	3.0	121	164	203	237	268	296	322	347	370
	3.5	129	176	217	254	287	318	346	374	399
Flat terrain	1.0	75	103	128	151	172	193	211	230	247
	1.5	93	128	159	188	214	239	262	284	306
	2.0	105	146	181	214	244	273	300	326	350
	2.5	116	160	200	236	269	300	330	359	386
	3.0	125	173	215	254	290	324	356	387	417
	3.5	133	184	229	271	309	345	379	412	444
Downhill 2%	1.0	81	116	148	179	208	237	265	293	320
	1.5	98	138	175	210	244	276	307	338	368
	2.0	110	155	196	235	271	306	340	374	405
	2.5	120	169	213	255	293	331	367	402	437
	3.0	129	181	228	272	313	353	391	428	464
	3.5	137	191	241	287	331	372	413	452	489

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	53	70	83	95	104	113	120	126	132
	1.5	73	99	120	139	155	170	184	196	207
	2.0	87	118	144	168	189	208	226	242	257
	2.5	98	133	163	190	215	237	258	277	295
	3.0	106	145	179	209	236	262	285	307	327
	3.5	114	156	192	225	255	283	308	332	355
Flat terrain	1.0	59	81	101	119	135	151	166	180	193
	1.5	78	108	134	158	181	202	222	240	258
	2.0	91	126	156	185	211	236	259	281	303
	2.5	101	140	174	206	235	263	289	313	337
	3.0	110	152	189	224	256	286	314	341	367
	3.5	117	162	202	239	273	305	335	365	392
Downhill 2%	1.0	65	92	119	144	168	192	215	238	260
	1.5	83	117	148	178	206	234	260	286	312
	2.0	95	134	169	202	233	264	294	321	350
	2.5	105	147	186	222	256	288	320	351	380
	3.0	113	158	200	239	275	309	343	375	407
	3.5	121	169	212	253	292	328	363	398	430

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	50	67	80	91	100	109	116	122	128
	1.5	70	94	114	133	149	163	176	188	199
	2.0	83	112	138	160	180	199	215	231	246
	2.5	93	126	155	181	205	226	246	265	282
	3.0	101	138	170	199	225	249	272	293	312
	3.5	108	148	183	215	243	270	294	317	339
Flat terrain	1.0	56	77	96	113	128	144	158	171	184
	1.5	74	102	127	150	171	191	210	228	245
	2.0	86	119	148	176	200	223	246	266	287
	2.5	96	133	165	195	223	249	274	298	320
	3.0	104	144	180	212	242	271	298	323	348
	3.5	111	154	192	227	259	290	318	346	372
Downhill 2%	1.0	61	87	112	135	158	180	202	223	244
	1.5	78	110	140	168	194	220	245	269	293
	2.0	90	126	160	191	221	249	277	303	329
	2.5	99	139	176	210	242	272	302	331	359
	3.0	107	150	189	226	260	293	324	355	384
	3.5	114	160	201	240	275	310	343	375	406

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

DripNet PC™ AS HWD

Compact pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism. Designed for permanent sub-surface drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.

Applications

Open field Orchards Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in permanent and semi-permanent row crops and orchards.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

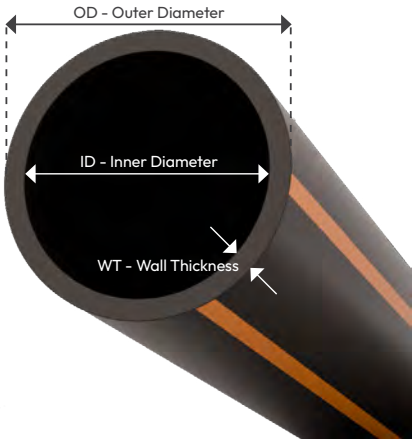


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12009	10.60	0.9	12.40	2.5/3.0/3.5*	3.9	2.85
12010	10.60	1.0	12.60	2.5/3.0/3.5*	4.6	2.85
16009	14.20	0.9	16.00	2.5/3.0/3.5*	3.9	0.72
16010	14.20	1.0	16.20	2.5/3.0/3.5*	4.6	0.72
16012	14.20	1.2	16.60	2.5/3.0/3.5*	5.2	0.72
20010	17.50	1.0	19.50	2.5/3.0/3.5*	4.6	0.25
20012	17.50	1.2	19.90	2.5/3.0/3.5*	5.2	0.25



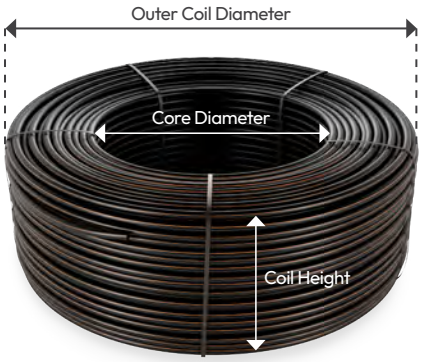
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
12009	0.9	0.15 to 1.00	500	16.8	78	41	26
12010	1.0	0.15 to 1.00	500	18.3	78	41	26
16009	0.9	0.15 to 1.00	500	18.5	84	41	27
16010	1.0	0.15 to 1.00	500	20.4	84	41	27
16012	1.2	0.15 to 1.00	400	22.4	78	41	28
20010	1.0	0.15 to 1.00	300	16.8	84	50	27
20012	1.2	0.15 to 1.00	300	20.3	84	50	27



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.

Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12009	500	384	192000
12010	500	384	192000
16009	500	330	165000
16010	500	330	165000
16012	400	330	132000
20010	300	330	99000
20012	300	330	99000



A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™ AS	DNPC AS

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 12009	500M
Model 12010	500M
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Special features	
No added	-
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

DNPC AS 16010 1.6L/H 0.30M 500M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ AS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™ AS	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	62	87	110	130	148	164	178	192	204
	1.5	75	106	135	162	185	207	228	247	264
	2.0	84	121	154	185	214	240	265	287	309
	2.5	92	133	170	204	236	266	294	320	346
Flat terrain	1.0	66	95	123	150	175	200	223	246	268
	1.5	78	113	147	179	209	239	266	293	320
	2.0	87	127	165	201	235	268	299	330	360
	2.5	95	138	180	219	256	292	326	360	393
Downhill 2%	1.0	69	104	137	171	203	237	270	302	334
	1.5	81	120	158	196	233	270	306	342	377
	2.0	90	133	175	217	257	296	335	374	411
	2.5	98	144	189	233	276	319	359	401	440

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	41	59	74	89	101	113	124	133	143
	1.5	52	74	94	113	131	147	162	176	190
	2.0	59	85	109	131	152	172	190	207	223
	2.5	65	94	120	145	169	190	212	231	250
	3.0	70	101	130	158	183	207	230	252	273
Flat terrain	1.0	43	63	82	100	116	133	148	164	178
	1.5	53	77	100	123	143	164	183	202	220
	2.0	60	88	114	139	163	186	208	230	250
	2.5	66	97	125	153	179	204	229	252	275
	3.0	71	104	135	165	193	220	246	272	296
Downhill 2%	1.0	46	68	89	111	132	153	174	194	215
	1.5	55	81	107	132	156	181	204	227	250
	2.0	62	91	120	148	175	201	227	252	277
	2.5	68	100	130	161	190	218	246	274	300
	3.0	72	107	140	172	202	232	262	292	320

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	31	44	56	67	77	87	96	104	112
	1.5	38	55	70	85	98	111	123	135	146
	2.0	44	63	81	98	114	129	143	157	170
	2.5	48	69	89	108	126	143	159	175	189
	3.0	51	75	96	117	136	155	173	189	206
Flat terrain	1.0	32	47	60	73	86	98	110	121	131
	1.5	39	57	74	90	106	120	134	149	162
	2.0	44	65	84	103	120	137	154	169	184
	2.5	49	71	92	113	132	151	168	185	203
	3.0	52	76	99	121	142	162	182	200	218
Downhill 2%	1.0	33	49	64	80	94	109	123	137	151
	1.5	40	59	77	95	112	130	146	163	179
	2.0	45	66	87	107	126	145	163	182	199
	2.5	49	73	95	117	137	158	178	197	216
	3.0	53	78	102	125	147	169	190	211	231

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	27	38	49	59	68	76	85	92	99
	1.5	33	48	61	74	86	97	108	118	128
	2.0	38	55	70	85	99	113	125	137	149
	2.5	41	60	78	94	110	125	138	152	165
	3.0	45	65	84	102	119	135	150	165	179
	3.5	47	69	89	108	127	144	160	176	192
Flat terrain	1.0	28	40	52	64	74	85	94	104	114
	1.5	34	49	64	78	91	104	117	129	140
	2.0	38	56	72	89	104	118	133	147	160
	2.5	42	61	80	97	114	130	146	161	175
	3.0	45	66	86	105	122	140	157	173	189
	3.5	48	70	91	111	130	148	166	184	201
Downhill 2%	1.0	28	42	55	68	80	93	105	117	129
	1.5	34	51	66	82	97	111	125	139	153
	2.0	39	57	75	92	109	125	140	156	171
	2.5	42	62	82	100	118	136	153	169	185
	3.0	46	67	88	107	127	145	163	181	198
	3.5	48	71	92	114	134	153	173	192	210

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	46	53	60	67	73	79
	1.5	25	37	48	58	67	76	85	93	101
	2.0	29	42	54	66	77	88	98	107	116
	2.5	32	46	60	73	85	97	108	119	129
	3.0	34	50	64	79	92	104	117	129	140
	3.5	36	53	68	84	98	111	124	137	149
Flat terrain	1.0	21	31	40	49	57	65	73	80	88
	1.5	26	38	49	60	70	80	90	99	108
	2.0	29	43	56	68	80	91	102	113	123
	2.5	32	47	61	75	88	100	112	123	135
	3.0	34	50	66	80	94	107	121	133	145
	3.5	37	53	70	85	100	114	128	141	154
Downhill 2%	1.0	22	32	42	52	61	70	79	87	96
	1.5	26	39	50	62	73	84	94	105	115
	2.0	30	44	57	70	82	95	106	118	129
	2.5	32	48	62	77	90	103	116	129	141
	3.0	35	51	67	82	97	111	124	138	151
	3.5	37	54	71	87	102	117	131	146	159

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	16	23	30	36	41	47	52	57	61
	1.5	21	31	40	49	56	64	71	78	85
	2.0	25	36	47	57	67	76	84	93	101
	2.5	28	41	52	64	74	85	94	104	113
	3.0	30	44	57	69	81	92	102	113	123
	3.5	32	47	61	74	86	99	110	122	132
Flat terrain	1.0	17	24	32	39	45	51	58	63	69
	1.5	22	32	41	51	59	68	76	84	91
	2.0	25	37	48	59	69	78	88	97	106
	2.5	28	41	53	65	76	88	98	108	118
	3.0	30	44	58	71	83	95	106	117	128
	3.5	32	47	62	75	88	101	113	125	136
Downhill 2%	1.0	17	25	33	41	49	56	63	70	77
	1.5	22	33	43	53	62	71	80	89	97
	2.0	26	38	49	61	71	82	92	102	112
	2.5	28	42	54	67	79	90	102	113	123
	3.0	31	45	59	72	85	97	109	121	132
	3.5	33	48	62	77	90	104	116	129	141

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.0	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.0	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.0	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.0	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.0	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.0	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.0	94	133	167	198	226	253	278	301	322
	3.5	101	141	178	212	242	271	298	323	347
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.0	97	138	175	210	242	272	302	329	356
	3.5	103	146	186	223	257	290	321	351	379
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.0	99	143	183	221	257	293	326	359	391
	3.5	105	151	194	234	272	309	345	379	412

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.0	73	103	130	154	177	198	218	237	254
	3.5	78	110	138	165	189	212	234	254	273
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.0	74	106	134	161	186	210	232	254	275
	3.5	79	112	143	171	198	223	247	270	292
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.0	76	109	139	168	196	222	247	271	295
	3.5	80	115	147	178	206	235	261	287	312

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	33	46	57	66	74	82	89	95	101
	1.5	45	63	79	93	106	118	129	139	149
	2.0	53	74	93	111	127	141	155	168	180
	2.5	59	83	105	125	143	160	175	190	204
	3.0	64	90	114	136	156	175	192	209	225
	3.5	69	97	122	146	167	188	207	225	242
Flat terrain	1.0	35	50	64	76	88	99	109	119	129
	1.5	47	66	84	101	116	131	145	158	171
	2.0	54	77	98	118	136	153	169	185	200
	2.5	60	86	109	131	151	170	188	206	223
	3.0	65	93	118	142	164	185	205	223	242
	3.5	70	99	126	152	175	197	218	239	258
Downhill 2%	1.0	38	54	70	86	101	116	130	144	158
	1.5	48	70	90	109	127	144	162	178	194
	2.0	56	80	103	125	145	165	183	203	220
	2.5	62	89	113	137	159	181	202	221	241
	3.0	67	95	122	148	172	195	217	239	259
	3.5	71	101	130	157	182	207	230	253	275

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	44	54	63	71	78	85	91	97
	1.5	43	60	75	89	101	112	123	133	142
	2.0	50	71	89	105	121	134	148	160	172
	2.5	56	79	100	118	136	152	167	181	195
	3.0	61	86	108	129	148	166	183	199	214
	3.5	65	92	116	139	159	179	197	214	231
Flat terrain	1.0	34	47	60	72	83	94	103	113	122
	1.5	44	63	80	96	110	124	138	150	162
	2.0	51	73	93	112	128	145	161	176	190
	2.5	57	81	103	124	143	161	178	195	211
	3.0	62	88	112	135	155	175	194	212	229
	3.5	66	94	120	144	166	187	207	227	245
Downhill 2%	1.0	35	51	66	81	95	109	122	135	148
	1.5	46	66	85	103	119	137	152	167	183
	2.0	53	76	97	118	137	155	174	191	208
	2.5	58	84	107	130	151	171	190	210	228
	3.0	63	90	116	140	162	184	205	225	245
	3.5	67	96	123	149	172	195	218	239	260

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	183	227	259	282	298	312	322	329	336
	1.5	234	300	351	391	422	448	470	487	502
	2.0	272	355	420	473	517	554	586	613	637
	2.5	303	399	476	540	594	641	682	717	749
Flat terrain	1.0	231	316	392	461	525	585	642	697	748
	1.5	276	378	469	553	629	702	770	836	899
	2.0	310	426	529	623	710	792	869	943	1014
	2.5	338	465	578	681	776	866	950	1031	1109
Downhill 2%	1.0	280	410	531	642	749	854	956	1056	1154
	1.5	318	459	590	712	828	941	1050	1157	1262
	2.0	348	499	638	768	892	1012	1128	1241	1352
	2.5	374	533	680	817	947	1072	1194	1313	1429

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	126	161	185	205	219	231	241	248	255
	1.5	167	218	258	291	319	342	362	379	394
	2.0	195	258	310	353	390	423	451	476	499
	2.5	218	291	351	403	448	487	522	554	584
	3.0	238	319	386	445	496	542	583	621	655
Flat terrain	1.0	153	210	260	307	349	389	427	464	498
	1.5	189	260	323	380	433	483	530	576	619
	2.0	215	296	368	434	495	552	606	658	708
	2.5	237	326	406	478	545	608	668	725	780
	3.0	255	352	437	516	589	657	722	783	842
Downhill 2%	1.0	180	262	340	418	494	568	643	713	777
	1.5	212	303	390	474	555	635	714	788	858
	2.0	236	335	429	518	605	689	772	850	924
	2.5	256	362	461	556	647	735	822	904	981
	3.0	273	385	490	589	683	776	866	950	1032

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	98	128	150	169	184	197	208	217	225
	1.5	127	169	203	232	256	278	298	315	330
	2.0	148	198	240	276	308	336	362	385	407
	2.5	164	221	270	312	349	383	414	442	468
	3.0	179	241	295	342	384	422	457	490	519
Flat terrain	1.0	113	155	192	227	258	288	316	343	369
	1.5	139	192	238	281	320	357	393	426	458
	2.0	159	219	272	321	366	408	449	487	524
	2.5	174	241	299	353	403	450	494	536	577
	3.0	188	259	323	381	435	485	534	580	623
Downhill 2%	1.0	128	183	236	288	337	386	435	483	531
	1.5	152	215	275	332	387	440	493	545	595
	2.0	170	240	305	367	426	483	539	594	647
	2.5	185	260	330	396	458	519	578	635	692
	3.0	197	278	351	421	487	550	612	672	731

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	87	113	135	153	167	180	191	201	209
	1.5	111	149	180	206	229	250	268	284	300
	2.0	129	174	211	244	274	300	323	345	365
	2.5	143	194	237	275	308	340	367	393	418
	3.0	155	211	258	301	338	373	405	434	462
	3.5	166	226	278	323	365	403	438	470	500
Flat terrain	1.0	98	134	166	196	224	250	274	297	320
	1.5	120	166	206	243	277	309	340	369	397
	2.0	137	189	236	278	317	354	389	422	454
	2.5	151	208	259	306	349	390	428	465	500
	3.0	163	224	280	330	377	421	462	502	540
	3.5	173	239	297	351	401	448	492	535	575
Downhill 2%	1.0	109	155	199	242	283	324	364	403	442
	1.5	130	184	234	282	328	372	416	458	500
	2.0	145	205	260	312	362	410	457	502	547
	2.5	158	223	282	338	391	442	491	539	586
	3.0	170	238	301	360	416	469	522	572	621
	3.5	179	251	318	380	438	494	548	601	652

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	69	91	109	125	139	151	161	170	179
	1.5	87	117	143	165	185	203	219	234	248
	2.0	101	136	167	194	218	240	261	279	297
	2.5	111	152	186	217	245	270	294	316	336
	3.0	121	164	203	237	268	296	322	347	370
	3.5	129	176	217	254	287	318	346	374	399
Flat terrain	1.0	75	103	128	151	172	193	211	230	247
	1.5	93	128	159	188	214	239	262	284	306
	2.0	105	146	181	214	244	273	300	326	350
	2.5	116	160	200	236	269	300	330	359	386
	3.0	125	173	215	254	290	324	356	387	417
	3.5	133	184	229	271	309	345	379	412	444
Downhill 2%	1.0	81	116	148	179	208	237	265	293	320
	1.5	98	138	175	210	244	276	307	338	368
	2.0	110	155	196	235	271	306	340	374	405
	2.5	120	169	213	255	293	331	367	402	437
	3.0	129	181	228	272	313	353	391	428	464
	3.5	137	191	241	287	331	372	413	452	489

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	53	70	83	95	104	113	120	126	132
	1.5	73	99	120	139	155	170	184	196	207
	2.0	87	118	144	168	189	208	226	242	257
	2.5	98	133	163	190	215	237	258	277	295
	3.0	106	145	179	209	236	262	285	307	327
	3.5	114	156	192	225	255	283	308	332	355
Flat terrain	1.0	59	81	101	119	135	151	166	180	193
	1.5	78	108	134	158	181	202	222	240	258
	2.0	91	126	156	185	211	236	259	281	303
	2.5	101	140	174	206	235	263	289	313	337
	3.0	110	152	189	224	256	286	314	341	367
	3.5	117	162	202	239	273	305	335	365	392
Downhill 2%	1.0	65	92	119	144	168	192	215	238	260
	1.5	83	117	148	178	206	234	260	286	312
	2.0	95	134	169	202	233	264	294	321	350
	2.5	105	147	186	222	256	288	320	351	380
	3.0	113	158	200	239	275	309	343	375	407
	3.5	121	169	212	253	292	328	363	398	430

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	50	67	80	91	100	109	116	122	128
	1.5	70	94	114	133	149	163	176	188	199
	2.0	83	112	138	160	180	199	215	231	246
	2.5	93	126	155	181	205	226	246	265	282
	3.0	101	138	170	199	225	249	272	293	312
	3.5	108	148	183	215	243	270	294	317	339
Flat terrain	1.0	56	77	96	113	128	144	158	171	184
	1.5	74	102	127	150	171	191	210	228	245
	2.0	86	119	148	176	200	223	246	266	287
	2.5	96	133	165	195	223	249	274	298	320
	3.0	104	144	180	212	242	271	298	323	348
	3.5	111	154	192	227	259	290	318	346	372
Downhill 2%	1.0	61	87	112	135	158	180	202	223	244
	1.5	78	110	140	168	194	220	245	269	293
	2.0	90	126	160	191	221	249	277	303	329
	2.5	99	139	176	210	242	272	302	331	359
	3.0	107	150	189	226	260	293	324	355	384
	3.5	114	160	201	240	275	310	343	375	406

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

DripNet PC™ AS XR HWD

Compact pressure-compensated dripper with continuous self-flushing, anti-siphon (AS) and enhanced root intrusion protection (XR). Ideal for permanent sub-surface crop applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Enhanced root intrusion resistance (XR)	Provides active root intrusion protection through a patented root-inhibiting barrier integrated into the dripper cover. Delivers long-term performance through non-migrating active ingredients, reducing reliance on chemical root control methods.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.

Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in applications where water supply is restricted due to hydraulic limitations or crop requirements, and where there is a potential risk of root intrusion.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

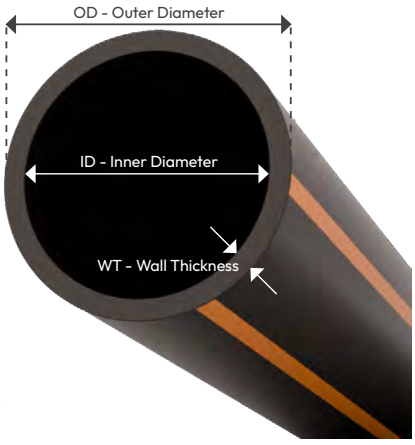


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12009	10.60	0.9	12.40	2.5/3.0/3.5*	3.9	2.85
12010	10.60	1.0	12.60	2.5/3.0/3.5*	4.6	2.85
16009	14.20	0.9	16.00	2.5/3.0/3.5*	3.9	0.72
16010	14.20	1.0	16.20	2.5/3.0/3.5*	4.6	0.72
16012	14.20	1.2	16.60	2.5/3.0/3.5*	5.2	0.72
20010	17.50	1.0	19.50	2.5/3.0/3.5*	4.6	0.25
20012	17.50	1.2	19.90	2.5/3.0/3.5*	5.2	0.25



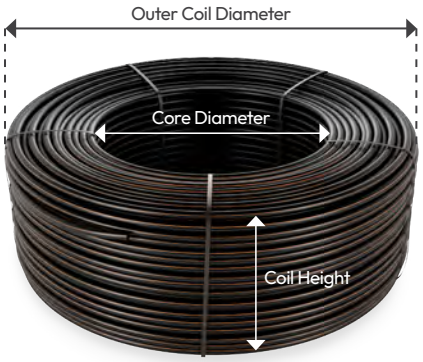
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
12009	0.9	0.15 to 1.00	500	16.8	78	41	26
12010	1.0	0.15 to 1.00	500	18.3	78	41	26
16009	0.9	0.15 to 1.00	500	18.5	84	41	27
16010	1.0	0.15 to 1.00	500	20.4	84	41	27
16012	1.2	0.15 to 1.00	400	22.4	78	41	28
20010	1.0	0.15 to 1.00	300	16.8	84	50	27
20012	1.2	0.15 to 1.00	300	20.3	84	50	27



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12009	500	384	192000
12010	500	384	192000
16009	500	330	165000
16010	500	330	165000
16012	400	330	132000
20010	300	330	99000
20012	300	330	99000



A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™ AS XR	DNPC AS XR

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 12009	500M
Model 12010	500M
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Special features	
No added	-
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

DNPC AS XR 16010 1.6L/H 0.30M 500M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ AS XR flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™ AS XR	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	62	87	110	130	148	164	178	192	204
	1.5	75	106	135	162	185	207	228	247	264
	2.0	84	121	154	185	214	240	265	287	309
	2.5	92	133	170	204	236	266	294	320	346
Flat terrain	1.0	66	95	123	150	175	200	223	246	268
	1.5	78	113	147	179	209	239	266	293	320
	2.0	87	127	165	201	235	268	299	330	360
	2.5	95	138	180	219	256	292	326	360	393
Downhill 2%	1.0	69	104	137	171	203	237	270	302	334
	1.5	81	120	158	196	233	270	306	342	377
	2.0	90	133	175	217	257	296	335	374	411
	2.5	98	144	189	233	276	319	359	401	440

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	41	59	74	89	101	113	124	133	143
	1.5	52	74	94	113	131	147	162	176	190
	2.0	59	85	109	131	152	172	190	207	223
	2.5	65	94	120	145	169	190	212	231	250
	3.0	70	101	130	158	183	207	230	252	273
Flat terrain	1.0	43	63	82	100	116	133	148	164	178
	1.5	53	77	100	123	143	164	183	202	220
	2.0	60	88	114	139	163	186	208	230	250
	2.5	66	97	125	153	179	204	229	252	275
	3.0	71	104	135	165	193	220	246	272	296
Downhill 2%	1.0	46	68	89	111	132	153	174	194	215
	1.5	55	81	107	132	156	181	204	227	250
	2.0	62	91	120	148	175	201	227	252	277
	2.5	68	100	130	161	190	218	246	274	300
	3.0	72	107	140	172	202	232	262	292	320

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	31	44	56	67	77	87	96	104	112
	1.5	38	55	70	85	98	111	123	135	146
	2.0	44	63	81	98	114	129	143	157	170
	2.5	48	69	89	108	126	143	159	175	189
	3.0	51	75	96	117	136	155	173	189	206
Flat terrain	1.0	32	47	60	73	86	98	110	121	131
	1.5	39	57	74	90	106	120	134	149	162
	2.0	44	65	84	103	120	137	154	169	184
	2.5	49	71	92	113	132	151	168	185	203
	3.0	52	76	99	121	142	162	182	200	218
Downhill 2%	1.0	33	49	64	80	94	109	123	137	151
	1.5	40	59	77	95	112	130	146	163	179
	2.0	45	66	87	107	126	145	163	182	199
	2.5	49	73	95	117	137	158	178	197	216
	3.0	53	78	102	125	147	169	190	211	231

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	27	38	49	59	68	76	85	92	99
	1.5	33	48	61	74	86	97	108	118	128
	2.0	38	55	70	85	99	113	125	137	149
	2.5	41	60	78	94	110	125	138	152	165
	3.0	45	65	84	102	119	135	150	165	179
	3.5	47	69	89	108	127	144	160	176	192
Flat terrain	1.0	28	40	52	64	74	85	94	104	114
	1.5	34	49	64	78	91	104	117	129	140
	2.0	38	56	72	89	104	118	133	147	160
	2.5	42	61	80	97	114	130	146	161	175
	3.0	45	66	86	105	122	140	157	173	189
	3.5	48	70	91	111	130	148	166	184	201
Downhill 2%	1.0	28	42	55	68	80	93	105	117	129
	1.5	34	51	66	82	97	111	125	139	153
	2.0	39	57	75	92	109	125	140	156	171
	2.5	42	62	82	100	118	136	153	169	185
	3.0	46	67	88	107	127	145	163	181	198
	3.5	48	71	92	114	134	153	173	192	210

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	46	53	60	67	73	79
	1.5	25	37	48	58	67	76	85	93	101
	2.0	29	42	54	66	77	88	98	107	116
	2.5	32	46	60	73	85	97	108	119	129
	3.0	34	50	64	79	92	104	117	129	140
	3.5	36	53	68	84	98	111	124	137	149
Flat terrain	1.0	21	31	40	49	57	65	73	80	88
	1.5	26	38	49	60	70	80	90	99	108
	2.0	29	43	56	68	80	91	102	113	123
	2.5	32	47	61	75	88	100	112	123	135
	3.0	34	50	66	80	94	107	121	133	145
	3.5	37	53	70	85	100	114	128	141	154
Downhill 2%	1.0	22	32	42	52	61	70	79	87	96
	1.5	26	39	50	62	73	84	94	105	115
	2.0	30	44	57	70	82	95	106	118	129
	2.5	32	48	62	77	90	103	116	129	141
	3.0	35	51	67	82	97	111	124	138	151
	3.5	37	54	71	87	102	117	131	146	159

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 12009/12010 • ID 10.6 mm • Kd 2.85 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	16	23	30	36	41	47	52	57	61
	1.5	21	31	40	49	56	64	71	78	85
	2.0	25	36	47	57	67	76	84	93	101
	2.5	28	41	52	64	74	85	94	104	113
	3.0	30	44	57	69	81	92	102	113	123
	3.5	32	47	61	74	86	99	110	122	132
Flat terrain	1.0	17	24	32	39	45	51	58	63	69
	1.5	22	32	41	51	59	68	76	84	91
	2.0	25	37	48	59	69	78	88	97	106
	2.5	28	41	53	65	76	88	98	108	118
	3.0	30	44	58	71	83	95	106	117	128
	3.5	32	47	62	75	88	101	113	125	136
Downhill 2%	1.0	17	25	33	41	49	56	63	70	77
	1.5	22	33	43	53	62	71	80	89	97
	2.0	26	38	49	61	71	82	92	102	112
	2.5	28	42	54	67	79	90	102	113	123
	3.0	31	45	59	72	85	97	109	121	132
	3.5	33	48	62	77	90	104	116	129	141

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.0	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.0	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.0	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.0	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.0	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.0	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.0	94	133	167	198	226	253	278	301	322
	3.5	101	141	178	212	242	271	298	323	347
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.0	97	138	175	210	242	272	302	329	356
	3.5	103	146	186	223	257	290	321	351	379
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.0	99	143	183	221	257	293	326	359	391
	3.5	105	151	194	234	272	309	345	379	412

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.0	73	103	130	154	177	198	218	237	254
	3.5	78	110	138	165	189	212	234	254	273
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.0	74	106	134	161	186	210	232	254	275
	3.5	79	112	143	171	198	223	247	270	292
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.0	76	109	139	168	196	222	247	271	295
	3.5	80	115	147	178	206	235	261	287	312

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	33	46	57	66	74	82	89	95	101
	1.5	45	63	79	93	106	118	129	139	149
	2.0	53	74	93	111	127	141	155	168	180
	2.5	59	83	105	125	143	160	175	190	204
	3.0	64	90	114	136	156	175	192	209	225
	3.5	69	97	122	146	167	188	207	225	242
Flat terrain	1.0	35	50	64	76	88	99	109	119	129
	1.5	47	66	84	101	116	131	145	158	171
	2.0	54	77	98	118	136	153	169	185	200
	2.5	60	86	109	131	151	170	188	206	223
	3.0	65	93	118	142	164	185	205	223	242
	3.5	70	99	126	152	175	197	218	239	258
Downhill 2%	1.0	38	54	70	86	101	116	130	144	158
	1.5	48	70	90	109	127	144	162	178	194
	2.0	56	80	103	125	145	165	183	203	220
	2.5	62	89	113	137	159	181	202	221	241
	3.0	67	95	122	148	172	195	217	239	259
	3.5	71	101	130	157	182	207	230	253	275

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	44	54	63	71	78	85	91	97
	1.5	43	60	75	89	101	112	123	133	142
	2.0	50	71	89	105	121	134	148	160	172
	2.5	56	79	100	118	136	152	167	181	195
	3.0	61	86	108	129	148	166	183	199	214
	3.5	65	92	116	139	159	179	197	214	231
Flat terrain	1.0	34	47	60	72	83	94	103	113	122
	1.5	44	63	80	96	110	124	138	150	162
	2.0	51	73	93	112	128	145	161	176	190
	2.5	57	81	103	124	143	161	178	195	211
	3.0	62	88	112	135	155	175	194	212	229
	3.5	66	94	120	144	166	187	207	227	245
Downhill 2%	1.0	35	51	66	81	95	109	122	135	148
	1.5	46	66	85	103	119	137	152	167	183
	2.0	53	76	97	118	137	155	174	191	208
	2.5	58	84	107	130	151	171	190	210	228
	3.0	63	90	116	140	162	184	205	225	245
	3.5	67	96	123	149	172	195	218	239	260

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	183	227	259	282	298	312	322	329	336
	1.5	234	300	351	391	422	448	470	487	502
	2.0	272	355	420	473	517	554	586	613	637
	2.5	303	399	476	540	594	641	682	717	749
Flat terrain	1.0	231	316	392	461	525	585	642	697	748
	1.5	276	378	469	553	629	702	770	836	899
	2.0	310	426	529	623	710	792	869	943	1014
	2.5	338	465	578	681	776	866	950	1031	1109
Downhill 2%	1.0	280	410	531	642	749	854	956	1056	1154
	1.5	318	459	590	712	828	941	1050	1157	1262
	2.0	348	499	638	768	892	1012	1128	1241	1352
	2.5	374	533	680	817	947	1072	1194	1313	1429

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	126	161	185	205	219	231	241	248	255
	1.5	167	218	258	291	319	342	362	379	394
	2.0	195	258	310	353	390	423	451	476	499
	2.5	218	291	351	403	448	487	522	554	584
	3.0	238	319	386	445	496	542	583	621	655
Flat terrain	1.0	153	210	260	307	349	389	427	464	498
	1.5	189	260	323	380	433	483	530	576	619
	2.0	215	296	368	434	495	552	606	658	708
	2.5	237	326	406	478	545	608	668	725	780
	3.0	255	352	437	516	589	657	722	783	842
Downhill 2%	1.0	180	262	340	418	494	568	643	713	777
	1.5	212	303	390	474	555	635	714	788	858
	2.0	236	335	429	518	605	689	772	850	924
	2.5	256	362	461	556	647	735	822	904	981
	3.0	273	385	490	589	683	776	866	950	1032

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	98	128	150	169	184	197	208	217	225
	1.5	127	169	203	232	256	278	298	315	330
	2.0	148	198	240	276	308	336	362	385	407
	2.5	164	221	270	312	349	383	414	442	468
	3.0	179	241	295	342	384	422	457	490	519
Flat terrain	1.0	113	155	192	227	258	288	316	343	369
	1.5	139	192	238	281	320	357	393	426	458
	2.0	159	219	272	321	366	408	449	487	524
	2.5	174	241	299	353	403	450	494	536	577
	3.0	188	259	323	381	435	485	534	580	623
Downhill 2%	1.0	128	183	236	288	337	386	435	483	531
	1.5	152	215	275	332	387	440	493	545	595
	2.0	170	240	305	367	426	483	539	594	647
	2.5	185	260	330	396	458	519	578	635	692
	3.0	197	278	351	421	487	550	612	672	731

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	87	113	135	153	167	180	191	201	209
	1.5	111	149	180	206	229	250	268	284	300
	2.0	129	174	211	244	274	300	323	345	365
	2.5	143	194	237	275	308	340	367	393	418
	3.0	155	211	258	301	338	373	405	434	462
	3.5	166	226	278	323	365	403	438	470	500
Flat terrain	1.0	98	134	166	196	224	250	274	297	320
	1.5	120	166	206	243	277	309	340	369	397
	2.0	137	189	236	278	317	354	389	422	454
	2.5	151	208	259	306	349	390	428	465	500
	3.0	163	224	280	330	377	421	462	502	540
	3.5	173	239	297	351	401	448	492	535	575
Downhill 2%	1.0	109	155	199	242	283	324	364	403	442
	1.5	130	184	234	282	328	372	416	458	500
	2.0	145	205	260	312	362	410	457	502	547
	2.5	158	223	282	338	391	442	491	539	586
	3.0	170	238	301	360	416	469	522	572	621
	3.5	179	251	318	380	438	494	548	601	652

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	69	91	109	125	139	151	161	170	179
	1.5	87	117	143	165	185	203	219	234	248
	2.0	101	136	167	194	218	240	261	279	297
	2.5	111	152	186	217	245	270	294	316	336
	3.0	121	164	203	237	268	296	322	347	370
	3.5	129	176	217	254	287	318	346	374	399
Flat terrain	1.0	75	103	128	151	172	193	211	230	247
	1.5	93	128	159	188	214	239	262	284	306
	2.0	105	146	181	214	244	273	300	326	350
	2.5	116	160	200	236	269	300	330	359	386
	3.0	125	173	215	254	290	324	356	387	417
	3.5	133	184	229	271	309	345	379	412	444
Downhill 2%	1.0	81	116	148	179	208	237	265	293	320
	1.5	98	138	175	210	244	276	307	338	368
	2.0	110	155	196	235	271	306	340	374	405
	2.5	120	169	213	255	293	331	367	402	437
	3.0	129	181	228	272	313	353	391	428	464
	3.5	137	191	241	287	331	372	413	452	489

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	53	70	83	95	104	113	120	126	132
	1.5	73	99	120	139	155	170	184	196	207
	2.0	87	118	144	168	189	208	226	242	257
	2.5	98	133	163	190	215	237	258	277	295
	3.0	106	145	179	209	236	262	285	307	327
	3.5	114	156	192	225	255	283	308	332	355
Flat terrain	1.0	59	81	101	119	135	151	166	180	193
	1.5	78	108	134	158	181	202	222	240	258
	2.0	91	126	156	185	211	236	259	281	303
	2.5	101	140	174	206	235	263	289	313	337
	3.0	110	152	189	224	256	286	314	341	367
	3.5	117	162	202	239	273	305	335	365	392
Downhill 2%	1.0	65	92	119	144	168	192	215	238	260
	1.5	83	117	148	178	206	234	260	286	312
	2.0	95	134	169	202	233	264	294	321	350
	2.5	105	147	186	222	256	288	320	351	380
	3.0	113	158	200	239	275	309	343	375	407
	3.5	121	169	212	253	292	328	363	398	430

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR HWD 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	50	67	80	91	100	109	116	122	128
	1.5	70	94	114	133	149	163	176	188	199
	2.0	83	112	138	160	180	199	215	231	246
	2.5	93	126	155	181	205	226	246	265	282
	3.0	101	138	170	199	225	249	272	293	312
	3.5	108	148	183	215	243	270	294	317	339
Flat terrain	1.0	56	77	96	113	128	144	158	171	184
	1.5	74	102	127	150	171	191	210	228	245
	2.0	86	119	148	176	200	223	246	266	287
	2.5	96	133	165	195	223	249	274	298	320
	3.0	104	144	180	212	242	271	298	323	348
	3.5	111	154	192	227	259	290	318	346	372
Downhill 2%	1.0	61	87	112	135	158	180	202	223	244
	1.5	78	110	140	168	194	220	245	269	293
	2.0	90	126	160	191	221	249	277	303	329
	2.5	99	139	176	210	242	272	302	331	359
	3.0	107	150	189	226	260	293	324	355	384
	3.5	114	160	201	240	275	310	343	375	406

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

DripNet PC™ MWD

Compact pressure-compensated dripper for semi-permanent and multi-season drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier retrieval at crop-cycle completion. Also beneficial in regions prone to sub-zero temperatures.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.

Applications

Open field Orchards Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in row crops, orchards and protected crops.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into medium-wall driplines: 0.50, 0.63 and 0.80 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.40	0.25 - 2.5	0.46 x 0.52 x 26	29	0.4	0	130/120
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

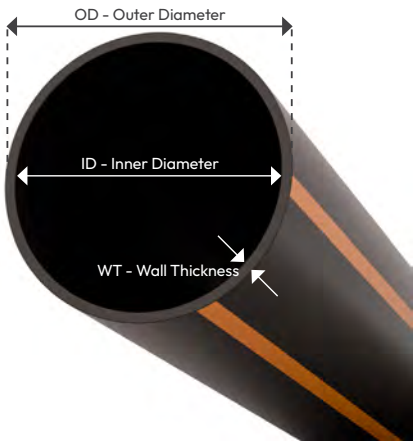


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12200	11.80	20 / 0.50	12.80	3.0	3.9	1.35
12250	11.80	25 / 0.63	13.06	3.0	3.9	1.35
16200	15.50	20 / 0.50	16.50	2.5	3.3	0.55
16250	15.50	25 / 0.63	16.76	2.8	3.6	0.55
16008	14.20	32 / 0.80	15.80	3.0	3.9	0.72
22200	22.20	20 / 0.50	23.20	2.1	2.7	0.18
22250	22.20	25 / 0.63	23.46	2.5	2.9	0.18



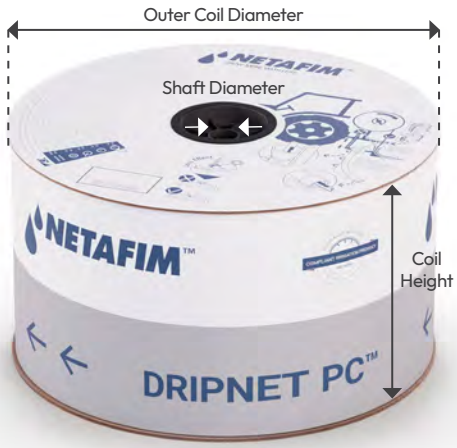
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12200	20 / 0.50	0.15 to 0.19	750	17.1	52.0	3.8	32.5
		25 / 0.63	850	17.4			
		20 / 0.50	850	16.9			
12250	25 / 0.63	0.15 to 0.19	650	19.5	52.0	3.8	32.5
		32 / 0.80	700	20.4			
		20 / 0.50	800	19.1			
16200	20 / 0.50	0.15 to 0.19	750	19.9	57.0	3.8	32.5
		25 / 0.63	800	19.6			
		32 / 0.80	850	19.1			
16250	25 / 0.63	0.15 to 0.19	750	26.5	57.0	3.8	32.5
		25 / 0.63	800	26.9			
		0.30 to 1.00	800	26.1			
16008	32 / 0.80	0.15 to 0.19	450	19.4	57.0	3.8	32.5
		0.20 to 0.25	500	21.0			
		0.30 to 1.00	500	21.0			
22200	20 / 0.50	0.15 to 0.19	700	18.3	57.0	3.8	32.5
		0.20 to 0.25	700	18.1			
		0.30 to 1.00	700	17.9			
22250	25 / 0.63	0.15 to 0.19	450	26.6	57.0	3.8	32.5
		0.20 to 0.25	500	28.0			
		0.30 to 1.00	500	27.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12200	750	12	109 x 109 x 110	215	480	360000
	850			219		408000
	850			213		408000
12250	650	12	109 x 109 x 110	244	480	312000
	700			255		336000
	800			239		384000
16200	750	12	109 x 109 x 110	249	480	360000
	800			245		384000
	850			239		408000
16250	750	12	109 x 109 x 110	328	480	360000
	800			333		384000
	800			323		384000
16008	450	12	109 x 109 x 110	243	480	216000
	500			262		240000
	500			262		240000
22200	700	12	109 x 109 x 110	230	480	336000
	700			227		336000
	700			224		336000
22250	450	12	109 x 109 x 110	329	480	216000
	500			346		240000
	500			339		240000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™	DNPC

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mil) / (mm)	
20 / 0.50	200
25 / 0.63	250
32 / 0.80	008

Flow rate (l/h)	
0.4	0.4L/H
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

DNPC 12250 0.6L/H 0.30M 800M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™	0.40	0.26	0.31	0.36	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	107	146	176	202	223	241	256	269	280
	1.5	132	182	225	261	293	321	346	367	387
	2.0	151	210	260	305	345	380	412	441	467
	2.5	166	232	290	341	387	428	466	500	533
Flat terrain	1.0	121	172	220	264	305	345	382	419	453
	1.5	144	205	262	315	365	412	458	501	543
	2.0	161	230	294	354	410	464	515	564	611
	2.5	175	251	321	387	448	507	562	616	667
Downhill 2%	1.0	134	199	264	328	392	456	514	572	627
	1.5	155	228	300	371	439	508	572	634	695
	2.0	171	251	328	404	478	550	618	685	750
	2.5	185	270	353	433	511	587	659	729	797

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	116	143	166	185	202	218	230	242
	1.5	103	144	179	210	238	263	285	305	323
	2.0	117	164	206	243	277	307	334	360	384
	2.5	129	181	228	270	308	343	375	405	433
Flat terrain	1.0	92	132	168	203	235	265	294	322	349
	1.5	110	157	201	242	281	317	352	385	418
	2.0	123	176	226	272	316	357	396	434	470
	2.5	134	193	246	297	344	389	433	473	514
Downhill 2%	1.0	100	148	195	241	286	331	375	419	463
	1.5	117	171	224	275	325	374	422	469	516
	2.0	129	189	246	302	355	407	459	509	559
	2.5	140	204	265	324	381	437	491	545	596

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	79	98	114	128	141	153	163	172
	1.5	72	101	126	149	169	188	206	221	236
	2.0	82	116	146	174	199	222	243	263	281
	2.5	91	129	162	194	222	249	273	296	318
	3.0	98	139	176	211	242	271	298	324	348
Flat terrain	1.0	61	88	112	135	156	176	196	214	232
	1.5	75	108	138	166	193	218	242	265	287
	2.0	85	122	157	189	220	249	276	302	328
	2.5	94	134	172	208	241	273	303	332	360
	3.0	101	145	186	224	260	294	326	358	388
Downhill 2%	1.0	65	96	126	156	184	212	240	268	295
	1.5	79	115	150	184	216	248	279	310	340
	2.0	89	129	168	205	241	275	309	342	375
	2.5	97	140	182	222	260	298	334	369	404
	3.0	103	150	194	237	278	317	355	393	429

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	60	75	88	100	111	121	130	138
	1.5	53	75	95	113	130	144	158	172	184
	2.0	61	87	110	131	151	169	186	202	217
	2.5	67	96	122	146	167	188	207	225	243
	3.0	73	104	132	158	182	204	226	246	265
Flat terrain	1.0	45	65	82	99	115	130	145	158	171
	1.5	55	79	102	123	142	160	178	195	212
	2.0	63	90	116	139	161	183	203	223	242
	2.5	69	99	127	153	178	201	224	246	266
	3.0	74	107	136	165	191	217	241	265	287
Downhill 2%	1.0	47	69	90	111	130	150	169	187	206
	1.5	57	83	108	132	155	177	198	220	241
	2.0	64	94	121	148	173	197	222	245	268
	2.5	70	102	132	161	188	215	240	266	290
	3.0	75	109	141	172	201	230	257	284	309

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	52	66	78	88	98	107	116	123
	1.5	46	66	83	99	113	127	139	151	163
	2.0	53	75	96	114	131	148	162	177	190
	2.5	58	83	106	127	146	164	182	197	213
	3.5	63	90	114	137	158	179	197	215	232
Flat terrain	1.0	39	56	71	86	100	113	125	137	149
	1.5	48	68	88	106	123	139	154	169	184
	2.0	54	78	100	121	140	158	176	194	209
	2.5	59	86	110	133	154	174	194	212	230
	3.5	64	92	118	143	166	188	209	229	248
Downhill 2%	1.0	41	59	77	95	111	127	143	159	174
	1.5	49	71	92	113	133	151	170	187	205
	2.0	55	80	104	127	148	169	190	210	229
	2.5	61	88	114	138	161	184	206	228	248
	3.5	65	94	122	148	173	197	220	243	265

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	29	41	51	61	70	78	86	93	100
	1.5	36	51	64	77	89	100	110	120	129
	2.0	41	58	74	89	103	116	127	140	150
	2.5	45	64	82	98	113	128	142	155	167
	3.5	48	69	88	106	123	139	154	167	181
Flat terrain	1.0	30	43	55	66	77	87	96	105	114
	1.5	37	53	67	82	94	107	119	131	141
	2.0	42	60	77	93	107	122	135	149	161
	2.5	46	65	84	102	118	134	149	164	177
	3.5	49	71	90	110	127	144	161	176	191
Downhill 2%	1.0	31	45	58	71	83	95	107	119	130
	1.5	37	54	70	86	100	114	128	141	154
	2.0	42	61	79	96	113	128	143	158	173
	2.5	46	67	86	105	123	140	156	172	188
	3.5	50	72	93	113	131	150	167	185	201

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	23	32	40	48	54	60	66	71	76
	1.5	30	43	54	65	75	84	93	101	109
	2.0	35	50	64	77	89	100	110	121	130
	2.5	39	56	72	86	100	112	124	135	146
	3.5	43	61	78	94	109	123	135	149	160
Flat terrain	1.0	23	34	43	52	60	68	76	83	90
	1.5	31	44	57	69	80	90	101	110	119
	2.0	36	52	66	80	93	105	117	129	139
	2.5	40	57	74	89	103	117	130	143	155
	3.5	43	62	80	96	112	127	142	155	168
Downhill 2%	1.0	24	36	46	57	67	76	86	95	104
	1.5	32	46	59	72	85	97	108	120	131
	2.0	36	53	68	83	97	111	124	137	149
	2.5	40	59	76	92	107	122	137	150	164
	3.5	44	63	82	99	116	132	147	162	176

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	45	52	57	63	68	73
	1.5	29	41	52	62	71	80	88	96	103
	2.0	33	48	61	73	84	95	105	114	124
	2.5	37	53	68	82	94	106	118	129	139
	3.5	40	58	74	89	103	116	129	140	152
Flat terrain	1.0	22	32	41	49	57	64	72	79	85
	1.5	29	42	54	65	76	85	95	104	113
	2.0	34	49	63	76	88	100	111	122	132
	2.5	38	54	70	84	98	111	123	136	147
	3.5	41	59	76	91	106	120	134	147	160
Downhill 2%	1.0	23	34	44	54	63	72	81	89	98
	1.5	30	44	56	69	80	91	102	113	123
	2.0	35	50	65	79	92	105	117	130	141
	2.5	38	55	72	87	101	116	129	142	155
	3.5	41	60	77	94	109	125	139	153	167

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	176	223	257	281	299	312	322	331	337
	1.5	231	305	361	407	443	473	498	518	536
	2.0	271	363	436	498	549	592	630	662	690
	2.5	303	409	496	571	634	689	737	779	817
Flat terrain	1.0	218	306	384	457	524	588	648	706	761
	1.5	267	375	472	562	645	724	798	869	938
	2.0	304	426	537	640	734	825	910	991	1069
	2.5	333	468	590	703	808	907	1001	1090	1176
Downhill 2%	1.0	262	392	517	633	745	855	962	1068	1172
	1.5	304	448	584	712	836	956	1073	1188	1301
	2.0	336	491	638	776	908	1036	1162	1283	1403
	2.5	363	528	683	829	969	1105	1236	1364	1490

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	142	185	218	244	263	279	293	303	312
	1.5	184	246	296	339	374	404	430	453	472
	2.0	214	290	353	407	454	494	530	563	591
	2.5	238	324	398	462	517	567	611	652	688
Flat terrain	1.0	167	235	296	352	404	453	499	544	586
	1.5	205	288	363	432	497	557	615	670	723
	2.0	233	327	413	492	565	635	701	763	824
	2.5	255	359	453	540	621	698	770	840	906
Downhill 2%	1.0	193	286	377	467	548	627	705	780	855
	1.5	227	331	431	530	620	707	792	875	956
	2.0	252	365	474	579	676	770	862	950	1037
	2.5	273	395	510	621	724	824	920	1014	1106

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	97	128	153	173	189	202	214	223	231
	1.5	130	176	214	247	276	301	323	343	360
	2.0	152	208	256	298	335	368	398	426	451
	2.5	170	234	289	338	382	421	458	491	522
Flat terrain	1.0	111	156	196	234	268	301	332	362	390
	1.5	141	198	250	298	343	384	424	463	499
	2.0	162	228	288	344	395	444	490	534	576
	2.5	179	252	318	380	437	491	542	591	638
Downhill 2%	1.0	125	184	241	298	353	407	462	516	569
	1.5	152	221	286	350	412	472	531	590	647
	2.0	172	248	320	390	456	522	585	647	708
	2.5	188	271	348	422	493	562	630	696	760

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	74	100	121	139	154	167	178	189	197
	1.5	98	134	165	192	216	238	258	275	292
	2.0	114	157	195	229	259	286	311	335	356
	2.5	127	176	219	258	292	324	354	382	407
Flat terrain	1.0	82	115	145	173	198	223	246	267	289
	1.5	104	146	184	220	253	284	314	342	369
	2.0	119	168	212	253	292	328	362	394	426
	2.5	132	186	235	280	322	363	401	437	472
Downhill 2%	1.0	89	130	169	207	244	281	317	352	387
	1.5	110	158	204	248	290	332	372	411	450
	2.0	125	179	230	278	325	370	414	456	498
	2.5	136	196	251	303	353	401	448	493	538

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	65	88	107	124	138	151	162	172	181
	1.5	85	117	145	170	191	211	230	246	261
	2.0	99	137	171	201	228	253	275	297	317
	2.5	110	153	191	226	257	286	312	337	360
Flat terrain	1.0	71	99	125	149	172	193	213	231	250
	1.5	90	126	160	190	219	246	271	296	320
	2.0	103	145	184	219	253	284	314	342	369
	2.5	114	161	203	243	279	314	347	378	409
Downhill 2%	1.0	76	111	144	175	206	237	266	295	324
	1.5	94	135	174	212	247	281	315	348	380
	2.0	107	153	197	238	277	315	352	388	423
	2.5	117	168	215	260	302	343	382	421	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	70	86	100	112	123	134	142	151
	1.5	66	92	114	134	152	169	184	198	211
	2.0	77	107	134	158	179	200	219	237	253
	2.5	85	119	149	177	202	225	246	266	286
Flat terrain	1.0	54	76	96	115	132	148	164	178	193
	1.5	69	97	122	147	169	189	209	229	246
	2.0	79	112	141	169	194	218	242	264	284
	2.5	87	123	156	187	215	242	267	292	315
Downhill 2%	1.0	58	83	107	130	152	174	195	216	237
	1.5	71	102	131	159	185	211	235	259	282
	2.0	81	116	149	180	209	237	264	291	316
	2.5	89	128	163	197	228	259	288	317	344

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	40	54	66	77	85	94	101	107	113
	1.5	56	78	97	114	129	143	156	167	179
	2.0	67	93	116	137	156	174	190	206	221
	2.5	75	104	131	155	178	198	217	235	252
Flat terrain	1.0	43	60	76	90	104	116	129	140	151
	1.5	58	82	104	124	143	161	178	194	209
	2.0	69	97	122	147	169	190	210	229	247
	2.5	76	108	137	164	188	212	234	256	277
Downhill 2%	1.0	46	66	86	105	122	141	158	175	192
	1.5	61	87	112	135	157	179	200	221	240
	2.0	71	101	129	156	181	206	229	252	274
	2.5	78	112	143	172	200	227	252	277	301

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	38	51	63	73	82	90	97	104	109
	1.5	53	74	92	108	123	137	149	160	171
	2.0	63	88	110	131	149	166	182	196	210
	2.5	71	99	124	148	169	188	206	224	240
Flat terrain	1.0	40	57	72	86	98	111	122	133	144
	1.5	55	78	99	118	136	153	169	184	198
	2.0	65	92	116	139	160	180	199	217	234
	2.5	72	103	130	155	179	201	222	243	262
Downhill 2%	1.0	43	62	81	99	115	132	148	165	180
	1.5	57	82	106	128	149	169	189	208	226
	2.0	67	95	122	147	171	194	216	238	259
	2.5	74	106	135	163	189	214	238	262	285

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	152	197	231	257	277	292	305	314	323
	1.5	191	255	306	347	381	410	434	454	471
	2.0	220	297	361	414	460	498	533	563	588
	2.5	244	332	406	469	523	571	614	651	685
Flat terrain	1.0	182	256	323	385	443	498	550	599	647
	1.5	217	305	386	461	530	596	658	718	775
	2.0	243	343	434	518	597	671	742	809	874
	2.5	265	374	474	566	652	733	810	884	955
Downhill 2%	1.0	212	316	420	518	610	700	788	875	960
	1.5	242	357	469	576	676	774	869	962	1054
	2.0	266	390	509	623	730	834	935	1034	1131
	2.5	286	418	544	663	776	886	992	1096	1198

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.5	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.5	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.5	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.5	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.5	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.5	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.5	94	133	167	198	226	253	278	301	322
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.5	97	138	175	210	242	272	302	329	356
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.5	99	143	183	221	257	293	326	359	391

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.5	73	103	130	154	177	198	218	237	254
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.5	74	106	134	161	186	210	232	254	275
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.5	76	109	139	168	196	222	247	271	295

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	39	54	67	79	89	99	107	116	123
	1.5	48	68	85	101	115	128	140	151	162
	2.0	55	78	98	117	133	149	164	177	190
	2.5	61	86	109	129	148	166	182	198	213
	3.5	66	93	118	140	161	180	198	216	232
Flat terrain	1.0	41	58	73	88	101	113	126	137	148
	1.5	50	71	90	108	125	141	155	170	184
	2.0	57	81	103	123	142	160	178	194	210
	2.5	62	89	113	135	156	176	195	213	231
	3.5	67	95	122	146	169	190	210	230	249
Downhill 2%	1.0	43	62	79	97	113	129	144	159	174
	1.5	52	74	95	116	134	153	171	188	205
	2.0	58	84	107	130	151	172	191	211	229
	2.5	64	91	117	142	164	186	208	229	249
	3.5	68	98	125	152	176	200	222	244	265

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	51	64	75	85	95	103	111	118
	1.5	46	65	81	96	109	122	134	145	155
	2.0	53	74	93	111	127	142	156	169	182
	2.5	58	82	103	123	141	158	174	189	203
	3.5	63	88	112	133	153	172	189	205	221
Flat terrain	1.0	39	55	69	83	95	108	119	131	141
	1.5	47	67	86	103	118	133	147	161	174
	2.0	54	77	97	117	135	152	168	184	199
	2.5	59	84	107	128	148	167	185	203	219
	3.5	64	91	115	138	160	180	199	218	236
Downhill 2%	1.0	40	58	75	91	106	121	136	150	164
	1.5	49	70	90	109	127	144	162	177	194
	2.0	55	79	102	123	143	162	181	199	216
	2.5	60	86	111	134	155	176	197	216	235
	3.5	65	93	119	143	166	189	210	231	251

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	281	319	338	350	356	361	364	366	368
	1.6	406	487	538	572	595	611	622	632	638
	2.2	496	614	695	752	794	825	850	869	884
	2.4	568	716	823	903	964	1012	1050	1080	1105
Flat terrain	1.0	455	622	770	905	1030	1147	1258	1364	1465
	1.6	559	765	948	1115	1270	1415	1552	1683	1809
	2.2	636	872	1080	1271	1447	1614	1770	1920	2064
	2.4	698	958	1188	1398	1593	1775	1949	2114	2272
Downhill 2%	1.0	628	913	1186	1451	1709	1963	2213	2459	2702
	1.6	707	1019	1315	1601	1877	2148	2414	2675	2932
	2.2	770	1103	1418	1720	2012	2297	2576	2849	3118
	2.4	822	1174	1506	1822	2128	2424	2714	2998	3277

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	243	287	313	330	340	348	353	357	360
	1.6	337	419	475	515	545	567	584	598	609
	2.2	405	515	596	657	706	744	775	800	821
	2.4	459	592	693	773	838	891	936	973	1005
Flat terrain	1.0	350	479	593	697	793	884	970	1051	1130
	1.6	430	589	730	859	978	1091	1197	1298	1395
	2.2	489	670	832	979	1115	1243	1365	1481	1591
	2.4	537	737	914	1077	1227	1369	1502	1630	1752
Downhill 2%	1.0	463	669	864	1052	1235	1414	1590	1762	1932
	1.6	525	752	966	1171	1369	1561	1750	1934	2116
	2.2	574	818	1047	1265	1475	1679	1878	2073	2264
	2.4	616	874	1116	1346	1566	1780	1988	2191	2390

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	172	209	232	249	259	267	274	278	281
	1.6	246	313	363	401	431	454	474	490	503
	2.2	296	385	454	509	555	593	626	653	677
	2.4	336	441	525	595	653	704	747	786	819
Flat terrain	1.0	232	318	394	464	527	588	645	699	752
	1.6	296	406	504	593	676	753	826	896	964
	2.2	341	468	581	685	781	870	955	1037	1115
	2.4	377	518	644	758	865	965	1059	1149	1236
Downhill 2%	1.0	295	436	576	710	829	946	1059	1171	1281
	1.6	347	503	654	798	928	1056	1179	1300	1418
	2.2	386	554	715	868	1007	1143	1274	1403	1529
	2.4	418	597	766	927	1075	1218	1356	1491	1623

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	138	173	198	217	231	242	251	257	263
	1.6	191	248	293	330	361	386	407	427	442
	2.2	227	299	359	408	451	487	520	548	574
	2.4	255	340	410	470	521	568	609	645	679
Flat terrain	1.0	171	235	291	343	390	435	478	518	557
	1.6	218	299	372	438	499	557	611	663	713
	2.2	251	345	429	506	577	643	706	767	825
	2.4	277	382	475	560	639	713	783	851	914
Downhill 2%	1.0	205	299	391	481	570	658	738	813	887
	1.6	246	352	454	552	648	742	828	911	992
	2.2	276	392	502	607	709	809	901	989	1076
	2.4	300	425	542	654	761	865	962	1056	1147

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	123	157	182	201	215	228	237	245	252
	1.6	168	221	263	298	327	352	374	393	410
	2.2	199	265	318	365	404	440	470	499	524
	2.4	223	299	362	417	465	508	546	581	613
Flat terrain	1.0	148	203	252	297	338	377	414	449	482
	1.6	188	259	322	380	433	482	530	575	618
	2.2	217	299	372	438	500	558	613	665	715
	2.4	240	331	411	485	554	618	678	737	792
Downhill 2%	1.0	174	252	327	401	473	545	616	686	748
	1.6	209	299	384	465	544	622	698	772	840
	2.2	235	334	426	514	599	682	762	841	913
	2.4	257	363	462	555	645	732	817	899	976

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	99	128	152	170	185	198	209	218	226
	1.6	133	176	212	243	269	293	314	332	349
	2.2	156	209	254	294	328	358	386	412	435
	2.4	175	236	288	333	374	410	444	474	503
Flat terrain	1.0	114	156	194	229	260	291	319	347	372
	1.6	145	199	248	292	334	372	409	444	477
	2.2	167	230	286	338	385	430	472	513	551
	2.4	184	254	317	374	427	476	523	568	611
Downhill 2%	1.0	129	185	238	291	341	391	440	489	537
	1.6	157	223	284	343	400	454	509	562	613
	2.2	178	251	318	383	444	503	561	617	673
	2.4	194	273	346	415	481	544	605	665	723

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	76	97	113	126	136	145	151	158	162
	1.6	112	149	180	206	228	248	265	281	295
	2.2	136	182	222	256	286	313	338	360	380
	2.4	154	207	254	294	330	363	393	420	446
Flat terrain	1.0	89	123	152	180	205	228	250	272	292
	1.6	123	169	210	248	283	316	346	376	405
	2.2	145	200	248	293	334	373	410	446	479
	2.4	162	223	278	328	374	418	459	499	537
Downhill 2%	1.0	103	149	193	237	278	320	362	402	443
	1.6	133	189	242	292	340	387	433	478	523
	2.2	154	217	276	331	385	435	486	535	582
	2.4	170	239	303	363	420	475	528	581	631

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	72	93	109	122	132	141	148	154	159
	1.6	107	143	172	197	219	238	255	271	285
	2.2	129	174	212	245	274	300	323	346	365
	2.4	146	197	242	281	315	347	375	402	427
Flat terrain	1.0	85	116	144	170	194	216	238	257	277
	1.6	117	161	200	236	268	300	329	357	384
	2.2	137	189	236	278	317	354	389	422	454
	2.4	153	212	264	311	355	396	436	473	509
Downhill 2%	1.0	97	140	181	222	260	300	338	375	413
	1.6	126	179	228	275	320	364	406	449	490
	2.2	145	205	260	312	362	410	457	502	547
	2.4	161	226	286	343	396	448	498	546	594

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

DripNet PC™ AS MWD

Compact pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism for semi-permanent and multi-season drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.

Applications

Open field Orchards Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in semi-permanent and multi-season row crops and orchards.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into medium-wall driplines: 0.50, 0.63 and 0.80 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

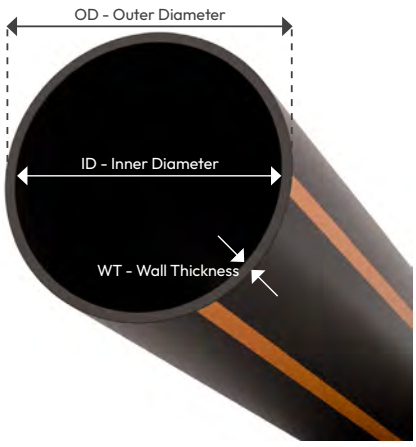


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12200	11.80	20 / 0.50	12.80	3.0	3.9	1.35
12250	11.80	25 / 0.63	13.06	3.0	3.9	1.35
16200	15.50	20 / 0.50	16.50	2.5	3.3	0.55
16250	15.50	25 / 0.63	16.76	2.8	3.6	0.55
16008	14.20	32 / 0.80	15.80	3.0	3.9	0.72
22200	22.20	20 / 0.50	23.20	2.1	2.7	0.18
22250	22.20	25 / 0.63	23.46	2.5	2.9	0.18



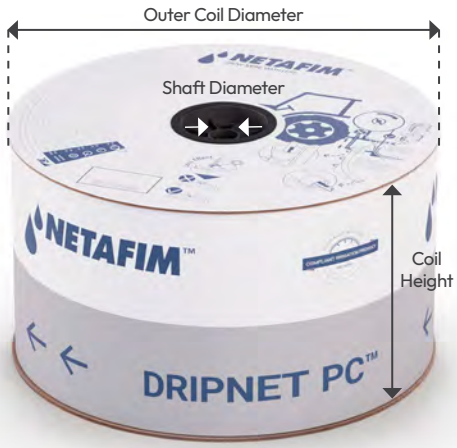
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12200	20 / 0.50	0.15 to 0.19	750	17.1	52.0	3.8	32.5
		0.20 to 0.25	850	17.4			
		0.30 to 1.00	850	16.9			
12250	25 / 0.63	0.15 to 0.19	650	19.5	52.0	3.8	32.5
		0.20 to 0.25	700	20.4			
		0.30 to 1.00	800	19.1			
16200	20 / 0.50	0.15 to 0.19	750	19.9	57.0	3.8	32.5
		0.20 to 0.25	800	19.6			
		0.30 to 1.00	850	19.1			
16250	25 / 0.63	0.15 to 0.19	750	26.5	57.0	3.8	32.5
		0.20 to 0.25	800	26.9			
		0.30 to 1.00	800	26.1			
16008	32 / 0.80	0.15 to 0.19	450	19.4	57.0	3.8	32.5
		0.20 to 0.25	500	21.0			
		0.30 to 1.00	500	21.0			
22200	20 / 0.50	0.15 to 0.19	700	18.3	57.0	3.8	32.5
		0.20 to 0.25	700	18.1			
		0.30 to 1.00	700	17.9			
22250	25 / 0.63	0.15 to 0.19	450	26.6	57.0	3.8	32.5
		0.20 to 0.25	500	28.0			
		0.30 to 1.00	500	27.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12200	750	12	109 x 109 x 110	215	480	360000
	850			219		408000
	850			213		408000
12250	650	12	109 x 109 x 110	244	480	312000
	700			255		336000
	800			239		384000
16200	750	12	109 x 109 x 110	249	480	360000
	800			245		384000
	850			239		408000
16250	750	12	109 x 109 x 110	328	480	360000
	800			333		384000
	800			323		384000
16008	450	12	109 x 109 x 110	243	480	216000
	500			262		240000
	500			262		240000
22200	700	12	109 x 109 x 110	230	480	336000
	700			227		336000
	700			224		336000
22250	450	12	109 x 109 x 110	329	480	216000
	500			346		240000
	500			339		240000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™ AS	DNPC AS

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mil) / (mm)	
20 / 0.50	200
25 / 0.63	250
32 / 0.80	008

Flow rate (l/h)	
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

DNPC AS 12250 0.6L/H 0.30M 800M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ AS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™ AS	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	85	116	143	166	185	202	218	230	242
	1.5	103	144	179	210	238	263	285	305	323
	2.0	117	164	206	243	277	307	334	360	384
	2.5	129	181	228	270	308	343	375	405	433
Flat terrain	1.0	92	132	168	203	235	265	294	322	349
	1.5	110	157	201	242	281	317	352	385	418
	2.0	123	176	226	272	316	357	396	434	470
	2.5	134	193	246	297	344	389	433	473	514
Downhill 2%	1.0	100	148	195	241	286	331	375	419	463
	1.5	117	171	224	275	325	374	422	469	516
	2.0	129	189	246	302	355	407	459	509	559
	2.5	140	204	265	324	381	437	491	545	596

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	57	79	98	114	128	141	153	163	172
	1.5	72	101	126	149	169	188	206	221	236
	2.0	82	116	146	174	199	222	243	263	281
	2.5	91	129	162	194	222	249	273	296	318
	3.0	98	139	176	211	242	271	298	324	348
Flat terrain	1.0	61	88	112	135	156	176	196	214	232
	1.5	75	108	138	166	193	218	242	265	287
	2.0	85	122	157	189	220	249	276	302	328
	2.5	94	134	172	208	241	273	303	332	360
	3.0	101	145	186	224	260	294	326	358	388
Downhill 2%	1.0	65	96	126	156	184	212	240	268	295
	1.5	79	115	150	184	216	248	279	310	340
	2.0	89	129	168	205	241	275	309	342	375
	2.5	97	140	182	222	260	298	334	369	404
	3.0	103	150	194	237	278	317	355	393	429

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	60	75	88	100	111	121	130	138
	1.5	53	75	95	113	130	144	158	172	184
	2.0	61	87	110	131	151	169	186	202	217
	2.5	67	96	122	146	167	188	207	225	243
	3.0	73	104	132	158	182	204	226	246	265
Flat terrain	1.0	45	65	82	99	115	130	145	158	171
	1.5	55	79	102	123	142	160	178	195	212
	2.0	63	90	116	139	161	183	203	223	242
	2.5	69	99	127	153	178	201	224	246	266
	3.0	74	107	136	165	191	217	241	265	287
Downhill 2%	1.0	47	69	90	111	130	150	169	187	206
	1.5	57	83	108	132	155	177	198	220	241
	2.0	64	94	121	148	173	197	222	245	268
	2.5	70	102	132	161	188	215	240	266	290
	3.0	75	109	141	172	201	230	257	284	309

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	52	66	78	88	98	107	116	123
	1.5	46	66	83	99	113	127	139	151	163
	2.0	53	75	96	114	131	148	162	177	190
	2.5	58	83	106	127	146	164	182	197	213
	3.5	63	90	114	137	158	179	197	215	232
Flat terrain	1.0	39	56	71	86	100	113	125	137	149
	1.5	48	68	88	106	123	139	154	169	184
	2.0	54	78	100	121	140	158	176	194	209
	2.5	59	86	110	133	154	174	194	212	230
	3.5	64	92	118	143	166	188	209	229	248
Downhill 2%	1.0	41	59	77	95	111	127	143	159	174
	1.5	49	71	92	113	133	151	170	187	205
	2.0	55	80	104	127	148	169	190	210	229
	2.5	61	88	114	138	161	184	206	228	248
	3.5	65	94	122	148	173	197	220	243	265

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	29	41	51	61	70	78	86	93	100
	1.5	36	51	64	77	89	100	110	120	129
	2.0	41	58	74	89	103	116	127	140	150
	2.5	45	64	82	98	113	128	142	155	167
	3.5	48	69	88	106	123	139	154	167	181
Flat terrain	1.0	30	43	55	66	77	87	96	105	114
	1.5	37	53	67	82	94	107	119	131	141
	2.0	42	60	77	93	107	122	135	149	161
	2.5	46	65	84	102	118	134	149	164	177
	3.5	49	71	90	110	127	144	161	176	191
Downhill 2%	1.0	31	45	58	71	83	95	107	119	130
	1.5	37	54	70	86	100	114	128	141	154
	2.0	42	61	79	96	113	128	143	158	173
	2.5	46	67	86	105	123	140	156	172	188
	3.5	50	72	93	113	131	150	167	185	201

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	23	32	40	48	54	60	66	71	76
	1.5	30	43	54	65	75	84	93	101	109
	2.0	35	50	64	77	89	100	110	121	130
	2.5	39	56	72	86	100	112	124	135	146
	3.5	43	61	78	94	109	123	135	149	160
Flat terrain	1.0	23	34	43	52	60	68	76	83	90
	1.5	31	44	57	69	80	90	101	110	119
	2.0	36	52	66	80	93	105	117	129	139
	2.5	40	57	74	89	103	117	130	143	155
	3.5	43	62	80	96	112	127	142	155	168
Downhill 2%	1.0	24	36	46	57	67	76	86	95	104
	1.5	32	46	59	72	85	97	108	120	131
	2.0	36	53	68	83	97	111	124	137	149
	2.5	40	59	76	92	107	122	137	150	164
	3.5	44	63	82	99	116	132	147	162	176

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	45	52	57	63	68	73
	1.5	29	41	52	62	71	80	88	96	103
	2.0	33	48	61	73	84	95	105	114	124
	2.5	37	53	68	82	94	106	118	129	139
	3.5	40	58	74	89	103	116	129	140	152
Flat terrain	1.0	22	32	41	49	57	64	72	79	85
	1.5	29	42	54	65	76	85	95	104	113
	2.0	34	49	63	76	88	100	111	122	132
	2.5	38	54	70	84	98	111	123	136	147
	3.5	41	59	76	91	106	120	134	147	160
Downhill 2%	1.0	23	34	44	54	63	72	81	89	98
	1.5	30	44	56	69	80	91	102	113	123
	2.0	35	50	65	79	92	105	117	130	141
	2.5	38	55	72	87	101	116	129	142	155
	3.5	41	60	77	94	109	125	139	153	167

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	142	185	218	244	263	279	293	303	312
	1.5	184	246	296	339	374	404	430	453	472
	2.0	214	290	353	407	454	494	530	563	591
	2.5	238	324	398	462	517	567	611	652	688
Flat terrain	1.0	167	235	296	352	404	453	499	544	586
	1.5	205	288	363	432	497	557	615	670	723
	2.0	233	327	413	492	565	635	701	763	824
	2.5	255	359	453	540	621	698	770	840	906
Downhill 2%	1.0	193	286	377	467	548	627	705	780	855
	1.5	227	331	431	530	620	707	792	875	956
	2.0	252	365	474	579	676	770	862	950	1037
	2.5	273	395	510	621	724	824	920	1014	1106

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	97	128	153	173	189	202	214	223	231
	1.5	130	176	214	247	276	301	323	343	360
	2.0	152	208	256	298	335	368	398	426	451
	2.5	170	234	289	338	382	421	458	491	522
Flat terrain	1.0	111	156	196	234	268	301	332	362	390
	1.5	141	198	250	298	343	384	424	463	499
	2.0	162	228	288	344	395	444	490	534	576
	2.5	179	252	318	380	437	491	542	591	638
Downhill 2%	1.0	125	184	241	298	353	407	462	516	569
	1.5	152	221	286	350	412	472	531	590	647
	2.0	172	248	320	390	456	522	585	647	708
	2.5	188	271	348	422	493	562	630	696	760

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	74	100	121	139	154	167	178	189	197
	1.5	98	134	165	192	216	238	258	275	292
	2.0	114	157	195	229	259	286	311	335	356
	2.5	127	176	219	258	292	324	354	382	407
Flat terrain	1.0	82	115	145	173	198	223	246	267	289
	1.5	104	146	184	220	253	284	314	342	369
	2.0	119	168	212	253	292	328	362	394	426
	2.5	132	186	235	280	322	363	401	437	472
Downhill 2%	1.0	89	130	169	207	244	281	317	352	387
	1.5	110	158	204	248	290	332	372	411	450
	2.0	125	179	230	278	325	370	414	456	498
	2.5	136	196	251	303	353	401	448	493	538

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	65	88	107	124	138	151	162	172	181
	1.5	85	117	145	170	191	211	230	246	261
	2.0	99	137	171	201	228	253	275	297	317
	2.5	110	153	191	226	257	286	312	337	360
Flat terrain	1.0	71	99	125	149	172	193	213	231	250
	1.5	90	126	160	190	219	246	271	296	320
	2.0	103	145	184	219	253	284	314	342	369
	2.5	114	161	203	243	279	314	347	378	409
Downhill 2%	1.0	76	111	144	175	206	237	266	295	324
	1.5	94	135	174	212	247	281	315	348	380
	2.0	107	153	197	238	277	315	352	388	423
	2.5	117	168	215	260	302	343	382	421	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	70	86	100	112	123	134	142	151
	1.5	66	92	114	134	152	169	184	198	211
	2.0	77	107	134	158	179	200	219	237	253
	2.5	85	119	149	177	202	225	246	266	286
Flat terrain	1.0	54	76	96	115	132	148	164	178	193
	1.5	69	97	122	147	169	189	209	229	246
	2.0	79	112	141	169	194	218	242	264	284
	2.5	87	123	156	187	215	242	267	292	315
Downhill 2%	1.0	58	83	107	130	152	174	195	216	237
	1.5	71	102	131	159	185	211	235	259	282
	2.0	81	116	149	180	209	237	264	291	316
	2.5	89	128	163	197	228	259	288	317	344

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	40	54	66	77	85	94	101	107	113
	1.5	56	78	97	114	129	143	156	167	179
	2.0	67	93	116	137	156	174	190	206	221
	2.5	75	104	131	155	178	198	217	235	252
Flat terrain	1.0	43	60	76	90	104	116	129	140	151
	1.5	58	82	104	124	143	161	178	194	209
	2.0	69	97	122	147	169	190	210	229	247
	2.5	76	108	137	164	188	212	234	256	277
Downhill 2%	1.0	46	66	86	105	122	141	158	175	192
	1.5	61	87	112	135	157	179	200	221	240
	2.0	71	101	129	156	181	206	229	252	274
	2.5	78	112	143	172	200	227	252	277	301

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	38	51	63	73	82	90	97	104	109
	1.5	53	74	92	108	123	137	149	160	171
	2.0	63	88	110	131	149	166	182	196	210
	2.5	71	99	124	148	169	188	206	224	240
Flat terrain	1.0	40	57	72	86	98	111	122	133	144
	1.5	55	78	99	118	136	153	169	184	198
	2.0	65	92	116	139	160	180	199	217	234
	2.5	72	103	130	155	179	201	222	243	262
Downhill 2%	1.0	43	62	81	99	115	132	148	165	180
	1.5	57	82	106	128	149	169	189	208	226
	2.0	67	95	122	147	171	194	216	238	259
	2.5	74	106	135	163	189	214	238	262	285

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.5	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.5	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.5	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.5	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.5	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.5	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.5	94	133	167	198	226	253	278	301	322
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.5	97	138	175	210	242	272	302	329	356
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.5	99	143	183	221	257	293	326	359	391

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.5	73	103	130	154	177	198	218	237	254
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.5	74	106	134	161	186	210	232	254	275
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.5	76	109	139	168	196	222	247	271	295

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	39	54	67	79	89	99	107	116	123
	1.5	48	68	85	101	115	128	140	151	162
	2.0	55	78	98	117	133	149	164	177	190
	2.5	61	86	109	129	148	166	182	198	213
	3.5	66	93	118	140	161	180	198	216	232
Flat terrain	1.0	41	58	73	88	101	113	126	137	148
	1.5	50	71	90	108	125	141	155	170	184
	2.0	57	81	103	123	142	160	178	194	210
	2.5	62	89	113	135	156	176	195	213	231
	3.5	67	95	122	146	169	190	210	230	249
Downhill 2%	1.0	43	62	79	97	113	129	144	159	174
	1.5	52	74	95	116	134	153	171	188	205
	2.0	58	84	107	130	151	172	191	211	229
	2.5	64	91	117	142	164	186	208	229	249
	3.5	68	98	125	152	176	200	222	244	265

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	51	64	75	85	95	103	111	118
	1.5	46	65	81	96	109	122	134	145	155
	2.0	53	74	93	111	127	142	156	169	182
	2.5	58	82	103	123	141	158	174	189	203
	3.5	63	88	112	133	153	172	189	205	221
Flat terrain	1.0	39	55	69	83	95	108	119	131	141
	1.5	47	67	86	103	118	133	147	161	174
	2.0	54	77	97	117	135	152	168	184	199
	2.5	59	84	107	128	148	167	185	203	219
	3.5	64	91	115	138	160	180	199	218	236
Downhill 2%	1.0	40	58	75	91	106	121	136	150	164
	1.5	49	70	90	109	127	144	162	177	194
	2.0	55	79	102	123	143	162	181	199	216
	2.5	60	86	111	134	155	176	197	216	235
	3.5	65	93	119	143	166	189	210	231	251

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	243	287	313	330	340	348	353	357	360
	1.6	337	419	475	515	545	567	584	598	609
	2.2	405	515	596	657	706	744	775	800	821
	2.4	459	592	693	773	838	891	936	973	1005
Flat terrain	1.0	350	479	593	697	793	884	970	1051	1130
	1.6	430	589	730	859	978	1091	1197	1298	1395
	2.2	489	670	832	979	1115	1243	1365	1481	1591
	2.4	537	737	914	1077	1227	1369	1502	1630	1752
Downhill 2%	1.0	463	669	864	1052	1235	1414	1590	1762	1932
	1.6	525	752	966	1171	1369	1561	1750	1934	2116
	2.2	574	818	1047	1265	1475	1679	1878	2073	2264
	2.4	616	874	1116	1346	1566	1780	1988	2191	2390

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	172	209	232	249	259	267	274	278	281
	1.6	246	313	363	401	431	454	474	490	503
	2.2	296	385	454	509	555	593	626	653	677
	2.4	336	441	525	595	653	704	747	786	819
Flat terrain	1.0	232	318	394	464	527	588	645	699	752
	1.6	296	406	504	593	676	753	826	896	964
	2.2	341	468	581	685	781	870	955	1037	1115
	2.4	377	518	644	758	865	965	1059	1149	1236
Downhill 2%	1.0	295	436	576	710	829	946	1059	1171	1281
	1.6	347	503	654	798	928	1056	1179	1300	1418
	2.2	386	554	715	868	1007	1143	1274	1403	1529
	2.4	418	597	766	927	1075	1218	1356	1491	1623

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	138	173	198	217	231	242	251	257	263
	1.6	191	248	293	330	361	386	407	427	442
	2.2	227	299	359	408	451	487	520	548	574
	2.4	255	340	410	470	521	568	609	645	679
Flat terrain	1.0	171	235	291	343	390	435	478	518	557
	1.6	218	299	372	438	499	557	611	663	713
	2.2	251	345	429	506	577	643	706	767	825
	2.4	277	382	475	560	639	713	783	851	914
Downhill 2%	1.0	205	299	391	481	570	658	738	813	887
	1.6	246	352	454	552	648	742	828	911	992
	2.2	276	392	502	607	709	809	901	989	1076
	2.4	300	425	542	654	761	865	962	1056	1147

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	123	157	182	201	215	228	237	245	252
	1.6	168	221	263	298	327	352	374	393	410
	2.2	199	265	318	365	404	440	470	499	524
	2.4	223	299	362	417	465	508	546	581	613
Flat terrain	1.0	148	203	252	297	338	377	414	449	482
	1.6	188	259	322	380	433	482	530	575	618
	2.2	217	299	372	438	500	558	613	665	715
	2.4	240	331	411	485	554	618	678	737	792
Downhill 2%	1.0	174	252	327	401	473	545	616	686	748
	1.6	209	299	384	465	544	622	698	772	840
	2.2	235	334	426	514	599	682	762	841	913
	2.4	257	363	462	555	645	732	817	899	976

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	99	128	152	170	185	198	209	218	226
	1.6	133	176	212	243	269	293	314	332	349
	2.2	156	209	254	294	328	358	386	412	435
	2.4	175	236	288	333	374	410	444	474	503
Flat terrain	1.0	114	156	194	229	260	291	319	347	372
	1.6	145	199	248	292	334	372	409	444	477
	2.2	167	230	286	338	385	430	472	513	551
	2.4	184	254	317	374	427	476	523	568	611
Downhill 2%	1.0	129	185	238	291	341	391	440	489	537
	1.6	157	223	284	343	400	454	509	562	613
	2.2	178	251	318	383	444	503	561	617	673
	2.4	194	273	346	415	481	544	605	665	723

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	76	97	113	126	136	145	151	158	162
	1.6	112	149	180	206	228	248	265	281	295
	2.2	136	182	222	256	286	313	338	360	380
	2.4	154	207	254	294	330	363	393	420	446
Flat terrain	1.0	89	123	152	180	205	228	250	272	292
	1.6	123	169	210	248	283	316	346	376	405
	2.2	145	200	248	293	334	373	410	446	479
	2.4	162	223	278	328	374	418	459	499	537
Downhill 2%	1.0	103	149	193	237	278	320	362	402	443
	1.6	133	189	242	292	340	387	433	478	523
	2.2	154	217	276	331	385	435	486	535	582
	2.4	170	239	303	363	420	475	528	581	631

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

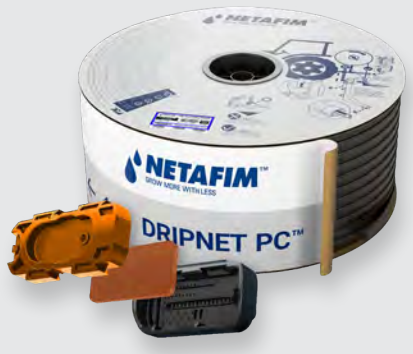
DripNet PC™ AS MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	72	93	109	122	132	141	148	154	159
	1.6	107	143	172	197	219	238	255	271	285
	2.2	129	174	212	245	274	300	323	346	365
	2.4	146	197	242	281	315	347	375	402	427
Flat terrain	1.0	85	116	144	170	194	216	238	257	277
	1.6	117	161	200	236	268	300	329	357	384
	2.2	137	189	236	278	317	354	389	422	454
	2.4	153	212	264	311	355	396	436	473	509
Downhill 2%	1.0	97	140	181	222	260	300	338	375	413
	1.6	126	179	228	275	320	364	406	449	490
	2.2	145	205	260	312	362	410	457	502	547
	2.4	161	226	286	343	396	448	498	546	594

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

DripNet PC™ AS XR MWD

Compact pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism and enhanced root intrusion protection (XR). For semi-permanent and multi-season drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



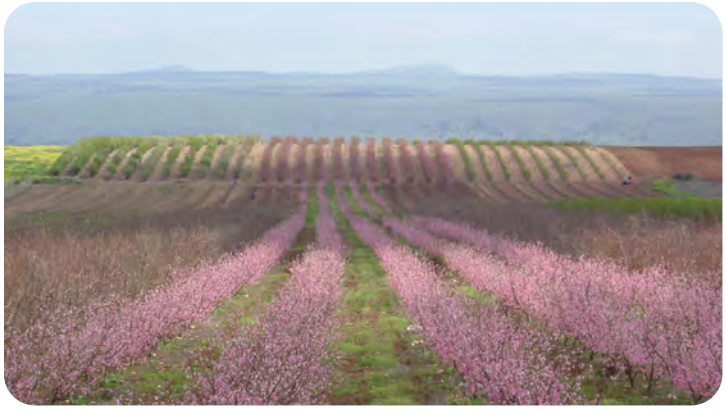
Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Enhanced root intrusion resistance (XR)	Provides active root intrusion protection through a patented root-inhibiting barrier integrated into the dripper cover. Delivers long-term performance through non-migrating active ingredients, reducing reliance on chemical root control methods.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.

Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in applications where water supply is restricted due to hydraulic limitations or crop requirements, and where there is a potential risk of root intrusion.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into medium-wall driplines: 0.50, 0.63 and 0.80 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

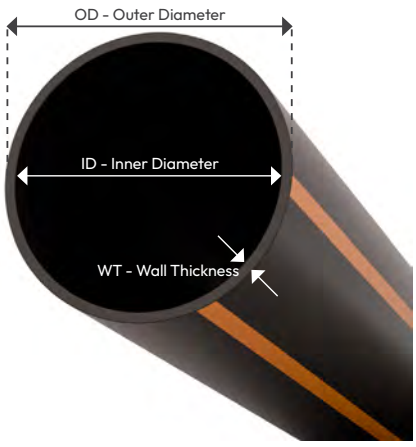


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12200	11.80	20 / 0.50	12.80	3.0	3.9	1.35
12250	11.80	25 / 0.63	13.06	3.0	3.9	1.35
16200	15.50	20 / 0.50	16.50	2.5	3.3	0.55
16250	15.50	25 / 0.63	16.76	2.8	3.6	0.55
16008	14.20	32 / 0.80	15.80	3.0	3.9	0.72
22200	22.20	20 / 0.50	23.20	2.1	2.7	0.18
22250	22.20	25 / 0.63	23.46	2.5	2.9	0.18



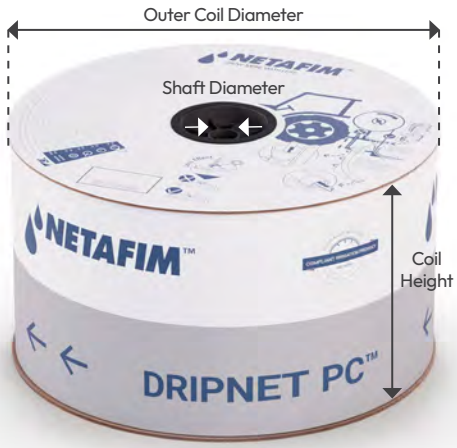
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12200	20 / 0.50	0.15 to 0.19	750	17.1	52.0	3.8	32.5
		0.20 to 0.25	850	17.4			
		0.30 to 1.00	850	16.9			
12250	25 / 0.63	0.15 to 0.19	650	19.5	52.0	3.8	32.5
		0.20 to 0.25	700	20.4			
		0.30 to 1.00	800	19.1			
16200	20 / 0.50	0.15 to 0.19	750	19.9	57.0	3.8	32.5
		0.20 to 0.25	800	19.6			
		0.30 to 1.00	850	19.1			
16250	25 / 0.63	0.15 to 0.19	750	26.5	57.0	3.8	32.5
		0.20 to 0.25	800	26.9			
		0.30 to 1.00	800	26.1			
16008	32 / 0.80	0.15 to 0.19	450	19.4	57.0	3.8	32.5
		0.20 to 0.25	500	21.0			
		0.30 to 1.00	500	21.0			
22200	20 / 0.50	0.15 to 0.19	700	18.3	57.0	3.8	32.5
		0.20 to 0.25	700	18.1			
		0.30 to 1.00	700	17.9			
22250	25 / 0.63	0.15 to 0.19	450	26.6	57.0	3.8	32.5
		0.20 to 0.25	500	28.0			
		0.30 to 1.00	500	27.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12200	750	12	109 x 109 x 110	215	480	360000
	850			219		408000
	850			213		408000
12250	650	12	109 x 109 x 110	244	480	312000
	700			255		336000
	800			239		384000
16200	750	12	109 x 109 x 110	249	480	360000
	800			245		384000
	850			239		408000
16250	750	12	109 x 109 x 110	328	480	360000
	800			333		384000
	800			323		384000
16008	450	12	109 x 109 x 110	243	480	216000
	500			262		240000
	500			262		240000
22200	700	12	109 x 109 x 110	230	480	336000
	700			227		336000
	700			224		336000
22250	450	12	109 x 109 x 110	329	480	216000
	500			346		240000
	500			339		240000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™ AS XR	DNPC AS XR

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mil) / (mm)	
20 / 0.50	200
25 / 0.63	250
32 / 0.80	008

Flow rate (l/h)	
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

DNPC AS XR 12250 0.6L/H 0.30M 800M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ AS XR flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™ AS XR	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	85	116	143	166	185	202	218	230	242
	1.5	103	144	179	210	238	263	285	305	323
	2.0	117	164	206	243	277	307	334	360	384
	2.5	129	181	228	270	308	343	375	405	433
Flat terrain	1.0	92	132	168	203	235	265	294	322	349
	1.5	110	157	201	242	281	317	352	385	418
	2.0	123	176	226	272	316	357	396	434	470
	2.5	134	193	246	297	344	389	433	473	514
Downhill 2%	1.0	100	148	195	241	286	331	375	419	463
	1.5	117	171	224	275	325	374	422	469	516
	2.0	129	189	246	302	355	407	459	509	559
	2.5	140	204	265	324	381	437	491	545	596

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	57	79	98	114	128	141	153	163	172
	1.5	72	101	126	149	169	188	206	221	236
	2.0	82	116	146	174	199	222	243	263	281
	2.5	91	129	162	194	222	249	273	296	318
	3.0	98	139	176	211	242	271	298	324	348
Flat terrain	1.0	61	88	112	135	156	176	196	214	232
	1.5	75	108	138	166	193	218	242	265	287
	2.0	85	122	157	189	220	249	276	302	328
	2.5	94	134	172	208	241	273	303	332	360
	3.0	101	145	186	224	260	294	326	358	388
Downhill 2%	1.0	65	96	126	156	184	212	240	268	295
	1.5	79	115	150	184	216	248	279	310	340
	2.0	89	129	168	205	241	275	309	342	375
	2.5	97	140	182	222	260	298	334	369	404
	3.0	103	150	194	237	278	317	355	393	429

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	60	75	88	100	111	121	130	138
	1.5	53	75	95	113	130	144	158	172	184
	2.0	61	87	110	131	151	169	186	202	217
	2.5	67	96	122	146	167	188	207	225	243
	3.0	73	104	132	158	182	204	226	246	265
Flat terrain	1.0	45	65	82	99	115	130	145	158	171
	1.5	55	79	102	123	142	160	178	195	212
	2.0	63	90	116	139	161	183	203	223	242
	2.5	69	99	127	153	178	201	224	246	266
	3.0	74	107	136	165	191	217	241	265	287
Downhill 2%	1.0	47	69	90	111	130	150	169	187	206
	1.5	57	83	108	132	155	177	198	220	241
	2.0	64	94	121	148	173	197	222	245	268
	2.5	70	102	132	161	188	215	240	266	290
	3.0	75	109	141	172	201	230	257	284	309

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	52	66	78	88	98	107	116	123
	1.5	46	66	83	99	113	127	139	151	163
	2.0	53	75	96	114	131	148	162	177	190
	2.5	58	83	106	127	146	164	182	197	213
	3.5	63	90	114	137	158	179	197	215	232
Flat terrain	1.0	39	56	71	86	100	113	125	137	149
	1.5	48	68	88	106	123	139	154	169	184
	2.0	54	78	100	121	140	158	176	194	209
	2.5	59	86	110	133	154	174	194	212	230
	3.5	64	92	118	143	166	188	209	229	248
Downhill 2%	1.0	41	59	77	95	111	127	143	159	174
	1.5	49	71	92	113	133	151	170	187	205
	2.0	55	80	104	127	148	169	190	210	229
	2.5	61	88	114	138	161	184	206	228	248
	3.5	65	94	122	148	173	197	220	243	265

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	29	41	51	61	70	78	86	93	100
	1.5	36	51	64	77	89	100	110	120	129
	2.0	41	58	74	89	103	116	127	140	150
	2.5	45	64	82	98	113	128	142	155	167
	3.5	48	69	88	106	123	139	154	167	181
Flat terrain	1.0	30	43	55	66	77	87	96	105	114
	1.5	37	53	67	82	94	107	119	131	141
	2.0	42	60	77	93	107	122	135	149	161
	2.5	46	65	84	102	118	134	149	164	177
	3.5	49	71	90	110	127	144	161	176	191
Downhill 2%	1.0	31	45	58	71	83	95	107	119	130
	1.5	37	54	70	86	100	114	128	141	154
	2.0	42	61	79	96	113	128	143	158	173
	2.5	46	67	86	105	123	140	156	172	188
	3.5	50	72	93	113	131	150	167	185	201

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	23	32	40	48	54	60	66	71	76
	1.5	30	43	54	65	75	84	93	101	109
	2.0	35	50	64	77	89	100	110	121	130
	2.5	39	56	72	86	100	112	124	135	146
	3.5	43	61	78	94	109	123	135	149	160
Flat terrain	1.0	23	34	43	52	60	68	76	83	90
	1.5	31	44	57	69	80	90	101	110	119
	2.0	36	52	66	80	93	105	117	129	139
	2.5	40	57	74	89	103	117	130	143	155
	3.5	43	62	80	96	112	127	142	155	168
Downhill 2%	1.0	24	36	46	57	67	76	86	95	104
	1.5	32	46	59	72	85	97	108	120	131
	2.0	36	53	68	83	97	111	124	137	149
	2.5	40	59	76	92	107	122	137	150	164
	3.5	44	63	82	99	116	132	147	162	176

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 12200/12250 • ID 11.8 mm • Kd 1.35 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	45	52	57	63	68	73
	1.5	29	41	52	62	71	80	88	96	103
	2.0	33	48	61	73	84	95	105	114	124
	2.5	37	53	68	82	94	106	118	129	139
	3.5	40	58	74	89	103	116	129	140	152
Flat terrain	1.0	22	32	41	49	57	64	72	79	85
	1.5	29	42	54	65	76	85	95	104	113
	2.0	34	49	63	76	88	100	111	122	132
	2.5	38	54	70	84	98	111	123	136	147
	3.5	41	59	76	91	106	120	134	147	160
Downhill 2%	1.0	23	34	44	54	63	72	81	89	98
	1.5	30	44	56	69	80	91	102	113	123
	2.0	35	50	65	79	92	105	117	130	141
	2.5	38	55	72	87	101	116	129	142	155
	3.5	41	60	77	94	109	125	139	153	167

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	142	185	218	244	263	279	293	303	312
	1.5	184	246	296	339	374	404	430	453	472
	2.0	214	290	353	407	454	494	530	563	591
	2.5	238	324	398	462	517	567	611	652	688
Flat terrain	1.0	167	235	296	352	404	453	499	544	586
	1.5	205	288	363	432	497	557	615	670	723
	2.0	233	327	413	492	565	635	701	763	824
	2.5	255	359	453	540	621	698	770	840	906
Downhill 2%	1.0	193	286	377	467	548	627	705	780	855
	1.5	227	331	431	530	620	707	792	875	956
	2.0	252	365	474	579	676	770	862	950	1037
	2.5	273	395	510	621	724	824	920	1014	1106

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	97	128	153	173	189	202	214	223	231
	1.5	130	176	214	247	276	301	323	343	360
	2.0	152	208	256	298	335	368	398	426	451
	2.5	170	234	289	338	382	421	458	491	522
Flat terrain	1.0	111	156	196	234	268	301	332	362	390
	1.5	141	198	250	298	343	384	424	463	499
	2.0	162	228	288	344	395	444	490	534	576
	2.5	179	252	318	380	437	491	542	591	638
Downhill 2%	1.0	125	184	241	298	353	407	462	516	569
	1.5	152	221	286	350	412	472	531	590	647
	2.0	172	248	320	390	456	522	585	647	708
	2.5	188	271	348	422	493	562	630	696	760

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	74	100	121	139	154	167	178	189	197
	1.5	98	134	165	192	216	238	258	275	292
	2.0	114	157	195	229	259	286	311	335	356
	2.5	127	176	219	258	292	324	354	382	407
Flat terrain	1.0	82	115	145	173	198	223	246	267	289
	1.5	104	146	184	220	253	284	314	342	369
	2.0	119	168	212	253	292	328	362	394	426
	2.5	132	186	235	280	322	363	401	437	472
Downhill 2%	1.0	89	130	169	207	244	281	317	352	387
	1.5	110	158	204	248	290	332	372	411	450
	2.0	125	179	230	278	325	370	414	456	498
	2.5	136	196	251	303	353	401	448	493	538

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	65	88	107	124	138	151	162	172	181
	1.5	85	117	145	170	191	211	230	246	261
	2.0	99	137	171	201	228	253	275	297	317
	2.5	110	153	191	226	257	286	312	337	360
Flat terrain	1.0	71	99	125	149	172	193	213	231	250
	1.5	90	126	160	190	219	246	271	296	320
	2.0	103	145	184	219	253	284	314	342	369
	2.5	114	161	203	243	279	314	347	378	409
Downhill 2%	1.0	76	111	144	175	206	237	266	295	324
	1.5	94	135	174	212	247	281	315	348	380
	2.0	107	153	197	238	277	315	352	388	423
	2.5	117	168	215	260	302	343	382	421	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	51	70	86	100	112	123	134	142	151
	1.5	66	92	114	134	152	169	184	198	211
	2.0	77	107	134	158	179	200	219	237	253
	2.5	85	119	149	177	202	225	246	266	286
Flat terrain	1.0	54	76	96	115	132	148	164	178	193
	1.5	69	97	122	147	169	189	209	229	246
	2.0	79	112	141	169	194	218	242	264	284
	2.5	87	123	156	187	215	242	267	292	315
Downhill 2%	1.0	58	83	107	130	152	174	195	216	237
	1.5	71	102	131	159	185	211	235	259	282
	2.0	81	116	149	180	209	237	264	291	316
	2.5	89	128	163	197	228	259	288	317	344

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	40	54	66	77	85	94	101	107	113
	1.5	56	78	97	114	129	143	156	167	179
	2.0	67	93	116	137	156	174	190	206	221
	2.5	75	104	131	155	178	198	217	235	252
Flat terrain	1.0	43	60	76	90	104	116	129	140	151
	1.5	58	82	104	124	143	161	178	194	209
	2.0	69	97	122	147	169	190	210	229	247
	2.5	76	108	137	164	188	212	234	256	277
Downhill 2%	1.0	46	66	86	105	122	141	158	175	192
	1.5	61	87	112	135	157	179	200	221	240
	2.0	71	101	129	156	181	206	229	252	274
	2.5	78	112	143	172	200	227	252	277	301

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16200/16250 • ID 15.5 mm • Kd 0.55 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	38	51	63	73	82	90	97	104	109
	1.5	53	74	92	108	123	137	149	160	171
	2.0	63	88	110	131	149	166	182	196	210
	2.5	71	99	124	148	169	188	206	224	240
Flat terrain	1.0	40	57	72	86	98	111	122	133	144
	1.5	55	78	99	118	136	153	169	184	198
	2.0	65	92	116	139	160	180	199	217	234
	2.5	72	103	130	155	179	201	222	243	262
Downhill 2%	1.0	43	62	81	99	115	132	148	165	180
	1.5	57	82	106	128	149	169	189	208	226
	2.0	67	95	122	147	171	194	216	238	259
	2.5	74	106	135	163	189	214	238	262	285

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.5	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.5	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.5	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.5	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.5	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.5	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.5	94	133	167	198	226	253	278	301	322
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.5	97	138	175	210	242	272	302	329	356
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.5	99	143	183	221	257	293	326	359	391

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.5	73	103	130	154	177	198	218	237	254
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.5	74	106	134	161	186	210	232	254	275
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.5	76	109	139	168	196	222	247	271	295

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	39	54	67	79	89	99	107	116	123
	1.5	48	68	85	101	115	128	140	151	162
	2.0	55	78	98	117	133	149	164	177	190
	2.5	61	86	109	129	148	166	182	198	213
	3.5	66	93	118	140	161	180	198	216	232
Flat terrain	1.0	41	58	73	88	101	113	126	137	148
	1.5	50	71	90	108	125	141	155	170	184
	2.0	57	81	103	123	142	160	178	194	210
	2.5	62	89	113	135	156	176	195	213	231
	3.5	67	95	122	146	169	190	210	230	249
Downhill 2%	1.0	43	62	79	97	113	129	144	159	174
	1.5	52	74	95	116	134	153	171	188	205
	2.0	58	84	107	130	151	172	191	211	229
	2.5	64	91	117	142	164	186	208	229	249
	3.5	68	98	125	152	176	200	222	244	265

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 16008 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	51	64	75	85	95	103	111	118
	1.5	46	65	81	96	109	122	134	145	155
	2.0	53	74	93	111	127	142	156	169	182
	2.5	58	82	103	123	141	158	174	189	203
	3.5	63	88	112	133	153	172	189	205	221
Flat terrain	1.0	39	55	69	83	95	108	119	131	141
	1.5	47	67	86	103	118	133	147	161	174
	2.0	54	77	97	117	135	152	168	184	199
	2.5	59	84	107	128	148	167	185	203	219
	3.5	64	91	115	138	160	180	199	218	236
Downhill 2%	1.0	40	58	75	91	106	121	136	150	164
	1.5	49	70	90	109	127	144	162	177	194
	2.0	55	79	102	123	143	162	181	199	216
	2.5	60	86	111	134	155	176	197	216	235
	3.5	65	93	119	143	166	189	210	231	251

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	243	287	313	330	340	348	353	357	360
	1.6	337	419	475	515	545	567	584	598	609
	2.2	405	515	596	657	706	744	775	800	821
	2.4	459	592	693	773	838	891	936	973	1005
Flat terrain	1.0	350	479	593	697	793	884	970	1051	1130
	1.6	430	589	730	859	978	1091	1197	1298	1395
	2.2	489	670	832	979	1115	1243	1365	1481	1591
	2.4	537	737	914	1077	1227	1369	1502	1630	1752
Downhill 2%	1.0	463	669	864	1052	1235	1414	1590	1762	1932
	1.6	525	752	966	1171	1369	1561	1750	1934	2116
	2.2	574	818	1047	1265	1475	1679	1878	2073	2264
	2.4	616	874	1116	1346	1566	1780	1988	2191	2390

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	172	209	232	249	259	267	274	278	281
	1.6	246	313	363	401	431	454	474	490	503
	2.2	296	385	454	509	555	593	626	653	677
	2.4	336	441	525	595	653	704	747	786	819
Flat terrain	1.0	232	318	394	464	527	588	645	699	752
	1.6	296	406	504	593	676	753	826	896	964
	2.2	341	468	581	685	781	870	955	1037	1115
	2.4	377	518	644	758	865	965	1059	1149	1236
Downhill 2%	1.0	295	436	576	710	829	946	1059	1171	1281
	1.6	347	503	654	798	928	1056	1179	1300	1418
	2.2	386	554	715	868	1007	1143	1274	1403	1529
	2.4	418	597	766	927	1075	1218	1356	1491	1623

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	138	173	198	217	231	242	251	257	263
	1.6	191	248	293	330	361	386	407	427	442
	2.2	227	299	359	408	451	487	520	548	574
	2.4	255	340	410	470	521	568	609	645	679
Flat terrain	1.0	171	235	291	343	390	435	478	518	557
	1.6	218	299	372	438	499	557	611	663	713
	2.2	251	345	429	506	577	643	706	767	825
	2.4	277	382	475	560	639	713	783	851	914
Downhill 2%	1.0	205	299	391	481	570	658	738	813	887
	1.6	246	352	454	552	648	742	828	911	992
	2.2	276	392	502	607	709	809	901	989	1076
	2.4	300	425	542	654	761	865	962	1056	1147

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	123	157	182	201	215	228	237	245	252
	1.6	168	221	263	298	327	352	374	393	410
	2.2	199	265	318	365	404	440	470	499	524
	2.4	223	299	362	417	465	508	546	581	613
Flat terrain	1.0	148	203	252	297	338	377	414	449	482
	1.6	188	259	322	380	433	482	530	575	618
	2.2	217	299	372	438	500	558	613	665	715
	2.4	240	331	411	485	554	618	678	737	792
Downhill 2%	1.0	174	252	327	401	473	545	616	686	748
	1.6	209	299	384	465	544	622	698	772	840
	2.2	235	334	426	514	599	682	762	841	913
	2.4	257	363	462	555	645	732	817	899	976

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	99	128	152	170	185	198	209	218	226
	1.6	133	176	212	243	269	293	314	332	349
	2.2	156	209	254	294	328	358	386	412	435
	2.4	175	236	288	333	374	410	444	474	503
Flat terrain	1.0	114	156	194	229	260	291	319	347	372
	1.6	145	199	248	292	334	372	409	444	477
	2.2	167	230	286	338	385	430	472	513	551
	2.4	184	254	317	374	427	476	523	568	611
Downhill 2%	1.0	129	185	238	291	341	391	440	489	537
	1.6	157	223	284	343	400	454	509	562	613
	2.2	178	251	318	383	444	503	561	617	673
	2.4	194	273	346	415	481	544	605	665	723

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	76	97	113	126	136	145	151	158	162
	1.6	112	149	180	206	228	248	265	281	295
	2.2	136	182	222	256	286	313	338	360	380
	2.4	154	207	254	294	330	363	393	420	446
Flat terrain	1.0	89	123	152	180	205	228	250	272	292
	1.6	123	169	210	248	283	316	346	376	405
	2.2	145	200	248	293	334	373	410	446	479
	2.4	162	223	278	328	374	418	459	499	537
Downhill 2%	1.0	103	149	193	237	278	320	362	402	443
	1.6	133	189	242	292	340	387	433	478	523
	2.2	154	217	276	331	385	435	486	535	582
	2.4	170	239	303	363	420	475	528	581	631

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR MWD 22200/22250 • ID 22.2 mm • Kd 0.18 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	72	93	109	122	132	141	148	154	159
	1.6	107	143	172	197	219	238	255	271	285
	2.2	129	174	212	245	274	300	323	346	365
	2.4	146	197	242	281	315	347	375	402	427
Flat terrain	1.0	85	116	144	170	194	216	238	257	277
	1.6	117	161	200	236	268	300	329	357	384
	2.2	137	189	236	278	317	354	389	422	454
	2.4	153	212	264	311	355	396	436	473	509
Downhill 2%	1.0	97	140	181	222	260	300	338	375	413
	1.6	126	179	228	275	320	364	406	449	490
	2.2	145	205	260	312	362	410	457	502	547
	2.4	161	226	286	343	396	448	498	546	594

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

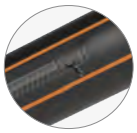
DripNet PC™ TWD

Compact pressure-compensated dripper designed for few-season drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier retrieval at crop-cycle completion. Also beneficial in regions prone to sub-zero temperatures.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in vegetables and industrial crops.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thin-wall driplines: 0.31, 0.34 and 0.38 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.40	0.25 - 2.5	0.46 x 0.52 x 26	29	0.4	0	130/120
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

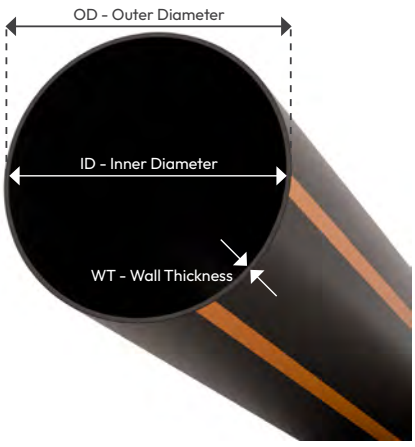


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12125	11.80	12.5 / 0.31	12.42	2.5	2.9	1.35
12150	11.80	15.0 / 0.38	12.56	3.0	3.5	1.35
16125	16.20	12.5 / 0.31	16.82	1.8	2.1	0.40
16150	16.20	15.0 / 0.38	16.96	2.2	2.5	0.40
22135	22.20	13.5 / 0.34	22.88	1.5	1.7	0.18
22150	22.20	15.0 / 0.38	22.96	1.8	2.1	0.18



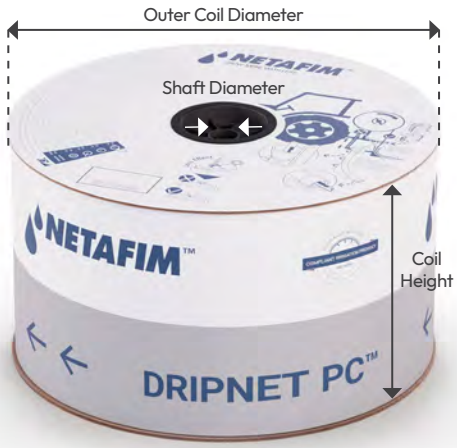
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12125	12.5 / 0.31	0.15 to 0.19	1000	17.5	52.0	3.8	32.5
		15.0 / 0.38	1100	16.3			
		12.5 / 0.31	1200	15.6			
12150	15.0 / 0.38	0.15 to 0.19	800	14.8	52.0	3.8	32.5
		13.5 / 0.34	900	14.5			
		15.0 / 0.38	900	14.0			
16125	12.5 / 0.31	0.15 to 0.19	1000	20.3	57.0	3.8	32.5
		0.20 to 0.25	1150	21.3			
		0.30 to 1.00	1300	22.7			
16150	15.0 / 0.38	0.15 to 0.19	950	23.3	57.0	3.8	32.5
		0.20 to 0.25	1100	24.2			
		0.30 to 1.00	1200	25.6			
22135	13.5 / 0.34	0.15 to 0.19	800	23.5	57.0	3.8	32.5
		0.20 to 0.25	850	22.9			
		0.30 to 1.00	950	24.5			
22150	15.0 / 0.38	0.15 to 0.19	700	22.6	57.0	3.8	32.5
		0.20 to 0.25	800	23.8			
		0.30 to 1.00	850	24.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12125	1000	12	109 x 109 x 110	220	480	480000
	1100			206		528000
	1200			197		576000
12150	800	12	109 x 109 x 110	188	480	384000
	900			184		432000
	900			178		432000
16125	1000	12	109 x 109 x 110	254	480	480000
	1150			266		552000
	1300			282		624000
16150	950	12	109 x 109 x 110	290	480	456000
	1100			300		528000
	1200			317		576000
22135	800	12	109 x 109 x 110	292	480	384000
	850			285		408000
	950			304		456000
22150	700	12	109 x 109 x 110	281	480	336000
	800			296		384000
	850			303		408000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™	DNPC

Commercial diameter (mm)	
12	12
16	16
22	22

Wall thickness (mil) / (mm)	
12.5 / 0.31	125
13.5 / 0.34	135
15.0 / 0.35	150

Flow rate (l/h)	
0.4	0.4L/H
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

DNPC 16125 1.0L/H 0.30M 1300M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™	0.40	0.26	0.31	0.36	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	107	146	176	202	223	241	256	269	280
	1.5	132	182	225	261	293	321	346	367	387
	2.0	151	210	260	305	345	380	412	441	467
	2.5	166	232	290	341	387	428	466	500	533
Flat terrain	1.0	121	172	220	264	305	345	382	419	453
	1.5	144	205	262	315	365	412	458	501	543
	2.0	161	230	294	354	410	464	515	564	611
	2.5	175	251	321	387	448	507	562	616	667
Downhill 2%	1.0	134	199	264	328	392	456	514	572	627
	1.5	155	228	300	371	439	508	572	634	695
	2.0	171	251	328	404	478	550	618	685	750
	2.5	185	270	353	433	511	587	659	729	797

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	116	143	166	185	202	218	230	242
	1.5	103	144	179	210	238	263	285	305	323
	2.0	117	164	206	243	277	307	334	360	384
	2.5	129	181	228	270	308	343	375	405	433
Flat terrain	1.0	92	132	168	203	235	265	294	322	349
	1.5	110	157	201	242	281	317	352	385	418
	2.0	123	176	226	272	316	357	396	434	470
	2.5	134	193	246	297	344	389	433	473	514
Downhill 2%	1.0	100	148	195	241	286	331	375	419	463
	1.5	117	171	224	275	325	374	422	469	516
	2.0	129	189	246	302	355	407	459	509	559
	2.5	140	204	265	324	381	437	491	545	596

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	79	98	114	128	141	153	163	172
	1.5	72	101	126	149	169	188	206	221	236
	2.0	82	116	146	174	199	222	243	263	281
	2.5	91	129	162	194	222	249	273	296	318
	3.0	98	139	176	211	242	271	298	324	348
Flat terrain	1.0	61	88	112	135	156	176	196	214	232
	1.5	75	108	138	166	193	218	242	265	287
	2.0	85	122	157	189	220	249	276	302	328
	2.5	94	134	172	208	241	273	303	332	360
	3.0	101	145	186	224	260	294	326	358	388
Downhill 2%	1.0	65	96	126	156	184	212	240	268	295
	1.5	79	115	150	184	216	248	279	310	340
	2.0	89	129	168	205	241	275	309	342	375
	2.5	97	140	182	222	260	298	334	369	404
	3.0	103	150	194	237	278	317	355	393	429

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	60	75	88	100	111	121	130	138
	1.5	53	75	95	113	130	144	158	172	184
	2.0	61	87	110	131	151	169	186	202	217
	2.5	67	96	122	146	167	188	207	225	243
	3.0	73	104	132	158	182	204	226	246	265
Flat terrain	1.0	45	65	82	99	115	130	145	158	171
	1.5	55	79	102	123	142	160	178	195	212
	2.0	63	90	116	139	161	183	203	223	242
	2.5	69	99	127	153	178	201	224	246	266
	3.0	74	107	136	165	191	217	241	265	287
Downhill 2%	1.0	47	69	90	111	130	150	169	187	206
	1.5	57	83	108	132	155	177	198	220	241
	2.0	64	94	121	148	173	197	222	245	268
	2.5	70	102	132	161	188	215	240	266	290
	3.0	75	109	141	172	201	230	257	284	309

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	52	66	78	88	98	107	116	123
	1.5	46	66	83	99	113	127	139	151	163
	2.0	53	75	96	114	131	148	162	177	190
	2.5	58	83	106	127	146	164	182	197	213
	3.5	63	90	114	137	158	179	197	215	232
Flat terrain	1.0	39	56	71	86	100	113	125	137	149
	1.5	48	68	88	106	123	139	154	169	184
	2.0	54	78	100	121	140	158	176	194	209
	2.5	59	86	110	133	154	174	194	212	230
	3.5	64	92	118	143	166	188	209	229	248
Downhill 2%	1.0	41	59	77	95	111	127	143	159	174
	1.5	49	71	92	113	133	151	170	187	205
	2.0	55	80	104	127	148	169	190	210	229
	2.5	61	88	114	138	161	184	206	228	248
	3.5	65	94	122	148	173	197	220	243	265

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	29	41	51	61	70	78	86	93	100
	1.5	36	51	64	77	89	100	110	120	129
	2.0	41	58	74	89	103	116	127	140	150
	2.5	45	64	82	98	113	128	142	155	167
	3.5	48	69	88	106	123	139	154	167	181
Flat terrain	1.0	30	43	55	66	77	87	96	105	114
	1.5	37	53	67	82	94	107	119	131	141
	2.0	42	60	77	93	107	122	135	149	161
	2.5	46	65	84	102	118	134	149	164	177
	3.5	49	71	90	110	127	144	161	176	191
Downhill 2%	1.0	31	45	58	71	83	95	107	119	130
	1.5	37	54	70	86	100	114	128	141	154
	2.0	42	61	79	96	113	128	143	158	173
	2.5	46	67	86	105	123	140	156	172	188
	3.5	50	72	93	113	131	150	167	185	201

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	23	32	40	48	54	60	66	71	76
	1.5	30	43	54	65	75	84	93	101	109
	2.0	35	50	64	77	89	100	110	121	130
	2.5	39	56	72	86	100	112	124	135	146
	3.5	43	61	78	94	109	123	135	149	160
Flat terrain	1.0	23	34	43	52	60	68	76	83	90
	1.5	31	44	57	69	80	90	101	110	119
	2.0	36	52	66	80	93	105	117	129	139
	2.5	40	57	74	89	103	117	130	143	155
	3.5	43	62	80	96	112	127	142	155	168
Downhill 2%	1.0	24	36	46	57	67	76	86	95	104
	1.5	32	46	59	72	85	97	108	120	131
	2.0	36	53	68	83	97	111	124	137	149
	2.5	40	59	76	92	107	122	137	150	164
	3.5	44	63	82	99	116	132	147	162	176

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	45	52	57	63	68	73
	1.5	29	41	52	62	71	80	88	96	103
	2.0	33	48	61	73	84	95	105	114	124
	2.5	37	53	68	82	94	106	118	129	139
	3.5	40	58	74	89	103	116	129	140	152
Flat terrain	1.0	22	32	41	49	57	64	72	79	85
	1.5	29	42	54	65	76	85	95	104	113
	2.0	34	49	63	76	88	100	111	122	132
	2.5	38	54	70	84	98	111	123	136	147
	3.5	41	59	76	91	106	120	134	147	160
Downhill 2%	1.0	23	34	44	54	63	72	81	89	98
	1.5	30	44	56	69	80	91	102	113	123
	2.0	35	50	65	79	92	105	117	130	141
	2.5	38	55	72	87	101	116	129	142	155
	3.5	41	60	77	94	109	125	139	153	167

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	193	240	272	295	311	323	332	338	344
	1.4	238	306	355	393	422	445	463	479	491
	1.8	274	357	420	471	512	545	573	596	616
	2.2	303	399	475	536	587	630	666	698	724
Flat terrain	1.0	247	343	429	507	580	648	714	775	835
	1.4	287	398	498	590	675	755	830	903	972
	1.8	318	442	554	656	750	839	924	1004	1082
	2.2	345	479	600	711	814	911	1002	1090	1174
Downhill 2%	1.0	304	453	588	717	842	964	1083	1201	1317
	1.4	337	495	640	778	911	1041	1168	1292	1414
	1.8	364	531	684	830	970	1106	1239	1369	1496
	2.2	387	562	722	875	1021	1163	1302	1436	1569

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	157	202	234	259	277	293	304	314	322
	1.4	191	251	297	334	364	389	410	428	443
	1.8	218	289	346	393	433	466	495	521	543
	2.2	240	320	386	442	490	531	566	599	627
Flat terrain	1.0	190	264	330	391	446	500	550	598	643
	1.4	220	306	383	454	520	582	640	696	749
	1.8	244	340	426	505	578	646	712	774	834
	2.2	264	368	462	547	626	701	772	840	905
Downhill 2%	1.0	223	329	432	528	618	706	791	875	957
	1.4	250	363	473	576	673	767	858	947	1034
	1.8	271	392	508	617	719	818	914	1008	1100
	2.2	289	417	538	653	760	863	963	1061	1157

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	108	140	166	185	201	214	225	233	241
	1.4	135	179	215	245	271	292	310	327	341
	1.8	155	208	252	290	322	351	376	399	419
	2.2	171	232	282	326	365	399	430	457	482
Flat terrain	1.0	126	175	219	260	297	333	366	398	428
	1.4	150	209	262	311	356	398	438	477	514
	1.8	169	236	295	350	401	449	494	537	579
	2.2	184	257	322	382	438	491	540	588	633
Downhill 2%	1.0	144	211	276	339	401	463	523	584	644
	1.4	166	240	311	379	446	511	576	639	702
	1.8	183	263	339	412	482	552	619	685	751
	2.2	197	283	363	440	514	586	656	725	793

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	110	132	150	166	179	190	200	208
	1.4	102	138	168	193	215	235	253	268	283
	1.8	117	159	194	226	253	277	300	320	339
	2.2	129	176	216	252	283	312	338	362	384
Flat terrain	1.0	93	129	162	192	220	246	270	294	317
	1.4	111	154	194	230	263	294	324	353	380
	1.8	124	173	218	258	296	332	366	398	428
	2.2	136	189	238	282	323	363	399	435	468
Downhill 2%	1.0	103	149	192	235	277	317	357	397	436
	1.4	119	171	220	267	312	356	399	442	483
	1.8	132	188	242	292	340	388	434	478	522
	2.2	143	203	260	314	365	414	462	509	556

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	73	98	118	135	149	162	173	183	192
	1.4	89	121	148	172	192	210	226	242	256
	1.8	102	139	171	199	224	246	267	286	303
	2.2	112	153	189	221	250	276	300	322	342
Flat terrain	1.0	80	112	140	166	190	213	234	255	275
	1.4	96	134	168	199	227	255	281	306	329
	1.8	107	150	188	224	256	287	317	345	371
	2.2	117	164	206	244	280	314	346	376	406
Downhill 2%	1.0	88	126	163	199	233	267	299	332	364
	1.4	102	146	187	227	265	301	337	373	407
	1.8	113	161	206	249	290	329	367	405	442
	2.2	122	174	222	268	311	353	394	433	472

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	77	94	109	122	133	143	153	161
	1.4	70	95	117	137	154	169	184	197	210
	1.8	79	109	134	158	178	197	214	230	246
	2.2	87	120	148	175	197	219	239	257	275
Flat terrain	1.0	62	86	108	128	146	164	181	196	212
	1.4	73	103	129	153	175	197	217	236	254
	1.8	82	115	145	172	197	221	244	266	286
	2.2	90	126	158	188	216	242	266	291	313
Downhill 2%	1.0	66	95	121	147	172	196	219	242	265
	1.4	77	110	140	170	197	224	250	275	300
	1.8	86	122	155	187	217	246	274	302	328
	2.2	93	132	168	202	234	265	294	324	352

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	44	60	72	83	92	101	108	114	120
	1.4	58	80	98	114	128	141	153	164	174
	1.8	68	93	115	135	152	169	184	198	211
	2.2	75	104	129	152	172	191	208	224	240
Flat terrain	1.0	48	68	84	101	115	129	142	154	166
	1.4	61	86	108	128	147	165	181	197	213
	1.8	71	99	124	148	169	190	209	228	245
	2.2	78	109	137	163	187	210	232	252	272
Downhill 2%	1.0	52	75	97	118	138	158	178	196	215
	1.4	65	92	118	143	166	188	210	232	253
	1.8	74	104	133	161	186	211	235	258	281
	2.2	81	114	146	175	203	230	255	281	305

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	42	57	69	80	89	97	104	111	116
	1.4	55	76	93	109	122	135	146	157	167
	1.8	64	89	110	129	146	161	175	189	201
	2.2	72	99	123	145	164	182	198	214	229
Flat terrain	1.0	46	64	80	95	109	122	134	147	158
	1.4	58	81	102	122	139	156	172	187	202
	1.8	67	94	118	140	161	180	198	216	233
	2.2	74	104	130	155	178	200	220	239	258
Downhill 2%	1.0	50	71	92	111	130	148	166	185	202
	1.4	61	87	111	135	157	178	198	219	238
	1.8	70	99	126	152	176	199	222	244	265
	2.2	76	108	138	166	191	217	241	265	288

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	281	319	338	350	356	361	364	366	368
	1.6	406	487	538	572	595	611	622	632	638
	2.2	496	614	695	752	794	825	850	869	884
	2.4	568	716	823	903	964	1012	1050	1080	1105
Flat terrain	1.0	455	622	770	905	1030	1147	1258	1364	1465
	1.6	559	765	948	1115	1270	1415	1552	1683	1809
	2.2	636	872	1080	1271	1447	1614	1770	1920	2064
	2.4	698	958	1188	1398	1593	1775	1949	2114	2272
Downhill 2%	1.0	628	913	1186	1451	1709	1963	2213	2459	2702
	1.6	707	1019	1315	1601	1877	2148	2414	2675	2932
	2.2	770	1103	1418	1720	2012	2297	2576	2849	3118
	2.4	822	1174	1506	1822	2128	2424	2714	2998	3277

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	243	287	313	330	340	348	353	357	360
	1.6	337	419	475	515	545	567	584	598	609
	2.2	405	515	596	657	706	744	775	800	821
	2.4	459	592	693	773	838	891	936	973	1005
Flat terrain	1.0	350	479	593	697	793	884	970	1051	1130
	1.6	430	589	730	859	978	1091	1197	1298	1395
	2.2	489	670	832	979	1115	1243	1365	1481	1591
	2.4	537	737	914	1077	1227	1369	1502	1630	1752
Downhill 2%	1.0	463	669	864	1052	1235	1414	1590	1762	1932
	1.6	525	752	966	1171	1369	1561	1750	1934	2116
	2.2	574	818	1047	1265	1475	1679	1878	2073	2264
	2.4	616	874	1116	1346	1566	1780	1988	2191	2390

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	172	209	232	249	259	267	274	278	281
	1.6	246	313	363	401	431	454	474	490	503
	2.2	296	385	454	509	555	593	626	653	677
	2.4	336	441	525	595	653	704	747	786	819
Flat terrain	1.0	232	318	394	464	527	588	645	699	752
	1.6	296	406	504	593	676	753	826	896	964
	2.2	341	468	581	685	781	870	955	1037	1115
	2.4	377	518	644	758	865	965	1059	1149	1236
Downhill 2%	1.0	295	436	576	710	829	946	1059	1171	1281
	1.6	347	503	654	798	928	1056	1179	1300	1418
	2.2	386	554	715	868	1007	1143	1274	1403	1529
	2.4	418	597	766	927	1075	1218	1356	1491	1623

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	138	173	198	217	231	242	251	257	263
	1.6	191	248	293	330	361	386	407	427	442
	2.2	227	299	359	408	451	487	520	548	574
	2.4	255	340	410	470	521	568	609	645	679
Flat terrain	1.0	171	235	291	343	390	435	478	518	557
	1.6	218	299	372	438	499	557	611	663	713
	2.2	251	345	429	506	577	643	706	767	825
	2.4	277	382	475	560	639	713	783	851	914
Downhill 2%	1.0	205	299	391	481	570	658	738	813	887
	1.6	246	352	454	552	648	742	828	911	992
	2.2	276	392	502	607	709	809	901	989	1076
	2.4	300	425	542	654	761	865	962	1056	1147

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	123	157	182	201	215	228	237	245	252
	1.6	168	221	263	298	327	352	374	393	410
	2.2	199	265	318	365	404	440	470	499	524
	2.4	223	299	362	417	465	508	546	581	613
Flat terrain	1.0	148	203	252	297	338	377	414	449	482
	1.6	188	259	322	380	433	482	530	575	618
	2.2	217	299	372	438	500	558	613	665	715
	2.4	240	331	411	485	554	618	678	737	792
Downhill 2%	1.0	174	252	327	401	473	545	616	686	748
	1.6	209	299	384	465	544	622	698	772	840
	2.2	235	334	426	514	599	682	762	841	913
	2.4	257	363	462	555	645	732	817	899	976

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	99	128	152	170	185	198	209	218	226
	1.6	133	176	212	243	269	293	314	332	349
	2.2	156	209	254	294	328	358	386	412	435
	2.4	175	236	288	333	374	410	444	474	503
Flat terrain	1.0	114	156	194	229	260	291	319	347	372
	1.6	145	199	248	292	334	372	409	444	477
	2.2	167	230	286	338	385	430	472	513	551
	2.4	184	254	317	374	427	476	523	568	611
Downhill 2%	1.0	129	185	238	291	341	391	440	489	537
	1.6	157	223	284	343	400	454	509	562	613
	2.2	178	251	318	383	444	503	561	617	673
	2.4	194	273	346	415	481	544	605	665	723

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	76	97	113	126	136	145	151	158	162
	1.6	112	149	180	206	228	248	265	281	295
	2.2	136	182	222	256	286	313	338	360	380
	2.4	154	207	254	294	330	363	393	420	446
Flat terrain	1.0	89	123	152	180	205	228	250	272	292
	1.6	123	169	210	248	283	316	346	376	405
	2.2	145	200	248	293	334	373	410	446	479
	2.4	162	223	278	328	374	418	459	499	537
Downhill 2%	1.0	103	149	193	237	278	320	362	402	443
	1.6	133	189	242	292	340	387	433	478	523
	2.2	154	217	276	331	385	435	486	535	582
	2.4	170	239	303	363	420	475	528	581	631

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	72	93	109	122	132	141	148	154	159
	1.6	107	143	172	197	219	238	255	271	285
	2.2	129	174	212	245	274	300	323	346	365
	2.4	146	197	242	281	315	347	375	402	427
Flat terrain	1.0	85	116	144	170	194	216	238	257	277
	1.6	117	161	200	236	268	300	329	357	384
	2.2	137	189	236	278	317	354	389	422	454
	2.4	153	212	264	311	355	396	436	473	509
Downhill 2%	1.0	97	140	181	222	260	300	338	375	413
	1.6	126	179	228	275	320	364	406	449	490
	2.2	145	205	260	312	362	410	457	502	547
	2.4	161	226	286	343	396	448	498	546	594

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

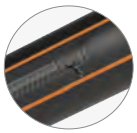
DripNet PC™ AS TWD

Compact pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism for few-season drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand, and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation, and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.



Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in vegetables and industrial crops.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thin-wall driplines: 0.31, 0.34 and 0.38 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

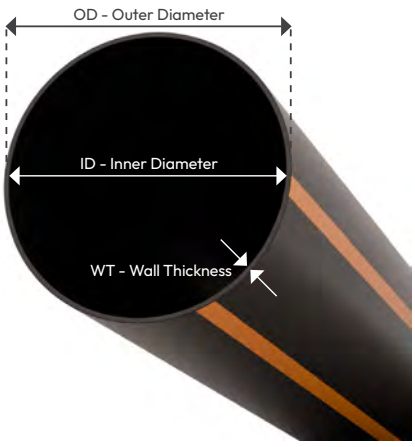


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12125	11.80	12.5 / 0.31	12.42	2.5	2.9	1.35
12150	11.80	15.0 / 0.38	12.56	3.0	3.5	1.35
16125	16.20	12.5 / 0.31	16.82	1.8	2.1	0.40
16150	16.20	15.0 / 0.38	16.96	2.2	2.5	0.40
22135	22.20	13.5 / 0.34	22.88	1.5	1.7	0.18
22150	22.20	15.0 / 0.38	22.96	1.8	2.1	0.18



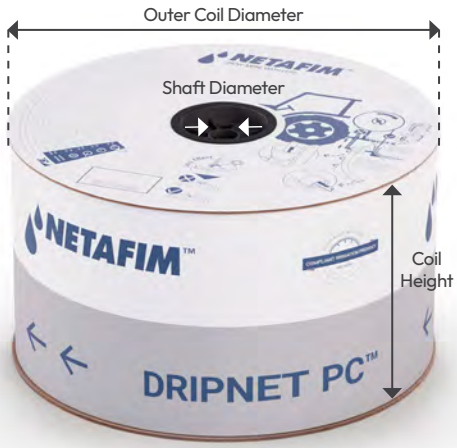
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12125	12.5 / 0.31	0.15 to 0.19	1000	17.5	52.0	3.8	32.5
		15.0 / 0.38	1100	16.3			
		12.5 / 0.31	1200	15.6			
12150	15.0 / 0.38	0.15 to 0.19	800	14.8	52.0	3.8	32.5
		13.5 / 0.34	900	14.5			
		15.0 / 0.38	900	14.0			
16125	12.5 / 0.31	0.15 to 0.19	1000	20.3	57.0	3.8	32.5
		15.0 / 0.38	1150	21.3			
		13.5 / 0.34	1300	22.7			
16150	15.0 / 0.38	0.15 to 0.19	950	23.3	57.0	3.8	32.5
		0.20 to 0.25	1100	24.2			
		0.30 to 1.00	1200	25.6			
22135	13.5 / 0.34	0.15 to 0.19	800	23.5	57.0	3.8	32.5
		15.0 / 0.38	850	22.9			
		0.30 to 1.00	950	24.5			
22150	15.0 / 0.38	0.15 to 0.19	700	22.6	57.0	3.8	32.5
		0.20 to 0.25	800	23.8			
		0.30 to 1.00	850	24.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12125	1000	12	109 x 109 x 110	220	480	480000
	1100			206		528000
	1200			197		576000
12150	800	12	109 x 109 x 110	188	480	384000
	900			184		432000
	900			178		432000
16125	1000	12	109 x 109 x 110	254	480	480000
	1150			266		552000
	1300			282		624000
16150	950	12	109 x 109 x 110	290	480	456000
	1100			300		528000
	1200			317		576000
22135	800	12	109 x 109 x 110	292	480	384000
	850			285		408000
	950			304		456000
22150	700	12	109 x 109 x 110	281	480	336000
	800			296		384000
	850			303		408000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™ AS	DNPC AS

Commercial diameter (mm)	
12	12
16	16
22	22

Wall thickness (mil) / (mm)	
12.5 / 0.31	125
13.5 / 0.34	135
15.0 / 0.35	150

Flow rate (l/h)	
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

DNPC AS 16125 1.0L/H 0.30M 1300M FL

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ AS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™ AS	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	116	143	166	185	202	218	230	242
	1.5	103	144	179	210	238	263	285	305	323
	2.0	117	164	206	243	277	307	334	360	384
	2.5	129	181	228	270	308	343	375	405	433
Flat terrain	1.0	92	132	168	203	235	265	294	322	349
	1.5	110	157	201	242	281	317	352	385	418
	2.0	123	176	226	272	316	357	396	434	470
	2.5	134	193	246	297	344	389	433	473	514
Downhill 2%	1.0	100	148	195	241	286	331	375	419	463
	1.5	117	171	224	275	325	374	422	469	516
	2.0	129	189	246	302	355	407	459	509	559
	2.5	140	204	265	324	381	437	491	545	596

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	79	98	114	128	141	153	163	172
	1.5	72	101	126	149	169	188	206	221	236
	2.0	82	116	146	174	199	222	243	263	281
	2.5	91	129	162	194	222	249	273	296	318
	3.0	98	139	176	211	242	271	298	324	348
Flat terrain	1.0	61	88	112	135	156	176	196	214	232
	1.5	75	108	138	166	193	218	242	265	287
	2.0	85	122	157	189	220	249	276	302	328
	2.5	94	134	172	208	241	273	303	332	360
	3.0	101	145	186	224	260	294	326	358	388
Downhill 2%	1.0	65	96	126	156	184	212	240	268	295
	1.5	79	115	150	184	216	248	279	310	340
	2.0	89	129	168	205	241	275	309	342	375
	2.5	97	140	182	222	260	298	334	369	404
	3.0	103	150	194	237	278	317	355	393	429

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	60	75	88	100	111	121	130	138
	1.5	53	75	95	113	130	144	158	172	184
	2.0	61	87	110	131	151	169	186	202	217
	2.5	67	96	122	146	167	188	207	225	243
	3.0	73	104	132	158	182	204	226	246	265
Flat terrain	1.0	45	65	82	99	115	130	145	158	171
	1.5	55	79	102	123	142	160	178	195	212
	2.0	63	90	116	139	161	183	203	223	242
	2.5	69	99	127	153	178	201	224	246	266
	3.0	74	107	136	165	191	217	241	265	287
Downhill 2%	1.0	47	69	90	111	130	150	169	187	206
	1.5	57	83	108	132	155	177	198	220	241
	2.0	64	94	121	148	173	197	222	245	268
	2.5	70	102	132	161	188	215	240	266	290
	3.0	75	109	141	172	201	230	257	284	309

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	52	66	78	88	98	107	116	123
	1.5	46	66	83	99	113	127	139	151	163
	2.0	53	75	96	114	131	148	162	177	190
	2.5	58	83	106	127	146	164	182	197	213
	3.5	63	90	114	137	158	179	197	215	232
Flat terrain	1.0	39	56	71	86	100	113	125	137	149
	1.5	48	68	88	106	123	139	154	169	184
	2.0	54	78	100	121	140	158	176	194	209
	2.5	59	86	110	133	154	174	194	212	230
	3.5	64	92	118	143	166	188	209	229	248
Downhill 2%	1.0	41	59	77	95	111	127	143	159	174
	1.5	49	71	92	113	133	151	170	187	205
	2.0	55	80	104	127	148	169	190	210	229
	2.5	61	88	114	138	161	184	206	228	248
	3.5	65	94	122	148	173	197	220	243	265

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	29	41	51	61	70	78	86	93	100
	1.5	36	51	64	77	89	100	110	120	129
	2.0	41	58	74	89	103	116	127	140	150
	2.5	45	64	82	98	113	128	142	155	167
	3.5	48	69	88	106	123	139	154	167	181
Flat terrain	1.0	30	43	55	66	77	87	96	105	114
	1.5	37	53	67	82	94	107	119	131	141
	2.0	42	60	77	93	107	122	135	149	161
	2.5	46	65	84	102	118	134	149	164	177
	3.5	49	71	90	110	127	144	161	176	191
Downhill 2%	1.0	31	45	58	71	83	95	107	119	130
	1.5	37	54	70	86	100	114	128	141	154
	2.0	42	61	79	96	113	128	143	158	173
	2.5	46	67	86	105	123	140	156	172	188
	3.5	50	72	93	113	131	150	167	185	201

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	23	32	40	48	54	60	66	71	76
	1.5	30	43	54	65	75	84	93	101	109
	2.0	35	50	64	77	89	100	110	121	130
	2.5	39	56	72	86	100	112	124	135	146
	3.5	43	61	78	94	109	123	135	149	160
Flat terrain	1.0	23	34	43	52	60	68	76	83	90
	1.5	31	44	57	69	80	90	101	110	119
	2.0	36	52	66	80	93	105	117	129	139
	2.5	40	57	74	89	103	117	130	143	155
	3.5	43	62	80	96	112	127	142	155	168
Downhill 2%	1.0	24	36	46	57	67	76	86	95	104
	1.5	32	46	59	72	85	97	108	120	131
	2.0	36	53	68	83	97	111	124	137	149
	2.5	40	59	76	92	107	122	137	150	164
	3.5	44	63	82	99	116	132	147	162	176

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	45	52	57	63	68	73
	1.5	29	41	52	62	71	80	88	96	103
	2.0	33	48	61	73	84	95	105	114	124
	2.5	37	53	68	82	94	106	118	129	139
	3.5	40	58	74	89	103	116	129	140	152
Flat terrain	1.0	22	32	41	49	57	64	72	79	85
	1.5	29	42	54	65	76	85	95	104	113
	2.0	34	49	63	76	88	100	111	122	132
	2.5	38	54	70	84	98	111	123	136	147
	3.5	41	59	76	91	106	120	134	147	160
Downhill 2%	1.0	23	34	44	54	63	72	81	89	98
	1.5	30	44	56	69	80	91	102	113	123
	2.0	35	50	65	79	92	105	117	130	141
	2.5	38	55	72	87	101	116	129	142	155
	3.5	41	60	77	94	109	125	139	153	167

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	157	202	234	259	277	293	304	314	322
	1.4	191	251	297	334	364	389	410	428	443
	1.8	218	289	346	393	433	466	495	521	543
	2.2	240	320	386	442	490	531	566	599	627
Flat terrain	1.0	190	264	330	391	446	500	550	598	643
	1.4	220	306	383	454	520	582	640	696	749
	1.8	244	340	426	505	578	646	712	774	834
	2.2	264	368	462	547	626	701	772	840	905
Downhill 2%	1.0	223	329	432	528	618	706	791	875	957
	1.4	250	363	473	576	673	767	858	947	1034
	1.8	271	392	508	617	719	818	914	1008	1100
	2.2	289	417	538	653	760	863	963	1061	1157

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	108	140	166	185	201	214	225	233	241
	1.4	135	179	215	245	271	292	310	327	341
	1.8	155	208	252	290	322	351	376	399	419
	2.2	171	232	282	326	365	399	430	457	482
Flat terrain	1.0	126	175	219	260	297	333	366	398	428
	1.4	150	209	262	311	356	398	438	477	514
	1.8	169	236	295	350	401	449	494	537	579
	2.2	184	257	322	382	438	491	540	588	633
Downhill 2%	1.0	144	211	276	339	401	463	523	584	644
	1.4	166	240	311	379	446	511	576	639	702
	1.8	183	263	339	412	482	552	619	685	751
	2.2	197	283	363	440	514	586	656	725	793

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	110	132	150	166	179	190	200	208
	1.4	102	138	168	193	215	235	253	268	283
	1.8	117	159	194	226	253	277	300	320	339
	2.2	129	176	216	252	283	312	338	362	384
Flat terrain	1.0	93	129	162	192	220	246	270	294	317
	1.4	111	154	194	230	263	294	324	353	380
	1.8	124	173	218	258	296	332	366	398	428
	2.2	136	189	238	282	323	363	399	435	468
Downhill 2%	1.0	103	149	192	235	277	317	357	397	436
	1.4	119	171	220	267	312	356	399	442	483
	1.8	132	188	242	292	340	388	434	478	522
	2.2	143	203	260	314	365	414	462	509	556

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	73	98	118	135	149	162	173	183	192
	1.4	89	121	148	172	192	210	226	242	256
	1.8	102	139	171	199	224	246	267	286	303
	2.2	112	153	189	221	250	276	300	322	342
Flat terrain	1.0	80	112	140	166	190	213	234	255	275
	1.4	96	134	168	199	227	255	281	306	329
	1.8	107	150	188	224	256	287	317	345	371
	2.2	117	164	206	244	280	314	346	376	406
Downhill 2%	1.0	88	126	163	199	233	267	299	332	364
	1.4	102	146	187	227	265	301	337	373	407
	1.8	113	161	206	249	290	329	367	405	442
	2.2	122	174	222	268	311	353	394	433	472

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	77	94	109	122	133	143	153	161
	1.4	70	95	117	137	154	169	184	197	210
	1.8	79	109	134	158	178	197	214	230	246
	2.2	87	120	148	175	197	219	239	257	275
Flat terrain	1.0	62	86	108	128	146	164	181	196	212
	1.4	73	103	129	153	175	197	217	236	254
	1.8	82	115	145	172	197	221	244	266	286
	2.2	90	126	158	188	216	242	266	291	313
Downhill 2%	1.0	66	95	121	147	172	196	219	242	265
	1.4	77	110	140	170	197	224	250	275	300
	1.8	86	122	155	187	217	246	274	302	328
	2.2	93	132	168	202	234	265	294	324	352

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	44	60	72	83	92	101	108	114	120
	1.4	58	80	98	114	128	141	153	164	174
	1.8	68	93	115	135	152	169	184	198	211
	2.2	75	104	129	152	172	191	208	224	240
Flat terrain	1.0	48	68	84	101	115	129	142	154	166
	1.4	61	86	108	128	147	165	181	197	213
	1.8	71	99	124	148	169	190	209	228	245
	2.2	78	109	137	163	187	210	232	252	272
Downhill 2%	1.0	52	75	97	118	138	158	178	196	215
	1.4	65	92	118	143	166	188	210	232	253
	1.8	74	104	133	161	186	211	235	258	281
	2.2	81	114	146	175	203	230	255	281	305

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	42	57	69	80	89	97	104	111	116
	1.4	55	76	93	109	122	135	146	157	167
	1.8	64	89	110	129	146	161	175	189	201
	2.2	72	99	123	145	164	182	198	214	229
Flat terrain	1.0	46	64	80	95	109	122	134	147	158
	1.4	58	81	102	122	139	156	172	187	202
	1.8	67	94	118	140	161	180	198	216	233
	2.2	74	104	130	155	178	200	220	239	258
Downhill 2%	1.0	50	71	92	111	130	148	166	185	202
	1.4	61	87	111	135	157	178	198	219	238
	1.8	70	99	126	152	176	199	222	244	265
	2.2	76	108	138	166	191	217	241	265	288

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	243	287	313	330	340	348	353	357	360
	1.6	337	419	475	515	545	567	584	598	609
	2.2	405	515	596	657	706	744	775	800	821
	2.4	459	592	693	773	838	891	936	973	1005
Flat terrain	1.0	350	479	593	697	793	884	970	1051	1130
	1.6	430	589	730	859	978	1091	1197	1298	1395
	2.2	489	670	832	979	1115	1243	1365	1481	1591
	2.4	537	737	914	1077	1227	1369	1502	1630	1752
Downhill 2%	1.0	463	669	864	1052	1235	1414	1590	1762	1932
	1.6	525	752	966	1171	1369	1561	1750	1934	2116
	2.2	574	818	1047	1265	1475	1679	1878	2073	2264
	2.4	616	874	1116	1346	1566	1780	1988	2191	2390

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	172	209	232	249	259	267	274	278	281
	1.6	246	313	363	401	431	454	474	490	503
	2.2	296	385	454	509	555	593	626	653	677
	2.4	336	441	525	595	653	704	747	786	819
Flat terrain	1.0	232	318	394	464	527	588	645	699	752
	1.6	296	406	504	593	676	753	826	896	964
	2.2	341	468	581	685	781	870	955	1037	1115
	2.4	377	518	644	758	865	965	1059	1149	1236
Downhill 2%	1.0	295	436	576	710	829	946	1059	1171	1281
	1.6	347	503	654	798	928	1056	1179	1300	1418
	2.2	386	554	715	868	1007	1143	1274	1403	1529
	2.4	418	597	766	927	1075	1218	1356	1491	1623

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	138	173	198	217	231	242	251	257	263
	1.6	191	248	293	330	361	386	407	427	442
	2.2	227	299	359	408	451	487	520	548	574
	2.4	255	340	410	470	521	568	609	645	679
Flat terrain	1.0	171	235	291	343	390	435	478	518	557
	1.6	218	299	372	438	499	557	611	663	713
	2.2	251	345	429	506	577	643	706	767	825
	2.4	277	382	475	560	639	713	783	851	914
Downhill 2%	1.0	205	299	391	481	570	658	738	813	887
	1.6	246	352	454	552	648	742	828	911	992
	2.2	276	392	502	607	709	809	901	989	1076
	2.4	300	425	542	654	761	865	962	1056	1147

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	123	157	182	201	215	228	237	245	252
	1.6	168	221	263	298	327	352	374	393	410
	2.2	199	265	318	365	404	440	470	499	524
	2.4	223	299	362	417	465	508	546	581	613
Flat terrain	1.0	148	203	252	297	338	377	414	449	482
	1.6	188	259	322	380	433	482	530	575	618
	2.2	217	299	372	438	500	558	613	665	715
	2.4	240	331	411	485	554	618	678	737	792
Downhill 2%	1.0	174	252	327	401	473	545	616	686	748
	1.6	209	299	384	465	544	622	698	772	840
	2.2	235	334	426	514	599	682	762	841	913
	2.4	257	363	462	555	645	732	817	899	976

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	99	128	152	170	185	198	209	218	226
	1.6	133	176	212	243	269	293	314	332	349
	2.2	156	209	254	294	328	358	386	412	435
	2.4	175	236	288	333	374	410	444	474	503
Flat terrain	1.0	114	156	194	229	260	291	319	347	372
	1.6	145	199	248	292	334	372	409	444	477
	2.2	167	230	286	338	385	430	472	513	551
	2.4	184	254	317	374	427	476	523	568	611
Downhill 2%	1.0	129	185	238	291	341	391	440	489	537
	1.6	157	223	284	343	400	454	509	562	613
	2.2	178	251	318	383	444	503	561	617	673
	2.4	194	273	346	415	481	544	605	665	723

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	76	97	113	126	136	145	151	158	162
	1.6	112	149	180	206	228	248	265	281	295
	2.2	136	182	222	256	286	313	338	360	380
	2.4	154	207	254	294	330	363	393	420	446
Flat terrain	1.0	89	123	152	180	205	228	250	272	292
	1.6	123	169	210	248	283	316	346	376	405
	2.2	145	200	248	293	334	373	410	446	479
	2.4	162	223	278	328	374	418	459	499	537
Downhill 2%	1.0	103	149	193	237	278	320	362	402	443
	1.6	133	189	242	292	340	387	433	478	523
	2.2	154	217	276	331	385	435	486	535	582
	2.4	170	239	303	363	420	475	528	581	631

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

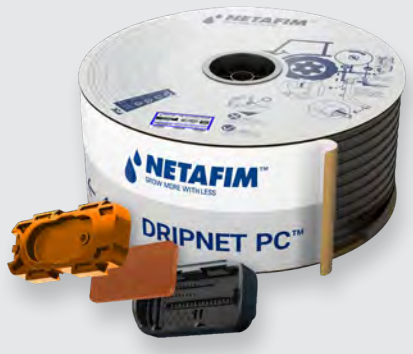
DripNet PC™ AS TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	72	93	109	122	132	141	148	154	159
	1.6	107	143	172	197	219	238	255	271	285
	2.2	129	174	212	245	274	300	323	346	365
	2.4	146	197	242	281	315	347	375	402	427
Flat terrain	1.0	85	116	144	170	194	216	238	257	277
	1.6	117	161	200	236	268	300	329	357	384
	2.2	137	189	236	278	317	354	389	422	454
	2.4	153	212	264	311	355	396	436	473	509
Downhill 2%	1.0	97	140	181	222	260	300	338	375	413
	1.6	126	179	228	275	320	364	406	449	490
	2.2	145	205	260	312	362	410	457	502	547
	2.4	161	226	286	343	396	448	498	546	594

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

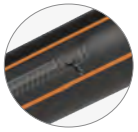
DripNet PC™AS XR TWD

Compact pressure-compensated dripper designed for few-season drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Enhanced root intrusion resistance (XR)	Provides active root intrusion protection through a patented root-inhibiting barrier integrated into the dripper cover. Delivers long-term performance through non-migrating active ingredients, reducing reliance on chemical root control methods.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring long-term system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.



Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in applications where water supply is restricted due to hydraulic limitations or crop requirements, and where there is a potential risk of root intrusion.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thin-wall driplines: 0.31, 0.34 and 0.38 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

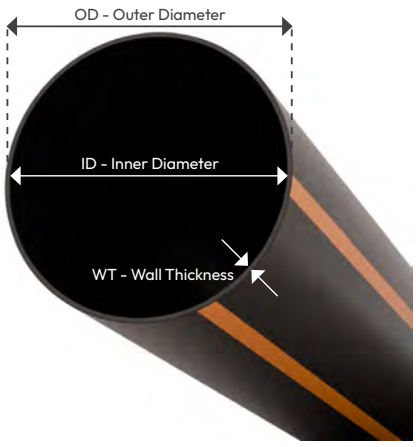


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12125	11.80	12.5 / 0.31	12.42	2.5	2.9	1.35
12150	11.80	15.0 / 0.38	12.56	3.0	3.5	1.35
16125	16.20	12.5 / 0.31	16.82	1.8	2.1	0.40
16150	16.20	15.0 / 0.38	16.96	2.2	2.5	0.40
22135	22.20	13.5 / 0.34	22.88	1.5	1.7	0.18
22150	22.20	15.0 / 0.38	22.96	1.8	2.1	0.18



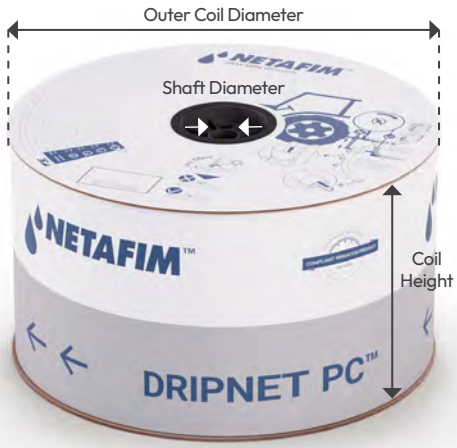
* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12125	12.5 / 0.31	0.15 to 0.19	1000	17.5	52.0	3.8	32.5
		0.20 to 0.25	1100	16.3			
		0.30 to 1.00	1200	15.6			
12150	15.0 / 0.38	0.15 to 0.19	800	14.8	52.0	3.8	32.5
		0.20 to 0.25	900	14.5			
		0.30 to 1.00	900	14.0			
16125	12.5 / 0.31	0.15 to 0.19	1000	20.3	57.0	3.8	32.5
		0.20 to 0.25	1150	21.3			
		0.30 to 1.00	1300	22.7			
16150	15.0 / 0.38	0.15 to 0.19	950	23.3	57.0	3.8	32.5
		0.20 to 0.25	1100	24.2			
		0.30 to 1.00	1200	25.6			
22135	13.5 / 0.34	0.15 to 0.19	800	23.5	57.0	3.8	32.5
		0.20 to 0.25	850	22.9			
		0.30 to 1.00	950	24.5			
22150	15.0 / 0.38	0.15 to 0.19	700	22.6	57.0	3.8	32.5
		0.20 to 0.25	800	23.8			
		0.30 to 1.00	850	24.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12125	1000	12	109 x 109 x 110	220	480	480000
	1100			206		528000
	1200			197		576000
12150	800	12	109 x 109 x 110	188	480	384000
	900			184		432000
	900			178		432000
16125	1000	12	109 x 109 x 110	254	480	480000
	1150			266		552000
	1300			282		624000
16150	950	12	109 x 109 x 110	290	480	456000
	1100			300		528000
	1200			317		576000
22135	800	12	109 x 109 x 110	292	480	384000
	850			285		408000
	950			304		456000
22150	700	12	109 x 109 x 110	281	480	336000
	800			296		384000
	850			303		408000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
DripNet PC™ AS XR	DNPC AS XR

Commercial diameter (mm)	
12	12
16	16
22	22

Wall thickness (mil) / (mm)	
12.5 / 0.31	125
13.5 / 0.34	135
15.0 / 0.35	150

Flow rate (l/h)	
0.6	0.6L/H
1.0	1.0L/H
1.6	1.6L/H
2.0	2.0L/H
3.0	3.0L/H
3.5	3.5L/H
3.8	3.8L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

DNPC AS XR 16125 1.0L/H 0.30M 1300M FL

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripNet PC™ AS XR flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripNet PC™ AS XR	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	116	143	166	185	202	218	230	242
	1.5	103	144	179	210	238	263	285	305	323
	2.0	117	164	206	243	277	307	334	360	384
	2.5	129	181	228	270	308	343	375	405	433
Flat terrain	1.0	92	132	168	203	235	265	294	322	349
	1.5	110	157	201	242	281	317	352	385	418
	2.0	123	176	226	272	316	357	396	434	470
	2.5	134	193	246	297	344	389	433	473	514
Downhill 2%	1.0	100	148	195	241	286	331	375	419	463
	1.5	117	171	224	275	325	374	422	469	516
	2.0	129	189	246	302	355	407	459	509	559
	2.5	140	204	265	324	381	437	491	545	596

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	79	98	114	128	141	153	163	172
	1.5	72	101	126	149	169	188	206	221	236
	2.0	82	116	146	174	199	222	243	263	281
	2.5	91	129	162	194	222	249	273	296	318
	3.0	98	139	176	211	242	271	298	324	348
Flat terrain	1.0	61	88	112	135	156	176	196	214	232
	1.5	75	108	138	166	193	218	242	265	287
	2.0	85	122	157	189	220	249	276	302	328
	2.5	94	134	172	208	241	273	303	332	360
	3.0	101	145	186	224	260	294	326	358	388
Downhill 2%	1.0	65	96	126	156	184	212	240	268	295
	1.5	79	115	150	184	216	248	279	310	340
	2.0	89	129	168	205	241	275	309	342	375
	2.5	97	140	182	222	260	298	334	369	404
	3.0	103	150	194	237	278	317	355	393	429

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	60	75	88	100	111	121	130	138
	1.5	53	75	95	113	130	144	158	172	184
	2.0	61	87	110	131	151	169	186	202	217
	2.5	67	96	122	146	167	188	207	225	243
	3.0	73	104	132	158	182	204	226	246	265
Flat terrain	1.0	45	65	82	99	115	130	145	158	171
	1.5	55	79	102	123	142	160	178	195	212
	2.0	63	90	116	139	161	183	203	223	242
	2.5	69	99	127	153	178	201	224	246	266
	3.0	74	107	136	165	191	217	241	265	287
Downhill 2%	1.0	47	69	90	111	130	150	169	187	206
	1.5	57	83	108	132	155	177	198	220	241
	2.0	64	94	121	148	173	197	222	245	268
	2.5	70	102	132	161	188	215	240	266	290
	3.0	75	109	141	172	201	230	257	284	309

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	37	52	66	78	88	98	107	116	123
	1.5	46	66	83	99	113	127	139	151	163
	2.0	53	75	96	114	131	148	162	177	190
	2.5	58	83	106	127	146	164	182	197	213
	3.5	63	90	114	137	158	179	197	215	232
Flat terrain	1.0	39	56	71	86	100	113	125	137	149
	1.5	48	68	88	106	123	139	154	169	184
	2.0	54	78	100	121	140	158	176	194	209
	2.5	59	86	110	133	154	174	194	212	230
	3.5	64	92	118	143	166	188	209	229	248
Downhill 2%	1.0	41	59	77	95	111	127	143	159	174
	1.5	49	71	92	113	133	151	170	187	205
	2.0	55	80	104	127	148	169	190	210	229
	2.5	61	88	114	138	161	184	206	228	248
	3.5	65	94	122	148	173	197	220	243	265

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	29	41	51	61	70	78	86	93	100
	1.5	36	51	64	77	89	100	110	120	129
	2.0	41	58	74	89	103	116	127	140	150
	2.5	45	64	82	98	113	128	142	155	167
	3.5	48	69	88	106	123	139	154	167	181
Flat terrain	1.0	30	43	55	66	77	87	96	105	114
	1.5	37	53	67	82	94	107	119	131	141
	2.0	42	60	77	93	107	122	135	149	161
	2.5	46	65	84	102	118	134	149	164	177
	3.5	49	71	90	110	127	144	161	176	191
Downhill 2%	1.0	31	45	58	71	83	95	107	119	130
	1.5	37	54	70	86	100	114	128	141	154
	2.0	42	61	79	96	113	128	143	158	173
	2.5	46	67	86	105	123	140	156	172	188
	3.5	50	72	93	113	131	150	167	185	201

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	23	32	40	48	54	60	66	71	76
	1.5	30	43	54	65	75	84	93	101	109
	2.0	35	50	64	77	89	100	110	121	130
	2.5	39	56	72	86	100	112	124	135	146
	3.5	43	61	78	94	109	123	135	149	160
Flat terrain	1.0	23	34	43	52	60	68	76	83	90
	1.5	31	44	57	69	80	90	101	110	119
	2.0	36	52	66	80	93	105	117	129	139
	2.5	40	57	74	89	103	117	130	143	155
	3.5	43	62	80	96	112	127	142	155	168
Downhill 2%	1.0	24	36	46	57	67	76	86	95	104
	1.5	32	46	59	72	85	97	108	120	131
	2.0	36	53	68	83	97	111	124	137	149
	2.5	40	59	76	92	107	122	137	150	164
	3.5	44	63	82	99	116	132	147	162	176

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 12125/12150 • ID 11.8 mm • Kd 1.35 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	21	30	38	45	52	57	63	68	73
	1.5	29	41	52	62	71	80	88	96	103
	2.0	33	48	61	73	84	95	105	114	124
	2.5	37	53	68	82	94	106	118	129	139
	3.5	40	58	74	89	103	116	129	140	152
Flat terrain	1.0	22	32	41	49	57	64	72	79	85
	1.5	29	42	54	65	76	85	95	104	113
	2.0	34	49	63	76	88	100	111	122	132
	2.5	38	54	70	84	98	111	123	136	147
	3.5	41	59	76	91	106	120	134	147	160
Downhill 2%	1.0	23	34	44	54	63	72	81	89	98
	1.5	30	44	56	69	80	91	102	113	123
	2.0	35	50	65	79	92	105	117	130	141
	2.5	38	55	72	87	101	116	129	142	155
	3.5	41	60	77	94	109	125	139	153	167

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper and by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	157	202	234	259	277	293	304	314	322
	1.4	191	251	297	334	364	389	410	428	443
	1.8	218	289	346	393	433	466	495	521	543
	2.2	240	320	386	442	490	531	566	599	627
Flat terrain	1.0	190	264	330	391	446	500	550	598	643
	1.4	220	306	383	454	520	582	640	696	749
	1.8	244	340	426	505	578	646	712	774	834
	2.2	264	368	462	547	626	701	772	840	905
Downhill 2%	1.0	223	329	432	528	618	706	791	875	957
	1.4	250	363	473	576	673	767	858	947	1034
	1.8	271	392	508	617	719	818	914	1008	1100
	2.2	289	417	538	653	760	863	963	1061	1157

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	108	140	166	185	201	214	225	233	241
	1.4	135	179	215	245	271	292	310	327	341
	1.8	155	208	252	290	322	351	376	399	419
	2.2	171	232	282	326	365	399	430	457	482
Flat terrain	1.0	126	175	219	260	297	333	366	398	428
	1.4	150	209	262	311	356	398	438	477	514
	1.8	169	236	295	350	401	449	494	537	579
	2.2	184	257	322	382	438	491	540	588	633
Downhill 2%	1.0	144	211	276	339	401	463	523	584	644
	1.4	166	240	311	379	446	511	576	639	702
	1.8	183	263	339	412	482	552	619	685	751
	2.2	197	283	363	440	514	586	656	725	793

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	110	132	150	166	179	190	200	208
	1.4	102	138	168	193	215	235	253	268	283
	1.8	117	159	194	226	253	277	300	320	339
	2.2	129	176	216	252	283	312	338	362	384
Flat terrain	1.0	93	129	162	192	220	246	270	294	317
	1.4	111	154	194	230	263	294	324	353	380
	1.8	124	173	218	258	296	332	366	398	428
	2.2	136	189	238	282	323	363	399	435	468
Downhill 2%	1.0	103	149	192	235	277	317	357	397	436
	1.4	119	171	220	267	312	356	399	442	483
	1.8	132	188	242	292	340	388	434	478	522
	2.2	143	203	260	314	365	414	462	509	556

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	73	98	118	135	149	162	173	183	192
	1.4	89	121	148	172	192	210	226	242	256
	1.8	102	139	171	199	224	246	267	286	303
	2.2	112	153	189	221	250	276	300	322	342
Flat terrain	1.0	80	112	140	166	190	213	234	255	275
	1.4	96	134	168	199	227	255	281	306	329
	1.8	107	150	188	224	256	287	317	345	371
	2.2	117	164	206	244	280	314	346	376	406
Downhill 2%	1.0	88	126	163	199	233	267	299	332	364
	1.4	102	146	187	227	265	301	337	373	407
	1.8	113	161	206	249	290	329	367	405	442
	2.2	122	174	222	268	311	353	394	433	472

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	57	77	94	109	122	133	143	153	161
	1.4	70	95	117	137	154	169	184	197	210
	1.8	79	109	134	158	178	197	214	230	246
	2.2	87	120	148	175	197	219	239	257	275
Flat terrain	1.0	62	86	108	128	146	164	181	196	212
	1.4	73	103	129	153	175	197	217	236	254
	1.8	82	115	145	172	197	221	244	266	286
	2.2	90	126	158	188	216	242	266	291	313
Downhill 2%	1.0	66	95	121	147	172	196	219	242	265
	1.4	77	110	140	170	197	224	250	275	300
	1.8	86	122	155	187	217	246	274	302	328
	2.2	93	132	168	202	234	265	294	324	352

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	44	60	72	83	92	101	108	114	120
	1.4	58	80	98	114	128	141	153	164	174
	1.8	68	93	115	135	152	169	184	198	211
	2.2	75	104	129	152	172	191	208	224	240
Flat terrain	1.0	48	68	84	101	115	129	142	154	166
	1.4	61	86	108	128	147	165	181	197	213
	1.8	71	99	124	148	169	190	209	228	245
	2.2	78	109	137	163	187	210	232	252	272
Downhill 2%	1.0	52	75	97	118	138	158	178	196	215
	1.4	65	92	118	143	166	188	210	232	253
	1.8	74	104	133	161	186	211	235	258	281
	2.2	81	114	146	175	203	230	255	281	305

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 16125/16150 • ID 16.2 mm • Kd 0.40 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	42	57	69	80	89	97	104	111	116
	1.4	55	76	93	109	122	135	146	157	167
	1.8	64	89	110	129	146	161	175	189	201
	2.2	72	99	123	145	164	182	198	214	229
Flat terrain	1.0	46	64	80	95	109	122	134	147	158
	1.4	58	81	102	122	139	156	172	187	202
	1.8	67	94	118	140	161	180	198	216	233
	2.2	74	104	130	155	178	200	220	239	258
Downhill 2%	1.0	50	71	92	111	130	148	166	185	202
	1.4	61	87	111	135	157	178	198	219	238
	1.8	70	99	126	152	176	199	222	244	265
	2.2	76	108	138	166	191	217	241	265	288

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	243	287	313	330	340	348	353	357	360
	1.6	337	419	475	515	545	567	584	598	609
	2.2	405	515	596	657	706	744	775	800	821
	2.4	459	592	693	773	838	891	936	973	1005
Flat terrain	1.0	350	479	593	697	793	884	970	1051	1130
	1.6	430	589	730	859	978	1091	1197	1298	1395
	2.2	489	670	832	979	1115	1243	1365	1481	1591
	2.4	537	737	914	1077	1227	1369	1502	1630	1752
Downhill 2%	1.0	463	669	864	1052	1235	1414	1590	1762	1932
	1.6	525	752	966	1171	1369	1561	1750	1934	2116
	2.2	574	818	1047	1265	1475	1679	1878	2073	2264
	2.4	616	874	1116	1346	1566	1780	1988	2191	2390

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	172	209	232	249	259	267	274	278	281
	1.6	246	313	363	401	431	454	474	490	503
	2.2	296	385	454	509	555	593	626	653	677
	2.4	336	441	525	595	653	704	747	786	819
Flat terrain	1.0	232	318	394	464	527	588	645	699	752
	1.6	296	406	504	593	676	753	826	896	964
	2.2	341	468	581	685	781	870	955	1037	1115
	2.4	377	518	644	758	865	965	1059	1149	1236
Downhill 2%	1.0	295	436	576	710	829	946	1059	1171	1281
	1.6	347	503	654	798	928	1056	1179	1300	1418
	2.2	386	554	715	868	1007	1143	1274	1403	1529
	2.4	418	597	766	927	1075	1218	1356	1491	1623

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	138	173	198	217	231	242	251	257	263
	1.6	191	248	293	330	361	386	407	427	442
	2.2	227	299	359	408	451	487	520	548	574
	2.4	255	340	410	470	521	568	609	645	679
Flat terrain	1.0	171	235	291	343	390	435	478	518	557
	1.6	218	299	372	438	499	557	611	663	713
	2.2	251	345	429	506	577	643	706	767	825
	2.4	277	382	475	560	639	713	783	851	914
Downhill 2%	1.0	205	299	391	481	570	658	738	813	887
	1.6	246	352	454	552	648	742	828	911	992
	2.2	276	392	502	607	709	809	901	989	1076
	2.4	300	425	542	654	761	865	962	1056	1147

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	123	157	182	201	215	228	237	245	252
	1.6	168	221	263	298	327	352	374	393	410
	2.2	199	265	318	365	404	440	470	499	524
	2.4	223	299	362	417	465	508	546	581	613
Flat terrain	1.0	148	203	252	297	338	377	414	449	482
	1.6	188	259	322	380	433	482	530	575	618
	2.2	217	299	372	438	500	558	613	665	715
	2.4	240	331	411	485	554	618	678	737	792
Downhill 2%	1.0	174	252	327	401	473	545	616	686	748
	1.6	209	299	384	465	544	622	698	772	840
	2.2	235	334	426	514	599	682	762	841	913
	2.4	257	363	462	555	645	732	817	899	976

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	99	128	152	170	185	198	209	218	226
	1.6	133	176	212	243	269	293	314	332	349
	2.2	156	209	254	294	328	358	386	412	435
	2.4	175	236	288	333	374	410	444	474	503
Flat terrain	1.0	114	156	194	229	260	291	319	347	372
	1.6	145	199	248	292	334	372	409	444	477
	2.2	167	230	286	338	385	430	472	513	551
	2.4	184	254	317	374	427	476	523	568	611
Downhill 2%	1.0	129	185	238	291	341	391	440	489	537
	1.6	157	223	284	343	400	454	509	562	613
	2.2	178	251	318	383	444	503	561	617	673
	2.4	194	273	346	415	481	544	605	665	723

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	76	97	113	126	136	145	151	158	162
	1.6	112	149	180	206	228	248	265	281	295
	2.2	136	182	222	256	286	313	338	360	380
	2.4	154	207	254	294	330	363	393	420	446
Flat terrain	1.0	89	123	152	180	205	228	250	272	292
	1.6	123	169	210	248	283	316	346	376	405
	2.2	145	200	248	293	334	373	410	446	479
	2.4	162	223	278	328	374	418	459	499	537
Downhill 2%	1.0	103	149	193	237	278	320	362	402	443
	1.6	133	189	242	292	340	387	433	478	523
	2.2	154	217	276	331	385	435	486	535	582
	2.4	170	239	303	363	420	475	528	581	631

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripNet PC™ AS XR TWD 22135/22150 • ID 22.2 mm • Kd 0.18 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	72	93	109	122	132	141	148	154	159
	1.6	107	143	172	197	219	238	255	271	285
	2.2	129	174	212	245	274	300	323	346	365
	2.4	146	197	242	281	315	347	375	402	427
Flat terrain	1.0	85	116	144	170	194	216	238	257	277
	1.6	117	161	200	236	268	300	329	357	384
	2.2	137	189	236	278	317	354	389	422	454
	2.4	153	212	264	311	355	396	436	473	509
Downhill 2%	1.0	97	140	181	222	260	300	338	375	413
	1.6	126	179	228	275	320	364	406	449	490
	2.2	145	205	260	312	362	410	457	502	547
	2.4	161	226	286	343	396	448	498	546	594

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

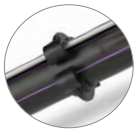
DripWine™

Compact pressure-compensated dripper with continuous self-flushing, designed for permanent vineyard drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies and freezing climates.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier retrieval at crop-cycle completion. Also beneficial in regions prone to sub-zero temperatures.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring longterm system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Improves installation efficiency (optional)	Pre-assembled ring designed to facilitate and accelerate dripline installation and hanging on vineyard support wires. When the Hybrid configuration is not selected, it also helps prevent drop migration on sloped terrain.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation in vineyards.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in vineyards where the dripline is installed on the ground or suspended on vineyard support wires. Enables effective drainage and is particularly suitable for regions where temperatures may reach freezing conditions.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two purple stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.40	0.25 - 2.5	0.46 x 0.52 x 26	29	0.4	0	130/120
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

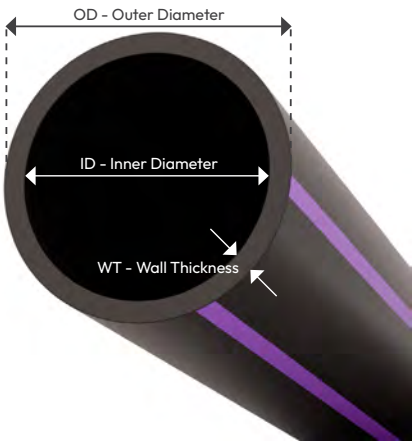


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16010	14.20	1.0	16.20	2.5/3.0/3.5*	4.6	0.72
16012	14.20	1.2	16.60	2.5/3.0/3.5*	5.2	0.72
20010	17.50	1.0	19.50	2.5/3.0/3.5*	4.6	0.25
20012	17.50	1.2	19.90	2.5/3.0/3.5*	5.2	0.25



* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

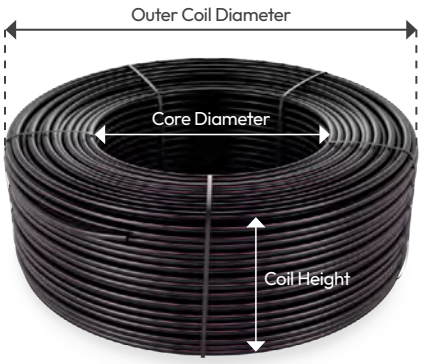
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16010	1.0	0.15 to 1.00	500	20.4	84	41	27
16012	1.2	0.15 to 1.00	400	22.4	78	41	28
20010	1.0	0.15 to 1.00	300	16.8	84	50	27
20012	1.2	0.15 to 1.00	300	20.3	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16010	500	330	165000
16012	400	330	132000
20010	300	330	99000
20012	300	330	99000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Special features	
DripWine™	DWINE	16	16	1.0	010	0.4	0.4L/H	0.2	0.20M	Model 16010	500M	No added	-
		20	20	1.2	012	0.6	0.6L/H	0.3	0.30M	Model 16012	400M	Other	XXX
						1.0	1.0L/H	0.4	0.40M	Model 20010	300M		
						1.6	1.6L/H	0.5	0.50M	Model 20012	300M		
						2.0	2.0L/H	0.6	0.60M				
						3.0	3.0L/H	0.7	0.70M				
						3.5	3.5L/H						
						3.8	3.8L/H						

*Other distances between drippers can be ordered.

*Other features available upon request. Consult your local Netafim™ distributor.

DWINE 16012 1.6L/H 0.40M 400M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripWine™ flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripWine™	0.40	0.26	0.31	0.36	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	152	197	231	257	277	292	305	314	323
	1.5	191	255	306	347	381	410	434	454	471
	2.0	220	297	361	414	460	498	533	563	588
	2.5	244	332	406	469	523	571	614	651	685
Flat terrain	1.0	182	256	323	385	443	498	550	599	647
	1.5	217	305	386	461	530	596	658	718	775
	2.0	243	343	434	518	597	671	742	809	874
	2.5	265	374	474	566	652	733	810	884	955
Downhill 2%	1.0	212	316	420	518	610	700	788	875	960
	1.5	242	357	469	576	676	774	869	962	1054
	2.0	266	390	509	623	730	834	935	1034	1131
	2.5	286	418	544	663	776	886	992	1096	1198

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.0	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.0	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.0	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.0	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.0	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.0	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.0	94	133	167	198	226	253	278	301	322
	3.5	101	141	178	212	242	271	298	323	347
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.0	97	138	175	210	242	272	302	329	356
	3.5	103	146	186	223	257	290	321	351	379
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.0	99	143	183	221	257	293	326	359	391
	3.5	105	151	194	234	272	309	345	379	412

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.0	73	103	130	154	177	198	218	237	254
	3.5	78	110	138	165	189	212	234	254	273
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.0	74	106	134	161	186	210	232	254	275
	3.5	79	112	143	171	198	223	247	270	292
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.0	76	109	139	168	196	222	247	271	295
	3.5	80	115	147	178	206	235	261	287	312

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	33	46	57	66	74	82	89	95	101
	1.5	45	63	79	93	106	118	129	139	149
	2.0	53	74	93	111	127	141	155	168	180
	2.5	59	83	105	125	143	160	175	190	204
	3.0	64	90	114	136	156	175	192	209	225
	3.5	69	97	122	146	167	188	207	225	242
Flat terrain	1.0	35	50	64	76	88	99	109	119	129
	1.5	47	66	84	101	116	131	145	158	171
	2.0	54	77	98	118	136	153	169	185	200
	2.5	60	86	109	131	151	170	188	206	223
	3.0	65	93	118	142	164	185	205	223	242
	3.5	70	99	126	152	175	197	218	239	258
Downhill 2%	1.0	38	54	70	86	101	116	130	144	158
	1.5	48	70	90	109	127	144	162	178	194
	2.0	56	80	103	125	145	165	183	203	220
	2.5	62	89	113	137	159	181	202	221	241
	3.0	67	95	122	148	172	195	217	239	259
	3.5	71	101	130	157	182	207	230	253	275

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	44	54	63	71	78	85	91	97
	1.5	43	60	75	89	101	112	123	133	142
	2.0	50	71	89	105	121	134	148	160	172
	2.5	56	79	100	118	136	152	167	181	195
	3.0	61	86	108	129	148	166	183	199	214
	3.5	65	92	116	139	159	179	197	214	231
Flat terrain	1.0	34	47	60	72	83	94	103	113	122
	1.5	44	63	80	96	110	124	138	150	162
	2.0	51	73	93	112	128	145	161	176	190
	2.5	57	81	103	124	143	161	178	195	211
	3.0	62	88	112	135	155	175	194	212	229
	3.5	66	94	120	144	166	187	207	227	245
Downhill 2%	1.0	35	51	66	81	95	109	122	135	148
	1.5	46	66	85	103	119	137	152	167	183
	2.0	53	76	97	118	137	155	174	191	208
	2.5	58	84	107	130	151	171	190	210	228
	3.0	63	90	116	140	162	184	205	225	245
	3.5	67	96	123	149	172	195	218	239	260

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.40 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	220	266	295	314	327	337	344	349	353
	1.5	289	362	415	454	482	505	523	537	549
	2.0	340	435	506	562	605	641	670	695	715
	2.5	381	494	581	651	708	755	795	830	859
Flat terrain	1.0	300	411	509	598	681	759	833	903	970
	1.5	359	492	610	718	817	911	999	1085	1165
	2.0	403	554	687	809	921	1027	1127	1223	1315
	2.5	440	605	751	884	1007	1124	1234	1338	1439
Downhill 2%	1.0	384	559	720	875	1025	1171	1314	1455	1594
	1.5	431	621	796	963	1124	1280	1434	1583	1730
	2.0	469	671	858	1035	1205	1371	1531	1688	1843
	2.5	501	714	910	1097	1276	1448	1616	1780	1940

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	183	227	259	282	298	312	322	329	336
	1.5	234	300	351	391	422	448	470	487	502
	2.0	272	355	420	473	517	554	586	613	637
	2.5	303	399	476	540	594	641	682	717	749
Flat terrain	1.0	231	316	392	461	525	585	642	697	748
	1.5	276	378	469	553	629	702	770	836	899
	2.0	310	426	529	623	710	792	869	943	1014
	2.5	338	465	578	681	776	866	950	1031	1109
Downhill 2%	1.0	280	410	531	642	749	854	956	1056	1154
	1.5	318	459	590	712	828	941	1050	1157	1262
	2.0	348	499	638	768	892	1012	1128	1241	1352
	2.5	374	533	680	817	947	1072	1194	1313	1429

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	126	161	185	205	219	231	241	248	255
	1.5	167	218	258	291	319	342	362	379	394
	2.0	195	258	310	353	390	423	451	476	499
	2.5	218	291	351	403	448	487	522	554	584
	3.0	238	319	386	445	496	542	583	621	655
Flat terrain	1.0	153	210	260	307	349	389	427	464	498
	1.5	189	260	323	380	433	483	530	576	619
	2.0	215	296	368	434	495	552	606	658	708
	2.5	237	326	406	478	545	608	668	725	780
	3.0	255	352	437	516	589	657	722	783	842
Downhill 2%	1.0	180	262	340	418	494	568	643	713	777
	1.5	212	303	390	474	555	635	714	788	858
	2.0	236	335	429	518	605	689	772	850	924
	2.5	256	362	461	556	647	735	822	904	981
	3.0	273	385	490	589	683	776	866	950	1032

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	98	128	150	169	184	197	208	217	225
	1.5	127	169	203	232	256	278	298	315	330
	2.0	148	198	240	276	308	336	362	385	407
	2.5	164	221	270	312	349	383	414	442	468
	3.0	179	241	295	342	384	422	457	490	519
Flat terrain	1.0	113	155	192	227	258	288	316	343	369
	1.5	139	192	238	281	320	357	393	426	458
	2.0	159	219	272	321	366	408	449	487	524
	2.5	174	241	299	353	403	450	494	536	577
	3.0	188	259	323	381	435	485	534	580	623
Downhill 2%	1.0	128	183	236	288	337	386	435	483	531
	1.5	152	215	275	332	387	440	493	545	595
	2.0	170	240	305	367	426	483	539	594	647
	2.5	185	260	330	396	458	519	578	635	692
	3.0	197	278	351	421	487	550	612	672	731

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	87	113	135	153	167	180	191	201	209
	1.5	111	149	180	206	229	250	268	284	300
	2.0	129	174	211	244	274	300	323	345	365
	2.5	143	194	237	275	308	340	367	393	418
	3.0	155	211	258	301	338	373	405	434	462
	3.5	166	226	278	323	365	403	438	470	500
Flat terrain	1.0	98	134	166	196	224	250	274	297	320
	1.5	120	166	206	243	277	309	340	369	397
	2.0	137	189	236	278	317	354	389	422	454
	2.5	151	208	259	306	349	390	428	465	500
	3.0	163	224	280	330	377	421	462	502	540
	3.5	173	239	297	351	401	448	492	535	575
Downhill 2%	1.0	109	155	199	242	283	324	364	403	442
	1.5	130	184	234	282	328	372	416	458	500
	2.0	145	205	260	312	362	410	457	502	547
	2.5	158	223	282	338	391	442	491	539	586
	3.0	170	238	301	360	416	469	522	572	621
	3.5	179	251	318	380	438	494	548	601	652

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	91	109	125	139	151	161	170	179
	1.5	87	117	143	165	185	203	219	234	248
	2.0	101	136	167	194	218	240	261	279	297
	2.5	111	152	186	217	245	270	294	316	336
	3.0	121	164	203	237	268	296	322	347	370
	3.5	129	176	217	254	287	318	346	374	399
Flat terrain	1.0	75	103	128	151	172	193	211	230	247
	1.5	93	128	159	188	214	239	262	284	306
	2.0	105	146	181	214	244	273	300	326	350
	2.5	116	160	200	236	269	300	330	359	386
	3.0	125	173	215	254	290	324	356	387	417
	3.5	133	184	229	271	309	345	379	412	444
Downhill 2%	1.0	81	116	148	179	208	237	265	293	320
	1.5	98	138	175	210	244	276	307	338	368
	2.0	110	155	196	235	271	306	340	374	405
	2.5	120	169	213	255	293	331	367	402	437
	3.0	129	181	228	272	313	353	391	428	464
	3.5	137	191	241	287	331	372	413	452	489

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	53	70	83	95	104	113	120	126	132
	1.5	73	99	120	139	155	170	184	196	207
	2.0	87	118	144	168	189	208	226	242	257
	2.5	98	133	163	190	215	237	258	277	295
	3.0	106	145	179	209	236	262	285	307	327
	3.5	114	156	192	225	255	283	308	332	355
Flat terrain	1.0	59	81	101	119	135	151	166	180	193
	1.5	78	108	134	158	181	202	222	240	258
	2.0	91	126	156	185	211	236	259	281	303
	2.5	101	140	174	206	235	263	289	313	337
	3.0	110	152	189	224	256	286	314	341	367
	3.5	117	162	202	239	273	305	335	365	392
Downhill 2%	1.0	65	92	119	144	168	192	215	238	260
	1.5	83	117	148	178	206	234	260	286	312
	2.0	95	134	169	202	233	264	294	321	350
	2.5	105	147	186	222	256	288	320	351	380
	3.0	113	158	200	239	275	309	343	375	407
	3.5	121	169	212	253	292	328	363	398	430

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	50	67	80	91	100	109	116	122	128
	1.5	70	94	114	133	149	163	176	188	199
	2.0	83	112	138	160	180	199	215	231	246
	2.5	93	126	155	181	205	226	246	265	282
	3.0	101	138	170	199	225	249	272	293	312
	3.5	108	148	183	215	243	270	294	317	339
Flat terrain	1.0	56	77	96	113	128	144	158	171	184
	1.5	74	102	127	150	171	191	210	228	245
	2.0	86	119	148	176	200	223	246	266	287
	2.5	96	133	165	195	223	249	274	298	320
	3.0	104	144	180	212	242	271	298	323	348
	3.5	111	154	192	227	259	290	318	346	372
Downhill 2%	1.0	61	87	112	135	158	180	202	223	244
	1.5	78	110	140	168	194	220	245	269	293
	2.0	90	126	160	191	221	249	277	303	329
	2.5	99	139	176	210	242	272	302	331	359
	3.0	107	150	189	226	260	293	324	355	384
	3.5	114	160	201	240	275	310	343	375	406

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

DripWine™ AS

Compact pressure-compensated dripper with continuous self-flushing and an anti-siphon (AS) mechanism, designed for permanent sub-surface vineyard drip irrigation applications. Its compact design enables a wide range of dripline configurations while maintaining reliable hydraulic performance, even in complex topographies.



Benefits & Features

Uniform water distribution	Ensures precise, uniform discharge across a broad pressure range, delivering consistent water and nutrient application along the entire dripline length.
Prevents suction (AS)	The integrated anti-siphon (AS) mechanism prevents the suction of contaminants into the dripper, making it especially suitable for sub-surface applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The advanced dripper structure is designed to help reduce the risk of root intrusion into the flow path, ensuring longterm system durability. A large filtration area reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.

Applications

Open field | Orchards | Protected crops

- Suitable for sub-surface installation in vineyards.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in permanent sub-surface vineyard applications.



Specifications

- Pressure-compensated operating range as shown in the table below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thick-wall driplines: 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two purple stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.60	0.25 - 2.5	0.52 x 0.60 x 22	39	0.6	0	130/120
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	130/120
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

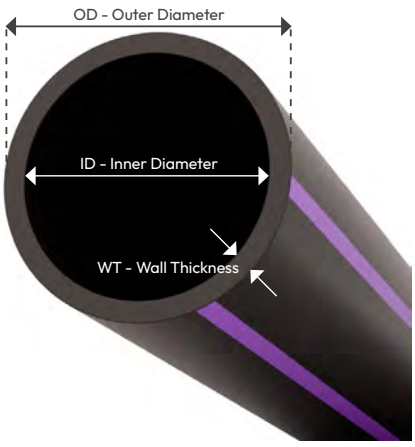


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16010	14.20	1.0	16.20	2.5/3.0/3.5*	4.6	0.72
16012	14.20	1.2	16.60	2.5/3.0/3.5*	5.2	0.72
20010	17.50	1.0	19.50	2.5/3.0/3.5*	4.6	0.25
20012	17.50	1.2	19.90	2.5/3.0/3.5*	5.2	0.25



* The maximum working pressure is defined by the dripper or by the dripline wall thickness.

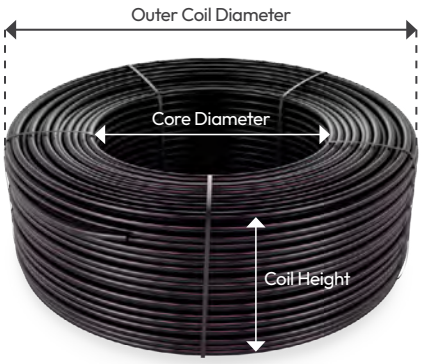
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16010	1.0	0.15 to 1.00	500	20.4	84	41	27
16012	1.2	0.15 to 1.00	400	22.4	78	41	28
20010	1.0	0.15 to 1.00	300	16.8	84	50	27
20012	1.2	0.15 to 1.00	300	20.3	84	50	27

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16010	500	330	165000
16012	400	330	132000
20010	300	330	99000
20012	300	330	99000

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Special features	
DripWine™ AS	DWINE AS	16	16	1.0	010	0.6	0.6L/H	0.2	0.20M	Model 16010	500M	No added	-
		20	20	1.2	012	1.0	1.0L/H	0.3	0.30M	Model 16012	400M	Other	XXX
						1.6	1.6L/H	0.4	0.40M	Model 20010	300M		
						2.0	2.0L/H	0.5	0.50M	Model 20012	300M		
						3.0	3.0L/H	0.6	0.60M				
						3.5	3.5L/H	0.7	0.70M				
						3.8	3.8L/H						

*Other distances between drippers can be ordered.

*Other features available upon request. Consult your local Netafim™ distributor.

DWINE AS 16012 1.6L/H 0.40M 400M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

DripWine™ AS flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
DripWine™ AS	0.60	0.39	0.47	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60
	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	122	161	193	218	239	256	270	282	292
	1.5	151	204	248	286	318	346	370	391	410
	2.0	173	236	290	336	377	412	445	473	499
	2.5	191	262	324	377	425	467	506	540	572
Flat terrain	1.0	139	196	248	296	341	383	423	462	498
	1.5	166	234	296	354	408	459	507	553	597
	2.0	186	263	334	399	459	517	570	623	673
	2.5	203	287	364	435	502	564	624	680	736
Downhill 2%	1.0	157	232	305	378	449	516	580	642	703
	1.5	181	265	346	425	502	574	643	711	777
	2.0	200	291	378	462	544	621	695	768	838
	2.5	216	313	405	494	580	662	740	816	890

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.0	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.0	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.0	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.0	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.0	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.0	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.0	94	133	167	198	226	253	278	301	322
	3.5	101	141	178	212	242	271	298	323	347
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.0	97	138	175	210	242	272	302	329	356
	3.5	103	146	186	223	257	290	321	351	379
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.0	99	143	183	221	257	293	326	359	391
	3.5	105	151	194	234	272	309	345	379	412

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.0	73	103	130	154	177	198	218	237	254
	3.5	78	110	138	165	189	212	234	254	273
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.0	74	106	134	161	186	210	232	254	275
	3.5	79	112	143	171	198	223	247	270	292
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.0	76	109	139	168	196	222	247	271	295
	3.5	80	115	147	178	206	235	261	287	312

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	33	46	57	66	74	82	89	95	101
	1.5	45	63	79	93	106	118	129	139	149
	2.0	53	74	93	111	127	141	155	168	180
	2.5	59	83	105	125	143	160	175	190	204
	3.0	64	90	114	136	156	175	192	209	225
	3.5	69	97	122	146	167	188	207	225	242
Flat terrain	1.0	35	50	64	76	88	99	109	119	129
	1.5	47	66	84	101	116	131	145	158	171
	2.0	54	77	98	118	136	153	169	185	200
	2.5	60	86	109	131	151	170	188	206	223
	3.0	65	93	118	142	164	185	205	223	242
	3.5	70	99	126	152	175	197	218	239	258
Downhill 2%	1.0	38	54	70	86	101	116	130	144	158
	1.5	48	70	90	109	127	144	162	178	194
	2.0	56	80	103	125	145	165	183	203	220
	2.5	62	89	113	137	159	181	202	221	241
	3.0	67	95	122	148	172	195	217	239	259
	3.5	71	101	130	157	182	207	230	253	275

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	44	54	63	71	78	85	91	97
	1.5	43	60	75	89	101	112	123	133	142
	2.0	50	71	89	105	121	134	148	160	172
	2.5	56	79	100	118	136	152	167	181	195
	3.0	61	86	108	129	148	166	183	199	214
	3.5	65	92	116	139	159	179	197	214	231
Flat terrain	1.0	34	47	60	72	83	94	103	113	122
	1.5	44	63	80	96	110	124	138	150	162
	2.0	51	73	93	112	128	145	161	176	190
	2.5	57	81	103	124	143	161	178	195	211
	3.0	62	88	112	135	155	175	194	212	229
	3.5	66	94	120	144	166	187	207	227	245
Downhill 2%	1.0	35	51	66	81	95	109	122	135	148
	1.5	46	66	85	103	119	137	152	167	183
	2.0	53	76	97	118	137	155	174	191	208
	2.5	58	84	107	130	151	171	190	210	228
	3.0	63	90	116	140	162	184	205	225	245
	3.5	67	96	123	149	172	195	218	239	260

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 0.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	183	227	259	282	298	312	322	329	336
	1.5	234	300	351	391	422	448	470	487	502
	2.0	272	355	420	473	517	554	586	613	637
	2.5	303	399	476	540	594	641	682	717	749
Flat terrain	1.0	231	316	392	461	525	585	642	697	748
	1.5	276	378	469	553	629	702	770	836	899
	2.0	310	426	529	623	710	792	869	943	1014
	2.5	338	465	578	681	776	866	950	1031	1109
Downhill 2%	1.0	280	410	531	642	749	854	956	1056	1154
	1.5	318	459	590	712	828	941	1050	1157	1262
	2.0	348	499	638	768	892	1012	1128	1241	1352
	2.5	374	533	680	817	947	1072	1194	1313	1429

Minimum design pressure: 0.25 bar. Maximum working pressure: Determined by the dripper limitations
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	126	161	185	205	219	231	241	248	255
	1.5	167	218	258	291	319	342	362	379	394
	2.0	195	258	310	353	390	423	451	476	499
	2.5	218	291	351	403	448	487	522	554	584
	3.0	238	319	386	445	496	542	583	621	655
Flat terrain	1.0	153	210	260	307	349	389	427	464	498
	1.5	189	260	323	380	433	483	530	576	619
	2.0	215	296	368	434	495	552	606	658	708
	2.5	237	326	406	478	545	608	668	725	780
	3.0	255	352	437	516	589	657	722	783	842
Downhill 2%	1.0	180	262	340	418	494	568	643	713	777
	1.5	212	303	390	474	555	635	714	788	858
	2.0	236	335	429	518	605	689	772	850	924
	2.5	256	362	461	556	647	735	822	904	981
	3.0	273	385	490	589	683	776	866	950	1032

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	98	128	150	169	184	197	208	217	225
	1.5	127	169	203	232	256	278	298	315	330
	2.0	148	198	240	276	308	336	362	385	407
	2.5	164	221	270	312	349	383	414	442	468
	3.0	179	241	295	342	384	422	457	490	519
Flat terrain	1.0	113	155	192	227	258	288	316	343	369
	1.5	139	192	238	281	320	357	393	426	458
	2.0	159	219	272	321	366	408	449	487	524
	2.5	174	241	299	353	403	450	494	536	577
	3.0	188	259	323	381	435	485	534	580	623
Downhill 2%	1.0	128	183	236	288	337	386	435	483	531
	1.5	152	215	275	332	387	440	493	545	595
	2.0	170	240	305	367	426	483	539	594	647
	2.5	185	260	330	396	458	519	578	635	692
	3.0	197	278	351	421	487	550	612	672	731

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	87	113	135	153	167	180	191	201	209
	1.5	111	149	180	206	229	250	268	284	300
	2.0	129	174	211	244	274	300	323	345	365
	2.5	143	194	237	275	308	340	367	393	418
	3.0	155	211	258	301	338	373	405	434	462
	3.5	166	226	278	323	365	403	438	470	500
Flat terrain	1.0	98	134	166	196	224	250	274	297	320
	1.5	120	166	206	243	277	309	340	369	397
	2.0	137	189	236	278	317	354	389	422	454
	2.5	151	208	259	306	349	390	428	465	500
	3.0	163	224	280	330	377	421	462	502	540
	3.5	173	239	297	351	401	448	492	535	575
Downhill 2%	1.0	109	155	199	242	283	324	364	403	442
	1.5	130	184	234	282	328	372	416	458	500
	2.0	145	205	260	312	362	410	457	502	547
	2.5	158	223	282	338	391	442	491	539	586
	3.0	170	238	301	360	416	469	522	572	621
	3.5	179	251	318	380	438	494	548	601	652

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	91	109	125	139	151	161	170	179
	1.5	87	117	143	165	185	203	219	234	248
	2.0	101	136	167	194	218	240	261	279	297
	2.5	111	152	186	217	245	270	294	316	336
	3.0	121	164	203	237	268	296	322	347	370
	3.5	129	176	217	254	287	318	346	374	399
Flat terrain	1.0	75	103	128	151	172	193	211	230	247
	1.5	93	128	159	188	214	239	262	284	306
	2.0	105	146	181	214	244	273	300	326	350
	2.5	116	160	200	236	269	300	330	359	386
	3.0	125	173	215	254	290	324	356	387	417
	3.5	133	184	229	271	309	345	379	412	444
Downhill 2%	1.0	81	116	148	179	208	237	265	293	320
	1.5	98	138	175	210	244	276	307	338	368
	2.0	110	155	196	235	271	306	340	374	405
	2.5	120	169	213	255	293	331	367	402	437
	3.0	129	181	228	272	313	353	391	428	464
	3.5	137	191	241	287	331	372	413	452	489

Minimum design pressure: 0.40 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	53	70	83	95	104	113	120	126	132
	1.5	73	99	120	139	155	170	184	196	207
	2.0	87	118	144	168	189	208	226	242	257
	2.5	98	133	163	190	215	237	258	277	295
	3.0	106	145	179	209	236	262	285	307	327
	3.5	114	156	192	225	255	283	308	332	355
Flat terrain	1.0	59	81	101	119	135	151	166	180	193
	1.5	78	108	134	158	181	202	222	240	258
	2.0	91	126	156	185	211	236	259	281	303
	2.5	101	140	174	206	235	263	289	313	337
	3.0	110	152	189	224	256	286	314	341	367
	3.5	117	162	202	239	273	305	335	365	392
Downhill 2%	1.0	65	92	119	144	168	192	215	238	260
	1.5	83	117	148	178	206	234	260	286	312
	2.0	95	134	169	202	233	264	294	321	350
	2.5	105	147	186	222	256	288	320	351	380
	3.0	113	158	200	239	275	309	343	375	407
	3.5	121	169	212	253	292	328	363	398	430

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

DripWine™ AS 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	50	67	80	91	100	109	116	122	128
	1.5	70	94	114	133	149	163	176	188	199
	2.0	83	112	138	160	180	199	215	231	246
	2.5	93	126	155	181	205	226	246	265	282
	3.0	101	138	170	199	225	249	272	293	312
	3.5	108	148	183	215	243	270	294	317	339
Flat terrain	1.0	56	77	96	113	128	144	158	171	184
	1.5	74	102	127	150	171	191	210	228	245
	2.0	86	119	148	176	200	223	246	266	287
	2.5	96	133	165	195	223	249	274	298	320
	3.0	104	144	180	212	242	271	298	323	348
	3.5	111	154	192	227	259	290	318	346	372
Downhill 2%	1.0	61	87	112	135	158	180	202	223	244
	1.5	78	110	140	168	194	220	245	269	293
	2.0	90	126	160	191	221	249	277	303	329
	2.5	99	139	176	210	242	272	302	331	359
	3.0	107	150	189	226	260	293	324	355	384
	3.5	114	160	201	240	275	310	343	375	406

Minimum design pressure: 0.60 bar. Maximum working pressure: Determined by the dripper limitations.



Orion™ PC

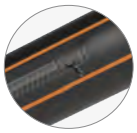
Orion™ PC

Compact integral pressure-compensated dripper designed specifically for thin-wall dripline (TWD) applications. Enables reliable pressure-compensated irrigation in seasonal field crops while maintaining stable hydraulic performance in lightweight dripline systems.



Benefits & Features

Uniform water distribution	Ensures reliable pressure-compensated irrigation in thin-wall dripline (TWD) systems enables uniform irrigation performance in seasonal field crops while maintaining stable hydraulic performance.
Integrated drainage mechanism	Releases water from the dripline at the end of each irrigation cycle, enabling faster and easier dripline retrieval at crop-cycle completion.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. An optimized filtration area helps limit suspended particle ingress, supporting reliable performance under standard water quality conditions. The TurbuNext™ labyrinth features deep, optimized flow passages that support clogging resistance. Water is drawn from the center of the flow stream, helping to minimize particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.
ReGen™ (optional)	ReGen™ dripline incorporates high-quality recycled materials, supporting the sustainability goals of modern agricultural operations while maintaining reliable irrigation performance. *ReGen™ is currently available in selected markets and is being progressively introduced worldwide. Please consult your local Netafim™ representative for availability.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in vegetables and industrial crops.



Specifications

- Pressure-compensated operating range: 0.2 – 1.8 bar.
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurbuNext™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Weldable into thin-wall driplines: 0.15, 0.20, 0.25 and 0.31 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) for excellent uniformity and reliable performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Fully compliant with ISO 9261 international manufacturing and performance standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.50	0.2 - 1.8	0.63 x 0.51 X 19	29	0.50	0	130/120
1.05	0.2 - 1.8	0.65 x 0.68 x 9	29	1.05	0	130/120
1.60	0.2 - 1.8	0.81 x 0.79 X 8	29	1.60	0	130/120

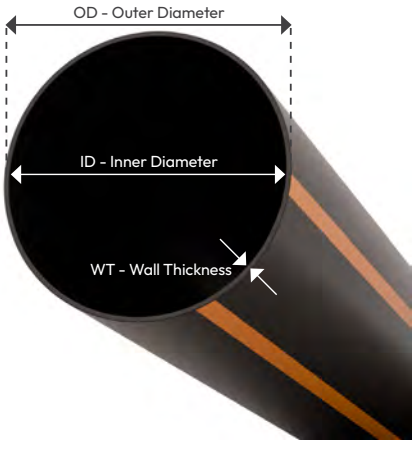


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12060	11.80	6.0 / 0.15	12.10	1.8*	2.5	0.32
12080	11.80	8.0 / 0.20	12.20	1.8*	2.5	0.32
12100	11.80	10.0 / 0.25	12.30	1.8*	2.5	0.32
12125	11.80	12.5 / 0.31	12.42	1.8*	2.5	0.32
16060	16.20	6.0 / 0.15	16.50	1.0	1.2	0.08
16080	16.20	8.0 / 0.20	16.60	1.2	1.4	0.08
16100	16.20	10.0 / 0.25	16.70	1.4	1.6	0.08
16125	16.20	12.5 / 0.31	16.82	1.8	2.1	0.08
22060	22.20	6.0 / 0.15	22.50	0.8	0.9	0.05
22080	22.20	8.0 / 0.20	22.60	1.0	1.2	0.05
22100	22.20	10.0 / 0.25	22.70	1.1	1.3	0.05
22125	22.20	12.5 / 0.31	22.82	1.2	1.4	0.05



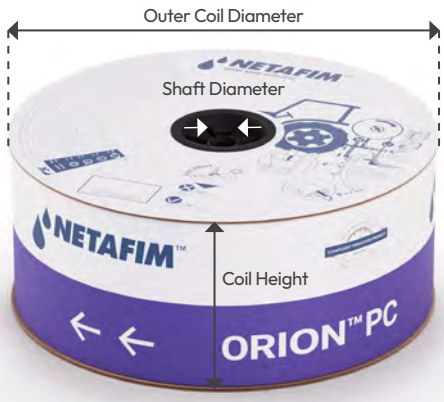
* The maximum working pressure is defined by the dripper.

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12060	6.0 / 0.15	0.15 to 0.25	2000	16.2	57.0	3.8	24.0
		8.0 / 0.20	2200	16.5			
12080	8.0 / 0.20	0.15 to 0.25	1600	16.1	57.0	3.8	24.0
		12.5 / 0.31	1800	16.8			
12100	10.0 / 0.25	0.15 to 0.25	1400	16.3	57.0	3.8	24.0
		8.0 / 0.20	1500	16.4			
12125	12.5 / 0.31	0.15 to 0.25	1100	15.5	57.0	3.8	24.0
		12.5 / 0.31	1200	16.0			
16060	6.0 / 0.15	0.15 to 0.25	2300	18.4	57.0	3.8	24.0
		8.0 / 0.20	2600	18.9			
16080	8.0 / 0.20	0.15 to 0.25	1600	19.9	57.0	3.8	24.0
		12.5 / 0.31	1800	21.0			
16100	10.0 / 0.25	0.15 to 0.25	1400	21.0	57.0	3.8	24.0
		0.30 to 1.00	1600	22.8			
16125	12.5 / 0.31	0.15 to 0.25	1300	23.5	57.0	3.8	24.0
		0.30 to 1.00	1400	24.2			
22060	6.0 / 0.15	0.15 to 0.25	1500	19.7	57.0	3.8	24.0
		0.30 to 1.00	1600	19.9			
22080	8.0 / 0.20	0.15 to 0.25	1300	21.7	57.0	3.8	24.0
		0.30 to 1.00	1400	22.3			
22100	10.0 / 0.25	0.15 to 0.25	1000	20.4	57.0	3.8	24.0
		0.30 to 1.00	1100	21.6			
22125	12.5 / 0.31	0.15 to 0.25	900	22.0	57.0	3.8	24.0
		0.30 to 1.00	1000	23.7			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12060	2000	16	109 x 109 x 110	269	640	1280000
	2200			274		1408000
12080	1600	16	109 x 109 x 110	267	640	1024000
	1800			278		1152000
12100	1400	16	109 x 109 x 110	271	640	896000
	1500			272		960000
12125	1100	16	109 x 109 x 110	257	640	704000
	1200			265		768000
16060	1800	16	109 x 109 x 110	304	640	1472000
	2000			313		1664000
16080	1600	16	109 x 109 x 110	329	640	1024000
	1800			347		1152000
16100	1400	16	109 x 109 x 110	346	640	896000
	1600			375		1024000
16125	1300	16	109 x 109 x 110	386	640	832000
	1400			398		896000
22060	1500	16	109 x 109 x 110	325	640	960000
	1600			329		1024000
22080	1300	16	109 x 109 x 110	357	640	832000
	1400			368		896000
22100	1000	16	109 x 109 x 110	337	640	640000
	1100			356		704000
22125	900	16	109 x 109 x 110	363	640	576000
	1000			389		640000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mil) / (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)	Special features	
Orion™ PC	ORN PC	12	12	6.0 / 0.15	060	0.50	0.50L/H	0.2	0.20M	Coil length according to the values presented in the corresponding table.	No added	-
		16	16	8.0 / 0.20	080	1.05	1.05L/H	0.3	0.30M		Flap outlet	FL
		22	22	10.0 / 0.25	100	1.60	1.60L/H	0.4	0.40M		Other	XXX
				12.5 / 0.31	125			0.5	0.50M			
								0.6	0.60M			
								0.7	0.70M			

*Other distances between drippers can be ordered.

*Other features available upon request. Consult your local Netafim™ distributor.

ORN PC 16080 1.05L/H 0.30M 1800M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including Orion™ PC (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

Orion™ PC flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)								
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	1.80
Orion™ PC	0.50	0.39	0.42	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	1.05	0.80	0.95	1.05	1.05	1.05	1.05	1.05	1.05	1.05
	1.60	1.38	1.52	1.60	1.60	1.60	1.60	1.60	1.60	1.60

* Within working pressure range.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 12060/12080/12100/12125 • ID 11.8 mm • Kd 0.32 • Flow rate 0.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.8	107	137	160	179	194	206	217	225	233
	1.0	122	158	186	210	229	246	260	273	283
	1.2	134	175	208	236	259	279	297	312	327
	1.4	145	190	227	258	285	309	329	347	364
	1.6	155	204	244	278	308	335	358	379	398
	1.8	163	216	259	297	329	358	384	408	429
Flat terrain	0.8	125	170	210	247	280	312	342	370	397
	1.0	139	189	233	273	310	345	378	410	440
	1.2	150	204	252	296	336	374	410	444	477
	1.4	160	218	269	316	359	399	438	474	509
	1.6	169	230	284	333	379	421	462	501	538
	1.8	177	241	298	350	397	442	485	526	564
Downhill 2%	0.8	144	205	263	319	374	424	471	518	563
	1.0	156	220	281	340	397	449	499	547	595
	1.2	166	234	297	358	417	471	523	574	623
	1.4	175	246	312	375	436	492	546	598	649
	1.6	183	257	325	390	452	510	566	620	673
	1.8	190	267	337	404	468	528	585	641	695

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 12060/12080/12100/12125 • ID 11.8 mm • Kd 0.32 • Flow rate 1.05 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.8	71	93	111	126	139	151	162	171	179
	1.0	79	105	126	145	161	175	188	200	210
	1.2	87	115	139	160	178	195	210	223	236
	1.4	93	124	150	174	194	212	229	245	259
	1.6	99	132	161	186	208	228	246	264	279
	1.8	104	140	170	197	220	242	262	280	297
Flat terrain	0.8	78	106	130	153	174	194	212	230	247
	1.0	86	117	144	170	193	215	235	255	274
	1.2	93	126	156	184	209	232	255	276	297
	1.4	99	135	167	196	223	248	272	295	317
	1.6	104	143	176	207	235	262	287	311	335
	1.8	109	149	185	217	247	275	302	327	351
Downhill 2%	0.8	85	119	151	181	210	239	266	293	321
	1.0	92	129	163	196	226	256	286	314	342
	1.2	99	138	174	208	240	272	302	331	360
	1.4	104	146	183	219	253	285	317	347	377
	1.6	110	153	192	229	264	298	330	362	393
	1.8	114	159	200	238	274	309	342	375	407

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 12060/12080/12100/12125 • ID 11.8 mm • Kd 0.32 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.8	55	73	88	101	113	123	132	140	148
	1.0	62	82	100	115	128	141	152	162	172
	1.2	67	90	109	127	142	155	168	180	191
	1.4	72	97	118	137	153	169	182	196	208
	1.6	76	103	125	146	163	180	195	210	223
	1.8	80	108	132	154	173	190	207	222	237
Flat terrain	0.8	59	80	100	117	133	148	162	176	189
	1.0	65	89	110	130	147	164	180	195	209
	1.2	71	96	119	140	160	178	194	212	227
	1.4	75	103	127	150	170	190	208	225	242
	1.6	79	109	134	158	179	200	219	239	256
	1.8	83	114	141	166	188	210	230	249	268
Downhill 2%	0.8	63	88	111	133	154	174	194	213	232
	1.0	69	96	121	145	167	188	209	230	249
	1.2	74	103	129	154	178	200	222	243	264
	1.4	78	109	137	163	187	211	234	256	277
	1.6	82	114	144	171	196	221	244	267	290
	1.8	86	119	150	178	204	230	254	278	301

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 16060/16080/16100/16125 • ID 16.2 mm • Kd 0.08 • Flow rate 0.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.8	174	207	228	244	254	263	269	274	277
	1.0	204	247	277	300	316	330	340	348	355
	1.2	229	281	319	348	370	389	403	415	425
	1.4	251	311	355	390	418	441	460	476	489
	1.6	270	337	388	428	461	489	512	531	548
	1.8	287	360	417	463	500	532	559	582	603
Flat terrain	0.8	237	314	382	444	500	554	605	653	700
	1.0	263	348	424	492	555	615	671	725	777
	1.2	285	377	459	533	602	666	727	786	842
	1.4	304	403	490	569	643	711	777	839	899
	1.6	321	426	518	602	679	752	821	887	950
	1.8	337	447	543	631	713	789	862	931	997
Downhill 2%	0.8	305	428	538	644	745	843	939	1033	1126
	1.0	325	454	569	679	784	886	986	1084	1179
	1.2	343	477	597	711	820	925	1028	1128	1227
	1.4	359	497	622	739	851	960	1066	1169	1270
	1.6	374	516	644	765	881	992	1101	1206	1310
	1.8	387	534	666	790	908	1022	1133	1241	1347

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 16060/16080/16100/16125 • ID 16.2 mm • Kd 0.08 • Flow rate 1.05 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.8	122	152	174	192	206	218	227	235	242
	1.0	140	176	204	227	245	262	275	287	297
	1.2	155	196	229	257	279	299	316	331	345
	1.4	168	214	251	282	308	332	352	370	386
	1.6	179	230	270	305	335	361	384	405	424
	1.8	190	244	288	326	358	387	413	437	458
Flat terrain	0.8	147	195	238	276	311	345	377	407	436
	1.0	163	217	264	306	346	383	418	452	484
	1.2	177	235	286	332	374	415	453	490	524
	1.4	189	251	305	354	400	443	484	523	560
	1.6	199	265	322	375	423	468	511	553	592
	1.8	209	278	338	393	443	491	537	580	621
Downhill 2%	0.8	173	241	306	368	425	479	530	581	631
	1.0	187	259	326	391	451	507	562	615	666
	1.2	199	274	344	412	473	532	589	644	697
	1.4	210	288	361	430	494	554	613	670	726
	1.6	219	301	376	447	513	575	636	694	752
	1.8	228	312	390	463	530	595	657	717	776

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 16060/16080/16100/16125 • ID 16.2 mm • Kd 0.08 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.8	98	124	144	161	175	186	197	206	214
	1.0	111	142	166	187	205	220	234	246	256
	1.2	122	157	185	209	230	248	264	279	292
	1.4	132	170	201	228	251	272	291	309	324
	1.6	140	182	216	245	271	294	315	335	352
	1.8	148	192	229	261	289	314	337	358	377
Flat terrain	0.8	112	149	182	211	238	264	288	311	333
	1.0	124	165	201	234	264	293	319	346	370
	1.2	135	179	218	254	286	317	346	374	401
	1.4	144	191	233	271	305	339	370	400	428
	1.6	152	202	246	286	323	358	390	422	452
	1.8	159	212	258	300	339	375	410	443	475
Downhill 2%	0.8	127	176	221	265	307	348	388	425	460
	1.0	138	190	238	284	328	370	412	450	487
	1.2	148	202	252	300	346	390	433	473	512
	1.4	156	213	265	315	362	408	452	493	534
	1.6	164	223	277	329	377	424	470	512	554
	1.8	171	232	288	341	391	440	486	530	572

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripper or by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 22060/22080/22100/22125 • ID 22.2 mm • Kd 0.05 • Flow rate 0.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.6	173	185	191	194	196	197	198	198	198
	0.8	236	261	274	282	286	289	292	293	294
	1.0	288	327	349	363	371	377	382	385	388
	1.2	333	385	416	437	451	461	468	473	477
Flat terrain	0.6	355	470	570	662	746	825	901	973	1042
	0.8	411	543	660	766	863	956	1042	1126	1206
	1.0	455	602	731	849	958	1060	1157	1249	1338
	1.2	493	653	792	920	1038	1149	1254	1354	1450
Downhill 2%	0.6	547	771	984	1191	1391	1588	1782	1973	2162
	0.8	585	820	1042	1257	1465	1668	1869	2066	2260
	1.0	618	862	1093	1314	1529	1738	1944	2147	2346
	1.2	647	900	1138	1366	1586	1801	2011	2219	2423

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 22060/22080/22100/22125 • ID 22.2 mm • Kd 0.05 • Flow rate 1.05 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.6	142	162	173	180	185	188	190	193	194
	0.8	183	215	236	250	260	267	274	277	281
	1.0	215	258	288	310	326	338	347	355	361
	1.2	242	295	333	361	383	400	414	426	435
Flat terrain	0.6	221	292	355	412	464	514	561	606	649
	0.8	255	338	410	476	538	595	650	701	751
	1.0	283	374	455	528	596	660	720	778	833
	1.2	306	406	493	573	646	715	781	843	903
Downhill 2%	0.6	308	434	548	658	763	867	967	1067	1165
	0.8	333	466	586	701	812	920	1025	1129	1230
	1.0	354	493	619	739	854	966	1074	1182	1287
	1.2	373	518	648	772	891	1007	1119	1229	1337

Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meter) at different inlet pressure and different slopes

Orion™ PC 22060/22080/22100/22125 • ID 22.2 mm • Kd 0.05 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	0.6	121	143	157	167	173	178	182	185	187
	0.8	151	184	206	223	236	246	254	260	265
	1.0	176	216	246	270	288	303	315	326	334
	1.2	196	244	280	310	333	352	369	383	395
Flat terrain	0.6	168	223	271	315	355	393	429	464	496
	0.8	195	258	313	364	410	454	496	536	574
	1.0	216	286	348	404	455	504	550	595	637
	1.2	233	310	376	437	494	547	597	644	690
Downhill 2%	0.6	219	312	397	475	549	622	692	761	829
	0.8	240	338	427	509	587	664	738	810	881
	1.0	257	359	453	539	620	699	777	852	926
	1.2	273	379	476	565	650	732	811	889	966

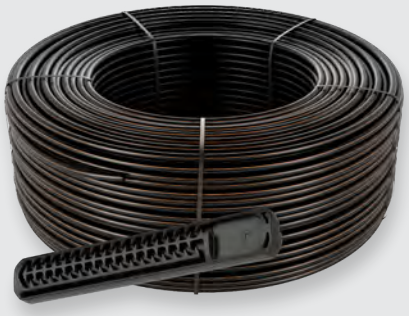
Minimum design pressure: 0.20 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.



Aries™

Aries™ HWD

Integral dripper (non-pressure-compensated) with high clogging resistance. Designed for multi-season drip irrigation applications in permanent crops.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance even under challenging water quality conditions through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The TurbuNext™ labyrinth features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.

Applications

Open field Orchards Protected crops

- Suitable for on-surface and sub-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in permanent and semi-permanent row crops and orchards.



Specifications

- Maximum operating pressure: According to dripline wall thickness and diameter. See tables below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurbuNext™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into thick-wall driplines: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* 1.2 WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.55	0.47 x 0.53 x 65	36	0.191	0.46	130/120
0.85	0.54 x 0.69 x 65	43	0.295	0.46	130/120
1.05	0.60 x 0.74 x 65	49	0.364	0.46	130/120
1.60	0.71 x 0.85 x 65	53	0.554	0.46	200/80
2.10	0.76 x 1.03 x 65	54	0.728	0.46	200/80
3.15	0.90 x 1.20 x 65	54	1.092	0.46	200/80
4.20	0.94 x 1.28 x 33	54	1.455	0.46	200/80
8.40	1.52 x 1.28 x 28	50	2.912	0.46	200/80

* Nominal flow rate at 1.0 bar. WT = dripline wall thickness



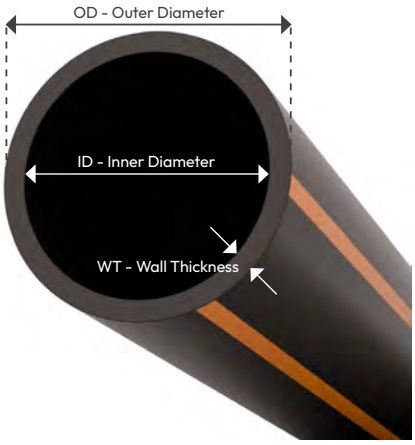
Flow rate* 0.9-1.0 WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.55	0.47 x 0.53 x 65	36	0.191	0.46	130/120
0.80	0.54 x 0.69 x 65	43	0.277	0.46	130/120
1.00	0.60 x 0.74 x 65	49	0.347	0.46	130/120
1.50	0.71 x 0.85 x 65	53	0.520	0.46	200/80
2.00	0.76 x 1.03 x 65	54	0.693	0.46	200/80
3.00	0.90 x 1.20 x 65	54	1.040	0.46	200/80
4.00	0.94 x 1.28 x 33	54	1.387	0.46	200/80
8.00	1.52 x 1.28 x 28	50	2.773	0.46	200/80

* Nominal flow rate at 1.0 bar. WT = dripline wall thickness

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12009	10.30	0.9	13.00	3.8	4.9	0.70
12010	10.30	1.0	12.30	4.0	5.2	0.70
16009	14.20	0.9	16.00	3.0	3.9	0.40
16010	14.20	1.0	16.20	3.5	4.6	0.40
16012	14.20	1.2	16.60	4.0	5.2	0.40
20010	17.50	1.0	19.50	3.5	4.6	0.10
20012	17.50	1.2	19.90	4.0	5.2	0.10

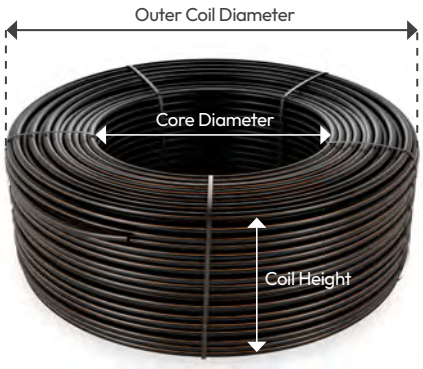


Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
12009	0.9	0.15 to 1.00	500	18.9	78	41	26
12010	1.0	0.15 to 1.00	500	20.6	78	41	26
16009	0.9	0.15 to 1.00	500	20.7	84	41	27
16010	1.0	0.15 to 1.00	500	23.0	84	41	27
16012	1.2	0.15 to 1.00	400	22.3	78	41	28
20010	1.0	0.15 to 1.00	300	16.7	84	50	27
20012	1.2	0.15 to 1.00	300	20.2	84	50	27



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12009	500	370	185000
12010	500	370	185000
16009	500	330	165000
16010	500	330	165000
16012	400	352	140800
20010	300	330	99000
20012	300	330	99000



A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Aries™ HWD	ARIES

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h) 1.2 mm WT	
0.55	0.55L/H
0.85	0.85L/H
1.05	1.05L/H
1.60	1.60L/H
2.10	2.10L/H
3.15	3.15L/H
4.20	4.20L/H
8.40	8.40L/H

Flow rate (l/h) 0.9-1.0 mm WT	
0.55	0.55L/H
0.80	0.80L/H
1.00	1.00L/H
1.50	1.50L/H
2.00	2.00L/H
3.00	3.00L/H
4.00	4.00L/H
8.00	8.00L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Special features	
No added	-
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

ARIES 16012 1.60L/H 0.30M 400M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Aries™ HWD flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00	3.50	4.00
Aries™ HWD 1.2 mm WT	0.55	0.36	0.44	0.50	0.55	0.66	0.76	0.84	0.91	0.98	1.04
	0.85	0.56	0.67	0.77	0.85	1.03	1.17	1.30	1.41	1.51	1.61
	1.05	0.69	0.83	0.95	1.05	1.27	1.44	1.60	1.74	1.87	1.99
	1.60	1.05	1.26	1.44	1.60	1.93	2.20	2.44	2.65	2.84	3.02
	2.10	1.38	1.66	1.89	2.10	2.53	2.89	3.20	3.48	3.74	3.97
	3.15	2.07	2.49	2.84	3.15	3.80	4.33	4.80	5.22	5.60	5.96
	4.20	2.75	3.32	3.79	4.20	5.06	5.77	6.40	6.96	7.47	7.94
	8.40	5.51	6.64	7.58	8.40	10.12	11.55	12.80	13.92	14.94	15.89

* Nominal flow rate at 1.0 bar.

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.20	0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00	3.50
Aries™ HWD 0.9 - 1.0 mm WT	0.55	0.26	0.36	0.44	0.50	0.55	0.66	0.76	0.84	0.91	0.98
	0.80	0.38	0.52	0.63	0.72	0.80	0.96	1.10	1.22	1.32	1.42
	1.00	0.48	0.66	0.79	0.90	1.00	1.21	1.38	1.53	1.66	1.78
	1.50	0.72	0.98	1.19	1.35	1.50	1.81	2.06	2.29	2.49	2.67
	2.00	0.95	1.31	1.58	1.80	2.00	2.41	2.75	3.05	3.31	3.56
	3.00	1.43	1.97	2.37	2.71	3.00	3.61	4.13	4.57	4.97	5.34
	4.00	1.91	2.62	3.16	3.61	4.00	4.82	5.50	6.10	6.63	7.12
	8.00	3.81	5.25	6.32	7.22	8.00	9.64	11.00	12.19	13.26	14.23

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 0.55 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	55	72	85	96	104	111	117	122	126
	1%	60	80	98	113	126	138	149	158	166
Flat terrain	0	64	89	112	132	151	169	186	202	217
Downhill	-1%	68	96	123	148	172	196	218	241	263
	-2%	72	104	135	166	196	225	255	284	314

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 0.80 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	45	60	71	81	89	96	102	108	112
	1%	48	65	79	92	103	113	123	131	140
Flat terrain	0	51	70	88	104	119	133	146	159	171
Downhill	-1%	53	74	94	114	132	149	166	183	199
	-2%	55	79	102	125	146	167	189	209	230

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	39	53	64	73	80	87	93	98	103
	1%	42	57	70	81	91	100	109	117	124
Flat terrain	0	44	61	76	90	103	115	126	138	149
Downhill	-1%	45	64	81	97	112	127	142	156	169
	-2%	47	67	86	105	123	141	158	175	192

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	31	42	51	59	66	72	78	83	87
	1%	32	44	55	64	73	81	88	95	100
Flat terrain	0	34	47	59	70	80	90	98	107	114
Downhill	-1%	34	48	61	74	85	96	106	117	127
	-2%	35	50	65	78	91	104	116	128	140

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	26	36	44	51	56	62	67	72	76
	1%	27	37	46	54	61	68	74	80	85
Flat terrain	0	28	39	49	58	66	74	82	89	96
Downhill	-1%	28	40	50	61	70	78	87	95	104
	-2%	29	41	53	64	74	84	94	104	113

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 3.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	20	28	34	40	46	50	54	59	62
Uphill	1%	21	29	36	43	48	54	59	64	68
Flat terrain	0	21	30	38	45	51	57	63	69	74
Downhill	-1%	22	31	38	46	53	60	66	73	79
	-2%	22	31	40	48	56	63	70	77	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	17	24	29	35	39	43	47	50	54
Uphill	1%	18	24	30	36	41	46	50	54	58
Flat terrain	0	18	25	31	38	43	48	53	58	62
Downhill	-1%	18	25	32	38	44	50	54	59	65
	-2%	18	26	33	40	46	52	58	63	68

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 12009/12010 • ID 10.3 mm • Kd 0.70 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	11	15	19	23	26	29	31	34	37
Uphill	1%	11	16	20	23	26	29	33	35	38
Flat terrain	0	11	16	20	24	28	31	34	37	40
Downhill	-1%	11	16	20	24	28	32	34	38	41
	-2%	12	16	21	25	29	32	36	40	42

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 0.55 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	87	107	120	130	136	141	145	148	150
Uphill	1%	101	131	155	175	191	205	217	227	235
Flat terrain	0	115	159	198	233	266	297	326	354	380
Downhill	-1%	127	182	235	286	335	384	432	481	528
	-2%	140	208	276	344	413	483	196	180	173

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 0.80 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	73	92	106	116	124	130	134	139	141
Uphill	1%	81	108	129	147	162	176	186	197	207
Flat terrain	0	90	125	155	184	209	234	257	279	300
Downhill	-1%	98	139	178	216	251	287	322	356	390
	-2%	106	155	203	251	298	346	394	443	492

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	65	83	97	107	115	122	127	131	135
Uphill	1%	71	95	114	131	145	158	170	179	188
Flat terrain	0	78	108	134	159	181	203	222	241	260
Downhill	-1%	83	118	151	183	212	242	270	299	326
	-2%	89	130	169	208	247	285	324	362	401

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	52	68	80	91	99	106	112	117	121
Uphill	1%	56	75	92	106	118	130	139	149	157
Flat terrain	0	60	83	104	123	140	156	171	186	201
Downhill	-1%	63	89	113	136	158	179	200	220	240
	-2%	66	96	124	151	178	204	230	257	282

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	44	59	70	80	88	95	101	106	110
Uphill	1%	47	64	78	90	101	111	121	130	136
Flat terrain	0	50	69	86	102	116	130	143	155	167
Downhill	-1%	52	73	93	111	128	146	162	178	194
	-2%	54	78	100	122	142	163	183	203	223

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 3.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	35	47	56	65	72	78	85	90	94
Uphill	1%	37	50	61	72	81	89	97	104	111
Flat terrain	0	38	53	66	79	90	100	110	121	129
Downhill	-1%	39	56	70	84	97	109	122	133	144
	-2%	41	58	74	90	105	119	134	148	161

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	30	40	48	56	63	69	74	78	83
Uphill	1%	31	42	52	61	68	76	82	88	94
Flat terrain	0	32	44	55	66	75	84	91	100	107
Downhill	-1%	32	46	58	69	79	90	99	109	118
	-2%	33	47	60	73	85	97	108	119	129

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	19	26	33	38	43	48	52	56	59
Uphill	1%	20	27	34	40	46	51	55	60	64
Flat terrain	0	20	28	36	42	48	54	59	65	70
Downhill	-1%	21	29	36	43	50	56	62	68	73
	-2%	21	29	38	45	52	59	66	72	78

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 0.55 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	87	107	120	130	136	141	145	148	150
Uphill	1%	101	131	155	175	191	205	217	227	235
Flat terrain	0	115	159	198	233	266	297	326	354	380
Downhill	-1%	127	182	235	286	335	384	432	481	528
	-2%	140	208	276	344	413	483	196	180	173

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 0.85 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	71	89	103	114	121	127	133	136	140
	1%	78	104	125	143	157	170	182	193	202
Flat terrain	0	87	120	149	177	201	225	247	268	289
Downhill	-1%	93	133	170	206	240	274	306	338	371
	-2%	101	147	193	238	283	328	373	419	464

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 1.05 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	63	81	94	105	113	120	126	130	134
	1%	69	93	112	128	142	155	166	176	185
Flat terrain	0	76	105	130	154	176	196	215	234	252
Downhill	-1%	81	114	146	176	205	233	261	288	314
	-2%	86	125	163	201	237	274	310	347	384

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 1.60 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	50	66	78	89	97	103	110	114	119
	1%	54	73	88	103	114	125	135	144	153
Flat terrain	0	58	80	100	118	134	150	165	179	193
Downhill	-1%	60	85	108	130	151	171	190	210	228
	-2%	64	92	118	144	169	194	219	243	268

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate2.10 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	43	57	68	78	86	92	99	104	108
	1%	46	62	76	88	99	109	118	125	133
Flat terrain	0	48	67	84	99	113	126	138	150	162
Downhill	-1%	50	71	90	108	124	141	156	172	187
	-2%	52	75	96	117	137	157	176	195	214

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate3.15 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	34	46	55	64	71	77	82	88	93
	1%	36	48	60	70	79	87	94	102	108
Flat terrain	0	37	51	64	76	87	97	107	117	126
Downhill	-1%	38	54	68	81	94	106	118	129	139
	-2%	39	56	72	87	101	115	129	142	155

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 4.20l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	29	39	47	55	61	67	72	77	81
	1%	30	41	50	59	67	74	80	86	92
Flat terrain	0	31	43	54	64	73	81	89	96	104
Downhill	-1%	31	44	56	67	77	87	96	105	114
	-2%	32	46	58	71	82	93	104	114	125

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 8.40 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	19	26	32	37	42	46	50	54	58
Uphill	1%	19	27	33	39	44	49	54	59	63
Flat terrain	0	20	27	34	41	47	53	58	63	68
Downhill	-1%	20	28	35	42	48	54	60	66	71
	-2%	20	29	36	44	50	57	63	69	75

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 0.55 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	117	133	142	147	151	153	155	156	157
Uphill	1%	150	184	208	227	241	253	262	270	277
Flat terrain	0	188	251	306	356	401	445	486	526	563
Downhill	-1%	222	313	400	485	569	652	737	821	905
	-2%	260	382	507	180	169	165	162	159	158

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 0.80 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	102	120	131	139	143	147	150	152	153
Uphill	1%	124	155	178	198	213	225	236	246	253
Flat terrain	0	148	197	241	280	317	351	384	415	444
Downhill	-1%	169	236	298	359	419	477	536	594	652
	-2%	191	277	362	448	208	182	173	167	164

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	93	111	123	132	137	141	146	148	150
Uphill	1%	110	139	161	180	195	207	219	229	236
Flat terrain	0	128	171	209	243	275	304	333	360	385
Downhill	-1%	143	199	251	302	350	398	445	491	538
	-2%	160	230	298	367	435	505	192	179	172

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	78	95	108	117	124	130	134	138	141
Uphill	1%	88	113	132	149	163	176	186	196	205
Flat terrain	0	99	132	161	188	212	235	257	278	298
Downhill	-1%	108	148	186	222	256	290	322	356	387
	-2%	117	166	213	260	305	351	397	443	489

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	67	84	96	106	113	119	125	130	133
Uphill	1%	75	96	114	129	142	154	164	174	182
Flat terrain	0	82	110	134	156	177	195	214	231	248
Downhill	-1%	88	121	151	180	207	233	259	284	309
	-2%	95	133	170	205	240	274	309	343	377

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 3.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	54	69	80	90	97	104	110	114	119
Uphill	1%	59	77	91	105	116	125	135	144	152
Flat terrain	0	63	85	104	121	136	151	166	179	192
Downhill	-1%	67	91	113	134	154	173	191	210	227
	-2%	71	98	124	149	173	197	221	244	267

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	46	59	70	79	86	92	98	103	107
Uphill	1%	49	65	78	89	99	109	117	124	131
Flat terrain	0	53	71	86	101	113	126	138	149	159
Downhill	-1%	55	75	93	110	125	141	155	170	184
	-2%	58	80	100	120	139	157	175	194	211

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	31	41	48	56	62	67	71	76	80
Uphill	1%	32	43	52	60	67	74	80	86	91
Flat terrain	0	34	45	56	65	73	81	89	95	103
Downhill	-1%	35	47	58	68	78	87	96	104	113
	-2%	36	49	61	73	83	94	104	113	123

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 0.55 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	117	133	142	147	151	153	155	156	157
Uphill	1%	150	184	208	227	241	253	262	270	277
Flat terrain	0	188	251	306	356	401	445	486	526	563
Downhill	-1%	222	313	400	485	569	652	737	821	905
	-2%	260	382	507	180	169	165	162	159	158

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 0.85 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	100	118	129	136	142	146	148	151	152
Uphill	1%	120	150	174	193	208	221	232	240	249
Flat terrain	0	142	190	232	270	304	337	369	398	427
Downhill	-1%	161	225	284	342	398	454	508	563	617
	-2%	182	263	343	424	505	188	176	170	166

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 1.05 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	91	109	121	130	136	140	144	147	149
Uphill	1%	107	135	158	176	191	204	215	224	233
Flat terrain	0	124	166	202	236	266	295	322	348	373
Downhill	-1%	139	192	242	291	337	383	428	473	517
	-2%	154	221	286	352	416	482	201	183	175

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 1.60 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	75	92	105	115	122	127	133	136	139
	1%	85	109	128	145	159	171	182	192	200
Flat terrain	0	95	127	154	180	203	225	246	267	286
Downhill	-1%	103	142	178	212	244	276	307	338	368
	-2%	112	158	202	246	289	332	375	418	461

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 2.10 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	66	82	94	104	112	118	123	128	131
	1%	73	94	111	126	139	150	161	170	179
Flat terrain	0	79	107	130	152	171	190	207	224	241
Downhill	-1%	85	117	146	173	199	225	250	274	298
	-2%	91	128	163	197	230	263	296	329	361

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 3.15 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	53	67	78	88	95	102	107	113	117
	1%	57	74	89	102	112	123	132	140	148
Flat terrain	0	61	82	100	117	132	146	160	174	186
Downhill	-1%	65	88	110	130	149	167	185	203	219
	-2%	68	95	120	144	167	190	212	234	256

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 4.20 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	45	58	68	77	84	91	96	101	105
	1%	48	63	76	87	97	106	114	122	128
Flat terrain	0	51	68	84	98	110	123	134	144	155
Downhill	-1%	53	72	90	106	121	136	150	164	178
	-2%	56	77	97	116	134	151	169	186	203

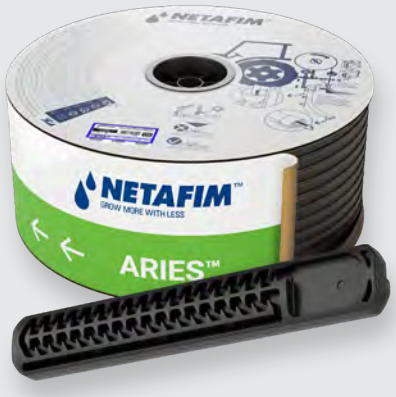
Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ HWD 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 8.40 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	30	40	47	54	60	65	70	74	78
	1%	31	42	50	59	65	71	78	83	89
Flat terrain	0	33	44	54	63	71	78	86	93	100
Downhill	-1%	33	45	56	66	75	84	93	101	109
	-2%	34	47	59	70	80	90	100	110	119

Aries™ MWD

Integral dripper (non-pressure-compensated) with high clogging resistance. Designed for few-season drip irrigation applications in semi-permanent and seasonal crops.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance even under challenging water quality conditions through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The TurbuNext™ labyrinth features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.

Applications

Open field Orchards Protected crops

- Suitable for on-surface and sub-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in semi-permanent and seasonal row crops and orchards.



Specifications

- Maximum operating pressure: According to dripline wall thickness and diameter. See tables below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurbuNext™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into medium-wall driplines: 0.50, 0.63 and 0.80 mm.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* 32 (mil) / 0.80 (mm) (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.55	0.47 x 0.53 x 65	36	0.191	0.46	130/120
0.80	0.54 x 0.69 x 65	43	0.295	0.46	130/120
1.00	0.60 x 0.74 x 65	49	0.364	0.46	130/120
1.50	0.71 x 0.85 x 65	53	0.554	0.46	200/80
2.00	0.76 x 1.03 x 65	54	0.728	0.46	200/80
3.00	0.90 x 1.20 x 65	54	1.092	0.46	200/80
4.00	0.94 x 1.28 x 33	54	1.455	0.46	200/80
8.00	1.52 x 1.28 x 28	50	2.912	0.46	200/80

* Nominal flow rate at 1.0 bar. WT = dripline wall thickness

Flow rate* 20-25 (mil) / 0.50-0.63 (mm) WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.55	0.47 x 0.53 x 65	36	0.191	0.46	130/120
0.80	0.54 x 0.69 x 65	43	0.277	0.46	130/120
1.00	0.60 x 0.74 x 65	49	0.347	0.46	130/120
1.40	0.71 x 0.85 x 65	53	0.485	0.46	200/80
1.90	0.76 x 1.03 x 65	54	0.659	0.46	200/80
2.85	0.90 x 1.20 x 65	54	0.988	0.46	200/80
3.80	0.94 x 1.28 x 33	54	1.316	0.46	200/80
8.00	1.52 x 1.28 x 28	50	2.773	0.46	200/80

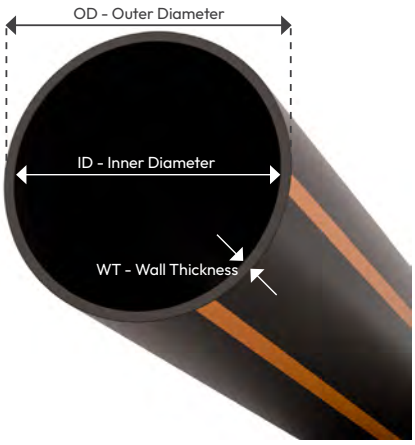
* Nominal flow rate at 1.0 bar. WT = dripline wall thickness

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.



Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12200	11.80	20 / 0.50	12.80	3.0	3.9	0.53
12250	11.80	25 / 0.63	13.06	3.5	4.6	0.53
16200	15.50	20 / 0.50	16.50	2.5	3.3	0.35
16250	15.50	25 / 0.63	16.76	2.8	3.6	0.35
16008	14.20	32 / 0.80	15.80	3.0	3.9	0.40
22200	22.20	20 / 0.50	23.20	2.0	2.3	0.06
22250	22.20	25 / 0.63	23.56	2.5	3.3	0.06

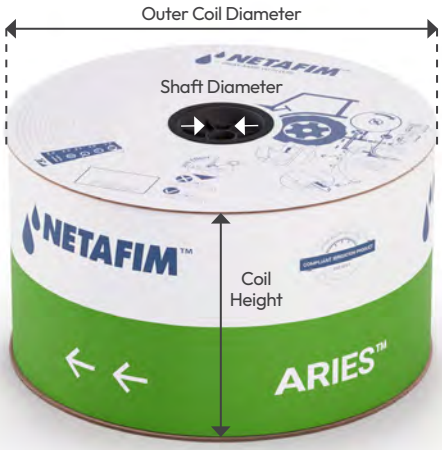


Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12200	20 / 0.50	0.15 to 0.25	800	17.6	57.0	3.8	32.5
		0.30 to 1.00	900	18.8			
12250	25 / 0.63	0.15 to 0.25	700	19.0	57.0	3.8	32.5
		0.30 to 1.00	750	19.6			
16200	20 / 0.50	0.15 to 0.25	850	23.1	57.0	3.8	32.5
		0.30 to 1.00	900	23.7			
16250	25 / 0.63	0.15 to 0.25	750	25.4	57.0	3.8	32.5
		0.30 to 1.00	800	26.3			
16008	32 / 0.80	0.15	450	19.4	57.0	3.8	32.5
		0.20 to 1.00	500	21.0			
22200	20 / 0.50	0.15 to 0.25	700	17.9	57.0	3.8	24.0
		0.30 to 1.00	800	20.4			
22250	25 / 0.63	0.15 to 0.25	550	25.7	57.0	3.8	24.0
		0.30 to 1.00	600	27.4			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12200	800	12	109 x 109 x 110	221	480	384000
	900			236		432000
12250	700	12	109 x 109 x 110	238	480	336000
	750			245		360000
16200	850	12	109 x 109 x 110	287	480	408000
	900			294		432000
16250	750	12	109 x 109 x 110	315	480	360000
	800			326		384000
16008	450	12	109 x 109 x 110	243	480	216000
	500			262		240000
22200	700	12	109 x 109 x 110	224	480	336000
	800			255		384000
22250	550	12	109 x 109 x 110	318	480	264000
	600			339		288000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Aries™ MWD	ARIES

Commercial diameter (mm)	
12	12
16	16
20	20

Wall thickness (mil) / (mm)	
20 / 0.50	200
25 / 0.63	250
32 / 0.80	008

Flow rate (l/h) 32 mil / 0.80 mm WT	
0.55	0.55L/H
0.80	0.80L/H
1.00	1.00L/H
1.50	1.50L/H
2.00	2.00L/H
3.00	3.00L/H
4.00	4.00L/H
8.00	8.00L/H

Flow rate (l/h) 20-25 mil / 0.50-0.63 mm WT	
0.55	0.55L/H
0.80	0.80L/H
1.00	1.00L/H
1.40	1.40L/H
1.90	1.90L/H
2.85	2.85L/H
3.80	3.80L/H
8.00	8.00L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

ARIES 16250 1.40L/H 0.40M 800M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Aries™ MWD flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)								
		0.20	0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00
Aries™ MWD 32 (mil) / 0.80 (mm) WT	0.55	0.26	0.36	0.44	0.50	0.55	0.66	0.76	0.84	0.91
	0.80	0.38	0.52	0.63	0.72	0.80	0.96	1.10	1.22	1.32
	1.00	0.48	0.66	0.79	0.90	1.00	1.21	1.38	1.53	1.66
	1.50	0.72	0.98	1.19	1.35	1.50	1.81	2.06	2.29	2.49
	2.00	0.95	1.31	1.58	1.80	2.00	2.41	2.75	3.05	3.31
	3.00	1.43	1.97	2.37	2.71	3.00	3.61	4.13	4.57	4.97
	4.00	1.91	2.62	3.16	3.61	4.00	4.82	5.50	6.10	6.63
	8.00	3.81	5.25	6.32	7.22	8.00	9.64	11.00	12.19	13.26

* Nominal flow rate at 1.0 bar.

Dripper	Flow rate* (l/h)	Working pressure (bar)								
		0.20	0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00
Aries™ MWD 20-25 (mil) / 0.50-0.63 (mm) WT	0.55	0.26	0.36	0.44	0.50	0.55	0.66	0.76	0.84	0.91
	0.80	0.38	0.52	0.63	0.72	0.80	0.96	1.10	1.22	1.32
	1.00	0.48	0.66	0.79	0.90	1.00	1.21	1.38	1.53	1.66
	1.40	0.67	0.92	1.11	1.26	1.40	1.69	1.92	2.13	2.32
	1.90	0.91	1.25	1.50	1.72	1.90	2.29	2.61	2.90	3.15
	2.85	1.36	1.87	2.25	2.57	2.85	3.43	3.92	4.34	4.72
	3.80	1.81	2.49	3.00	3.43	3.80	4.57	5.22	5.79	6.29
	8.00	3.81	5.25	6.32	7.22	8.00	9.64	11.00	12.19	13.26

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 0.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	74	92	106	116	124	130	134	138	141
Uphill	1%	83	109	130	147	162	175	186	196	206
Flat terrain	0	92	126	156	184	209	232	255	277	298
Downhill	-1%	100	141	179	216	251	286	320	354	386
	-2%	108	157	204	252	298	345	392	439	487

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	58	74	87	97	105	112	118	122	126
Uphill	1%	63	83	101	115	128	140	150	160	168
Flat terrain	0	68	93	116	136	155	172	190	204	220
Downhill	-1%	72	101	128	153	177	201	223	246	268
	-2%	76	110	141	172	202	232	262	291	320

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 1.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	51	66	78	89	96	103	109	114	119
Uphill	1%	55	73	89	103	114	125	134	143	151
Flat terrain	0	59	80	100	118	134	149	164	178	191
Downhill	-1%	62	86	109	130	151	170	190	208	226
	-2%	65	93	119	144	169	193	218	241	265

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 1.40 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	42	55	66	75	83	90	95	100	105
Uphill	1%	45	60	73	85	95	104	112	120	127
Flat terrain	0	47	65	80	95	107	120	131	142	153
Downhill	-1%	49	68	86	102	118	133	147	162	176
	-2%	51	72	92	111	130	148	166	183	200

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 1.90 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	36	47	56	65	72	78	84	89	93
Uphill	1%	37	50	61	71	80	88	96	103	110
Flat terrain	0	39	53	66	78	89	99	109	119	127
Downhill	-1%	40	56	70	84	96	108	120	131	142
	-2%	41	58	74	89	104	118	131	145	158

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MW 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 2.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	28	38	46	53	58	64	69	73	77
Uphill	1%	29	39	48	57	64	70	76	82	87
Flat terrain	0	30	41	51	61	68	76	84	91	98
Downhill	-1%	30	42	53	63	73	82	90	99	107
	-2%	31	44	56	67	77	88	98	107	117

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 3.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	24	32	38	45	50	55	59	64	68
Uphill	1%	24	33	40	48	53	60	65	70	75
Flat terrain	0	25	34	42	50	57	64	70	77	82
Downhill	-1%	25	35	44	52	60	67	74	81	88
	-2%	26	36	46	55	63	71	79	87	94

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MW 12200/12250 • ID 11.8 mm • Kd 0.40 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	15	20	25	30	33	36	39	42	45
Uphill	1%	15	21	26	31	34	38	42	45	48
Flat terrain	0	15	21	27	32	36	40	44	48	51
Downhill	-1%	15	21	27	32	37	41	46	50	53
	-2%	16	22	28	33	38	43	47	51	56

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 0.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	101	120	132	140	145	148	150	153	154
Uphill	1%	121	155	182	202	218	232	242	252	260
Flat terrain	0	144	197	246	290	330	368	404	439	472
Downhill	-1%	162	234	304	372	439	505	571	637	704
	-2%	183	275	369	465	192	176	169	165	162

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	82	102	115	125	131	137	141	145	147
Uphill	1%	93	122	146	165	181	195	206	216	226
Flat terrain	0	106	146	181	214	244	272	299	325	350
Downhill	-1%	116	165	212	258	302	345	388	430	473
	-2%	127	187	246	307	367	428	490	197	182

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 1.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	73	92	106	117	124	130	135	139	142
Uphill	1%	82	108	130	148	163	176	188	198	208
Flat terrain	0	91	126	157	185	211	235	259	281	303
Downhill	-1%	99	140	180	218	254	290	325	359	394
	-2%	107	156	205	253	301	350	398	448	498

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 1.40 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	62	80	93	103	112	118	124	129	133
Uphill	1%	68	90	109	125	139	151	162	172	181
Flat terrain	0	74	101	126	150	170	190	209	227	244
Downhill	-1%	78	111	141	170	198	225	251	277	303
	-2%	83	121	157	193	228	263	298	333	368

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 1.90 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	52	68	81	91	99	106	112	117	121
Uphill	1%	56	75	92	106	119	130	139	149	157
Flat terrain	0	60	83	104	123	140	156	172	186	201
Downhill	-1%	63	89	113	136	158	179	200	220	240
	-2%	67	96	124	152	178	204	230	257	283

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 2.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	42	55	66	76	83	90	95	101	105
Uphill	1%	44	59	73	85	95	105	113	121	129
Flat terrain	0	46	64	80	95	108	120	133	144	155
Downhill	-1%	48	68	86	103	118	134	149	164	178
	-2%	50	71	92	111	130	148	167	185	203

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 3.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	35	47	57	65	73	79	85	90	94
Uphill	1%	37	50	62	72	81	90	97	104	111
Flat terrain	0	39	53	66	79	90	101	110	121	130
Downhill	-1%	39	56	70	84	97	109	122	133	145
	-2%	41	58	74	90	105	120	134	148	162

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16200/16250 • ID 16.2 mm • Kd 0.35 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	23	31	38	44	49	54	58	63	67
Uphill	1%	23	32	39	46	52	58	64	68	74
Flat terrain	0	24	33	41	49	56	62	69	75	81
Downhill	-1%	24	34	42	51	58	66	73	79	86
	-2%	25	35	44	53	61	69	78	85	93

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 0.55 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	97	117	129	137	143	146	150	152	153
Uphill	1%	115	148	174	194	211	224	235	245	253
Flat terrain	0	135	185	230	272	310	345	380	412	443
Downhill	-1%	151	218	282	344	405	466	526	586	646
	-2%	169	253	338	425	225	183	173	167	164

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	82	102	115	125	131	137	141	145	147
	1%	93	122	146	165	181	195	206	216	226
Flat terrain	0	106	146	181	214	244	272	299	325	350
Downhill	-1%	116	165	212	258	302	345	388	430	473
	-2%	127	187	246	307	367	428	490	197	182

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 1.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	73	92	106	117	124	130	135	139	142
	1%	82	108	130	148	163	176	188	198	208
Flat terrain	0	91	126	157	185	211	235	259	281	303
Downhill	-1%	99	140	180	218	254	290	325	359	394
	-2%	107	156	205	253	301	350	398	448	498

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 1.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	60	77	90	101	109	116	121	126	130
	1%	65	86	105	121	134	146	157	167	176
Flat terrain	0	70	97	121	143	163	182	200	218	234
Downhill	-1%	74	105	134	162	188	214	238	263	287
	-2%	79	115	149	183	215	248	281	313	346

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MW 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 2.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	51	66	79	89	97	104	110	115	120
	1%	55	73	89	103	115	126	136	145	154
Flat terrain	0	58	80	100	119	135	151	166	181	195
Downhill	-1%	61	86	110	132	152	173	193	212	231
	-2%	64	92	120	146	171	197	222	247	271

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 3.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	40	53	64	74	82	88	94	99	103
	1%	43	58	71	83	92	102	110	118	125
Flat terrain	0	45	62	78	92	104	116	128	140	150
Downhill	-1%	46	65	82	99	114	130	143	158	171
	-2%	48	69	88	107	125	143	160	177	195

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 4.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	34	46	55	64	71	77	82	88	92
	1%	36	48	60	70	79	87	94	102	108
Flat terrain	0	37	51	64	76	87	97	107	116	125
Downhill	-1%	38	54	68	81	94	106	117	129	139
	-2%	39	56	72	87	101	115	129	142	155

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 16008 • ID 14.2 mm • Kd 0.40 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	23	31	38	44	49	54	58	63	67
Uphill	1%	23	32	39	46	52	58	64	68	74
Flat terrain	0	24	33	41	49	56	62	69	75	81
Downhill	-1%	24	34	42	51	58	66	73	79	86
	-2%	25	35	44	53	61	69	78	85	93

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 0.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	142	151	155	157	158	159	159	160	161
Uphill	1%	209	243	264	278	287	295	299	303	306
Flat terrain	0	307	407	494	575	649	718	784	846	907
Downhill	-1%	401	578	753	930	397	358	342	334	328
	-2%	508	169	161	159	157	156	155	155	154

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	128	141	148	152	154	156	158	158	159
Uphill	1%	171	206	230	248	261	271	278	284	291
Flat terrain	0	227	301	366	425	480	531	580	627	671
Downhill	-1%	277	392	503	614	723	834	945	431	379
	-2%	333	496	177	167	162	160	158	157	156

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 1.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	120	135	143	148	152	154	155	157	158
Uphill	1%	154	188	213	232	245	257	266	273	279
Flat terrain	0	196	260	317	368	416	460	503	543	582
Downhill	-1%	234	328	419	508	596	683	771	860	949
	-2%	275	404	208	177	167	163	161	159	158

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 1.40 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	107	124	134	141	145	148	150	153	154
Uphill	1%	131	162	186	205	220	232	242	252	259
Flat terrain	0	158	210	256	297	335	372	406	438	470
Downhill	-1%	182	254	321	387	451	515	578	640	703
	-2%	208	301	394	488	190	175	169	165	162

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 1.90 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	94	112	124	132	137	141	146	148	150
Uphill	1%	111	140	162	180	196	208	219	230	237
Flat terrain	0	130	173	210	245	276	306	334	361	386
Downhill	-1%	146	202	254	304	353	400	448	495	541
	-2%	163	233	302	370	439	509	190	178	172

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 2.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	78	96	108	117	125	130	134	139	141
	1%	89	113	133	150	164	176	187	197	206
Flat terrain	0	100	133	162	189	214	236	258	279	299
Downhill	-1%	109	150	188	224	258	292	325	357	389
	-2%	120	169	216	262	308	354	399	446	492

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 3.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	68	84	97	106	114	120	125	130	133
	1%	76	97	115	130	143	155	165	175	183
Flat terrain	0	83	111	135	157	178	197	215	232	249
Downhill	-1%	90	122	152	181	208	235	261	286	311
	-2%	97	135	172	207	242	277	311	346	380

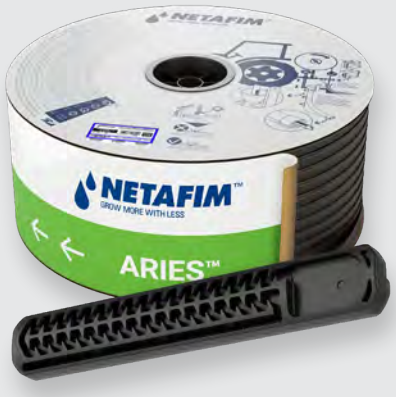
Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ MWD 22200/22250 • ID 22.2 mm • Kd 0.60 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	46	59	68	77	85	91	96	101	105
	1%	49	64	76	87	97	106	114	122	128
Flat terrain	0	52	69	84	98	111	123	134	145	155
Downhill	-1%	54	73	90	107	122	137	151	165	178
	-2%	57	78	98	117	134	152	170	186	203

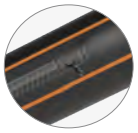
Aries™ TWD

Integral dripper (non-pressure-compensated) with high clogging resistance. Designed for seasonal drip irrigation applications in vegetables, industrial crops and other seasonal crops.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance even under challenging water quality conditions through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The TurbuNext™ labyrinth features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface and sub-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in seasonal vegetables, industrial and other row crops.



Specifications

- Maximum operating pressure: According to dripline wall thickness and diameter. See tables below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurbuNext™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into thin-wall driplines: 0.31, 0.34 and 0.38 mm.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.50	0.47 x 0.53 x 65	36	0.173	0.46	130/120
0.80	0.54 x 0.69 x 65	43	0.277	0.46	130/120
0.95	0.60 x 0.74 x 65	49	0.329	0.46	130/120
1.35	0.71 x 0.85 x 65	53	0.468	0.46	200/80
1.85	0.76 x 1.03 x 65	54	0.641	0.46	200/80
2.80	0.90 x 1.20 x 65	54	0.971	0.46	200/80
3.80	0.94 x 1.28 x 33	54	1.318	0.46	200/80
8.00	1.52 x 1.28 x 28	50	2.773	0.46	200/80

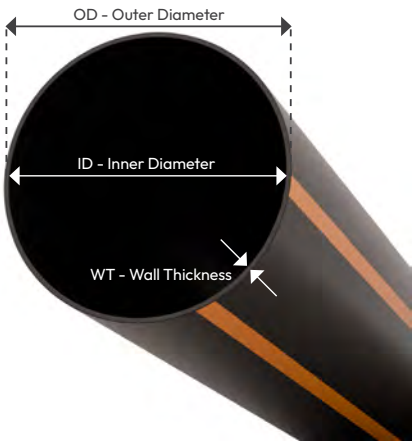


* Nominal flow rate at 1.0 bar.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12125	11.80	12.5 / 0.31	12.42	2.5	2.9	0.53
12150	11.80	15.0 / 0.38	12.56	3.0	3.5	0.53
16125	16.20	12.5 / 0.31	16.82	1.8	2.1	0.30
16150	16.20	15.0 / 0.38	16.96	2.2	2.5	0.30
22125	22.20	12.5 / 0.31	22.82	1.2	1.4	0.06
22135	22.20	13.5 / 0.34	22.88	1.6	1.8	0.06
22150	22.20	15.0 / 0.38	22.96	1.8	2.1	0.06



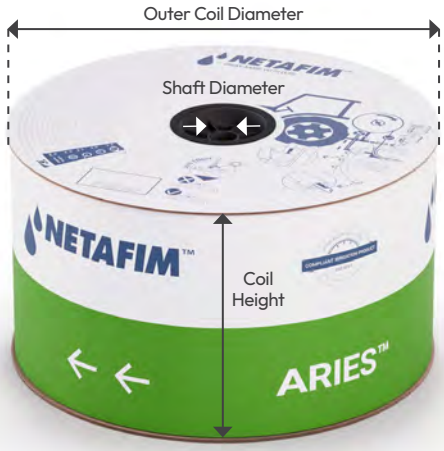
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diamenter (cm)	Shaft diameter (cm)	Coil height (cm)
12125	1.25 / 0.31	0.15	1300	14.5	52.0	3.8	32.5
		0.20 to 0.25	1300	14.5			
		0.30 to 1.00	1350	15.1			
12150	15.0 / 0.38	0.15	1000	19.1	52.0	3.8	32.5
		0.20 to 0.25	1100	19.3			
		0.30 to 1.00	1200	19.8			
16125	12.5 / 0.31	0.15 to 0.25	1000	18.7	57.0	3.8	24.0
		0.30 to 1.00	1100	19.5			
16150	15.0 / 0.38	0.15 to 0.25	900	20.1	57.0	3.8	24.0
		0.30 to 1.00	1000	21.4			
22125	12.5 / 0.31	0.15	900	21.9	57.0	3.8	24.0
		0.20 to 1.00	1000	23.4			
22135	13.5 / 0.34	0.15 to 0.25	800	18.2	57.0	3.8	24.0
		0.30 to 1.00	900	20.5			
22150	15.0 / 0.38	0.15 to 0.25	700	20.6	57.0	3.8	24.0
		0.30 to 1.00	800	22.7			

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12125	1300	12	109 x 109 x 110	184	480	624000
	1300			184		624000
	1350			191		648000
12150	1000	12	109 x 109 x 110	239	480	480000
	1100			242		528000
	1200			248		576000
16125	1000	16	109 x 109 x 106	309	640	640000
	1100			322		704000
16150	900	16	109 x 109 x 106	332	640	576000
	1000			352		640000
22125	900	16	109 x 109 x 106	360	640	576000
	1000			384		640000
22135	800	16	109 x 109 x 106	302	640	512000
	900			338		576000
22150	700	16	109 x 109 x 106	340	640	448000
	800			373		512000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Aries™	ARIES

Commercial diameter (mm)	
12	12
16	16
22	22

Wall thickness (mil) / (mm)	
12.5 / 0.31	125
13.5 / 0.34	135
15.0 / 0.35	150

Flow rate (l/h)	
0.50	0.55L/H
0.80	0.80L/H
0.95	0.95L/H
1.35	1.35L/H
1.85	1.85L/H
2.80	2.80L/H
3.80	3.80L/H
8.00	8.00L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

ARIES 22125 0.95L/H 0.40M 1000M FL

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Aries™ TWD flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)							
		0.20	0.40	0.60	0.80	1.00	1.50	2.00	2.50
Aries™ TWD	0.50	0.24	0.33	0.39	0.45	0.50	0.60	0.69	0.76
	0.80	0.38	0.52	0.63	0.72	0.80	0.96	1.10	1.22
	0.95	0.45	0.62	0.75	0.86	0.95	1.14	1.31	1.45
	1.35	0.64	0.89	1.07	1.22	1.35	1.63	1.86	2.06
	1.85	0.88	1.21	1.46	1.67	1.85	2.23	2.54	2.82
	2.80	1.34	1.84	2.21	2.53	2.80	3.37	3.85	4.27
	3.80	1.81	2.49	3.01	3.43	3.80	4.58	5.23	5.79
	8.00	3.81	5.25	6.32	7.22	8.00	9.64	11.00	12.19

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 0.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	74	92	106	116	124	130	134	138	141
Uphill	1%	83	109	130	147	162	175	186	196	206
Flat terrain	0	92	126	156	184	209	232	255	277	298
Downhill	-1%	100	141	179	216	251	286	320	354	386
	-2%	108	157	204	252	298	345	392	439	487

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	58	74	87	97	105	112	118	122	126
Uphill	1%	63	83	101	115	128	140	150	160	168
Flat terrain	0	68	93	116	136	155	172	190	204	220
Downhill	-1%	72	101	128	153	177	201	223	246	268
	-2%	76	110	141	172	202	232	262	291	320

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 0.95 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	53	68	80	91	98	105	111	116	120
Uphill	1%	57	76	92	106	118	128	138	147	155
Flat terrain	0	61	83	104	122	139	154	170	184	198
Downhill	-1%	64	89	113	135	157	177	197	216	235
	-2%	67	96	124	150	176	202	227	252	277

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 1.35 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	43	57	68	77	85	92	97	102	106
Uphill	1%	46	62	75	87	97	106	115	122	130
Flat terrain	0	49	66	82	97	111	124	135	147	158
Downhill	-1%	50	70	88	106	122	137	153	167	181
	-2%	53	74	95	115	134	153	171	189	207

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 1.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	36	48	57	66	73	79	85	90	94
	1%	38	51	62	72	81	90	98	104	111
Flat terrain	0	40	54	67	80	91	101	111	121	130
Downhill	-1%	41	57	71	85	98	110	122	133	145
	-2%	42	59	76	91	106	120	134	149	162

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 2.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	28	38	46	53	58	64	69	73	77
	1%	29	39	48	57	64	70	76	82	87
Flat terrain	0	30	41	51	61	68	76	84	91	98
Downhill	-1%	30	42	53	63	73	82	90	99	107
	-2%	31	44	56	67	77	88	98	107	117

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 3.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	24	32	38	45	50	55	59	64	68
	1%	24	33	40	48	53	60	65	70	75
Flat terrain	0	25	34	42	50	57	64	70	77	82
Downhill	-1%	25	35	44	52	60	67	74	81	88
	-2%	26	36	46	55	63	71	79	87	94

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 12125/12150 • ID 11.8 mm • Kd 0.40 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	15	20	25	30	33	36	39	42	45
	1%	15	21	26	31	34	38	42	45	48
Flat terrain	0	15	21	27	32	36	40	44	48	51
Downhill	-1%	15	21	27	32	37	41	46	50	53
	-2%	16	22	28	33	38	43	47	51	56

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 0.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	107	125	136	143	148	151	154	155	155
	1%	130	166	192	213	229	242	252	261	268
Flat terrain	0	157	216	267	315	359	400	438	476	511
Downhill	-1%	180	260	337	413	488	563	637	712	787
	-2%	205	309	416	210	178	169	165	162	160

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	87	107	120	130	136	141	145	147	150
	1%	101	131	155	175	191	204	216	226	235
Flat terrain	0	116	159	198	233	265	295	325	352	378
Downhill	-1%	128	183	235	285	334	382	430	478	525
	-2%	141	209	276	344	412	481	198	181	173

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 0.95 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	81	100	114	124	130	136	140	143	146
	1%	92	120	142	162	178	190	202	212	222
Flat terrain	0	104	143	177	209	237	265	290	316	339
Downhill	-1%	113	161	206	250	292	334	374	415	455
	-2%	124	182	239	296	353	412	470	210	187

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 1.35 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	68	86	100	110	118	125	129	133	137
	1%	75	99	119	136	150	163	174	185	193
Flat terrain	0	83	113	141	166	190	211	232	251	271
Downhill	-1%	88	125	159	192	224	254	285	314	343
	-2%	95	138	180	221	262	302	343	384	425

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 1.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	57	74	87	97	106	112	118	122	127
	1%	62	83	100	115	128	140	151	160	169
Flat terrain	0	67	93	115	136	155	173	190	205	221
Downhill	-1%	71	100	127	153	178	201	224	247	269
	-2%	75	109	140	172	202	232	262	293	322

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 2.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	46	60	71	81	89	96	102	107	111
	1%	48	65	79	92	103	113	122	131	139
Flat terrain	0	51	71	88	104	119	133	146	158	170
Downhill	-1%	53	75	95	114	131	148	166	182	197
	-2%	56	80	103	125	146	167	187	208	228

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 3.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	38	51	61	70	77	83	90	95	99
	1%	40	54	67	78	87	96	104	112	118
Flat terrain	0	42	58	73	86	97	109	120	131	140
Downhill	-1%	43	61	77	92	106	120	133	146	158
	-2%	45	64	82	99	116	132	147	163	178

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 16125/16150 • ID 16.2 mm • Kd 0.30 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	25	33	40	47	53	57	62	67	71
	1%	25	35	42	50	56	63	69	74	79
Flat terrain	0	26	36	45	53	61	68	74	81	87
Downhill	-1%	26	37	46	56	64	71	79	86	94
	-2%	27	38	48	58	67	76	85	94	102

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 0.50 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	142	151	155	157	158	159	159	160	161
Uphill	1%	209	243	264	278	287	295	299	303	306
Flat terrain	0	307	407	494	575	649	718	784	846	907
Downhill	-1%	401	578	753	930	397	358	342	334	328
	-2%	508	169	161	159	157	156	155	155	154

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 0.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	128	141	148	152	154	156	158	158	159
Uphill	1%	171	206	230	248	261	271	278	284	291
Flat terrain	0	227	301	366	425	480	531	580	627	671
Downhill	-1%	277	392	503	614	723	834	945	431	379
	-2%	333	496	177	167	162	160	158	157	156

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 0.95 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	122	136	144	149	152	155	156	157	158
Uphill	1%	158	193	217	235	249	260	269	276	282
Flat terrain	0	203	269	328	381	430	476	520	562	602
Downhill	-1%	243	342	437	531	623	715	809	902	996
	-2%	287	423	195	173	166	162	160	158	157

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 1.35 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	108	125	135	142	146	149	151	154	154
Uphill	1%	133	165	189	208	223	235	246	254	262
Flat terrain	0	162	215	262	304	344	380	416	448	481
Downhill	-1%	187	260	330	398	464	530	595	661	725
	-2%	214	311	407	505	185	174	167	164	162

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 1.85 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	95	113	124	133	138	142	146	148	150
Uphill	1%	113	142	164	183	198	211	222	231	239
Flat terrain	0	132	176	214	249	281	311	340	367	393
Downhill	-1%	149	206	259	311	361	410	458	506	554
	-2%	167	239	309	379	450	223	187	176	171

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 2.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	79	97	109	118	125	130	135	139	141
Uphill	1%	90	115	134	151	165	178	188	198	207
Flat terrain	0	101	135	164	191	216	239	261	282	302
Downhill	-1%	111	152	190	227	262	295	329	362	395
	-2%	121	171	218	266	312	358	406	453	500

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 3.80 l/h • Inlet pressure 1.5 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	68	84	97	106	114	120	125	130	133
Uphill	1%	75	97	115	130	143	155	165	174	183
Flat terrain	0	83	111	135	157	178	197	214	232	249
Downhill	-1%	90	122	152	181	208	235	260	285	310
	-2%	96	135	171	207	242	277	310	345	379

Max. dripline length (meters) at different slopes - 10.0% flow variation

Aries™ TWD 22125/22135/22150 • ID 22.2 mm • Kd 0.06 • Flow rate 8.00 l/h • Inlet pressure 1.5 bar

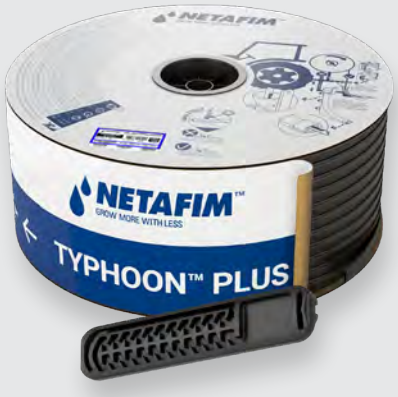
	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	46	59	68	77	85	91	96	101	105
Uphill	1%	49	64	76	87	97	106	114	122	128
Flat terrain	0	52	69	84	98	111	123	134	145	155
Downhill	-1%	54	73	90	107	122	137	151	165	178
	-2%	57	78	98	117	134	152	170	186	203



Typhoon™ Plus

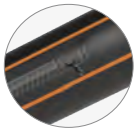
Typhoon™ Plus

Integral dripper (non-pressure-compensated) with high clogging resistance. Proven performance for multi-season drip irrigation applications in field crops.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The TurbuNext™ labyrinth features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.
ReGen™ (optional)	ReGen™ dripline incorporates high-quality recycled materials, supporting the sustainability goals of modern agricultural operations while maintaining reliable irrigation performance. *ReGen™ is currently available in selected markets and is being progressively introduced worldwide. Please consult your local Netafim™ representative for availability.





Applications

Open field | Orchards | Protected crops

- Suitable for on-surface and sub-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in seasonal vegetables, industrial and other row crops.



Specifications

- Maximum operating pressure: According to dripline wall thickness and diameter. See tables below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurbuNext™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into thin and medium-wall driplines: 0.20, 0.25, 0.31, 0.34, 0.38 and 0.45 mm.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.50	0.45 x 0.45 x 34	21	0.177	0.45	130/120
0.70	0.52 x 0.51 x 34	22	0.247	0.45	130/120
1.00	0.60 x 0.59 x 34	24	0.355	0.45	200/80
1.60	0.66 x 0.63 x 18	26	0.567	0.45	200/80
2.20	0.77 x 0.72 x 18	26	0.780	0.45	200/80

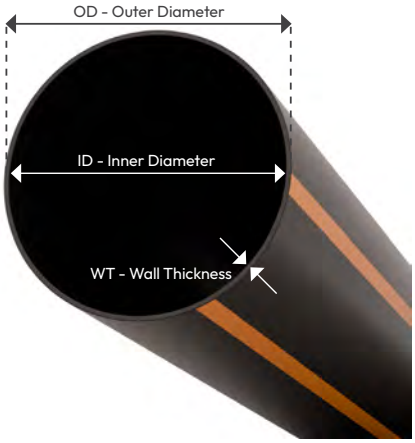


* Nominal flow rate at 1.0 bar.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12080	11.80	8.0 / 0.20	12.20	2.0	2.3	0.20
12100	11.80	10.0 / 0.25	12.30	2.3	2.6	0.20
12125	11.80	12.5 / 0.31	12.42	2.5	2.9	0.20
12150	11.80	15.0 / 0.38	12.56	3.0	3.5	0.20
12180	11.80	18.0 / 0.45	12.70	3.2	3.7	0.20
16080	16.20	8.0 / 0.20	16.60	1.2	1.4	0.10
16100	16.20	10.0 / 0.25	16.70	1.4	1.6	0.10
16125	16.20	12.5 / 0.31	16.82	1.8	2.1	0.10
16150	16.20	15.0 / 0.38	16.96	2.2	2.5	0.10
16180	16.20	18.0 / 0.45	17.10	2.5	2.9	0.10
22080	22.20	8.0 / 0.20	22.60	1.0	1.2	0.02
22100	22.20	10.0 / 0.25	22.70	1.1	1.3	0.02
22135	22.20	13.5 / 0.34	22.88	1.5	1.7	0.02
22150	22.20	15.0 / 0.38	22.96	1.8	2.1	0.02
22180	22.20	18.0 / 0.45	23.10	2.1	2.4	0.02
25135	25.00	13.5 / 0.34	25.68	1.2	1.4	0.01
25150	25.00	15.0 / 0.38	25.76	1.4	1.6	0.01

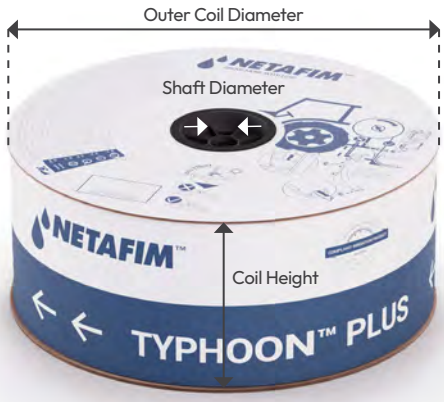


Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diamenter (cm)	Shaft diameter (cm)	Coil height (cm)
12080	8.0 / 0.20	0.15 to 0.25	1200	11.0	52	3.8	24
		0.30 to 1.00	1300	11.9			
12100	10.0 / 0.25	0.15 to 0.25	1200	12.5	52	3.8	24
		0.30 to 1.00	1300	13.1			
12125	12.5 / 0.31	0.15 to 0.25	1200	13.4	52	3.8	24
		0.30 to 1.00	1300	14.5			
12150	15.0 / 0.38	0.15 to 0.25	1100	15.1	52	3.8	24
		0.30 to 1.00	1100	15.1			
12180	18.0 / 0.45	0.15 to 0.25	650	12.3	52	3.8	24
		0.30 to 1.00	700	13.0			
16080	8.0 / 0.20	0.15 to 0.25	2400	23.4	57	3.8	24
		0.30 to 1.00	2500	24.4			
16100	10.0 / 0.25	0.15 to 0.25	1900	23.2	57	3.8	24
		0.30 to 1.00	2000	24.5			
16125	12.5 / 0.31	0.15 to 0.25	1350	20.6	57	3.8	24
		0.30 to 1.00	1600	24.4			
16150	15.0 / 0.38	0.15 to 0.25	1200	22.5	57	3.8	24
		0.30 to 1.00	1300	24.4			
16180	18.0 / 0.45	0.15 to 0.25	1100	20.6	57	3.8	24
		0.30 to 1.00	1200	22.5			
22080	8.0 / 0.20	0.15 to 0.25	1500	20.0	57	3.8	24
		0.30 to 1.00	1700	22.7			
22100	10.0 / 0.25	0.15 to 0.25	1200	20.0	57	3.8	24
		0.30 to 1.00	1500	25.0			
22135	13.5 / 0.34	0.15 to 0.25	1100	25.1	57	3.8	24
		0.30 to 1.00	1100	25.1			
22150	15.0 / 0.38	0.15 to 0.25	1000	25.5	57	3.8	24
		0.30 to 1.00	1000	25.5			
22180	18.0 / 0.45	0.15 to 0.25	800	24.3	57	3.8	24
		0.30 to 1.00	900	27.3			
25135	13.5 / 0.34	0.15 to 0.25	900	23.3	57	3.8	24
		0.30 to 1.00	1000	25.8			
25150	15.0 / 0.38	0.15 to 0.25	900	26.0	57	3.8	24
		0.30 to 1.00	900	26.0			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12125	1200	16	109 x 109 x 106	224	640	768000
	1300			242		832000
12150	1100	16	109 x 109 x 106	252	640	704000
	1100			252		704000
12180	650	16	109 x 109 x 106	207	640	416000
	700			218		448000
16080	2400	16	109 x 109 x 106	385	640	1536000
	2500			400		1600000
16100	1900	16	109 x 109 x 106	382	640	1216000
	2000			402		1280000
16125	1350	16	109 x 109 x 106	339	640	864000
	1600			400		1024000
16150	1200	16	109 x 109 x 106	370	640	768000
	1300			400		832000
16180	1100	16	109 x 109 x 106	340	640	704000
	1200			370		768000
22080	1500	16	109 x 109 x 106	330	640	960000
	1700			372		1088000
22100	1200	16	109 x 109 x 106	330	640	768000
	1500			411		960000
22135	1100	16	109 x 109 x 106	411	640	704000
	1100			411		704000
22150	1000	16	109 x 109 x 106	418	640	640000
	1000			418		640000
22180	800	16	109 x 109 x 106	398	640	512000
	900			447		576000
25135	900	16	109 x 109 x 106	382	640	576000
	1000			423		640000
25150	900	16	109 x 109 x 106	426	640	576000
	900			426		576000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Typhoon™ Plus	TYP+

Commercial diameter (mm)	
12	12
16	16
22	22
25	25

Wall thickness (mil) / (mm)	
8.0 / 0.20	80
10.0 / 0.25	100
12.5 / 0.31	125
13.5 / 0.34	135
15.0 / 0.38	150
18.0 / 0.45	180

Flow rate (l/h)	
0.50	0.50L/H
0.70	0.70L/H
1.00	1.00L/H
1.60	1.60L/H
2.20	2.20L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

TYP+ 22135 1.00L/H 0.30M 1100M FL

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Typhoon™ Plus flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.40	0.70	1.00	1.30	1.60	1.90	2.20	2.50	2.80	3.00
Typhoon™ Plus	0.50	0.33	0.42	0.50	0.56	0.62	0.67	0.71	0.75	0.79	0.82
	0.70	0.46	0.59	0.70	0.78	0.86	0.93	0.99	1.05	1.11	1.14
	1.00	0.66	0.85	1.00	1.13	1.24	1.34	1.43	1.51	1.59	1.64
	1.60	1.06	1.36	1.60	1.80	1.97	2.13	2.28	2.41	2.54	2.62
	2.20	1.46	1.87	2.20	2.47	2.72	2.93	3.13	3.32	3.49	3.60

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 12125/12150/12180 • ID 11.8 mm • Kd 0.20 • Flow rate 0.50 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	69	82	90	95	98	102	104	105	106
	1%	83	105	122	135	146	154	162	168	174
Flat terrain	0	99	132	162	189	213	237	259	280	300
Downhill	-1%	112	156	198	239	278	318	357	395	434
	-2%	126	183	240	297	151	125	118	114	112

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 12125/12150/12180 • ID 11.8 mm • Kd 0.20 • Flow rate 0.70 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	60	73	82	88	92	96	98	101	102
	1%	70	89	104	116	127	136	143	150	157
Flat terrain	0	80	107	131	153	173	191	210	227	243
Downhill	-1%	88	122	154	185	214	243	272	300	328
	-2%	97	139	180	221	262	303	345	131	123

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 12125/12150/12180 • ID 11.8 mm • Kd 0.20 • Flow rate 1.00 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	51	63	72	79	83	88	91	94	96
	1%	57	74	86	98	107	116	124	131	136
Flat terrain	0	63	85	104	121	137	152	166	179	192
Downhill	-1%	68	94	118	141	163	183	205	225	245
	-2%	74	105	134	163	191	220	249	277	306

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 12125/12150/12180 • ID 11.8 mm • Kd 0.20 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	40	50	58	66	71	76	79	83	86
	1%	43	56	67	77	85	93	99	105	111
Flat terrain	0	47	63	77	90	102	113	123	133	143
Downhill	-1%	49	68	84	100	115	130	144	158	171
	-2%	52	73	93	112	131	149	167	185	203

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 12125/12150/12180 • ID 11.8 mm • Kd 0.20 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	33	43	50	57	62	67	70	74	77
Uphill	1%	36	47	56	65	72	79	85	91	95
Flat terrain	0	38	51	63	74	83	92	101	109	117
Downhill	-1%	40	54	68	80	92	103	114	125	135
	-2%	42	58	73	88	102	116	130	143	156

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 16080/16100/16125/16150/16180 • ID 16.2 mm • Kd 0.10 • Flow rate 0.50 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	93	101	105	108	109	110	110	111	112
Uphill	1%	128	153	169	181	189	195	200	204	207
Flat terrain	0	175	233	283	329	371	411	450	485	520
Downhill	-1%	218	310	401	491	582	674	266	246	236
	-2%	266	127	114	110	108	107	106	106	105

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 16080/16100/16125/16150/16180 • ID 16.2 mm • Kd 0.10 • Flow rate 0.70 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	85	95	100	104	106	108	109	110	110
Uphill	1%	110	134	151	164	174	181	187	193	197
Flat terrain	0	141	188	229	266	300	333	363	392	420
Downhill	-1%	168	237	304	370	434	499	564	630	696
	-2%	199	295	130	117	112	110	108	107	107

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 16080/16100/16125/16150/16180 • ID 16.2 mm • Kd 0.10 • Flow rate 1.00 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	75	87	94	99	102	104	106	107	108
Uphill	1%	92	114	131	144	155	164	170	176	182
Flat terrain	0	112	149	181	211	238	264	288	311	334
Downhill	-1%	128	179	228	275	320	366	411	456	502
	-2%	147	214	281	349	125	117	114	111	110

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 16080/16100/16125/16150/16180 • ID 16.2 mm • Kd 0.10 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	62	74	83	89	93	97	98	101	103
Uphill	1%	72	91	106	119	129	138	146	152	159
Flat terrain	0	83	110	134	156	177	195	214	231	248
Downhill	-1%	92	127	159	191	221	251	279	309	337
	-2%	102	145	187	229	271	314	150	128	121

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 16080/16100/16125/16150/16180 • ID 16.2 mm • Kd 0.10 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	53	65	74	81	85	90	93	95	98
Uphill	1%	60	77	90	102	112	120	128	135	141
Flat terrain	0	68	90	110	128	144	160	174	189	203
Downhill	-1%	73	101	126	150	173	195	218	239	261
	-2%	80	113	144	175	205	236	266	297	328

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 22080/22100/22135/22150/22180 • ID 22.2 mm • Kd 0.02 • Flow rate 0.50 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	107	110	110	111	112	112	112	113	113
	1%	178	195	204	210	214	216	218	220	221
Flat terrain	0	317	414	500	578	650	718	782	844	903
Downhill	-1%	469	683	242	227	221	218	215	214	213
	-2%	111	107	106	105	105	104	105	104	104

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 22080/22100/22135/22150/22180 • ID 22.2 mm • Kd 0.02 • Flow rate 0.70 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	103	107	109	111	111	111	111	112	112
	1%	161	182	194	202	207	211	214	215	217
Flat terrain	0	256	335	404	467	526	580	633	683	731
Downhill	-1%	353	505	659	254	235	227	222	219	217
	-2%	119	110	107	106	106	105	105	104	104

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 22080/22100/22135/22150/22180 • ID 22.2 mm • Kd 0.02 • Flow rate 1.00 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	97	104	107	109	110	111	111	111	112
	1%	141	164	178	189	196	202	205	208	211
Flat terrain	0	203	266	321	371	417	461	502	543	580
Downhill	-1%	263	370	476	583	690	258	241	232	227
	-2%	332	117	111	108	107	106	106	105	105

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 22080/22100/22135/22150/22180 • ID 22.2 mm • Kd 0.02 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	87	96	101	105	107	108	109	110	110
	1%	115	138	154	167	176	183	189	194	198
Flat terrain	0	151	197	238	275	310	342	373	402	430
Downhill	-1%	183	253	321	388	454	520	587	654	292
	-2%	219	317	125	116	112	109	108	107	106

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 22080/22100/22135/22150/22180 • ID 22.2 mm • Kd 0.02 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	79	89	96	100	103	105	106	108	108
	1%	99	121	137	150	160	168	175	180	186
Flat terrain	0	123	161	194	225	253	279	305	329	351
Downhill	-1%	144	197	248	298	347	395	443	491	540
	-2%	167	239	311	133	120	115	112	110	109

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 25135/25150 • ID 25.0 mm • Kd 0.01 • Flow rate 0.50 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	109	110	111	112	112	113	112	113	113
	1%	192	206	212	216	218	220	221	221	222
Flat terrain	0	393	512	616	712	800	883	962	1038	1110
Downhill	-1%	633	238	224	218	215	214	212	212	211
	-2%	108	106	105	105	104	104	104	104	104

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 25135/25150 • ID 25.0 mm • Kd 0.01 • Flow rate 0.70 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	107	110	110	111	112	112	112	113	113
	1%	178	195	204	210	214	216	218	220	221
Flat terrain	0	317	414	500	578	650	718	782	844	903
Downhill	-1%	469	683	242	227	221	218	215	214	213
	-2%	111	107	106	105	105	104	105	104	104

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 25135/25150 • ID 25.0 mm • Kd 0.01 • Flow rate 1.00 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	103	107	109	111	111	111	111	112	112
	1%	159	180	192	201	206	209	213	214	216
Flat terrain	0	252	328	395	457	514	567	618	666	713
Downhill	-1%	346	492	639	261	238	228	223	220	218
	-2%	120	110	108	107	106	105	105	104	104

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 25135/25150 • ID 25.0 mm • Kd 0.01 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	94	102	105	108	109	110	110	111	112
	1%	134	156	172	183	190	197	201	204	207
Flat terrain	0	187	244	294	339	381	421	458	494	529
Downhill	-1%	237	331	422	514	606	699	259	243	234
	-2%	295	123	113	110	108	107	106	105	105

Max. dripline length (meters) at different slopes - 10.0% flow variation

Typhoon™ Plus 25135/25150 • ID 25.0 mm • Kd 0.01 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	87	97	102	105	107	108	109	110	110
	1%	116	139	155	167	176	183	189	194	198
Flat terrain	0	153	199	239	277	311	344	374	404	432
Downhill	-1%	185	256	324	391	457	524	590	658	289
	-2%	222	322	124	115	112	109	108	107	106



Streamline™ X

Streamline™ X

Compact integral dripper (non-pressure-compensated) with high clogging resistance, designed specifically for thin-wall dripline (TWD) applications. Ideal for seasonal and short multi-season drip irrigation in vegetables and other intensive row crops.



Benefits & Features

Hydraulic performance adaptability

Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions.

A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.

Enhanced toughness

Streamline™ X features a unique ribbed outer surface that creates a barrier between the soil and the dripline, improving durability and enabling smoother deployment and retrieval.

The ribbed structure reduces friction with the soil and minimizes mechanical damage during installation and retrieval operations.

Long-lasting, high clogging resistance

Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation.

A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels.

The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.

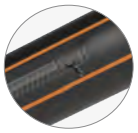
Guided installation orientation

Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.

Flap outlet protection (optional)

Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris.

*Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.



ReGen™ (optional)

ReGen™ dripline incorporates high-quality recycled materials, supporting the sustainability goals of modern agricultural operations while maintaining reliable irrigation performance.

*ReGen™ is currently available in selected markets and is being progressively introduced worldwide. Please consult your local Netafim™ representative for availability.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in seasonal vegetables and other row crops.



Specifications

- Maximum operating pressure: According to dripline wall thickness and diameter. See tables below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into thin-wall driplines: 0.13, 0.15, 0.18, 0.20 and 0.25 mm.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* 5.0-6.0-7.0 (mil) / 0.13-0.15-0.18 (mm) WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.35	0.35 x 0.34 x 23	11	0.116	0.48	130/120
0.75	0.48 x 0.53 x 25	15	0.248	0.48	130/120
1.10	0.51 x 0.51 x 13	16	0.389	0.45	130/120
1.60	0.64 x 0.60 x 13	14	0.568	0.45	130/120
2.20	0.75 x 0.70 x 13	14	0.780	0.45	130/120
2.80	0.84 x 0.75 x 13	15	0.993	0.45	200/80

* Nominal flow rate at 1.0 bar. WT = dripline wall thickness



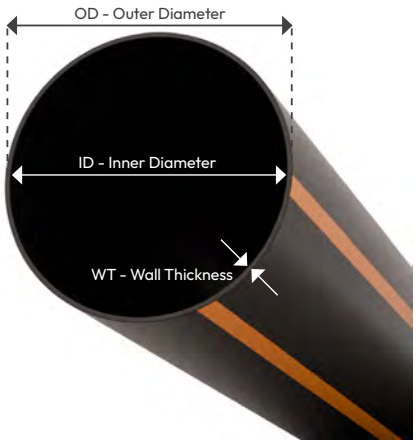
Flow rate* 8.0-10.0 (mil) / 0.20-0.25 (mm) WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.35	0.35 x 0.34 x 23	11	0.116	0.48	130/120
0.75	0.48 x 0.53 x 25	15	0.248	0.48	130/120
1.05	0.51 x 0.51 x 13	16	0.373	0.45	130/120
1.60	0.64 x 0.60 x 13	14	0.568	0.45	130/120
2.10	0.75 x 0.70 x 13	14	0.745	0.45	130/120
2.80	0.84 x 0.75 x 13	15	0.993	0.45	200/80

* Nominal flow rate at 1.0 bar. WT = dripline wall thickness

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mil) / (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12060	11.80	6.0 / 0.15	12.10	1.6	1.8	0.15
12080	11.80	8.0 / 0.20	12.20	1.9	2.2	0.15
16050	16.20	5.0 / 0.13	16.46	0.8	0.9	0.10
16060	16.20	6.0 / 0.15	16.50	1.0	1.2	0.10
16070	16.20	7.0 / 0.18	16.56	1.1	1.3	0.10
16080	16.20	8.0 / 0.20	16.60	1.2	1.4	0.10
16100	16.20	10.0 / 0.25	16.70	1.4	1.6	0.10
22050	22.20	5.0 / 0.13	22.46	0.8	0.9	0.01
22060	22.20	6.0 / 0.15	22.50	0.8	0.9	0.01
22070	22.20	7.0 / 0.18	22.56	0.9	1.0	0.01
22080	22.20	8.0 / 0.20	22.60	1.0	1.2	0.01
22100	22.20	10.0 / 0.25	22.70	1.1	1.3	0.01



Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Wall thickness (mil) / (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12060	6.0 / 0.15	0.15 to 0.25	3000	22.1	52	3.8	24
		0.30 to 1.00	3500	21.2			
12080	8.0 / 0.20	0.15	2800	24.0	57	3.8	24
		0.20 to 1.00	3000	24.2			
16050	5.0 / 0.13	0.15 to 0.25	3200	24.5	57	3.8	24
		0.30 to 1.00	3600	25.6			
16060	6.0 / 0.15	0.15 to 0.25	2600	21.5	57	3.8	24
		0.30 to 1.00	3000	24.0			
16070	7.0 / 0.18	0.15 to 0.25	2500	22.5	57	3.8	24
		0.30 to 1.00	2800	26.5			
16080	8.0 / 0.20	0.15 to 0.25	2200	23.7	57	3.8	24
		0.30 to 1.00	2500	26.3			
16100	10.0 / 0.25	0.15 to 0.25	1800	23.6	57	3.8	24
		0.30 to 1.00	2000	25.9			
22050	5.0 / 0.13	0.15 to 0.25	2800	26.0	57	3.8	24
		0.30 to 1.00	3000	27.9			
22060	6.0 / 0.15	0.15 to 0.25	2200	23.5	57	3.8	24
		0.30 to 1.00	2400	26.0			
22070	7.0 / 0.18	0.15 to 0.25	1800	23.7	57	3.8	24
		0.30 to 1.00	2000	25.8			
22080	8.0 / 0.20	0.15 to 0.25	1600	23.6	57	3.8	24
		0.30 to 1.00	1800	25.6			
22100	10.0 / 0.25	0.15 to 0.25	1200	22.0	57	3.8	24
		0.30 to 1.00	1500	26.6			



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12060	2000	16	109 x 109 x 110	269	640	1280000
	2200			274		1408000
12080	1600	16	109 x 109 x 110	267	640	1024000
	1800			278		1152000
12100	1400	16	109 x 109 x 110	271	640	896000
	1500			272		960000
12125	1100	16	109 x 109 x 110	257	640	704000
	1200			265		768000
16060	1800	16	109 x 109 x 110	304	640	1472000
	2000			313		1664000
16080	1600	16	109 x 109 x 110	329	640	1024000
	1800			347		1152000
16100	1400	16	109 x 109 x 110	346	640	896000
	1600			375		1024000
16125	1300	16	109 x 109 x 110	386	640	832000
	1400			398		896000
22060	1500	16	109 x 109 x 110	325	640	960000
	1600			329		1024000
22080	1300	16	109 x 109 x 110	357	640	832000
	1400			368		896000
22100	1000	16	109 x 109 x 110	337	640	640000
	1100			356		704000
22125	900	16	109 x 109 x 110	363	640	576000
	1000			389		640000





*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Streamline™ X	STRM X

Commercial diameter (mm)	
12	12
16	16
22	22

Wall thickness (mil) / (mm)	
5.0 / 0.13	050
6.0 / 0.15	060
7.0 / 0.18	070
8.0 / 0.20	080
10.0 / 0.25	100

Flow rate (l/h) 5.0-6.0-7.0 (mil) / 0.13-0.15-0.18 (mm) WT	
0.35	0.35L/H
0.75	0.75L/H
1.10	1.10L/H
1.60	1.60L/H
2.20	2.20L/H
2.80	2.80L/H

Flow rate (l/h) 8.0-10.0 (mil) / 0.20-0.25 (mm) WT	
0.35	0.35L/H
0.75	0.75L/H
1.05	1.05L/H
1.60	1.60L/H
2.10	2.10L/H
2.80	2.80L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

STRM X 16060 1.60L/H 0.40M 3000M FL

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Streamline™ X flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)										
		0.30	0.40	0.50	0.60	0.70	0.80	1.00	1.20	1.40	1.60	1.80
Streamline™ X 5.0-6.0-7.0 (mil) / 0.13-0.15-0.18 (mm) WT	0.35	0.20	0.22	0.25	0.27	0.29	0.31	0.35	0.38	0.41	0.44	0.46
	0.75	0.42	0.48	0.54	0.59	0.63	0.67	0.75	0.82	0.88	0.94	0.99
	1.10	0.64	0.73	0.80	0.87	0.93	0.99	1.10	1.19	1.28	1.35	1.43
	1.60	0.93	1.06	1.17	1.27	1.36	1.45	1.60	1.74	1.86	1.98	2.09
	2.20	1.28	1.46	1.61	1.75	1.87	1.99	2.20	2.39	2.56	2.72	2.86
	2.80	1.63	1.85	2.05	2.22	2.38	2.53	2.80	3.04	3.26	3.46	3.65

* Nominal flow rate at 1.0 bar.

Dripper	Flow rate* (l/h)	Working pressure (bar)										
		0.30	0.40	0.50	0.60	0.70	0.80	1.00	1.20	1.40	1.60	1.80
Streamline™ X 8.0-10.0 (mil) / 0.20-0.25 (mm) WT	0.35	0.20	0.22	0.25	0.27	0.29	0.31	0.35	0.38	0.41	0.44	0.46
	0.75	0.42	0.48	0.54	0.59	0.63	0.67	0.75	0.82	0.88	0.94	0.99
	1.05	0.61	0.70	0.77	0.84	0.90	0.95	1.05	1.14	1.22	1.30	1.37
	1.60	0.93	1.06	1.17	1.27	1.36	1.45	1.60	1.74	1.86	1.98	2.09
	2.10	1.22	1.39	1.54	1.67	1.79	1.90	2.10	2.28	2.44	2.59	2.74
	2.80	1.63	1.85	2.05	2.22	2.38	2.53	2.80	3.04	3.26	3.46	3.65

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12060 • ID 11.8 mm • Kd 0.15 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	73	83	88	91	92	94	95	95	96
	1%	95	116	131	142	151	158	163	167	171
Flat terrain	0	121	161	196	228	257	284	310	336	360
Downhill	-1%	146	205	262	317	372	427	482	536	592
	-2%	171	251	143	115	108	105	103	102	101

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12060 • ID 11.8 mm • Kd 0.15 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	55	66	73	79	82	85	87	89	90
	1%	64	81	94	106	115	123	129	135	140
Flat terrain	0	74	99	120	140	158	175	191	207	222
Downhill	-1%	84	116	145	174	201	228	254	281	307
	-2%	93	132	170	209	247	285	323	125	116

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12060 • ID 11.8 mm • Kd 0.15 • Flow rate 1.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	49	61	70	76	81	85	89	92	95
	1%	55	70	83	94	103	112	119	125	131
Flat terrain	0	61	81	99	115	130	144	157	169	182
Downhill	-1%	65	89	111	133	152	172	191	210	228
	-2%	71	99	126	153	178	204	230	256	282

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12060 • ID 11.8 mm • Kd 0.15 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	41	51	59	66	71	76	79	83	86
	1%	44	57	68	78	86	94	99	106	112
Flat terrain	0	48	64	78	91	103	113	124	134	144
Downhill	-1%	51	69	86	101	116	131	145	158	172
	-2%	54	75	94	114	132	151	169	186	204

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12060 • ID 11.8 mm • Kd 0.15 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	34	44	51	57	62	67	71	75	77
	1%	37	48	57	65	73	79	86	91	96
Flat terrain	0	39	52	64	74	84	93	102	110	117
Downhill	-1%	41	55	68	81	92	104	115	126	136
	-2%	43	59	74	89	103	117	130	144	157

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12060 • ID 11.8 mm • Kd 0.15 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	30	38	45	51	56	60	64	68	71
	1%	32	41	50	57	64	69	75	80	85
Flat terrain	0	34	45	55	64	71	80	87	95	101
Downhill	-1%	35	47	58	69	78	88	97	105	114
	-2%	36	50	62	75	86	97	108	119	130

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12080 • ID 11.8 mm • Kd 0.15 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	73	83	88	91	92	94	95	95	96
	1%	95	116	131	142	151	158	163	167	171
Flat terrain	0	121	161	196	228	257	284	310	336	360
Downhill	-1%	146	205	262	317	372	427	482	536	592
	-2%	171	251	143	115	108	105	103	102	101

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12080 • ID 11.8 mm • Kd 0.15 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	55	66	73	79	82	85	87	89	90
	1%	64	81	94	106	115	123	129	135	140
Flat terrain	0	74	99	120	140	158	175	191	207	222
Downhill	-1%	84	116	145	174	201	228	254	281	307
	-2%	93	132	170	209	247	285	323	125	116

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12080 • ID 11.8 mm • Kd 0.15 • Flow rate 1.05 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	50	62	71	77	82	87	90	93	96
	1%	56	72	85	97	106	114	122	128	134
Flat terrain	0	63	83	102	119	134	148	162	175	188
Downhill	-1%	67	92	116	138	158	179	198	218	237
	-2%	73	103	131	159	186	214	240	267	295

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12080 • ID 11.8 mm • Kd 0.15 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	41	51	59	66	71	76	79	83	86
	1%	44	57	68	78	86	94	99	106	112
Flat terrain	0	48	64	78	91	103	113	124	134	144
Downhill	-1%	51	69	86	101	116	131	145	158	172
	-2%	54	75	94	114	132	151	169	186	204

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12080 • ID 11.8 mm • Kd 0.15 • Flow rate 2.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	34	44	51	57	62	67	71	75	77
	1%	37	48	57	65	73	79	86	91	96
Flat terrain	0	39	52	64	74	84	93	102	110	117
Downhill	-1%	41	55	68	81	92	104	115	126	136
	-2%	43	59	74	89	103	117	130	144	157

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12080 • ID 11.8 mm • Kd 0.15 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	30	38	45	51	56	60	64	68	71
	1%	32	41	50	57	64	69	75	80	85
Flat terrain	0	34	45	55	64	71	80	87	95	101
Downhill	-1%	35	47	58	69	78	88	97	105	114
	-2%	36	50	62	75	86	97	108	119	130

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16050/16060/16070 • ID 16.2 mm • Kd 0.10 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	89	93	95	97	97	97	98	98	98
Uphill	1%	136	156	168	175	180	183	186	188	189
Flat terrain	0	209	278	338	393	443	491	536	580	621
Downhill	-1%	284	413	541	281	233	220	214	210	207
	-2%	122	106	102	101	100	99	99	99	99

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16050/16060/16070 • ID 16.2 mm • Kd 0.10 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	75	84	89	92	94	95	95	96	96
Uphill	1%	99	120	135	147	155	161	166	171	174
Flat terrain	0	129	171	208	242	273	302	330	357	382
Downhill	-1%	157	221	282	344	404	464	524	585	647
	-2%	185	274	124	111	106	104	102	102	101

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16050/16060/16070 • ID 16.2 mm • Kd 0.10 • Flow rate 1.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	72	84	92	97	100	103	104	106	107
Uphill	1%	87	109	126	139	149	158	166	172	177
Flat terrain	0	105	140	170	198	224	248	270	293	313
Downhill	-1%	119	167	211	254	296	337	378	419	460
	-2%	136	197	257	318	134	121	116	113	111

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16050/16060/16070 • ID 16.2 mm • Kd 0.10 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	62	74	82	89	93	97	98	101	103
Uphill	1%	72	91	106	119	129	138	146	152	159
Flat terrain	0	83	110	134	156	176	195	214	231	248
Downhill	-1%	91	126	159	190	220	250	279	308	337
	-2%	102	145	187	229	271	313	150	128	121

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16050/16060/16070 • ID 16.2 mm • Kd 0.10 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	53	65	74	81	85	90	93	95	98
Uphill	1%	60	77	90	102	112	120	128	135	141
Flat terrain	0	68	90	110	128	144	160	174	189	203
Downhill	-1%	73	101	126	150	173	195	218	239	261
	-2%	80	113	144	175	205	236	266	297	328

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16050/16060/16070 • ID 16.2 mm • Kd 0.10 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	47	59	67	74	79	83	87	90	93
Uphill	1%	52	68	80	91	100	108	115	122	128
Flat terrain	0	58	77	94	110	124	137	150	162	174
Downhill	-1%	62	85	106	126	145	163	181	198	216
	-2%	67	93	119	144	168	192	216	240	264

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16080/16100 • ID 16.2 mm • Kd 0.10 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	89	93	95	97	97	97	98	98	98
	1%	136	156	168	175	180	183	186	188	189
Flat terrain	0	209	278	338	393	443	491	536	580	621
Downhill	-1%	284	413	541	281	233	220	214	210	207
	-2%	122	106	102	101	100	99	99	99	99

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16080/16100 • ID 16.2 mm • Kd 0.10 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	75	84	89	92	94	95	95	96	96
	1%	99	120	135	147	155	161	166	171	174
Flat terrain	0	129	171	208	242	273	302	330	357	382
Downhill	-1%	157	221	282	344	404	464	524	585	647
	-2%	185	274	124	111	106	104	102	102	101

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16080/16100 • ID 16.2 mm • Kd 0.10 • Flow rate 1.05 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	73	85	93	98	101	104	105	107	107
	1%	90	112	128	142	152	161	168	175	179
Flat terrain	0	108	144	176	205	231	256	279	302	324
Downhill	-1%	124	173	219	264	308	351	394	437	481
	-2%	142	205	268	333	128	119	114	112	110

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16080/16100 • ID 16.2 mm • Kd 0.10 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	62	74	82	89	93	97	98	101	103
	1%	72	91	106	119	129	138	146	152	159
Flat terrain	0	83	110	134	156	176	195	214	231	248
Downhill	-1%	91	126	159	190	220	250	279	308	337
	-2%	102	145	187	229	271	313	150	128	121

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16080/16100 • ID 16.2 mm • Kd 0.10 • Flow rate 2.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	53	65	74	81	85	90	93	95	98
	1%	60	77	90	102	112	120	128	135	141
Flat terrain	0	68	90	110	128	144	160	174	189	203
Downhill	-1%	73	101	126	150	173	195	218	239	261
	-2%	80	113	144	175	205	236	266	297	328

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16080/16100 • ID 16.2 mm • Kd 0.10 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	47	59	67	74	79	83	87	90	93
	1%	52	68	80	91	100	108	115	122	128
Flat terrain	0	58	77	94	110	124	137	150	162	174
Downhill	-1%	62	85	106	126	145	163	181	198	216
	-2%	67	93	119	144	168	192	216	240	264

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22050/22060/22070 • ID 22.2 mm • Kd 0.01 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	78	78	78	79	79	79	79	79	79
	1%	146	151	153	155	155	156	156	157	157
Flat terrain	0	379	493	593	685	770	850	926	998	1068
Downhill	-1%	179	166	162	161	160	159	158	158	158
	-2%	80	79	79	79	79	78	78	78	78

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22050/22060/22070 • ID 22.2 mm • Kd 0.01 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	75	77	78	78	78	78	78	78	79
	1%	127	139	145	149	151	152	153	154	155
Flat terrain	0	233	303	365	422	474	524	570	615	658
Downhill	-1%	354	512	183	172	167	165	162	161	161
	-2%	84	81	80	80	79	79	78	78	79

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22050/22060/22070 • ID 22.2 mm • Kd 0.01 • Flow rate 1.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	81	85	87	88	89	89	90	90	90
	1%	123	141	151	158	163	167	169	170	172
Flat terrain	0	190	247	298	344	387	427	465	501	537
Downhill	-1%	256	363	469	235	197	187	182	178	176
	-2%	100	89	86	86	85	84	84	84	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22050/22060/22070 • ID 22.2 mm • Kd 0.01 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	76	82	84	87	87	88	89	89	89
	1%	107	125	138	146	152	157	161	164	166
Flat terrain	0	150	195	235	272	305	337	367	396	424
Downhill	-1%	190	266	339	412	486	561	207	194	187
	-2%	237	98	90	88	86	85	85	85	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22050/22060/22070 • ID 22.2 mm • Kd 0.01 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	70	77	82	84	85	86	87	88	88
	1%	93	111	124	134	142	147	152	156	159
Flat terrain	0	123	160	192	222	250	275	301	324	346
Downhill	-1%	149	206	260	314	367	420	474	528	229
	-2%	179	259	99	92	89	88	86	86	85

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22050/22060/22070 • ID 22.2 mm • Kd 0.01 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	65	73	78	82	83	85	86	87	87
	1%	83	101	114	124	131	138	143	148	151
Flat terrain	0	105	137	165	191	214	237	258	278	297
Downhill	-1%	124	170	214	257	299	341	382	425	467
	-2%	146	208	271	100	93	90	88	87	86

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22080/22100 • ID 22.2 mm • Kd 0.01 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	78	78	78	79	79	79	79	79	79
	1%	146	151	153	155	155	156	156	157	157
Flat terrain	0	379	493	593	685	770	850	926	998	1068
Downhill	-1%	179	166	162	161	160	159	158	158	158
	-2%	80	79	79	79	79	78	78	78	78

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22080/22100 • ID 22.2 mm • Kd 0.01 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	75	77	78	78	78	78	78	78	79
	1%	127	139	145	149	151	152	153	154	155
Flat terrain	0	233	303	365	422	474	524	570	615	658
Downhill	-1%	354	512	183	172	167	165	162	161	161
	-2%	84	81	80	80	79	79	78	78	79

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22080/22100 • ID 22.2 mm • Kd 0.01 • Flow rate 1.05 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	82	86	87	88	89	90	90	90	90
	1%	126	142	152	160	164	167	170	172	173
Flat terrain	0	196	255	308	355	399	440	481	518	554
Downhill	-1%	267	379	491	218	193	185	180	176	175
	-2%	98	89	86	85	85	84	84	84	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22080/22100 • ID 22.2 mm • Kd 0.01 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	76	82	84	87	87	88	89	89	89
	1%	107	125	138	146	152	157	161	164	166
Flat terrain	0	150	195	235	272	305	337	367	396	424
Downhill	-1%	190	266	339	412	486	561	207	194	187
	-2%	237	98	90	88	86	85	85	85	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22080/22100 • ID 22.2 mm • Kd 0.01 • Flow rate 2.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	70	77	82	84	85	86	87	88	88
	1%	93	111	124	134	142	147	152	156	159
Flat terrain	0	123	160	192	222	250	275	301	324	346
Downhill	-1%	149	206	260	314	367	420	474	528	229
	-2%	179	259	99	92	89	88	86	86	85

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22080/22100 • ID 22.2 mm • Kd 0.01 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Uphill	2%	65	73	78	82	83	85	86	87	87
	1%	83	101	114	124	131	138	143	148	151
Flat terrain	0	105	137	165	191	214	237	258	278	297
Downhill	-1%	124	170	214	257	299	341	382	425	467
	-2%	146	208	271	100	93	90	88	87	86

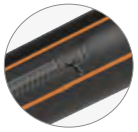
Streamline™ X EZ

Compact integral dripper (non-pressure-compensated) with high clogging resistance, designed specifically for thin-wall dripline (TWD) applications. Optimized for single-season drip irrigation in vegetables and other intensive row crops.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Enhanced toughness	Streamline™ X EZ features a unique ribbed outer surface that creates a barrier between the soil and the dripline, improving durability and enabling smoother deployment and retrieval. The ribbed structure reduces friction with the soil and minimizes mechanical damage during installation and retrieval operations.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.
Guided installation orientation	Dual orange stripes indicate the dripper position, enabling quick and accurate installation. Installing the dripper facing upwards helps reduce sediment accumulation away from the inlet, improving long-term performance and reliability.
Flap outlet protection (optional)	Reduces the risk of particle ingress from surrounding soil through a flexible outlet cover that closes when irrigation stops, acting as a mechanical barrier against soil, sand and debris. *Does not provide full anti-siphon functionality or guarantee complete sealing under all field conditions. Proper system design, installation and maintenance, including the correct use of air valves, are recommended to prevent suction within the dripline.
ReGen™ (optional)	ReGen™ dripline incorporates high-quality recycled materials, supporting the sustainability goals of modern agricultural operations while maintaining reliable irrigation performance. *ReGen™ is currently available in selected markets and is being progressively introduced worldwide. Please consult your local Netafim™ representative for availability.



Applications

Open field Orchards Protected crops

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in seasonal vegetables and other row crops.



Specifications

- Maximum operating pressure: According to dripline diameter. See tables below.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into thin-wall driplines.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black with two orange stripes.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
0.35	0.35 x 0.34 x 23	11	0.116	0.48	130/120
0.75	0.48 x 0.53 x 25	15	0.248	0.48	130/120
1.10	0.51 x 0.51 x 13	16	0.389	0.45	130/120
1.60	0.64 x 0.60 x 13	14	0.568	0.45	130/120
2.20	0.75 x 0.70 x 13	14	0.780	0.45	130/120
2.80	0.84 x 0.75 x 13	15	0.993	0.45	200/80

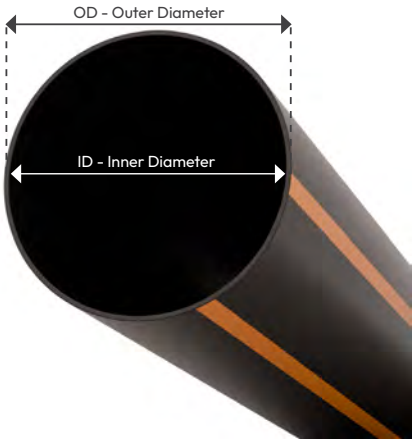


* Nominal flow rate at 1.0 bar.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
12 EZ	11.80	12.10	1.6	1.8	0.15
16 EZ	16.20	16.46	0.8	0.9	0.10
22 EZ	22.20	22.46	0.8	0.9	0.01



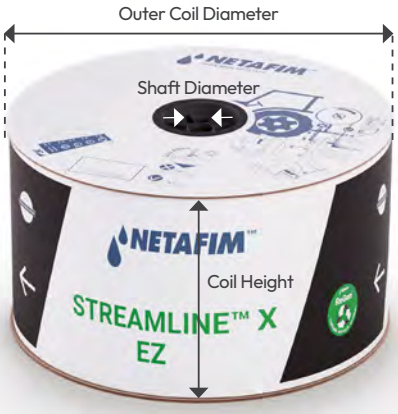
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on carton coil)

Model	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Shaft diameter (cm)	Coil height (cm)
12 EZ	0.15 to 0.25	3000	22.1	52	3.8	24
	0.30 to 1.00	3500	21.8			
16 EZ	0.15 to 0.25	3200	24.5	57	3.8	24
	0.30 to 1.00	3600	25.6			
22 EZ	0.15 to 0.25	2800	26.0	57	3.8	24
	0.30 to 1.00	3000	27.9			

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on carton coil) within container

Model	Coil length (m)	Coils p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
12 X EZ	3000	16	109 x 109 x 106	364	640	1920000
	3500			359		2240000
16 X EZ	3200	16	109 x 109 x 106	402	640	2048000
	3600			420		2304000
22 X EZ	2800	16	109 x 109 x 106	426	640	1792000
	3000			456		1920000

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H). In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.





Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Streamline™ X	STRM X

Commercial diameter (mm)	
12	12 EZ
16	16 EZ
22	22 EZ

Flow rate (l/h)	
0.35	0.35L/H
0.75	0.75L/H
1.10	1.10L/H
1.60	1.60L/H
2.20	2.20L/H
2.80	2.80L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

Special features	
No added	-
Flap outlet	FL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

STRM X 16 EZ 1.60L/H 0.40M 3600M FL

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Streamline™ X EZ flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)										
		0.30	0.40	0.50	0.60	0.70	0.80	1.00	1.20	1.40	1.60	1.80
Streamline™ X EZ	0.35	0.20	0.22	0.25	0.27	0.29	0.31	0.35	0.38	0.41	0.44	0.46
	0.75	0.42	0.48	0.54	0.59	0.63	0.67	0.75	0.82	0.88	0.94	0.99
	1.10	0.64	0.73	0.80	0.87	0.93	0.99	1.10	1.19	1.28	1.35	1.43
	1.60	0.93	1.06	1.17	1.27	1.36	1.45	1.60	1.74	1.86	1.98	2.09
	2.20	1.28	1.46	1.61	1.75	1.87	1.99	2.20	2.39	2.56	2.72	2.86
	2.80	1.63	1.85	2.05	2.22	2.38	2.53	2.80	3.04	3.26	3.46	3.65

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12 EZ • ID 11.8 mm • Kd 0.15 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	73	83	88	91	92	94	95	95	96
	1%	95	116	131	142	151	158	163	167	171
Flat terrain	0	121	161	196	228	257	284	310	336	360
Downhill	-1%	146	205	262	317	372	427	482	536	592
	-2%	171	251	143	115	108	105	103	102	101

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12 EZ • ID 11.8 mm • Kd 0.15 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	55	66	73	79	82	85	87	89	90
	1%	64	81	94	106	115	123	129	135	140
Flat terrain	0	74	99	120	140	158	175	191	207	222
Downhill	-1%	84	116	145	174	201	228	254	281	307
	-2%	93	132	170	209	247	285	323	125	116

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12 EZ • ID 11.8 mm • Kd 0.15 • Flow rate 1.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	49	61	70	76	81	85	89	92	95
	1%	55	70	83	94	103	112	119	125	131
Flat terrain	0	61	81	99	115	130	144	157	169	182
Downhill	-1%	65	89	111	133	152	172	191	210	228
	-2%	71	99	126	153	178	204	230	256	282

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12 EZ • ID 11.8 mm • Kd 0.15 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	41	51	59	66	71	76	79	83	86
	1%	44	57	68	78	86	94	99	106	112
Flat terrain	0	48	64	78	91	103	113	124	134	144
Downhill	-1%	51	69	86	101	116	131	145	158	172
	-2%	54	75	94	114	132	151	169	186	204

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12 EZ • ID 11.8 mm • Kd 0.15 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	34	44	51	57	62	67	71	75	77
Uphill	1%	37	48	57	65	73	79	86	91	96
Flat terrain	0	39	52	64	74	84	93	102	110	117
Downhill	-1%	41	55	68	81	92	104	115	126	136
	-2%	43	59	74	89	103	117	130	144	157

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 12 EZ • ID 11.8 mm • Kd 0.15 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	30	38	45	51	56	60	64	68	71
Uphill	1%	32	41	50	57	64	69	75	80	85
Flat terrain	0	34	45	55	64	71	80	87	95	101
Downhill	-1%	35	47	58	69	78	88	97	105	114
	-2%	36	50	62	75	86	97	108	119	130

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16 EZ • ID 16.2 mm • Kd 0.10 • Flow rate 0.35 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	89	93	95	97	97	97	98	98	98
Uphill	1%	136	156	168	175	180	183	186	188	189
Flat terrain	0	209	278	338	393	443	491	536	580	621
Downhill	-1%	284	413	541	281	233	220	214	210	207
	-2%	122	106	102	101	100	99	99	99	99

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16 EZ • ID 16.2 mm • Kd 0.10 • Flow rate 0.75 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	75	84	89	92	94	95	95	96	96
Uphill	1%	99	120	135	147	155	161	166	171	174
Flat terrain	0	129	171	208	242	273	302	330	357	382
Downhill	-1%	157	221	282	344	404	464	524	585	647
	-2%	185	274	124	111	106	104	102	102	101

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16 EZ • ID 16.2 mm • Kd 0.10 • Flow rate 1.10 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	72	84	92	97	100	103	104	106	107
Uphill	1%	87	109	126	139	149	158	166	172	177
Flat terrain	0	105	140	170	198	224	248	270	293	313
Downhill	-1%	119	167	211	254	296	337	378	419	460
	-2%	136	197	257	318	134	121	116	113	111

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16 EZ • ID 16.2 mm • Kd 0.10 • Flow rate 1.60 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	62	74	82	89	93	97	98	101	103
Uphill	1%	72	91	106	119	129	138	146	152	159
Flat terrain	0	83	110	134	156	176	195	214	231	248
Downhill	-1%	91	126	159	190	220	250	279	308	337
	-2%	102	145	187	229	271	313	150	128	121

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16 EZ • ID 16.2 mm • Kd 0.10 • Flow rate 2.20 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	53	65	74	81	85	90	93	95	98
Uphill	1%	60	77	90	102	112	120	128	135	141
Flat terrain	0	68	90	110	128	144	160	174	189	203
Downhill	-1%	73	101	126	150	173	195	218	239	261
	-2%	80	113	144	175	205	236	266	297	328

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 16 EZ • ID 16.2 mm • Kd 0.10 • Flow rate 2.80 l/h • Inlet pressure 1.0 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	47	59	67	74	79	83	87	90	93
Uphill	1%	52	68	80	91	100	108	115	122	128
Flat terrain	0	58	77	94	110	124	137	150	162	174
Downhill	-1%	62	85	106	126	145	163	181	198	216
	-2%	67	93	119	144	168	192	216	240	264

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22 EZ • ID 22.2 mm • Kd 0.01 • Flow rate 0.35 l/h • Inlet pressure 0.8 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	78	78	78	79	79	79	79	79	79
Uphill	1%	146	151	153	155	155	156	156	157	157
Flat terrain	0	379	493	593	685	770	850	926	998	1068
Downhill	-1%	179	166	162	161	160	159	158	158	158
	-2%	80	79	79	79	79	78	78	78	78

Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22 EZ • ID 22.2 mm • Kd 0.01 • Flow rate 0.75 l/h • Inlet pressure 0.8 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	75	77	78	78	78	78	78	78	79
Uphill	1%	127	139	145	149	151	152	153	154	155
Flat terrain	0	233	303	365	422	474	524	570	615	658
Downhill	-1%	354	512	183	172	167	165	162	161	161
	-2%	84	81	80	80	79	79	78	78	79

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22 EZ • ID 22.2 mm • Kd 0.01 • Flow rate 1.10 l/h • Inlet pressure 0.8 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	81	85	87	88	89	89	90	90	90
Uphill	1%	123	141	151	158	163	167	169	170	172
Flat terrain	0	190	247	298	344	387	427	465	501	537
Downhill	-1%	256	363	469	235	197	187	182	178	176
	-2%	100	89	86	86	85	84	84	84	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22 EZ • ID 22.2 mm • Kd 0.01 • Flow rate 1.60 l/h • Inlet pressure 0.8 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	76	82	84	87	87	88	89	89	89
Uphill	1%	107	125	138	146	152	157	161	164	166
Flat terrain	0	150	195	235	272	305	337	367	396	424
Downhill	-1%	190	266	339	412	486	561	207	194	187
	-2%	237	98	90	88	86	85	85	85	84

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22 EZ • ID 22.2 mm • Kd 0.01 • Flow rate 2.20 l/h • Inlet pressure 0.8 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	70	77	82	84	85	86	87	88	88
	1%	93	111	124	134	142	147	152	156	159
Flat terrain	0	123	160	192	222	250	275	301	324	346
Downhill	-1%	149	206	260	314	367	420	474	528	229
	-2%	179	259	99	92	89	88	86	86	85

Max. dripline length (meters) at different slopes - 10.0% flow variation

Streamline™ X 22 EZ • ID 22.2 mm • Kd 0.01 • Flow rate 2.80 l/h • Inlet pressure 0.8 bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	65	73	78	82	83	85	86	87	87
	1%	83	101	114	124	131	138	143	148	151
Flat terrain	0	105	137	165	191	214	237	258	278	297
Downhill	-1%	124	170	214	257	299	341	382	425	467
	-2%	146	208	271	100	93	90	88	87	86



Microdrip

Microdrip 8

Integral dripper (non-pressure-compensated) with high clogging resistance, designed for small-diameter driplines. Suitable for low-pressure drip irrigation applications starting from 0.1 bar, ideal for short fields, irrigation kits, nurseries and kitchen gardens.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Optimized for small-scale applications	Small-diameter dripline design suited for short fields, irrigation kits, nurseries and kitchen gardens.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream to further minimize suspended particle ingress.
Ultra-low pressure operation	Enables effective irrigation starting from 0.1 bar (1 m head), making it ideal for gravity-fed systems supplied by tanks or barrels positioned 1.0 m or higher above the field.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping fields.
- Ideal for irrigation in seasonal vegetables or other row crops.



Specifications

- Maximum operating pressure: 4.0 bar
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with enhanced clogging resistance and superior hydraulic performance.
- Weldable into medium-wall driplines: 0.80 mm.
- Injection-molded dripper with very low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Driplines are black.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
2.00	0.63 x 0.73 x 22	22	0.647	0.49	130/120



* Nominal flow rate at 1.0 bar.

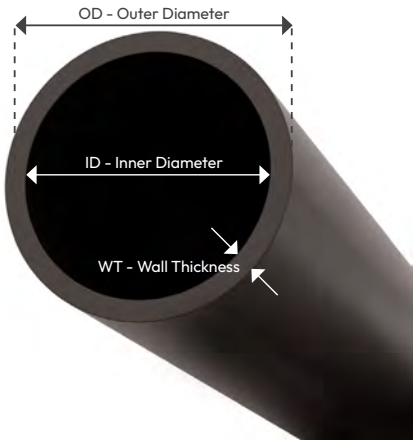
Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
Microdrip 8	6.30	0.8	7.90	4.0	5.2	2.00

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.



Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
Microdrip 8	0.8	0.20 to 0.50	200	3.5	1440	288000
			250	4.3	1440	360000
			300	5.2	1440	432000
			400	6.9	640	256000
			600	10.4	640	384000



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances.
Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Microdrip 8	MCDRIP 8

Flow rate (l/h)	
2.0	2.00/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M

*Other distances between drippers can be ordered.

Coil length (m)
Coil length according to the values presented in the corresponding table.

MCDRIP 8 2.00L/H 0.30M 400M

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Microdrip 8 flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)										
		0.10	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
Microdrip 8	2.00	0.65	0.91	1.28	1.56	1.79	2.00	2.19	2.36	2.52	2.67	2.81

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10.0% flow variation

Microdrip • ID 6.3 mm • Kd 2.00 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	10	14	18	22	25	27	30	32	35
	1%	10	15	18	22	25	28	31	34	36
Flat terrain	0	10	15	19	23	26	29	33	35	38
Downhill	-1%	11	15	19	23	27	30	34	37	40
	-2%	11	15	20	24	28	32	35	39	42

Max. dripline length (meters) at different slopes - 10.0% flow variation

Microdrip • ID 6.3 mm • Kd 2.00 • Flow rate 2.00 l/h • Inlet pressure 0.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	9	13	16	19	20	22	24	26	27
	1%	10	14	17	20	23	25	28	30	32
Flat terrain	0	10	14	18	22	25	28	31	34	37
Downhill	-1%	11	15	19	24	27	31	34	38	41
	-2%	11	16	20	25	29	34	38	41	46

Max. dripline length (meters) at different slopes - 10.0% flow variation

Microdrip • ID 6.3 mm • Kd 2.00 • Flow rate 2.00 l/h • Inlet pressure 0.1 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	7	8	8	9	9	10	10	10	10
	1%	8	11	12	14	14	15	16	16	17
Flat terrain	0	10	14	17	21	23	27	30	32	34
Downhill	-1%	11	17	22	28	33	39	44	50	55
	-2%	13	20	28	12	11	10	10	10	9



On-line Drippers

PC on-line dripper

Pressure-compensated on-line dripper, designed for robust and reliable performance in demanding field conditions. Featuring large water passages, it is particularly suited for orchard applications and long-term irrigation systems requiring durability and clogging resistance.



Benefits & Features

Uniform water distribution	Ensures precise and stable flow regulation across a wide pressure range, delivering uniform water distribution along irrigation lines and across varying topographies.
Prevents drainage (LCNL or HCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution. The HCNL (high anti-drain) mechanism operates at a higher shut-off threshold, preventing drainage even under steep slope conditions. Improves pulse irrigation performance; eliminates drainage and refill effects, enhancing irrigation efficiency in pulse irrigation applications.
Long-lasting, high clogging resistance	Designed with large internal water passages that improve tolerance to suspended solids, ensuring reliable performance in challenging water quality conditions. A built-in filtration area, uncommon in most on-line drippers, helps reduce the risk of suspended particle ingress, ensuring dependable performance across a wide range of water qualities. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including flat and press-fit connections, supporting flexible system design and compatibility with "Spider" assemblies. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Open field · Orchards · Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation applications in orchards, greenhouses and nurseries.



Specifications

- Pressure-compensated operating range: according to dripper model (see tables below).
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Insertable into thick-wall PE pipes: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international manufacturing and performance standards.
- Available outlet configurations: flat and press-fit (nipple).

Drippers technical data

PC AS dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
2.0	0.5 - 4.0	1.17 x 1.04 x 61	2.0	2.0	0	130/120	Red	Black
4.0		1.32 x 1.44 x 60	2.0	4.0	0	130/120	Black	Black
8.5		1.60 x 1.60 x 17	2.0	8.5	0	130/120	Green	Black



* Within working pressure range.
PC AS dripper. Identified by its specific base color code combined with a black upper body.

PC LCNL dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
2.0	1.0 - 4.0	1.17 x 1.04 x 61	2.0	2.0	0	130/120	Red	Brown
4.0		1.32 x 1.44 x 60	2.0	4.0	0	130/120	Black	Brown
8.5		1.60 x 1.60 x 17	2.0	8.5	0	130/120	Green	Brown



* Within working pressure range.
PC LCNL dripper nominal shut-off pressure: 0.15 bar. Identified by its specific base color code combined with a brown upper body.

PC HCNL dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
3.0	1.4 - 4.0	1.17 x 1.04 x 61	2.0	3.0	0	130/120	Black	Black
6.0		1.32 x 1.44 x 60	2.0	6.0	0	130/120	Black	Black
12.0		1.60 x 1.60 x 17	2.0	12.0	0	130/120	Black	Black



* Within working pressure range.

PC HCNL dripper nominal shut-off pressure: 0.30 bar. Identified by its black base and upper body combination. The nominal flow rate is printed on the dripper upper body.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

PE pipe	Inner diameter (mm)	Kd
12/4	9.80	1.65
16/4	13.20	0.39
20/4	17.00	0.13
25/4	21.20	0.10

Blank dripline	Inner diameter (mm)	Kd
12009 - 12010	10.60	1.61
16010 - 16012	14.20	0.37
20010 - 20012	17.50	0.12

Kd: A barbed inlet connector installed inside the pipe creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.



PC dripper flat outlet



PC dripper nipple outlet

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PC AS and LCNL drippers, flat outlet	2500	57 x 28 x 27	18.8	32	114 x 114 x 112	611
PC, LCNL and HCNL drippers, nipple outlet	2300		17.3			565

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
PC dripper	PC

Additional features	
No added	AS
Anti-drain	LCNL
High anti-drain	HCNL

Flow rate (l/h) PC and PC LCNL model	
2.0	2.0L/H
4.0	4.0L/H
8.5	8.5L/H

Flow rate (l/h) PC HCNL model	
3.0	3.0L/H
6.0	6.0L/H
12.0	12.0L/H

Outlet type	
Flat	FLT
Nipple	NIP

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	2500/CA
	2300/CA

PC LCNL 4.0L/H NIP 1000/BAG

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including PC dripper (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter, and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and, most importantly, the structural integrity of the pipe and its associated connections.

In LCNL and HCNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	54	88	130	159	176	190	204	210	216	225	230
	1.5	71	118	184	231	268	295	318	343	360	369	390
	2.0	83	139	220	282	328	370	402	434	456	486	500
	2.5	92	156	250	321	376	425	468	504	544	567	600
	3.0	100	170	274	354	420	475	522	567	608	648	680
	3.5	107	182	294	381	456	515	570	623	664	711	750
	4.0	113	193	314	408	484	555	612	672	720	765	810
Flat terrain	1.0	59	102	168	225	272	315	360	399	432	468	500
	1.5	75	129	216	288	348	405	456	511	552	603	640
	2.0	86	149	248	330	404	470	528	588	640	693	740
	2.5	95	165	276	366	448	520	588	651	712	765	820
	3.0	103	178	298	396	484	560	636	707	768	828	890
	3.5	109	190	318	423	516	600	678	749	824	891	950
	4.0	115	201	336	447	544	635	714	791	864	936	1010
Downhill 2%	1.0	64	116	210	294	380	460	540	616	696	774	840
	1.5	79	141	248	345	436	525	606	693	776	855	930
	2.0	90	160	278	384	480	575	666	749	840	918	1000
	2.5	98	175	302	414	516	615	708	805	888	981	1060
	3.0	106	187	324	441	552	655	750	847	936	1026	1120
	3.5	112	199	342	465	580	685	786	889	984	1080	1170
	4.0	118	209	358	489	604	715	822	924	1024	1116	1210

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	36	59	92	117	136	150	162	175	184	189	200
	1.5	46	78	126	162	192	215	240	259	272	288	300
	2.0	54	91	148	192	228	260	288	315	336	360	380
	2.5	59	102	166	216	260	295	330	357	384	414	440
	3.0	64	111	182	237	284	325	366	399	432	459	490
	3.5	69	118	194	255	308	350	396	434	464	495	530
	4.0	73	125	206	270	328	375	420	462	496	531	570
Flat terrain	1.0	38	65	108	144	176	205	234	259	280	306	330
	1.5	48	83	138	186	224	260	294	329	360	387	420
	2.0	55	96	160	213	260	305	342	378	416	450	480
	2.5	61	106	178	237	288	335	378	420	456	495	530
	3.0	66	114	192	255	312	365	408	455	496	540	580
	3.5	70	122	204	273	332	385	438	483	528	576	610
	4.0	74	128	216	288	352	410	462	511	560	603	650
Downhill 2%	1.0	40	71	126	174	220	265	306	350	392	432	470
	1.5	49	88	152	210	260	310	360	406	448	495	540
	2.0	56	100	172	234	292	345	396	448	496	540	590
	2.5	62	110	188	255	316	375	432	483	536	585	630
	3.0	67	118	202	273	340	400	456	511	568	621	670
	3.5	71	125	214	291	360	420	480	539	600	648	700
	4.0	75	132	226	303	376	440	504	567	624	684	730

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.0	23	38	62	78	96	105	120	126	136	144	150
	1.5	29	50	82	105	128	145	162	175	192	207	220
	2.0	33	57	94	123	148	170	192	210	232	243	260
	2.5	37	64	106	138	168	195	216	238	256	279	300
	3.0	40	69	114	153	184	210	240	259	280	306	320
	3.5	43	74	122	162	196	225	258	280	304	324	350
	4.0	45	78	130	171	208	240	270	301	328	351	370
Flat terrain	1.0	23	40	68	90	112	130	144	161	176	189	210
	1.5	30	51	86	114	140	165	186	203	224	243	260
	2.0	34	59	100	132	160	190	216	238	256	279	300
	2.5	37	65	110	147	180	210	234	259	288	306	330
	3.0	40	70	118	159	192	225	258	280	312	333	360
	3.5	43	75	126	168	208	240	270	301	328	360	380
	4.0	45	79	134	177	216	255	288	322	352	378	400
Downhill 2%	1.0	24	43	74	102	128	150	174	196	216	243	260
	1.5	30	53	92	123	156	180	210	238	256	288	310
	2.0	34	61	104	141	176	205	234	266	288	315	340
	2.5	38	67	114	153	192	225	258	287	312	342	370
	3.0	41	72	122	165	204	240	276	308	336	369	400
	3.5	43	76	130	177	216	255	288	322	352	387	420
	4.0	46	80	138	186	228	265	306	336	376	405	440

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.0	95	138	184	207	220	230	234	238	240	243	250
	1.5	129	197	280	333	368	395	414	427	440	450	460
	2.0	153	237	348	423	480	520	558	581	608	621	640
	2.5	172	269	402	495	568	625	672	707	744	765	790
	3.0	187	296	446	555	640	710	768	819	856	891	930
	3.5	201	319	486	606	704	785	852	910	960	1008	1050
	4.0	213	340	520	654	760	850	930	994	1056	1107	1150
Flat terrain	1.0	112	184	294	384	464	535	606	665	728	783	840
	1.5	144	235	376	492	596	690	774	854	936	1008	1080
	2.0	166	272	436	570	688	795	894	987	1080	1161	1250
	2.5	183	301	482	633	764	880	996	1099	1200	1296	1380
	3.0	198	326	522	684	828	955	1074	1190	1296	1404	1500
	3.5	212	348	558	732	884	1020	1152	1267	1384	1494	1600
	4.0	223	367	590	771	932	1080	1218	1344	1464	1584	1690
Downhill 2%	1.0	130	232	418	594	768	920	1062	1204	1336	1467	1600
	1.5	158	275	478	666	848	1010	1164	1316	1456	1602	1740
	2.0	179	307	526	726	916	1090	1248	1407	1560	1710	1850
	2.5	195	333	566	777	972	1155	1320	1484	1648	1800	1950
	3.0	210	356	602	819	1024	1210	1386	1554	1720	1881	2040
	3.5	222	377	634	861	1072	1265	1446	1624	1792	1953	2120
	4.0	233	395	662	897	1112	1310	1500	1680	1856	2025	2190

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	65	99	142	168	188	200	210	217	224	225	230
	1.5	86	135	202	249	284	315	336	357	376	387	400
	2.0	101	160	244	306	352	395	426	455	480	504	530
	2.5	113	180	276	348	408	460	498	539	576	603	630
	3.0	123	197	304	387	452	510	564	609	648	684	720
	3.5	131	211	328	417	492	555	612	665	712	756	790
	4.0	139	225	350	447	528	600	660	714	768	819	860
Flat terrain	1.0	72	118	190	249	300	345	390	434	472	504	540
	1.5	92	151	242	318	384	445	498	553	600	648	700
	2.0	106	174	280	366	444	515	576	637	696	756	810
	2.5	117	193	310	408	492	570	642	707	776	837	890
	3.0	127	209	336	441	532	615	696	770	840	900	970
	3.5	135	223	358	471	568	660	738	819	896	963	1030
	4.0	143	236	380	498	600	695	780	868	944	1017	1090
Downhill 2%	1.0	79	138	240	336	428	515	606	693	776	855	930
	1.5	98	167	284	390	488	585	678	770	864	945	1020
	2.0	111	189	318	432	536	640	738	833	928	1017	1100
	2.5	122	207	346	465	580	685	786	889	984	1080	1170
	3.0	132	222	368	495	616	725	834	938	1040	1134	1220
	3.5	140	235	390	522	644	760	870	980	1088	1179	1280
	4.0	147	247	408	549	676	795	912	1022	1128	1233	1330

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	42	66	98	123	140	155	168	175	184	198	200
	1.5	55	87	134	171	200	225	246	266	280	297	310
	2.0	64	102	160	204	240	270	300	329	352	369	390
	2.5	71	114	180	231	272	310	342	371	400	423	450
	3.0	77	125	196	252	300	340	378	413	448	477	500
	3.5	82	133	210	273	324	370	408	448	480	513	550
	4.0	87	141	224	288	344	395	438	483	520	549	590
Flat terrain	1.0	45	73	118	153	188	215	246	266	296	315	340
	1.5	57	93	150	198	240	275	312	343	376	405	430
	2.0	66	108	174	228	276	320	360	399	432	468	500
	2.5	72	119	192	252	304	355	396	441	480	522	560
	3.0	78	129	208	273	332	385	432	476	520	558	600
	3.5	83	138	222	291	352	410	462	511	552	603	640
	4.0	88	146	234	309	372	430	486	539	584	630	680
Downhill 2%	1.0	47	81	138	189	236	280	324	371	416	459	500
	1.5	59	100	166	225	280	330	378	427	472	522	570
	2.0	68	113	188	252	312	365	420	469	520	576	620
	2.5	74	124	206	276	340	400	456	511	560	612	670
	3.0	80	134	220	294	360	425	486	539	600	648	700
	3.5	85	142	234	312	384	450	510	567	632	684	740
	4.0	90	150	246	327	400	470	534	595	656	711	770

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	138	183	220	234	240	245	246	252	248	252	250
	1.5	196	279	368	414	440	455	468	476	480	486	490
	2.0	236	346	476	552	600	635	660	679	688	702	710
	2.5	268	399	562	666	736	790	828	854	880	900	910
	3.0	295	444	636	762	852	920	972	1015	1048	1080	1100
	3.5	318	483	700	846	956	1040	1104	1162	1200	1242	1270
	4.0	339	517	756	921	1048	1145	1224	1288	1344	1386	1430
Flat terrain	1.0	183	291	460	597	720	830	936	1036	1128	1215	1300
	1.5	234	374	590	768	924	1070	1200	1323	1448	1557	1670
	2.0	271	432	682	888	1068	1235	1392	1533	1672	1800	1930
	2.5	300	480	758	984	1188	1370	1542	1701	1856	1998	2140
	3.0	325	520	820	1068	1288	1485	1668	1848	2008	2169	2320
	3.5	347	555	876	1140	1372	1585	1782	1967	2144	2313	2480
	4.0	366	586	926	1206	1452	1675	1884	2086	2272	2448	2620
Downhill 2%	1.0	231	414	760	1053	1324	1585	1836	2086	2328	2574	2810
	1.5	273	475	842	1155	1444	1720	1992	2254	2512	2763	3010
	2.0	306	523	908	1239	1544	1835	2118	2387	2656	2925	3180
	2.5	332	563	966	1311	1628	1935	2226	2506	2784	3060	3330
	3.0	355	598	1016	1377	1708	2020	2322	2618	2904	3177	3460
	3.5	375	629	1062	1434	1776	2100	2412	2709	3008	3294	3570
	4.0	394	657	1104	1488	1840	2170	2490	2800	3104	3393	3680

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	98	140	184	207	220	230	234	238	240	243	250
	1.5	134	200	282	333	368	395	414	427	440	450	460
	2.0	159	242	350	423	480	520	552	581	608	621	640
	2.5	179	275	404	495	568	625	672	707	744	765	790
	3.0	196	302	450	555	640	710	768	812	856	891	930
	3.5	211	326	490	609	704	785	852	910	960	1008	1040
	4.0	224	348	524	654	760	850	924	994	1048	1107	1150
Flat terrain	1.0	117	187	296	384	464	535	606	665	728	783	840
	1.5	150	240	380	495	596	690	774	854	928	1008	1080
	2.0	174	278	440	573	688	795	894	987	1080	1161	1240
	2.5	192	308	486	633	764	880	990	1099	1192	1287	1380
	3.0	208	334	528	687	828	955	1074	1190	1296	1395	1490
	3.5	222	356	564	735	884	1020	1146	1267	1384	1494	1600
	4.0	235	377	596	777	936	1080	1212	1344	1464	1575	1690
Downhill 2%	1.0	137	238	422	597	768	920	1062	1197	1336	1467	1590
	1.5	166	282	484	672	852	1015	1164	1309	1456	1593	1730
	2.0	188	315	532	729	920	1090	1248	1400	1552	1701	1850
	2.5	206	342	572	780	976	1155	1320	1484	1640	1791	1940
	3.0	221	366	608	825	1028	1210	1386	1554	1720	1872	2030
	3.5	234	387	640	864	1072	1265	1446	1617	1784	1953	2110
	4.0	246	406	670	900	1116	1315	1500	1680	1848	2016	2180

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	65	97	138	165	184	195	204	217	224	225	230
	1.5	87	133	196	243	276	305	330	350	368	378	390
	2.0	102	158	238	297	344	385	414	448	472	495	510
	2.5	114	178	270	339	396	445	486	525	560	585	610
	3.0	124	194	296	375	440	495	546	588	624	666	700
	3.5	133	209	320	405	476	540	594	644	688	729	770
	4.0	141	222	342	435	512	580	642	693	744	792	830
Flat terrain	1.0	73	116	184	240	288	335	378	413	456	486	520
	1.5	93	149	236	306	368	425	480	532	576	621	670
	2.0	107	172	272	354	428	495	558	616	672	720	770
	2.5	119	191	302	393	472	545	618	679	744	801	860
	3.0	129	206	326	426	512	595	666	735	800	864	930
	3.5	137	220	348	456	548	635	714	784	856	927	990
	4.0	145	233	368	480	580	670	750	833	904	981	1050
Downhill 2%	1.0	80	135	232	321	408	490	576	658	736	819	890
	1.5	99	165	276	375	468	560	648	735	816	900	980
	2.0	113	186	308	414	516	610	702	791	880	972	1050
	2.5	124	204	334	450	556	655	750	847	936	1026	1110
	3.0	133	219	358	477	588	695	798	896	992	1080	1170
	3.5	142	232	378	504	620	730	834	938	1032	1134	1220
	4.0	149	244	396	528	648	760	870	973	1072	1179	1270

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	175	214	238	243	248	250	252	252	256	252	250
	1.5	263	353	430	459	476	485	486	490	496	495	500
	2.0	323	453	582	645	680	700	714	721	728	729	740
	2.5	372	533	710	804	860	895	918	938	952	963	970
	3.0	412	601	818	942	1020	1075	1110	1141	1160	1179	1190
	3.5	447	659	914	1068	1168	1240	1290	1330	1360	1377	1400
	4.0	478	711	998	1179	1300	1390	1458	1505	1544	1575	1600
Flat terrain	1.0	267	426	672	873	1052	1215	1368	1512	1640	1773	1900
	1.5	342	547	862	1122	1352	1560	1752	1939	2112	2277	2440
	2.0	396	632	998	1299	1564	1805	2028	2240	2440	2637	2820
	2.5	438	701	1108	1440	1736	2005	2250	2485	2712	2925	3130
	3.0	475	760	1200	1560	1880	2170	2442	2695	2936	3168	3390
	3.5	507	811	1282	1668	2008	2320	2610	2877	3136	3384	3620
	4.0	536	858	1354	1764	2124	2450	2760	3045	3320	3573	3830
Downhill 2%	1.0	369	684	1214	1689	2140	2580	3006	3430	3848	4257	4660
	1.5	427	763	1328	1833	2308	2770	3222	3661	4096	4518	4940
	2.0	471	826	1422	1950	2448	2930	3396	3850	4296	4743	5180
	2.5	508	880	1502	2052	2572	3065	3546	4018	4480	4932	5380
	3.0	540	928	1574	2145	2676	3190	3684	4165	4640	5103	5560
	3.5	568	971	1638	2226	2776	3300	3810	4305	4784	5256	5730
	4.0	594	1010	1698	2304	2868	3405	3924	4424	4920	5400	5880

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	132	177	216	231	240	245	246	245	248	252	250
	1.5	186	267	356	402	432	450	462	469	480	486	490
	2.0	224	330	458	534	584	620	648	665	680	693	700
	2.5	253	380	538	642	712	765	804	840	864	882	900
	3.0	278	421	608	732	824	890	948	987	1024	1053	1080
	3.5	300	457	666	810	920	1005	1074	1127	1176	1215	1240
	4.0	320	490	720	882	1004	1105	1182	1253	1304	1350	1390
Flat terrain	1.0	172	274	432	561	676	785	882	973	1056	1143	1220
	1.5	220	351	554	723	868	1005	1128	1246	1360	1467	1570
	2.0	254	406	642	834	1008	1160	1308	1442	1576	1692	1820
	2.5	281	450	712	927	1116	1290	1452	1603	1744	1881	2010
	3.0	305	488	772	1005	1208	1395	1572	1736	1888	2043	2180
	3.5	325	521	824	1071	1292	1490	1680	1855	2016	2178	2330
	4.0	343	551	870	1134	1364	1575	1776	1960	2136	2304	2460
Downhill 2%	1.0	214	382	698	975	1228	1465	1698	1932	2152	2376	2590
	1.5	254	441	776	1074	1340	1595	1848	2086	2320	2556	2790
	2.0	285	486	842	1152	1436	1705	1962	2219	2464	2709	2940
	2.5	310	524	896	1221	1516	1795	2064	2331	2584	2835	3080
	3.0	331	557	944	1281	1588	1880	2160	2429	2696	2952	3210
	3.5	350	587	988	1338	1656	1955	2244	2520	2792	3060	3320
	4.0	367	613	1028	1389	1716	2025	2316	2604	2880	3150	3420

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.0	90	130	174	198	216	225	228	238	240	243	240
	1.5	123	184	264	315	352	380	402	413	432	441	450
	2.0	145	222	324	396	448	495	528	553	576	603	620
	2.5	163	251	372	459	528	585	630	672	704	729	760
	3.0	178	276	414	513	596	660	720	763	808	846	880
	3.5	191	297	448	561	652	730	792	854	904	945	990
	4.0	203	317	480	603	704	790	864	924	984	1035	1080
Flat terrain	1.0	106	169	268	348	420	485	546	602	656	711	760
	1.5	136	217	344	447	540	625	702	777	840	909	970
	2.0	157	251	398	516	624	720	810	896	976	1053	1130
	2.5	174	278	440	573	692	800	900	994	1080	1170	1250
	3.0	188	302	478	621	748	865	972	1078	1168	1260	1350
	3.5	201	322	510	663	800	925	1038	1148	1248	1350	1440
	4.0	212	340	538	702	844	975	1098	1211	1320	1431	1530
Downhill 2%	1.0	122	211	370	522	672	815	942	1064	1176	1296	1410
	1.5	149	251	428	591	748	900	1032	1162	1288	1413	1530
	2.0	168	281	474	648	812	970	1110	1246	1384	1512	1640
	2.5	184	306	510	693	864	1030	1176	1323	1456	1593	1730
	3.0	198	328	544	735	912	1085	1236	1386	1528	1674	1810
	3.5	210	347	572	771	956	1130	1290	1442	1592	1737	1880
	4.0	221	364	598	804	996	1175	1338	1498	1648	1800	1950

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.5	54	88	130	159	176	190	204	210	216	225	230
	2.0	71	118	184	231	268	295	318	343	360	369	390
	2.5	83	139	220	282	328	370	402	434	456	486	500
	3.0	92	156	250	321	376	425	468	504	544	567	600
	3.5	100	170	274	354	420	475	522	567	608	648	680
	4.0	107	182	294	381	456	515	570	623	664	711	750
Flat terrain	1.5	59	102	168	225	272	315	360	399	432	468	500
	2.0	75	129	216	288	348	405	456	511	552	603	640
	2.5	86	149	248	330	404	470	528	588	640	693	740
	3.0	95	165	276	366	448	520	588	651	712	765	820
	3.5	103	178	298	396	484	560	636	707	768	828	890
	4.0	109	190	318	423	516	600	678	749	824	891	950
Downhill 2%	1.5	64	116	210	294	380	460	540	616	696	774	840
	2.0	79	141	248	345	436	525	606	693	776	855	930
	2.5	90	160	278	384	480	575	666	749	840	918	1000
	3.0	98	175	302	414	516	615	708	805	888	981	1060
	3.5	106	187	324	441	552	655	750	847	936	1026	1120
	4.0	112	199	342	465	580	685	786	889	984	1080	1170

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.5	36	59	92	117	136	150	162	175	184	189	200
	2.0	46	78	126	162	192	215	240	259	272	288	300
	2.5	54	91	148	192	228	260	288	315	336	360	380
	3.0	59	102	166	216	260	295	330	357	384	414	440
	3.5	64	111	182	237	284	325	366	399	432	459	490
	4.0	69	118	194	255	308	350	396	434	464	495	530
Flat terrain	1.5	38	65	108	144	176	205	234	259	280	306	330
	2.0	48	83	138	186	224	260	294	329	360	387	420
	2.5	55	96	160	213	260	305	342	378	416	450	480
	3.0	61	106	178	237	288	335	378	420	456	495	530
	3.5	66	114	192	255	312	365	408	455	496	540	580
	4.0	70	122	204	273	332	385	438	483	528	576	610
Downhill 2%	1.5	40	71	126	174	220	265	306	350	392	432	470
	2.0	49	88	152	210	260	310	360	406	448	495	540
	2.5	56	100	172	234	292	345	396	448	496	540	590
	3.0	62	110	188	255	316	375	432	483	536	585	630
	3.5	67	118	202	273	340	400	456	511	568	621	670
	4.0	71	125	214	291	360	420	480	539	600	648	700

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.5	23	38	62	78	96	105	120	126	136	144	150
	2.0	29	50	82	105	128	145	162	175	192	207	220
	2.5	33	57	94	123	148	170	192	210	232	243	260
	3.0	37	64	106	138	168	195	216	238	256	279	300
	3.5	40	69	114	153	184	210	240	259	280	306	320
	4.0	43	74	122	162	196	225	258	280	304	324	350
Flat terrain	1.5	23	40	68	90	112	130	144	161	176	189	210
	2.0	30	51	86	114	140	165	186	203	224	243	260
	2.5	34	59	100	132	160	190	216	238	256	279	300
	3.0	37	65	110	147	180	210	234	259	288	306	330
	3.5	40	70	118	159	192	225	258	280	312	333	360
	4.0	43	75	126	168	208	240	270	301	328	360	380
Downhill 2%	1.5	24	43	74	102	128	150	174	196	216	243	260
	2.0	30	53	92	123	156	180	210	238	256	288	310
	2.5	34	61	104	141	176	205	234	266	288	315	340
	3.0	38	67	114	153	192	225	258	287	312	342	370
	3.5	41	72	122	165	204	240	276	308	336	369	400
	4.0	43	76	130	177	216	255	288	322	352	387	420

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.5	95	138	184	207	220	230	234	238	240	243	250
	2.0	129	197	280	333	368	395	414	427	440	450	460
	2.5	153	237	348	423	480	520	558	581	608	621	640
	3.0	172	269	402	495	568	625	672	707	744	765	790
	3.5	187	296	446	555	640	710	768	819	856	891	930
	4.0	201	319	486	606	704	785	852	910	960	1008	1050
Flat terrain	1.5	112	184	294	384	464	535	606	665	728	783	840
	2.0	144	235	376	492	596	690	774	854	936	1008	1080
	2.5	166	272	436	570	688	795	894	987	1080	1161	1250
	3.0	183	301	482	633	764	880	996	1099	1200	1296	1380
	3.5	198	326	522	684	828	955	1074	1190	1296	1404	1500
	4.0	212	348	558	732	884	1020	1152	1267	1384	1494	1600
Downhill 2%	1.5	130	232	418	594	768	940	1110	1281	1448	1602	1740
	2.0	158	275	478	666	848	1025	1200	1379	1552	1710	1850
	2.5	179	307	526	726	916	1100	1284	1463	1632	1800	1950
	3.0	195	333	566	777	972	1165	1350	1533	1712	1881	2040
	3.5	210	356	602	819	1024	1220	1410	1603	1784	1953	2120
	4.0	222	377	634	861	1072	1275	1470	1659	1848	2025	2190

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.5	65	99	142	168	188	200	210	217	224	225	230
	2.0	86	135	202	249	284	315	336	357	376	387	400
	2.5	101	160	244	306	352	395	426	455	480	504	530
	3.0	113	180	276	348	408	460	498	539	576	603	630
	3.5	123	197	304	387	452	510	564	609	648	684	720
	4.0	131	211	328	417	492	555	612	665	712	756	790
Flat terrain	1.5	72	118	190	249	300	345	390	434	472	504	540
	2.0	92	151	242	318	384	445	498	553	600	648	700
	2.5	106	174	280	366	444	515	576	637	696	756	810
	3.0	117	193	310	408	492	570	642	707	776	837	890
	3.5	127	209	336	441	532	615	696	770	840	900	970
	4.0	135	223	358	471	568	660	738	819	896	963	1030
Downhill 2%	1.5	79	138	240	336	428	515	606	693	776	855	930
	2.0	98	167	284	390	488	585	678	770	864	945	1020
	2.5	111	189	318	432	536	640	738	833	928	1017	1100
	3.0	122	207	346	465	580	685	786	889	984	1080	1170
	3.5	132	222	368	495	616	725	834	938	1040	1134	1220
	4.0	140	235	390	522	644	760	870	980	1088	1179	1280

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.5	42	66	98	123	140	155	168	175	184	198	200
	2.0	55	87	134	171	200	225	246	266	280	297	310
	2.5	64	102	160	204	240	270	300	329	352	369	390
	3.0	71	114	180	231	272	310	342	371	400	423	450
	3.5	77	125	196	252	300	340	378	413	448	477	500
	4.0	82	133	210	273	324	370	408	448	480	513	550
Flat terrain	1.5	45	73	118	153	188	215	246	266	296	315	340
	2.0	57	93	150	198	240	275	312	343	376	405	430
	2.5	66	108	174	228	276	320	360	399	432	468	500
	3.0	72	119	192	252	304	355	396	441	480	522	560
	3.5	78	129	208	273	332	385	432	476	520	558	600
	4.0	83	138	222	291	352	410	462	511	552	603	640
Downhill 2%	1.5	47	81	138	189	236	280	324	371	416	459	500
	2.0	59	100	166	225	280	330	378	427	472	522	570
	2.5	68	113	188	252	312	365	420	469	520	576	620
	3.0	74	124	206	276	340	400	456	511	560	612	670
	3.5	80	134	220	294	360	425	486	539	600	648	700
	4.0	85	142	234	312	384	450	510	567	632	684	740

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.5	138	183	220	234	240	245	246	252	248	252	250
	2.0	196	279	368	414	440	455	468	476	480	486	490
	2.5	236	346	476	552	600	635	660	679	688	702	710
	3.0	268	399	562	666	736	790	828	854	880	900	910
	3.5	295	444	636	762	852	920	972	1015	1048	1080	1100
	4.0	318	483	700	846	956	1040	1104	1162	1200	1242	1270
Flat terrain	1.5	183	291	460	597	720	830	936	1036	1128	1215	1300
	2.0	234	374	590	768	924	1070	1200	1323	1448	1557	1670
	2.5	271	432	682	888	1068	1235	1392	1533	1672	1800	1930
	3.0	300	480	758	984	1188	1370	1542	1701	1856	1998	2140
	3.5	325	520	820	1068	1288	1485	1668	1848	2008	2169	2320
	4.0	347	555	876	1140	1372	1585	1782	1967	2144	2313	2480
Downhill 2%	1.5	231	414	760	1053	1324	1585	1836	2086	2328	2574	2810
	2.0	273	475	842	1155	1444	1720	1992	2254	2512	2763	3010
	2.5	306	523	908	1239	1544	1835	2118	2387	2656	2925	3180
	3.0	332	563	966	1311	1628	1935	2226	2506	2784	3060	3330
	3.5	355	598	1016	1377	1708	2020	2322	2618	2904	3177	3460
	4.0	375	629	1062	1434	1776	2100	2412	2709	3008	3294	3570

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.5	98	140	184	207	220	230	234	238	240	243	250
	2.0	134	200	282	333	368	395	414	427	440	450	460
	2.5	159	242	350	423	480	520	552	581	608	621	640
	3.0	179	275	404	495	568	625	672	707	744	765	790
	3.5	196	302	450	555	640	710	768	812	856	891	930
	4.0	211	326	490	609	704	785	852	910	960	1008	1040
Flat terrain	1.5	117	187	296	384	464	535	606	665	728	783	840
	2.0	150	240	380	495	596	690	774	854	928	1008	1080
	2.5	174	278	440	573	688	795	894	987	1080	1161	1240
	3.0	192	308	486	633	764	880	990	1099	1192	1287	1380
	3.5	208	334	528	687	828	955	1074	1190	1296	1395	1490
	4.0	222	356	564	735	884	1020	1146	1267	1384	1494	1600
Downhill 2%	1.5	137	238	422	597	768	920	1062	1197	1336	1467	1590
	2.0	166	282	484	672	852	1015	1164	1309	1456	1593	1730
	2.5	188	315	532	729	920	1090	1248	1400	1552	1701	1850
	3.0	206	342	572	780	976	1155	1320	1484	1640	1791	1940
	3.5	221	366	608	825	1028	1210	1386	1554	1720	1872	2030
	4.0	234	387	640	864	1072	1265	1446	1617	1784	1953	2110

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.5	65	97	138	165	184	195	204	217	224	225	230
	2.0	87	133	196	243	276	305	330	350	368	378	390
	2.5	102	158	238	297	344	385	414	448	472	495	510
	3.0	114	178	270	339	396	445	486	525	560	585	610
	3.5	124	194	296	375	440	495	546	588	624	666	700
	4.0	133	209	320	405	476	540	594	644	688	729	770
Flat terrain	1.5	73	116	184	240	288	335	378	413	456	486	520
	2.0	93	149	236	306	368	425	480	532	576	621	670
	2.5	107	172	272	354	428	495	558	616	672	720	770
	3.0	119	191	302	393	472	545	618	679	744	801	860
	3.5	129	206	326	426	512	595	666	735	800	864	930
	4.0	137	220	348	456	548	635	714	784	856	927	990
Downhill 2%	1.5	80	135	232	321	408	490	576	658	736	819	890
	2.0	99	165	276	375	468	560	648	735	816	900	980
	2.5	113	186	308	414	516	610	702	791	880	972	1050
	3.0	124	204	334	450	556	655	750	847	936	1026	1110
	3.5	133	219	358	477	588	695	798	896	992	1080	1170
	4.0	142	232	378	504	620	730	834	938	1032	1134	1220

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	1.5	175	214	238	243	248	250	252	252	256	252	250
	2.0	263	353	430	459	476	485	486	490	496	495	500
	2.5	323	453	582	645	680	700	714	721	728	729	740
	3.0	372	533	710	804	860	895	918	938	952	963	970
	3.5	412	601	818	942	1020	1075	1110	1141	1160	1179	1190
	4.0	447	659	914	1068	1168	1240	1290	1330	1360	1377	1400
Flat terrain	1.5	267	426	672	873	1052	1215	1368	1512	1640	1773	1900
	2.0	342	547	862	1122	1352	1560	1752	1939	2112	2277	2440
	2.5	396	632	998	1299	1564	1805	2028	2240	2440	2637	2820
	3.0	438	701	1108	1440	1736	2005	2250	2485	2712	2925	3130
	3.5	475	760	1200	1560	1880	2170	2442	2695	2936	3168	3390
	4.0	507	811	1282	1668	2008	2320	2610	2877	3136	3384	3620
Downhill 2%	1.5	369	684	1214	1689	2140	2580	3006	3430	3848	4257	4660
	2.0	427	763	1328	1833	2308	2770	3222	3661	4096	4518	4940
	2.5	471	826	1422	1950	2448	2930	3396	3850	4296	4743	5180
	3.0	508	880	1502	2052	2572	3065	3546	4018	4480	4932	5380
	3.5	540	928	1574	2145	2676	3190	3684	4165	4640	5103	5560
	4.0	568	971	1638	2226	2776	3300	3810	4305	4784	5256	5730

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.5	132	177	216	231	240	245	246	245	248	252	250
	2.0	186	267	356	402	432	450	462	469	480	486	490
	2.5	224	330	458	534	584	620	648	665	680	693	700
	3.0	253	380	538	642	712	765	804	840	864	882	900
	3.5	278	421	608	732	824	890	948	987	1024	1053	1080
	4.0	300	457	666	810	920	1005	1074	1127	1176	1215	1240
Flat terrain	1.5	172	274	432	561	676	785	882	973	1056	1143	1220
	2.0	220	351	554	723	868	1005	1128	1246	1360	1467	1570
	2.5	254	406	642	834	1008	1160	1308	1442	1576	1692	1820
	3.0	281	450	712	927	1116	1290	1452	1603	1744	1881	2010
	3.5	305	488	772	1005	1208	1395	1572	1736	1888	2043	2180
	4.0	325	521	824	1071	1292	1490	1680	1855	2016	2178	2330
Downhill 2%	1.5	214	382	698	975	1228	1465	1698	1932	2152	2376	2590
	2.0	254	441	776	1074	1340	1595	1848	2086	2320	2556	2790
	2.5	285	486	842	1152	1436	1705	1962	2219	2464	2709	2940
	3.0	310	524	896	1221	1516	1795	2064	2331	2584	2835	3080
	3.5	331	557	944	1281	1588	1880	2160	2429	2696	2952	3210
	4.0	350	587	988	1338	1656	1955	2244	2520	2792	3060	3320

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 8.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	1.5	90	130	174	198	216	225	228	238	240	243	240
	2.0	123	184	264	315	352	380	402	413	432	441	450
	2.5	145	222	324	396	448	495	528	553	576	603	620
	3.0	163	251	372	459	528	585	630	672	704	729	760
	3.5	178	276	414	513	596	660	720	763	808	846	880
	4.0	191	297	448	561	652	730	792	854	904	945	990
Flat terrain	1.5	106	169	268	348	420	485	546	602	656	711	760
	2.0	136	217	344	447	540	625	702	777	840	909	970
	2.5	157	251	398	516	624	720	810	896	976	1053	1130
	3.0	174	278	440	573	692	800	900	994	1080	1170	1250
	3.5	188	302	478	621	748	865	972	1078	1168	1260	1350
	4.0	201	322	510	663	800	925	1038	1148	1248	1350	1440
Downhill 2%	1.5	122	211	370	522	672	815	942	1064	1176	1296	1410
	2.0	149	251	428	591	748	900	1032	1162	1288	1413	1530
	2.5	168	281	474	648	812	970	1110	1246	1384	1512	1640
	3.0	184	306	510	693	864	1030	1176	1323	1456	1593	1730
	3.5	198	328	544	735	912	1085	1236	1386	1528	1674	1810
	4.0	210	347	572	771	956	1130	1290	1442	1592	1737	1880

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	2.0	43	70	108	132	152	170	180	189	200	207	210
	2.5	55	93	148	189	220	250	270	294	312	324	340
	3.0	64	109	176	225	268	305	336	364	384	405	430
	3.5	71	122	196	255	304	345	384	420	448	477	500
	4.0	77	132	216	279	336	380	426	462	496	531	560
Flat terrain	2.0	45	78	130	174	212	245	276	308	336	360	390
	2.5	58	100	166	222	272	315	354	392	432	468	500
	3.0	66	115	192	255	312	365	408	455	496	540	580
	3.5	73	127	212	282	344	400	456	504	552	594	640
	4.0	79	137	230	306	372	435	492	546	592	648	690
Downhill 2%	2.0	48	87	154	216	276	330	384	441	496	549	600
	2.5	60	107	186	255	320	385	444	504	560	621	670
	3.0	68	121	210	288	356	425	492	553	616	675	730
	3.5	75	133	228	312	388	460	528	595	656	720	780
	4.0	81	143	246	333	412	490	558	630	696	765	830

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 6.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Uphill 2%	2.0	28	47	74	96	112	125	138	147	160	162	170
	2.5	36	61	100	129	152	175	192	210	224	243	250
	3.0	42	71	116	153	184	210	234	252	272	297	310
	3.5	46	79	130	171	204	235	264	287	312	333	360
	4.0	50	86	142	186	224	260	288	315	344	369	390
Flat terrain	2.0	29	50	84	111	136	160	180	203	216	234	250
	2.5	37	64	108	144	176	205	228	252	280	306	320
	3.0	42	74	124	165	200	235	264	294	320	351	370
	3.5	47	81	136	183	224	260	294	329	360	387	410
	4.0	50	88	148	198	240	280	318	350	384	414	450
Downhill 2%	2.0	30	54	94	129	164	195	228	259	288	315	340
	2.5	38	67	116	156	196	230	270	301	336	369	400
	3.0	43	76	130	177	220	260	300	336	368	405	440
	3.5	48	84	144	195	240	285	324	364	400	441	470
	4.0	51	90	154	207	256	305	348	385	424	468	500

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	18	31	50	66	80	90	102	112	120	126	130
	2.5	23	40	66	87	104	120	132	147	160	171	180
	3.0	27	46	76	102	124	140	162	175	192	207	220
	3.5	30	51	86	114	136	160	180	196	216	225	240
	4.0	32	56	92	123	148	175	192	217	232	252	270
Flat terrain	2.0	19	33	54	72	88	105	120	133	144	153	170
	2.5	24	41	70	93	112	130	150	168	184	198	210
	3.0	27	47	80	108	132	150	174	189	208	225	240
	3.5	30	52	88	117	144	170	192	210	232	252	270
	4.0	32	56	96	129	156	180	204	231	248	270	290
Downhill 2%	2.0	19	34	58	81	100	120	138	154	168	189	200
	2.5	24	42	72	99	124	145	168	182	208	225	240
	3.0	28	48	82	111	140	165	186	210	232	252	270
	3.5	30	53	90	123	152	180	204	224	248	270	290
	4.0	33	57	98	132	164	190	216	245	264	288	310

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	76	114	160	186	204	215	222	231	232	234	240
	2.5	102	159	232	282	320	350	372	392	408	414	430
	3.0	120	189	284	351	404	445	480	511	536	558	580
	3.5	134	213	324	405	472	525	570	609	640	675	700
	4.0	146	234	358	450	524	590	642	693	736	774	800
Flat terrain	2.0	87	142	228	297	360	415	468	518	568	612	650
	2.5	111	181	290	381	460	530	600	665	720	783	830
	3.0	128	210	336	441	532	615	696	763	832	900	970
	3.5	141	232	372	489	588	680	768	847	928	999	1070
	4.0	153	251	404	528	640	740	834	917	1000	1080	1160
Downhill 2%	2.0	97	171	300	423	540	660	774	889	1000	1116	1230
	2.5	119	205	352	486	612	735	858	973	1096	1215	1330
	3.0	135	231	390	534	668	800	924	1050	1168	1287	1410
	3.5	148	251	422	573	716	850	984	1113	1232	1359	1480
	4.0	159	269	450	609	756	895	1032	1162	1296	1422	1550

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 6.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	51	80	118	144	160	175	186	196	208	216	220
	2.5	68	107	164	204	236	265	288	308	328	342	350
	3.0	79	126	194	246	288	325	354	385	408	432	450
	3.5	88	141	220	279	328	375	414	448	480	504	530
	4.0	95	154	240	309	364	415	456	497	536	567	600
Flat terrain	2.0	56	91	146	192	232	270	300	336	368	396	420
	2.5	71	117	188	246	296	345	390	427	464	504	540
	3.0	82	135	216	285	344	395	450	497	536	585	620
	3.5	91	149	240	315	380	440	498	546	600	648	690
	4.0	98	161	260	342	412	475	534	595	648	702	750
Downhill 2%	2.0	60	103	176	243	308	370	432	490	552	612	670
	2.5	75	126	212	288	360	430	492	560	624	684	750
	3.0	85	143	238	321	400	470	540	609	680	747	810
	3.5	93	157	260	351	432	510	582	658	728	792	860
	4.0	101	169	280	375	460	540	618	693	768	837	910

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	34	54	82	102	120	135	144	154	168	171	180
	2.5	44	71	110	141	168	190	210	224	240	252	270
	3.0	51	83	130	168	200	225	252	273	296	315	330
	3.5	57	93	146	189	224	255	288	308	336	360	380
	4.0	62	101	160	207	248	280	312	343	368	396	420
Flat terrain	2.0	36	59	94	123	152	175	198	217	240	261	280
	2.5	46	75	120	159	192	225	252	280	304	324	350
	3.0	53	87	140	183	220	255	288	322	352	378	400
	3.5	58	96	154	204	244	285	318	357	384	414	450
	4.0	63	104	168	219	264	310	348	385	416	450	480
Downhill 2%	2.0	38	64	108	147	184	215	252	280	312	351	380
	2.5	47	79	132	177	220	255	294	329	368	405	440
	3.0	54	90	148	198	244	290	330	371	408	441	480
	3.5	59	99	164	219	268	315	354	399	440	477	520
	4.0	64	107	176	234	284	335	384	427	472	513	550

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	114	158	200	219	232	235	240	245	248	252	250
	2.5	158	231	318	369	400	425	438	455	464	468	470
	3.0	188	282	400	477	532	570	600	630	648	657	670
	3.5	212	322	466	564	636	695	738	777	808	828	850
	4.0	233	356	522	639	728	800	858	903	944	972	1010
Flat terrain	2.0	141	225	356	462	556	645	726	798	872	936	1010
	2.5	181	289	456	594	716	825	930	1022	1120	1206	1290
	3.0	209	334	528	687	828	955	1074	1183	1296	1395	1490
	3.5	231	370	584	762	916	1060	1194	1316	1432	1548	1650
	4.0	250	401	634	825	992	1150	1290	1428	1552	1674	1790
Downhill 2%	2.0	170	298	536	765	992	1215	1440	1659	1880	2106	2310
	2.5	204	349	606	846	1080	1310	1542	1764	1992	2214	2420
	3.0	230	388	662	915	1156	1395	1626	1855	2088	2313	2530
	3.5	250	420	710	972	1224	1465	1704	1939	2176	2403	2620
	4.0	268	448	750	1023	1280	1530	1776	2016	2248	2484	2710

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 6.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	79	116	160	186	204	215	222	231	232	234	240
	2.5	107	161	234	285	320	350	372	392	408	414	430
	3.0	126	193	286	351	404	445	480	511	536	558	580
	3.5	141	218	326	408	472	525	570	609	640	675	700
	4.0	153	239	360	453	528	590	642	693	728	765	800
Flat terrain	2.0	91	145	228	297	360	415	468	518	560	603	650
	2.5	116	186	294	381	460	530	600	658	720	774	830
	3.0	134	215	340	441	532	615	690	763	832	900	960
	3.5	148	238	376	489	592	680	768	847	928	999	1070
	4.0	161	258	408	531	640	740	834	917	1000	1080	1160
Downhill 2%	2.0	102	175	304	426	544	660	774	889	1000	1116	1230
	2.5	126	210	356	489	612	735	858	973	1088	1206	1320
	3.0	143	237	394	537	668	800	924	1043	1168	1287	1400
	3.5	156	258	428	576	716	850	978	1106	1232	1359	1480
	4.0	168	277	456	612	760	900	1032	1162	1288	1413	1540

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	54	81	118	144	160	175	186	196	208	216	220
	2.5	71	109	164	204	236	265	288	308	328	342	350
	3.0	83	129	196	246	288	325	354	385	408	432	450
	3.5	92	145	222	282	332	375	408	448	472	504	530
	4.0	100	158	244	309	364	415	456	497	528	567	590
Flat terrain	2.0	58	93	148	192	232	270	300	336	368	396	420
	2.5	75	119	190	246	296	345	384	427	464	504	540
	3.0	86	138	218	285	344	395	450	497	536	585	620
	3.5	95	153	242	315	380	440	498	546	600	648	690
	4.0	103	166	262	342	412	475	534	595	648	693	750
Downhill 2%	2.0	63	106	178	246	308	370	432	490	552	612	670
	2.5	79	130	214	291	360	430	492	560	624	684	740
	3.0	90	147	242	324	400	475	540	609	680	738	810
	3.5	99	161	264	351	432	510	582	658	728	792	860
	4.0	106	174	282	375	460	540	618	693	768	837	910

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	149	194	226	237	244	245	246	252	248	252	250
	2.5	216	303	388	429	452	465	474	483	488	486	490
	3.0	262	379	512	585	628	660	678	693	704	711	720
	3.5	298	440	610	711	780	825	864	889	904	918	930
	4.0	328	490	692	822	912	975	1026	1064	1088	1116	1130
Flat terrain	2.0	206	329	518	675	812	940	1056	1169	1272	1368	1470
	2.5	264	422	666	867	1044	1205	1356	1498	1632	1755	1880
	3.0	305	488	770	1002	1208	1395	1572	1736	1888	2034	2180
	3.5	338	541	854	1113	1340	1550	1740	1925	2096	2259	2420
	4.0	366	586	926	1206	1452	1680	1884	2086	2272	2448	2620
Downhill 2%	2.0	267	484	898	1305	1708	2110	2460	2779	3096	3402	3710
	2.5	314	551	986	1404	1812	2220	2580	2912	3240	3555	3870
	3.0	350	603	1058	1488	1908	2320	2688	3031	3368	3690	4020
	3.5	379	648	1120	1563	1988	2410	2784	3136	3480	3816	4150
	4.0	405	686	1176	1629	2064	2490	2874	3234	3592	3933	4270

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 6.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	108	152	196	216	228	235	240	245	248	252	250
	2.5	149	220	306	357	392	415	432	448	456	468	470
	3.0	178	268	384	459	516	555	588	616	632	648	660
	3.5	200	305	446	540	612	670	714	756	784	810	830
	4.0	219	337	496	609	696	770	828	875	912	954	980
Flat terrain	2.0	132	211	334	435	524	605	678	749	816	882	950
	2.5	169	271	428	558	672	775	876	966	1048	1134	1210
	3.0	196	314	496	645	776	900	1008	1113	1216	1314	1400
	3.5	217	348	550	717	864	995	1122	1239	1352	1458	1560
	4.0	235	377	596	777	936	1080	1212	1344	1464	1575	1690
Downhill 2%	2.0	157	276	494	702	908	1115	1314	1519	1720	1926	2120
	2.5	190	324	562	783	996	1205	1416	1624	1824	2034	2240
	3.0	214	361	614	846	1068	1285	1500	1708	1920	2124	2330
	3.5	234	391	660	903	1132	1355	1578	1792	2000	2214	2420
	4.0	251	418	698	951	1188	1420	1644	1862	2080	2295	2510

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PC HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.5**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**	**9.0**	**10.0**
Uphill 2%	2.0	75	111	154	180	196	210	216	224	232	234	240
	2.5	101	153	224	273	308	335	360	378	392	405	420
	3.0	118	182	272	336	388	430	462	490	520	540	560
	3.5	132	206	310	387	448	500	546	581	616	648	680
	4.0	144	225	342	429	500	560	612	658	704	738	770
Flat terrain	2.0	85	136	216	279	340	390	438	483	528	567	610
	2.5	109	174	276	360	432	500	564	623	680	729	780
	3.0	126	202	320	417	500	580	654	721	784	846	910
	3.5	139	223	354	462	556	640	720	798	872	936	1000
	4.0	151	242	384	498	604	695	780	861	944	1017	1090
Downhill 2%	2.0	95	163	282	393	500	605	714	812	920	1017	1120
	2.5	117	196	330	453	568	680	792	896	1008	1116	1220
	3.0	133	221	368	498	624	740	858	966	1080	1188	1300
	3.5	146	241	398	537	668	790	912	1029	1144	1251	1370
	4.0	157	259	426	573	708	835	960	1078	1200	1314	1430

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

PCJ™ PRO on-line dripper

Advanced pressure-compensated on-line dripper, engineered to deliver superior clogging resistance and precise hydraulic performance across a wide range of water qualities.
Specifically designed for intensive irrigation applications in greenhouses and nurseries, where uniformity and reliability are critical.



Benefits & Features

Uniform water distribution	The refined pressure-compensation mechanism ensures precise and stable flow regulation across a wide pressure range, delivering uniform water distribution along long irrigation lines and across varying topographies.
Prevents drainage (LCNL or HCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution. The HCNL (high anti-drain) mechanism operates at a higher shut-off threshold, preventing drainage even under steep slope conditions. Improves pulse irrigation performance; eliminates drainage and refill effects, enhancing irrigation efficiency in pulse irrigation applications.
Long-lasting, high clogging resistance	Optimized and enlarged internal water passages improve tolerance to suspended solids. Enhanced flow path geometry increases turbulence, reducing sediment accumulation and maintaining precise hydraulic performance across a wide range of water qualities. A built-in filtration area, uncommon in most on-line drippers, helps reduce the risk of suspended particle ingress, ensuring dependable performance across a wide range of water quality levels. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including press-fit, straight or angled barbed connections, supporting flexible system design and compatibility with "Spider" assemblies. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in greenhouses, nurseries and other protected crop applications.



Specifications

- Pressure-compensated operating range: according to dripper model (see tables below).
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Insertable into thick-wall PE pipes: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international manufacturing and performance standards.
- Available outlet configurations: straight or angled 3 mm barbed connection, straight 4 mm barbed connection and press-fit (nipple).

Drippers technical data

PCJ™ PRO AS dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
1.2	0.5 - 4.0	0.70 x 0.84 x 39	2.8	1.2	0	130/120	Brown	Black
2.0		0.95 x 0.84 x 39	2.8	2.0	0	130/120	Red	Black
3.0		1.13 x 0.98 x 39	2.8	3.0	0	130/120	Blue	Black
4.0		1.31 x 0.98 x 39	2.8	4.0	0	130/120	Gray	Black



* Within working pressure range.

PCJ™ PRO AS. Identified by its base color code and by the AS marking on the emitter body.

PCJ™ PRO LCNL dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
1.2	0.7- 4.0	0.70 x 0.84 x 39	2.8	1.2	0	130/120	Brown	Black
2.0		0.95 x 0.84 x 39	2.8	2.0	0	130/120	Red	Black
3.0		1.13 x 0.98 x 39	2.8	3.0	0	130/120	Blue	Black
4.0		1.31 x 0.98 x 39	2.8	4.0	0	130/120	Gray	Black



* Within working pressure range.

PCJ™ PRO LCNL nominal shut-off pressure: 0.15 bar. Identified by its base color code and by the CNL marking on the emitter body.

PCJ™ PRO HCNL dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
1.2	1.5 - 4.0	0.70 x 0.84 x 39	2.8	1.2	0	130/120	Light brown	Black
2.0		0.95 x 0.84 x 39	2.8	2.0	0	130/120	Pink	Black
3.0		1.13 x 0.98 x 39	2.8	3.0	0	130/120	Light blue	Black
4.0		1.31 x 0.98 x 39	2.8	4.0	0	130/120	Light gray	Black



* Within working pressure range.

PCJ™ PRO HCNL nominal shut-off pressure: 0.25 bar. Identified by its base color code and by the CNL marking on the emitter body.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Kd (minor losses) – insertion barb in the distribution pipe

PE pipe	Inner diameter (mm)	Kd
12/4	9.80	1.65
16/4	13.20	0.39
20/4	17.00	0.13
25/4	21.20	0.10

Blank dripline	Inner diameter (mm)	Kd
12009 - 12010	10.60	1.61
16010 - 16012	14.20	0.37
20010 - 20012	17.50	0.12

Kd: A barbed inlet connector inside the pipe creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.



Straight barb 3 mm | Angled barb 3 mm

Straight barb 4 mm | Nipple (press fit)

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PCJ™ PRO drippers (straight barb 3 and 4 mm outlet)	10000	57 x 28 x 27	13.9	32	114 x 114 x 112	456
PCJ™ PRO drippers (nipple outlet)	9000		13.2			431
PCJ™ PRO drippers (angled barb 3 mm outlet)	8000		13.8			451

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
PCJ™ PRO dripper	PCJ PRO

Additional features	
No added	AS
Anti-drain	LCNL
High anti-drain	HCNL

Flow rate (l/h)	
1.2	1.2L/H
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H

Outlet type	
Straight barb 3 mm	BRB3
Straight barb 4 mm	BRB4
Nipple (press-fit)	NIP
Angled barb 3 mm	BRB3 ANG

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	9000/CA
	7500/CA

Special features	
No added	-
Anti-insects cap	+CAP

PCJ-PRO LCNL 2.0L/H BRB3 ANG 500/BAG

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including PCJ™ PRO dripper (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter, and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and, most importantly, the structural integrity of the pipe and its associated connections.

In LCNL and HCNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	35	62	83	100	114	162	189	208	220	228	231
	1.5	46	81	110	136	158	238	291	332	360	384	399
	2.0	53	95	130	161	187	290	363	420	460	498	525
	2.5	58	106	145	180	211	332	420	488	545	594	630
	3.0	63	114	158	197	231	366	465	544	615	672	721
	3.5	67	122	169	211	248	396	507	596	670	738	798
	4.0	71	130	179	224	264	422	543	640	725	798	861
Flat terrain	1.0	37	68	95	119	141	234	309	376	440	492	546
	1.5	47	86	121	151	180	298	396	484	560	636	700
	2.0	54	99	139	174	207	346	459	556	650	732	812
	2.5	60	110	154	193	229	382	507	616	720	810	896
	3.0	64	118	166	209	248	414	549	668	780	876	973
	3.5	69	126	176	222	264	442	585	716	830	936	1036
	4.0	72	133	187	234	279	466	621	756	875	990	1099
Downhill 2%	1.0	39	74	107	138	169	312	447	576	705	828	938
	1.5	49	92	131	167	203	362	510	648	785	918	1036
	2.0	55	104	148	189	227	402	558	708	850	984	1113
	2.5	61	114	161	206	248	434	600	756	905	1044	1176
	3.0	66	122	173	221	265	462	636	796	950	1098	1232
	3.5	70	130	184	234	281	488	669	836	995	1146	1288
	4.0	73	136	193	246	295	510	699	872	1035	1194	1337

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	26	46	62	75	88	130	159	176	190	204	210
	1.5	33	59	82	101	118	184	231	268	295	318	343
	2.0	38	69	95	118	139	220	282	328	370	402	434
	2.5	42	76	106	132	156	250	321	376	425	468	504
	3.0	45	83	115	144	170	274	354	420	475	522	567
	3.5	48	88	123	154	182	294	381	456	515	570	623
	4.0	51	94	130	163	193	314	408	484	555	612	672
Flat terrain	1.0	27	49	68	86	102	168	225	272	315	360	399
	1.5	34	62	86	109	129	216	288	348	405	456	511
	2.0	39	71	100	126	149	248	330	404	470	528	588
	2.5	43	79	110	138	165	276	366	448	520	588	651
	3.0	46	85	119	150	178	298	396	484	560	636	707
	3.5	49	90	127	160	190	318	423	516	600	678	749
	4.0	52	95	134	169	201	336	447	544	635	714	791
Downhill 2%	1.0	28	52	74	96	116	210	294	380	460	540	616
	1.5	35	64	92	118	141	248	345	436	525	606	693
	2.0	39	74	104	133	160	278	384	480	575	666	749
	2.5	43	81	115	146	175	302	414	516	615	708	805
	3.0	47	87	123	156	187	324	441	552	655	750	847
	3.5	50	92	131	166	199	342	465	580	685	786	889
	4.0	52	97	137	174	209	358	489	604	715	822	924

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	20	36	49	60	70	108	132	152	170	180	189
	1.5	25	46	64	79	93	148	189	220	250	270	294
	2.0	29	53	74	92	109	176	225	268	305	336	364
	2.5	32	59	82	103	122	196	255	304	345	384	420
	3.0	35	64	89	112	132	216	279	336	380	426	462
	3.5	37	68	95	119	141	232	303	360	415	462	504
	4.0	39	72	101	126	150	246	321	384	440	492	539
Flat terrain	1.0	20	38	53	66	78	130	174	212	245	276	308
	1.5	26	48	67	84	100	166	222	272	315	354	392
	2.0	30	55	77	97	115	192	255	312	365	408	455
	2.5	33	60	85	106	127	212	282	344	400	456	504
	3.0	35	65	92	115	137	230	306	372	435	492	546
	3.5	38	69	97	123	146	246	327	400	465	522	581
	4.0	40	73	103	130	155	260	345	420	490	552	616
Downhill 2%	1.0	21	40	56	72	87	154	216	276	330	384	441
	1.5	26	49	70	89	107	186	255	320	385	444	504
	2.0	30	56	79	101	121	210	288	356	425	492	553
	2.5	33	62	87	110	133	228	312	388	460	528	595
	3.0	36	66	94	119	143	246	333	412	490	558	630
	3.5	38	70	100	126	151	260	351	436	515	588	665
	4.0	40	74	105	133	159	272	369	456	540	618	693

Minimum considered pressure 0.5 bar

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	17	30	41	50	59	92	117	136	150	162	175
	1.5	21	38	53	66	78	126	162	192	215	240	259
	2.0	24	44	62	78	91	148	192	228	260	288	315
	2.5	27	49	68	86	102	166	216	260	295	330	357
	3.0	29	53	74	94	111	182	237	284	325	366	399
	3.5	31	57	79	100	118	194	255	308	350	396	434
	4.0	33	60	84	106	125	206	270	328	375	420	462
Flat terrain	1.0	17	31	44	55	65	108	144	176	205	234	259
	1.5	21	40	55	70	83	138	186	224	260	294	329
	2.0	25	45	64	80	96	160	213	260	305	342	378
	2.5	27	50	70	89	106	178	237	288	335	378	420
	3.0	29	54	76	96	114	192	255	312	365	408	455
	3.5	31	58	81	102	122	204	273	332	385	438	483
	4.0	33	61	85	108	128	216	288	352	410	462	511
Downhill 2%	1.0	17	32	46	59	71	126	174	220	265	306	350
	1.5	22	40	58	73	88	152	210	260	310	360	406
	2.0	25	46	65	83	100	172	234	292	345	396	448
	2.5	27	51	72	91	110	188	255	316	375	432	483
	3.0	29	55	77	98	118	202	273	340	400	456	511
	3.5	31	58	82	105	125	214	291	360	420	480	539
	4.0	33	61	87	110	132	226	303	376	440	504	567

Minimum considered pressure 0.5 bar

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	69	108	135	155	170	210	228	236	240	246	245
	1.5	92	149	191	226	253	344	393	424	445	456	469
	2.0	107	177	230	274	311	440	519	572	610	636	658
	2.5	120	199	261	313	357	516	618	692	745	792	819
	3.0	130	218	287	345	395	580	705	796	865	924	966
	3.5	139	234	310	373	428	634	777	888	970	1038	1099
	4.0	147	249	329	398	458	684	843	968	1065	1146	1218
Flat terrain	1.0	77	132	178	218	255	406	531	640	740	834	924
	1.5	98	169	227	279	326	522	681	824	950	1074	1183
	2.0	113	195	263	322	377	602	789	952	1100	1242	1372
	2.5	125	216	291	357	417	668	873	1056	1220	1374	1519
	3.0	135	233	315	386	452	724	948	1144	1325	1488	1645
	3.5	144	248	336	413	483	774	1011	1220	1415	1590	1757
	4.0	152	262	355	436	510	818	1068	1292	1495	1680	1855
Downhill 2%	1.0	85	157	223	286	347	642	909	1144	1370	1590	1806
	1.5	105	189	264	335	402	718	1002	1252	1495	1728	1953
	2.0	119	212	295	372	445	778	1077	1344	1595	1842	2079
	2.5	130	232	321	403	480	830	1143	1420	1685	1938	2184
	3.0	140	248	343	430	511	876	1200	1488	1760	2028	2282
	3.5	149	263	362	454	538	918	1251	1552	1835	2106	2366
	4.0	156	276	380	474	563	956	1299	1608	1900	2178	2443

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	51	83	106	123	138	184	207	220	230	234	238
	1.5	67	111	145	173	197	280	333	368	395	414	427
	2.0	78	131	172	207	237	348	423	480	520	558	581
	2.5	87	146	194	234	269	402	495	568	625	672	707
	3.0	94	160	212	257	296	446	555	640	710	768	819
	3.5	101	171	228	277	319	486	606	704	785	852	910
	4.0	106	182	242	294	340	520	654	760	850	930	994
Flat terrain	1.0	55	95	128	158	184	294	384	464	535	606	665
	1.5	70	121	164	201	235	376	492	596	690	774	854
	2.0	81	140	189	232	272	436	570	688	795	894	987
	2.5	90	155	209	258	301	482	633	764	880	996	1099
	3.0	97	168	227	278	326	522	684	828	955	1074	1190
	3.5	103	179	242	298	348	558	732	884	1020	1152	1267
	4.0	109	189	255	314	367	590	771	932	1080	1218	1344
Downhill 2%	1.0	60	108	151	193	232	418	594	768	920	1062	1204
	1.5	74	132	183	230	275	478	666	848	1010	1164	1316
	2.0	84	149	206	258	307	526	726	916	1090	1248	1407
	2.5	92	163	225	281	333	566	777	972	1155	1320	1484
	3.0	99	176	241	301	356	602	819	1024	1210	1386	1554
	3.5	106	186	256	318	377	634	861	1072	1265	1446	1624
	4.0	111	196	268	334	395	662	897	1112	1310	1500	1680

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	40	66	85	101	114	160	186	204	215	222	231
	1.5	52	87	115	138	159	232	282	320	350	372	392
	2.0	61	102	136	164	189	284	351	404	445	480	511
	2.5	67	114	152	185	213	324	405	472	525	570	609
	3.0	73	124	166	202	234	358	450	524	590	642	693
	3.5	78	133	178	217	251	388	489	576	645	708	763
	4.0	82	141	189	230	267	414	525	616	695	768	826
Flat terrain	1.0	43	73	99	122	142	228	297	360	415	468	518
	1.5	54	94	126	155	181	290	381	460	530	600	665
	2.0	62	108	146	179	210	336	441	532	615	696	763
	2.5	69	119	161	198	232	372	489	588	680	768	847
	3.0	74	129	175	215	251	404	528	640	740	834	917
	3.5	79	138	186	229	268	430	564	684	790	888	980
	4.0	84	145	197	242	283	456	597	720	835	942	1036
Downhill 2%	1.0	45	81	113	142	171	300	423	540	660	774	875
	1.5	56	100	137	172	205	352	486	612	735	858	966
	2.0	64	113	156	194	231	390	534	668	800	924	1043
	2.5	70	124	170	213	251	422	573	716	850	984	1106
	3.0	76	134	183	228	269	450	609	756	895	1032	1162
	3.5	81	142	194	242	285	476	642	796	940	1080	1211
	4.0	85	149	205	254	300	498	669	828	980	1122	1253

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	34	56	73	87	99	142	168	188	200	210	217
	1.5	44	74	97	118	135	202	249	284	315	336	357
	2.0	50	86	114	138	160	244	306	352	395	426	455
	2.5	56	96	128	155	180	276	348	408	460	498	539
	3.0	61	104	139	170	197	304	387	452	510	564	609
	3.5	65	111	149	182	211	328	417	492	555	612	665
	4.0	68	118	158	193	225	350	447	528	600	660	714
Flat terrain	1.0	35	61	82	101	118	190	249	300	345	390	434
	1.5	45	78	105	129	151	242	318	384	445	498	553
	2.0	52	90	121	149	174	280	366	444	515	576	637
	2.5	57	99	134	165	193	310	408	492	570	642	707
	3.0	62	107	145	178	209	336	441	532	615	696	770
	3.5	66	114	155	190	223	358	471	568	660	738	819
	4.0	69	120	163	202	236	380	498	600	695	780	868
Downhill 2%	1.0	37	66	92	115	138	240	336	428	515	606	693
	1.5	46	82	113	141	167	284	390	488	585	678	770
	2.0	53	93	128	159	189	318	432	536	640	738	833
	2.5	58	102	140	174	207	346	465	580	685	786	889
	3.0	63	110	151	188	222	368	495	616	725	834	938
	3.5	67	117	160	199	235	390	522	644	760	870	980
	4.0	70	124	169	210	247	408	549	676	795	912	1022

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	108	154	181	198	210	236	243	248	250	252	252
	1.5	149	225	276	314	342	422	453	472	480	486	490
	2.0	177	273	342	395	438	568	633	668	690	708	714
	2.5	199	312	394	459	513	688	786	844	885	912	931
	3.0	218	344	437	513	577	792	918	1000	1055	1098	1127
	3.5	234	372	475	560	632	882	1035	1140	1215	1266	1309
	4.0	248	396	509	602	681	962	1140	1268	1355	1428	1477
Flat terrain	1.0	132	217	287	348	404	636	828	996	1150	1296	1428
	1.5	168	278	367	446	518	816	1062	1280	1475	1662	1834
	2.0	194	321	425	516	599	946	1230	1480	1710	1920	2121
	2.5	215	356	471	573	665	1048	1365	1644	1895	2130	2352
	3.0	233	385	510	620	720	1136	1479	1780	2055	2310	2555
	3.5	248	411	545	662	769	1214	1578	1900	2195	2472	2723
	4.0	262	434	575	700	813	1282	1668	2012	2320	2610	2884
Downhill 2%	1.0	157	284	404	522	636	1136	1575	1996	2400	2802	3192
	1.5	189	333	465	590	712	1244	1713	2156	2585	3000	3409
	2.0	212	370	512	645	773	1332	1824	2288	2735	3168	3591
	2.5	232	401	551	691	825	1410	1923	2404	2865	3312	3752
	3.0	248	428	586	732	871	1478	2010	2508	2985	3444	3892
	3.5	263	452	616	768	912	1540	2088	2600	3090	3564	4018
	4.0	276	473	644	801	950	1596	2160	2688	3185	3672	4137

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	82	123	149	168	183	220	234	240	245	246	252
	1.5	111	172	217	251	279	368	414	440	455	468	476
	2.0	131	206	263	308	346	476	552	600	635	660	679
	2.5	146	233	299	354	399	562	666	736	790	828	854
	3.0	159	256	330	391	444	636	762	852	920	972	1015
	3.5	171	276	356	424	483	700	846	956	1040	1104	1162
	4.0	181	293	380	454	517	756	921	1048	1145	1224	1288
Flat terrain	1.0	95	156	207	251	291	460	597	720	830	936	1036
	1.5	121	200	265	322	374	590	768	924	1070	1200	1323
	2.0	140	231	307	373	432	682	888	1068	1235	1392	1533
	2.5	155	256	340	413	480	758	984	1188	1370	1542	1701
	3.0	167	278	368	447	520	820	1068	1288	1485	1668	1848
	3.5	178	296	392	478	555	876	1140	1372	1585	1782	1967
	4.0	188	313	415	505	586	926	1206	1452	1675	1884	2086
Downhill 2%	1.0	108	192	268	342	414	760	1053	1324	1585	1836	2086
	1.5	132	229	316	397	475	842	1155	1444	1720	1992	2254
	2.0	149	257	352	439	523	908	1239	1544	1835	2118	2387
	2.5	163	280	381	474	563	966	1311	1628	1935	2226	2506
	3.0	175	300	407	506	598	1016	1377	1708	2020	2322	2618
	3.5	186	317	430	533	629	1062	1434	1776	2100	2412	2709
	4.0	196	333	451	558	657	1104	1488	1840	2170	2490	2800

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	66	100	125	143	158	200	219	232	235	240	245
	1.5	87	138	175	206	231	318	369	400	425	438	455
	2.0	102	163	210	249	282	400	477	532	570	600	630
	2.5	114	184	238	283	322	466	564	636	695	738	777
	3.0	124	201	261	311	356	522	639	728	800	858	903
	3.5	133	216	281	337	385	570	702	804	890	960	1015
	4.0	141	229	299	358	411	612	759	876	970	1050	1120
Flat terrain	1.0	73	120	160	194	225	356	462	556	645	726	798
	1.5	93	154	205	249	289	456	594	716	825	930	1022
	2.0	108	178	236	287	334	528	687	828	955	1074	1183
	2.5	119	198	262	318	370	584	762	916	1060	1194	1316
	3.0	129	214	284	345	401	634	825	992	1150	1290	1428
	3.5	137	228	303	369	428	676	882	1060	1225	1380	1519
	4.0	145	241	320	390	453	716	930	1124	1295	1458	1610
Downhill 2%	1.0	81	142	196	248	298	536	765	964	1150	1332	1505
	1.5	99	172	235	294	349	606	846	1060	1260	1452	1638
	2.0	113	194	263	327	388	662	915	1140	1350	1548	1743
	2.5	124	212	287	355	420	710	972	1208	1425	1638	1841
	3.0	133	227	307	379	448	750	1023	1268	1495	1710	1925
	3.5	142	241	325	401	472	788	1068	1320	1555	1782	2002
	4.0	149	253	341	421	495	822	1113	1372	1615	1848	2072

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	56	86	109	126	140	184	207	220	230	234	238
	1.5	73	117	150	177	200	282	333	368	395	414	427
	2.0	86	138	178	212	242	350	423	480	520	552	581
	2.5	95	155	201	240	275	404	495	568	625	672	707
	3.0	104	169	220	264	302	450	555	640	710	768	812
	3.5	111	181	237	284	326	490	609	704	785	852	910
	4.0	117	192	252	302	348	524	654	760	850	924	994
Flat terrain	1.0	61	100	133	162	187	296	384	464	535	606	665
	1.5	77	128	170	207	240	380	495	596	690	774	854
	2.0	89	148	197	239	278	440	573	688	795	894	987
	2.5	99	164	218	265	308	486	633	764	880	990	1099
	3.0	107	178	236	287	334	528	687	828	955	1074	1190
	3.5	114	190	252	306	356	564	735	884	1020	1146	1267
	4.0	120	200	266	324	377	596	777	936	1080	1212	1344
Downhill 2%	1.0	66	115	158	199	238	422	597	768	920	1062	1197
	1.5	82	140	191	238	282	484	672	852	1015	1164	1309
	2.0	93	159	215	266	315	532	729	920	1090	1248	1400
	2.5	102	174	235	290	342	572	780	976	1155	1320	1484
	3.0	110	187	252	311	366	608	825	1028	1210	1386	1554
	3.5	117	198	267	329	387	640	864	1072	1265	1446	1617
	4.0	123	209	281	346	406	670	900	1116	1315	1500	1680

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	143	190	212	225	232	244	249	252	250	252	252
	1.5	205	296	350	386	410	464	483	488	495	498	497
	2.0	247	369	449	506	548	656	696	716	730	732	742
	2.5	280	427	527	602	660	822	894	928	950	966	973
	3.0	308	475	593	683	755	970	1071	1128	1165	1182	1197
	3.5	333	517	650	754	838	1102	1236	1312	1365	1398	1421
	4.0	354	555	701	817	912	1220	1386	1488	1550	1596	1631
Flat terrain	1.0	193	317	419	509	590	930	1209	1456	1680	1890	2086
	1.5	246	406	538	653	758	1194	1554	1872	2160	2430	2681
	2.0	284	470	622	755	877	1382	1797	2164	2500	2808	3101
	2.5	315	520	689	838	972	1534	1995	2404	2775	3120	3444
	3.0	341	564	746	907	1053	1662	2163	2604	3005	3378	3731
	3.5	363	602	797	969	1125	1774	2310	2780	3210	3612	3983
	4.0	384	636	842	1024	1189	1876	2442	2940	3395	3816	4214
Downhill 2%	1.0	246	461	668	864	1035	1828	2565	3276	3970	4650	5320
	1.5	290	525	746	952	1136	1978	2757	3500	4220	4926	5621
	2.0	323	576	808	1024	1218	2104	2913	3684	4430	5160	5873
	2.5	350	618	861	1086	1290	2212	3051	3848	4615	5364	6097
	3.0	374	655	908	1142	1353	2308	3174	3992	4780	5544	6293
	3.5	394	688	950	1191	1411	2396	3285	4120	4925	5706	6475
	4.0	413	718	989	1237	1464	2476	3387	4244	5065	5862	6636

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	112	159	186	202	214	238	243	248	250	252	252
	1.5	155	234	286	324	353	430	459	476	485	486	490
	2.0	185	285	356	410	453	582	645	680	700	714	721
	2.5	208	326	411	478	533	710	804	860	895	918	938
	3.0	228	360	457	535	601	818	942	1020	1075	1110	1141
	3.5	245	389	497	585	659	914	1068	1168	1240	1290	1330
	4.0	260	416	533	630	711	998	1179	1300	1390	1458	1505
Flat terrain	1.0	139	229	302	367	426	672	873	1052	1215	1368	1512
	1.5	177	293	388	471	547	862	1122	1352	1560	1752	1939
	2.0	204	338	448	545	632	998	1299	1564	1805	2028	2240
	2.5	226	375	497	604	701	1108	1440	1736	2005	2250	2485
	3.0	245	406	538	654	760	1200	1560	1880	2170	2442	2695
	3.5	261	433	574	698	811	1282	1668	2008	2320	2610	2877
	4.0	276	458	607	738	858	1354	1764	2124	2450	2760	3045
Downhill 2%	1.0	166	304	433	560	684	1214	1689	2140	2580	3006	3430
	1.5	200	354	496	631	763	1328	1833	2308	2770	3222	3661
	2.0	224	393	545	688	826	1422	1950	2448	2930	3396	3850
	2.5	244	426	586	736	880	1502	2052	2572	3065	3546	4018
	3.0	262	453	622	778	928	1574	2145	2676	3190	3684	4165
	3.5	277	478	654	817	971	1638	2226	2776	3300	3810	4305
	4.0	291	501	683	851	1010	1698	2304	2868	3405	3924	4424

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	91	134	161	180	194	226	237	244	245	246	252
	1.5	123	190	238	274	303	388	429	452	465	474	483
	2.0	146	229	290	339	379	512	585	628	660	678	693
	2.5	164	260	332	390	440	610	711	780	825	864	889
	3.0	178	285	367	434	490	692	822	912	975	1026	1064
	3.5	191	308	397	471	535	766	918	1024	1105	1170	1218
	4.0	203	328	424	504	574	830	1002	1128	1225	1302	1365
Flat terrain	1.0	107	176	233	283	329	518	675	812	940	1056	1169
	1.5	136	226	299	363	422	666	867	1044	1205	1356	1498
	2.0	157	261	346	420	488	770	1002	1208	1395	1572	1736
	2.5	174	289	383	466	541	854	1113	1340	1550	1740	1925
	3.0	188	313	415	505	586	926	1206	1452	1680	1884	2086
	3.5	201	334	443	539	626	990	1287	1552	1790	2016	2226
	4.0	212	353	468	570	662	1046	1362	1640	1895	2130	2352
Downhill 2%	1.0	123	221	311	399	484	886	1221	1540	1850	2148	2443
	1.5	150	262	364	459	551	976	1335	1676	2000	2316	2625
	2.0	169	293	403	506	603	1050	1431	1788	2130	2460	2779
	2.5	185	319	436	545	648	1114	1512	1884	2235	2580	2912
	3.0	198	341	465	578	686	1170	1584	1968	2335	2688	3031
	3.5	210	360	490	609	721	1222	1650	2044	2425	2784	3136
	4.0	221	378	513	637	753	1268	1710	2116	2505	2874	3234

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	78	117	143	162	177	216	231	240	245	246	245
	1.5	104	163	206	239	267	356	402	432	450	462	469
	2.0	123	195	249	293	330	458	534	584	620	648	665
	2.5	137	220	283	335	380	538	642	712	765	804	840
	3.0	150	241	311	370	421	608	732	824	890	948	987
	3.5	160	260	337	401	457	666	810	920	1005	1074	1127
	4.0	170	276	359	429	490	720	882	1004	1105	1182	1253
Flat terrain	1.0	89	147	194	236	274	432	561	676	785	882	973
	1.5	113	188	249	302	351	554	723	868	1005	1128	1246
	2.0	131	217	287	350	406	642	834	1008	1160	1308	1442
	2.5	145	240	319	388	450	712	927	1116	1290	1452	1603
	3.0	156	260	345	420	488	772	1005	1208	1395	1572	1736
	3.5	167	278	368	448	521	824	1071	1292	1490	1680	1855
	4.0	176	293	389	474	551	870	1134	1364	1575	1776	1960
Downhill 2%	1.0	100	178	248	316	382	698	975	1228	1465	1698	1932
	1.5	122	213	293	369	441	776	1074	1340	1595	1848	2086
	2.0	139	239	327	409	486	842	1152	1436	1705	1962	2219
	2.5	152	261	355	442	524	896	1221	1516	1795	2064	2331
	3.0	163	280	380	471	557	944	1281	1588	1880	2160	2429
	3.5	173	296	401	497	587	988	1338	1656	1955	2244	2520
	4.0	182	311	421	520	613	1028	1389	1716	2025	2316	2604

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	35	62	83	100	114	162	189	208	220	228	231
	2.0	46	81	110	136	158	238	291	332	360	384	399
	2.5	53	95	130	161	187	290	363	420	460	498	525
	3.0	58	106	145	180	211	332	420	488	545	594	630
	3.5	63	114	158	197	231	366	465	544	615	672	721
	4.0	67	122	169	211	248	396	507	596	670	738	798
Flat terrain	1.5	37	68	95	119	141	234	309	376	440	492	546
	2.0	47	86	121	151	180	298	396	484	560	636	700
	2.5	54	99	139	174	207	346	459	556	650	732	812
	3.0	60	110	154	193	229	382	507	616	720	810	896
	3.5	64	118	166	209	248	414	549	668	780	876	973
	4.0	69	126	176	222	264	442	585	716	830	936	1036
Downhill 2%	1.5	39	74	107	138	169	312	447	576	705	828	938
	2.0	49	92	131	167	203	362	510	648	785	918	1036
	2.5	55	104	148	189	227	402	558	708	850	984	1113
	3.0	61	114	161	206	248	434	600	756	905	1044	1176
	3.5	66	122	173	221	265	462	636	796	950	1098	1232
	4.0	70	130	184	234	281	488	669	836	995	1146	1288

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	26	46	62	75	88	130	159	176	190	204	210
	2.0	33	59	82	101	118	184	231	268	295	318	343
	2.5	38	69	95	118	139	220	282	328	370	402	434
	3.0	42	76	106	132	156	250	321	376	425	468	504
	3.5	45	83	115	144	170	274	354	420	475	522	567
	4.0	48	88	123	154	182	294	381	456	515	570	623
Flat terrain	1.5	27	49	68	86	102	168	225	272	315	360	399
	2.0	34	62	86	109	129	216	288	348	405	456	511
	2.5	39	71	100	126	149	248	330	404	470	528	588
	3.0	43	79	110	138	165	276	366	448	520	588	651
	3.5	46	85	119	150	178	298	396	484	560	636	707
	4.0	49	90	127	160	190	318	423	516	600	678	749
Downhill 2%	1.5	28	52	74	96	116	210	294	380	460	540	616
	2.0	35	64	92	118	141	248	345	436	525	606	693
	2.5	39	74	104	133	160	278	384	480	575	666	749
	3.0	43	81	115	146	175	302	414	516	615	708	805
	3.5	47	87	123	156	187	324	441	552	655	750	847
	4.0	50	92	131	166	199	342	465	580	685	786	889

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	20	36	49	60	70	108	132	152	170	180	189
	2.0	25	46	64	79	93	148	189	220	250	270	294
	2.5	29	53	74	92	109	176	225	268	305	336	364
	3.0	32	59	82	103	122	196	255	304	345	384	420
	3.5	35	64	89	112	132	216	279	336	380	426	462
	4.0	37	68	95	119	141	232	303	360	415	462	504
Flat terrain	1.5	20	38	53	66	78	130	174	212	245	276	308
	2.0	26	48	67	84	100	166	222	272	315	354	392
	2.5	30	55	77	97	115	192	255	312	365	408	455
	3.0	33	60	85	106	127	212	282	344	400	456	504
	3.5	35	65	92	115	137	230	306	372	435	492	546
	4.0	38	69	97	123	146	246	327	400	465	522	581
Downhill 2%	1.5	21	40	56	72	87	154	216	276	330	384	441
	2.0	26	49	70	89	107	186	255	320	385	444	504
	2.5	30	56	79	101	121	210	288	356	425	492	553
	3.0	33	62	87	110	133	228	312	388	460	528	595
	3.5	36	66	94	119	143	246	333	412	490	558	630
	4.0	38	70	100	126	151	260	351	436	515	588	665

Minimum considered pressure 1.0 bar

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	17	30	41	50	59	92	117	136	150	162	175
	2.0	21	38	53	66	78	126	162	192	215	240	259
	2.5	24	44	62	78	91	148	192	228	260	288	315
	3.0	27	49	68	86	102	166	216	260	295	330	357
	3.5	29	53	74	94	111	182	237	284	325	366	399
	4.0	31	57	79	100	118	194	255	308	350	396	434
Flat terrain	1.5	17	31	44	55	65	108	144	176	205	234	259
	2.0	21	40	55	70	83	138	186	224	260	294	329
	2.5	25	45	64	80	96	160	213	260	305	342	378
	3.0	27	50	70	89	106	178	237	288	335	378	420
	3.5	29	54	76	96	114	192	255	312	365	408	455
	4.0	31	58	81	102	122	204	273	332	385	438	483
Downhill 2%	1.5	17	32	46	59	71	126	174	220	265	306	350
	2.0	22	40	58	73	88	152	210	260	310	360	406
	2.5	25	46	65	83	100	172	234	292	345	396	448
	3.0	27	51	72	91	110	188	255	316	375	432	483
	3.5	29	55	77	98	118	202	273	340	400	456	511
	4.0	31	58	82	105	125	214	291	360	420	480	539

Minimum considered pressure 1.0 bar

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	69	108	135	155	170	210	228	236	240	246	245
	2.0	92	149	191	226	253	344	393	424	445	456	469
	2.5	107	177	230	274	311	440	519	572	610	636	658
	3.0	120	199	261	313	357	516	618	692	745	792	819
	3.5	130	218	287	345	395	580	705	796	865	924	966
	4.0	139	234	310	373	428	634	777	888	970	1038	1099
Flat terrain	1.5	77	132	178	218	255	406	531	640	740	834	924
	2.0	98	169	227	279	326	522	681	824	950	1074	1183
	2.5	113	195	263	322	377	602	789	952	1100	1242	1372
	3.0	125	216	291	357	417	668	873	1056	1220	1374	1519
	3.5	135	233	315	386	452	724	948	1144	1325	1488	1645
	4.0	144	248	336	413	483	774	1011	1220	1415	1590	1757
Downhill 2%	1.5	85	157	223	286	347	642	909	1144	1370	1590	1806
	2.0	105	189	264	335	402	718	1002	1252	1495	1728	1953
	2.5	119	212	295	372	445	778	1077	1344	1595	1842	2079
	3.0	130	232	321	403	480	830	1143	1420	1685	1938	2184
	3.5	140	248	343	430	511	876	1200	1488	1760	2028	2282
	4.0	149	263	362	454	538	918	1251	1552	1835	2106	2366

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	51	83	106	123	138	184	207	220	230	234	238
	2.0	67	111	145	173	197	280	333	368	395	414	427
	2.5	78	131	172	207	237	348	423	480	520	558	581
	3.0	87	146	194	234	269	402	495	568	625	672	707
	3.5	94	160	212	257	296	446	555	640	710	768	819
	4.0	101	171	228	277	319	486	606	704	785	852	910
Flat terrain	1.5	55	95	128	158	184	294	384	464	535	606	665
	2.0	70	121	164	201	235	376	492	596	690	774	854
	2.5	81	140	189	232	272	436	570	688	795	894	987
	3.0	90	155	209	258	301	482	633	764	880	996	1099
	3.5	97	168	227	278	326	522	684	828	955	1074	1190
	4.0	103	179	242	298	348	558	732	884	1020	1152	1267
Downhill 2%	1.5	60	108	151	193	232	418	594	768	920	1062	1204
	2.0	74	132	183	230	275	478	666	848	1010	1164	1316
	2.5	84	149	206	258	307	526	726	916	1090	1248	1407
	3.0	92	163	225	281	333	566	777	972	1155	1320	1484
	3.5	99	176	241	301	356	602	819	1024	1210	1386	1554
	4.0	106	186	256	318	377	634	861	1072	1265	1446	1624

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	40	66	85	101	114	160	186	204	215	222	231
	2.0	52	87	115	138	159	232	282	320	350	372	392
	2.5	61	102	136	164	189	284	351	404	445	480	511
	3.0	67	114	152	185	213	324	405	472	525	570	609
	3.5	73	124	166	202	234	358	450	524	590	642	693
	4.0	78	133	178	217	251	388	489	576	645	708	763
Flat terrain	1.5	43	73	99	122	142	228	297	360	415	468	518
	2.0	54	94	126	155	181	290	381	460	530	600	665
	2.5	62	108	146	179	210	336	441	532	615	696	763
	3.0	69	119	161	198	232	372	489	588	680	768	847
	3.5	74	129	175	215	251	404	528	640	740	834	917
	4.0	79	138	186	229	268	430	564	684	790	888	980
Downhill 2%	1.5	45	81	113	142	171	300	423	540	660	774	875
	2.0	56	100	137	172	205	352	486	612	735	858	966
	2.5	64	113	156	194	231	390	534	668	800	924	1043
	3.0	70	124	170	213	251	422	573	716	850	984	1106
	3.5	76	134	183	228	269	450	609	756	895	1032	1162
	4.0	81	142	194	242	285	476	642	796	940	1080	1211

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	34	56	73	87	99	142	168	188	200	210	217
	2.0	44	74	97	118	135	202	249	284	315	336	357
	2.5	50	86	114	138	160	244	306	352	395	426	455
	3.0	56	96	128	155	180	276	348	408	460	498	539
	3.5	61	104	139	170	197	304	387	452	510	564	609
	4.0	65	111	149	182	211	328	417	492	555	612	665
Flat terrain	1.5	35	61	82	101	118	190	249	300	345	390	434
	2.0	45	78	105	129	151	242	318	384	445	498	553
	2.5	52	90	121	149	174	280	366	444	515	576	637
	3.0	57	99	134	165	193	310	408	492	570	642	707
	3.5	62	107	145	178	209	336	441	532	615	696	770
	4.0	66	114	155	190	223	358	471	568	660	738	819
Downhill 2%	1.5	37	66	92	115	138	240	336	428	515	606	693
	2.0	46	82	113	141	167	284	390	488	585	678	770
	2.5	53	93	128	159	189	318	432	536	640	738	833
	3.0	58	102	140	174	207	346	465	580	685	786	889
	3.5	63	110	151	188	222	368	495	616	725	834	938
	4.0	67	117	160	199	235	390	522	644	760	870	980

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	108	154	181	198	210	236	243	248	250	252	252
	2.0	149	225	276	314	342	422	453	472	480	486	490
	2.5	177	273	342	395	438	568	633	668	690	708	714
	3.0	199	312	394	459	513	688	786	844	885	912	931
	3.5	218	344	437	513	577	792	918	1000	1055	1098	1127
	4.0	234	372	475	560	632	882	1035	1140	1215	1266	1309
Flat terrain	1.5	132	217	287	348	404	636	828	996	1150	1296	1428
	2.0	168	278	367	446	518	816	1062	1280	1475	1662	1834
	2.5	194	321	425	516	599	946	1230	1480	1710	1920	2121
	3.0	215	356	471	573	665	1048	1365	1644	1895	2130	2352
	3.5	233	385	510	620	720	1136	1479	1780	2055	2310	2555
	4.0	248	411	545	662	769	1214	1578	1900	2195	2472	2723
Downhill 2%	1.5	157	284	404	522	636	1136	1575	1996	2400	2802	3192
	2.0	189	333	465	590	712	1244	1713	2156	2585	3000	3409
	2.5	212	370	512	645	773	1332	1824	2288	2735	3168	3591
	3.0	232	401	551	691	825	1410	1923	2404	2865	3312	3752
	3.5	248	428	586	732	871	1478	2010	2508	2985	3444	3892
	4.0	263	452	616	768	912	1540	2088	2600	3090	3564	4018

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	82	123	149	168	183	220	234	240	245	246	252
	2.0	111	172	217	251	279	368	414	440	455	468	476
	2.5	131	206	263	308	346	476	552	600	635	660	679
	3.0	146	233	299	354	399	562	666	736	790	828	854
	3.5	159	256	330	391	444	636	762	852	920	972	1015
	4.0	171	276	356	424	483	700	846	956	1040	1104	1162
Flat terrain	1.5	95	156	207	251	291	460	597	720	830	936	1036
	2.0	121	200	265	322	374	590	768	924	1070	1200	1323
	2.5	140	231	307	373	432	682	888	1068	1235	1392	1533
	3.0	155	256	340	413	480	758	984	1188	1370	1542	1701
	3.5	167	278	368	447	520	820	1068	1288	1485	1668	1848
	4.0	178	296	392	478	555	876	1140	1372	1585	1782	1967
Downhill 2%	1.5	108	192	268	342	414	760	1053	1324	1585	1836	2086
	2.0	132	229	316	397	475	842	1155	1444	1720	1992	2254
	2.5	149	257	352	439	523	908	1239	1544	1835	2118	2387
	3.0	163	280	381	474	563	966	1311	1628	1935	2226	2506
	3.5	175	300	407	506	598	1016	1377	1708	2020	2322	2618
	4.0	186	317	430	533	629	1062	1434	1776	2100	2412	2709

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	66	100	125	143	158	200	219	232	235	240	245
	2.0	87	138	175	206	231	318	369	400	425	438	455
	2.5	102	163	210	249	282	400	477	532	570	600	630
	3.0	114	184	238	283	322	466	564	636	695	738	777
	3.5	124	201	261	311	356	522	639	728	800	858	903
	4.0	133	216	281	337	385	570	702	804	890	960	1015
Flat terrain	1.5	73	120	160	194	225	356	462	556	645	726	798
	2.0	93	154	205	249	289	456	594	716	825	930	1022
	2.5	108	178	236	287	334	528	687	828	955	1074	1183
	3.0	119	198	262	318	370	584	762	916	1060	1194	1316
	3.5	129	214	284	345	401	634	825	992	1150	1290	1428
	4.0	137	228	303	369	428	676	882	1060	1225	1380	1519
Downhill 2%	1.5	81	142	196	248	298	536	765	964	1150	1332	1505
	2.0	99	172	235	294	349	606	846	1060	1260	1452	1638
	2.5	113	194	263	327	388	662	915	1140	1350	1548	1743
	3.0	124	212	287	355	420	710	972	1208	1425	1638	1841
	3.5	133	227	307	379	448	750	1023	1268	1495	1710	1925
	4.0	142	241	325	401	472	788	1068	1320	1555	1782	2002

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	56	86	109	126	140	184	207	220	230	234	238
	2.0	73	117	150	177	200	282	333	368	395	414	427
	2.5	86	138	178	212	242	350	423	480	520	552	581
	3.0	95	155	201	240	275	404	495	568	625	672	707
	3.5	104	169	220	264	302	450	555	640	710	768	812
	4.0	111	181	237	284	326	490	609	704	785	852	910
Flat terrain	1.5	61	100	133	162	187	296	384	464	535	606	665
	2.0	77	128	170	207	240	380	495	596	690	774	854
	2.5	89	148	197	239	278	440	573	688	795	894	987
	3.0	99	164	218	265	308	486	633	764	880	990	1099
	3.5	107	178	236	287	334	528	687	828	955	1074	1190
	4.0	114	190	252	306	356	564	735	884	1020	1146	1267
Downhill 2%	1.5	66	115	158	199	238	422	597	768	920	1062	1197
	2.0	82	140	191	238	282	484	672	852	1015	1164	1309
	2.5	93	159	215	266	315	532	729	920	1090	1248	1400
	3.0	102	174	235	290	342	572	780	976	1155	1320	1484
	3.5	110	187	252	311	366	608	825	1028	1210	1386	1554
	4.0	117	198	267	329	387	640	864	1072	1265	1446	1617

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	143	190	212	225	232	244	249	252	250	252	252
	2.0	205	296	350	386	410	464	483	488	495	498	497
	2.5	247	369	449	506	548	656	696	716	730	732	742
	3.0	280	427	527	602	660	822	894	928	950	966	973
	3.5	308	475	593	683	755	970	1071	1128	1165	1182	1197
	4.0	333	517	650	754	838	1102	1236	1312	1365	1398	1421
Flat terrain	1.5	193	317	419	509	590	930	1209	1456	1680	1890	2086
	2.0	246	406	538	653	758	1194	1554	1872	2160	2430	2681
	2.5	284	470	622	755	877	1382	1797	2164	2500	2808	3101
	3.0	315	520	689	838	972	1534	1995	2404	2775	3120	3444
	3.5	341	564	746	907	1053	1662	2163	2604	3005	3378	3731
	4.0	363	602	797	969	1125	1774	2310	2780	3210	3612	3983
Downhill 2%	1.5	246	461	668	864	1035	1828	2565	3276	3970	4650	5320
	2.0	290	525	746	952	1136	1978	2757	3500	4220	4926	5621
	2.5	323	576	808	1024	1218	2104	2913	3684	4430	5160	5873
	3.0	350	618	861	1086	1290	2212	3051	3848	4615	5364	6097
	3.5	374	655	908	1142	1353	2308	3174	3992	4780	5544	6293
	4.0	394	688	950	1191	1411	2396	3285	4120	4925	5706	6475

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	112	159	186	202	214	238	243	248	250	252	252
	2.0	155	234	286	324	353	430	459	476	485	486	490
	2.5	185	285	356	410	453	582	645	680	700	714	721
	3.0	208	326	411	478	533	710	804	860	895	918	938
	3.5	228	360	457	535	601	818	942	1020	1075	1110	1141
	4.0	245	389	497	585	659	914	1068	1168	1240	1290	1330
Flat terrain	1.5	139	229	302	367	426	672	873	1052	1215	1368	1512
	2.0	177	293	388	471	547	862	1122	1352	1560	1752	1939
	2.5	204	338	448	545	632	998	1299	1564	1805	2028	2240
	3.0	226	375	497	604	701	1108	1440	1736	2005	2250	2485
	3.5	245	406	538	654	760	1200	1560	1880	2170	2442	2695
	4.0	261	433	574	698	811	1282	1668	2008	2320	2610	2877
Downhill 2%	1.5	166	304	433	560	684	1214	1689	2140	2580	3006	3430
	2.0	200	354	496	631	763	1328	1833	2308	2770	3222	3661
	2.5	224	393	545	688	826	1422	1950	2448	2930	3396	3850
	3.0	244	426	586	736	880	1502	2052	2572	3065	3546	4018
	3.5	262	453	622	778	928	1574	2145	2676	3190	3684	4165
	4.0	277	478	654	817	971	1638	2226	2776	3300	3810	4305

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	91	134	161	180	194	226	237	244	245	246	252
	2.0	123	190	238	274	303	388	429	452	465	474	483
	2.5	146	229	290	339	379	512	585	628	660	678	693
	3.0	164	260	332	390	440	610	711	780	825	864	889
	3.5	178	285	367	434	490	692	822	912	975	1026	1064
	4.0	191	308	397	471	535	766	918	1024	1105	1170	1218
Flat terrain	1.5	107	176	233	283	329	518	675	812	940	1056	1169
	2.0	136	226	299	363	422	666	867	1044	1205	1356	1498
	2.5	157	261	346	420	488	770	1002	1208	1395	1572	1736
	3.0	174	289	383	466	541	854	1113	1340	1550	1740	1925
	3.5	188	313	415	505	586	926	1206	1452	1680	1884	2086
	4.0	201	334	443	539	626	990	1287	1552	1790	2016	2226
Downhill 2%	1.5	123	221	311	399	484	886	1221	1540	1850	2148	2443
	2.0	150	262	364	459	551	976	1335	1676	2000	2316	2625
	2.5	169	293	403	506	603	1050	1431	1788	2130	2460	2779
	3.0	185	319	436	545	648	1114	1512	1884	2235	2580	2912
	3.5	198	341	465	578	686	1170	1584	1968	2335	2688	3031
	4.0	210	360	490	609	721	1222	1650	2044	2425	2784	3136

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ PRO LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	78	117	143	162	177	216	231	240	245	246	245
	2.0	104	163	206	239	267	356	402	432	450	462	469
	2.5	123	195	249	293	330	458	534	584	620	648	665
	3.0	137	220	283	335	380	538	642	712	765	804	840
	3.5	150	241	311	370	421	608	732	824	890	948	987
	4.0	160	260	337	401	457	666	810	920	1005	1074	1127
Flat terrain	1.5	89	147	194	236	274	432	561	676	785	882	973
	2.0	113	188	249	302	351	554	723	868	1005	1128	1246
	2.5	131	217	287	350	406	642	834	1008	1160	1308	1442
	3.0	145	240	319	388	450	712	927	1116	1290	1452	1603
	3.5	156	260	345	420	488	772	1005	1208	1395	1572	1736
	4.0	167	278	368	448	521	824	1071	1292	1490	1680	1855
Downhill 2%	1.5	100	178	248	316	382	698	975	1228	1465	1698	1932
	2.0	122	213	293	369	441	776	1074	1340	1595	1848	2086
	2.5	139	239	327	409	486	842	1152	1436	1705	1962	2219
	3.0	152	261	355	442	524	896	1221	1516	1795	2064	2331
	3.5	163	280	380	471	557	944	1281	1588	1880	2160	2429
	4.0	173	296	401	497	587	988	1338	1656	1955	2244	2520

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	35	62	83	100	114	162	189	208	220	228	231
	2.5	46	81	110	136	158	238	291	332	360	384	399
	3.0	53	95	130	161	187	290	363	420	460	498	525
	3.5	58	106	145	180	211	332	420	488	545	594	630
	4.0	63	114	158	197	231	366	465	544	615	672	721
Flat terrain	2.0	37	68	95	119	141	234	309	376	440	492	546
	2.5	47	86	121	151	180	298	396	484	560	636	700
	3.0	54	99	139	174	207	346	459	556	650	732	812
	3.5	60	110	154	193	229	382	507	616	720	810	896
	4.0	64	118	166	209	248	414	549	668	780	876	973
Downhill 2%	2.0	39	74	107	138	169	312	447	576	705	828	938
	2.5	49	92	131	167	203	362	510	648	785	918	1036
	3.0	55	104	148	189	227	402	558	708	850	984	1113
	3.5	61	114	161	206	248	434	600	756	905	1044	1176
	4.0	66	122	173	221	265	462	636	796	950	1098	1232

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	26	46	62	75	88	130	159	176	190	204	210
	2.5	33	59	82	101	118	184	231	268	295	318	343
	3.0	38	69	95	118	139	220	282	328	370	402	434
	3.5	42	76	106	132	156	250	321	376	425	468	504
	4.0	45	83	115	144	170	274	354	420	475	522	567
Flat terrain	2.0	27	49	68	86	102	168	225	272	315	360	399
	2.5	34	62	86	109	129	216	288	348	405	456	511
	3.0	39	71	100	126	149	248	330	404	470	528	588
	3.5	43	79	110	138	165	276	366	448	520	588	651
	4.0	46	85	119	150	178	298	396	484	560	636	707
Downhill 2%	2.0	28	52	74	96	116	210	294	380	460	540	616
	2.5	35	64	92	118	141	248	345	436	525	606	693
	3.0	39	74	104	133	160	278	384	480	575	666	749
	3.5	43	81	115	146	175	302	414	516	615	708	805
	4.0	47	87	123	156	187	324	441	552	655	750	847

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	20	36	49	60	70	108	132	152	170	180	189
	2.5	25	46	64	79	93	148	189	220	250	270	294
	3.0	29	53	74	92	109	176	225	268	305	336	364
	3.5	32	59	82	103	122	196	255	304	345	384	420
	4.0	35	64	89	112	132	216	279	336	380	426	462
Flat terrain	2.0	20	38	53	66	78	130	174	212	245	276	308
	2.5	26	48	67	84	100	166	222	272	315	354	392
	3.0	30	55	77	97	115	192	255	312	365	408	455
	3.5	33	60	85	106	127	212	282	344	400	456	504
	4.0	35	65	92	115	137	230	306	372	435	492	546
Downhill 2%	2.0	21	40	56	72	87	154	216	276	330	384	441
	2.5	26	49	70	89	107	186	255	320	385	444	504
	3.0	30	56	79	101	121	210	288	356	425	492	553
	3.5	33	62	87	110	133	228	312	388	460	528	595
	4.0	36	66	94	119	143	246	333	412	490	558	630

Minimum considered pressure 1.5 bar

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	17	30	41	50	59	92	117	136	150	162	175
	2.5	21	38	53	66	78	126	162	192	215	240	259
	3.0	24	44	62	78	91	148	192	228	260	288	315
	3.5	27	49	68	86	102	166	216	260	295	330	357
	4.0	29	53	74	94	111	182	237	284	325	366	399
Flat terrain	2.0	17	31	44	55	65	108	144	176	205	234	259
	2.5	21	40	55	70	83	138	186	224	260	294	329
	3.0	25	45	64	80	96	160	213	260	305	342	378
	3.5	27	50	70	89	106	178	237	288	335	378	420
	4.0	29	54	76	96	114	192	255	312	365	408	455
Downhill 2%	2.0	17	32	46	59	71	126	174	220	265	306	350
	2.5	22	40	58	73	88	152	210	260	310	360	406
	3.0	25	46	65	83	100	172	234	292	345	396	448
	3.5	27	51	72	91	110	188	255	316	375	432	483
	4.0	29	55	77	98	118	202	273	340	400	456	511

Minimum considered pressure 1.5 bar

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	69	108	135	155	170	210	228	236	240	246	245
	2.5	92	149	191	226	253	344	393	424	445	456	469
	3.0	107	177	230	274	311	440	519	572	610	636	658
	3.5	120	199	261	313	357	516	618	692	745	792	819
	4.0	130	218	287	345	395	580	705	796	865	924	966
Flat terrain	2.0	77	132	178	218	255	406	531	640	740	834	924
	2.5	98	169	227	279	326	522	681	824	950	1074	1183
	3.0	113	195	263	322	377	602	789	952	1100	1242	1372
	3.5	125	216	291	357	417	668	873	1056	1220	1374	1519
	4.0	135	233	315	386	452	724	948	1144	1325	1488	1645
Downhill 2%	2.0	85	157	223	286	347	642	909	1144	1370	1590	1806
	2.5	105	189	264	335	402	718	1002	1252	1495	1728	1953
	3.0	119	212	295	372	445	778	1077	1344	1595	1842	2079
	3.5	130	232	321	403	480	830	1143	1420	1685	1938	2184
	4.0	140	248	343	430	511	876	1200	1488	1760	2028	2282

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	51	83	106	123	138	184	207	220	230	234	238
	2.5	67	111	145	173	197	280	333	368	395	414	427
	3.0	78	131	172	207	237	348	423	480	520	558	581
	3.5	87	146	194	234	269	402	495	568	625	672	707
	4.0	94	160	212	257	296	446	555	640	710	768	819
Flat terrain	2.0	55	95	128	158	184	294	384	464	535	606	665
	2.5	70	121	164	201	235	376	492	596	690	774	854
	3.0	81	140	189	232	272	436	570	688	795	894	987
	3.5	90	155	209	258	301	482	633	764	880	996	1099
	4.0	97	168	227	278	326	522	684	828	955	1074	1190
Downhill 2%	2.0	60	108	151	193	232	418	594	768	920	1062	1204
	2.5	74	132	183	230	275	478	666	848	1010	1164	1316
	3.0	84	149	206	258	307	526	726	916	1090	1248	1407
	3.5	92	163	225	281	333	566	777	972	1155	1320	1484
	4.0	99	176	241	301	356	602	819	1024	1210	1386	1554

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	40	66	85	101	114	160	186	204	215	222	231
	2.5	52	87	115	138	159	232	282	320	350	372	392
	3.0	61	102	136	164	189	284	351	404	445	480	511
	3.5	67	114	152	185	213	324	405	472	525	570	609
	4.0	73	124	166	202	234	358	450	524	590	642	693
Flat terrain	2.0	43	73	99	122	142	228	297	360	415	468	518
	2.5	54	94	126	155	181	290	381	460	530	600	665
	3.0	62	108	146	179	210	336	441	532	615	696	763
	3.5	69	119	161	198	232	372	489	588	680	768	847
	4.0	74	129	175	215	251	404	528	640	740	834	917
Downhill 2%	2.0	45	81	113	142	171	300	423	540	660	774	875
	2.5	56	100	137	172	205	352	486	612	735	858	966
	3.0	64	113	156	194	231	390	534	668	800	924	1043
	3.5	70	124	170	213	251	422	573	716	850	984	1106
	4.0	76	134	183	228	269	450	609	756	895	1032	1162

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	34	56	73	87	99	142	168	188	200	210	217
	2.5	44	74	97	118	135	202	249	284	315	336	357
	3.0	50	86	114	138	160	244	306	352	395	426	455
	3.5	56	96	128	155	180	276	348	408	460	498	539
	4.0	61	104	139	170	197	304	387	452	510	564	609
Flat terrain	2.0	35	61	82	101	118	190	249	300	345	390	434
	2.5	45	78	105	129	151	242	318	384	445	498	553
	3.0	52	90	121	149	174	280	366	444	515	576	637
	3.5	57	99	134	165	193	310	408	492	570	642	707
	4.0	62	107	145	178	209	336	441	532	615	696	770
Downhill 2%	2.0	37	66	92	115	138	240	336	428	515	606	693
	2.5	46	82	113	141	167	284	390	488	585	678	770
	3.0	53	93	128	159	189	318	432	536	640	738	833
	3.5	58	102	140	174	207	346	465	580	685	786	889
	4.0	63	110	151	188	222	368	495	616	725	834	938

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	108	154	181	198	210	236	243	248	250	252	252
	2.5	149	225	276	314	342	422	453	472	480	486	490
	3.0	177	273	342	395	438	568	633	668	690	708	714
	3.5	199	312	394	459	513	688	786	844	885	912	931
	4.0	218	344	437	513	577	792	918	1000	1055	1098	1127
Flat terrain	2.0	132	217	287	348	404	636	828	996	1150	1296	1428
	2.5	168	278	367	446	518	816	1062	1280	1475	1662	1834
	3.0	194	321	425	516	599	946	1230	1480	1710	1920	2121
	3.5	215	356	471	573	665	1048	1365	1644	1895	2130	2352
	4.0	233	385	510	620	720	1136	1479	1780	2055	2310	2555
Downhill 2%	2.0	157	284	404	522	636	1136	1575	1996	2400	2802	3192
	2.5	189	333	465	590	712	1244	1713	2156	2585	3000	3409
	3.0	212	370	512	645	773	1332	1824	2288	2735	3168	3591
	3.5	232	401	551	691	825	1410	1923	2404	2865	3312	3752
	4.0	248	428	586	732	871	1478	2010	2508	2985	3444	3892

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	82	123	149	168	183	220	234	240	245	246	252
	2.5	111	172	217	251	279	368	414	440	455	468	476
	3.0	131	206	263	308	346	476	552	600	635	660	679
	3.5	146	233	299	354	399	562	666	736	790	828	854
	4.0	159	256	330	391	444	636	762	852	920	972	1015
Flat terrain	2.0	95	156	207	251	291	460	597	720	830	936	1036
	2.5	121	200	265	322	374	590	768	924	1070	1200	1323
	3.0	140	231	307	373	432	682	888	1068	1235	1392	1533
	3.5	155	256	340	413	480	758	984	1188	1370	1542	1701
	4.0	167	278	368	447	520	820	1068	1288	1485	1668	1848
Downhill 2%	2.0	108	192	268	342	414	760	1053	1324	1585	1836	2086
	2.5	132	229	316	397	475	842	1155	1444	1720	1992	2254
	3.0	149	257	352	439	523	908	1239	1544	1835	2118	2387
	3.5	163	280	381	474	563	966	1311	1628	1935	2226	2506
	4.0	175	300	407	506	598	1016	1377	1708	2020	2322	2618

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	66	100	125	143	158	200	219	232	235	240	245
	2.5	87	138	175	206	231	318	369	400	425	438	455
	3.0	102	163	210	249	282	400	477	532	570	600	630
	3.5	114	184	238	283	322	466	564	636	695	738	777
	4.0	124	201	261	311	356	522	639	728	800	858	903
Flat terrain	2.0	73	120	160	194	225	356	462	556	645	726	798
	2.5	93	154	205	249	289	456	594	716	825	930	1022
	3.0	108	178	236	287	334	528	687	828	955	1074	1183
	3.5	119	198	262	318	370	584	762	916	1060	1194	1316
	4.0	129	214	284	345	401	634	825	992	1150	1290	1428
Downhill 2%	2.0	81	142	196	248	298	536	765	964	1150	1332	1505
	2.5	99	172	235	294	349	606	846	1060	1260	1452	1638
	3.0	113	194	263	327	388	662	915	1140	1350	1548	1743
	3.5	124	212	287	355	420	710	972	1208	1425	1638	1841
	4.0	133	227	307	379	448	750	1023	1268	1495	1710	1925

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	56	86	109	126	140	184	207	220	230	234	238
	2.5	73	117	150	177	200	282	333	368	395	414	427
	3.0	86	138	178	212	242	350	423	480	520	552	581
	3.5	95	155	201	240	275	404	495	568	625	672	707
	4.0	104	169	220	264	302	450	555	640	710	768	812
Flat terrain	2.0	61	100	133	162	187	296	384	464	535	606	665
	2.5	77	128	170	207	240	380	495	596	690	774	854
	3.0	89	148	197	239	278	440	573	688	795	894	987
	3.5	99	164	218	265	308	486	633	764	880	990	1099
	4.0	107	178	236	287	334	528	687	828	955	1074	1190
Downhill 2%	2.0	66	115	158	199	238	422	597	768	920	1062	1197
	2.5	82	140	191	238	282	484	672	852	1015	1164	1309
	3.0	93	159	215	266	315	532	729	920	1090	1248	1400
	3.5	102	174	235	290	342	572	780	976	1155	1320	1484
	4.0	110	187	252	311	366	608	825	1028	1210	1386	1554

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	143	190	212	225	232	244	249	252	250	252	252
	2.5	205	296	350	386	410	464	483	488	495	498	497
	3.0	247	369	449	506	548	656	696	716	730	732	742
	3.5	280	427	527	602	660	822	894	928	950	966	973
	4.0	308	475	593	683	755	970	1071	1128	1165	1182	1197
Flat terrain	2.0	193	317	419	509	590	930	1209	1456	1680	1890	2086
	2.5	246	406	538	653	758	1194	1554	1872	2160	2430	2681
	3.0	284	470	622	755	877	1382	1797	2164	2500	2808	3101
	3.5	315	520	689	838	972	1534	1995	2404	2775	3120	3444
	4.0	341	564	746	907	1053	1662	2163	2604	3005	3378	3731
Downhill 2%	2.0	246	461	668	864	1035	1828	2565	3276	3970	4650	5320
	2.5	290	525	746	952	1136	1978	2757	3500	4220	4926	5621
	3.0	323	576	808	1024	1218	2104	2913	3684	4430	5160	5873
	3.5	350	618	861	1086	1290	2212	3051	3848	4615	5364	6097
	4.0	374	655	908	1142	1353	2308	3174	3992	4780	5544	6293

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	112	159	186	202	214	238	243	248	250	252	252
	2.5	155	234	286	324	353	430	459	476	485	486	490
	3.0	185	285	356	410	453	582	645	680	700	714	721
	3.5	208	326	411	478	533	710	804	860	895	918	938
	4.0	228	360	457	535	601	818	942	1020	1075	1110	1141
Flat terrain	2.0	139	229	302	367	426	672	873	1052	1215	1368	1512
	2.5	177	293	388	471	547	862	1122	1352	1560	1752	1939
	3.0	204	338	448	545	632	998	1299	1564	1805	2028	2240
	3.5	226	375	497	604	701	1108	1440	1736	2005	2250	2485
	4.0	245	406	538	654	760	1200	1560	1880	2170	2442	2695
Downhill 2%	2.0	166	304	433	560	684	1214	1689	2140	2580	3006	3430
	2.5	200	354	496	631	763	1328	1833	2308	2770	3222	3661
	3.0	224	393	545	688	826	1422	1950	2448	2930	3396	3850
	3.5	244	426	586	736	880	1502	2052	2572	3065	3546	4018
	4.0	262	453	622	778	928	1574	2145	2676	3190	3684	4165

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	91	134	161	180	194	226	237	244	245	246	252
	2.5	123	190	238	274	303	388	429	452	465	474	483
	3.0	146	229	290	339	379	512	585	628	660	678	693
	3.5	164	260	332	390	440	610	711	780	825	864	889
	4.0	178	285	367	434	490	692	822	912	975	1026	1064
Flat terrain	2.0	107	176	233	283	329	518	675	812	940	1056	1169
	2.5	136	226	299	363	422	666	867	1044	1205	1356	1498
	3.0	157	261	346	420	488	770	1002	1208	1395	1572	1736
	3.5	174	289	383	466	541	854	1113	1340	1550	1740	1925
	4.0	188	313	415	505	586	926	1206	1452	1680	1884	2086
Downhill 2%	2.0	123	221	311	399	484	886	1221	1540	1850	2148	2443
	2.5	150	262	364	459	551	976	1335	1676	2000	2316	2625
	3.0	169	293	403	506	603	1050	1431	1788	2130	2460	2779
	3.5	185	319	436	545	648	1114	1512	1884	2235	2580	2912
	4.0	198	341	465	578	686	1170	1584	1968	2335	2688	3031

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meter) at different inlet pressure and different slopes

PCJ™ PRO HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	78	117	143	162	177	216	231	240	245	246	245
	2.5	104	163	206	239	267	356	402	432	450	462	469
	3.0	123	195	249	293	330	458	534	584	620	648	665
	3.5	137	220	283	335	380	538	642	712	765	804	840
	4.0	150	241	311	370	421	608	732	824	890	948	987
Flat terrain	2.0	89	147	194	236	274	432	561	676	785	882	973
	2.5	113	188	249	302	351	554	723	868	1005	1128	1246
	3.0	131	217	287	350	406	642	834	1008	1160	1308	1442
	3.5	145	240	319	388	450	712	927	1116	1290	1452	1603
	4.0	156	260	345	420	488	772	1005	1208	1395	1572	1736
Downhill 2%	2.0	100	178	248	316	382	698	975	1228	1465	1698	1932
	2.5	122	213	293	369	441	776	1074	1340	1595	1848	2086
	3.0	139	239	327	409	486	842	1152	1436	1705	1962	2219
	3.5	152	261	355	442	524	896	1221	1516	1795	2064	2331
	4.0	163	280	380	471	557	944	1281	1588	1880	2160	2429

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

PCJ™ on-line dripper

Compact pressure-compensated on-line dripper, designed to deliver reliable and uniform irrigation performance across a wide range of applications.
Widely used in greenhouses, nurseries and orchards, it offers a proven and versatile solution for precision irrigation.



Benefits & Features

Uniform water distribution	Ensures precise and stable flow regulation across a wide pressure range, delivering uniform water distribution along irrigation lines and across varying topographies.
Prevents drainage (LCNL or HCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution. The HCNL (high anti-drain) mechanism operates at a higher shut-off threshold, preventing drainage even under steep slope conditions. Improves pulse irrigation performance; eliminates drainage and refill effects, enhancing irrigation efficiency in pulse irrigation applications.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A built-in filtration area, uncommon in most on-line drippers, helps reduce the risk of suspended particle ingress, ensuring dependable performance across a wide range of water qualities. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including press-fit, straight or angled barbed connections, supporting flexible system design and compatibility with "Spider" assemblies. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for precision irrigation in greenhouses, nurseries and orchards.



Specifications

- Pressure-compensated operating range: according to dripper model (see tables below).
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with extra-wide flow passages for enhanced clogging resistance.
- Insertable into thick-wall PE pipes: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with ultra-low coefficient of variation (CV) and an injection-molded silicone diaphragm for exceptional uniformity and long-term performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international manufacturing and performance standards.
- Available outlet configurations: straight or angled 3 mm barbed connection, straight 4 mm barbed connection and press-fit (nipple).
- Anti-Insect (AI) option: Protective outlet cover available factory-assembled or for field installation on PCJ™ drippers equipped with a press-fit (nipple) outlet.

Drippers technical data

PCJ™ AS dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
0.5	0.5 - 4.0	0.54 x 0.60 x 35	2.0	0.5	0	130/120	Mustard	Black
1.2		0.67 x 0.77 x 35	2.0	1.2	0	130/120	Brown	Black
2.0		0.98 x 0.79 x 35	2.0	2.0	0	130/120	Red	Black
3.0		1.03 x 1.07 x 35	2.0	3.0	0	130/120	Blue	Black
4.0		1.32 x 0.92 x 35	2.0	4.0	0	130/120	Gray	Black
8.0		1.60 x 1.08 x 35	2.0	8.0	0	130/120	Green	Black
12.0		1.60 x 1.08 x 17	2.0	12.0	0	130/120	Fuchsia	Black
15.0		1.60 x 1.08 x 17	2.0	15.0	0	130/120	Black	Black



* Within working pressure range.
PCJ™ AS dripper. Is identified by its base color code.

PCJ™ LCNL dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
0.5	0.7 - 4.0	0.54 x 0.60 x 35	1.8	0.5	0	130/120	Mustard	Black
1.2		0.67 x 0.77 x 35	2.0	1.2	0	130/120	Brown	Black
2.0		0.98 x 0.79 x 35	2.0	2.0	0	130/120	Red	Black
3.0		1.03 x 1.07 x 35	2.0	3.0	0	130/120	Blue	Black
4.0		1.32 x 0.92 x 35	2.0	4.0	0	130/120	Gray	Black
8.0		1.60 x 1.08 x 35	2.0	8.0	0	130/120	Green	Black
12.0		1.60 x 1.08 x 17	2.0	12.0	0	130/120	Fuchsia	Black



* Within working pressure range.
PCJ™ LCNL nominal shut-off pressure: 0.12 bar. Is identified by its base color code and by the rings around the barbed water inlet connector.

PCJ™ HCNL dripper

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
0.5	1.5 - 4.0	0.54 x 0.60 x 35	1.8	0.5	0	130/120	Light yellow	Black
1.2		0.67 x 0.77 x 35	2.0	1.2	0	130/120	Light brown	Black
2.0		0.98 x 0.79 x 35	2.0	2.0	0	130/120	Pink	Black
3.0		1.03 x 1.07 x 35	2.0	3.0	0	130/120	Light blue	Black
4.0		1.32 x 0.92 x 35	2.0	4.0	0	130/120	Light gray	Black



* Within working pressure range.
PCJ™ HCNL nominal shut-off pressure: 0.18 bar. Is identified by its base color code and by the rings around the barbed water inlet connector.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Model designed to meet specific needs.

Anti-Insect (AI): Special outlet protector designed to help prevent insect intrusion through the dripper outlet.

The Anti Insect Cap is designed to protect from insect intruders in fields with high intensity of insects, helping maintain reliable water discharge and reducing maintenance requirements



Kd (minor losses) – insertion barb in the distribution pipe

PE pipe	Inner diameter (mm)	Kd
12/4	9.80	1.65
16/4	13.20	0.39
20/4	17.00	0.13
25/4	21.20	0.10

Blank dripline	Inner diameter (mm)	Kd
12009 - 12010	10.60	1.61
16010 - 16012	14.20	0.37
20010 - 20012	17.50	0.12

Kd: A barbed inlet connector inside the pipe creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.



Straight barb 3 mm



Angled barb 3 mm



Straight barb 4 mm



Nipple (press fit)

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PCJ™ drippers (straight barb 3 and 4 mm outlet)	13000	57 x 28 x 27	14.4	32	114 x 114 x 112	470
PCJ™ drippers (nipple oullet)	12000		13.7			448
PCJ™ drippers (angled barb 3 mm outlet)	6500		12.6			414
PCJ™ drippers (AI model)	9500		13.4			438

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
PCJ™ dripper	PCJ

Additional features	
No added	AS
Anti-drain	LCNL
High anti-drain	HCNL

Flow rate (l/h) PCJ™ AS and PCJ™ LCNL model	
0.5	0.5L/H
1.2	1.2L/H
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H
8.0	8.0L/H
12.0	12.0L/H
15.0*	15.0L/H

*Only available in PCJ™ AS model

Flow rate (l/h) PCJ™ HCNL model	
0.5	0.5L/H
1.2	1.2L/H
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H

Outlet type	
Straight barb 3 mm	BRB3
Straight barb 4 mm	BRB4
Nipple (press-fit)	NIP
Angled barb 3 mm	BRB3 ANG

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	13000/CA
	7500/CA

Special features	
No added	-
Anti-insects cap	+CAP

PCJ LCNL 2.0L/H BRB3 ANG 500/BAG

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including PCJ™ dripper (featured in this document), the dripper exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter, and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and, most importantly, the structural integrity of the pipe and its associated connections.

In LCNL and HCNL drippers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	60	101	130	151	168	212	228	236	245	246	245
	1.5	79	137	182	218	248	346	396	428	445	462	469
	2.0	92	162	218	264	304	442	525	576	615	642	665
	2.5	102	181	245	300	347	518	627	700	760	798	833
	3.0	111	198	269	330	384	580	711	808	880	936	980
	3.5	118	212	290	357	415	636	786	900	990	1056	1113
	4.0	125	225	308	380	443	684	855	984	1085	1170	1239
Flat terrain	1.0	66	120	167	209	248	408	540	656	765	864	952
	1.5	84	153	213	266	316	524	693	844	980	1104	1225
	2.0	96	176	245	307	365	604	801	976	1130	1278	1414
	2.5	106	194	271	340	403	670	888	1080	1255	1416	1568
	3.0	114	210	293	368	436	724	963	1168	1360	1536	1701
	3.5	122	223	312	392	465	774	1026	1248	1450	1638	1813
	4.0	128	236	329	414	491	816	1083	1320	1535	1734	1918
Downhill 2%	1.0	72	140	206	270	334	642	927	1176	1415	1650	1876
	1.5	89	169	244	317	387	718	1017	1284	1540	1788	2030
	2.0	100	190	273	352	427	778	1095	1376	1645	1902	2156
	2.5	110	207	296	381	461	830	1158	1456	1735	2004	2268
	3.0	118	222	317	406	490	876	1218	1524	1815	2094	2366
	3.5	125	235	335	428	516	916	1269	1588	1885	2172	2450
	4.0	132	246	351	448	540	954	1317	1644	1955	2250	2534

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	35	62	83	100	114	162	189	208	220	228	231
	1.5	46	81	110	136	158	238	291	332	360	384	399
	2.0	53	95	130	161	187	290	363	420	460	498	525
	2.5	58	106	145	180	211	332	420	488	545	594	630
	3.0	63	114	158	197	231	366	465	544	615	672	721
	3.5	67	122	169	211	248	396	507	596	670	738	798
	4.0	71	130	179	224	264	422	543	640	725	798	861
Flat terrain	1.0	37	68	95	119	141	234	309	376	440	492	546
	1.5	47	86	121	151	180	298	396	484	560	636	700
	2.0	54	99	139	174	207	346	459	556	650	732	812
	2.5	60	110	154	193	229	382	507	616	720	810	896
	3.0	64	118	166	209	248	414	549	668	780	876	973
	3.5	69	126	176	222	264	442	585	716	830	936	1036
	4.0	72	133	187	234	279	466	621	756	875	990	1099
Downhill 2%	1.0	39	74	107	138	169	312	447	576	705	828	938
	1.5	49	92	131	167	203	362	510	648	785	918	1036
	2.0	55	104	148	189	227	402	558	708	850	984	1113
	2.5	61	114	161	206	248	434	600	756	905	1044	1176
	3.0	66	122	173	221	265	462	636	796	950	1098	1232
	3.5	70	130	184	234	281	488	669	836	995	1146	1288
	4.0	73	136	193	246	295	510	699	872	1035	1194	1337

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	26	46	62	75	88	130	159	176	190	204	210
	1.5	33	59	82	101	118	184	231	268	295	318	343
	2.0	38	69	95	118	139	220	282	328	370	402	434
	2.5	42	76	106	132	156	250	321	376	425	468	504
	3.0	45	83	115	144	170	274	354	420	475	522	567
	3.5	48	88	123	154	182	294	381	456	515	570	623
	4.0	51	94	130	163	193	314	408	484	555	612	672
Flat terrain	1.0	27	49	68	86	102	168	225	272	315	360	399
	1.5	34	62	86	109	129	216	288	348	405	456	511
	2.0	39	71	100	126	149	248	330	404	470	528	588
	2.5	43	79	110	138	165	276	366	448	520	588	651
	3.0	46	85	119	150	178	298	396	484	560	636	707
	3.5	49	90	127	160	190	318	423	516	600	678	749
	4.0	52	95	134	169	201	336	447	544	635	714	791
Downhill 2%	1.0	28	52	74	96	116	210	294	380	460	540	616
	1.5	35	64	92	118	141	248	345	436	525	606	693
	2.0	39	74	104	133	160	278	384	480	575	666	749
	2.5	43	81	115	146	175	302	414	516	615	708	805
	3.0	47	87	123	156	187	324	441	552	655	750	847
	3.5	50	92	131	166	199	342	465	580	685	786	889
	4.0	52	97	137	174	209	358	489	604	715	822	924

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	20	36	49	60	70	108	132	152	170	180	189
	1.5	25	46	64	79	93	148	189	220	250	270	294
	2.0	29	53	74	92	109	176	225	268	305	336	364
	2.5	32	59	82	103	122	196	255	304	345	384	420
	3.0	35	64	89	112	132	216	279	336	380	426	462
	3.5	37	68	95	119	141	232	303	360	415	462	504
	4.0	39	72	101	126	150	246	321	384	440	492	539
Flat terrain	1.0	20	38	53	66	78	130	174	212	245	276	308
	1.5	26	48	67	84	100	166	222	272	315	354	392
	2.0	30	55	77	97	115	192	255	312	365	408	455
	2.5	33	60	85	106	127	212	282	344	400	456	504
	3.0	35	65	92	115	137	230	306	372	435	492	546
	3.5	38	69	97	123	146	246	327	400	465	522	581
	4.0	40	73	103	130	155	260	345	420	490	552	616
Downhill 2%	1.0	21	40	56	72	87	154	216	276	330	384	441
	1.5	26	49	70	89	107	186	255	320	385	444	504
	2.0	30	56	79	101	121	210	288	356	425	492	553
	2.5	33	62	87	110	133	228	312	388	460	528	595
	3.0	36	66	94	119	143	246	333	412	490	558	630
	3.5	38	70	100	126	151	260	351	436	515	588	665
	4.0	40	74	105	133	159	272	369	456	540	618	693

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	17	30	41	50	59	92	117	136	150	162	175
	1.5	21	38	53	66	78	126	162	192	215	240	259
	2.0	24	44	62	78	91	148	192	228	260	288	315
	2.5	27	49	68	86	102	166	216	260	295	330	357
	3.0	29	53	74	94	111	182	237	284	325	366	399
	3.5	31	57	79	100	118	194	255	308	350	396	434
	4.0	33	60	84	106	125	206	270	328	375	420	462
Flat terrain	1.0	17	31	44	55	65	108	144	176	205	234	259
	1.5	21	40	55	70	83	138	186	224	260	294	329
	2.0	25	45	64	80	96	160	213	260	305	342	378
	2.5	27	50	70	89	106	178	237	288	335	378	420
	3.0	29	54	76	96	114	192	255	312	365	408	455
	3.5	31	58	81	102	122	204	273	332	385	438	483
	4.0	33	61	85	108	128	216	288	352	410	462	511
Downhill 2%	1.0	17	32	46	59	71	126	174	220	265	306	350
	1.5	22	40	58	73	88	152	210	260	310	360	406
	2.0	25	46	65	83	100	172	234	292	345	396	448
	2.5	27	51	72	91	110	188	255	316	375	432	483
	3.0	29	55	77	98	118	202	273	340	400	456	511
	3.5	31	58	82	105	125	214	291	360	420	480	539
	4.0	33	61	87	110	132	226	303	376	440	504	567

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	11	20	27	34	40	64	81	96	110	120	133
	1.5	14	25	35	43	51	84	111	132	150	168	182
	2.0	16	28	40	50	60	98	129	156	180	198	217
	2.5	17	32	44	56	66	110	144	176	200	222	245
	3.0	18	34	48	60	72	120	156	188	220	246	273
	3.5	20	36	51	64	77	128	168	204	235	264	294
	4.0	21	38	54	68	81	134	180	216	250	282	308
Flat terrain	1.0	11	20	28	35	42	70	93	116	135	150	168
	1.5	14	25	35	45	53	90	120	144	170	192	217
	2.0	16	29	41	51	61	104	138	168	195	222	245
	2.5	17	32	45	57	68	114	153	184	215	246	273
	3.0	19	34	49	62	73	124	165	200	235	264	294
	3.5	20	37	52	66	78	132	177	216	250	282	315
	4.0	21	39	55	69	82	138	186	228	265	300	329
Downhill 2%	1.0	11	20	29	37	44	78	105	132	160	180	203
	1.5	14	26	37	46	55	96	129	160	190	216	245
	2.0	16	29	41	53	63	108	147	180	215	246	273
	2.5	17	32	46	58	69	118	159	200	235	264	301
	3.0	19	35	49	62	75	128	171	212	250	282	322
	3.5	20	37	52	66	79	136	183	224	265	300	336
	4.0	21	39	55	70	84	142	192	236	280	318	350

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	8	15	21	26	31	50	66	80	90	102	112
	1.5	10	19	27	34	40	66	87	104	120	132	147
	2.0	12	22	31	39	46	76	102	124	140	162	175
	2.5	13	24	34	43	51	86	114	136	160	180	196
	3.0	14	26	37	46	56	92	123	148	175	192	217
	3.5	15	28	40	50	59	100	132	160	185	210	231
	4.0	16	30	41	53	63	104	138	168	195	222	245
Flat terrain	1.0	8	15	22	27	33	54	72	88	105	120	133
	1.5	10	20	28	34	41	70	93	112	130	150	168
	2.0	12	22	31	40	47	80	108	132	150	174	189
	2.5	13	24	35	44	52	88	117	144	170	192	210
	3.0	14	26	37	47	56	96	129	156	180	204	231
	3.5	15	28	40	50	60	102	135	168	195	222	245
	4.0	16	30	42	53	63	108	144	176	205	234	259
Downhill 2%	1.0	8	16	22	28	34	58	81	100	120	138	154
	1.5	11	20	28	35	42	72	99	124	145	168	182
	2.0	12	22	32	41	48	82	111	140	165	186	210
	2.5	13	25	35	45	53	90	123	152	180	204	224
	3.0	14	27	38	48	57	98	132	164	190	216	245
	3.5	15	28	40	51	61	104	141	172	205	228	259
	4.0	16	30	42	54	64	110	147	180	215	240	273

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 15.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	7	10	13	16	19	21	23	25	27	90	98
	1.5	9	13	17	20	23	27	30	32	35	120	133
	2.0	10	15	19	23	27	31	34	37	40	138	154
	2.5	11	17	21	26	30	34	38	41	45	156	175
	3.0	12	18	23	28	32	36	41	44	48	168	189
	3.5	13	19	24	30	34	39	43	48	52	180	203
	4.0	14	20	26	31	36	41	46	50	54	192	217
Flat terrain	1.0	7	11	13	16	19	21	24	26	28	102	112
	1.5	9	13	17	21	24	27	30	33	36	132	147
	2.0	10	15	19	24	27	31	34	38	41	150	168
	2.5	11	17	21	26	30	34	38	41	45	168	182
	3.0	12	18	23	28	32	37	41	45	49	180	196
	3.5	13	19	24	30	34	39	44	48	52	192	210
	4.0	14	20	26	31	37	41	46	50	55	204	224
Downhill 2%	1.0	7	11	14	17	19	22	25	27	29	120	133
	1.5	9	13	17	21	24	27	30	33	37	144	161
	2.0	10	15	20	24	28	32	35	39	42	162	182
	2.5	11	17	22	26	31	34	38	42	46	174	196
	3.0	12	18	23	28	32	37	42	46	50	186	210
	3.5	13	19	24	30	35	39	44	49	53	198	224
	4.0	14	20	26	32	37	41	46	51	56	210	231

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	111	161	189	206	217	238	246	248	250	252	252
	1.5	153	237	292	332	361	436	465	480	485	492	497
	2.0	181	289	364	422	466	596	657	688	705	720	728
	2.5	204	330	421	492	550	730	822	876	910	930	945
	3.0	223	364	468	551	620	846	969	1044	1095	1128	1155
	3.5	239	393	509	602	681	946	1101	1200	1265	1314	1351
	4.0	254	420	545	649	736	1036	1218	1340	1425	1488	1533
Flat terrain	1.0	136	232	312	382	446	710	927	1120	1295	1458	1610
	1.5	174	297	399	489	571	912	1191	1436	1660	1866	2065
	2.0	200	343	461	566	660	1054	1377	1664	1920	2160	2387
	2.5	221	379	511	626	732	1170	1527	1844	2130	2400	2653
	3.0	239	410	553	678	792	1266	1656	2000	2310	2598	2870
	3.5	254	438	590	724	846	1352	1767	2136	2465	2778	3066
	4.0	268	462	623	765	894	1430	1869	2256	2610	2934	3241
Downhill 2%	1.0	162	309	450	588	725	1298	1818	2312	2795	3270	3731
	1.5	195	360	513	661	804	1416	1968	2492	2995	3492	3976
	2.0	218	398	562	718	869	1514	2091	2640	3165	3678	4179
	2.5	238	430	604	767	925	1598	2199	2764	3310	3834	4354
	3.0	255	458	640	810	974	1674	2295	2880	3440	3978	4508
	3.5	269	483	673	850	1018	1742	2382	2984	3555	4110	4648
	4.0	283	505	703	885	1058	1804	2463	3076	3665	4230	4781

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	69	108	135	155	170	210	228	236	240	246	245
	1.5	92	149	191	226	253	344	393	424	445	456	469
	2.0	107	177	230	274	311	440	519	572	610	636	658
	2.5	120	199	261	313	357	516	618	692	745	792	819
	3.0	130	218	287	345	395	580	705	796	865	924	966
	3.5	139	234	310	373	428	634	777	888	970	1038	1099
	4.0	147	249	329	398	458	684	843	968	1065	1146	1218
Flat terrain	1.0	77	132	178	218	255	406	531	640	740	834	924
	1.5	98	169	227	279	326	522	681	824	950	1074	1183
	2.0	113	195	263	322	377	602	789	952	1100	1242	1372
	2.5	125	216	291	357	417	668	873	1056	1220	1374	1519
	3.0	135	233	315	386	452	724	948	1144	1325	1488	1645
	3.5	144	248	336	413	483	774	1011	1220	1415	1590	1757
	4.0	152	262	355	436	510	818	1068	1292	1495	1680	1855
Downhill 2%	1.0	85	157	223	286	347	642	909	1144	1370	1590	1806
	1.5	105	189	264	335	402	718	1002	1252	1495	1728	1953
	2.0	119	212	295	372	445	778	1077	1344	1595	1842	2079
	2.5	130	232	321	403	480	830	1143	1420	1685	1938	2184
	3.0	140	248	343	430	511	876	1200	1488	1760	2028	2282
	3.5	149	263	362	454	538	918	1251	1552	1835	2106	2366
	4.0	156	276	380	474	563	956	1299	1608	1900	2178	2443

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	51	83	106	123	138	184	207	220	230	234	238
	1.5	67	111	145	173	197	280	333	368	395	414	427
	2.0	78	131	172	207	237	348	423	480	520	558	581
	2.5	87	146	194	234	269	402	495	568	625	672	707
	3.0	94	160	212	257	296	446	555	640	710	768	819
	3.5	101	171	228	277	319	486	606	704	785	852	910
	4.0	106	182	242	294	340	520	654	760	850	930	994
Flat terrain	1.0	55	95	128	158	184	294	384	464	535	606	665
	1.5	70	121	164	201	235	376	492	596	690	774	854
	2.0	81	140	189	232	272	436	570	688	795	894	987
	2.5	90	155	209	258	301	482	633	764	880	996	1099
	3.0	97	168	227	278	326	522	684	828	955	1074	1190
	3.5	103	179	242	298	348	558	732	884	1020	1152	1267
	4.0	109	189	255	314	367	590	771	932	1080	1218	1344
Downhill 2%	1.0	60	108	151	193	232	418	594	768	920	1062	1204
	1.5	74	132	183	230	275	478	666	848	1010	1164	1316
	2.0	84	149	206	258	307	526	726	916	1090	1248	1407
	2.5	92	163	225	281	333	566	777	972	1155	1320	1484
	3.0	99	176	241	301	356	602	819	1024	1210	1386	1554
	3.5	106	186	256	318	377	634	861	1072	1265	1446	1624
	4.0	111	196	268	334	395	662	897	1112	1310	1500	1680

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	40	66	85	101	114	160	186	204	215	222	231
	1.5	52	87	115	138	159	232	282	320	350	372	392
	2.0	61	102	136	164	189	284	351	404	445	480	511
	2.5	67	114	152	185	213	324	405	472	525	570	609
	3.0	73	124	166	202	234	358	450	524	590	642	693
	3.5	78	133	178	217	251	388	489	576	645	708	763
	4.0	82	141	189	230	267	414	525	616	695	768	826
Flat terrain	1.0	43	73	99	122	142	228	297	360	415	468	518
	1.5	54	94	126	155	181	290	381	460	530	600	665
	2.0	62	108	146	179	210	336	441	532	615	696	763
	2.5	69	119	161	198	232	372	489	588	680	768	847
	3.0	74	129	175	215	251	404	528	640	740	834	917
	3.5	79	138	186	229	268	430	564	684	790	888	980
	4.0	84	145	197	242	283	456	597	720	835	942	1036
Downhill 2%	1.0	45	81	113	142	171	300	423	540	660	774	875
	1.5	56	100	137	172	205	352	486	612	735	858	966
	2.0	64	113	156	194	231	390	534	668	800	924	1043
	2.5	70	124	170	213	251	422	573	716	850	984	1106
	3.0	76	134	183	228	269	450	609	756	895	1032	1162
	3.5	81	142	194	242	285	476	642	796	940	1080	1211
	4.0	85	149	205	254	300	498	669	828	980	1122	1253

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	34	56	73	87	99	142	168	188	200	210	217
	1.5	44	74	97	118	135	202	249	284	315	336	357
	2.0	50	86	114	138	160	244	306	352	395	426	455
	2.5	56	96	128	155	180	276	348	408	460	498	539
	3.0	61	104	139	170	197	304	387	452	510	564	609
	3.5	65	111	149	182	211	328	417	492	555	612	665
	4.0	68	118	158	193	225	350	447	528	600	660	714
Flat terrain	1.0	35	61	82	101	118	190	249	300	345	390	434
	1.5	45	78	105	129	151	242	318	384	445	498	553
	2.0	52	90	121	149	174	280	366	444	515	576	637
	2.5	57	99	134	165	193	310	408	492	570	642	707
	3.0	62	107	145	178	209	336	441	532	615	696	770
	3.5	66	114	155	190	223	358	471	568	660	738	819
	4.0	69	120	163	202	236	380	498	600	695	780	868
Downhill 2%	1.0	37	66	92	115	138	240	336	428	515	606	693
	1.5	46	82	113	141	167	284	390	488	585	678	770
	2.0	53	93	128	159	189	318	432	536	640	738	833
	2.5	58	102	140	174	207	346	465	580	685	786	889
	3.0	63	110	151	188	222	368	495	616	725	834	938
	3.5	67	117	160	199	235	390	522	644	760	870	980
	4.0	70	124	169	210	247	408	549	676	795	912	1022

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	22	37	49	59	68	102	126	144	160	174	182
	1.5	28	48	64	78	91	140	177	204	230	252	273
	2.0	32	56	75	91	106	166	210	248	280	312	336
	2.5	36	62	83	102	119	186	237	280	320	354	385
	3.0	39	67	91	111	129	204	261	312	355	390	427
	3.5	41	72	97	118	138	218	282	336	380	426	462
	4.0	44	76	103	126	147	232	300	356	410	456	497
Flat terrain	1.0	23	39	53	65	76	122	159	192	225	252	280
	1.5	29	50	67	83	97	156	204	248	285	324	357
	2.0	33	57	77	96	112	180	237	288	330	372	413
	2.5	36	63	86	106	124	200	261	316	365	414	455
	3.0	39	68	93	114	134	216	285	344	395	450	497
	3.5	42	73	99	122	143	230	303	368	425	480	525
	4.0	44	77	104	129	151	244	321	388	450	504	560
Downhill 2%	1.0	23	41	57	71	84	144	195	248	295	342	392
	1.5	29	52	71	88	104	174	234	292	345	396	448
	2.0	33	59	80	100	118	196	264	324	385	438	497
	2.5	37	65	89	110	130	214	288	352	415	474	532
	3.0	40	70	95	118	139	230	306	376	445	504	567
	3.5	42	74	101	126	148	244	324	400	465	534	595
	4.0	44	78	107	133	156	256	342	416	490	558	623

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	17	29	38	46	54	82	102	120	135	144	154
	1.5	22	37	50	62	71	110	141	168	190	210	224
	2.0	25	43	58	71	83	130	168	200	225	252	273
	2.5	28	48	65	79	93	146	189	224	255	288	308
	3.0	30	52	70	86	101	160	207	248	280	312	343
	3.5	32	56	75	92	108	172	222	264	305	336	371
	4.0	34	59	79	98	114	182	234	280	325	360	392
Flat terrain	1.0	17	30	41	50	59	94	123	152	175	198	217
	1.5	22	38	52	64	75	120	159	192	225	252	280
	2.0	25	44	60	74	87	140	183	220	255	288	322
	2.5	28	49	67	82	96	154	204	244	285	318	357
	3.0	30	53	72	89	104	168	219	264	310	348	385
	3.5	32	56	76	94	111	178	234	284	330	372	413
	4.0	34	59	81	100	117	188	249	300	345	390	434
Downhill 2%	1.0	18	31	43	54	64	108	147	184	215	252	280
	1.5	22	39	54	67	79	132	177	220	255	294	329
	2.0	26	45	62	77	90	148	198	244	290	330	371
	2.5	28	50	68	84	99	164	219	268	315	354	399
	3.0	30	54	73	90	107	176	234	284	335	384	427
	3.5	32	57	78	97	114	186	246	304	355	402	448
	4.0	34	60	82	102	120	196	261	316	370	420	469

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 15.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	15	20	25	30	34	37	41	44	47	132	140
	1.5	19	26	32	39	44	49	54	58	62	186	203
	2.0	22	30	38	45	51	57	62	68	73	222	245
	2.5	24	33	42	50	56	63	69	75	81	252	273
	3.0	26	36	45	54	61	69	75	82	88	276	301
	3.5	28	38	48	57	65	73	80	87	94	300	329
	4.0	29	41	51	61	69	77	85	93	99	318	350
Flat terrain	1.0	15	21	26	31	35	40	44	48	51	174	189
	1.5	19	26	33	40	45	50	55	60	65	216	245
	2.0	22	31	38	46	52	58	64	70	75	252	280
	2.5	24	34	42	50	58	64	71	77	83	276	308
	3.0	26	36	46	54	62	69	77	84	90	300	336
	3.5	28	39	49	58	66	74	82	89	96	324	357
	4.0	29	41	51	61	70	78	86	94	101	342	378
Downhill 2%	1.0	15	22	27	32	37	42	46	50	55	210	238
	1.5	19	27	34	41	47	53	58	63	68	252	280
	2.0	22	31	39	47	53	60	66	72	78	282	315
	2.5	24	34	43	51	59	66	73	79	86	306	343
	3.0	26	37	46	55	63	71	78	86	92	330	364
	3.5	28	39	49	59	67	76	83	91	98	348	385
	4.0	29	41	52	62	71	80	88	95	103	366	406

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	161	206	224	233	238	248	249	252	250	252	252
	1.5	236	331	383	414	435	478	489	496	495	498	504
	2.0	288	420	501	556	595	686	717	728	735	744	742
	2.5	329	490	596	672	728	872	927	956	970	978	987
	3.0	363	550	676	770	842	1042	1125	1168	1195	1206	1218
	3.5	393	601	746	856	942	1196	1311	1372	1410	1434	1449
	4.0	419	646	808	932	1032	1336	1482	1564	1615	1650	1673
Flat terrain	1.0	232	380	502	609	706	1112	1446	1740	2005	2256	2492
	1.5	296	487	644	781	906	1426	1854	2232	2580	2898	3199
	2.0	342	563	745	904	1048	1652	2148	2588	2985	3354	3703
	2.5	379	624	826	1002	1163	1832	2382	2868	3310	3726	4109
	3.0	410	676	894	1086	1260	1986	2583	3112	3590	4038	4459
	3.5	437	722	955	1159	1345	2122	2760	3324	3835	4314	4760
	4.0	462	762	1009	1226	1422	2242	2916	3512	4055	4560	5033
Downhill 2%	1.0	308	585	848	1074	1290	2296	3240	4152	5045	5922	6790
	1.5	359	658	935	1178	1408	2474	3465	4416	5340	6246	7140
	2.0	398	716	1006	1262	1505	2620	3648	4632	5585	6522	7434
	2.5	430	764	1067	1335	1590	2746	3807	4820	5800	6756	7693
	3.0	458	808	1122	1401	1664	2860	3951	4988	5990	6966	7924
	3.5	482	846	1171	1460	1732	2962	4080	5140	6165	7158	8134
	4.0	505	882	1216	1514	1794	3058	4200	5284	6325	7338	8330

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	108	154	181	198	210	236	243	248	250	252	252
	1.5	149	225	276	314	342	422	453	472	480	486	490
	2.0	177	273	342	395	438	568	633	668	690	708	714
	2.5	199	312	394	459	513	688	786	844	885	912	931
	3.0	218	344	437	513	577	792	918	1000	1055	1098	1127
	3.5	234	372	475	560	632	882	1035	1140	1215	1266	1309
	4.0	248	396	509	602	681	962	1140	1268	1355	1428	1477
Flat terrain	1.0	132	217	287	348	404	636	828	996	1150	1296	1428
	1.5	168	278	367	446	518	816	1062	1280	1475	1662	1834
	2.0	194	321	425	516	599	946	1230	1480	1710	1920	2121
	2.5	215	356	471	573	665	1048	1365	1644	1895	2130	2352
	3.0	233	385	510	620	720	1136	1479	1780	2055	2310	2555
	3.5	248	411	545	662	769	1214	1578	1900	2195	2472	2723
	4.0	262	434	575	700	813	1282	1668	2012	2320	2610	2884
Downhill 2%	1.0	157	284	404	522	636	1136	1575	1996	2400	2802	3192
	1.5	189	333	465	590	712	1244	1713	2156	2585	3000	3409
	2.0	212	370	512	645	773	1332	1824	2288	2735	3168	3591
	2.5	232	401	551	691	825	1410	1923	2404	2865	3312	3752
	3.0	248	428	586	732	871	1478	2010	2508	2985	3444	3892
	3.5	263	452	616	768	912	1540	2088	2600	3090	3564	4018
	4.0	276	473	644	801	950	1596	2160	2688	3185	3672	4137

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	82	123	149	168	183	220	234	240	245	246	252
	1.5	111	172	217	251	279	368	414	440	455	468	476
	2.0	131	206	263	308	346	476	552	600	635	660	679
	2.5	146	233	299	354	399	562	666	736	790	828	854
	3.0	159	256	330	391	444	636	762	852	920	972	1015
	3.5	171	276	356	424	483	700	846	956	1040	1104	1162
	4.0	181	293	380	454	517	756	921	1048	1145	1224	1288
Flat terrain	1.0	95	156	207	251	291	460	597	720	830	936	1036
	1.5	121	200	265	322	374	590	768	924	1070	1200	1323
	2.0	140	231	307	373	432	682	888	1068	1235	1392	1533
	2.5	155	256	340	413	480	758	984	1188	1370	1542	1701
	3.0	167	278	368	447	520	820	1068	1288	1485	1668	1848
	3.5	178	296	392	478	555	876	1140	1372	1585	1782	1967
	4.0	188	313	415	505	586	926	1206	1452	1675	1884	2086
Downhill 2%	1.0	108	192	268	342	414	760	1053	1324	1585	1836	2086
	1.5	132	229	316	397	475	842	1155	1444	1720	1992	2254
	2.0	149	257	352	439	523	908	1239	1544	1835	2118	2387
	2.5	163	280	381	474	563	966	1311	1628	1935	2226	2506
	3.0	175	300	407	506	598	1016	1377	1708	2020	2322	2618
	3.5	186	317	430	533	629	1062	1434	1776	2100	2412	2709
	4.0	196	333	451	558	657	1104	1488	1840	2170	2490	2800

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	66	100	125	143	158	200	219	232	235	240	245
	1.5	87	138	175	206	231	318	369	400	425	438	455
	2.0	102	163	210	249	282	400	477	532	570	600	630
	2.5	114	184	238	283	322	466	564	636	695	738	777
	3.0	124	201	261	311	356	522	639	728	800	858	903
	3.5	133	216	281	337	385	570	702	804	890	960	1015
	4.0	141	229	299	358	411	612	759	876	970	1050	1120
Flat terrain	1.0	73	120	160	194	225	356	462	556	645	726	798
	1.5	93	154	205	249	289	456	594	716	825	930	1022
	2.0	108	178	236	287	334	528	687	828	955	1074	1183
	2.5	119	198	262	318	370	584	762	916	1060	1194	1316
	3.0	129	214	284	345	401	634	825	992	1150	1290	1428
	3.5	137	228	303	369	428	676	882	1060	1225	1380	1519
	4.0	145	241	320	390	453	716	930	1124	1295	1458	1610
Downhill 2%	1.0	81	142	196	248	298	536	765	964	1150	1332	1505
	1.5	99	172	235	294	349	606	846	1060	1260	1452	1638
	2.0	113	194	263	327	388	662	915	1140	1350	1548	1743
	2.5	124	212	287	355	420	710	972	1208	1425	1638	1841
	3.0	133	227	307	379	448	750	1023	1268	1495	1710	1925
	3.5	142	241	325	401	472	788	1068	1320	1555	1782	2002
	4.0	149	253	341	421	495	822	1113	1372	1615	1848	2072

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	56	86	109	126	140	184	207	220	230	234	238
	1.5	73	117	150	177	200	282	333	368	395	414	427
	2.0	86	138	178	212	242	350	423	480	520	552	581
	2.5	95	155	201	240	275	404	495	568	625	672	707
	3.0	104	169	220	264	302	450	555	640	710	768	812
	3.5	111	181	237	284	326	490	609	704	785	852	910
	4.0	117	192	252	302	348	524	654	760	850	924	994
Flat terrain	1.0	61	100	133	162	187	296	384	464	535	606	665
	1.5	77	128	170	207	240	380	495	596	690	774	854
	2.0	89	148	197	239	278	440	573	688	795	894	987
	2.5	99	164	218	265	308	486	633	764	880	990	1099
	3.0	107	178	236	287	334	528	687	828	955	1074	1190
	3.5	114	190	252	306	356	564	735	884	1020	1146	1267
	4.0	120	200	266	324	377	596	777	936	1080	1212	1344
Downhill 2%	1.0	66	115	158	199	238	422	597	768	920	1062	1197
	1.5	82	140	191	238	282	484	672	852	1015	1164	1309
	2.0	93	159	215	266	315	532	729	920	1090	1248	1400
	2.5	102	174	235	290	342	572	780	976	1155	1320	1484
	3.0	110	187	252	311	366	608	825	1028	1210	1386	1554
	3.5	117	198	267	329	387	640	864	1072	1265	1446	1617
	4.0	123	209	281	346	406	670	900	1116	1315	1500	1680

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	37	58	75	89	101	142	168	188	200	210	217
	1.5	48	78	101	121	138	204	249	284	315	336	357
	2.0	56	91	119	142	164	246	306	352	395	426	455
	2.5	62	101	133	160	184	278	351	408	460	498	539
	3.0	67	110	145	175	201	308	387	456	510	558	602
	3.5	72	118	155	188	217	332	420	492	555	612	665
	4.0	76	125	165	199	230	354	450	528	600	660	714
Flat terrain	1.0	39	64	85	104	121	190	249	300	345	390	434
	1.5	50	82	109	133	155	244	318	384	445	498	553
	2.0	57	95	126	154	179	282	369	444	515	576	637
	2.5	63	105	140	170	198	314	408	492	570	642	707
	3.0	68	114	151	185	214	340	441	532	615	696	763
	3.5	73	122	161	197	229	362	471	568	660	738	819
	4.0	77	128	171	208	242	384	498	600	695	780	861
Downhill 2%	1.0	41	70	96	119	142	244	336	428	515	606	693
	1.5	51	87	118	146	172	288	393	492	585	678	770
	2.0	59	99	134	165	194	322	435	540	640	738	833
	2.5	65	109	147	181	212	348	468	580	685	786	889
	3.0	70	118	158	194	228	372	498	616	725	834	938
	3.5	74	125	168	206	242	394	525	648	760	870	980
	4.0	78	132	177	217	254	414	552	676	795	906	1015

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	29	46	60	71	81	118	144	160	175	186	196
	1.5	37	61	79	95	109	164	204	236	265	288	308
	2.0	43	71	93	112	129	196	246	288	325	354	385
	2.5	48	79	104	126	145	222	282	332	375	408	448
	3.0	52	86	113	137	158	244	309	364	415	456	497
	3.5	55	92	121	146	169	262	333	396	450	498	539
	4.0	58	97	128	155	180	278	357	420	480	534	581
Flat terrain	1.0	30	50	66	80	93	148	192	232	270	300	336
	1.5	38	64	85	102	119	190	246	296	345	384	427
	2.0	44	73	97	118	138	218	285	344	395	450	497
	2.5	49	81	108	131	153	242	315	380	440	498	546
	3.0	53	88	117	142	166	262	342	412	475	534	595
	3.5	56	94	125	152	177	280	366	440	510	570	630
	4.0	59	99	132	161	187	296	387	464	540	606	672
Downhill 2%	1.0	31	53	72	90	106	178	246	308	370	432	490
	1.5	39	66	89	110	130	214	291	360	430	492	560
	2.0	45	76	102	126	147	242	324	400	475	540	609
	2.5	49	84	112	138	161	264	351	432	510	582	658
	3.0	53	90	121	148	174	282	375	460	540	618	693
	3.5	57	96	128	158	184	300	396	488	570	654	728
	4.0	60	101	136	166	194	314	417	512	595	678	763

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 15.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	25	33	40	47	53	58	63	68	72	174	182
	1.5	32	43	53	62	70	77	83	90	96	258	280
	2.0	37	50	62	72	81	90	98	105	113	318	343
	2.5	41	56	69	80	91	100	110	118	127	366	399
	3.0	45	61	74	87	98	109	119	129	138	408	441
	3.5	48	65	80	93	106	117	128	138	148	438	483
	4.0	51	69	84	99	112	124	135	147	157	468	511
Flat terrain	1.0	26	35	43	51	57	64	70	76	81	264	294
	1.5	33	45	55	65	73	81	89	96	104	336	371
	2.0	38	52	64	75	85	94	103	112	120	390	427
	2.5	42	57	70	83	94	104	114	123	133	432	476
	3.0	46	62	76	90	101	113	123	134	144	468	518
	3.5	49	66	81	95	108	120	132	143	153	498	553
	4.0	51	70	86	101	114	127	139	151	162	528	581
Downhill 2%	1.0	27	37	46	54	62	69	77	84	90	360	406
	1.5	34	46	57	68	77	86	95	104	111	414	469
	2.0	39	53	66	77	88	98	108	118	127	462	518
	2.5	43	58	72	85	97	108	118	129	139	498	560
	3.0	46	63	78	92	104	116	128	139	150	528	588
	3.5	49	67	83	98	111	124	136	148	159	558	623
	4.0	52	71	87	103	117	130	143	156	167	582	651

Minimum considered pressure 0.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.0	197	229	239	243	246	250	252	252	250	252	252
	1.5	309	400	440	461	472	492	498	500	500	504	504
	2.0	387	531	605	647	674	724	738	744	745	750	749
	2.5	449	636	742	809	853	946	972	984	990	996	994
	3.0	501	726	861	950	1013	1154	1200	1220	1230	1236	1239
	3.5	545	803	965	1077	1157	1352	1419	1448	1465	1476	1484
	4.0	585	872	1058	1190	1288	1536	1629	1672	1700	1710	1722
Flat terrain	1.0	339	556	734	890	1033	1626	2112	2544	2935	3300	3640
	1.5	434	713	942	1142	1325	2088	2715	3268	3770	4242	4683
	2.0	501	824	1089	1322	1534	2416	3141	3784	4365	4908	5418
	2.5	554	914	1208	1466	1701	2680	3486	4196	4845	5448	6013
	3.0	600	989	1309	1589	1844	2906	3780	4548	5250	5904	6517
	3.5	640	1056	1397	1696	1969	3104	4038	4860	5610	6306	6965
	4.0	676	1116	1476	1793	2081	3282	4269	5140	5930	6666	7364
Downhill 2%	1.0	501	958	1351	1724	2085	3790	5409	6984	8535	10062	11578
	1.5	567	1053	1472	1869	2250	4034	5718	7344	8940	10512	12061
	2.0	620	1130	1573	1988	2386	4238	5973	7644	9280	10884	12467
	2.5	664	1197	1659	2092	2505	4416	6195	7908	9575	11208	12824
	3.0	702	1256	1736	2184	2610	4574	6393	8140	9840	11502	13139
	3.5	737	1310	1806	2267	2706	4718	6576	8352	10080	11766	13433
	4.0	768	1360	1870	2344	2794	4852	6744	8552	10300	12018	13699

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	143	190	212	225	232	244	249	252	250	252	252
	1.5	205	296	350	386	410	464	483	488	495	498	497
	2.0	247	369	449	506	548	656	696	716	730	732	742
	2.5	280	427	527	602	660	822	894	928	950	966	973
	3.0	308	475	593	683	755	970	1071	1128	1165	1182	1197
	3.5	333	517	650	754	838	1102	1236	1312	1365	1398	1421
	4.0	354	555	701	817	912	1220	1386	1488	1550	1596	1631
Flat terrain	1.0	193	317	419	509	590	930	1209	1456	1680	1890	2086
	1.5	246	406	538	653	758	1194	1554	1872	2160	2430	2681
	2.0	284	470	622	755	877	1382	1797	2164	2500	2808	3101
	2.5	315	520	689	838	972	1534	1995	2404	2775	3120	3444
	3.0	341	564	746	907	1053	1662	2163	2604	3005	3378	3731
	3.5	363	602	797	969	1125	1774	2310	2780	3210	3612	3983
	4.0	384	636	842	1024	1189	1876	2442	2940	3395	3816	4214
Downhill 2%	1.0	246	461	668	864	1035	1828	2565	3276	3970	4650	5320
	1.5	290	525	746	952	1136	1978	2757	3500	4220	4926	5621
	2.0	323	576	808	1024	1218	2104	2913	3684	4430	5160	5873
	2.5	350	618	861	1086	1290	2212	3051	3848	4615	5364	6097
	3.0	374	655	908	1142	1353	2308	3174	3992	4780	5544	6293
	3.5	394	688	950	1191	1411	2396	3285	4120	4925	5706	6475
	4.0	413	718	989	1237	1464	2476	3387	4244	5065	5862	6636

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	112	159	186	202	214	238	243	248	250	252	252
	1.5	155	234	286	324	353	430	459	476	485	486	490
	2.0	185	285	356	410	453	582	645	680	700	714	721
	2.5	208	326	411	478	533	710	804	860	895	918	938
	3.0	228	360	457	535	601	818	942	1020	1075	1110	1141
	3.5	245	389	497	585	659	914	1068	1168	1240	1290	1330
	4.0	260	416	533	630	711	998	1179	1300	1390	1458	1505
Flat terrain	1.0	139	229	302	367	426	672	873	1052	1215	1368	1512
	1.5	177	293	388	471	547	862	1122	1352	1560	1752	1939
	2.0	204	338	448	545	632	998	1299	1564	1805	2028	2240
	2.5	226	375	497	604	701	1108	1440	1736	2005	2250	2485
	3.0	245	406	538	654	760	1200	1560	1880	2170	2442	2695
	3.5	261	433	574	698	811	1282	1668	2008	2320	2610	2877
	4.0	276	458	607	738	858	1354	1764	2124	2450	2760	3045
Downhill 2%	1.0	166	304	433	560	684	1214	1689	2140	2580	3006	3430
	1.5	200	354	496	631	763	1328	1833	2308	2770	3222	3661
	2.0	224	393	545	688	826	1422	1950	2448	2930	3396	3850
	2.5	244	426	586	736	880	1502	2052	2572	3065	3546	4018
	3.0	262	453	622	778	928	1574	2145	2676	3190	3684	4165
	3.5	277	478	654	817	971	1638	2226	2776	3300	3810	4305
	4.0	291	501	683	851	1010	1698	2304	2868	3405	3924	4424

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	91	134	161	180	194	226	237	244	245	246	252
	1.5	123	190	238	274	303	388	429	452	465	474	483
	2.0	146	229	290	339	379	512	585	628	660	678	693
	2.5	164	260	332	390	440	610	711	780	825	864	889
	3.0	178	285	367	434	490	692	822	912	975	1026	1064
	3.5	191	308	397	471	535	766	918	1024	1105	1170	1218
	4.0	203	328	424	504	574	830	1002	1128	1225	1302	1365
Flat terrain	1.0	107	176	233	283	329	518	675	812	940	1056	1169
	1.5	136	226	299	363	422	666	867	1044	1205	1356	1498
	2.0	157	261	346	420	488	770	1002	1208	1395	1572	1736
	2.5	174	289	383	466	541	854	1113	1340	1550	1740	1925
	3.0	188	313	415	505	586	926	1206	1452	1680	1884	2086
	3.5	201	334	443	539	626	990	1287	1552	1790	2016	2226
	4.0	212	353	468	570	662	1046	1362	1640	1895	2130	2352
Downhill 2%	1.0	123	221	311	399	484	886	1221	1540	1850	2148	2443
	1.5	150	262	364	459	551	976	1335	1676	2000	2316	2625
	2.0	169	293	403	506	603	1050	1431	1788	2130	2460	2779
	2.5	185	319	436	545	648	1114	1512	1884	2235	2580	2912
	3.0	198	341	465	578	686	1170	1584	1968	2335	2688	3031
	3.5	210	360	490	609	721	1222	1650	2044	2425	2784	3136
	4.0	221	378	513	637	753	1268	1710	2116	2505	2874	3234

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	78	117	143	162	177	216	231	240	245	246	245
	1.5	104	163	206	239	267	356	402	432	450	462	469
	2.0	123	195	249	293	330	458	534	584	620	648	665
	2.5	137	220	283	335	380	538	642	712	765	804	840
	3.0	150	241	311	370	421	608	732	824	890	948	987
	3.5	160	260	337	401	457	666	810	920	1005	1074	1127
	4.0	170	276	359	429	490	720	882	1004	1105	1182	1253
Flat terrain	1.0	89	147	194	236	274	432	561	676	785	882	973
	1.5	113	188	249	302	351	554	723	868	1005	1128	1246
	2.0	131	217	287	350	406	642	834	1008	1160	1308	1442
	2.5	145	240	319	388	450	712	927	1116	1290	1452	1603
	3.0	156	260	345	420	488	772	1005	1208	1395	1572	1736
	3.5	167	278	368	448	521	824	1071	1292	1490	1680	1855
	4.0	176	293	389	474	551	870	1134	1364	1575	1776	1960
Downhill 2%	1.0	100	178	248	316	382	698	975	1228	1465	1698	1932
	1.5	122	213	293	369	441	776	1074	1340	1595	1848	2086
	2.0	139	239	327	409	486	842	1152	1436	1705	1962	2219
	2.5	152	261	355	442	524	896	1221	1516	1795	2064	2331
	3.0	163	280	380	471	557	944	1281	1588	1880	2160	2429
	3.5	173	296	401	497	587	988	1338	1656	1955	2244	2520
	4.0	182	311	421	520	613	1028	1389	1716	2025	2316	2604

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	52	82	103	120	134	178	201	216	225	234	238
	1.5	69	110	142	168	190	270	321	360	385	408	420
	2.0	80	130	169	201	229	334	408	460	505	540	567
	2.5	89	146	190	227	260	384	474	544	600	648	686
	3.0	97	159	208	249	286	426	531	612	680	738	784
	3.5	104	170	223	268	308	464	579	672	750	816	875
	4.0	110	181	237	286	328	496	624	724	810	888	952
Flat terrain	1.0	57	94	125	151	176	278	363	436	505	570	630
	1.5	72	120	160	194	226	356	465	560	645	726	805
	2.0	83	139	185	225	261	412	537	648	750	840	931
	2.5	92	154	205	249	289	458	597	720	830	936	1029
	3.0	100	167	221	270	313	496	645	780	900	1014	1120
	3.5	107	178	236	288	335	530	690	832	960	1080	1190
	4.0	112	188	250	304	354	560	729	880	1015	1140	1260
Downhill 2%	1.0	61	107	147	185	221	390	549	708	855	984	1113
	1.5	76	131	178	222	262	450	621	788	940	1080	1218
	2.0	87	148	201	249	294	496	678	852	1015	1164	1309
	2.5	95	162	220	271	320	534	726	908	1075	1230	1379
	3.0	103	174	236	290	342	568	768	956	1130	1290	1449
	3.5	109	185	250	308	362	598	804	1000	1180	1350	1512
	4.0	115	195	263	323	379	624	840	1040	1225	1398	1568

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	41	65	83	98	111	154	180	196	210	216	224
	1.5	54	87	113	134	153	224	273	308	335	360	378
	2.0	62	102	133	159	182	272	336	388	430	462	490
	2.5	69	114	149	179	206	310	387	448	500	546	581
	3.0	75	124	163	196	225	342	429	500	560	612	658
	3.5	80	133	175	210	243	370	468	548	615	672	728
	4.0	85	140	185	223	258	394	501	588	660	726	791
Flat terrain	1.0	44	72	96	117	136	216	279	340	390	438	483
	1.5	56	93	123	150	174	276	360	432	500	564	623
	2.0	64	107	142	174	202	320	417	500	580	654	721
	2.5	71	119	158	192	223	354	462	556	640	720	798
	3.0	77	128	171	208	242	384	498	604	695	780	861
	3.5	82	137	182	222	258	410	534	644	745	834	924
	4.0	86	145	193	234	273	432	564	680	785	882	973
Downhill 2%	1.0	46	80	110	137	163	282	393	500	605	714	812
	1.5	58	99	134	166	196	330	453	568	680	792	896
	2.0	66	112	152	188	221	368	498	624	740	858	966
	2.5	73	124	167	206	241	398	537	668	790	912	1029
	3.0	79	133	179	221	259	426	573	708	835	960	1078
	3.5	84	142	190	234	274	450	603	744	875	1002	1127
	4.0	88	149	200	246	288	472	630	776	915	1044	1169

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ AS drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 15.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.0	36	47	57	66	74	81	87	94	99	210	217
	1.5	47	62	76	88	99	109	118	127	135	336	350
	2.0	54	73	89	103	116	128	140	150	160	420	455
	2.5	60	81	99	116	130	144	157	169	181	492	532
	3.0	65	88	108	126	142	157	171	185	197	552	595
	3.5	70	94	116	135	152	169	184	198	212	606	651
	4.0	74	100	122	143	161	179	195	211	225	648	707
Flat terrain	1.0	38	51	63	74	83	93	102	110	118	384	420
	1.5	48	65	80	94	107	119	130	141	151	492	539
	2.0	56	75	93	109	124	137	150	163	175	564	623
	2.5	62	83	103	121	137	152	166	181	194	630	693
	3.0	67	90	111	131	148	165	181	195	210	678	749
	3.5	71	96	119	139	158	176	193	209	224	726	798
	4.0	75	102	126	147	167	186	203	221	237	768	847
Downhill 2%	1.0	40	55	68	82	94	105	117	128	138	588	672
	1.5	50	68	85	101	115	129	142	155	168	660	749
	2.0	57	78	97	115	131	146	161	176	189	720	812
	2.5	63	86	106	126	143	160	177	193	207	768	868
	3.0	68	93	115	136	154	172	190	206	223	810	910
	3.5	72	98	122	144	164	183	202	219	236	852	959
	4.0	76	104	129	152	173	193	212	230	248	888	994

Minimum considered pressure 0.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	60	101	130	151	168	212	228	236	245	246	245
	2.0	79	137	182	218	248	346	396	428	445	462	469
	2.5	92	162	218	264	304	442	525	576	615	642	665
	3.0	102	181	245	300	347	518	627	700	760	798	833
	3.5	111	198	269	330	384	580	711	808	880	936	980
	4.0	118	212	290	357	415	636	786	900	990	1056	1113
Flat terrain	1.5	66	120	167	209	248	408	540	656	765	864	952
	2.0	84	153	213	266	316	524	693	844	980	1104	1225
	2.5	96	176	245	307	365	604	801	976	1130	1278	1414
	3.0	106	194	271	340	403	670	888	1080	1255	1416	1568
	3.5	114	210	293	368	436	724	963	1168	1360	1536	1701
	4.0	122	223	312	392	465	774	1026	1248	1450	1638	1813
Downhill 2%	1.5	72	140	206	270	334	642	927	1176	1415	1650	1876
	2.0	89	169	244	317	387	718	1017	1284	1540	1788	2030
	2.5	100	190	273	352	427	778	1095	1376	1645	1902	2156
	3.0	110	207	296	381	461	830	1158	1456	1735	2004	2268
	3.5	118	222	317	406	490	876	1218	1524	1815	2094	2366
	4.0	125	235	335	428	516	916	1269	1588	1885	2172	2450

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.5	35	62	83	100	114	162	189	208	220	228	231
	2.0	46	81	110	136	158	238	291	332	360	384	399
	2.5	53	95	130	161	187	290	363	420	460	498	525
	3.0	58	106	145	180	211	332	420	488	545	594	630
	3.5	63	114	158	197	231	366	465	544	615	672	721
	4.0	67	122	169	211	248	396	507	596	670	738	798
Flat terrain	1.5	37	68	95	119	141	234	309	376	440	492	546
	2.0	47	86	121	151	180	298	396	484	560	636	700
	2.5	54	99	139	174	207	346	459	556	650	732	812
	3.0	60	110	154	193	229	382	507	616	720	810	896
	3.5	64	118	166	209	248	414	549	668	780	876	973
	4.0	69	126	176	222	264	442	585	716	830	936	1036
Downhill 2%	1.5	39	74	107	138	169	312	447	576	705	828	938
	2.0	49	92	131	167	203	362	510	648	785	918	1036
	2.5	55	104	148	189	227	402	558	708	850	984	1113
	3.0	61	114	161	206	248	434	600	756	905	1044	1176
	3.5	66	122	173	221	265	462	636	796	950	1098	1232
	4.0	70	130	184	234	281	488	669	836	995	1146	1288

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.5	26	46	62	75	88	130	159	176	190	204	210
	2.0	33	59	82	101	118	184	231	268	295	318	343
	2.5	38	69	95	118	139	220	282	328	370	402	434
	3.0	42	76	106	132	156	250	321	376	425	468	504
	3.5	45	83	115	144	170	274	354	420	475	522	567
	4.0	48	88	123	154	182	294	381	456	515	570	623
Flat terrain	1.5	27	49	68	86	102	168	225	272	315	360	399
	2.0	34	62	86	109	129	216	288	348	405	456	511
	2.5	39	71	100	126	149	248	330	404	470	528	588
	3.0	43	79	110	138	165	276	366	448	520	588	651
	3.5	46	85	119	150	178	298	396	484	560	636	707
	4.0	49	90	127	160	190	318	423	516	600	678	749
Downhill 2%	1.5	28	52	74	96	116	210	294	380	460	540	616
	2.0	35	64	92	118	141	248	345	436	525	606	693
	2.5	39	74	104	133	160	278	384	480	575	666	749
	3.0	43	81	115	146	175	302	414	516	615	708	805
	3.5	47	87	123	156	187	324	441	552	655	750	847
	4.0	50	92	131	166	199	342	465	580	685	786	889

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	20	36	49	60	70	108	132	152	170	180	189
	2.0	25	46	64	79	93	148	189	220	250	270	294
	2.5	29	53	74	92	109	176	225	268	305	336	364
	3.0	32	59	82	103	122	196	255	304	345	384	420
	3.5	35	64	89	112	132	216	279	336	380	426	462
	4.0	37	68	95	119	141	232	303	360	415	462	504
Flat terrain	1.5	20	38	53	66	78	130	174	212	245	276	308
	2.0	26	48	67	84	100	166	222	272	315	354	392
	2.5	30	55	77	97	115	192	255	312	365	408	455
	3.0	33	60	85	106	127	212	282	344	400	456	504
	3.5	35	65	92	115	137	230	306	372	435	492	546
	4.0	38	69	97	123	146	246	327	400	465	522	581
Downhill 2%	1.5	21	40	56	72	87	154	216	276	330	384	441
	2.0	26	49	70	89	107	186	255	320	385	444	504
	2.5	30	56	79	101	121	210	288	356	425	492	553
	3.0	33	62	87	110	133	228	312	388	460	528	595
	3.5	36	66	94	119	143	246	333	412	490	558	630
	4.0	38	70	100	126	151	260	351	436	515	588	665

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	17	30	41	50	59	92	117	136	150	162	175
	2.0	21	38	53	66	78	126	162	192	215	240	259
	2.5	24	44	62	78	91	148	192	228	260	288	315
	3.0	27	49	68	86	102	166	216	260	295	330	357
	3.5	29	53	74	94	111	182	237	284	325	366	399
	4.0	31	57	79	100	118	194	255	308	350	396	434
Flat terrain	1.5	17	31	44	55	65	108	144	176	205	234	259
	2.0	21	40	55	70	83	138	186	224	260	294	329
	2.5	25	45	64	80	96	160	213	260	305	342	378
	3.0	27	50	70	89	106	178	237	288	335	378	420
	3.5	29	54	76	96	114	192	255	312	365	408	455
	4.0	31	58	81	102	122	204	273	332	385	438	483
Downhill 2%	1.5	17	32	46	59	71	126	174	220	265	306	350
	2.0	22	40	58	73	88	152	210	260	310	360	406
	2.5	25	46	65	83	100	172	234	292	345	396	448
	3.0	27	51	72	91	110	188	255	316	375	432	483
	3.5	29	55	77	98	118	202	273	340	400	456	511
	4.0	31	58	82	105	125	214	291	360	420	480	539

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	11	20	27	34	40	64	81	96	110	120	133
	2.0	14	25	35	43	51	84	111	132	150	168	182
	2.5	16	28	40	50	60	98	129	156	180	198	217
	3.0	17	32	44	56	66	110	144	176	200	222	245
	3.5	18	34	48	60	72	120	156	188	220	246	273
	4.0	20	36	51	64	77	128	168	204	235	264	294
Flat terrain	1.5	11	20	28	35	42	70	93	116	135	150	168
	2.0	14	25	35	45	53	90	120	144	170	192	217
	2.5	16	29	41	51	61	104	138	168	195	222	245
	3.0	17	32	45	57	68	114	153	184	215	246	273
	3.5	19	34	49	62	73	124	165	200	235	264	294
	4.0	20	37	52	66	78	132	177	216	250	282	315
Downhill 2%	1.5	11	20	29	37	44	78	105	132	160	180	203
	2.0	14	26	37	46	55	96	129	160	190	216	245
	2.5	16	29	41	53	63	108	147	180	215	246	273
	3.0	17	32	46	58	69	118	159	200	235	264	301
	3.5	19	35	49	62	75	128	171	212	250	282	322
	4.0	20	37	52	66	79	136	183	224	265	300	336

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	8	15	21	26	31	50	66	80	90	102	112
	2.0	10	19	27	34	40	66	87	104	120	132	147
	2.5	12	22	31	39	46	76	102	124	140	162	175
	3.0	13	24	34	43	51	86	114	136	160	180	196
	3.5	14	26	37	46	56	92	123	148	175	192	217
	4.0	15	28	40	50	59	100	132	160	185	210	231
Flat terrain	1.5	8	15	22	27	33	54	72	88	105	120	133
	2.0	10	20	28	34	41	70	93	112	130	150	168
	2.5	12	22	31	40	47	80	108	132	150	174	189
	3.0	13	24	35	44	52	88	117	144	170	192	210
	3.5	14	26	37	47	56	96	129	156	180	204	231
	4.0	15	28	40	50	60	102	135	168	195	222	245
Downhill 2%	1.5	8	16	22	28	34	58	81	100	120	138	154
	2.0	11	20	28	35	42	72	99	124	145	168	182
	2.5	12	22	32	41	48	82	111	140	165	186	210
	3.0	13	25	35	45	53	90	123	152	180	204	224
	3.5	14	27	38	48	57	98	132	164	190	216	245
	4.0	15	28	40	51	61	104	141	172	205	228	259

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	111	161	189	206	217	238	246	248	250	252	252
	2.0	153	237	292	332	361	436	465	480	485	492	497
	2.5	181	289	364	422	466	596	657	688	705	720	728
	3.0	204	330	421	492	550	730	822	876	910	930	945
	3.5	223	364	468	551	620	846	969	1044	1095	1128	1155
	4.0	239	393	509	602	681	946	1101	1200	1265	1314	1351
Flat terrain	1.5	136	232	312	382	446	710	927	1120	1295	1458	1610
	2.0	174	297	399	489	571	912	1191	1436	1660	1866	2065
	2.5	200	343	461	566	660	1054	1377	1664	1920	2160	2387
	3.0	221	379	511	626	732	1170	1527	1844	2130	2400	2653
	3.5	239	410	553	678	792	1266	1656	2000	2310	2598	2870
	4.0	254	438	590	724	846	1352	1767	2136	2465	2778	3066
Downhill 2%	1.5	162	309	450	588	725	1298	1818	2312	2795	3270	3731
	2.0	195	360	513	661	804	1416	1968	2492	2995	3492	3976
	2.5	218	398	562	718	869	1514	2091	2640	3165	3678	4179
	3.0	238	430	604	767	925	1598	2199	2764	3310	3834	4354
	3.5	255	458	640	810	974	1674	2295	2880	3440	3978	4508
	4.0	269	483	673	850	1018	1742	2382	2984	3555	4110	4648

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	69	108	135	155	170	210	228	236	240	246	245
	2.0	92	149	191	226	253	344	393	424	445	456	469
	2.5	107	177	230	274	311	440	519	572	610	636	658
	3.0	120	199	261	313	357	516	618	692	745	792	819
	3.5	130	218	287	345	395	580	705	796	865	924	966
	4.0	139	234	310	373	428	634	777	888	970	1038	1099
Flat terrain	1.5	77	132	178	218	255	406	531	640	740	834	924
	2.0	98	169	227	279	326	522	681	824	950	1074	1183
	2.5	113	195	263	322	377	602	789	952	1100	1242	1372
	3.0	125	216	291	357	417	668	873	1056	1220	1374	1519
	3.5	135	233	315	386	452	724	948	1144	1325	1488	1645
	4.0	144	248	336	413	483	774	1011	1220	1415	1590	1757
Downhill 2%	1.5	85	157	223	286	347	642	909	1144	1370	1590	1806
	2.0	105	189	264	335	402	718	1002	1252	1495	1728	1953
	2.5	119	212	295	372	445	778	1077	1344	1595	1842	2079
	3.0	130	232	321	403	480	830	1143	1420	1685	1938	2184
	3.5	140	248	343	430	511	876	1200	1488	1760	2028	2282
	4.0	149	263	362	454	538	918	1251	1552	1835	2106	2366

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	51	83	106	123	138	184	207	220	230	234	238
	2.0	67	111	145	173	197	280	333	368	395	414	427
	2.5	78	131	172	207	237	348	423	480	520	558	581
	3.0	87	146	194	234	269	402	495	568	625	672	707
	3.5	94	160	212	257	296	446	555	640	710	768	819
	4.0	101	171	228	277	319	486	606	704	785	852	910
Flat terrain	1.5	55	95	128	158	184	294	384	464	535	606	665
	2.0	70	121	164	201	235	376	492	596	690	774	854
	2.5	81	140	189	232	272	436	570	688	795	894	987
	3.0	90	155	209	258	301	482	633	764	880	996	1099
	3.5	97	168	227	278	326	522	684	828	955	1074	1190
	4.0	103	179	242	298	348	558	732	884	1020	1152	1267
Downhill 2%	1.5	60	108	151	193	232	418	594	768	920	1062	1204
	2.0	74	132	183	230	275	478	666	848	1010	1164	1316
	2.5	84	149	206	258	307	526	726	916	1090	1248	1407
	3.0	92	163	225	281	333	566	777	972	1155	1320	1484
	3.5	99	176	241	301	356	602	819	1024	1210	1386	1554
	4.0	106	186	256	318	377	634	861	1072	1265	1446	1624

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	40	66	85	101	114	160	186	204	215	222	231
	2.0	52	87	115	138	159	232	282	320	350	372	392
	2.5	61	102	136	164	189	284	351	404	445	480	511
	3.0	67	114	152	185	213	324	405	472	525	570	609
	3.5	73	124	166	202	234	358	450	524	590	642	693
	4.0	78	133	178	217	251	388	489	576	645	708	763
Flat terrain	1.5	43	73	99	122	142	228	297	360	415	468	518
	2.0	54	94	126	155	181	290	381	460	530	600	665
	2.5	62	108	146	179	210	336	441	532	615	696	763
	3.0	69	119	161	198	232	372	489	588	680	768	847
	3.5	74	129	175	215	251	404	528	640	740	834	917
	4.0	79	138	186	229	268	430	564	684	790	888	980
Downhill 2%	1.5	45	81	113	142	171	300	423	540	660	774	875
	2.0	56	100	137	172	205	352	486	612	735	858	966
	2.5	64	113	156	194	231	390	534	668	800	924	1043
	3.0	70	124	170	213	251	422	573	716	850	984	1106
	3.5	76	134	183	228	269	450	609	756	895	1032	1162
	4.0	81	142	194	242	285	476	642	796	940	1080	1211

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.5	34	56	73	87	99	142	168	188	200	210	217
	2.0	44	74	97	118	135	202	249	284	315	336	357
	2.5	50	86	114	138	160	244	306	352	395	426	455
	3.0	56	96	128	155	180	276	348	408	460	498	539
	3.5	61	104	139	170	197	304	387	452	510	564	609
	4.0	65	111	149	182	211	328	417	492	555	612	665
Flat terrain	1.5	35	61	82	101	118	190	249	300	345	390	434
	2.0	45	78	105	129	151	242	318	384	445	498	553
	2.5	52	90	121	149	174	280	366	444	515	576	637
	3.0	57	99	134	165	193	310	408	492	570	642	707
	3.5	62	107	145	178	209	336	441	532	615	696	770
	4.0	66	114	155	190	223	358	471	568	660	738	819
Downhill 2%	1.5	37	66	92	115	138	240	336	428	515	606	693
	2.0	46	82	113	141	167	284	390	488	585	678	770
	2.5	53	93	128	159	189	318	432	536	640	738	833
	3.0	58	102	140	174	207	346	465	580	685	786	889
	3.5	63	110	151	188	222	368	495	616	725	834	938
	4.0	67	117	160	199	235	390	522	644	760	870	980

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	1.5	22	37	49	59	68	102	126	144	160	174	182
	2.0	28	48	64	78	91	140	177	204	230	252	273
	2.5	32	56	75	91	106	166	210	248	280	312	336
	3.0	36	62	83	102	119	186	237	280	320	354	385
	3.5	39	67	91	111	129	204	261	312	355	390	427
	4.0	41	72	97	118	138	218	282	336	380	426	462
Flat terrain	1.5	23	39	53	65	76	122	159	192	225	252	280
	2.0	29	50	67	83	97	156	204	248	285	324	357
	2.5	33	57	77	96	112	180	237	288	330	372	413
	3.0	36	63	86	106	124	200	261	316	365	414	455
	3.5	39	68	93	114	134	216	285	344	395	450	497
	4.0	42	73	99	122	143	230	303	368	425	480	525
Downhill 2%	1.5	23	41	57	71	84	144	195	248	295	342	392
	2.0	29	52	71	88	104	174	234	292	345	396	448
	2.5	33	59	80	100	118	196	264	324	385	438	497
	3.0	37	65	89	110	130	214	288	352	415	474	532
	3.5	40	70	95	118	139	230	306	376	445	504	567
	4.0	42	74	101	126	148	244	324	400	465	534	595

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	17	29	38	46	54	82	102	120	135	144	154
	2.0	22	37	50	62	71	110	141	168	190	210	224
	2.5	25	43	58	71	83	130	168	200	225	252	273
	3.0	28	48	65	79	93	146	189	224	255	288	308
	3.5	30	52	70	86	101	160	207	248	280	312	343
	4.0	32	56	75	92	108	172	222	264	305	336	371
Flat terrain	1.5	17	30	41	50	59	94	123	152	175	198	217
	2.0	22	38	52	64	75	120	159	192	225	252	280
	2.5	25	44	60	74	87	140	183	220	255	288	322
	3.0	28	49	67	82	96	154	204	244	285	318	357
	3.5	30	53	72	89	104	168	219	264	310	348	385
	4.0	32	56	76	94	111	178	234	284	330	372	413
Downhill 2%	1.5	18	31	43	54	64	108	147	184	215	252	280
	2.0	22	39	54	67	79	132	177	220	255	294	329
	2.5	26	45	62	77	90	148	198	244	290	330	371
	3.0	28	50	68	84	99	164	219	268	315	354	399
	3.5	30	54	73	90	107	176	234	284	335	384	427
	4.0	32	57	78	97	114	186	246	304	355	402	448

Minimum considered pressure 1.0 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	161	206	224	233	238	248	249	252	250	252	252
	2.0	236	331	383	414	435	478	489	496	495	498	504
	2.5	288	420	501	556	595	686	717	728	735	744	742
	3.0	329	490	596	672	728	872	927	956	970	978	987
	3.5	363	550	676	770	842	1042	1125	1168	1195	1206	1218
	4.0	393	601	746	856	942	1196	1311	1372	1410	1434	1449
Flat terrain	1.5	232	380	502	609	706	1112	1446	1740	2005	2256	2492
	2.0	296	487	644	781	906	1426	1854	2232	2580	2898	3199
	2.5	342	563	745	904	1048	1652	2148	2588	2985	3354	3703
	3.0	379	624	826	1002	1163	1832	2382	2868	3310	3726	4109
	3.5	410	676	894	1086	1260	1986	2583	3112	3590	4038	4459
	4.0	437	722	955	1159	1345	2122	2760	3324	3835	4314	4760
Downhill 2%	1.5	308	585	848	1074	1290	2296	3240	4152	5045	5922	6790
	2.0	359	658	935	1178	1408	2474	3465	4416	5340	6246	7140
	2.5	398	716	1006	1262	1505	2620	3648	4632	5585	6522	7434
	3.0	430	764	1067	1335	1590	2746	3807	4820	5800	6756	7693
	3.5	458	808	1122	1401	1664	2860	3951	4988	5990	6966	7924
	4.0	482	846	1171	1460	1732	2962	4080	5140	6165	7158	8134

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	108	154	181	198	210	236	243	248	250	252	252
	2.0	149	225	276	314	342	422	453	472	480	486	490
	2.5	177	273	342	395	438	568	633	668	690	708	714
	3.0	199	312	394	459	513	688	786	844	885	912	931
	3.5	218	344	437	513	577	792	918	1000	1055	1098	1127
	4.0	234	372	475	560	632	882	1035	1140	1215	1266	1309
Flat terrain	1.5	132	217	287	348	404	636	828	996	1150	1296	1428
	2.0	168	278	367	446	518	816	1062	1280	1475	1662	1834
	2.5	194	321	425	516	599	946	1230	1480	1710	1920	2121
	3.0	215	356	471	573	665	1048	1365	1644	1895	2130	2352
	3.5	233	385	510	620	720	1136	1479	1780	2055	2310	2555
	4.0	248	411	545	662	769	1214	1578	1900	2195	2472	2723
Downhill 2%	1.5	157	284	404	522	636	1136	1575	1996	2400	2802	3192
	2.0	189	333	465	590	712	1244	1713	2156	2585	3000	3409
	2.5	212	370	512	645	773	1332	1824	2288	2735	3168	3591
	3.0	232	401	551	691	825	1410	1923	2404	2865	3312	3752
	3.5	248	428	586	732	871	1478	2010	2508	2985	3444	3892
	4.0	263	452	616	768	912	1540	2088	2600	3090	3564	4018

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	82	123	149	168	183	220	234	240	245	246	252
	2.0	111	172	217	251	279	368	414	440	455	468	476
	2.5	131	206	263	308	346	476	552	600	635	660	679
	3.0	146	233	299	354	399	562	666	736	790	828	854
	3.5	159	256	330	391	444	636	762	852	920	972	1015
	4.0	171	276	356	424	483	700	846	956	1040	1104	1162
Flat terrain	1.5	95	156	207	251	291	460	597	720	830	936	1036
	2.0	121	200	265	322	374	590	768	924	1070	1200	1323
	2.5	140	231	307	373	432	682	888	1068	1235	1392	1533
	3.0	155	256	340	413	480	758	984	1188	1370	1542	1701
	3.5	167	278	368	447	520	820	1068	1288	1485	1668	1848
	4.0	178	296	392	478	555	876	1140	1372	1585	1782	1967
Downhill 2%	1.5	108	192	268	342	414	760	1053	1324	1585	1836	2086
	2.0	132	229	316	397	475	842	1155	1444	1720	1992	2254
	2.5	149	257	352	439	523	908	1239	1544	1835	2118	2387
	3.0	163	280	381	474	563	966	1311	1628	1935	2226	2506
	3.5	175	300	407	506	598	1016	1377	1708	2020	2322	2618
	4.0	186	317	430	533	629	1062	1434	1776	2100	2412	2709

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	66	100	125	143	158	200	219	232	235	240	245
	2.0	87	138	175	206	231	318	369	400	425	438	455
	2.5	102	163	210	249	282	400	477	532	570	600	630
	3.0	114	184	238	283	322	466	564	636	695	738	777
	3.5	124	201	261	311	356	522	639	728	800	858	903
	4.0	133	216	281	337	385	570	702	804	890	960	1015
Flat terrain	1.5	73	120	160	194	225	356	462	556	645	726	798
	2.0	93	154	205	249	289	456	594	716	825	930	1022
	2.5	108	178	236	287	334	528	687	828	955	1074	1183
	3.0	119	198	262	318	370	584	762	916	1060	1194	1316
	3.5	129	214	284	345	401	634	825	992	1150	1290	1428
	4.0	137	228	303	369	428	676	882	1060	1225	1380	1519
Downhill 2%	1.5	81	142	196	248	298	536	765	964	1150	1332	1505
	2.0	99	172	235	294	349	606	846	1060	1260	1452	1638
	2.5	113	194	263	327	388	662	915	1140	1350	1548	1743
	3.0	124	212	287	355	420	710	972	1208	1425	1638	1841
	3.5	133	227	307	379	448	750	1023	1268	1495	1710	1925
	4.0	142	241	325	401	472	788	1068	1320	1555	1782	2002

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	56	86	109	126	140	184	207	220	230	234	238
	2.0	73	117	150	177	200	282	333	368	395	414	427
	2.5	86	138	178	212	242	350	423	480	520	552	581
	3.0	95	155	201	240	275	404	495	568	625	672	707
	3.5	104	169	220	264	302	450	555	640	710	768	812
	4.0	111	181	237	284	326	490	609	704	785	852	910
Flat terrain	1.5	61	100	133	162	187	296	384	464	535	606	665
	2.0	77	128	170	207	240	380	495	596	690	774	854
	2.5	89	148	197	239	278	440	573	688	795	894	987
	3.0	99	164	218	265	308	486	633	764	880	990	1099
	3.5	107	178	236	287	334	528	687	828	955	1074	1190
	4.0	114	190	252	306	356	564	735	884	1020	1146	1267
Downhill 2%	1.5	66	115	158	199	238	422	597	768	920	1062	1197
	2.0	82	140	191	238	282	484	672	852	1015	1164	1309
	2.5	93	159	215	266	315	532	729	920	1090	1248	1400
	3.0	102	174	235	290	342	572	780	976	1155	1320	1484
	3.5	110	187	252	311	366	608	825	1028	1210	1386	1554
	4.0	117	198	267	329	387	640	864	1072	1265	1446	1617

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	37	58	75	89	101	142	168	188	200	210	217
	2.0	48	78	101	121	138	204	249	284	315	336	357
	2.5	56	91	119	142	164	246	306	352	395	426	455
	3.0	62	101	133	160	184	278	351	408	460	498	539
	3.5	67	110	145	175	201	308	387	456	510	558	602
	4.0	72	118	155	188	217	332	420	492	555	612	665
Flat terrain	1.5	39	64	85	104	121	190	249	300	345	390	434
	2.0	50	82	109	133	155	244	318	384	445	498	553
	2.5	57	95	126	154	179	282	369	444	515	576	637
	3.0	63	105	140	170	198	314	408	492	570	642	707
	3.5	68	114	151	185	214	340	441	532	615	696	763
	4.0	73	122	161	197	229	362	471	568	660	738	819
Downhill 2%	1.5	41	70	96	119	142	244	336	428	515	606	693
	2.0	51	87	118	146	172	288	393	492	585	678	770
	2.5	59	99	134	165	194	322	435	540	640	738	833
	3.0	65	109	147	181	212	348	468	580	685	786	889
	3.5	70	118	158	194	228	372	498	616	725	834	938
	4.0	74	125	168	206	242	394	525	648	760	870	980

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	29	46	60	71	81	118	144	160	175	186	196
	2.0	37	61	79	95	109	164	204	236	265	288	308
	2.5	43	71	93	112	129	196	246	288	325	354	385
	3.0	48	79	104	126	145	222	282	332	375	408	448
	3.5	52	86	113	137	158	244	309	364	415	456	497
	4.0	55	92	121	146	169	262	333	396	450	498	539
Flat terrain	1.5	30	50	66	80	93	148	192	232	270	300	336
	2.0	38	64	85	102	119	190	246	296	345	384	427
	2.5	44	73	97	118	138	218	285	344	395	450	497
	3.0	49	81	108	131	153	242	315	380	440	498	546
	3.5	53	88	117	142	166	262	342	412	475	534	595
	4.0	56	94	125	152	177	280	366	440	510	570	630
Downhill 2%	1.5	31	53	72	90	106	178	246	308	370	432	490
	2.0	39	66	89	110	130	214	291	360	430	492	560
	2.5	45	76	102	126	147	242	324	400	475	540	609
	3.0	49	84	112	138	161	264	351	432	510	582	658
	3.5	53	90	121	148	174	282	375	460	540	618	693
	4.0	57	96	128	158	184	300	396	488	570	654	728

Minimum considered pressure 1.0 bar

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	197	229	239	243	246	250	252	252	250	252	252
	2.0	309	400	440	461	472	492	498	500	500	504	504
	2.5	387	531	605	647	674	724	738	744	745	750	749
	3.0	449	636	742	809	853	946	972	984	990	996	994
	3.5	501	726	861	950	1013	1154	1200	1220	1230	1236	1239
	4.0	545	803	965	1077	1157	1352	1419	1448	1465	1476	1484
Flat terrain	1.5	339	556	734	890	1033	1626	2112	2544	2935	3300	3640
	2.0	434	713	942	1142	1325	2088	2715	3268	3770	4242	4683
	2.5	501	824	1089	1322	1534	2416	3141	3784	4365	4908	5418
	3.0	554	914	1208	1466	1701	2680	3486	4196	4845	5448	6013
	3.5	600	989	1309	1589	1844	2906	3780	4548	5250	5904	6517
	4.0	640	1056	1397	1696	1969	3104	4038	4860	5610	6306	6965
Downhill 2%	1.5	501	958	1351	1724	2085	3790	5409	6984	8535	10062	11578
	2.0	567	1053	1472	1869	2250	4034	5718	7344	8940	10512	12061
	2.5	620	1130	1573	1988	2386	4238	5973	7644	9280	10884	12467
	3.0	664	1197	1659	2092	2505	4416	6195	7908	9575	11208	12824
	3.5	702	1256	1736	2184	2610	4574	6393	8140	9840	11502	13139
	4.0	737	1310	1806	2267	2706	4718	6576	8352	10080	11766	13433

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	143	190	212	225	232	244	249	252	250	252	252
	2.0	205	296	350	386	410	464	483	488	495	498	497
	2.5	247	369	449	506	548	656	696	716	730	732	742
	3.0	280	427	527	602	660	822	894	928	950	966	973
	3.5	308	475	593	683	755	970	1071	1128	1165	1182	1197
	4.0	333	517	650	754	838	1102	1236	1312	1365	1398	1421
Flat terrain	1.5	193	317	419	509	590	930	1209	1456	1680	1890	2086
	2.0	246	406	538	653	758	1194	1554	1872	2160	2430	2681
	2.5	284	470	622	755	877	1382	1797	2164	2500	2808	3101
	3.0	315	520	689	838	972	1534	1995	2404	2775	3120	3444
	3.5	341	564	746	907	1053	1662	2163	2604	3005	3378	3731
	4.0	363	602	797	969	1125	1774	2310	2780	3210	3612	3983
Downhill 2%	1.5	246	461	668	864	1035	1828	2565	3276	3970	4650	5320
	2.0	290	525	746	952	1136	1978	2757	3500	4220	4926	5621
	2.5	323	576	808	1024	1218	2104	2913	3684	4430	5160	5873
	3.0	350	618	861	1086	1290	2212	3051	3848	4615	5364	6097
	3.5	374	655	908	1142	1353	2308	3174	3992	4780	5544	6293
	4.0	394	688	950	1191	1411	2396	3285	4120	4925	5706	6475

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	112	159	186	202	214	238	243	248	250	252	252
	2.0	155	234	286	324	353	430	459	476	485	486	490
	2.5	185	285	356	410	453	582	645	680	700	714	721
	3.0	208	326	411	478	533	710	804	860	895	918	938
	3.5	228	360	457	535	601	818	942	1020	1075	1110	1141
	4.0	245	389	497	585	659	914	1068	1168	1240	1290	1330
Flat terrain	1.5	139	229	302	367	426	672	873	1052	1215	1368	1512
	2.0	177	293	388	471	547	862	1122	1352	1560	1752	1939
	2.5	204	338	448	545	632	998	1299	1564	1805	2028	2240
	3.0	226	375	497	604	701	1108	1440	1736	2005	2250	2485
	3.5	245	406	538	654	760	1200	1560	1880	2170	2442	2695
	4.0	261	433	574	698	811	1282	1668	2008	2320	2610	2877
Downhill 2%	1.5	166	304	433	560	684	1214	1689	2140	2580	3006	3430
	2.0	200	354	496	631	763	1328	1833	2308	2770	3222	3661
	2.5	224	393	545	688	826	1422	1950	2448	2930	3396	3850
	3.0	244	426	586	736	880	1502	2052	2572	3065	3546	4018
	3.5	262	453	622	778	928	1574	2145	2676	3190	3684	4165
	4.0	277	478	654	817	971	1638	2226	2776	3300	3810	4305

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	91	134	161	180	194	226	237	244	245	246	252
	2.0	123	190	238	274	303	388	429	452	465	474	483
	2.5	146	229	290	339	379	512	585	628	660	678	693
	3.0	164	260	332	390	440	610	711	780	825	864	889
	3.5	178	285	367	434	490	692	822	912	975	1026	1064
	4.0	191	308	397	471	535	766	918	1024	1105	1170	1218
Flat terrain	1.5	107	176	233	283	329	518	675	812	940	1056	1169
	2.0	136	226	299	363	422	666	867	1044	1205	1356	1498
	2.5	157	261	346	420	488	770	1002	1208	1395	1572	1736
	3.0	174	289	383	466	541	854	1113	1340	1550	1740	1925
	3.5	188	313	415	505	586	926	1206	1452	1680	1884	2086
	4.0	201	334	443	539	626	990	1287	1552	1790	2016	2226
Downhill 2%	1.5	123	221	311	399	484	886	1221	1540	1850	2148	2443
	2.0	150	262	364	459	551	976	1335	1676	2000	2316	2625
	2.5	169	293	403	506	603	1050	1431	1788	2130	2460	2779
	3.0	185	319	436	545	648	1114	1512	1884	2235	2580	2912
	3.5	198	341	465	578	686	1170	1584	1968	2335	2688	3031
	4.0	210	360	490	609	721	1222	1650	2044	2425	2784	3136

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	78	117	143	162	177	216	231	240	245	246	245
	2.0	104	163	206	239	267	356	402	432	450	462	469
	2.5	123	195	249	293	330	458	534	584	620	648	665
	3.0	137	220	283	335	380	538	642	712	765	804	840
	3.5	150	241	311	370	421	608	732	824	890	948	987
	4.0	160	260	337	401	457	666	810	920	1005	1074	1127
Flat terrain	1.5	89	147	194	236	274	432	561	676	785	882	973
	2.0	113	188	249	302	351	554	723	868	1005	1128	1246
	2.5	131	217	287	350	406	642	834	1008	1160	1308	1442
	3.0	145	240	319	388	450	712	927	1116	1290	1452	1603
	3.5	156	260	345	420	488	772	1005	1208	1395	1572	1736
	4.0	167	278	368	448	521	824	1071	1292	1490	1680	1855
Downhill 2%	1.5	100	178	248	316	382	698	975	1228	1465	1698	1932
	2.0	122	213	293	369	441	776	1074	1340	1595	1848	2086
	2.5	139	239	327	409	486	842	1152	1436	1705	1962	2219
	3.0	152	261	355	442	524	896	1221	1516	1795	2064	2331
	3.5	163	280	380	471	557	944	1281	1588	1880	2160	2429
	4.0	173	296	401	497	587	988	1338	1656	1955	2244	2520

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 8.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	52	82	103	120	134	178	201	216	225	234	238
	2.0	69	110	142	168	190	270	321	360	385	408	420
	2.5	80	130	169	201	229	334	408	460	505	540	567
	3.0	89	146	190	227	260	384	474	544	600	648	686
	3.5	97	159	208	249	286	426	531	612	680	738	784
	4.0	104	170	223	268	308	464	579	672	750	816	875
Flat terrain	1.5	57	94	125	151	176	278	363	436	505	570	630
	2.0	72	120	160	194	226	356	465	560	645	726	805
	2.5	83	139	185	225	261	412	537	648	750	840	931
	3.0	92	154	205	249	289	458	597	720	830	936	1029
	3.5	100	167	221	270	313	496	645	780	900	1014	1120
	4.0	107	178	236	288	335	530	690	832	960	1080	1190
Downhill 2%	1.5	61	107	147	185	221	390	549	708	855	984	1113
	2.0	76	131	178	222	262	450	621	788	940	1080	1218
	2.5	87	148	201	249	294	496	678	852	1015	1164	1309
	3.0	95	162	220	271	320	534	726	908	1075	1230	1379
	3.5	103	174	236	290	342	568	768	956	1130	1290	1449
	4.0	109	185	250	308	362	598	804	1000	1180	1350	1512

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. lateral length (meters) at different inlet pressure and different slopes

PCJ™ LCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 12.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	1.5	41	65	83	98	111	154	180	196	210	216	224
	2.0	54	87	113	134	153	224	273	308	335	360	378
	2.5	62	102	133	159	182	272	336	388	430	462	490
	3.0	69	114	149	179	206	310	387	448	500	546	581
	3.5	75	124	163	196	225	342	429	500	560	612	658
	4.0	80	133	175	210	243	370	468	548	615	672	728
Flat terrain	1.5	44	72	96	117	136	216	279	340	390	438	483
	2.0	56	93	123	150	174	276	360	432	500	564	623
	2.5	64	107	142	174	202	320	417	500	580	654	721
	3.0	71	119	158	192	223	354	462	556	640	720	798
	3.5	77	128	171	208	242	384	498	604	695	780	861
	4.0	82	137	182	222	258	410	534	644	745	834	924
Downhill 2%	1.5	46	80	110	137	163	282	393	500	605	714	812
	2.0	58	99	134	166	196	330	453	568	680	792	896
	2.5	66	112	152	188	221	368	498	624	740	858	966
	3.0	73	124	167	206	241	398	537	668	790	912	1029
	3.5	79	133	179	221	259	426	573	708	835	960	1078
	4.0	84	142	190	234	274	450	603	744	875	1002	1127

Minimum considered pressure 1.0 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	60	101	130	151	168	212	228	236	245	246	245
	2.5	79	137	182	218	248	346	396	428	445	462	469
	3.0	92	162	218	264	304	442	525	576	615	642	665
	3.5	102	181	245	300	347	518	627	700	760	798	833
	4.0	111	198	269	330	384	580	711	808	880	936	980
Flat terrain	2.0	66	120	167	209	248	408	540	656	765	864	952
	2.5	84	153	213	266	316	524	693	844	980	1104	1225
	3.0	96	176	245	307	365	604	801	976	1130	1278	1414
	3.5	106	194	271	340	403	670	888	1080	1255	1416	1568
	4.0	114	210	293	368	436	724	963	1168	1360	1536	1701
Downhill 2%	2.0	72	140	206	270	334	642	927	1176	1415	1650	1876
	2.5	89	169	244	317	387	718	1017	1284	1540	1788	2030
	3.0	100	190	273	352	427	778	1095	1376	1645	1902	2156
	3.5	110	207	296	381	461	830	1158	1456	1735	2004	2268
	4.0	118	222	317	406	490	876	1218	1524	1815	2094	2366

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	35	62	83	100	114	162	189	208	220	228	231
	2.5	46	81	110	136	158	238	291	332	360	384	399
	3.0	53	95	130	161	187	290	363	420	460	498	525
	3.5	58	106	145	180	211	332	420	488	545	594	630
	4.0	63	114	158	197	231	366	465	544	615	672	721
Flat terrain	2.0	37	68	95	119	141	234	309	376	440	492	546
	2.5	47	86	121	151	180	298	396	484	560	636	700
	3.0	54	99	139	174	207	346	459	556	650	732	812
	3.5	60	110	154	193	229	382	507	616	720	810	896
	4.0	64	118	166	209	248	414	549	668	780	876	973
Downhill 2%	2.0	39	74	107	138	169	312	447	576	705	828	938
	2.5	49	92	131	167	203	362	510	648	785	918	1036
	3.0	55	104	148	189	227	402	558	708	850	984	1113
	3.5	61	114	161	206	248	434	600	756	905	1044	1176
	4.0	66	122	173	221	265	462	636	796	950	1098	1232

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	26	46	62	75	88	130	159	176	190	204	210
	2.5	33	59	82	101	118	184	231	268	295	318	343
	3.0	38	69	95	118	139	220	282	328	370	402	434
	3.5	42	76	106	132	156	250	321	376	425	468	504
	4.0	45	83	115	144	170	274	354	420	475	522	567
Flat terrain	2.0	27	49	68	86	102	168	225	272	315	360	399
	2.5	34	62	86	109	129	216	288	348	405	456	511
	3.0	39	71	100	126	149	248	330	404	470	528	588
	3.5	43	79	110	138	165	276	366	448	520	588	651
	4.0	46	85	119	150	178	298	396	484	560	636	707
Downhill 2%	2.0	28	52	74	96	116	210	294	380	460	540	616
	2.5	35	64	92	118	141	248	345	436	525	606	693
	3.0	39	74	104	133	160	278	384	480	575	666	749
	3.5	43	81	115	146	175	302	414	516	615	708	805
	4.0	47	87	123	156	187	324	441	552	655	750	847

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	20	36	49	60	70	108	132	152	170	180	189
	2.5	25	46	64	79	93	148	189	220	250	270	294
	3.0	29	53	74	92	109	176	225	268	305	336	364
	3.5	32	59	82	103	122	196	255	304	345	384	420
	4.0	35	64	89	112	132	216	279	336	380	426	462
Flat terrain	2.0	20	38	53	66	78	130	174	212	245	276	308
	2.5	26	48	67	84	100	166	222	272	315	354	392
	3.0	30	55	77	97	115	192	255	312	365	408	455
	3.5	33	60	85	106	127	212	282	344	400	456	504
	4.0	35	65	92	115	137	230	306	372	435	492	546
Downhill 2%	2.0	21	40	56	72	87	154	216	276	330	384	441
	2.5	26	49	70	89	107	186	255	320	385	444	504
	3.0	30	56	79	101	121	210	288	356	425	492	553
	3.5	33	62	87	110	133	228	312	388	460	528	595
	4.0	36	66	94	119	143	246	333	412	490	558	630

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	17	30	41	50	59	92	117	136	150	162	175
	2.5	21	38	53	66	78	126	162	192	215	240	259
	3.0	24	44	62	78	91	148	192	228	260	288	315
	3.5	27	49	68	86	102	166	216	260	295	330	357
	4.0	29	53	74	94	111	182	237	284	325	366	399
Flat terrain	2.0	17	31	44	55	65	108	144	176	205	234	259
	2.5	21	40	55	70	83	138	186	224	260	294	329
	3.0	25	45	64	80	96	160	213	260	305	342	378
	3.5	27	50	70	89	106	178	237	288	335	378	420
	4.0	29	54	76	96	114	192	255	312	365	408	455
Downhill 2%	2.0	17	32	46	59	71	126	174	220	265	306	350
	2.5	22	40	58	73	88	152	210	260	310	360	406
	3.0	25	46	65	83	100	172	234	292	345	396	448
	3.5	27	51	72	91	110	188	255	316	375	432	483
	4.0	29	55	77	98	118	202	273	340	400	456	511

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	111	161	189	206	217	238	246	248	250	252	252
	2.5	153	237	292	332	361	436	465	480	485	492	497
	3.0	181	289	364	422	466	596	657	688	705	720	728
	3.5	204	330	421	492	550	730	822	876	910	930	945
	4.0	223	364	468	551	620	846	969	1044	1095	1128	1155
Flat terrain	2.0	136	232	312	382	446	710	927	1120	1295	1458	1610
	2.5	174	297	399	489	571	912	1191	1436	1660	1866	2065
	3.0	200	343	461	566	660	1054	1377	1664	1920	2160	2387
	3.5	221	379	511	626	732	1170	1527	1844	2130	2400	2653
	4.0	239	410	553	678	792	1266	1656	2000	2310	2598	2870
Downhill 2%	2.0	162	309	450	588	725	1298	1818	2312	2795	3270	3731
	2.5	195	360	513	661	804	1416	1968	2492	2995	3492	3976
	3.0	218	398	562	718	869	1514	2091	2640	3165	3678	4179
	3.5	238	430	604	767	925	1598	2199	2764	3310	3834	4354
	4.0	255	458	640	810	974	1674	2295	2880	3440	3978	4508

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	69	108	135	155	170	210	228	236	240	246	245
	2.5	92	149	191	226	253	344	393	424	445	456	469
	3.0	107	177	230	274	311	440	519	572	610	636	658
	3.5	120	199	261	313	357	516	618	692	745	792	819
	4.0	130	218	287	345	395	580	705	796	865	924	966
Flat terrain	2.0	77	132	178	218	255	406	531	640	740	834	924
	2.5	98	169	227	279	326	522	681	824	950	1074	1183
	3.0	113	195	263	322	377	602	789	952	1100	1242	1372
	3.5	125	216	291	357	417	668	873	1056	1220	1374	1519
	4.0	135	233	315	386	452	724	948	1144	1325	1488	1645
Downhill 2%	2.0	85	157	223	286	347	642	909	1144	1370	1590	1806
	2.5	105	189	264	335	402	718	1002	1252	1495	1728	1953
	3.0	119	212	295	372	445	778	1077	1344	1595	1842	2079
	3.5	130	232	321	403	480	830	1143	1420	1685	1938	2184
	4.0	140	248	343	430	511	876	1200	1488	1760	2028	2282

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	51	83	106	123	138	184	207	220	230	234	238
	2.5	67	111	145	173	197	280	333	368	395	414	427
	3.0	78	131	172	207	237	348	423	480	520	558	581
	3.5	87	146	194	234	269	402	495	568	625	672	707
	4.0	94	160	212	257	296	446	555	640	710	768	819
Flat terrain	2.0	55	95	128	158	184	294	384	464	535	606	665
	2.5	70	121	164	201	235	376	492	596	690	774	854
	3.0	81	140	189	232	272	436	570	688	795	894	987
	3.5	90	155	209	258	301	482	633	764	880	996	1099
	4.0	97	168	227	278	326	522	684	828	955	1074	1190
Downhill 2%	2.0	60	108	151	193	232	418	594	768	920	1062	1204
	2.5	74	132	183	230	275	478	666	848	1010	1164	1316
	3.0	84	149	206	258	307	526	726	916	1090	1248	1407
	3.5	92	163	225	281	333	566	777	972	1155	1320	1484
	4.0	99	176	241	301	356	602	819	1024	1210	1386	1554

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	40	66	85	101	114	160	186	204	215	222	231
	2.5	52	87	115	138	159	232	282	320	350	372	392
	3.0	61	102	136	164	189	284	351	404	445	480	511
	3.5	67	114	152	185	213	324	405	472	525	570	609
	4.0	73	124	166	202	234	358	450	524	590	642	693
Flat terrain	2.0	43	73	99	122	142	228	297	360	415	468	518
	2.5	54	94	126	155	181	290	381	460	530	600	665
	3.0	62	108	146	179	210	336	441	532	615	696	763
	3.5	69	119	161	198	232	372	489	588	680	768	847
	4.0	74	129	175	215	251	404	528	640	740	834	917
Downhill 2%	2.0	45	81	113	142	171	300	423	540	660	774	875
	2.5	56	100	137	172	205	352	486	612	735	858	966
	3.0	64	113	156	194	231	390	534	668	800	924	1043
	3.5	70	124	170	213	251	422	573	716	850	984	1106
	4.0	76	134	183	228	269	450	609	756	895	1032	1162

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	34	56	73	87	99	142	168	188	200	210	217
	2.5	44	74	97	118	135	202	249	284	315	336	357
	3.0	50	86	114	138	160	244	306	352	395	426	455
	3.5	56	96	128	155	180	276	348	408	460	498	539
	4.0	61	104	139	170	197	304	387	452	510	564	609
Flat terrain	2.0	35	61	82	101	118	190	249	300	345	390	434
	2.5	45	78	105	129	151	242	318	384	445	498	553
	3.0	52	90	121	149	174	280	366	444	515	576	637
	3.5	57	99	134	165	193	310	408	492	570	642	707
	4.0	62	107	145	178	209	336	441	532	615	696	770
Downhill 2%	2.0	37	66	92	115	138	240	336	428	515	606	693
	2.5	46	82	113	141	167	284	390	488	585	678	770
	3.0	53	93	128	159	189	318	432	536	640	738	833
	3.5	58	102	140	174	207	346	465	580	685	786	889
	4.0	63	110	151	188	222	368	495	616	725	834	938

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	161	206	224	233	238	248	249	252	250	252	252
	2.5	236	331	383	414	435	478	489	496	495	498	504
	3.0	288	420	501	556	595	686	717	728	735	744	742
	3.5	329	490	596	672	728	872	927	956	970	978	987
	4.0	363	550	676	770	842	1042	1125	1168	1195	1206	1218
Flat terrain	2.0	232	380	502	609	706	1112	1446	1740	2005	2256	2492
	2.5	296	487	644	781	906	1426	1854	2232	2580	2898	3199
	3.0	342	563	745	904	1048	1652	2148	2588	2985	3354	3703
	3.5	379	624	826	1002	1163	1832	2382	2868	3310	3726	4109
	4.0	410	676	894	1086	1260	1986	2583	3112	3590	4038	4459
Downhill 2%	2.0	308	585	848	1074	1290	2296	3240	4152	5045	5922	6790
	2.5	359	658	935	1178	1408	2474	3465	4416	5340	6246	7140
	3.0	398	716	1006	1262	1505	2620	3648	4632	5585	6522	7434
	3.5	430	764	1067	1335	1590	2746	3807	4820	5800	6756	7693
	4.0	458	808	1122	1401	1664	2860	3951	4988	5990	6966	7924

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	108	154	181	198	210	236	243	248	250	252	252
	2.5	149	225	276	314	342	422	453	472	480	486	490
	3.0	177	273	342	395	438	568	633	668	690	708	714
	3.5	199	312	394	459	513	688	786	844	885	912	931
	4.0	218	344	437	513	577	792	918	1000	1055	1098	1127
Flat terrain	2.0	132	217	287	348	404	636	828	996	1150	1296	1428
	2.5	168	278	367	446	518	816	1062	1280	1475	1662	1834
	3.0	194	321	425	516	599	946	1230	1480	1710	1920	2121
	3.5	215	356	471	573	665	1048	1365	1644	1895	2130	2352
	4.0	233	385	510	620	720	1136	1479	1780	2055	2310	2555
Downhill 2%	2.0	157	284	404	522	636	1136	1575	1996	2400	2802	3192
	2.5	189	333	465	590	712	1244	1713	2156	2585	3000	3409
	3.0	212	370	512	645	773	1332	1824	2288	2735	3168	3591
	3.5	232	401	551	691	825	1410	1923	2404	2865	3312	3752
	4.0	248	428	586	732	871	1478	2010	2508	2985	3444	3892

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	82	123	149	168	183	220	234	240	245	246	252
	2.5	111	172	217	251	279	368	414	440	455	468	476
	3.0	131	206	263	308	346	476	552	600	635	660	679
	3.5	146	233	299	354	399	562	666	736	790	828	854
	4.0	159	256	330	391	444	636	762	852	920	972	1015
Flat terrain	2.0	95	156	207	251	291	460	597	720	830	936	1036
	2.5	121	200	265	322	374	590	768	924	1070	1200	1323
	3.0	140	231	307	373	432	682	888	1068	1235	1392	1533
	3.5	155	256	340	413	480	758	984	1188	1370	1542	1701
	4.0	167	278	368	447	520	820	1068	1288	1485	1668	1848
Downhill 2%	2.0	108	192	268	342	414	760	1053	1324	1585	1836	2086
	2.5	132	229	316	397	475	842	1155	1444	1720	1992	2254
	3.0	149	257	352	439	523	908	1239	1544	1835	2118	2387
	3.5	163	280	381	474	563	966	1311	1628	1935	2226	2506
	4.0	175	300	407	506	598	1016	1377	1708	2020	2322	2618

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	66	100	125	143	158	200	219	232	235	240	245
	2.5	87	138	175	206	231	318	369	400	425	438	455
	3.0	102	163	210	249	282	400	477	532	570	600	630
	3.5	114	184	238	283	322	466	564	636	695	738	777
	4.0	124	201	261	311	356	522	639	728	800	858	903
Flat terrain	2.0	73	120	160	194	225	356	462	556	645	726	798
	2.5	93	154	205	249	289	456	594	716	825	930	1022
	3.0	108	178	236	287	334	528	687	828	955	1074	1183
	3.5	119	198	262	318	370	584	762	916	1060	1194	1316
	4.0	129	214	284	345	401	634	825	992	1150	1290	1428
Downhill 2%	2.0	81	142	196	248	298	536	765	964	1150	1332	1505
	2.5	99	172	235	294	349	606	846	1060	1260	1452	1638
	3.0	113	194	263	327	388	662	915	1140	1350	1548	1743
	3.5	124	212	287	355	420	710	972	1208	1425	1638	1841
	4.0	133	227	307	379	448	750	1023	1268	1495	1710	1925

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	56	86	109	126	140	184	207	220	230	234	238
	2.5	73	117	150	177	200	282	333	368	395	414	427
	3.0	86	138	178	212	242	350	423	480	520	552	581
	3.5	95	155	201	240	275	404	495	568	625	672	707
	4.0	104	169	220	264	302	450	555	640	710	768	812
Flat terrain	2.0	61	100	133	162	187	296	384	464	535	606	665
	2.5	77	128	170	207	240	380	495	596	690	774	854
	3.0	89	148	197	239	278	440	573	688	795	894	987
	3.5	99	164	218	265	308	486	633	764	880	990	1099
	4.0	107	178	236	287	334	528	687	828	955	1074	1190
Downhill 2%	2.0	66	115	158	199	238	422	597	768	920	1062	1197
	2.5	82	140	191	238	282	484	672	852	1015	1164	1309
	3.0	93	159	215	266	315	532	729	920	1090	1248	1400
	3.5	102	174	235	290	342	572	780	976	1155	1320	1484
	4.0	110	187	252	311	366	608	825	1028	1210	1386	1554

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 0.5 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	197	229	239	243	246	250	252	252	250	252	252
	2.5	309	400	440	461	472	492	498	500	500	504	504
	3.0	387	531	605	647	674	724	738	744	745	750	749
	3.5	449	636	742	809	853	946	972	984	990	996	994
	4.0	501	726	861	950	1013	1154	1200	1220	1230	1236	1239
Flat terrain	2.0	339	556	734	890	1033	1626	2112	2544	2935	3300	3640
	2.5	434	713	942	1142	1325	2088	2715	3268	3770	4242	4683
	3.0	501	824	1089	1322	1534	2416	3141	3784	4365	4908	5418
	3.5	554	914	1208	1466	1701	2680	3486	4196	4845	5448	6013
	4.0	600	989	1309	1589	1844	2906	3780	4548	5250	5904	6517
Downhill 2%	2.0	501	958	1351	1724	2085	3790	5409	6984	8535	10062	11578
	2.5	567	1053	1472	1869	2250	4034	5718	7344	8940	10512	12061
	3.0	620	1130	1573	1988	2386	4238	5973	7644	9280	10884	12467
	3.5	664	1197	1659	2092	2505	4416	6195	7908	9575	11208	12824
	4.0	702	1256	1736	2184	2610	4574	6393	8140	9840	11502	13139

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.2 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	143	190	212	225	232	244	249	252	250	252	252
	2.5	205	296	350	386	410	464	483	488	495	498	497
	3.0	247	369	449	506	548	656	696	716	730	732	742
	3.5	280	427	527	602	660	822	894	928	950	966	973
	4.0	308	475	593	683	755	970	1071	1128	1165	1182	1197
Flat terrain	2.0	193	317	419	509	590	930	1209	1456	1680	1890	2086
	2.5	246	406	538	653	758	1194	1554	1872	2160	2430	2681
	3.0	284	470	622	755	877	1382	1797	2164	2500	2808	3101
	3.5	315	520	689	838	972	1534	1995	2404	2775	3120	3444
	4.0	341	564	746	907	1053	1662	2163	2604	3005	3378	3731
Downhill 2%	2.0	246	461	668	864	1035	1828	2565	3276	3970	4650	5320
	2.5	290	525	746	952	1136	1978	2757	3500	4220	4926	5621
	3.0	323	576	808	1024	1218	2104	2913	3684	4430	5160	5873
	3.5	350	618	861	1086	1290	2212	3051	3848	4615	5364	6097
	4.0	374	655	908	1142	1353	2308	3174	3992	4780	5544	6293

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	112	159	186	202	214	238	243	248	250	252	252
	2.5	155	234	286	324	353	430	459	476	485	486	490
	3.0	185	285	356	410	453	582	645	680	700	714	721
	3.5	208	326	411	478	533	710	804	860	895	918	938
	4.0	228	360	457	535	601	818	942	1020	1075	1110	1141
Flat terrain	2.0	139	229	302	367	426	672	873	1052	1215	1368	1512
	2.5	177	293	388	471	547	862	1122	1352	1560	1752	1939
	3.0	204	338	448	545	632	998	1299	1564	1805	2028	2240
	3.5	226	375	497	604	701	1108	1440	1736	2005	2250	2485
	4.0	245	406	538	654	760	1200	1560	1880	2170	2442	2695
Downhill 2%	2.0	166	304	433	560	684	1214	1689	2140	2580	3006	3430
	2.5	200	354	496	631	763	1328	1833	2308	2770	3222	3661
	3.0	224	393	545	688	826	1422	1950	2448	2930	3396	3850
	3.5	244	426	586	736	880	1502	2052	2572	3065	3546	4018
	4.0	262	453	622	778	928	1574	2145	2676	3190	3684	4165

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	91	134	161	180	194	226	237	244	245	246	252
	2.5	123	190	238	274	303	388	429	452	465	474	483
	3.0	146	229	290	339	379	512	585	628	660	678	693
	3.5	164	260	332	390	440	610	711	780	825	864	889
	4.0	178	285	367	434	490	692	822	912	975	1026	1064
Flat terrain	2.0	107	176	233	283	329	518	675	812	940	1056	1169
	2.5	136	226	299	363	422	666	867	1044	1205	1356	1498
	3.0	157	261	346	420	488	770	1002	1208	1395	1572	1736
	3.5	174	289	383	466	541	854	1113	1340	1550	1740	1925
	4.0	188	313	415	505	586	926	1206	1452	1680	1884	2086
Downhill 2%	2.0	123	221	311	399	484	886	1221	1540	1850	2148	2443
	2.5	150	262	364	459	551	976	1335	1676	2000	2316	2625
	3.0	169	293	403	506	603	1050	1431	1788	2130	2460	2779
	3.5	185	319	436	545	648	1114	1512	1884	2235	2580	2912
	4.0	198	341	465	578	686	1170	1584	1968	2335	2688	3031

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HCNL drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	78	117	143	162	177	216	231	240	245	246	245
	2.5	104	163	206	239	267	356	402	432	450	462	469
	3.0	123	195	249	293	330	458	534	584	620	648	665
	3.5	137	220	283	335	380	538	642	712	765	804	840
	4.0	150	241	311	370	421	608	732	824	890	948	987
Flat terrain	2.0	89	147	194	236	274	432	561	676	785	882	973
	2.5	113	188	249	302	351	554	723	868	1005	1128	1246
	3.0	131	217	287	350	406	642	834	1008	1160	1308	1442
	3.5	145	240	319	388	450	712	927	1116	1290	1452	1603
	4.0	156	260	345	420	488	772	1005	1208	1395	1572	1736
Downhill 2%	2.0	100	178	248	316	382	698	975	1228	1465	1698	1932
	2.5	122	213	293	369	441	776	1074	1340	1595	1848	2086
	3.0	139	239	327	409	486	842	1152	1436	1705	1962	2219
	3.5	152	261	355	442	524	896	1221	1516	1795	2064	2331
	4.0	163	280	380	471	557	944	1281	1588	1880	2160	2429

Minimum considered pressure 1.5 bar
Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

PCJ™ HF on-line bubbler

Compact pressure-compensated high-flow on-line emitter (bubbler), designed to deliver controlled, high-volume water application for trees and permanent crops.
Ideal for applications requiring localized irrigation with higher discharge rates, ensuring uniform and efficient water distribution.



Benefits & Features

Uniform water distribution	Ensures stable and precise flow regulation across a wide pressure range, delivering uniform water application even in variable topographies and long irrigation lines.
Prevents drainage (LCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution.
Long-lasting, high clogging resistance	Designed with large flow passages to handle high discharge rates while maintaining reliable performance. The flow path geometry promotes continuous flushing of debris during operation, ensuring stable emitter performance even under varying water qualities. Water is drawn from the center of the flow stream, further minimizing suspended particle ingress.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to tree spacing and irrigation layout. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation. The emitter must be operated with an outlet accessory to prevent splashing. Available with a barbed outlet for connection to a micro-tube, or with a cylindrical (press-fit) outlet for connection to distribution accessories such as "Spider" assemblies. When used as a stand-alone emitter, a dedicated deflector cap must be installed to prevent splashing and ensure proper water application. The deflector cap can be factory-installed or fitted in the field onto emitters with a cylindrical (press-fit) outlet.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies.
- Ideal for irrigation of trees, orchards and permanent crops with large root zones.



Specifications

- Pressure-compensated operating range: according to bubbler model (see tables below).
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- Designed with large flow passages for high discharge rates and enhanced clogging resistance.
- Insertable into thick-wall PE pipes: 0.90, 1.00 and 1.20 mm.
- Injection-molded emitter with ultra-low coefficient of variation (CV) and pressure-compensating diaphragm for consistent performance.
- High UV resistance and fully compatible with standard agricultural nutrients and fertilizers.
- Available outlet configurations: straight 3 mm barbed connection, straight 4 mm barbed connection and press-fit (nipple).

Bubblers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
20.0	1.0 - 4.0	1.4 x 1.1	2.0	20.0	0	130/120	Orange	Black
25.0		1.4 x 1.1 + 0.4 x 2.1	2.0	25.0	0	130/120	Orange	Light gray
30.0		1.4 x 1.1 + 0.7 x 2.1	2.0	30.0	0	130/120	Orange	Brown
35.0		1.4 x 1.1 + 1.0 x 2.1	2.0	35.0	0	130/120	Orange	Light blue
40.0	1.3 - 4.0	1.4 x 1.1 + 1.0 x 2.6	2.0	40.0	0	130/120	Orange	Blue



* Within working pressure range.

PCJ™ HF LCNL bubblers nominal shut-off pressure: 0.12 bar, applicable to all flow rates. Is identified by its base and upper body color code and by the rings around the barbed water inlet connector.

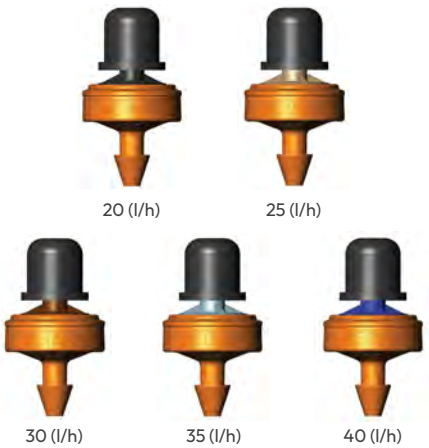
Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Kd (minor losses) – insertion barb in the distribution pipe

PE pipe	Inner diameter (mm)	Kd
12/4	9.80	1.65
16/4	13.20	0.39
20/4	17.00	0.13
25/4	21.20	0.10

Blank dripline	Inner diameter (mm)	Kd
12009 - 12010	10.60	1.61
16010 - 16012	14.20	0.37
20010 - 20012	17.50	0.12

Kd: A barbed inlet connector inside the pipe creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.



Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PCJ™ HF bubblers (straight barb 3 and 4 mm outlet)	13000	57 x 28 x 27	14.4	32	114 x 114 x 112	470
PCJ™ HF bubblers (nipple outlet)	12000		13.7			448
PCJ™-HF bubblers + assembled cap	9500		13.4			438

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
PCJ™ HF bubbler	PCJ BUB

Additional features	
No added	-
Anti-drain	LCNL

Flow rate (l/h)	
20.0	20.0L/H
25.0	25.0L/H
30.0	30.0L/H
35.0	35.0L/H
40.0	40.0L/H

Outlet type	
Straight barb 3 mm	BRB3
Straight barb 4 mm	BRB4
Nipple (press-fit)	NIP
Nipple+cap assembled	NIP+CAP

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	13000/CA
	9500/CA

PCJ BUB LCNL 25.0L/H NIP+CAP 500/BAG

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^x$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including PCJ™ HF bubbler (featured in this document), the emmiter exponent X is equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual bubbler flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated bubbler model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the bubbler behaves as a non-pressure-compensated emitter, and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated emmiters will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and, most importantly, the structural integrity of the pipe and its associated connections.

In LCNL bubblers, the flow rate remains zero until the pressure exceeds the minimum working pressure.
As the pressure within the dripline decreases below the minimum working pressure, the flow rate gradually decreases until it reaches the shut-off pressure. When the pressure falls below the shut-off pressure, the flow rate returns to zero.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	12	21	28	34	40	62	78	92	105	114	126
	2.5	16	27	37	45	52	82	105	128	145	162	175
	3.0	18	31	43	52	61	96	126	148	170	192	210
	3.5	20	35	47	58	68	108	141	168	190	216	238
	4.0	22	38	51	62	73	118	153	184	210	234	259
Flat terrain	2.0	12	22	29	36	43	68	90	108	125	144	161
	2.5	16	28	38	46	54	88	114	140	160	180	203
	3.0	18	32	43	54	63	102	132	160	185	210	231
	3.5	20	35	48	59	69	112	147	180	205	234	259
	4.0	22	38	52	64	75	122	159	192	225	252	280
Downhill 2%	2.0	13	22	31	38	45	76	102	128	150	174	196
	2.5	16	28	38	48	56	94	126	152	180	204	231
	3.0	18	32	44	54	64	106	141	172	205	234	259
	3.5	20	36	49	60	71	116	156	188	220	252	280
	4.0	22	38	52	65	77	126	165	204	240	270	301

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 25 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	11	18	25	30	35	56	72	84	95	102	112
	2.5	14	24	32	39	46	72	93	112	130	144	154
	3.0	16	27	37	46	53	84	111	132	150	168	182
	3.5	17	30	41	50	59	94	123	148	170	186	210
	4.0	19	33	44	54	64	102	132	160	185	204	224
Flat terrain	2.0	11	19	26	32	37	60	78	96	110	126	140
	2.5	14	24	32	40	47	76	99	120	140	162	175
	3.0	16	28	38	46	54	88	117	140	165	186	203
	3.5	17	30	41	51	60	98	129	156	180	204	224
	4.0	19	33	45	55	65	106	138	168	195	222	245
Downhill 2%	2.0	11	19	26	33	39	64	87	108	130	144	168
	2.5	14	24	34	42	49	80	108	132	155	174	196
	3.0	16	28	38	47	56	92	123	148	175	198	224
	3.5	17	31	42	52	61	100	135	164	190	216	245
	4.0	19	33	46	56	66	108	144	176	205	234	259

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 30 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	10	16	22	27	32	50	63	76	85	96	105
	2.5	12	21	28	35	41	64	84	100	115	126	140
	3.0	14	24	33	41	47	76	99	120	135	150	168
	3.5	15	27	37	45	53	84	111	132	150	168	189
	4.0	17	29	40	49	57	92	120	144	165	186	203
Flat terrain	2.0	10	17	23	28	33	54	72	84	100	114	126
	2.5	12	21	29	36	42	68	90	108	125	144	161
	3.0	14	24	34	42	48	78	102	124	145	162	182
	3.5	15	27	37	46	54	86	114	140	160	180	203
	4.0	17	29	40	50	58	94	123	148	175	198	217
Downhill 2%	2.0	10	17	23	30	35	58	78	96	115	132	147
	2.5	12	22	29	37	43	72	96	116	135	156	175
	3.0	14	25	34	42	50	82	108	132	155	174	196
	3.5	16	27	37	46	55	90	120	144	170	192	217
	4.0	17	30	40	50	59	96	129	156	180	204	231

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 35 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	9	15	20	25	29	46	60	68	80	90	98
	2.5	11	19	26	32	37	60	78	92	105	120	133
	3.0	13	22	30	37	43	70	90	108	125	138	154
	3.5	14	24	33	41	48	76	99	120	140	156	168
	4.0	15	26	36	44	52	84	108	132	150	168	189
Flat terrain	2.0	9	15	21	26	30	48	63	76	90	102	112
	2.5	11	19	26	33	38	62	81	100	115	132	147
	3.0	13	22	31	38	44	72	93	112	130	150	168
	3.5	14	24	34	42	49	78	105	124	145	162	182
	4.0	15	26	36	45	53	86	111	136	160	180	196
Downhill 2%	2.0	9	16	22	26	31	52	69	88	100	114	133
	2.5	11	20	27	34	39	64	87	104	125	144	161
	3.0	13	22	31	38	45	74	99	120	140	162	175
	3.5	14	25	34	42	49	82	108	132	155	174	196
	4.0	15	27	37	46	53	88	117	140	165	186	210

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 40 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	8	14	19	23	27	42	54	64	75	84	91
	2.5	10	18	24	30	34	54	72	84	100	108	119
	3.0	12	20	28	34	40	64	84	100	115	126	140
	3.5	13	22	31	38	44	70	93	112	130	144	161
	4.0	14	24	33	41	48	76	99	120	140	156	175
Flat terrain	2.0	8	14	19	23	28	44	60	72	85	96	105
	2.5	10	18	24	30	35	58	75	92	105	120	133
	3.0	12	20	28	34	40	66	87	104	120	138	154
	3.5	13	22	31	38	45	72	96	116	135	150	168
	4.0	14	24	33	41	48	78	102	124	145	162	182
Downhill 2%	2.0	8	14	20	24	29	48	63	80	95	108	119
	2.5	10	18	25	30	36	60	78	96	115	132	147
	3.0	12	21	28	35	41	68	90	108	130	144	161
	3.5	13	23	31	38	45	74	99	120	140	162	175
	4.0	14	24	34	42	49	80	105	128	150	174	189

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	21	34	44	54	61	92	114	132	145	156	168
	2.5	27	44	58	70	81	124	156	184	205	228	245
	3.0	31	52	68	82	95	146	186	220	250	276	301
	3.5	35	57	76	92	106	164	210	248	285	312	343
	4.0	37	62	82	100	116	180	231	272	310	348	378
Flat terrain	2.0	22	36	47	58	68	108	141	168	195	222	245
	2.5	27	46	61	74	86	138	180	216	250	282	308
	3.0	32	53	70	86	100	158	207	248	290	324	357
	3.5	35	58	78	95	111	176	228	276	320	360	399
	4.0	38	63	85	103	120	190	249	300	345	390	427
Downhill 2%	2.0	22	38	51	63	74	124	168	208	250	288	329
	2.5	28	47	64	78	92	150	201	248	295	336	378
	3.0	32	54	73	90	105	170	228	280	330	372	420
	3.5	35	60	80	98	115	186	249	304	355	408	455
	4.0	38	64	86	106	124	200	264	324	380	432	483

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 25 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	18	30	39	47	54	82	102	120	130	144	154
	2.5	23	39	51	62	71	110	138	164	185	204	224
	3.0	27	45	59	72	83	128	165	196	220	246	266
	3.5	30	50	66	80	93	144	186	220	250	276	301
	4.0	32	54	71	87	101	158	201	240	275	306	336
Flat terrain	2.0	19	31	41	50	59	94	123	148	170	192	210
	2.5	24	40	53	65	75	120	156	188	215	246	273
	3.0	27	46	61	74	87	138	180	216	250	282	315
	3.5	30	51	68	82	96	152	198	240	275	312	343
	4.0	33	55	73	90	104	164	216	260	300	336	371
Downhill 2%	2.0	19	32	44	54	64	106	141	176	210	240	273
	2.5	24	41	55	67	79	130	174	212	250	288	322
	3.0	28	47	63	77	90	146	195	240	280	318	357
	3.5	31	52	69	85	99	160	213	260	305	348	385
	4.0	33	56	75	91	107	172	228	280	325	372	413

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 30 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	16	27	35	42	49	74	93	108	120	132	140
	2.5	21	34	46	55	64	98	126	148	170	186	203
	3.0	24	40	53	64	74	116	147	176	200	222	245
	3.5	27	44	59	71	83	130	165	200	225	252	273
	4.0	29	48	64	78	90	140	183	216	250	276	301
Flat terrain	2.0	17	28	37	45	52	84	108	132	150	174	189
	2.5	21	35	47	58	67	106	138	168	195	216	238
	3.0	24	41	55	66	77	122	159	192	225	252	280
	3.5	27	45	60	74	86	136	177	216	250	276	308
	4.0	29	49	65	79	93	148	192	232	270	300	336
Downhill 2%	2.0	17	29	39	48	56	92	126	156	185	210	238
	2.5	21	36	49	60	70	114	153	188	220	252	280
	3.0	25	42	56	69	80	130	171	212	245	282	315
	3.5	27	46	62	75	88	142	189	232	270	306	343
	4.0	29	50	67	82	95	154	201	248	290	330	364

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 35 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	15	24	32	38	44	68	87	100	115	126	133
	2.5	19	31	41	50	58	90	114	136	155	174	189
	3.0	22	36	48	58	68	106	135	160	185	204	224
	3.5	24	40	53	65	75	118	153	180	205	234	252
	4.0	26	44	58	70	82	128	165	196	225	252	280
Flat terrain	2.0	15	25	34	41	48	76	99	120	140	156	175
	2.5	19	32	43	52	61	96	126	152	175	198	217
	3.0	22	37	49	60	70	112	144	176	205	228	252
	3.5	24	41	55	66	78	124	162	196	225	252	280
	4.0	26	44	59	72	84	134	174	212	245	276	301
Downhill 2%	2.0	15	26	35	43	51	84	111	140	165	192	210
	2.5	19	33	44	54	63	102	138	168	200	228	252
	3.0	22	38	50	62	72	118	156	188	220	252	280
	3.5	25	42	56	68	80	128	171	208	245	276	308
	4.0	27	45	60	74	86	138	183	224	260	294	329

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 40 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	14	22	29	35	41	62	81	92	105	114	126
	2.5	17	29	38	46	54	84	108	128	145	162	175
	3.0	20	34	44	54	62	98	126	148	170	192	210
	3.5	22	37	49	60	70	108	141	168	190	216	238
	4.0	24	40	53	65	75	118	153	184	210	234	259
Flat terrain	2.0	14	23	31	38	44	70	90	108	125	144	161
	2.5	18	30	39	48	56	88	117	140	160	180	203
	3.0	20	34	46	55	64	102	135	160	185	210	231
	3.5	22	38	50	62	71	114	147	180	205	234	259
	4.0	24	41	54	66	77	122	159	192	225	252	280
Downhill 2%	2.0	14	24	32	39	46	76	102	128	150	174	196
	2.5	18	30	40	50	58	94	126	152	180	204	231
	3.0	20	34	46	57	66	108	141	172	205	234	259
	3.5	23	38	51	62	73	118	156	192	220	252	280
	4.0	24	41	55	67	79	126	168	204	240	270	301

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 20 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	30	48	63	74	85	122	147	168	180	192	203
	2.5	39	64	83	100	115	172	213	248	275	300	315
	3.0	45	74	98	118	136	206	258	304	340	372	399
	3.5	50	83	109	132	152	232	294	344	390	426	462
	4.0	54	90	119	144	166	256	324	384	435	480	518
Flat terrain	2.0	31	52	70	85	98	156	204	244	285	318	350
	2.5	40	67	89	108	126	200	261	312	365	408	448
	3.0	46	77	103	125	146	230	300	364	420	474	518
	3.5	51	86	114	138	161	256	333	404	465	522	581
	4.0	55	92	123	150	175	278	360	436	505	564	623
Downhill 2%	2.0	33	56	76	95	112	190	261	332	395	462	525
	2.5	41	70	95	117	137	228	309	384	455	528	595
	3.0	47	80	108	133	156	256	345	424	505	576	651
	3.5	52	88	118	146	171	280	375	460	545	624	700
	4.0	56	95	128	157	184	300	399	492	575	660	742

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 25 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	26	42	55	66	75	110	135	152	170	180	189
	2.5	34	56	73	88	101	152	192	220	250	270	287
	3.0	39	65	85	103	119	182	231	268	305	336	357
	3.5	44	72	95	115	133	204	261	308	345	384	413
	4.0	47	78	104	126	145	224	285	340	385	426	462
Flat terrain	2.0	27	45	61	74	85	136	177	212	245	276	308
	2.5	35	58	77	94	109	174	225	272	315	354	392
	3.0	40	67	89	109	126	200	261	316	365	408	455
	3.5	44	74	99	120	140	222	291	348	405	456	504
	4.0	48	80	107	130	152	240	315	380	435	492	546
Downhill 2%	2.0	28	48	65	81	96	162	222	276	330	384	441
	2.5	36	60	82	100	118	194	264	324	385	444	504
	3.0	41	69	93	114	134	220	294	364	430	492	553
	3.5	45	76	102	126	147	240	321	392	460	528	595
	4.0	48	82	110	135	158	258	342	420	490	564	630

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 30 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	23	38	50	59	68	100	123	144	155	168	182
	2.5	30	50	65	79	91	138	174	204	225	252	266
	3.0	35	58	76	92	107	164	207	244	275	306	329
	3.5	39	64	85	103	119	184	234	276	315	348	378
	4.0	42	70	92	112	130	202	258	304	345	384	420
Flat terrain	2.0	24	40	54	66	76	120	159	192	220	246	273
	2.5	31	52	68	84	97	154	201	244	280	318	350
	3.0	36	60	79	97	113	178	234	280	325	366	406
	3.5	39	66	88	107	125	198	258	312	360	408	448
	4.0	43	71	95	116	135	214	279	336	390	438	483
Downhill 2%	2.0	25	43	58	71	84	142	192	240	290	336	378
	2.5	32	54	72	89	104	172	231	284	340	390	434
	3.0	36	61	82	101	119	194	258	320	375	432	483
	3.5	40	68	91	111	130	212	282	348	405	462	518
	4.0	43	73	98	120	140	228	303	368	435	492	553

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 35 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0	6.0	7.0
Uphill 2%	2.0	21	35	46	54	62	94	114	132	145	162	168
	2.5	27	45	59	72	83	126	159	188	210	234	252
	3.0	32	53	70	84	97	150	192	224	255	282	308
	3.5	35	58	77	94	109	168	216	256	290	318	350
	4.0	38	64	84	102	118	184	237	280	320	354	385
Flat terrain	2.0	22	37	49	59	69	110	144	172	200	228	252
	2.5	28	47	62	76	88	140	183	220	255	288	315
	3.0	32	54	72	88	102	162	210	256	295	330	364
	3.5	36	60	80	97	113	180	234	284	325	366	406
	4.0	38	65	86	105	122	194	255	304	355	396	441
Downhill 2%	2.0	23	38	52	64	76	126	171	216	255	294	336
	2.5	28	48	65	80	94	154	207	256	300	348	392
	3.0	33	55	74	91	107	174	234	284	335	384	434
	3.5	36	61	82	101	118	190	255	312	365	414	462
	4.0	39	66	88	108	127	206	273	332	390	444	497

Minimum considered pressure 1.5 bar

Max. dripline length (meter) at different inlet pressure and different slopes

PCJ™ HF Bubblers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 40 l/h

	Distance between drippers (meter)											
	Inlet pressure (bar)	**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**
Uphill 2%	2.0	20	32	42	50	58	86	108	124	140	150	161
	2.5	25	42	55	66	77	118	150	176	195	216	238
	3.0	29	48	64	78	90	138	177	208	235	264	287
	3.5	32	54	71	86	100	156	198	236	270	300	329
	4.0	35	58	77	94	109	170	219	260	295	330	357
Flat terrain	2.0	20	34	45	54	63	100	132	160	185	210	231
	2.5	26	43	57	70	81	128	168	204	235	264	294
	3.0	30	50	66	81	94	148	195	236	270	306	336
	3.5	33	55	73	90	104	164	216	260	300	336	371
	4.0	35	59	79	97	112	178	234	280	325	366	406
Downhill 2%	2.0	21	35	47	58	69	116	156	196	230	270	301
	2.5	26	44	59	74	86	140	189	232	275	312	350
	3.0	30	51	68	84	98	160	213	260	305	348	392
	3.5	33	56	75	92	108	174	231	284	335	378	420
	4.0	36	60	81	99	116	188	249	304	355	402	448

Minimum considered pressure 1.5 bar

Button and Pot on-line drippers

On-line non-pressure-compensated dripper, designed for simple and flexible irrigation in greenhouses, nurseries pots and container applications.
Provides a cost-effective solution where pressure variations are limited and system simplicity is preferred.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance even under challenging water quality conditions through a self-cleaning labyrinth that continuously flushes debris during operation. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, helping to minimize suspended particle ingress and maintain consistent performance.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including flat, straight barbed or press-fit connections, supporting flexible system design and compatibility with "Spider" assemblies. Flow rate is color-coded for quick identification and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Open field · Orchards · Protected crops

- Suitable for on-surface installation.
- Delivers stable hydraulic performance in flat terrain and slightly sloping fields.
- Ideal for irrigation in greenhouses, nurseries, pots and container applications.



Specifications

- Maximum operating pressure: 2.0 bar.
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with enhanced clogging resistance and stable hydraulic performance.
- Insertable into thick-wall PE pipes: 0.90, 1.00 and 1.20 mm.
- Injection-molded dripper with low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Compliant with ISO 9261 international standards.
- Button dripper: barbed inlet connection for direct insertion into the distribution pipe.
- Pot dripper: tapered threaded outlet for connection to a 3 mm ID micro-tube.

Drippers technical data

Button dripper

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
2.0	0.98 x 0.89 x 50	2.0	0.662	0.48	130/120	Red	Black
3.0	1.05 x 0.95 x 50	2.0	0.993	0.48	130/120	Blue	Black
4.0	1.27 x 1.20 x 50	2.0	1.325	0.48	130/120	Black	Black
8.0	1.55 x 1.55 x 50	2.0	2.649	0.48	130/120	Green	Black

* Nominal flow rate at 1.0 bar.



Pot dripper

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)	Base color code	Upper body color code
2.0	0.98 x 0.89 x 50	2.0	0.662	0.48	130/120	Red	Black
4.0	1.27 x 1.20 x 50	2.0	1.325	0.48	130/120	Black	Black
8.0	1.55 x 1.55 x 50	2.0	2.649	0.48	130/120	Green	Black

* Nominal flow rate at 1.0 bar.



Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Kd (minor losses) – insertion barb in the distribution pipe

PE pipe	Inner diameter (mm)	Kd
12/4	9.80	1.65
16/4	13.20	0.39
20/4	17.00	0.13
25/4	21.20	0.10

Blank dripline	Inner diameter (mm)	Kd
12009 - 12010	10.60	1.61
16010 - 16012	14.20	0.37
20010 - 20012	17.50	0.12



Button dripper flat outlet | Button dripper 3 mm barb outlet | Button dripper nipple outlet

Kd: A barbed inlet connector installed inside the pipe creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Drippers package data (on carton box)

Button dripper	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
Flat outlet	10000	57 x 28 x 27	13.0	32	114 x 114 x 112	427
Barb outlet	9500		10.4			344
Nipple outlet	8500		12.0			395

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.

Pot dripper	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
Flat outlet	10000	57 x 28 x 27	13.0	32	114 x 114 x 112	427
Nipple outlet	8500		12.0			395

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Button dripper	BUTTON

Flow rate (l/h)	
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H
8.0	8.0L/H

Outlet type	
Flat	FLT
Barb 3 mm	BRB3
Nipple	NIP

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	10000/CA
	9500/CA
	8500/CA

BUTTON 4.0L/H NIP 100/BAG

Catalog description example

Product name	
Pot dripper	POT

Flow rate (l/h)	
2.0	2.0L/H
4.0	4.0L/H
8.0	8.0L/H

Outlet type	
Flat	FLT
Nipple	NIP

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	10000/CA
	8500/CA

POT 2.0L/H FLT 50/BAG

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Button drippers flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
Button drippers	2.00	0.92	1.29	1.56	1.80	2.00	2.18	2.35	2.51	2.65	2.79
	3.00	1.38	1.93	2.35	2.69	3.00	3.27	3.52	3.76	3.98	4.18
	4.00	1.85	2.58	3.13	3.60	4.00	4.37	4.70	5.01	5.31	5.58
	8.00	3.69	5.15	6.26	7.19	8.00	8.73	9.40	10.02	10.61	11.16

* Nominal flow rate at 1.0 bar.

Pot drippers flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
Pot drippers	2.00	0.92	1.29	1.56	1.80	2.00	2.18	2.35	2.51	2.65	2.79
	4.00	1.85	2.58	3.13	3.60	4.00	4.37	4.70	5.01	5.31	5.58
	8.00	3.69	5.15	6.26	7.19	8.00	8.73	9.40	10.02	10.61	11.16

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	45	69	86	97	113	132	140
Uphill	1%	48	78	101	118	146	198	235
Flat terrain	0	52	87	117	143	188	297	415
Downhill	-1%	55	96	132	166	228	399	615
	-2%	58	104	147	189	269	204	155

Max. dripline length (meters) at different slopes - 10% flow variation

Button drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 3.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	36	57	71	82	98	123	135
Uphill	1%	38	62	80	95	120	168	210
Flat terrain	0	40	68	90	110	146	231	325
Downhill	-1%	42	73	100	124	170	291	440
	-2%	43	78	108	137	194	354	175

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 4.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	30	49	62	72	87	114	130
Uphill	1%	32	52	68	81	104	150	190
Flat terrain	0	33	56	75	92	122	192	270
Downhill	-1%	34	60	82	101	138	234	350
	-2%	36	63	88	111	155	276	440

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 8.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	20	33	43	51	65	90	110
Uphill	1%	21	35	46	55	71	105	140
Flat terrain	0	21	36	48	59	78	126	175
Downhill	-1%	22	38	51	63	86	141	210
	-2%	22	39	53	67	92	159	245

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	69	96	112	121	132	144	145
Uphill	1%	78	118	145	166	197	246	270
Flat terrain	0	87	142	187	226	296	462	645
Downhill	-1%	96	165	227	284	396	717	360
	-2%	104	187	267	345	212	153	150

Max. dripline length (meters) at different slopes - 10% flow variation

Button drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 3.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	56	82	97	108	122	138	145
Uphill	1%	62	95	119	138	168	219	250
Flat terrain	0	67	109	144	174	228	357	500
Downhill	-1%	72	123	168	209	288	507	790
	-2%	77	137	191	245	350	165	150

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 4.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	48	72	86	98	113	132	140
Uphill	1%	52	81	102	120	147	198	235
Flat terrain	0	56	91	120	145	191	300	415
Downhill	-1%	59	101	137	170	231	402	615
	-2%	63	110	152	194	273	201	155

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 8.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	33	50	63	73	89	114	130
Uphill	1%	34	54	70	83	105	150	190
Flat terrain	0	36	59	77	94	123	192	270
Downhill	-1%	37	63	84	104	140	234	350
	-2%	39	67	91	114	156	279	440

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	90	117	129	135	141	147	150
Uphill	1%	108	157	188	209	237	273	285
Flat terrain	0	127	207	272	330	431	678	940
Downhill	-1%	145	256	358	456	650	345	310
	-2%	163	306	449	175	158	150	145

Due to lateral filling time and flushing effectiveness it is not recommended to exceed 800 meters lateral length

Max. dripline length (meters) at different slopes - 10% flow variation

Button drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 3.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
	2%	75	103	118	126	135	144	150
Uphill	1%	86	129	158	180	210	255	275
Flat terrain	0	98	160	210	255	333	522	730
Downhill	-1%	109	189	261	330	462	849	330
	-2%	119	218	314	409	174	153	145

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 4.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
Uphill	2%	66	93	108	118	129	141	145
	1%	73	112	139	159	191	240	265
Flat terrain	0	81	133	175	212	278	435	605
Downhill	-1%	89	153	210	264	366	657	390
	-2%	96	173	245	317	461	156	150

Max. dripline length (meters) at different slopes - 10% flow variation

Button and Pot drippers • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 8.0 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)							
	Slope	**0.25**	**0.50**	**0.75**	**1.00**	**1.50**	**3.00**	**5.00**
Uphill	2%	46	68	83	94	110	132	140
	1%	49	77	97	114	141	192	230
Flat terrain	0	52	86	113	137	179	282	390
Downhill	-1%	56	94	128	158	215	372	570
	-2%	58	102	142	179	252	468	160

CapiNet™ on-line dripper

On-line non-pressure-compensated dripper designed for precise irrigation in pots and container crops.
Enables accurate water delivery directly to the required place while simplifying installation and system layout.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The filtration area prevents suspended particles from entering the dripper. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Precise water delivery	The integrated drop-leading design directs water accurately to the required place, improving irrigation efficiency and reducing water losses.
Designed stake for stable positioning	The specially designed stake enables secure positioning in pots, beds and containers conditions. It can be installed vertically or at a 45° angle, ensuring stable placement without the need for additional accessories.
Simplified installation	No connectors are required to connect the dripper to the distribution line, enabling fast and efficient installation.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation.
- For irrigation in greenhouses, nurseries, pots and container applications.
- Designed for precise water delivery in protected crop environments.



Specifications

- Maximum operating pressure: 2.0 bar.
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with enhanced clogging resistance and stable hydraulic performance.
- Insertable into thick-wall PE pipes: 1.00 and 1.20 mm.
- Injection-molded dripper with low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm^2)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.95	0.76 x 0.70 x 21	5.0	0.630	0.49	130/120
2.75	0.76 x 0.70 x 11	5.0	0.890	0.49	130/120



* Nominal flow rate at 1.0 bar.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
20 cm length	3000	27 x 56 x 25	13.8	32	114 x 114 x 112	453
40 cm length		27 x 56 x 25	27.4	32		885
60 cm length		27 x 62 x 27	40.9	32		1318
80 cm length		27 x 113 x 28	54.4	16		880
100 cm length		27 x 113 x 28	67.9	16		1096



*Values shown are average weights and may vary due to injection tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

The final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
CapiNet™	CAPINET

Flow rate (l/h)	
1.95	1.95L/H
2.75	2.75L/H

CapiNet™ length (cm)	
20	20CM
40	40CM
60	60CM
80	80CM
100	100CM

Emitters per package	
3000	3000/CA

CAPINET 1.95L/H 60CM 3000/CA

Catalog description example

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

CapiNet™ drippers flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
CapiNet™ drippers	1.95	0.88	1.24	1.52	1.75	1.95	2.13	2.30	2.45	2.60	2.73
	2.75	1.25	1.76	2.14	2.47	2.75	3.01	3.24	3.46	3.67	3.86

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 1.95 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	11	20	28	35	41	47	52	56	60	64
Uphill	1%	11	21	29	37	44	50	56	62	67	72
Flat terrain	0	11	21	30	38	46	53	61	67	74	80
Downhill	-1%	11	22	31	40	49	57	65	73	80	87
	-2%	11	22	32	42	51	60	69	78	86	94

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 1.95 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	23	39	51	61	69	76	83	87	92	96
Uphill	1%	24	41	56	68	78	88	97	104	112	118
Flat terrain	0	24	43	60	74	88	100	112	123	133	144
Downhill	-1%	25	46	64	81	97	112	127	141	154	167
	-2%	26	48	68	87	106	123	141	158	175	191

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 1.95 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	39	61	76	87	96	103	108	113	116	120
Uphill	1%	41	67	87	104	118	130	140	150	158	166
Flat terrain	0	44	74	100	122	143	161	179	196	212	228
Downhill	-1%	46	81	111	140	167	192	216	241	265	288
	-2%	48	87	122	157	190	223	255	287	319	351

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 1.95 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	54	81	97	108	116	121	125	128	131	133
Uphill	1%	59	94	120	140	157	170	181	192	201	208
Flat terrain	0	64	109	146	179	209	236	262	286	311	333
Downhill	-1%	68	122	170	216	259	301	342	382	423	463
	-2%	73	135	195	253	311	369	428	222	180	169

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 12/4 • ID 9.8 mm • Kd 1.65 • Flow rate 2.75 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	9	16	23	28	34	38	43	47	50	54
Uphill	1%	9	16	23	30	36	41	46	50	55	59
Flat terrain	0	9	17	24	31	37	43	48	54	59	64
Downhill	-1%	9	17	25	32	39	45	51	58	63	69
	-2%	9	17	25	33	40	47	54	60	67	73

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 16/4 • ID 13.2 mm • Kd 0.39 • Flow rate 2.75 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	18	32	42	51	59	65	70	75	80	84
Uphill	1%	19	33	45	55	64	73	80	86	93	99
Flat terrain	0	19	35	48	60	71	80	90	98	107	115
Downhill	-1%	20	36	51	64	77	88	99	110	121	131
	-2%	20	38	53	68	82	95	108	121	133	146

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 20/4 • ID 17.0 mm • Kd 0.13 • Flow rate 2.75 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	**0.10**	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	32	51	64	75	84	90	96	101	105	109
	1%	33	55	72	86	98	109	118	127	135	142
Flat terrain	0	35	59	80	98	115	130	144	158	170	183
Downhill	-1%	36	64	88	109	130	149	168	186	204	221
	-2%	38	67	95	120	145	169	192	215	239	261

Max. dripline length (meters) at different slopes - 10% flow variation

CapiNet™ dripper • On PE pipe 25/4 • ID 21.2 mm • Kd 0.10 • Flow rate 2.75 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)										
	Slope	**0.10**	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	44	69	85	96	105	111	116	120	123	126
	1%	48	77	100	118	133	146	157	167	176	184
Flat terrain	0	51	87	117	143	167	190	210	230	248	267
Downhill	-1%	54	96	133	167	200	231	262	291	321	350
	-2%	57	104	148	190	232	274	315	356	398	439

Arrow on-line drippers

On-line non-pressure-compensated dripper with integrated drop-leading stake, designed for precise water delivery in pots, grow bags and container applications.
Functions as a key component in multi-outlet irrigation systems, ensuring accurate and uniform water distribution at each irrigation point.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies with pressure, following pressure-dependent flow characteristics that enable flexible system design under specific field conditions. A low exponent (X) allows improved irrigation uniformity and enables longer dripline lengths under similar operating conditions.
Long-lasting, high clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The filtration area prevents suspended particles from entering the dripper. The TurboNet™ labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Precise water delivery	The drop-leading design directs water accurately to the root zone, improving irrigation efficiency and minimizing water losses.
Integrated stake for stable positioning	The integrated stake allows secure positioning in pots, grow bags and containers.
System integration capability	Can be connected to Netafim™ on-line drippers via barbs, manifolds or adapters, enabling pressure-compensated and anti-drain functionality when required. Ensures uniform water distribution across multiple outlets when used as part of "Spider" irrigation systems.
Flexible configurations	Available in multiple configurations (angled, straight, with plug or splitter), allowing adaptation to a wide range of irrigation layouts and crop requirements.

Applications

Open field · Orchards · Protected crops

- Suitable for on-surface installation.
- For irrigation in greenhouses, nurseries, pots and grow bags.
- Designed for precise water delivery in multi-outlet irrigation systems.



Specifications

- Maximum operating pressure: 2.0 bar.
- Filtration requirements: A filtration grade of 130 micron / 120 mesh is recommended to ensure long-term operational reliability. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- TurboNet™ labyrinth with enhanced clogging resistance and stable hydraulic performance.
- Connectable to 3 x 5 mm micro-tubes.
- Injection-molded dripper with low coefficient of variation (CV) for reliable uniformity.
- High UV resistance and compatible with standard agricultural nutrients and fertilizers.
- Available in two colors, black and gray, the gray intended for protected crop to increase light reflection.

Assembly guidelines

When supplied as a standalone unit (not factory-connected to a micro-tube), proper assembly is essential to ensure accurate flow performance.
The micro-tube must be cut cleanly and perpendicular to its axis, avoiding angled or irregular cuts.
It must then be inserted fully until it reaches the internal stop (end of the dripper labyrinth).
Incorrect assembly may result in flow rate variation.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.6**	0.83 x 0.56 x 20	9.0	0.529	0.48	130/120
2.30	0.83 x 0.84 x 20	13.0	0.761	0.48	130/120

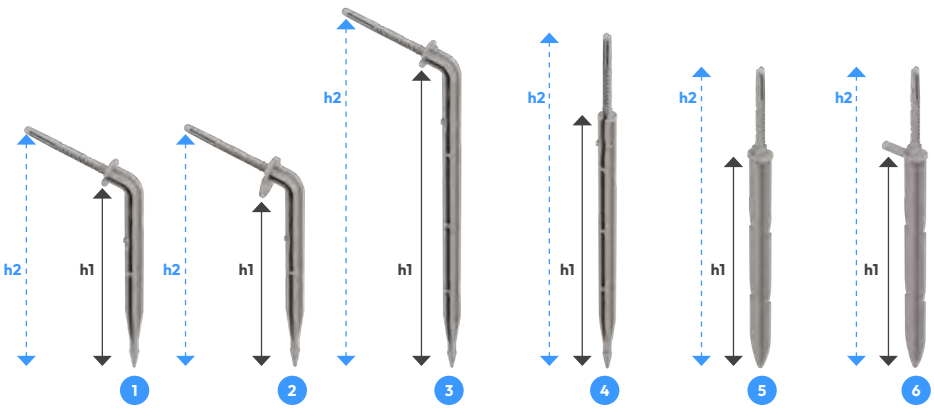


* Nominal flow rate at 1.0 bar. **Only in angled model

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Drippers models and technical data

Arrow	Model	h1 (cm)	h2 (cm)
1	Angled short	8.49	10.12
2	Angled short DS	8.49	10.12
3	Angled long	15.00	16.51
4	Straight with splitter	13.07	16.76
5	Straight	10.97	14.87
6	Straight wth plug	10.97	14.87





DS - Drop Splitter. Surface drip delivery solution ideal for small plants and potted applications.
Water is discharged at the surface, creating a wider initial wetting pattern.

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
Angled short	3000	57 x 28 x 27	5.7	32	114 x 114 x 112	192
Angled short DS	3000		6.0	32		202
Angled long	1250		4.0	32		138
Straight with splitter	2500		10.4	32		343
Straight	3000		9.8	32		324
Straight with plug	2000		5.3	32		180

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Catalog number 22000 - (any of the below 6 digits)

Model	Flow rate* (l/h)	1 unit	50 units/bag	100 units/bag	1000 units/box
Angled short (gray)	2.3	001500		001550	
Angled short (black)	2.3	000900	000930	000920	000940
Angled short DS (gray)	1.6	001560			
Angled short DS (black)	1.6	000950	000980	000970	000960
Angled short (black)	1.6	001250			
Angled long (gray)	2.3	001420	001440	001450	
Angled long (black)	2.3	001300	001317	001320	001350
Straight with splitter (gray)	2.3	001160	001170	001180	
Straight with splitter (black)	2.3	001100		001120	001140
Straight (gray)	2.3				
Straight (balck)	2.3	001000	001020	001030	001040
Straight with plug (gray)	2.3				
Straight with plug (black)	2.3	001200	001220	001230	001245

*Nominal flow rate at 1.0 bar. **Missing catalog numbers available upon request

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Arrow drippers flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
Arrow drippers	1.60	0.74	1.03	1.25	1.44	1.60	1.74	1.88	2.00	2.12	2.23
	2.30	1.06	1.48	1.80	2.06	2.30	2.51	2.70	2.88	3.05	3.21

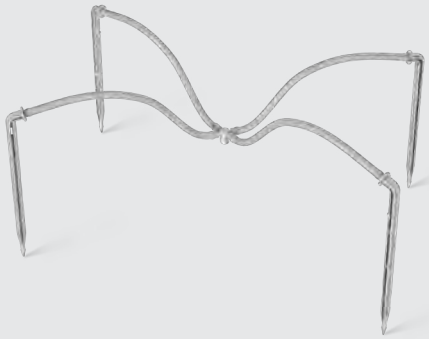
* Nominal flow rate at 1.0 bar.



Other Irrigation Products

Spider assemblies

Pre-assembled irrigation assemblies designed to distribute the flow from a single hub dripper to multiple irrigation outlets.
Provide precise water delivery to the exact location required, enabling uniform flow distribution across multiple irrigation points.



Benefits & Features

Labor saving and installation efficiency	Pre-assembled components significantly reduce installation time and labor costs in the field. Advanced assembly processes ensure consistent quality and reliable performance.
Long-lasting, high clogging resistance	High resistance to UV radiation and compatibility with commonly injected nutrients used in agriculture, greenhouses and nursery irrigation systems.
Flexible system design	Emitters can be positioned precisely according to project requirements, enabling accurate adaptation to the irrigation layout. Allows uniform distribution of the hub dripper flow across multiple outlets.
Consistent quality and sustainability	All drippers and assembly components are designed and manufactured under Netafim™ quality standards, ensuring uniform performance and system reliability. The tubes are made from recyclable materials, similar to integral driplines, supporting environmentally responsible use.

Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation.
- Ideal for irrigation in nurseries, greenhouses, pots, container applications and young orchards.
- Recommended for extending the irrigation capabilities of on-line drippers and Netafim™ Hybrid driplines.



Specifications

- Maximum operating pressure must comply with the specifications of all Spider assembly components.
- The minimum operating pressure depends on the technical specifications of the selected hub dripper.
- When multiple irrigation points are required, it is recommended to use Spider assemblies with Netafim™ Arrow drippers at each outlet to ensure uniform flow distribution.
- For single irrigation points, Netafim™ Spikes can be used as the end component.
- Recommended minimum flow per outlet: 0.5 l/h.
  The number of outlets should be defined accordingly.
  For example:
  - 2.0 l/h hub dripper → maximum 4 outlets
  - 1.2 l/h hub dripper → maximum 2 outlets
- High resistance to UV radiation and compatibility with standard agricultural nutrients.

Single-outlet configuration

Step 1 – Select the inlet connection

Straight or angled adapter

Adapters can be connected to press-fit outlets of on-line drippers or to the Hybrid outlet of Netafim™ integral driplines.
Alternatively, PCJ™ PRO or PCJ™ drippers with a 3 mm straight or angled barbed outlet can be used (available in all models and flow rates).

Step 2 – Select the micro-tube

Type: SPE (Soft PE) or SSPE (Super Soft PE).
Color: black or light gray.
Length: according to project requirements (e.g., 40, 60, 80 cm or other).

Step 3 – Select the end accessory

Netafim™ Spike model (according to crop requirements).



Catalog numbers

Because of the wide range of available configurations (different flow rates, components and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Prefix	
Assembled Spiders	SR

Initial component	
Without hub dripper	W/OD
PCJ™ AS	PCJ
PCJ™ LCNL	PCJL
PCJ™ HCNL	PCJH
PCJ™ PRO AS	PCJP
PCJ™ PRO LCNL	PCJPL
PCJ™ PRO HCNL	PCJPH

Dripper flow rate (l/h)	
Without hub dripper	-
Select flow rate based on the selected hub dripper model	XLH

Dripper outlet type	
Without hub dripper	-
3 mm straigth	BRB
3 mm angled	ABRB

Adapter tupe	
Straight adapter black	ST-ADP
Straight adapter gray	ST-ADP-G
Angled adapter black	MEL-FPE
Angled adapter gray	MEL-FPE-G
Without adapter	-

Micro-tube	
Soft PE Black	S-
Soft PE Gray	SG-
Super Soft PE Black	SS-
Super Soft PE Gray	SSG-

Micro-tube length (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M
0.8	0.80M
0.9	0.90M
1.0	1.00M

*Other lengths can be ordered.

Spike model	
Long	SPK-L
Short	SPK-S
Drop splitter	SPK-DS

Spike color	
Black	BK
Gray	GR

SR W/OD MEL-FPE-G SSG-0.50M SPK-S-G

Catalog description example

Multiple-outlet configuration

Step 1 – Select the inlet adapter

2-outlet or 4-outlet adapter

Expandable 4-outlet adapter for extended configurations (up to 6 or 8 outlets using stacked adapters).

All adapters are compatible with male press-fit outlets of Netafim™ on-line drippers and with Hybrid outlets of Netafim™ integral driplines.

Hub dripper flow rates must be selected to meet the recommended design criteria (not less than 0.5 l/h per outlet).

For further technical information and hydraulic design guidelines, please consult your local Netafim™ representative.

Step 2 – Select the micro-tubes

Quantity: according to the number of outlets.
Type: SPE (Soft PE) or SSPE (Super Soft PE).
Color: black or light gray.
Length: according to project requirements (e.g., 40, 60, 80 cm or other).

Step 3 – Select the end dripper

Netafim™ Arrow dripper (according to crop requirements).



Catalog numbers

Because of the wide range of available configurations (different flow rates, components and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Prefix		Initial component		Dripper flow rate (l/h)		Dripper outlet type		Adapter tupe		Micro-tube		Micro-tube length (m)		Arrow dripper model		Arrow dripper color	
Assembled Spiders	SR	Without hub dripper	W/OD	Without hub dripper	-	Without hub dripper	-	Adapter 2 outlets black	M2-F	Soft PE Black	S-	0.2	0.20M	Angled 1.6	A1.6	Black	BK
		PCJ™ AS	PCJ	Select flow rate based on the selected hub dripper model	XLH	Nipple	NIP	Adapter 2 outlets gray	M2-F-G	Soft PE Gray	SG-	0.3	0.30M	Angled 2.3	A2.3	Gray	GR
		PCJ™ LCNL	PCJL					Adapter 4 outlets black	M4-F	Super Soft PE Black	SS-	0.4	0.40M	Angled 1.6 DS	A16DS		
		PCJ™ HCNL	PCJH					Adapter 4 outlets gray	M4-F-G	Super Soft PE Gray	SSG-	0.5	0.50M	Short angled 2.3	AS2.3		
		PCJ™ PRO AS	PCJP					Expandable 4 outlets black	M4E-F			0.6	0.60M	Straight 2.3	SA2.3		
		PCJ™ PRO LCNL	PCJPL					Expandable 4 outlets gray	M4E-F-G			0.7	0.70M	Straight with plug 2.3	SAP2.3		
		PCJ™ PRO HCNL	PCJPH									0.8	0.80M	Straight with splitter 2.3	SAS2.3		
		PC AS	PC									0.9	0.90M				
		PC LCNL	PCL									1.0	1.00M				
		PC HCNL	PCH									*Other lengths can be ordered.					

SR PCJL 4LH NIP M4-F-G SSG- 0.50M A2.3 GR

Catalog description example

To simplify the definition of the required Spider assembly configuration, considering inlet connection, micro-tube type and length and end accessories, Netafim™ configuration software can be used.

Spikes

Irrigation accessory designed for precise water delivery directly to the root zone.
Provides an efficient and flexible solution for container irrigation in nurseries, greenhouses and protected crops, as well as for young tree establishment.



Benefits & Features

Very high irrigation efficiency	Netafim™ Spikes are plastic stakes connected via a 3 × 5 mm micro-tube to an on-line dripper outlet or to the hybrid outlet of a dripline. They guide the water directly to the precise point where the plant requires it most, improving irrigation efficiency and reducing water losses. A secure barbed connector ensures reliable attachment to the micro-tube, preventing disconnection due to hose movement or nearby activity.
Long-lasting	High resistance to UV radiation and compatibility with commonly injected nutrients used in greenhouse and nursery irrigation systems.
Visual integration and system adaptability	Available in black or light gray for easy identification and visual integration into different growing environments. The light gray option reduces heat absorption by reflecting radiation.
Spike models	Each model in the Spike product line is engineered to address specific irrigation needs while maintaining water efficiency and supporting optimal plant development. **LM - Long Spike**. Designed for delivering water to the center of the root zone in taller containers, grow bags or pots, particularly for plants with root systems deeper than 5 cm. Also suitable for young tree plantations where precise water placement is critical during early establishment. **SM - Short Spike**. Suitable for smaller containers and shallow root zones. Features a central water-conducting channel that directs water to a sub-surface discharge point within the soil or substrate. **DS - Drop Splitter**. Surface drip delivery solution ideal for small plants and potted applications. Water is discharged at the surface, creating a wider initial wetting pattern.



Applications

Open field | Orchards | Protected crops

- Suitable for on-surface installation.
- Ideal for irrigation in nurseries, greenhouses, pots and container applications.
- Recommended for high-value crops, propagation, bedding plants and vertical farming systems.



Specifications

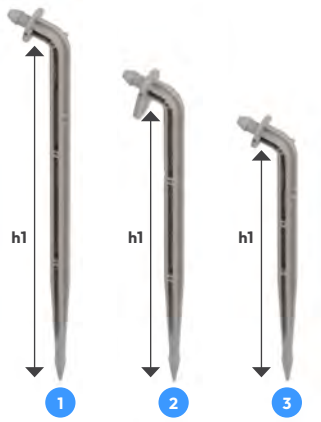
- Maximum operating pressure: 4.0 bar.
- Filtration requirements: As specified by the supplying dripper (“hub dripper”).
- Color options: Available in black or light gray, depending on application requirements.
- Tubing compatibility: Designed for insertion into 3 × 5 mm micro-tube.
- Intended for single-point irrigation applications.
- In multi-outlet irrigation systems like “Spider” assemblies, the use of arrow drippers is mandatory instead of spikes for optimal performance.

Assembly guidelines

Proper assembly is essential to ensure accurate performance:
The micro-tube must be cut cleanly and perpendicular to its axis, avoiding angled or irregular cuts.
It must be inserted fully until it reaches the end of the barbed connection.

Spike models and technical data

Spike	Model	h1 (cm)
1	LM (long model)	14.3
2	DS (drop splitter)	12.5
3	SM (short model)	10.3



Spikes package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
LM	2500	57 x 28 x 27	5.8	32	114 x 114 x 112	196
DS	3500		6.5			218
SM	5000		11.0			362

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Catalog number 32000 - (any of the below 6 digits)

Model	1 unit	100 units/bag	250 units/bag	1000 units/bag	2500 units/box
Spike LM (black)	001801	001804	001806	001847	001855
Spike LM (gray)	001830	001832	001807	001834	001838
Spike DS (black)	001790				
Spike DS (gray)	001780				
Spike SM (black)	001740				
Spike SM (gray)	001835				

*Missing catalog numbers available upon request

NetBow™

Innovative, user-friendly multi-outlet arc designed for irrigation in wide pots and grow bags, ensuring uniform water distribution across the entire container area, with high clogging resistance.



Benefits & Features

User-friendly installation	Simple and fast installation, reducing labor requirements during both system setup and crop rotations.
Superb distribution uniformity	NetBow™ integrates four or eight of Netafim™'s high clogging-resistant labyrinths, ensuring uniform water distribution across the container with reduced clogging risk.
Long-lasting, high clogging resistance	Ensures reliable performance through multiple self-cleaning labyrinths that continuously flush debris during operation. A large filtration area before each outlet significantly reduces the risk of suspended particle ingress, maintaining dependable performance across a wide range of water qualities. The TurboNet™ labyrinth at each outlet features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.

Applications

Open field · Orchards · Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies, in accordance with the selected hub dripper.
- Ideal for precision irrigation in pots, containers and grow bags, particularly in nursery applications.



Specifications

- Flow distribution: Total flow is determined by the hub dripper and divided evenly between 4 or 8 outlets, depending on the model.
- Container compatibility: Suitable for containers from 10 to 60 liters.
- Diameter options: 120 mm and 250 mm.
- Flow rate range (hub dripper):
  - 2.0–12.0 l/h for 250 mm model
  - 2.0–8.0 l/h for 120 mm model
- Maximum operating pressure: 4.0 bar.
- Minimum operating pressure (at hub dripper inlet): According to hub dripper specifications.
- Recommended minimum flow per outlet: 0.5 l/h.
- High resistance to chemicals and UV radiation for extended durability.
- Light gray color for improved light reflection.

NetBow™ technical data

The total flow of the NetBow™ assembly is defined by the hub dripper and remains constant. The flow at each outlet is equal to the hub dripper flow divided by the number of outlets.
It is recommended that the actual flow per outlet is not less than 0.5 l/h.
The table below presents a few examples of the minimum inlet pressures required at the hub dripper to ensure proper flow at each outlet.

Hub dripper nominal flow rate (l/h) vs. minimum inlet pressure (bar)

NetBow™ diameter (mm)	Number of outlets (units)	PCJ™		PCJ™ LCNL		PCJ™ HCNL		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
120	4	2.0	0.6	2.0	0.8	2.0	1.6	0.50
		3.0	0.7	3.0	0.9	3.0	1.7	0.75
		4.0	0.8	4.0	1.0	4.0	1.8	1.00
		8.0	1.5	8.0	1.7	N/R	N/R	2.00
250	8	4.0	0.6	4.0	0.8	4.0	1.6	0.50
		8.0	0.8	8.0	1.0	N/R	N/R	1.00
		12.0	1.1	12.0	1.3	N/R	N/R	1.50

NetBow™ diameter (mm)	Number of outlets (units)	PCJ™ PRO		PCJ™ PRO LCNL		PCJ™ PRO HCNL		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
120	4	2.0	0.6	2.0	0.8	2.0	1.6	0.50
		3.0	0.7	3.0	0.9	3.0	1.7	0.75
		4.0	0.8	4.0	1.0	4.0	1.8	1.00
250	8	4.0	0.6	4.0	0.8	4.0	1.6	0.50

NetBow™ diameter (mm)	Number of outlets (units)	UniRam™ RC		UniRam™ CNL		UniRam™ HCNL		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
120	4	2.3	0.6	2.3	1.1	2.0	1.6	0.58 / 0.50
		3.5	0.7	3.5	1.2	2.9	1.7	0.88 / 0.73
		N/R	N/R	N/R	N/R	4.4	1.8	1.10
250	8	N/R	N/R	N/R	N/R	4.4	1.6	0.55

NetBow™ package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
NetBow™ 250 mm/10", 8 outlets	50	35 x 28 x 57	5.1	24	106 x 113 x 130	132.4
NetBow™ 120 mm/5", 4 outlets	120	32 x 28 x 56	5.9	24	98 x 111 x 128	151.6

*Values shown are average weights and may vary due to injection tolerance. Refer to the official Netafim™ disclaimers for details.



Catalog numbers

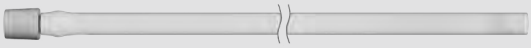
Catalog number 77470 - (any of the below digits)

Model	1 (unit)
NetBow™ 250 mm/10", 8 outlets, barb conn, gray, foldable	000210
NetBow™ 250 mm/10", 8 outlets, press fit conn, gray, foldable	000211
NetBow™ 120 mm/5", 4 outlets, barb conn, gray, foldable	000212
NetBow™ 120 mm/5", 4 outlets, press fit conn, gray, foldable	000213

The catalog numbers listed in this table refer to a single unit.
Orders must be placed in full box quantities or in multiples thereof.
Each box contains 50 or 120 units, depending on the selected model.

Related products

Netafim™ offers micro-tubes for connection between the hub dripper and the NetBow™, available in different lengths and configurations, with or without pre-assembled connectors.
These SSPE (Super Soft PE) micro-tubes are available in gray or black, depending on application requirements.
Available connection configurations include:

Illustration	Model
	Press-fit (hub dripper) to press-fit (NetBow™).
	Press-fit (hub dripper) to barbed (NetBow™).
	Barbed (hub dripper) to press-fit (NetBow™).
	Barbed (hub dripper) to barbed (NetBow™).

Ordering information

How to use: Select one option from each category to define the most appropriate product configuration for your application.

Prefix	Inlet connector		Micro tube		Tube length		Outlet connector	
SR W/OD	Barb-female press-fit gray	PF-ST-ADP-G	Super soft PE gray	SSG-	25 cm	0.25M	Barb-female press-fit gray	ST-ADP-PF-G
	Without connector	W/OIC	Super soft PE black	SSB-	30 cm	0.30M	Without connector	W/OC
					40 cm	0.40M		
					50 cm	0.50M		

SR W/OD PF-ST-ADP-G SSG-0.25M W/OC

Catalog description example

Catalog description examples:

SR W/OD PF-ST-ADP-G SSG-0.30M W/OC	40200-000005
SR W/OD PF-ST-ADP-G SSG-0.30M ST-ADP-PF-G	40200-000164



Suitable connectors are available for field assembly of micro-tubes between the hub dripper and the NetBow™.

Illustration	Description	Catalog number
	Female press-fit / barbed connectors compatible with 3 mm ID micro-tubes.	32000-001970

A range of dedicated installation tools is available in the Netafim™ accessories catalog.



Foldable NetBow™

FlexBow™

Multi-outlet irrigation loop designed for container applications, providing uniform water distribution with high clogging resistance.



Benefits & Features

User-friendly installation	Simple and fast installation, reducing labor requirements during both system setup and crop rotations.
Superb distribution uniformity	FlexBow™ integrates multiple high clogging-resistant Netafim™ labyrinths, ensuring uniform water distribution across the container with reduced clogging risk.
Efficient maintenance	Enables quick and easy maintenance through a press-fit flushing connector, allowing efficient system cleaning when required.
Long-lasting, high clogging resistance	Ensures reliable performance through multiple self-cleaning labyrinths that continuously flush debris during operation. A large filtration area before each outlet significantly reduces the risk of suspended particle ingress, maintaining dependable performance across a wide range of water qualities. The TurboNet™ labyrinth at each outlet features wide, deep flow passages with large cross-sections that enhance clogging resistance. Water is drawn from the center of the flow stream, further minimizing particle ingress.

Applications

Open field · Orchards · Protected crops

- Suitable for on-surface installation across a wide range of field conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies, in accordance with the selected hub dripper.
- Ideal for precision irrigation in pots, containers and grow bags, particularly in nursery applications.



Specifications

- Container compatibility: Suitable for a range of container diameters, depending on the selected configuration.
- Recommended minimum flow per outlet: 0.5 l/h.
- Maximum operating pressure: 4.0 bar.
- Minimum operating pressure (at hub dripper inlet): According to the table below.
- High resistance to chemicals and UV radiation for extended durability.
- Light gray color for improved light reflection.

FlexBow™ and FlexBow™ Dual models

Loop diameter (mm)	Number of outlets
211	8
264	10
317	12
370	14
424	16

FlexBow™ and FlexBow™ Dual technical data

The total flow of the FlexBow™ assembly is defined by the hub dripper and remains constant. The flow at each outlet is equal to the hub dripper flow divided by the number of outlets.
It is recommended that the actual flow per outlet is not less than 0.5 l/h.
The table below presents a few examples of the minimum inlet pressures required at the hub dripper to ensure proper flow at each outlet.

Hub dripper nominal flow rate (l/h) vs. minimum inlet pressure (bar)

FlexBow™ and FlexBow™ Dual diameter (mm)	Number of outlets (units)	PC HCNL		PCJ™		PCJ™ HF Bubbler		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
211	8			4.0	0.71			0.50
				8.0	0.72			1.00
		12.0	1.46	12.0	0.76			1.50
				15.0	0.80			1.80
264	10	6.0	1.41					0.60
		12.0	1.42	12.0	0.72			1.20
				15.0	0.76			1.50
						20.0	1.10	2.00
317	12			8.0	0.71			0.50
				15.0	0.72			1.00
						20.0	1.06	1.67
						25.0	1.10	2.08
370	14			8.0	0.71			0.57
				15.0	0.72			1.07
						20.0	1.06	1.43
						30.0	1.10	2.14
424	16			8.0	0.71			0.50
				15.0	0.72			0.94
						25.0	1.06	1.56
						30.0	1.10	1.88

FlexBow™ and FlexBow™ Dual package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Box weight* (kg)		Boxes per pallet (units)	Units per pallet
			FlexBow™	FlexBow™ Dual		
211	300	85.0 x 28.5 x 28.5	5.5	6.0	12	3600
264	300	85.0 x 28.5 x 28.5	8.7	9.2	12	3600
317	150	57.0 x 49.0 x 31.0	5.9	6.5	12	1800
370	150	57.0 x 49.0 x 31.0	6.8	7.3	12	1800
424	150	57.0 x 49.0 x 31.0	8.0	8.5	12	1800

*Values shown are average weights and may vary due to injection tolerances. Refer to the official Netafim™ disclaimers for details.





Catalog numbers

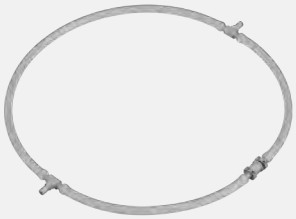
FlexBow™
Catalog number 77470 - (any of the below 6 digits)

Illustration	Model	Catalog number
	FlexBow™ 211 mm / 8.3" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000600
	FlexBow™ 264 mm / 10.4" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000605
	FlexBow™ 317 mm / 12.5" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000606
	FlexBow™ 370 mm / 14.6" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000607
	FlexBow™ 424 mm / 16.7" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000608
	FlexBow™ 211 mm / 8.3" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000750
	FlexBow™ 264 mm / 10.4" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm + press fit (male/female)	000755
	FlexBow™ 317 mm / 12.5" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000756
	FlexBow™ 370 mm / 14.6" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000757
	FlexBow™ 424 mm / 16.7" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000758

The catalog numbers listed in this table refer to a single unit.
Orders must be placed in full box quantities or in multiples thereof.
Each box contains 300 or 150 units, depending on the selected model.

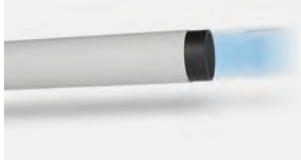


FlexBow™ Dual
Catalog number 77470 - (any of the below 6 digits)

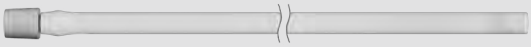
Illustration	Model	Catalog number
	FlexBow™ Dual 211 mm / 8.3" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000017
	FlexBow™ Dual 264 mm / 10.4" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000019
	FlexBow™ Dual 317 mm / 12.5" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000021
	FlexBow™ Dual 370 mm / 14.6" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000023
	FlexBow™ Dual 424 mm / 16.7" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000025
	FlexBow™ Dual 211 mm / 8.3" loop, light gray tube color, with installed connectors 2* (8 mm*male press fit*8 mm) + press fit (male/female)	000016
	FlexBow™ Dual 264 mm / 10.4" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000018
	FlexBow™ Dual 317 mm / 12.5" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000020
	FlexBow™ Dual 370 mm / 14.6" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000022
	FlexBow™ Dual 424 mm / 16.7" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000024

The catalog numbers listed in this table refer to a single unit.
Orders must be placed in full box quantities or in multiples thereof.
Each box contains 300 or 150 units, depending on the selected model.

Related products

Illustration	Model	Catalog number
	Micro tube 3*5 mm (to connect the FlexBow™ to the hub dripper outlet)	
	SSPE, 200 meter coil, light gray	40005-000103
	SSPE, 500 meter coil, light gray	40005-000101
	SSPE, 1000 meter coil, light gray	40005-000104
	FlexBow™ barbed "T" connector 8*3*8, light gray	77470-000105
	FlexBow™ press fit "T" connector, 8*male*8, light gray	77470-000130
	8 mm barbed/ male press fit, light gray	77470-000650
	8 mm barbed/ female press fit, light gray	77470-000651
	Stake for fixing an 8 mm OD pipe	32500-002150

Netafim™ offers micro-tubes for connection between the hub dripper and the FlexBow™, available in different lengths and configurations, with or without pre-assembled connectors.
These SSPE (Super Soft PE) micro-tubes are available in gray or black, depending on application requirements.
Available connection configurations include:

Illustration	Model
	Press-fit (hub dripper) to press-fit (FlexBow™).
	Press-fit (hub dripper) to barbed (FlexBow™).
	Barbed (hub dripper) to press-fit (FlexBow™).
	Barbed (hub dripper) to barbed (FlexBow™).

Ordering information

How to use: Select one option from each category to define the most appropriate product configuration for your application.

Prefix	Inlet connector		Micro tube		Tube length		Outlet connector	
SR W/OD	Barb-female press-fit gray	PF-ST-ADP-G	Super soft PE gray	SSG-	25 cm	0.25M	Barb-female press-fit gray	ST-ADP-PF-G
	Without connector	W/OIC	Super soft PE black	SSB-	30 cm	0.30M	Without connector	W/OC
					40 cm	0.40M		
					50 cm	0.50M		

SR W/OD PF-ST-ADP-G SSG-0.25M W/OC

Catalog description example

Catalog description examples:

SR W/OD PF-ST-ADP-G SSG-0.30M W/OC	40200-000005	
SR W/OD PF-ST-ADP-G SSG-0.30M ST-ADP-PF-G	40200-000164	

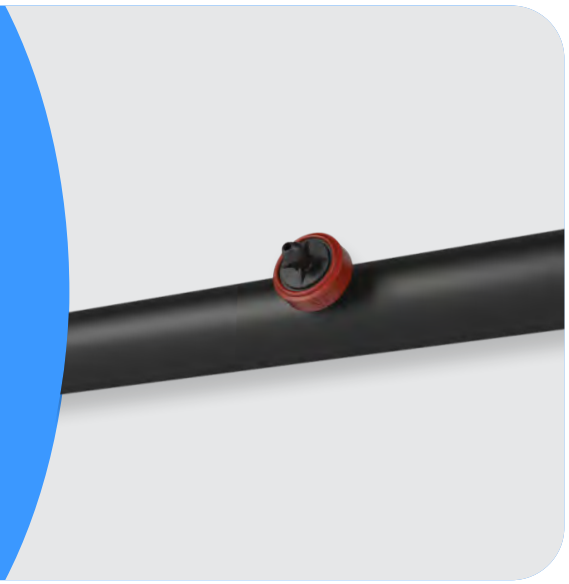
Suitable connectors are available for field assembly of micro-tubes between the hub dripper and the FlexBow™.

Illustration	Description	Catalog number
	Female press-fit / barbed connectors compatible with 3 mm ID micro-tubes.	32000-001970

A range of dedicated installation tools is available in the Netafim™ accessories catalog.

Assembled driplines

Factory-assembled irrigation solution combining distribution pipes with pre-installed on-line drippers, positioned according to project requirements.
Designed to reduce installation time and ensure accurate emitter placement for a wide range of agricultural applications.



Benefits & Features

Labor saving and installation efficiency	Factory pre-assembly of on-line drippers significantly reduces installation time and labor costs in the field. Advanced assembly processes ensure consistent quality and reliable performance.
Long lasting	High resistance to UV radiation and compatibility with commonly injected nutrients used in agriculture, greenhouses and nursery irrigation systems.
Flexible system design	Emitters can be positioned precisely according to project requirements, including defined spacing between individual emitters or emitter groups (“clusters”), enabling accurate adaptation to the irrigation layout. Available with a range of dripper outlet options, including press-fit, straight or angled barbed connections, supporting flexible system design and compatibility with "Spider" assemblies.
Consistent quality and sustainability	All drippers and assembly components are designed and manufactured under Netafim™ quality standards, ensuring uniform performance and system reliability. The pipes are made from recyclable materials, similar to integral driplines, supporting environmentally responsible use.

Applications

Open field | Orchards | Protected crops

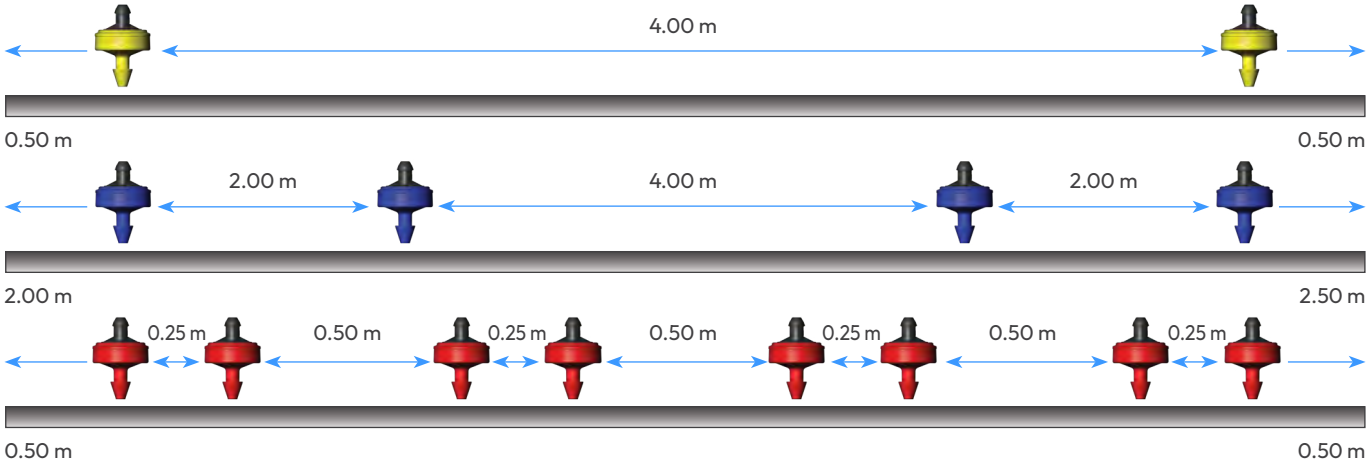
- Suitable for on-surface installation.
- Ideal for irrigation in nurseries, greenhouses, pots, container applications and young orchards.
- Recommended when using on-line drippers while minimizing field installation work.



Specifications

- Operating pressure: must match the specifications of the assembled drippers and consider pipe diameter and wall thickness.
- Filtration requirements: Filtration level depends on the dripper flow rate and must be selected according to the type and concentration of particles in the water. When sand content exceeds 2 ppm, a Hydrocyclone must be installed upstream of the main filter. For sand/silt/clay solids above 100 ppm, apply pre-treatment in line with Netafim™ expert guidelines.
- High UV resistance and compatibility with standard agricultural nutrients and fertilizers.

Possible configurations (examples)



Catalog numbers

Catalog configuration: Due to the wide range of available configurations (dripper models, flow rates, emitter spacing, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

How to define the product: Select the required options according to the following parameters:



Catalog description example

Pipe description
Commercial diameter / class. The letter G denotes light gray color; otherwise, the pipe is black.

Emitter
Single dripper or assembled "Spider".
For "Spider" configurations, the last six digits (XXXXXX) of the Netafim™ spider catalog number must be specified.

Cluster
A single dripper, a "Spider" assembly or a group of emitters installed at a defined spacing.

Distance between clusters
Distance between the centers of adjacent clusters.

Total coil length
Total required length per coil, including initial and end sections.

Initial and end length
Distance from the beginning of the pipe to the first emitter, identical to the distance between the last emitter and the pipe end.



Mining products



Integral PC driplines

Leach Line™ U

Pressure-compensated integral dripline designed for uniform solution distribution in heap leaching applications, particularly in sloped and variable topography conditions.



Benefits & Features

Uniform water distribution

The pressure-compensated emitter delivers consistent flow rates across a wide pressure range, ensuring uniform solution distribution along the entire dripline length.

This is especially critical in sloped heaps and long runs, where pressure variations can significantly impact leaching efficiency and metal recovery.

Optimized performance for heap leaching efficiency

By maintaining a constant discharge, the system ensures uniform percolation through the heap profile, contributing to improved contact between solution and ore and enhancing overall recovery rates.

Long-lasting performance under harsh solution conditions

Engineered to operate reliably with challenging solution quality, including high levels of suspended solids and chemical exposure.

The self-flushing TurboNet™ labyrinth continuously evacuates debris during operation, maintaining stable flow conditions over time.

Superior clogging resistance

The TurboNet™ labyrinth features:

- Deep, wide and large cross-section flow passages
- Reduced sensitivity to particulate intrusion
- Continuous internal flushing action

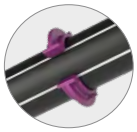
This design minimizes clogging risk and ensures consistent leaching performance throughout the system lifespan.

An extra-large filtration area significantly reduces the risk of suspended particle ingress, ensuring dependable performance across a wide range of solution quality levels..

Anti-migration clip (optional)

Prevents downslope solution migration in sloped or uneven heap geometries, maintaining uniform distribution.

Pre-installed during manufacturing, reducing field labor and installation time.



Applications

Acid & Alkaline Solutions

Acid & Alkaline Solutions

Evaporation Systems

- Heap leaching of gold, silver and other operations using alkaline (high pH) solutions.
- Installation on top of heap leach pads, either on-surface or sub-surface. Particularly suitable for side slope applications and highly variable topography, ensuring uniform solution distribution.
- Applicable for primary and secondary leaching cycles. Designed for large-scale heaps with long dripline runs and significant elevation differences.



Specifications

- Operating pressure range: 0.5 to 4.0 bar.
- Pressure-compensated emitter (constant flow within the specified pressure-compensation range).
- Filtration recommendation: A filtration grade of 200 micron / 80 mesh is recommended to ensure long-term operational reliability, maintain optimal hydraulic performance and achieve high solution distribution uniformity.
  Netafim™ provides a comprehensive range of non-corrosive filtration systems engineered for mining environments, suitable for installation at the mainline or sub-block level across the heap.
- Labyrinth technology: TurboNet™ with large flow passages for enhanced clogging resistance.
- Manufacturing integration: Weldable into thick-wall driplines; 0.90, 1.00, 1.20 mm.
- Hydraulic uniformity: Injection-molded dripper with low coefficient of variation (CV), ensuring reliable distribution uniformity under field conditions.
- Durability: High UV resistance. Resistant to chemicals typically used in heap leaching operations.
- Standards compliance: Compliant with ISO 9261.
- Driplines are black with two white stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
0.70	0.5 - 4.0	0.70 x 0.65 x 40	110	0.7	0	130/120
1.00		0.83 x 0.74 x 40	130	1.0	0	130/120
1.60		1.09 x 0.76 x 40	130	1.6	0	200/80
2.30		1.26 x 0.93 x 40	130	2.3	0	200/80
3.50		1.59 x 1.07 x 40	150	3.5	0	200/80

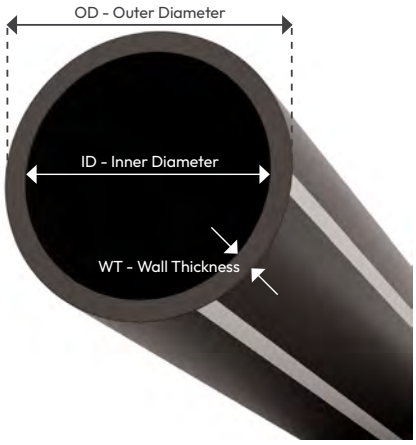


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	0.40
16010	14.20	1.0	16.20	3.5	4.6	0.40
16012	14.20	1.2	16.60	4.0	5.2	0.40
20010	17.50	1.0	19.50	3.5	4.6	0.10
20012	17.50	1.2	19.90	4.0	5.2	0.10



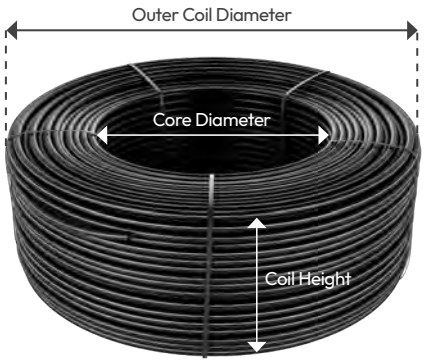
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	500	20.7	84	41	27
16010	1.0	0.15 to 1.00	500	23.0	84	41	27
16012	1.2	0.15 to 1.00	400	22.3	78	41	28
20010	1.0	0.15 to 1.00	300	16.7	84	50	27
20012	1.2	0.15 to 1.00	300	20.2	84	50	27

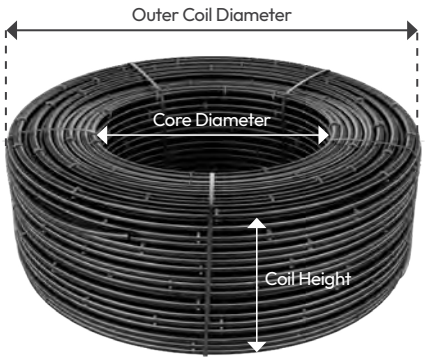
*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	300	13.0	84	45	27
16010	1.0	0.15 to 1.00		15.0			
16012	1.2	0.15 to 1.00		17.9			
20010	1.0	0.15 to 1.00		18.0			
20012	1.2	0.15 to 1.00		21.5			

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	500	330	165000
16010	500	330	165000
16012	400	352	140800
20010	300	330	99000
20012	300	330	99000



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	300	330	99000
16010			
16012			
20010			
20012			

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Leach Line™ U	LEACH LINE U

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
0.70	0.70L/H
1.00	1.00L/H
1.60	1.60L/H
2.30	2.30L/H
3.50	3.50L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length with assembled clips (m)	
All models	300M

Special features	
No added	-
Clip	CL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

LEACH LINE U 16012 1.00L/H 0.40M 300M CL

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Dripline	Material group (MG)
Leach Line™ U 16009	12326
Leach Line™ U 16010	12311
Leach Line™ U 16012	12285

Brown dripline	Material group (MG)
Leach Line™ U 20010	12422
Leach Line™ U 20012	12423

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including UniRam™ (featured in this document), the dripper exponent X is considered equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

Leach Line™ U flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.30	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
Leach Line™ U	0.70	0.32	0.55	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	1.00	0.46	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.60	0.74	1.25	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	2.30	1.06	1.80	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	3.50	1.62	2.74	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

*Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 16009/16010/16012 • ID 14.2 mm • Kd 1.3 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	112	135	153	168	180	190	197	204
	1.5	111	154	190	221	248	271	291	310	326
	2.0	130	182	227	267	302	334	362	388	411
	2.5	145	204	256	303	345	383	418	449	478
	3.0	158	223	281	333	380	424	463	500	534
	3.5	169	239	302	359	412	459	503	545	583
	4.0	179	254	321	383	439	491	539	584	626
Flat terrain	1.0	96	137	176	213	247	279	310	340	369
	1.5	121	174	224	270	314	356	395	434	471
	2.0	139	200	257	311	361	410	456	500	543
	2.5	153	221	284	343	400	453	504	554	600
	3.0	165	239	306	371	431	489	545	598	649
	3.5	176	254	326	395	460	522	581	637	692
	4.0	185	268	344	417	485	550	613	673	731
Downhill 2%	1.0	108	163	219	275	331	387	443	500	557
	1.5	131	195	258	321	382	444	505	565	626
	2.0	148	218	288	355	422	488	553	617	681
	2.5	161	238	312	384	455	524	593	661	727
	3.0	173	254	332	409	483	557	628	698	768
	3.5	183	269	351	431	509	585	659	733	805
	4.0	192	281	368	451	532	610	688	763	838

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 16009/16010/16012 • ID 14.2 mm • Kd 1.3 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	68	93	113	131	145	158	167	176	184
	1.5	90	125	156	183	207	228	247	265	280
	2.0	105	147	185	219	249	277	302	326	347
	2.5	116	164	208	247	282	315	345	373	399
	3.0	126	179	227	270	310	347	381	412	442
	3.5	135	192	243	291	334	375	412	447	480
	4.0	142	203	258	309	355	399	439	478	514
Flat terrain	1.0	76	109	140	169	196	222	246	270	293
	1.5	96	138	177	214	249	282	314	345	374
	2.0	110	158	204	246	286	325	362	397	431
	2.5	121	175	225	272	317	359	400	439	477
	3.0	131	189	243	294	342	388	432	474	515
	3.5	139	201	258	313	364	414	461	506	549
	4.0	147	212	272	330	384	436	486	534	580
Downhill 2%	1.0	83	125	166	208	248	290	330	372	412
	1.5	102	151	199	246	292	337	382	428	472
	2.0	115	170	223	274	325	374	422	471	518
	2.5	126	185	242	298	352	404	456	507	556
	3.0	135	198	259	318	374	430	484	537	590
	3.5	144	210	274	336	395	453	510	565	620
	4.0	151	221	287	352	413	474	533	590	647

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 16009/16010/16012 • ID 14.2 mm • Kd 1.3 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	51	71	88	103	116	127	138	147	155
	1.5	67	95	119	141	160	179	195	210	224
	2.0	78	110	140	166	191	214	234	254	272
	2.5	86	123	156	187	214	241	265	288	309
	3.0	93	133	170	204	235	263	290	316	340
	3.5	100	143	182	218	251	284	313	341	367
	4.0	105	151	192	231	267	301	333	363	391
Flat terrain	1.0	56	80	103	124	144	163	182	200	216
	1.5	70	101	130	158	184	208	231	254	276
	2.0	81	116	150	181	211	239	266	293	318
	2.5	89	128	165	200	233	265	294	324	352
	3.0	96	139	178	216	252	286	318	350	380
	3.5	102	147	190	230	268	305	339	373	405
	4.0	108	155	200	243	283	321	358	393	428
Downhill 2%	1.0	60	89	117	145	173	200	228	255	282
	1.5	74	108	142	175	206	238	269	299	329
	2.0	84	122	160	197	232	266	300	333	365
	2.5	92	134	175	214	252	289	325	360	395
	3.0	98	144	187	229	269	309	346	384	421
	3.5	104	152	198	242	285	326	366	405	444
	4.0	110	160	208	254	299	342	384	425	464

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 16009/16010/16012 • ID 14.2 mm • Kd 1.3 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Uphill 2%	1.0	41	58	72	85	97	106	116	124	132
	1.5	53	76	96	114	130	146	160	174	186
	2.0	62	88	112	134	154	173	190	207	222
	2.5	68	98	124	150	172	194	214	233	251
	3.0	74	106	135	163	188	211	234	256	276
	3.5	79	113	145	174	202	228	251	275	297
	4.0	83	119	153	184	214	241	267	292	315
Flat terrain	1.0	44	63	81	98	114	130	144	158	171
	1.5	55	80	103	125	145	165	183	201	218
	2.0	64	92	118	143	167	189	210	231	251
	2.5	70	101	130	158	184	209	233	256	278
	3.0	76	109	141	171	199	226	252	276	301
	3.5	80	116	150	182	212	241	268	294	320
	4.0	85	122	158	192	223	253	283	311	338
Downhill 2%	1.0	46	68	90	111	132	153	173	193	212
	1.5	57	84	110	135	160	183	206	230	252
	2.0	65	95	124	153	179	206	231	257	281
	2.5	72	105	136	167	196	224	252	279	305
	3.0	77	113	146	179	209	240	270	298	326
	3.5	82	119	155	189	222	254	285	315	344
	4.0	86	125	163	199	233	267	298	330	361

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 16009/16010/16012 • ID 14.2 mm • Kd 1.3 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	45	56	67	77	85	94	101	108
	1.5	41	58	74	89	102	114	126	137	147
	2.0	47	68	86	104	119	134	149	162	175
	2.5	52	75	96	115	133	151	166	182	196
	3.0	56	81	104	125	145	164	182	198	215
	3.5	60	86	111	134	155	175	194	213	230
	4.0	63	91	117	142	164	186	206	226	244
Flat terrain	1.0	33	48	62	75	87	99	110	121	131
	1.5	42	61	78	95	110	125	139	153	166
	2.0	48	70	90	109	127	144	161	176	192
	2.5	53	77	99	120	140	159	178	195	212
	3.0	57	83	107	130	151	172	192	211	229
	3.5	61	88	114	138	161	183	204	224	244
	4.0	64	93	120	146	170	193	215	237	258
Downhill 2%	1.0	35	51	67	82	97	112	126	140	154
	1.5	43	63	82	101	119	136	153	169	186
	2.0	49	72	94	114	134	153	173	191	209
	2.5	54	79	102	125	147	168	188	208	228
	3.0	58	85	110	134	158	180	202	223	244
	3.5	62	90	117	143	167	191	214	236	258
	4.0	65	95	123	150	176	200	225	248	271

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 20010/20012 • ID 17.5 mm • Kd 0.4 • Flow rate 0.70 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	130	162	184	199	209	217	223	228	231
	1.5	182	238	280	313	340	361	378	393	406
	2.0	218	289	346	393	432	466	494	518	539
	2.5	246	329	398	456	505	548	586	618	648
	3.0	269	363	442	509	566	617	662	703	739
	3.5	289	392	479	554	620	678	730	777	819
	4.0	307	419	513	595	667	732	790	842	890
Flat terrain	1.0	168	233	292	347	397	445	489	532	573
	1.5	213	297	373	443	507	568	626	681	734
	2.0	245	343	430	511	586	656	722	787	848
	2.5	271	379	476	565	648	727	801	871	939
	3.0	293	409	514	611	701	786	866	943	1017
	3.5	312	436	548	652	748	839	925	1006	1085
	4.0	329	460	579	688	790	886	977	1063	1146
Downhill 2%	1.0	207	309	412	514	616	718	817	905	990
	1.5	245	359	471	581	689	796	900	995	1087
	2.0	273	397	517	634	748	860	969	1068	1166
	2.5	296	429	556	678	797	914	1027	1132	1235
	3.0	316	456	589	717	841	962	1079	1189	1295
	3.5	334	480	619	752	880	1005	1126	1239	1350
	4.0	350	503	646	784	916	1045	1170	1287	1400

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 20010/20012 • ID 17.5 mm • Kd 0.4 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	109	140	162	178	190	200	208	214	219
	1.5	149	198	236	268	295	316	335	352	366
	2.0	177	238	288	331	367	398	426	451	473
	2.5	199	269	328	380	424	463	498	530	558
	3.0	217	296	362	420	472	517	558	596	630
	3.5	233	318	392	456	512	564	610	653	692
	4.0	247	338	418	487	549	606	657	704	748
Flat terrain	1.0	133	185	232	276	316	353	389	423	456
	1.5	169	236	296	352	403	452	498	542	583
	2.0	194	272	341	406	465	522	574	626	674
	2.5	215	300	378	449	515	577	636	693	747
	3.0	232	325	408	485	557	624	689	750	809
	3.5	247	346	435	518	594	666	734	800	863
	4.0	260	365	459	546	627	704	776	845	911
Downhill 2%	1.0	157	233	308	382	455	528	601	673	745
	1.5	189	275	358	439	518	596	674	750	826
	2.0	212	306	396	483	568	650	731	812	891
	2.5	230	332	428	520	609	696	781	864	947
	3.0	247	354	455	552	645	736	824	911	996
	3.5	261	374	480	581	677	771	863	953	1041
	4.0	274	392	502	607	707	804	898	991	1082

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 20010/20012 • ID 17.5 mm • Kd 0.4 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	85	111	132	148	161	173	182	190	196
	1.5	114	153	186	214	237	258	277	293	308
	2.0	134	182	222	258	289	317	342	365	386
	2.5	149	204	252	293	330	363	394	421	447
	3.0	162	223	276	323	364	402	437	469	499
	3.5	174	240	297	348	394	436	474	510	544
	4.0	184	254	316	371	420	466	508	547	583
Flat terrain	1.0	98	137	171	203	233	261	287	313	337
	1.5	124	174	218	260	298	333	368	401	431
	2.0	143	200	252	299	343	385	425	463	498
	2.5	158	221	278	331	380	426	470	512	552
	3.0	170	239	301	358	411	461	509	554	598
	3.5	181	255	321	382	439	492	542	591	638
	4.0	191	269	338	403	463	519	574	625	674
Downhill 2%	1.0	111	163	212	262	310	357	404	451	498
	1.5	135	195	252	307	361	412	464	515	564
	2.0	152	219	281	341	399	455	510	564	617
	2.5	166	238	306	370	431	491	549	606	661
	3.0	178	255	326	394	459	522	582	642	700
	3.5	189	270	345	416	484	550	613	674	735
	4.0	199	283	362	436	506	574	640	704	767

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 20010/20012 • ID 17.5 mm • Kd 0.4 • Flow rate 2.30 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	92	110	126	139	150	159	167	175
	1.5	91	124	152	176	197	216	233	248	263
	2.0	107	146	181	211	238	262	284	304	323
	2.5	119	164	203	238	269	298	324	348	371
	3.0	129	179	222	261	296	328	358	385	411
	3.5	138	192	238	281	319	354	386	417	446
	4.0	146	203	253	299	340	377	413	446	477
Flat terrain	1.0	77	108	136	161	184	207	228	248	267
	1.5	98	137	173	205	235	264	291	317	342
	2.0	113	158	199	237	272	305	336	366	395
	2.5	124	175	220	262	301	337	372	405	437
	3.0	134	189	238	283	325	365	402	439	473
	3.5	143	201	254	302	347	389	430	468	505
	4.0	151	212	268	319	366	411	454	494	534
Downhill 2%	1.0	85	124	161	197	232	267	302	335	369
	1.5	105	150	194	235	275	314	351	389	425
	2.0	119	170	217	263	307	349	390	430	469
	2.5	130	185	237	286	332	378	422	464	506
	3.0	139	199	254	306	355	403	449	494	537
	3.5	148	210	268	323	375	425	474	520	566
	4.0	155	221	282	339	393	445	495	545	592

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ U 20010/20012 • ID 17.5 mm • Kd 0.4 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	54	73	89	102	114	124	133	141	149
	1.5	71	97	120	140	157	174	188	202	214
	2.0	82	114	141	166	187	207	226	243	259
	2.5	92	127	158	186	211	235	256	276	295
	3.0	99	138	172	203	231	257	281	303	325
	3.5	106	148	184	218	248	277	302	328	351
	4.0	112	156	196	231	263	294	322	349	374
Flat terrain	1.0	59	82	103	123	141	158	174	189	204
	1.5	75	104	132	157	179	202	222	242	261
	2.0	86	120	152	181	207	232	257	280	302
	2.5	95	133	168	200	229	258	284	310	334
	3.0	102	144	181	216	248	279	307	335	361
	3.5	109	153	193	230	265	297	328	357	386
	4.0	115	161	204	243	279	314	346	377	407
Downhill 2%	1.0	63	92	118	144	169	193	217	240	264
	1.5	78	112	144	174	202	230	258	284	310
	2.0	89	127	162	196	227	258	288	317	345
	2.5	98	139	177	214	248	281	313	344	374
	3.0	105	149	190	229	265	300	334	367	399
	3.5	111	158	202	243	281	318	354	388	421
	4.0	117	167	212	255	295	333	370	406	441

Minimum design pressure: 0.5 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Leach Line™ D

Pressure-compensated integral dripline with compact emitter design, engineered for efficient and uniform solution distribution in heap leaching applications.



Benefits & Features

Uniform water distribution

The pressure-compensated emitter delivers consistent flow rates across a wide pressure range, ensuring uniform solution distribution along the dripline.

The compact emitter design enables efficient hydraulic behavior and stable operation across varying field conditions.

Design flexibility and system optimization

The compact emitter geometry allows for a wide range of dripline configurations, enabling designers to optimize system layout according to heap geometry, flow requirements and operational constraints.

This flexibility supports cost-effective system design without compromising distribution uniformity.

Long-lasting performance under harsh solution conditions

Engineered to operate reliably with challenging solution quality, including high levels of suspended solids and chemical exposure.

The TurboNet™ labyrinth ensures continuous self-flushing, maintaining stable flow conditions over time.

Superior clogging resistance

The TurboNet™ labyrinth features:

- Deep, wide and large cross-section flow passages
- Reduced sensitivity to particulate intrusion
- Continuous internal flushing action

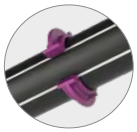
This design minimizes clogging risk and ensures consistent leaching performance throughout the system lifespan.

A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of solution quality levels.

Anti-migration clip (optional)

Prevents downslope solution migration in sloped or uneven heap geometries, maintaining uniform distribution.

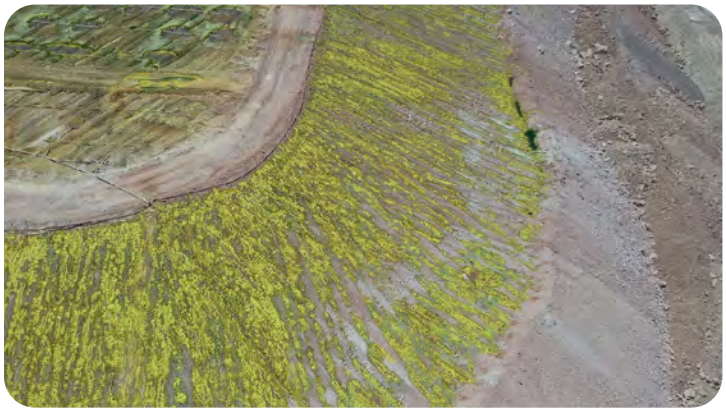
Pre-installed during manufacturing, reducing field labor and installation time.



Applications

Acid & Alkaline Solutions | Acid & Alkaline Solutions | Evaporation Systems

- Heap leaching of gold, silver and other operations using alkaline (high pH) solutions.
- Installation on top of heap leach pads, either on-surface or sub-surface. Particularly suitable for side slope applications and highly variable topography, ensuring uniform solution distribution.
- Applicable for primary and secondary leaching cycles. Designed for large-scale heaps with long dripline runs and significant elevation differences.



Specifications

- Operating pressure range: Defined according to dripper flow rate (refer to tables).
- Pressure-compensated emitter (constant flow within the specified pressure-compensation range).
- Filtration recommendation: A filtration grade of 200 micron / 80 mesh is recommended to ensure long-term operational reliability, maintain optimal hydraulic performance and achieve high solution distribution uniformity.
  Netafim™ provides a comprehensive range of non-corrosive filtration systems engineered for mining environments, suitable for installation at the mainline or sub-block level across the heap.
- Labyrinth technology: TurboNet™ with large flow passages for enhanced clogging resistance.
- Manufacturing integration: Weldable into thick-wall driplines; 0.90, 1.00, 1.20 mm.
- Hydraulic uniformity: Injection-molded dripper with low coefficient of variation (CV), ensuring reliable distribution uniformity under field conditions.
- Durability: High UV resistance. Resistant to chemicals typically used in heap leaching operations.
- Standards compliance: Compliant with ISO 9261.
- Driplines are black with two white stripes.

Drippers technical data

Flow rate* (l/h)	Working pressure range (bar)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent* X	Recommended filtration (micron)/(mesh)
1.00	0.40 - 3.0	0.61 x 0.60 x 8	39	1.0	0	200/80
1.60	0.40 - 3.0	0.76 x 0.73 x 8	39	1.6	0	200/80
2.00	0.40 - 3.5	0.76 x 0.88 x 8	39	2.0	0	200/80
3.00	0.40 - 3.5	1.02 x 0.88 x 8	39	3.0	0	200/80
3.50	0.60 - 3.5	1.02 x 0.88 x 8	39	3.5	0	200/80
3.80	0.60 - 3.5	1.02 x 0.88 x 8	39	3.8	0	200/80

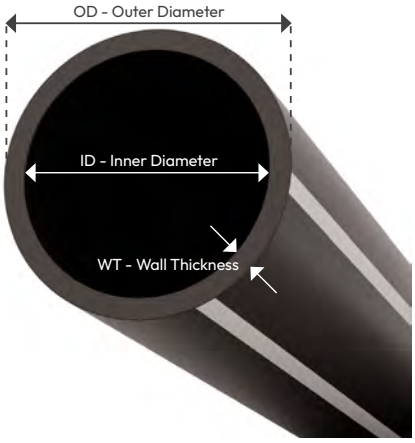


* Within working pressure range.

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure (within its specified working range), as detailed in the following pages.

Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	0.40
16010	14.20	1.0	16.20	3.5	4.6	0.40
16012	14.20	1.2	16.60	4.0	5.2	0.40
20010	17.50	1.0	19.50	3.5	4.6	0.10
20012	17.50	1.2	19.90	4.0	5.2	0.10



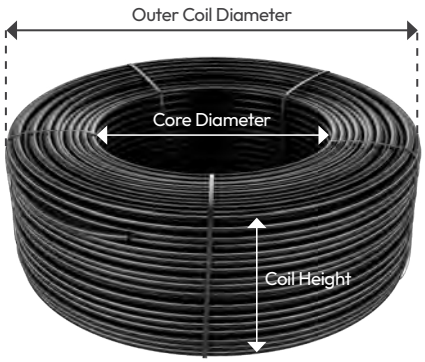
Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.

Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	500	20.7	84	41	27
16010	1.0	0.15 to 1.00	500	23.0	84	41	27
16012	1.2	0.15 to 1.00	400	22.3	78	41	28
20010	1.0	0.15 to 1.00	300	16.7	84	50	27
20012	1.2	0.15 to 1.00	300	20.2	84	50	27

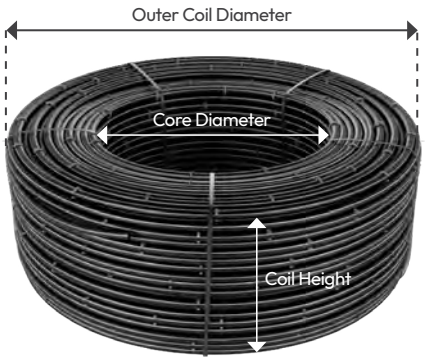
*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	300	13.0	84	45	27
16010	1.0	0.15 to 1.00		15.0			
16012	1.2	0.15 to 1.00		17.9			
20010	1.0	0.15 to 1.00		18.0			
20012	1.2	0.15 to 1.00		21.5			

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	500	330	165000
16010	500	330	165000
16012	400	352	140800
20010	300	330	99000
20012	300	330	99000



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	300	330	99000
16010			
16012			
20010			
20012			

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Leach Line™ D	LEACH LINE D

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h)	
1.00	1.00L/H
1.60	1.60L/H
2.00	2.00L/H
3.00	3.00L/H
3.50	3.50L/H
3.80	3.80L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length with assembled clips (m)	
All models	300M

Special features	
No added	-
Clip	CL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

LEACH LINE D 16010 2.00L/H 0.40M 500M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Dripline	Material group (MG)
Leach Line™ D 16009	12325
Leach Line™ D 16010	12309
Leach Line™ D 16012	12424

Brown dripline	Material group (MG)
Leach Line™ D 20010	12425
Leach Line™ D 20012	12426

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

In all Netafim™ pressure-compensated drippers, including DripNet PC™ (featured in this document), the dripper exponent X is considered equal to 0 within the specified pressure-compensation range for each model. This ensures that the actual dripper flow rate remains constant within ±7%, in full compliance with ISO 9261 international standards.

Each pressure-compensated dripper model operates within a defined compensation range, with clearly specified minimum and maximum pressure limits. Below the minimum compensation pressure, the dripper behaves as a non-pressure-compensated emitter and its flow rate increases proportionally with pressure until the minimum operating threshold is reached.

Above the maximum compensation pressure, Netafim™ pressure-compensated drippers will continue to regulate flow; however, they become more susceptible to clogging. In most cases, the maximum operating pressure is determined by the physical limitations of the dripline, such as diameter, wall thickness and most importantly, the structural integrity of the pipe and its associated connections.

Leach Line™ D flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.10	0.15	0.20	0.25	0.30	0.40	0.50	1.00	2.00	3.00
Leach Line™ D	1.00	0.51	0.62	0.72	0.80	0.87	1.00	1.00	1.00	1.00	1.00
	1.60	0.82	1.00	1.15	1.28	1.39	1.60	1.60	1.60	1.60	1.60
	2.00	1.03	1.25	1.43	1.60	1.74	2.00	2.00	2.00	2.00	2.00
	3.00	1.54	1.87	2.15	2.39	2.61	3.00	3.00	3.00	3.00	3.00
	3.50	1.48	1.80	2.07	2.30	2.51	2.88	3.21	3.50	3.50	3.50
	3.80	1.61	1.95	2.24	2.50	2.72	3.13	3.48	3.80	3.80	3.80

* Within working pressure range

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ D 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	83	111	134	153	169	183	194	205	214
	1.5	106	145	178	207	232	253	274	292	308
	2.0	122	169	209	244	275	304	330	354	375
	2.5	135	188	234	274	311	344	374	403	429
	3.0	147	204	254	300	341	378	413	445	474
Flat terrain	1.0	92	130	165	197	226	255	282	307	331
	1.5	114	161	204	243	280	315	349	381	411
	2.0	129	183	232	277	320	360	398	434	469
	2.5	142	201	255	305	352	396	438	478	517
	3.0	153	216	274	329	379	426	472	516	557
Downhill 2%	1.0	102	150	196	242	287	330	374	418	461
	1.5	122	177	230	281	331	379	426	473	520
	2.0	136	197	255	311	364	417	468	518	567
	2.5	148	214	276	336	393	449	502	555	607
	3.0	159	229	295	358	418	476	533	588	642

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripper limitations.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ D 16009/16010/16012 • ID 14.2 mm • Kd 0.72 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	63	86	105	121	136	148	159	169	178
	1.5	79	110	136	159	180	199	216	231	246
	2.0	91	127	158	187	212	235	256	276	295
	2.5	101	141	176	208	237	264	289	311	333
	3.0	109	152	191	227	259	288	316	342	366
Flat terrain	1.0	68	96	122	145	167	188	208	227	245
	1.5	84	118	150	180	207	232	258	281	304
	2.0	95	135	171	205	236	265	294	320	347
	2.5	104	148	188	225	259	292	323	353	382
	3.0	112	159	202	242	280	315	349	381	412
Downhill 2%	1.0	73	107	138	170	200	230	258	287	316
	1.5	88	127	164	200	234	267	300	332	363
	2.0	99	143	184	223	260	297	332	366	400
	2.5	108	155	199	242	282	321	358	395	431
	3.0	115	166	213	258	301	342	382	420	458

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 16009/16010//16012 • ID 14.2 mm • Kd 0.72 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	55	75	92	108	121	133	143	153	162
	1.5	69	96	119	140	159	176	192	206	220
	2.0	79	110	138	164	186	207	226	244	261
	2.5	87	122	154	182	208	232	254	275	294
	3.0	94	133	167	198	226	253	278	301	322
	3.5	101	141	178	212	242	271	298	323	347
Flat terrain	1.0	59	83	105	126	145	163	180	196	212
	1.5	72	102	130	155	179	202	223	243	263
	2.0	82	116	148	177	204	230	254	278	300
	2.5	90	128	162	195	224	253	280	306	331
	3.0	97	138	175	210	242	272	302	329	356
	3.5	103	146	186	223	257	290	321	351	379
Downhill 2%	1.0	63	91	118	144	169	194	218	242	266
	1.5	75	109	140	171	199	228	255	282	308
	2.0	85	122	157	191	223	253	283	312	340
	2.5	93	133	171	207	241	274	306	338	368
	3.0	99	143	183	221	257	293	326	359	391
	3.5	105	151	194	234	272	309	345	379	412

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 16009/16010//16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	43	59	73	86	97	107	117	125	133
	1.5	53	75	94	111	126	140	153	166	177
	2.0	61	86	108	128	146	163	179	194	208
	2.5	67	95	120	142	163	182	200	217	233
	3.0	73	103	130	154	177	198	218	237	254
	3.5	78	110	138	165	189	212	234	254	273
Flat terrain	1.0	45	64	81	97	112	125	138	151	164
	1.5	55	79	100	120	138	155	172	187	203
	2.0	63	89	114	136	157	177	196	214	231
	2.5	69	98	125	150	173	195	215	236	255
	3.0	74	106	134	161	186	210	232	254	275
	3.5	79	112	143	171	198	223	247	270	292
Downhill 2%	1.0	47	68	88	108	126	144	162	178	195
	1.5	57	83	106	129	150	171	190	210	229
	2.0	65	93	119	144	168	190	213	234	255
	2.5	71	101	130	157	182	207	231	254	277
	3.0	76	109	139	168	196	222	247	271	295
	3.5	80	115	147	178	206	235	261	287	312

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 16009/16010//16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	33	46	56	66	74	81	88	95	100
	1.5	45	63	78	93	106	117	128	139	148
	2.0	53	74	93	110	126	141	154	167	179
	2.5	59	83	104	124	142	159	174	190	204
	3.0	64	90	114	136	155	174	191	208	224
	3.5	68	97	122	146	167	187	206	224	241
Flat terrain	1.0	35	50	63	76	87	98	108	118	128
	1.5	47	66	84	100	116	130	144	158	170
	2.0	54	77	98	117	135	152	168	184	199
	2.5	60	86	108	130	150	169	187	205	222
	3.0	65	93	118	141	163	184	204	222	241
	3.5	69	99	126	151	174	197	218	238	257
Downhill 2%	1.0	37	54	70	86	100	115	129	143	157
	1.5	48	69	89	108	126	144	161	177	193
	2.0	56	80	102	124	144	164	182	201	219
	2.5	61	88	113	137	158	180	201	221	240
	3.0	66	95	122	147	171	194	216	238	258
	3.5	71	101	130	157	182	206	230	252	274

Minimum design pressure: 0.6 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 16009/16010//16012 • ID 14.2 mm • Kd 0.72 • Flow rate 3.80 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	32	44	54	63	71	78	85	91	97
	1.5	43	60	75	89	101	112	123	133	142
	2.0	50	71	89	105	121	134	148	160	172
	2.5	56	79	100	118	136	152	167	181	195
	3.0	61	86	108	129	148	166	183	199	214
	3.5	65	92	116	139	159	179	197	214	231
Flat terrain	1.0	34	47	60	72	83	94	103	113	122
	1.5	44	63	80	96	110	124	138	150	162
	2.0	51	73	93	112	128	145	161	176	190
	2.5	57	81	103	124	143	161	178	195	211
	3.0	62	88	112	135	155	175	194	212	229
	3.5	66	94	120	144	166	187	207	227	245
Downhill 2%	1.0	35	51	66	81	95	109	122	135	148
	1.5	46	66	85	103	119	137	152	167	183
	2.0	53	76	97	118	137	155	174	191	208
	2.5	58	84	107	130	151	171	190	210	228
	3.0	63	90	116	140	162	184	205	225	245
	3.5	67	96	123	149	172	195	218	239	260

Minimum design pressure: 0.6 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	126	161	185	205	219	231	241	248	255
	1.5	167	218	258	291	319	342	362	379	394
	2.0	195	258	310	353	390	423	451	476	499
	2.5	218	291	351	403	448	487	522	554	584
	3.0	238	319	386	445	496	542	583	621	655
Flat terrain	1.0	153	210	260	307	349	389	427	464	498
	1.5	189	260	323	380	433	483	530	576	619
	2.0	215	296	368	434	495	552	606	658	708
	2.5	237	326	406	478	545	608	668	725	780
	3.0	255	352	437	516	589	657	722	783	842
Downhill 2%	1.0	180	262	340	418	494	568	643	713	777
	1.5	212	303	390	474	555	635	714	788	858
	2.0	236	335	429	518	605	689	772	850	924
	2.5	256	362	461	556	647	735	822	904	981
	3.0	273	385	490	589	683	776	866	950	1032

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripper limitations.
Due to considerations related to dripline filling time and flushing effectiveness, it is not recommended to exceed a dripline length of 800 meters.

Max. lateral length (meter) at different inlet pressure and different slopes

Leach Line™ D 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 1.60 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	98	128	150	169	184	197	208	217	225
	1.5	127	169	203	232	256	278	298	315	330
	2.0	148	198	240	276	308	336	362	385	407
	2.5	164	221	270	312	349	383	414	442	468
	3.0	179	241	295	342	384	422	457	490	519
Flat terrain	1.0	113	155	192	227	258	288	316	343	369
	1.5	139	192	238	281	320	357	393	426	458
	2.0	159	219	272	321	366	408	449	487	524
	2.5	174	241	299	353	403	450	494	536	577
	3.0	188	259	323	381	435	485	534	580	623
Downhill 2%	1.0	128	183	236	288	337	386	435	483	531
	1.5	152	215	275	332	387	440	493	545	595
	2.0	170	240	305	367	426	483	539	594	647
	2.5	185	260	330	396	458	519	578	635	692
	3.0	197	278	351	421	487	550	612	672	731

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripper limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 2.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	87	113	135	153	167	180	191	201	209
	1.5	111	149	180	206	229	250	268	284	300
	2.0	129	174	211	244	274	300	323	345	365
	2.5	143	194	237	275	308	340	367	393	418
	3.0	155	211	258	301	338	373	405	434	462
	3.5	166	226	278	323	365	403	438	470	500
Flat terrain	1.0	98	134	166	196	224	250	274	297	320
	1.5	120	166	206	243	277	309	340	369	397
	2.0	137	189	236	278	317	354	389	422	454
	2.5	151	208	259	306	349	390	428	465	500
	3.0	163	224	280	330	377	421	462	502	540
	3.5	173	239	297	351	401	448	492	535	575
Downhill 2%	1.0	109	155	199	242	283	324	364	403	442
	1.5	130	184	234	282	328	372	416	458	500
	2.0	145	205	260	312	362	410	457	502	547
	2.5	158	223	282	338	391	442	491	539	586
	3.0	170	238	301	360	416	469	522	572	621
	3.5	179	251	318	380	438	494	548	601	652

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.00 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	69	91	109	125	139	151	161	170	179
	1.5	87	117	143	165	185	203	219	234	248
	2.0	101	136	167	194	218	240	261	279	297
	2.5	111	152	186	217	245	270	294	316	336
	3.0	121	164	203	237	268	296	322	347	370
	3.5	129	176	217	254	287	318	346	374	399
Flat terrain	1.0	75	103	128	151	172	193	211	230	247
	1.5	93	128	159	188	214	239	262	284	306
	2.0	105	146	181	214	244	273	300	326	350
	2.5	116	160	200	236	269	300	330	359	386
	3.0	125	173	215	254	290	324	356	387	417
	3.5	133	184	229	271	309	345	379	412	444
Downhill 2%	1.0	81	116	148	179	208	237	265	293	320
	1.5	98	138	175	210	244	276	307	338	368
	2.0	110	155	196	235	271	306	340	374	405
	2.5	120	169	213	255	293	331	367	402	437
	3.0	129	181	228	272	313	353	391	428	464
	3.5	137	191	241	287	331	372	413	452	489

Minimum design pressure: 0.4 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.50 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	53	70	83	95	104	113	120	126	132
	1.5	73	99	120	139	155	170	184	196	207
	2.0	87	118	144	168	189	208	226	242	257
	2.5	98	133	163	190	215	237	258	277	295
	3.0	106	145	179	209	236	262	285	307	327
	3.5	114	156	192	225	255	283	308	332	355
Flat terrain	1.0	59	81	101	119	135	151	166	180	193
	1.5	78	108	134	158	181	202	222	240	258
	2.0	91	126	156	185	211	236	259	281	303
	2.5	101	140	174	206	235	263	289	313	337
	3.0	110	152	189	224	256	286	314	341	367
	3.5	117	162	202	239	273	305	335	365	392
Downhill 2%	1.0	65	92	119	144	168	192	215	238	260
	1.5	83	117	148	178	206	234	260	286	312
	2.0	95	134	169	202	233	264	294	321	350
	2.5	105	147	186	222	256	288	320	351	380
	3.0	113	158	200	239	275	309	343	375	407
	3.5	121	169	212	253	292	328	363	398	430

Minimum design pressure: 0.6 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.

Max. dripline length (meter) at different inlet pressure and different slopes

Leach Line™ D 20010/20012 • ID 17.5 mm • Kd 0.25 • Flow rate 3.08 l/h

	Distance between drippers (meter)									
	Inlet pressure (bar)	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
Uphill 2%	1.0	50	67	80	91	100	109	116	122	128
	1.5	70	94	114	133	149	163	176	188	199
	2.0	83	112	138	160	180	199	215	231	246
	2.5	93	126	155	181	205	226	246	265	282
	3.0	101	138	170	199	225	249	272	293	312
	3.5	108	148	183	215	243	270	294	317	339
Flat terrain	1.0	56	77	96	113	128	144	158	171	184
	1.5	74	102	127	150	171	191	210	228	245
	2.0	86	119	148	176	200	223	246	266	287
	2.5	96	133	165	195	223	249	274	298	320
	3.0	104	144	180	212	242	271	298	323	348
	3.5	111	154	192	227	259	290	318	346	372
Downhill 2%	1.0	61	87	112	135	158	180	202	223	244
	1.5	78	110	140	168	194	220	245	269	293
	2.0	90	126	160	191	221	249	277	303	329
	2.5	99	139	176	210	242	272	302	331	359
	3.0	107	150	189	226	260	293	324	355	384
	3.5	114	160	201	240	275	310	343	375	406

Minimum design pressure: 0.6 bar. Maximum working pressure: Determined by the dripline wall-thickness limitations.



Integral Non PC driplines

Leach Line™ X

Non-pressure-compensating integral dripper with superior clogging resistance, designed for heap leaching applications in mining environments.



Benefits & Features

Superior clogging resistance

The TurboNet™ labyrinth features:

- Deep, wide and large cross-section flow passages
- Reduced sensitivity to particulate intrusion
- Continuous internal flushing action

This design minimizes clogging risk and ensures consistent leaching performance throughout the system lifespan.

An extra-large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of solution quality levels.

Long-lasting performance under harsh solution conditions

Engineered to operate reliably with challenging solution quality, including high levels of suspended solids and chemical exposure.

The self-flushing TurboNet™ labyrinth continuously evacuates debris during operation, maintaining stable flow conditions over time.

Hydraulic performance adaptability

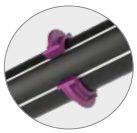
Flow rate varies with pressure, following a pressure-dependent flow regime, enabling flexible hydraulic design tailored to specific heap conditions.

A low flow exponent (X) improves distribution uniformity along the dripline and allows longer run lengths under comparable operating pressures, contributing to more consistent solution application and improved metal recovery.

Anti-migration clip (optional)

Prevents downslope solution migration in sloped or uneven heap geometries, maintaining uniform distribution.

Pre-installed during manufacturing, reducing field labor and installation time.



Applications

Acid & Alkaline Solutions

Acid & Alkaline Solutions

Evaporation Systems

- Heap leaching of copper, gold, silver and other metals.
- Installation on top of heap leach pads, either on-surface or sub-surface.
  Suitable for side slope applications when used in combination with dedicated accessories, ensuring uniform solution distribution.
- Applicable for primary and secondary leaching cycles. Designed for large-scale heaps with long dripline runs and variable topography.



Specifications

- Operating pressure range: Defined according to dripline diameter and wall thickness (refer to tables).
- Flow regime: Non-pressure-compensating (pressure-dependent flow).

  Filtration recommendation: A filtration grade of 200 micron / 80 mesh is recommended to ensure long-term operational reliability, maintain optimal hydraulic performance and achieve high solution distribution uniformity.
  Netafim™ provides a comprehensive range of non-corrosive filtration systems engineered for mining environments, suitable for installation at the mainline or sub-block level across the heap.
- Labyrinth technology: TurboNet™ with large flow passages for enhanced clogging resistance.
- Manufacturing integration: Weldable into thick-wall driplines; 0.90, 1.00, 1.20 mm.
- Hydraulic uniformity: Injection-molded dripper with low coefficient of variation (CV), ensuring reliable distribution uniformity under field conditions.
- Durability: High UV resistance. Resistant to chemicals typically used in heap leaching operations.
- Standards compliance: Compliant with ISO 9261.
- Driplines are black with two white stripes.

Drippers technical data

Flow rate* 1.2 WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.05	0.60 x 0.80 x 75	70	0.364	0.46	200/80
1.50	0.73 x 0.90 x 75	70	0.520	0.46	200/80
2.10	0.76 x 1.09 x 75	70	0.728	0.46	200/80
4.20	1.06 x 1.40 x 75	76	1.456	0.46	200/80
8.40	1.68 x 1.40 x 37	76	2.913	0.46	200/80

*Flow rate at 1.0 bar pressure WT = dripline wall thickness

Flow rate* 0.9-1.0 WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.00	0.60 x 0.80 x 75	70	0.348	0.46	200/80
1.50	0.73 x 0.90 x 75	70	0.520	0.46	200/80
2.00	0.76 x 1.09 x 75	70	0.693	0.46	200/80
4.00	1.06 x 1.40 x 75	76	1.387	0.46	200/80
8.00	1.68 x 1.40 x 37	76	2.774	0.46	200/80

*Flow rate at 1.0 bar pressure WT = dripline wall thickness

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

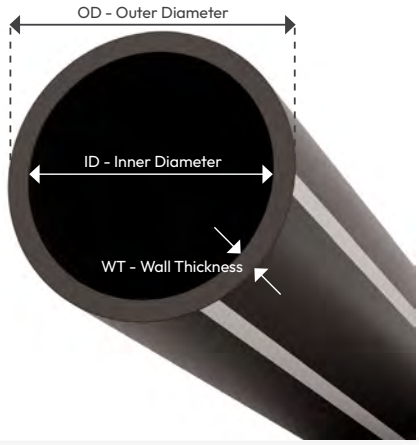


Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	0.40
16010	14.20	1.0	16.20	3.5	4.6	0.40
16012	14.20	1.2	16.60	4.0	5.2	0.40
20010	17.50	1.0	19.50	3.5	4.6	0.10
20012	17.50	1.2	19.90	4.0	5.2	0.10

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

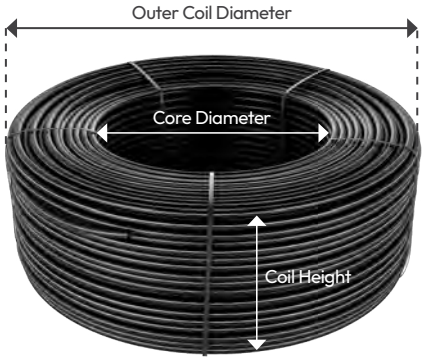
Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.



Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	500	20.7	84	41	27
16010	1.0	0.15 to 1.00	500	23.0	84	41	27
16012	1.2	0.15 to 1.00	400	22.3	78	41	28
20010	1.0	0.15 to 1.00	300	16.7	84	50	27
20012	1.2	0.15 to 1.00	300	20.2	84	50	27

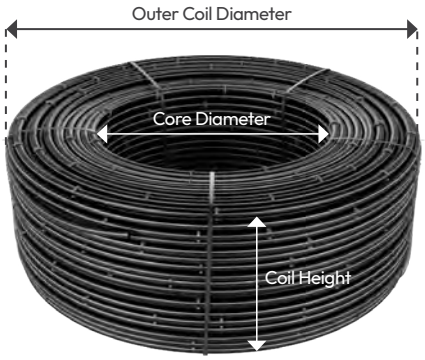
*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	300	13.0	84	45	27
16010	1.0	0.15 to 1.00		15.0			
16012	1.2	0.15 to 1.00		17.9			
20010	1.0	0.15 to 1.00		18.0			
20012	1.2	0.15 to 1.00		21.5			

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	500	330	165000
16010	500	330	165000
16012	400	352	140800
20010	300	330	99000
20012	300	330	99000



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	300	330	99000
16010			
16012			
20010			
20012			

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Leach Line™ X	LEACH LINE X

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h) 1.2 mm WT	
1.05	1.05L/H
1.50	1.50L/H
2.10	2.10L/H
4.20	4.20L/H
8.40	8.40L/H

Flow rate (l/h) 0.9-1.0 mm WT	
1.00	1.00L/H
1.50	1.50L/H
2.00	2.00L/H
4.00	4.00L/H
8.00	8.00L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length with assembled clips (m)	
All models	300M

Special features	
No added	-
Clip	CL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

LEACH LINE X 16012 1.50L/H 0.30M 400M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Dripline	Material group (MG)
Leach Line™ X 16009	12320
Leach Line™ X 16010	12310
Leach Line™ X 16012	12300

Brown dripline	Material group (MG)
Leach Line™ X 20010	12400
Leach Line™ X 20012	12420

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Leach Line™ X flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00	3.50	4.00
Leach Line™ X 1.2 mm WT	1.05	0.69	0.83	0.95	1.05	1.27	1.44	1.60	1.74	1.87	1.99
	1.50	0.98	1.19	1.35	1.50	1.81	2.06	2.29	2.49	2.67	2.84
	2.10	1.38	1.66	1.89	2.10	2.53	2.89	3.20	3.48	3.74	3.97
	4.20	2.75	3.32	3.79	4.20	5.06	5.78	6.40	6.96	7.47	7.95
	8.40	5.51	6.64	7.58	8.40	10.12	11.56	12.81	13.93	14.95	15.90

* Nominal flow rate at 1.0 bar.

Dripper	Flow rate* (l/h)	Working pressure (bar)								
		0.20	0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00	3.50
Leach Line™ X 0.9-1.0 mm WT	1.00	0.48	0.66	0.79	0.91	1.00	1.21	1.38	1.53	1.66	1.79
	1.50	0.72	0.98	1.19	1.35	1.50	1.81	2.06	2.29	2.49	2.67
	2.00	0.95	1.31	1.58	1.80	2.00	2.41	2.75	3.05	3.31	3.56
	4.00	1.91	2.62	3.16	3.61	4.00	4.82	5.50	6.10	6.63	7.12
	8.00	3.82	5.25	6.32	7.22	8.00	9.64	11.00	12.19	13.26	14.24

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	65	83	96	107	115	122	126	131	135
Uphill	1%	71	95	114	131	145	158	169	179	188
Flat terrain	0	78	108	134	159	181	202	222	241	259
Downhill	-1%	83	118	151	182	212	242	270	298	326
	-2%	89	130	169	208	246	284	323	361	400

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	52	68	80	91	99	106	112	117	121
Uphill	1%	56	75	92	106	118	130	139	149	157
Flat terrain	0	60	83	104	123	140	156	171	186	201
Downhill	-1%	63	89	113	136	158	179	200	220	240
	-2%	66	96	124	151	178	204	230	257	282

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	44	59	70	80	88	95	101	106	110
Uphill	1%	47	64	78	90	101	111	121	130	136
Flat terrain	0	50	69	86	102	116	130	143	155	167
Downhill	-1%	52	73	93	111	128	146	162	178	194
	-2%	54	78	100	122	142	163	183	203	223

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	30	40	48	56	63	69	74	78	83
Uphill	1%	31	42	52	61	68	76	82	88	94
Flat terrain	0	32	44	55	66	75	84	91	100	107
Downhill	-1%	32	46	58	69	79	90	99	109	118
	-2%	33	47	60	73	85	97	108	119	129

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	19	26	33	38	43	48	52	58	59
Uphill	1%	20	27	34	40	46	50	55	60	64
Flat terrain	0	20	28	36	42	48	54	59	65	70
Downhill	-1%	21	29	36	43	50	56	62	68	73
	-2%	21	29	38	45	52	59	66	72	78

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 1.05 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	63	81	94	105	113	120	126	130	134
	1%	69	93	112	128	142	155	166	176	185
Flat terrain	0	76	105	130	154	176	196	215	234	252
Downhill	-1%	81	114	146	176	205	233	261	288	314
	-2%	86	125	163	201	237	274	310	347	384

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	50	66	78	89	97	103	110	114	119
	1%	54	73	88	103	114	125	135	144	152
Flat terrain	0	58	80	100	118	134	150	165	179	193
Downhill	-1%	60	85	108	130	151	171	190	210	228
	-2%	63	91	118	144	169	194	218	243	267

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 2.10 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	43	57	68	78	86	92	99	104	108
	1%	46	62	76	88	99	109	118	125	133
Flat terrain	0	48	67	84	99	113	126	138	150	162
Downhill	-1%	50	71	90	108	124	141	156	172	187
	-2%	52	75	96	117	137	157	176	195	214

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 4.20 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	29	39	47	55	61	67	72	77	81
	1%	30	41	50	59	67	74	80	86	92
Flat terrain	0	31	43	54	64	73	81	89	96	104
Downhill	-1%	31	44	56	67	77	87	96	105	114
	-2%	32	46	58	71	82	93	104	114	125

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 8.40 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	19	26	32	37	42	46	60	54	58
	1%	19	27	33	39	44	49	54	59	63
Flat terrain	0	20	27	34	41	47	53	58	63	68
Downhill	-1%	20	28	35	42	48	54	60	66	71
	-2%	20	29	36	44	50	57	63	69	75

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20010 • ID 17.5 mm • Kd 0.140 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	93	111	123	132	137	141	145	148	150
Uphill	1%	110	139	161	179	195	207	218	229	236
Flat terrain	0	128	170	208	243	274	304	332	359	384
Downhill	-1%	143	199	251	301	349	397	444	491	537
	-2%	160	229	298	366	434	503	192	179	172

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20010 • ID 17.5 mm • Kd 0.140 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	78	95	108	117	124	130	134	138	141
Uphill	1%	88	113	132	149	163	176	186	196	205
Flat terrain	0	99	132	161	188	212	235	257	278	298
Downhill	-1%	108	148	186	222	256	290	322	356	387
	-2%	117	166	213	260	305	351	397	443	489

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20010 • ID 17.5 mm • Kd 0.140 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	67	84	96	106	113	119	125	130	133
Uphill	1%	75	96	114	129	142	154	164	174	182
Flat terrain	0	82	110	134	156	177	195	214	231	248
Downhill	-1%	88	121	151	180	207	233	259	284	309
	-2%	95	133	170	205	240	274	309	343	377

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20010 • ID 17.5 mm • Kd 0.140 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	46	59	70	79	86	92	98	103	107
Uphill	1%	49	65	78	89	99	109	117	124	131
Flat terrain	0	53	71	86	101	113	126	138	149	159
Downhill	-1%	55	75	93	110	125	141	155	170	184
	-2%	58	80	100	120	139	157	175	194	211

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20010 • ID 17.5 mm • Kd 0.140 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	31	41	48	56	62	67	71	76	80
Uphill	1%	32	43	52	60	67	74	80	86	91
Flat terrain	0	34	45	56	65	73	81	89	95	103
Downhill	-1%	35	47	58	68	78	87	96	104	113
	-2%	36	49	61	73	83	94	104	113	123

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 1.05 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	91	109	121	130	136	140	144	147	149
	1%	107	135	158	176	191	204	215	224	233
Flat terrain	0	124	166	202	236	266	295	322	348	373
Downhill	-1%	139	192	242	291	337	383	428	473	517
	-2%	154	221	286	352	416	482	201	183	175

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	75	92	105	115	122	127	133	136	139
	1%	85	109	128	145	158	170	182	192	200
Flat terrain	0	95	127	154	180	203	225	246	266	286
Downhill	-1%	103	142	177	211	244	276	307	338	368
	-2%	112	158	202	246	289	331	374	418	461

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 2.10 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	66	82	94	104	112	118	123	128	131
	1%	73	94	111	126	139	150	161	170	179
Flat terrain	0	79	107	130	152	171	190	207	224	241
Downhill	-1%	85	117	146	173	199	225	250	274	298
	-2%	91	128	163	197	230	263	296	329	361

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 4.20 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	45	58	68	77	84	91	96	101	105
	1%	48	63	76	87	97	106	114	121	128
Flat terrain	0	51	68	83	98	110	123	133	144	155
Downhill	-1%	53	72	90	106	121	136	150	164	178
	-2%	56	77	97	116	134	151	169	185	203

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ X 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 8.40 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	30	40	47	54	60	65	70	74	78
	1%	31	42	50	59	65	71	78	83	89
Flat terrain	0	33	44	54	63	71	78	86	93	100
Downhill	-1%	33	45	56	66	75	84	93	101	109
	-2%	34	47	59	70	80	90	100	110	119

Leach Line™ A

Non-pressure-compensating integral dripper with advanced clogging resistance, designed for heap leaching applications in mining environments.



Benefits & Features

Superior clogging resistance

The TurbuNext™ labyrinth features:

- Deep, wide and large cross-section flow passages
- Enhanced internal turbulence for improved self-cleaning performance
- Reduced sensitivity to sediment accumulation
- Continuous internal flushing action

This advanced hydraulic design improves resistance to clogging and ensures stable flow performance under demanding operating conditions.

A large filtration area prevents suspended particles from entering the dripper, maintaining dependable performance across a wide range of solution quality levels.

Long-lasting performance under harsh solution conditions

Engineered to operate reliably with challenging solution quality, including high levels of suspended solids and chemical exposure.

The TurbuNext™ labyrinth is engineered to increase internal turbulence, minimizing sediment deposition and improving resistance to clogging within the dripper.

Hydraulic performance adaptability

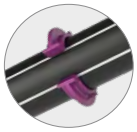
Flow rate varies with pressure, following a pressure-dependent flow regime, enabling flexible hydraulic design tailored to specific heap conditions.

A low flow exponent (X) improves distribution uniformity along the dripline and allows longer run lengths under comparable operating pressures, contributing to more consistent solution application and improved metal recovery.

Anti-migration clip (optional)

Prevents downslope solution migration in sloped or uneven heap geometries, maintaining uniform distribution.

Pre-installed during manufacturing, reducing field labor and installation time.



Applications

Acid & Alkaline Solutions

Acid & Alkaline Solutions

Evaporation Systems

- Heap leaching of copper, gold, silver and other metals.
- Installation on top of heap leach pads, either on-surface or sub-surface.
  Suitable for side slope applications when used in combination with dedicated accessories, ensuring uniform solution distribution.
- Applicable for primary and secondary leaching cycles. Designed for large-scale heaps with long dripline runs and variable topography.



Specifications

- Operating pressure range: Defined according to dripline diameter and wall thickness (refer to tables).
- Flow regime: Non-pressure-compensating (pressure-dependent flow).
- Filtration recommendation: A filtration grade of 200 micron / 80 mesh is recommended to ensure long-term operational reliability, maintain optimal hydraulic performance and achieve high solution distribution uniformity.
  Netafim™ provides a comprehensive range of non-corrosive filtration systems engineered for mining environments, suitable for installation at the mainline or sub-block level across the heap.
- Labyrinth technology: TurbuNext™ labyrinth designed for enhanced turbulence and improved clogging resistance.
- Manufacturing integration: Weldable into thick-wall driplines; 0.90, 1.00, 1.20 mm.
- Hydraulic uniformity: Injection-molded dripper with low coefficient of variation (CV), ensuring reliable distribution uniformity under field conditions.
- Durability: High UV resistance. Resistant to chemicals typically used in heap leaching operations.
- Standards compliance: Compliant with ISO 9261.
- Driplines are black with two white stripes.

Drippers technical data

Flow rate* 1.2 WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.05	0.60 x 0.74 x 65	49	0.364	0.46	200/80
1.60	0.71 x 0.85 x 65	53	0.554	0.46	200/80
2.10	0.76 x 1.03 x 65	54	0.728	0.46	200/80
3.15	0.90 x 1.20 x 65	54	1.092	0.46	200/80
4.20	0.94 x 1.28 x 33	54	1.455	0.46	200/80
8.40	1.52 x 1.28 x 28	50	2.912	0.46	200/80

*Flow rate at 1.0 bar pressure WT = dripline wall thickness

Flow rate* 0.9-1.0 WT (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.00	0.60 x 0.74 x 65	49	0.348	0.46	200/80
1.50	0.71 x 0.85 x 65	53	0.520	0.46	200/80
2.00	0.76 x 1.03 x 65	54	0.693	0.46	200/80
3.00	0.90 x 1.20 x 65	54	1.040	0.46	200/80
4.00	0.94 x 1.28 x 33	54	1.387	0.46	200/80
8.00	1.52 x 1.28 x 28	50	2.773	0.46	200/80

*Flow rate at 1.0 bar pressure WT = dripline wall thickness

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

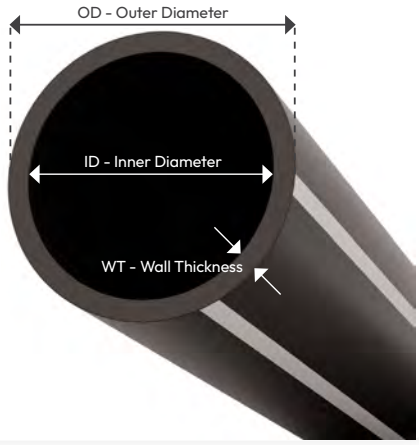


Driplines technical data

Model	Inner diameter (mm)	Wall thickness (mm)	Outer diameter (mm)	Max. working pressure (bar)	Max. flushing pressure (bar)	Kd
16009	14.20	0.9	16.00	3.0	3.9	0.40
16010	14.20	1.0	16.20	3.5	4.6	0.40
16012	14.20	1.2	16.60	4.0	5.2	0.40
20010	17.50	1.0	19.50	3.5	4.6	0.10
20012	17.50	1.2	19.90	4.0	5.2	0.10

Kd: An integral dripper installed inside the dripline creates a localized disturbance in the water flow, generating minor head losses (Kd) as its shape and volume partially obstruct the internal flow path. The lower the Kd value for a given inner diameter, the longer the driplines can be designed under similar operating conditions.

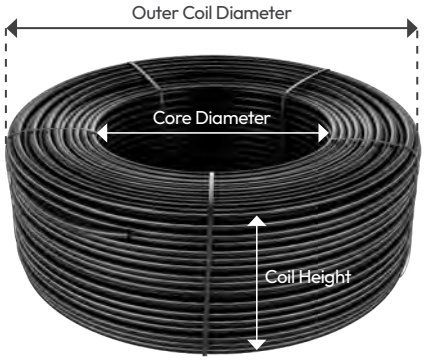
Max. flushing pressure: The maximum permissible flushing pressures shown in the table apply to continuous flushing cycles of up to 30 minutes, with the ends of at least five driplines opened for flushing.



Driplines package data (on bundled coil)

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	500	20.7	84	41	27
16010	1.0	0.15 to 1.00	500	23.0	84	41	27
16012	1.2	0.15 to 1.00	400	22.3	78	41	28
20010	1.0	0.15 to 1.00	300	16.7	84	50	27
20012	1.2	0.15 to 1.00	300	20.2	84	50	27

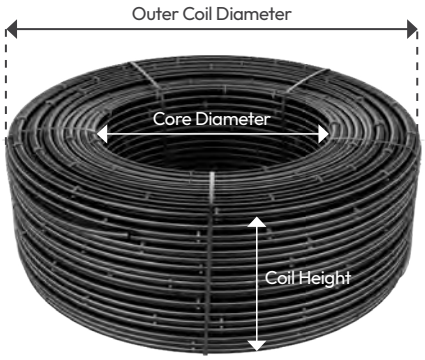
*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Wall thickness (mm)	Distance between drippers (m)	Coil length (m)	Average* coil weight (kg)	Outer coil diameter (cm)	Core coil diameter (cm)	Coil height (cm)
16009	0.9	0.15 to 1.00	300	13.0	84	45	27
16010	1.0	0.15 to 1.00		15.0			
16012	1.2	0.15 to 1.00		17.9			
20010	1.0	0.15 to 1.00		18.0			
20012	1.2	0.15 to 1.00		21.5			

*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.



Driplines package data (on bundled coil) within container

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	500	330	165000
16010	500	330	165000
16012	400	352	140800
20010	300	330	99000
20012	300	330	99000



Driplines package data (on bundled coil) with assembled anti-migration clips

Model	Coil length (m)	Coils in a 40 foot container (units)	Total in a 40 foot container (m)
16009	300	330	99000
16010			
16012			
20010			
20012			

A standard 40-foot container has internal dimensions of 12.0 m (L) × 2.35 m (W) × 2.39 m (H).
In certain cases, a 40-foot High Cube container may be used, providing an increased internal height of 2.69 m, allowing improved volume utilization depending on product configuration.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Product name	
Leach Line™ A	LEACH LINE A

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
0.9	009
1.0	010
1.2	012

Flow rate (l/h) 1.2 mm WT	
1.05	1.05L/H
1.60	1.60L/H
2.10	2.10L/H
3.15	3.15L/H
4.20	4.20L/H
8.40	8.40L/H

Flow rate (l/h) 0.9-1.0 mm WT	
1.00	1.00L/H
1.50	1.50L/H
2.00	2.00L/H
3.00	3.00L/H
4.00	4.00L/H
8.00	8.00L/H

Distance between drippers (m)	
0.2	0.20M
0.3	0.30M
0.4	0.40M
0.5	0.50M
0.6	0.60M
0.7	0.70M

*Other distances between drippers can be ordered.

Coil length (m)	
Model 16009	500M
Model 16010	500M
Model 16012	400M
Model 20010	300M
Model 20012	300M

Coil length with assembled clips (m)	
All models	300M

Special features	
No added	-
Clip	CL
Other	XXX

*Other features available upon request. Consult your local Netafim™ distributor.

LEACH LINE A 16012 1.60L/H 0.30M 300M CL

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Dripline	Material group (MG)
Leach Line™ A 16009	12315
Leach Line™ A 16010	12308
Leach Line™ A 16012	12290

Brown dripline	Material group (MG)
Leach Line™ A 20010	*
Leach Line™ A 20012	*

*Will be activated upon request

Drippers flow rate vs working pressure

To determine the actual flow rate of a dripper under different operating pressures, the following equation is applied:
$Q = K \times P^X$

Where:

Q = Dripper flow rate (liters per hour)

K = Dripper-specific flow constant (manufacturer-defined)

P = Actual working pressure (meters of water column)

X = Dripper-specific exponent (manufacturer-defined)

In accordance with ISO 9261, manufacturers must declare both the K constant and the X exponent for each dripper model.

Non-pressure-compensated drippers deliver a flow rate that varies with operating pressure, following the relationship defined by the formula presented above.

To provide a general understanding of how flow rate responds to changes in operating pressure, tables are provided showing the dripper flow rate at different working pressures for each model in this document.

Leach Line™ A flow (l/h) vs pressure (bar)

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00	3.50	4.00
Leach Line™ A 1.2 mm WT	1.05	0.69	0.83	0.95	1.05	1.27	1.44	1.60	1.74	1.87	1.99
	1.60	1.05	1.26	1.44	1.60	1.93	2.20	2.44	2.65	2.84	3.02
	2.10	1.38	1.66	1.89	2.10	2.53	2.89	3.20	3.48	3.74	3.97
	3.15	2.07	2.49	2.84	3.15	3.80	4.33	4.80	5.22	5.60	5.96
	4.20	2.75	3.32	3.79	4.20	5.06	5.77	6.40	6.96	7.47	7.94
	8.40	5.51	6.64	7.58	8.40	10.12	11.55	12.80	13.92	14.94	15.89

* Nominal flow rate at 1.0 bar.

Dripper	Flow rate* (l/h)	Working pressure (bar)									
		0.20	0.40	0.60	0.80	1.00	1.50	2.00	2.50	3.00	3.50
Leach Line™ A 0.9-1.0 mm WT	1.00	0.48	0.66	0.79	0.90	1.00	1.21	1.38	1.53	1.66	1.78
	1.50	0.72	0.98	1.19	1.35	1.50	1.81	2.06	2.29	2.49	2.67
	2.00	0.95	1.31	1.58	1.80	2.00	2.41	2.75	3.05	3.31	3.56
	3.00	1.43	1.97	2.37	2.71	3.00	3.61	4.13	4.57	4.97	5.34
	4.00	1.91	2.62	3.16	3.61	4.00	4.82	5.50	6.10	6.63	7.12
	8.00	3.81	5.25	6.32	7.22	8.00	9.64	11.00	12.19	13.26	14.23

* Nominal flow rate at 1.0 bar.

Maximum driplines length

To determine the maximum feasible run length for a given dripline, considering all hydraulic factors that influence flow within the dripline, Netafim™ uses proprietary design software based on the Darcy–Weisbach equations, supported by decades of engineering expertise and long-standing collaboration with leading academic institutions.

The precise maximum run length for any installation must be calculated using this dedicated design software, which evaluates all relevant hydraulic parameters across the system.

Minor differences may occur between design tools available on the market, due to variations in calculation methodologies and underlying design assumptions.

To calculate the maximum feasible dripline length, taking into account the required variables, such as flow rate and emitter spacing, pipe inner diameter, field slope, inlet pressure and other parameters, Netafim™ HydroCalc design software can be used.

HydroCalc 3.0 by NETAFIM

The following tables present the maximum dripline lengths that can be used in driplines to achieve optimal performance.

The values provided here are intended to offer a preliminary reference. The actual maximum dripline length must be calculated by a hydraulic engineer responsible for designing the complete system, in order to account for additional constraints and site-specific limitations.

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	65	83	97	107	115	122	127	131	135
	1%	71	95	114	131	145	158	170	179	188
Flat terrain	0	78	108	134	159	181	203	222	241	260
Downhill	-1%	83	118	151	183	212	242	270	299	326
	-2%	89	130	169	208	247	285	324	362	401

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	52	68	80	91	99	106	112	117	121
	1%	56	75	92	106	118	130	139	149	157
Flat terrain	0	60	83	104	123	140	156	171	186	201
Downhill	-1%	63	89	113	136	158	179	200	220	240
	-2%	66	96	124	151	178	204	230	257	282

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	44	59	70	80	88	95	101	106	110
	1%	47	64	78	90	101	111	121	130	136
Flat terrain	0	50	69	86	102	116	130	143	155	167
Downhill	-1%	52	73	93	111	128	146	162	178	194
	-2%	54	78	100	122	142	163	183	203	223

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 3.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	35	47	56	65	72	78	85	90	94
	1%	37	50	61	72	81	89	97	104	111
Flat terrain	0	38	53	66	79	90	100	110	121	129
Downhill	-1%	39	56	70	84	97	109	122	133	144
	-2%	41	58	74	90	105	119	134	148	161

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	30	40	48	56	63	69	74	78	83
	1%	31	42	52	61	68	76	82	88	94
Flat terrain	0	32	44	55	66	75	84	91	100	107
Downhill	-1%	32	46	58	69	79	90	99	109	118
	-2%	33	47	60	73	85	97	108	119	129

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16009/16010 • ID 14.2 mm • Kd 0.40 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
Uphill	2%	19	26	33	38	43	48	52	56	59
	1%	20	27	34	40	46	51	55	60	64
Flat terrain	0	20	28	36	42	48	54	59	65	70
Downhill	-1%	21	29	36	43	50	56	62	68	73
	-2%	21	29	38	45	52	59	66	72	78

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 1.05 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	63	81	94	105	113	120	126	130	134
Uphill	1%	69	93	112	128	142	155	166	176	185
Flat terrain	0	76	105	130	154	176	196	215	234	252
Downhill	-1%	81	114	146	176	205	233	261	288	314
	-2%	86	125	163	201	237	274	310	347	384

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 1.60 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	50	66	78	89	97	103	110	114	119
Uphill	1%	54	73	88	103	114	125	135	144	153
Flat terrain	0	58	80	100	118	134	150	165	179	193
Downhill	-1%	60	85	108	130	151	171	190	210	228
	-2%	64	92	118	144	169	194	219	243	268

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 2.10 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	43	57	68	78	86	92	99	104	108
Uphill	1%	46	62	76	88	99	109	118	125	133
Flat terrain	0	48	67	84	99	113	126	138	150	162
Downhill	-1%	50	71	90	108	124	141	156	172	187
	-2%	52	75	96	117	137	157	176	195	214

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 3.15 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	34	46	55	64	71	77	82	88	93
Uphill	1%	36	48	60	70	79	87	94	102	108
Flat terrain	0	37	51	64	76	87	97	107	117	126
Downhill	-1%	38	54	68	81	94	106	118	129	139
	-2%	39	56	72	87	101	115	129	142	155

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 4.20 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	29	39	47	55	61	67	72	77	81
Uphill	1%	30	41	50	59	67	74	80	86	92
Flat terrain	0	31	43	54	64	73	81	89	96	104
Downhill	-1%	31	44	56	67	77	87	96	105	114
	-2%	32	46	58	71	82	93	104	114	125

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 16012 • ID 14.2 mm • Kd 0.40 • Flow rate 8.40 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	19	26	32	37	42	46	50	54	58
Uphill	1%	19	27	33	39	44	49	54	59	63
Flat terrain	0	20	27	34	41	47	53	58	63	68
Downhill	-1%	20	28	35	42	48	54	60	66	71
	-2%	20	29	36	44	50	57	63	69	75

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 1.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	93	111	123	132	137	141	146	148	150
Uphill	1%	110	139	161	180	195	207	219	229	236
Flat terrain	0	128	171	209	243	275	304	333	360	385
Downhill	-1%	143	199	251	302	350	398	445	491	538
	-2%	160	230	298	367	435	505	192	179	172

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 1.50 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	78	95	108	117	124	130	134	138	141
Uphill	1%	88	113	132	149	163	176	186	196	205
Flat terrain	0	99	132	161	188	212	235	257	278	298
Downhill	-1%	108	148	186	222	256	290	322	356	387
	-2%	117	166	213	260	305	351	397	443	489

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 2.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	67	84	96	106	113	119	125	130	133
Uphill	1%	75	96	114	129	142	154	164	174	182
Flat terrain	0	82	110	134	156	177	195	214	231	248
Downhill	-1%	88	121	151	180	207	233	259	284	309
	-2%	95	133	170	205	240	274	309	343	377

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 3.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	54	69	80	90	97	104	110	114	119
Uphill	1%	59	77	91	105	116	125	135	144	152
Flat terrain	0	63	85	104	121	136	151	166	179	192
Downhill	-1%	67	91	113	134	154	173	191	210	227
	-2%	71	98	124	149	173	197	221	244	267

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 4.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	46	59	70	79	86	92	98	103	107
Uphill	1%	49	65	78	89	99	109	117	124	131
Flat terrain	0	53	71	86	101	113	126	138	149	159
Downhill	-1%	55	75	93	110	125	141	155	170	184
	-2%	58	80	100	120	139	157	175	194	211

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20010 • ID 17.5 mm • Kd 0.10 • Flow rate 8.00 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**	**0.90**	**1.00**
	2%	31	41	48	56	62	67	71	76	80
Uphill	1%	32	43	52	60	67	74	80	86	91
Flat terrain	0	34	45	56	65	73	81	89	95	103
Downhill	-1%	35	47	58	68	78	87	96	104	113
	-2%	36	49	61	73	83	94	104	113	123

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 1.05 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	91	109	121	130	136	140	144	147	149
Uphill	1%	107	135	158	176	191	204	215	224	233
Flat terrain	0	124	166	202	236	266	295	322	348	373
Downhill	-1%	139	192	242	291	337	383	428	473	517
	-2%	154	221	286	352	416	482	201	183	175

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 1.60 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	75	92	105	115	122	127	133	136	139
Uphill	1%	85	109	128	145	159	171	182	192	200
Flat terrain	0	95	127	154	180	203	225	246	267	286
Downhill	-1%	103	142	178	212	244	276	307	338	368
	-2%	112	158	202	246	289	332	375	418	461

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 2.10 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	66	82	94	104	112	118	123	128	131
Uphill	1%	73	94	111	126	139	150	161	170	179
Flat terrain	0	79	107	130	152	171	190	207	224	241
Downhill	-1%	85	117	146	173	199	225	250	274	298
	-2%	91	128	163	197	230	263	296	329	361

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 3.15 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	53	67	78	88	95	102	107	113	117
Uphill	1%	57	74	89	102	112	123	132	140	148
Flat terrain	0	61	82	100	117	132	146	160	174	186
Downhill	-1%	65	88	110	130	149	167	185	203	219
	-2%	68	95	120	144	167	190	212	234	256

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 4.20 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	45	58	68	77	84	91	96	101	105
Uphill	1%	48	63	76	87	97	106	114	122	128
Flat terrain	0	51	68	84	98	110	123	134	144	155
Downhill	-1%	53	72	90	106	121	136	150	164	178
	-2%	56	77	97	116	134	151	169	186	203

Max. lateral length (meters) at different slopes - 10% flow variation

Leach Line™ A 20012 • ID 17.5 mm • Kd 0.10 • Flow rate 8.40 l/h • Inlet pressure 1.5 Bar

	Distance between drippers (meter)									
	Slope	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	2%	30	40	47	54	60	65	70	74	78
Uphill	1%	31	42	50	59	65	71	78	83	89
Flat terrain	0	33	44	54	63	71	78	86	93	100
Downhill	-1%	33	45	56	66	75	84	93	101	109
	-2%	34	47	59	70	80	90	100	110	119



Landscape products



Integral PC Driplines

TechLine™

Integral pressure-compensated dripline with continuous self-flushing and integrated drainage mechanism, featuring enhanced resistance to root intrusion.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term operation even under challenging water quality conditions. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Hybrid configuration (optional)	Optional patented Hybrid configuration combines the advantages of an integral dripline with compatibility for Netafim™ press-fit adaptors through an on-line saddle connection.
Landscape integration	Available in brown and dark brown colors for seamless integration into landscape applications.



Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs, trees and nursery applications.
- Recommended for flat terrains, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.3 and 3.5 l/h.
- Dripline diameters: 16 mm (14.2 mm ID), 20 mm (17.5 mm ID – available upon request).
- Wall thicknesses: 1.00 and 1.20 mm.
- Pressure-compensated operating range: 0.5 to 4.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color		Special features	
TechLine™	TCLINE	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M	Brown	-	Hybrid	HYB
		20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M	Dark Brown	DB		
						2.30	2.30L/H	0.5	0.50M	200	200M				
						3.50	3.50L/H			400	400M				

*Other distances between drippers can be ordered.

TCLINE 16012 1.00L/H 0.30M 400M HYB

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 16	Material group (MG)	Brown dripline 20	Material group (MG)	Dark brown dripline 16	Material group (MG)	Dark brown dripline 20	Material group (MG)
TechLine™ 16010	*	TechLine™ 20010	*	TechLine™ 16010	*	TechLine™ 20010	*
TechLine™ 16012	*	TechLine™ 20012	*	TechLine™ 16012	*	TechLine™ 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum dripline length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	138	177	214	101	130	158	80	103	125	61	78	95
2.0	158	204	246	116	150	181	92	118	143	70	90	109
2.5	175	225	272	128	165	200	101	130	158	77	99	120
3.0	189	243	294	139	178	216	109	141	171	83	107	130
3.5	201	258	313	147	190	230	116	150	182	88	114	138
4.0	212	272	330	155	200	243	122	158	192	93	120	146

Maximum dripline length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	125	156	183	95	119	141	76	96	114	58	74	89
2.0	147	185	219	110	140	166	88	112	134	68	86	104
2.5	164	208	247	123	156	187	98	124	150	75	96	115
3.0	179	227	270	133	170	204	106	135	163	81	104	125
3.5	192	243	291	143	182	218	113	145	174	86	111	134
4.0	203	258	309	151	192	231	119	153	184	91	117	142

Maximum dripline length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	151	199	246	108	142	175	84	110	135	63	82	101
2.0	170	223	274	122	160	197	95	124	153	72	94	114
2.5	185	242	298	134	175	214	105	136	167	79	102	125
3.0	198	259	318	144	187	229	113	146	179	85	110	134
3.5	210	274	336	152	198	242	119	155	189	90	117	143
4.0	221	287	352	160	208	254	125	163	199	95	123	150

*In all tables minimum considered pressure 0.5 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

TechLine™ AS

Integral pressure-compensated dripper with continuous self-flushing and anti-siphon mechanisms, featuring enhanced resistance to root intrusion.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents suction (AS)	The integrated anti-siphon (AS) feature prevents the suction of contaminants into the dripper, making it ideal for sub-surface applications.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Maximum root intrusion protection (XRS) (optional)	Extra root intrusion and root-wrap protection (XRS) – optional feature combining enhanced root intrusion resistance with an external stripe that prevents root wrapping around the dripline. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Hybrid configuration (optional)	Optional patented Hybrid configuration combines the advantages of an integral dripline with compatibility for Netafim™ press-fit adaptors through an on-line saddle connection. 
Landscape integration	Available in brown and dark brown colors for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, sub-surface turf applications, flower beds, hedges, shrubs, trees and nursery applications.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.3, 3.5 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 0.5–4.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color		Special features	
TechLine™ AS	TCLINE AS	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M	Brown	-	Hybrid	HYB
TechLine™ AS XR	TCLINE AS XR	20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M	Dark Brown	DB		
TechLine™ AS XRS	TCLINE AS XRS					2.30	2.30L/H	0.5	0.50M	200	200M				
						3.50	3.50L/H			400	400M				

*Other distances between drippers can be ordered.

TCLINE AS XR 16012 1.60L/H 0.30M 50M HYB

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 16	Material group (MG)	Brown dripline 20	Material group (MG)	Dark brown dripline 16	Material group (MG)	Dark brown dripline 20	Material group (MG)
TechLine™ AS 16010	14720	TechLine™ AS 20010	*	TechLine™ AS 16010	*	TechLine™ AS 20010	*
TechLine™ AS 16012	14710	TechLine™ AS 20012	*	TechLine™ AS 16012	14690	TechLine™ AS 20012	*
TechLine™ AS XR 16010	14699	TechLine™ AS XR 20010	*	TechLine™ AS XR 16010	*	TechLine™ AS XR 20010	*
TechLine™ AS XR 16012	14695	TechLine™ AS XR 20012	*	TechLine™ AS XR 16012	14691	TechLine™ AS XR 20012	*
TechLine™ AS XRS 16010	*	TechLine™ AS XRS 20010	*	TechLine™ AS XRS 16010	*	TechLine™ AS XRS 20010	*
TechLine™ AS XRS 16012	*	TechLine™ AS XRS 20012	*	TechLine™ AS XRS 16012	*	TechLine™ AS XRS 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	138	177	214	101	130	158	80	103	125	61	78	95
2.0	158	204	246	116	150	181	92	118	143	70	90	109
2.5	175	225	272	128	165	200	101	130	158	77	99	120
3.0	189	243	294	139	178	216	109	141	171	83	107	130
3.5	201	258	313	147	190	230	116	150	182	88	114	138
4.0	212	272	330	155	200	243	122	158	192	93	120	146

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	125	156	183	95	119	141	76	96	114	58	74	89
2.0	147	185	219	110	140	166	88	112	134	68	86	104
2.5	164	208	247	123	156	187	98	124	150	75	96	115
3.0	179	227	270	133	170	204	106	135	163	81	104	125
3.5	192	243	291	143	182	218	113	145	174	86	111	134
4.0	203	258	309	151	192	231	119	153	184	91	117	142

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	151	199	246	108	142	175	84	110	135	63	82	101
2.0	170	223	274	122	160	197	95	124	153	72	94	114
2.5	185	242	298	134	175	214	105	136	167	79	102	125
3.0	198	259	318	144	187	229	113	146	179	85	110	134
3.5	210	274	336	152	198	242	119	155	189	90	117	143
4.0	221	287	352	160	208	254	125	163	199	95	123	150

*In all tables minimum considered pressure 0.5 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

TechLine™ CV

Integral pressure-compensated dripper with continuous self-flushing, anti-drain and anti-siphon mechanisms, featuring enhanced resistance to root intrusion. Recognized worldwide for its outstanding hydraulic performance and reliability.



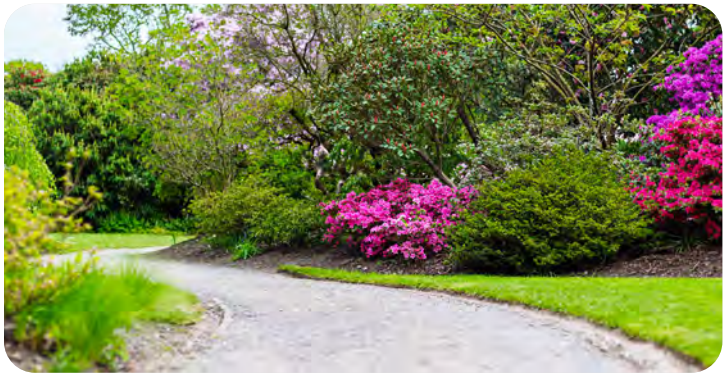
Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents drainage (CV)	An integrated anti-drain (CV) maintains dripline pressure by preventing emitter drainage in low areas, helping ensure uniform water distribution.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Maximum root intrusion protection (XRS) (optional)	Extra root intrusion and root-wrap protection (XRS) – optional feature combining enhanced root intrusion resistance with an external stripe that prevents root wrapping around the dripline. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Hybrid configuration (optional)	Optional patented Hybrid configuration combines the advantages of an integral dripline with compatibility for Netafim™ press-fit adaptors through an on-line saddle connection. 
Landscape integration	Available in brown and dark brown colors for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs, trees and nursery applications.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.3, 3.5 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 1.0–4.0 bar.
- Shut-off pressure: 0.14 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color		Special features	
TechLine™ CV	TCLINE CV	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M	Brown	-	Hybrid	HYB
TechLine™ CV XR	TCLINE CV XR	20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M	Dark Brown	DB		
TechLine™ CV XRS	TCLINE CV XRS					2.30	2.30L/H	0.5	0.50M	200	200M				
						3.50	3.50L/H			400	400M				

*Other distances between drippers can be ordered.

TCLINE CV XR 16012 1.60L/H 0.30M 200M HYB

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 16	Material group (MG)	Brown dripline 20	Material group (MG)	Dark brown dripline 16	Material group (MG)	Dark brown dripline 20	Material group (MG)
TechLine™ CV 16010	*	TechLine™ CV 20010	*	TechLine™ CV 16010	*	TechLine™ CV 20010	*
TechLine™ CV 16012	14700	TechLine™ CV 20012	*	TechLine™ CV 16012	14705	TechLine™ CV 20012	*
TechLine™ CV XR 16010	14704	TechLine™ CV XR 20010	*	TechLine™ CV XR 16010	*	TechLine™ CV XR 20010	*
TechLine™ CV XR 16012	14701	TechLine™ CV XR 20012	*	TechLine™ CV XR 16012	*	TechLine™ CV XR 20012	*
TechLine™ CV XRS 16010	*	TechLine™ CV XRS 20010	*	TechLine™ CV XRS 16010	*	TechLine™ CV XRS 20010	*
TechLine™ CV XRS 16012	14702	TechLine™ CV XRS 20012	*	TechLine™ CV XRS 16012	*	TechLine™ CV XRS 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	109	140	169	80	103	124	63	81	98	48	62	75
2.0	138	177	214	101	130	158	80	103	125	61	78	95
2.5	158	204	246	116	150	181	92	118	143	70	90	109
3.0	175	225	272	128	165	200	101	130	158	77	99	120
3.5	189	243	294	139	178	216	109	141	171	83	107	130
4.0	201	258	313	147	190	230	116	150	182	88	114	138

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	93	113	131	71	88	103	58	72	85	45	56	67
2.0	125	156	183	95	119	141	76	96	114	58	74	89
2.5	147	185	219	110	140	166	88	112	134	68	86	104
3.0	164	208	247	123	156	187	98	124	150	75	96	115
3.5	179	227	270	133	170	204	106	135	163	81	104	125
4.0	192	243	291	143	182	218	113	145	174	86	111	134

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	125	166	208	89	117	145	68	90	111	51	67	82
2.0	151	199	246	108	142	175	84	110	135	63	82	101
2.5	170	223	274	122	160	197	95	124	153	72	94	114
3.0	185	242	298	134	175	214	105	136	167	79	102	125
3.5	198	259	318	144	187	229	113	146	179	85	110	134
4.0	210	274	336	152	198	242	119	155	189	90	117	143

*In all tables minimum considered pressure 1.0 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

TechLine™ HCV

Integral pressure-compensated dripper with continuous self-flushing, high anti-drain and anti-siphon mechanisms, featuring enhanced resistance to root intrusion. Recognized worldwide for its outstanding hydraulic performance and reliability.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents drainage (HCV)	An integrated high anti-drain (HCV) maintains dripline pressure by preventing emitter drainage in low areas, ensuring even water distribution. Eliminates drainage and refill effects, improving efficiency in pulse irrigation—even on steep topography.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Maximum root intrusion protection (XRS) (optional)	Extra root intrusion and root-wrap protection (XRS) – optional feature combining enhanced root intrusion resistance with an external stripe that prevents root wrapping around the dripline. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Hybrid configuration (optional)	Optional patented Hybrid configuration combines the advantages of an integral dripline with compatibility for Netafim™ press-fit adaptors through an on-line saddle connection. 
Landscape integration	Available in brown and dark brown colors for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs, trees and nursery applications.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.25, 2.00, 2.90, 4.40 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 1.5–4.0 bar.
- Shut-off pressure: 0.25 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color		Special features	
TechLine™ HCV	TCLINE HCV	16	16	1.0	010	1.25	1.2L/H	0.3	0.30M	50	50M	Brown	-	Hybrid	HYB
TechLine™ HCV XR	TCLINE HCV XR	20	20	1.2	012	2.00	2.0L/H	0.4	0.40M	100	100M	Dark Brown	DB		
TechLine™ HCV XRS	TCLINE HCV XRS					2.90	2.9L/H	0.5	0.50M	200	200M				
						4.40	4.4L/H			400	400M				

*Other distances between drippers can be ordered.

TCLINE HCV XRS 16012 2.00L/H 0.30M 200M HYB

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 16	Material group (MG)	Brown dripline 20	Material group (MG)	Dark brown dripline 16	Material group (MG)	Dark brown dripline 20	Material group (MG)
TechLine™ HCV 16010	*	TechLine™ HCV 20010	*	TechLine™ HCV 16010	*	TechLine™ HCV 20010	*
TechLine™ HCV 16012	*	TechLine™ HCV 20012	*	TechLine™ HCV 16012	*	TechLine™ HCV 20012	*
TechLine™ HCV XR 16010	*	TechLine™ HCV XR 20010	*	TechLine™ HCV XR 16010	*	TechLine™ HCV XR 20010	*
TechLine™ HCV XR 16012	*	TechLine™ HCV XR 20012	*	TechLine™ HCV XR 16012	*	TechLine™ HCV XR 20012	*
TechLine™ HCV XRS 16010	*	TechLine™ HCV XRS 20010	*	TechLine™ HCV XRS 16010	*	TechLine™ HCV XRS 20010	*
TechLine™ HCV XRS 16012	*	TechLine™ HCV XRS 20012	*	TechLine™ HCV XRS 16012	*	TechLine™ HCV XRS 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.25 Distance between drippers (m)			2.0 Distance between drippers (m)			2.90 Distance between drippers (m)			4.40 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
2.0	94	121	146	69	89	107	54	70	84	41	53	64
2.5	119	153	185	88	112	136	69	88	107	52	67	82
3.0	137	176	213	101	130	157	79	102	123	60	77	94
3.5	151	194	235	111	143	173	87	112	136	66	85	104
4.0	163	210	254	120	154	187	94	121	147	71	92	112

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.25 Distance between drippers (m)			2.0 Distance between drippers (m)			2.90 Distance between drippers (m)			4.40 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
2.0	82	101	117	63	78	92	50	63	75	39	49	59
2.5	110	137	162	82	104	124	65	83	99	50	64	77
3.0	128	162	192	96	122	146	76	97	116	58	74	90
3.5	143	181	216	107	136	163	84	108	149	65	83	100
4.0	156	198	236	116	148	177	92	117	163	70	90	108

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.25 Distance between drippers (m)			2.0 Distance between drippers (m)			2.90 Distance between drippers (m)			4.40 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
2.0	106	140	175	76	100	123	58	76	94	44	57	70
2.5	129	169	209	93	121	149	72	94	115	54	70	86
3.0	146	190	234	105	137	168	82	106	130	62	80	98
3.5	159	207	254	115	150	184	89	116	142	68	88	107
4.0	170	222	272	124	161	197	96	125	153	73	94	115

*In all tables minimum considered pressure 1.5 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

BioLine™

Integral pressure-compensated dripper with continuous self-flushing, featuring enhanced resistance to root intrusion. Designed for landscape irrigation applications using **non-potable water**.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents suction (AS) (optional)	An integrated anti-siphon (AS) feature prevents the suction of contaminants into the dripper, making it ideal for sub-surface applications.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in violet (BioLine™ model) or brown with dual violet stripes (BioTechLine™ model) for easy visual identification in reclaimed water applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Ideal for gardens, sub-surface turf applications, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.3, 3.5 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 0.5–4.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
BioLine™ (Violet)	BLINE
BioLine™ AS (Violet)	BLINE AS
BioLine™ AS XR	BLINE AS XR
BioTechLine™ (Brown with dual violet stripes)	BTCLINE
BioTechLine™ AS (Brown with dual violet stripes)	BTCLINE AS

Commercial diameter (mm)	
16	16
20	20

Wall thickness (mm)	
1.0	010
1.2	012

Flow rate (l/h)	
1.00	1.00L/H
1.60	1.60L/H
2.30	2.30L/H
3.50	3.50L/H

Distance between drippers (m)	
0.3	0.30M
0.4	0.40M
0.5	0.50M

*Other distances between drippers can be ordered.

Coil length (m)	
50	50M
100	100M
200	200M
400	400M

BLINE 16010 2.30L/H 0.30M 400M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Violet dripline 16	Material group (MG)
BioLine™ 16010	*
BioLine™ 16012	*
BioLine™ AS 16010	13960
BioLine™ AS 16012	13930
BioLine™ AS XR 16010	13965
BioLine™ AS XR 16012	13967

Violet dripline 20	Material group (MG)
BioLine™ 20010	*
BioLine™ 20012	*
BioLine™ AS 20010	14580
BioLine™ AS 20012	14680
BioLine™ AS XR 20010	*
BioLine™ AS XR 20012	14669

Brown with dual violet stripes dripline 16	Material group (MG)
BioTechLine™ 16010	*
BioTechLine™ 16012	*
BioTechLine™ AS 16010	*
BioTechLine™ AS 16012	*
BioTechLine™ AS XR 16010	*
BioTechLine™ AS XR 16012	*

Brown with dual violet stripes dripline 20	Material group (MG)
BioTechLine™ 20010	*
BioTechLine™ 20012	*
BioTechLine™ AS 20010	*
BioTechLine™ AS 20012	*
BioTechLine™ AS XR 20010	*
BioTechLine™ AS XR 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	138	177	214	101	130	158	80	103	125	61	78	95
2.0	158	204	246	116	150	181	92	118	143	70	90	109
2.5	175	225	272	128	165	200	101	130	158	77	99	120
3.0	189	243	294	139	178	216	109	141	171	83	107	130
3.5	201	258	313	147	190	230	116	150	182	88	114	138
4.0	212	272	330	155	200	243	122	158	192	93	120	146

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	125	156	183	95	119	141	76	96	114	58	74	89
2.0	147	185	219	110	140	166	88	112	134	68	86	104
2.5	164	208	247	123	156	187	98	124	150	75	96	115
3.0	179	227	270	133	170	204	106	135	163	81	104	125
3.5	192	243	291	143	182	218	113	145	174	86	111	134
4.0	203	258	309	151	192	231	119	153	184	91	117	142

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	151	199	246	108	142	175	84	110	135	63	82	101
2.0	170	223	274	122	160	197	95	124	153	72	94	114
2.5	185	242	298	134	175	214	105	136	167	79	102	125
3.0	198	259	318	144	187	229	113	146	179	85	110	134
3.5	210	274	336	152	198	242	119	155	189	90	117	143
4.0	221	287	352	160	208	254	125	163	199	95	123	150

*In all tables minimum considered pressure 0.5 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

BioLine™ CV

Integral pressure-compensated dripper with continuous self-flushing, anti-drain and anti-siphon mechanisms, featuring enhanced resistance to root intrusion. Designed for landscape irrigation applications using **non-potable water.**



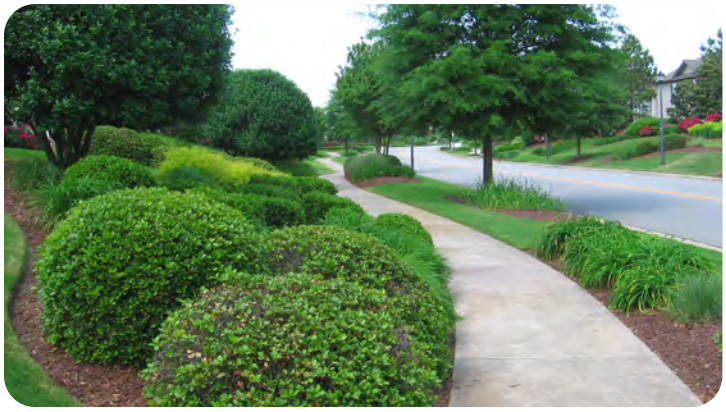
Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents drainage (CV)	An integrated anti-drain (CV) maintains dripline pressure by preventing emitter drainage in low areas, helping ensure uniform water distribution.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in violet (BioLine™ model) or brown with dual violet stripes (BioTechLine™ model) for easy visual identification in reclaimed water applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, sub-surface turf applications, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.3, 3.5 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 1.0–4.0 bar.
- Shut-off pressure: 0.14 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)	
BioLine™ CV (Violet)	BLINE CV	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M
BioLine™ CV XR (Violet)	BLINE CV XR	20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M
BioTechLine™ CV (Brown with dual violet stripes)	BTCLINE CV					2.30	2.30L/H	0.5	0.50M	200	200M
BioTechLine™ CV XR (Brown with dual violet stripes)	BTCLINE CV XR					3.50	3.50L/H	*Other distances between drippers can be ordered.		400	400M

BLINE CV 16010 3.50L/H 0.40M 200M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Violet dripline 16	Material group (MG)	Violet dripline 20	Material group (MG)	Brown with dual violet stripes dripline 16	Material group (MG)	Brown with dual violet stripes dripline 20	Material group (MG)
BioLine™ CV 16010	13940	BioLine™ CV 20010	*	BioTechLine™ CV 16010	*	BioTechLine™ CV 20010	*
BioLine™ CV 16012	13970	BioLine™ CV 20012	14670	BioTechLine™ CV 16012	*	BioTechLine™ CV 20012	*
BioLine™ CV XR 16010	13964	BioLine™ CV XR 20010	*	BioTechLine™ CV XR 16010	*	BioTechLine™ CV XR 20010	*
BioLine™ CV XR 16012	*	BioLine™ CV XR 20012	14668	BioTechLine™ CV XR 16012	*	BioTechLine™ CV XR 20012	*
BioLine™ AS XR 16010	13965	BioLine™ AS XR 20010	*	BioTechLine™ AS XR 16010	*	BioTechLine™ AS XR 20010	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	109	140	169	80	103	124	63	81	98	48	62	75
2.0	138	177	214	101	130	158	80	103	125	61	78	95
2.5	158	204	246	116	150	181	92	118	143	70	90	109
3.0	175	225	272	128	165	200	101	130	158	77	99	120
3.5	189	243	294	139	178	216	109	141	171	83	107	130
4.0	201	258	313	147	190	230	116	150	182	88	114	138

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	93	113	131	71	88	103	58	72	85	45	56	67
2.0	125	156	183	95	119	141	76	96	114	58	74	89
2.5	147	185	219	110	140	166	88	112	134	68	86	104
3.0	164	208	247	123	156	187	98	124	150	75	96	115
3.5	179	227	270	133	170	204	106	135	163	81	104	125
4.0	192	243	291	143	182	218	113	145	174	86	111	134

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.3 Distance between drippers (m)			3.5 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.5	125	166	208	89	117	145	68	90	111	51	67	82
2.0	151	199	246	108	142	175	84	110	135	63	82	101
2.5	170	223	274	122	160	197	95	124	153	72	94	114
3.0	185	242	298	134	175	214	105	136	167	79	102	125
3.5	198	259	318	144	187	229	113	146	179	85	110	134
4.0	210	274	336	152	198	242	119	155	189	90	117	143

*In all tables minimum considered pressure 1.0 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

BioLine™ HCV

Integral pressure-compensated dripper with continuous self-flushing, high anti-drain and anti-siphon mechanisms, featuring enhanced resistance to root intrusion. Designed for landscape irrigation applications using **non-potable water**.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. Large filtration area. The extra-large filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents drainage (HCV)	An integrated high anti-drain (HCV) maintains dripline pressure by preventing emitter drainage in low areas, ensuring even water distribution. Eliminates drainage and refill effects, improving efficiency in pulse irrigation—even on steep topography.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusio through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in violet (BioLine™ model) or brown with dual violet stripes (BioTechLine™ model) for easy visual identification in reclaimed water applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, sub-surface turf applications, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.25, 2.00, 2.90, 4.40 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 1.5–4.0 bar.
- Shut-off pressure: 0.25 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)	
BioLine™ HCV (Violet)	BLINE HCV	16	16	1.0	010	1.25	1.2L/H	0.3	0.30M	50	50M
BioLine™ HCV XR (Violet)	BLINE HCV XR	20	20	1.2	012	2.00	2.0L/H	0.4	0.40M	100	100M
BioTechLine™ HCV (Brown with dual violet stripes)	BTCLINE HCV					2.90	2.9L/H	0.5	0.50M	200	200M
BioTechLine™ HCV XR (Brown with dual violet stripes)	BTCLINE HCV XR					4.40	4.4L/H	*Other distances between drippers can be ordered.		400	400M

BLINE HCV 16010 2.00L/H 0.40M 200M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Violet dripline 16	Material group (MG)	Violet dripline 20	Material group (MG)	Brown with dual violet stripes dripline 16	Material group (MG)	Brown with dual violet stripes dripline 20	Material group (MG)
BioLine™ HCV 16010	*	BioLine™ HCV 20010	*	BioTechLine™ HCV 16010	*	BioTechLine™ HCV 20010	*
BioLine™ HCV 16012	*	BioLine™ HCV 20012	*	BioTechLine™ HCV 16012	*	BioTechLine™ HCV 20012	*
BioLine™ HCV XR 16010	*	BioLine™ HCV XR 20010	*	BioTechLine™ HCV XR 16010	*	BioTechLine™ HCV XR 20010	*
BioLine™ HCV XR 16012	*	BioLine™ HCV XR 20012	*	BioTechLine™ HCV XR 16012	*	BioTechLine™ HCV XR 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.25 Distance between drippers (m)			2.0 Distance between drippers (m)			2.90 Distance between drippers (m)			4.40 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
2.0	94	121	146	69	89	107	54	70	84	41	53	64
2.5	119	153	185	88	112	136	69	88	107	52	67	82
3.0	137	176	213	101	130	157	79	102	123	60	77	94
3.5	151	194	235	111	143	173	87	112	136	66	85	104
4.0	163	210	254	120	154	187	94	121	147	71	92	112

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.25 Distance between drippers (m)			2.0 Distance between drippers (m)			2.90 Distance between drippers (m)			4.40 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
2.0	82	101	117	63	78	92	50	63	75	39	49	59
2.5	110	137	162	82	104	124	65	83	99	50	64	77
3.0	128	162	192	96	122	146	76	97	116	58	74	90
3.5	143	181	216	107	136	163	84	108	149	65	83	100
4.0	156	198	236	116	148	177	92	117	163	70	90	108

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.25 Distance between drippers (m)			2.0 Distance between drippers (m)			2.90 Distance between drippers (m)			4.40 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
2.0	106	140	175	76	100	123	58	76	94	44	57	70
2.5	129	169	209	93	121	149	72	94	115	54	70	86
3.0	146	190	234	105	137	168	82	106	130	62	80	98
3.5	159	207	254	115	150	184	89	116	142	68	88	107
4.0	170	222	272	124	161	197	96	125	153	73	94	115

*In all tables minimum considered pressure 1.5 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

TechNet™

Integral pressure-compensated dripper with continuous self-flushing and integrated drainage mechanism.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term operation even under challenging water quality conditions. The optimized filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in brown and dark brown colors for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.0, 3.0 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 0.4–3.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.4
				100	4.8
				200	9.6
				400	19.1
16012	14.2	1.2	4.0	50	2.9
				100	5.7
				200	11.5
				400	23.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color	
TechNet™	TCNET	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M	Brown	-
		20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M	Dark Brown	DB
						2.00	2.00L/H	0.5	0.50M	200	200M		
						3.00	3.00L/H			400	400M		

*Other distances between drippers can be ordered.

TCNET 16012 1.00L/H 0.30M 400M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 16	Material group (MG)	Brown dripline 20	Material group (MG)	Dark brown dripline 16	Material group (MG)	Dark brown dripline 20	Material group (MG)
TechNet™ 16010	17680	TechNet™ 20010	*	TechNet™ 16010	*	TechNet™ 20010	*
TechNet™ 16012	17710	TechNet™ 20012	*	TechNet™ 16012	17686	TechNet™ 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	130	165	197	96	122	145	83	105	126	64	81	97
1.5	161	204	243	118	150	180	102	130	155	79	100	120
2.0	183	232	277	135	171	205	116	148	177	89	114	136
2.5	201	255	305	148	188	225	128	162	195	98	125	150
3.0	216	274	329	159	202	242	138	175	210	106	134	161

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	111	134	153	86	105	121	75	92	108	59	73	86
1.5	145	178	207	110	136	159	96	119	140	75	94	111
2.0	169	209	244	127	158	187	110	138	164	86	108	128
2.5	188	234	274	141	176	208	122	154	182	95	120	142
3.0	204	254	300	152	191	227	133	167	198	103	130	154

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	150	196	242	107	138	170	91	118	144	68	88	108
1.5	177	230	281	127	164	200	109	140	171	83	106	129
2.0	197	255	311	143	184	223	122	157	191	93	119	144
2.5	214	276	336	155	199	242	133	171	207	101	130	157
3.0	229	295	358	166	213	258	143	183	221	109	139	168

*In all tables minimum considered pressure 0.4 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

TechNet™ AS

Integral pressure-compensated dripper with continuous self-flushing and anti-siphon mechanisms.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The optimized filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents suction (AS)	The integrated anti-siphon (AS) feature prevents the suction of contaminants into the dripper, making it ideal for sub-surface applications.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Maximum root intrusion protection (XRS) (optional)	Extra root intrusion and root-wrap protection (XRS) – optional feature combining enhanced root intrusion resistance with an external stripe that prevents root wrapping around the dripline. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in brown and dark brown colors for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.0, 3.0 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 0.4–3.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.4
				100	4.8
				200	9.6
				400	19.1
16012	14.2	1.2	4.0	50	2.9
				100	5.7
				200	11.5
				400	23.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color	
TechNet™ AS	TCNET AS	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M	Brown	-
TechNet™ AS XR	TCNET AS XR	20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M	Dark Brown	DB
TechNet™ AS XRS	TCNET AS XRS					2.00	2.00L/H	0.5	0.50M	200	200M		
						3.00	3.00L/H			400	400M		

*Other distances between drippers can be ordered.

TCNET AS XR 16012 1.60L/H 0.30M 400M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 16	Material group (MG)	Brown dripline 20	Material group (MG)	Dark brown dripline 16	Material group (MG)	Dark brown dripline 20	Material group (MG)
TechNet™ AS 16010	17678	TechNet™ AS 20010	*	TechNet™ AS 16010	17679	TechNet™ AS 20010	*
TechNet™ AS 16012	17708	TechNet™ AS 20012	*	TechNet™ AS 16012	17684	TechNet™ AS 20012	*
TechNet™ AS XR 16010	17677	TechNet™ AS XR 20010	*	TechNet™ AS XR 16010	*	TechNet™ AS XR 20010	*
TechNet™ AS XR 16012	17681	TechNet™ AS XR 20012	*	TechNet™ AS XR 16012	17682	TechNet™ AS XR 20012	*
TechNet™ AS XRS 16010	*	TechNet™ AS XRS 20010	*	TechNet™ AS XRS 16010	*	TechNet™ AS XRS 20010	*
TechNet™ AS XRS 16012	*	TechNet™ AS XRS 20012	*	TechNet™ AS XRS 16012	*	TechNet™ AS XRS 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	130	165	197	96	122	145	83	105	126	64	81	97
1.5	161	204	243	118	150	180	102	130	155	79	100	120
2.0	183	232	277	135	171	205	116	148	177	89	114	136
2.5	201	255	305	148	188	225	128	162	195	98	125	150
3.0	216	274	329	159	202	242	138	175	210	106	134	161

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	111	134	153	86	105	121	75	92	108	59	73	86
1.5	145	178	207	110	136	159	96	119	140	75	94	111
2.0	169	209	244	127	158	187	110	138	164	86	108	128
2.5	188	234	274	141	176	208	122	154	182	95	120	142
3.0	204	254	300	152	191	227	133	167	198	103	130	154

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	150	196	242	107	138	170	91	118	144	68	88	108
1.5	177	230	281	127	164	200	109	140	171	83	106	129
2.0	197	255	311	143	184	223	122	157	191	93	119	144
2.5	214	276	336	155	199	242	133	171	207	101	130	157
3.0	229	295	358	166	213	258	143	183	221	109	139	168

*In all tables minimum considered pressure 0.4 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

BioNet™

Integral pressure-compensated dripper with continuous self-flushing. Designed for landscape irrigation applications using **non-potable water**.



Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The optimized filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in violet (BioNet™ model) or brown with dual violet stripes (BioTechNet™ model) for easy visual identification in reclaimed water applications.

Applications

Turf · Shrubs & Trees · Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.0, 3.0 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 0.4–3.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.4
				100	4.8
				200	9.6
				400	19.1
16012	14.2	1.2	4.0	50	2.9
				100	5.7
				200	11.5
				400	23.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)	
BioNet™ (Violet)	BNET	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M
BioTechNet™ (Brown with dual violet stripes)	BTCNET	20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M
						2.00	2.00L/H	0.5	0.50M	200	200M
						3.00	3.00L/H			400	400M

*Other distances between drippers can be ordered.

BNET 16010 1.00L/H 0.30M 400M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Violet dripline 16	Material group (MG)	Violet dripline 20	Material group (MG)	Brown with dual violet stripes dripline 16	Material group (MG)	Brown with dual violet stripes dripline 20	Material group (MG)
BioNet™ 16010	17695	BioNet™ 20010	*	BioTechNet™ 16010	*	BioTechNet™ 20010	*
BioNet™ 16012	17713	BioNet™ 20012	17775	BioTechNet™ 16012	*	BioTechNet™ 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	130	165	197	96	122	145	83	105	126	64	81	97
1.5	161	204	243	118	150	180	102	130	155	79	100	120
2.0	183	232	277	135	171	205	116	148	177	89	114	136
2.5	201	255	305	148	188	225	128	162	195	98	125	150
3.0	216	274	329	159	202	242	138	175	210	106	134	161

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	111	134	153	86	105	121	75	92	108	59	73	86
1.5	145	178	207	110	136	159	96	119	140	75	94	111
2.0	169	209	244	127	158	187	110	138	164	86	108	128
2.5	188	234	274	141	176	208	122	154	182	95	120	142
3.0	204	254	300	152	191	227	133	167	198	103	130	154

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	150	196	242	107	138	170	91	118	144	68	88	108
1.5	177	230	281	127	164	200	109	140	171	83	106	129
2.0	197	255	311	143	184	223	122	157	191	93	119	144
2.5	214	276	336	155	199	242	133	171	207	101	130	157
3.0	229	295	358	166	213	258	143	183	221	109	139	168

*In all tables minimum considered pressure 0.4 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

BioNet™ AS

Integral pressure-compensated dripper with continuous self-flushing and anti-siphon mechanisms. Designed for landscape irrigation applications using **non-potable water**.



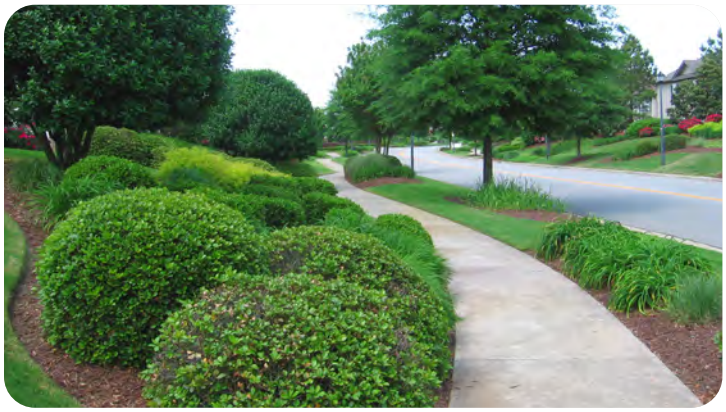
Benefits & Features

Uniform water distribution	Provides precise and uniform water application across a wide pressure range, ensuring consistent irrigation and nutrient delivery throughout the entire dripline length.
Long-lasting clogging resistance	The continuously self-flushing dripper design helps prevent sediment accumulation, ensuring reliable long-term performance even under challenging water quality conditions. The optimized filtration area minimizes the risk of particle ingress into the labyrinth, contributing to dependable operation across a broad range of water qualities.
Prevents suction (AS)	An integrated anti-siphon (AS) feature prevents the suction of contaminants into the dripper, making it ideal for sub-surface applications.
Enhanced root intrusion resistance (XR) (optional)	Extra root intrusion protection (XR) – optional feature providing enhanced resistance to root intrusion through a patented root-inhibiting barrier integrated into the dripper cover. Offers long-term protection and minimizes reliance on chemical root control methods. 
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in violet (BioNet™ model) or brown with dual violet stripes (BioTechNet™ model) for easy visual identification in reclaimed water applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface or sub-surface installation.
- Ideal for gardens, flower beds, hedges, shrubs and landscaped tree areas.
- Recommended for flat terrain, slopes and variable topographies.



Specifications

- Dripper flow rates: 1.0, 1.6, 2.0, 3.0 l/h.
- Dripline diameter: 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Pressure-compensated operating range: 0.4–3.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.4
				100	4.8
				200	9.6
				400	19.1
16012	14.2	1.2	4.0	50	2.9
				100	5.7
				200	11.5
				400	23.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)	
BioNet™ AS (Violet)	BNET AS	16	16	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M
BioNet™ AS XR (Violet)	BNET AS XR	20	20	1.2	012	1.60	1.60L/H	0.4	0.40M	100	100M
BioTechNet™ AS (Brown with dual violet stripes)	BTCNET AS					2.00	2.00L/H	0.5	0.50M	200	200M
BioTechNet™ AS XR (Brown with dual violet stripes)	BTCNET AS XR					3.00	3.00L/H			400	400M

*Other distances between drippers can be ordered.

BNET AS 16012 1.00L/H 0.30M 400M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Violet dripline 16	Material group (MG)	Violet dripline 20	Material group (MG)	Brown with dual violet stripes dripline 16	Material group (MG)	Brown with dual violet stripes dripline 20	Material group (MG)
BioNet™ AS 16010	17423	BioNet™ AS 20010	*	BioTechNet™ AS 16010	*	BioTechNet™ AS 20010	*
BioNet™ AS 16012	*	BioNet™ AS 20012	17774	BioTechNet™ AS 16012	*	BioTechNet™ AS 20012	*
BioNet™ AS XR 16010	*	BioNet™ AS XR 20010	*	BioTechNet™ AS XR 16010	*	BioTechNet™ AS XR 20010	*
BioNet™ AS XR 16012	*	BioNet™ AS XR 20012	*	BioTechNet™ AS XR 16012	*	BioTechNet™ AS XR 20012	*

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

Maximum lateral length on a flat area, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	130	165	197	96	122	145	83	105	126	64	81	97
1.5	161	204	243	118	150	180	102	130	155	79	100	120
2.0	183	232	277	135	171	205	116	148	177	89	114	136
2.5	201	255	305	148	188	225	128	162	195	98	125	150
3.0	216	274	329	159	202	242	138	175	210	106	134	161

Maximum lateral length on 2% slope Uphill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	111	134	153	86	105	121	75	92	108	59	73	86
1.5	145	178	207	110	136	159	96	119	140	75	94	111
2.0	169	209	244	127	158	187	110	138	164	86	108	128
2.5	188	234	274	141	176	208	122	154	182	95	120	142
3.0	204	254	300	152	191	227	133	167	198	103	130	154

Maximum lateral length on 2% slope Downhill, model 16 (14.2 mm ID) diameter

Inlet pressure (bar)	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			1.6 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)		
	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
1.0	150	196	242	107	138	170	91	118	144	68	88	108
1.5	177	230	281	127	164	200	109	140	171	83	106	129
2.0	197	255	311	143	184	223	122	157	191	93	119	144
2.5	214	276	336	155	199	242	133	171	207	101	130	157
3.0	229	295	358	166	213	258	143	183	221	109	139	168

*In all tables minimum considered pressure 0.4 bar.
Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.



Integral Non PC driplines

LandLine™

Integral non-pressure-compensated dripper with high clogging resistance, designed for reliable operation under a wide range of water quality conditions.



Benefits & Features

Long-lasting clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area helps prevent sediment from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The labyrinth features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in brown and dark brown colors for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Designed to provide reliable hydraulic performance on flat terrain and moderate slopes.
- Ideal for gardens, flower beds, hedges, shrubs and landscaped tree areas.



Specifications

- Dripper flow rates: 1.0, 2.0, 3.0, 4.0 l/h.
- Dripline diameter: 12 mm (10.3 mm ID), 16 mm (14.2 mm ID); 20 mm (17.5 mm ID – available upon request).
- Wall thickness: 1.00, 1.20 mm.
- Maximum working pressure: 3.5 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
16010	14.2	1.0	3.5	50	2.7
				100	5.3
				200	10.5
				400	21.1
16012	14.2	1.2	4.0	50	3.1
				100	6.2
				200	12.5
				400	25.0



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates, emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Wall thickness (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color	
LandLine™	LDLINE	12	12	1.0	010	1.00	1.00L/H	0.3	0.30M	50	50M	Brown	-
		16	16	1.2	012	2.00	2.00L/H	0.4	0.40M	100	100M	Dark Brown	DB
		20	20			3.00	3.00L/H	0.5	0.50M	200	200M		
						4.00	4.00L/H			400	400M		

*Other distances between drippers can be ordered.

LDLINE 16012 2.00L/H 0.30M 200M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 12	Material group (MG)
LandLine™ 12010	16060
LandLine™ 12012	*

Brown dripline 16	Material group (MG)
LandLine™ 16010	16065
LandLine™ 16012	16066

Brown dripline 20	Material group (MG)
LandLine™ 20010	*
LandLine™ 20012	16067

Dark brown dripline 12	Material group (MG)
LandLine™ 12010	*
LandLine™ 12012	*

Dark brown dripline 16	Material group (MG)
LandLine™ 16010	*
LandLine™ 16012	*

Dark brown dripline 20	Material group (MG)
LandLine™ 20010	*
LandLine™ 20012	*

*Will be activated upon request

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

LandLine™ 12 (10.3 mm ID) diameter. Max. lateral length (meters) at different slopes - 10% flow variation

Inlet pressure 1.5 bar	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)			4.0 Distance between drippers (m)		
Slope %	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
+2	53	64	73	36	44	51	28	34	40	23	29	34
+1	57	70	81	37	46	54	29	36	42	24	30	36
0	61	76	90	39	49	58	29	37	44	25	31	37
-1	64	81	97	40	50	61	30	38	46	25	31	38
-2	67	86	105	41	53	64	31	39	47	26	32	39

LandLine™ 16 (14.2 mm ID) diameter. Max. lateral length (meters) at different slopes - 10% flow variation

Inlet pressure 1.5 bar	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)			4.0 Distance between drippers (m)		
Slope %	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
+2	83	97	107	59	70	80	47	56	65	40	48	56
+1	95	114	131	64	78	90	50	61	72	42	52	61
0	108	134	159	69	86	102	53	66	79	44	55	66
-1	118	151	183	73	93	111	56	70	84	46	58	69
-2	130	169	208	78	100	122	58	74	90	47	60	73

LandLine™ 20 (17.5 mm ID) diameter. Max. lateral length (meters) at different slopes - 10% flow variation

Inlet pressure 1.5 bar	Drippers flow rates (l/h)											
	1.0 Distance between drippers (m)			2.0 Distance between drippers (m)			3.0 Distance between drippers (m)			4.0 Distance between drippers (m)		
Slope %	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5	0.3	0.4	0.5
+2	111	123	132	84	96	106	69	80	90	59	70	79
+1	139	161	180	98	114	129	77	91	105	65	78	89
0	171	209	243	110	134	156	85	104	121	71	86	101
-1	199	251	302	121	151	180	91	113	134	75	93	110
-2	230	298	367	133	170	205	98	124	149	80	100	120

*Other distances between drippers, other dripline diameter information, can be requested from your Netafim™ irrigation dealer.

LandLine™ 8 and 6

Compact, integral non-pressure-compensated dripper with high clogging resistance for reliable operation in small-diameter driplines.



Benefits & Features

Long-lasting clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A large filtration area prevents sediment from entering the dripper, maintaining dependable performance across a wide range of water quality levels. The labyrinth features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly flexible dripline that easily adapts to curved layouts, flower beds, tree lines and irregular landscape designs. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems.
Landscape integration	Available in brown color for improved visual integration into landscape applications.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain and slightly sloping areas.
- Ideal for gardens, flower beds, hedges, shrubs and kitchen gardens.



Specifications

- Dripper flow rate: 2.0 l/h.
- Dripline diameter: 8 mm (ID = 6.3 mm), 6 mm (ID = 4.6 mm).
- Wall thickness:
  LandLine™ 8 = 0.8 mm.
  LandLine™ 6 = 0.7 mm.
- Maximum working pressure: 4.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Driplines package data (on bundled coil)

Model	Inner diameter (mm)	Wall thickness (mm)	Maximum working pressure (bar)	Coil length (m)	Average* coil weight (kg)
8	6.3	0.8	4.0	30	0.6
				50	1.0
				100	2.0
6	4.6	0.7	4.0	15	0.2
				30	0.4
				50	0.6



*Values shown are average weights and may vary due to dripper spacing and extrusion tolerances. Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (emitter spacings, coil lengths and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name		Commercial diameter (mm)		Flow rate (l/h)		Distance between drippers (m)		Coil length (m)		Dripline color	
LandLine™	LDLINE	8	8	2.00	2.00L/H	0.3	0.30M	15	15M	Brown	-
		6	6			0.4	0.40M	30	30M		
						0.5	0.50M	50	50M		
						*Other distances between drippers can be ordered.		100	100M		

LDLINE 8 2.00L/H 0.30M 100M

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Brown dripline 8	Material group (MG)	Brown dripline 6	Material group (MG)
LandLine™ 8	18500	LandLine™ 6	18540

Maximum dripline lengths

The following tables present the maximum dripline lengths recommended for optimal hydraulic performance.

The tables presented in this document are for initial reference only; the exact run length of the driplines is obtained from design software that considers various hydraulic factors in the entire system.

LandLine™ 8 (6.3 mm ID) diameter. Max. lateral length (meters) at different slopes - 10% flow variation

Inlet pressure 1.5 bar Slope %	Dripper flow rate 2.0 (l/h)		
	Distance between drippers (m)		
	0.3	0.4	0.5
+2	15	18	22
0	15	19	23
-2	16	20	25

LandLine™ 6 (4.6 mm ID) diameter. Max. lateral length (meters) at different slopes - 10% flow variation

Inlet pressure 1.5 bar Slope %	Dripper flow rate 2.0 (l/h)		
	Distance between drippers (m)		
	0.3	0.4	0.5
+2	6	8	9
0	7	9	11
-2	7	9	12

Other distances between drippers, can be requested from your Netafim™ irrigation dealer.



On-line Drippers

PC dripper

Pressure-compensated on-line dripper designed for robust and reliable operation under demanding conditions.



Benefits & Features

Uniform water distribution	Ensures precise and stable flow regulation across a wide pressure range, delivering uniform water distribution along irrigation lines and across varying topographies.
Prevents drainage (LCNL or HCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution. The HCNL (high anti-drain) mechanism operates at a higher shut-off threshold, preventing drainage even under steep slope conditions. Improves pulse irrigation performance; eliminates drainage and refill effects.
Long-lasting clogging resistance	Designed with large internal water passages that improve tolerance to suspended solids, ensuring reliable performance in challenging water quality conditions. A built-in filtration area, helps reduce the risk of suspended particle ingress, ensuring dependable performance across a wide range of water qualities. The labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to tree spacing and irrigation layout. Available with different outlet options, including flat and press-fit (nipple) connections, supporting flexible system design and compatibility with many different accessories. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation across a wide range of landscape conditions.
- Delivers uniform hydraulic performance on flat terrain, slopes and variable topographies.
- Ideal for gardens, flower beds, shrubs, nurseries, greenhouses and trees.



Specifications

- Dripper flow rates: 2.0, 4.0, 8.5 l/h.
- Dripper flow rates – HCNL model: 3.0, 6.0, 12.0 l/h.
- Compatibility: Insertable into thick wall blank PE pipes (0.90, 1.00, 1.20 mm).
- Pressure-compensated range: depending on the selected model.
- Shut-off pressure: 0.15 or 0.30 bar, depending on the selected model.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Drippers technical data

Model	Flow rate (l/h)	Working pressure range (bar)	Shut-off pressure (bar)	Base color code	Upper body color code
PC AS dripper	2.0	0.5 - 4.0	-	Red	Black
	4.0			Black	Black
	8.5			Green	Black
PC LCNL dripper	2.0	1.0 - 4.0	0.15	Red	Brown
	4.0			Black	Brown
	8.5			Green	Brown
PC HCNL dripper	3.0	1.4 - 4.0	0.30	Black	Black
	6.0			Black	Black
	12.0			Black	Black



The flow rates are printed on the upper body

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PC AS and LCNL drippers, flat outlet	2500	57 x 28 x 27	18.8	32	114 x 114 x 112	611
PC, LCNL and HCNL drippers, nipple outlet	2300		17.3			565

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
PC dripper	PC

Model	
Not added features	AS
Anti-drain	LCNL
High anti-drain	HCNL

Flow rate AS and LCNL models	
2.0	2.0L/H
4.0	4.0L/H
8.5	8.5L/H

Flow rate HCNL model	
3.0	3.0L/H
6.0	6.0L/H
12.0	12.0L/H

Outlet	
Flat	FL
Nipple	NIP

Packaging	
1 unit	-
25 units/bag	25U/BAG
50 units/bag	50U/BAG
100 units/bag	100U/BAG
250 units/bag	250U/BAG
500 units/bag	500U/BAG
10000 units/bag	1000U/BAG

PC LCNL 4.0L/H NIP 50U/BAG

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Model	Material group (MG)
PC AS and LCNL drippers, flat outlet	21000
PC AS and LCNL drippers, nipple outlet	21020
PC HCNL drippers	21060

PCJ™ dripper

Compact pressure-compensated on-line dripper, designed to deliver reliable and uniform irrigation performance across a wide range of applications.



Benefits & Features

Uniform water distribution	Ensures precise and stable flow regulation across a wide pressure range, delivering uniform water distribution along irrigation lines and across varying topographies.
Prevents drainage (LCNL or HCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution. The HCNL (high anti-drain) mechanism operates at a higher shut-off threshold, preventing drainage even under steep slope conditions.
Long-lasting clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A built-in filtration area helps reduce the risk of suspended particle ingress, ensuring dependable performance across a wide range of water qualities. The labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including press-fit, straight or angled barbed connections, supporting flexible system design and compatibility with many different accessories. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain, sloping and variable topographies.
- Ideal for gardens, flower beds, shrubs, nurseries, greenhouses and trees.



Specifications

- Dripper flow rates: 0.5, 1.2, 2.0, 3.0, 4.0, 8.0, 12.0, 15.0 l/h.
- Compatibility: Insertable into thick wall blank PE pipes (0.90, 1.00, 1.20 mm).
- Pressure-compensated range: depending on the selected model.
- Shut-off pressure: 0.12 or 0.18 bar, depending on the selected model.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.
- Available outlet configurations: straight or angled 3 mm barbed connection, straight 4 mm barbed connection and press-fit (nipple).

Drippers technical data

Model	Flow rate* (l/h)	Working pressure range (bar)	Shut-off pressure pressure (bar)	Base color code	Upper body color code
PCJ™ AS dripper	0.5	0.5 - 4.0	-	Mustard	Black
	1.2			Brown	Black
	2.0			Red	Black
	3.0			Blue	Black
	4.0			Gray	Black
	8.0			Green	Black
	12.0			Fuchsia	Black
	15.0			Black	Black



The flow rates are printed on the upper body.
PCJ™ AS dripper. Identified by its base color code.

Model	Flow rate* (l/h)	Working pressure range (bar)	Shut-off pressure pressure (bar)	Base color code	Upper body color code
PCJ™ LCNL dripper	0.5	0.7 - 4.0	0.12	Mustard	Black
	1.2			Brown	Black
	2.0			Red	Black
	3.0			Blue	Black
	4.0			Gray	Black
	8.0			Green	Black
	12.0			Fuchsia	Black



The flow rates are printed on the upper body.
PCJ™ LCNL is identified by the rings around the barb water inlet connector.

Model	Flow rate* (l/h)	Working pressure range (bar)	Shut-off pressure pressure (bar)	Base color code	Upper body color code
PCJ™ HCNL dripper	0.5	1.5 - 4.0	0.18	Light yellow	Black
	1.2			Light brown	Black
	2.0			Pink	Black
	3.0			Light blue	Black
	4.0			Light gray	Black



The flow rates are printed on the upper body.
PCJ™ HCNL Is identified by its base color code and by the rings around the barbed water inlet connector.

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PCJ™ drippers (straight barb 3 and 4 mm outlet)	13000	57 x 28 x 27	14.4	32	114 x 114 x 112	470
PCJ™ drippers (nipple oullet)	12000		13.7			448
PCJ™ drippers (angled barb 3 mm outlet)	6500		12.6			414
PCJ™ drippers (AI model)	9500		13.4			438

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Model designed to meet specific needs.



Anti-Insect (AI): Factory-assembled cap designed to help prevent insect intrusion through the dripper outlet.

Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
PCJ™ dripper	PCJ

Additional features	
No added	AS
Anti-drain	LCNL
High anti-drain	HCNL

Flow rate (l/h) PCJ™ AS and PCJ™ LCNL model	
0.5	0.5L/H
1.2	1.2L/H
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H
8.0	8.0L/H
12.0	12.0L/H
15.0*	15.0L/H

*Only available in PCJ™ AS model

Flow rate (l/h) PCJ™ HCNL model	
0.5	0.5L/H
1.2	1.2L/H
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H

Outlet type	
Straight barb 3 mm	BRB3
Straight barb 4 mm	BRB4
Nipple (press-fit)	NIP
Angled barb 3 mm	BRB3 ANG

Emitters per package	
1	-
25	25/BAG
50	50/BAG
100	100/BAG
250	250/BAG
500	500/BAG
1000	1000/BAG
According to the dripper model	13000/CA
	9500/CA

Special features	
No added	-
Anti-insects cap	+CAP

PCJ LCNL 2.0L/H BRB3 ANG 500/BAG

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Model	Material group (MG)
PCJ™ AS	21500
PCJ™ LCNL and HCNL	21520

TechFlow™ Junior in-line dripper

Pressure-compensated in-line dripper designed for flexible micro-irrigation lines in pots, planters and landscape applications.



Benefits & Features

Custom dripper spacing	Allows users to create customized drip lines by positioning each dripper at the exact spacing required in the field. The compact in-line design provides maximum flexibility when adapting irrigation layouts to different plant arrangements, planter geometries and landscape requirements.
Space-saving solution	Connected in-line with a flexible 4 mm ID micro-tube, creating a highly flexible irrigation line that requires minimal installation space.
Uniform water distribution	Pressure-compensated technology ensures precise and stable flow regulation across a wide pressure range, providing consistent water application throughout the irrigation line.
Prevents drainage (LCNL) (optional)	The compact non-leakage (LCNL) mechanism minimizes drainage when the system is shut down, improving irrigation efficiency and reducing unnecessary water loss.
Long-lasting clogging resistance	Designed with large internal water passages that improve tolerance to suspended solids, ensuring reliable performance in different water quality conditions. The self-flushing design continuously removes debris during operation, supporting reliable long-term performance.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems. Compact and lightweight design simplifies installation, modifications and future expansion of the irrigation layout.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Recommended for pots, planters, decorative containers and narrow planting strips. Suitable for balconies, terraces, rooftop gardens and urban landscape projects.
- Allows homeowners and landscape professionals to create customized drip lines with flexible dripper spacing.



Specifications

- Dripper flow rates: 0.5, 1.2, 2.0, 3.0, 4.0, 8.0 l/h.
- Compatibility: For installation with 4 mm ID × 6.4 mm OD micro-tube.
- Pressure-compensated range: depending on the selected model.
- Shut-off pressure: 0.12 bar, in LCNL model.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Drippers technical data

Model	Flow rate (l/h)	Working pressure range (bar)	Shut-off pressure (bar)	Base color code	Upper body color code
TechFlow™ Junior AS In-line dripper	0.5	0.5 - 4.0	-	Brown	Black
	1.2				
	2.0				
	3.0				
	4.0				
	8.0				

The flow rates are printed on the upper body.

Model	Flow rate (l/h)	Working pressure range (bar)	Shut-off pressure (bar)	Base color code	Upper body color code
TechFlow™ Junior LCNL In-line dripper	0.5	0.7 - 4.0	0.12	Brown	Black
	1.2				
	2.0				
	3.0				
	4.0				
	8.0				

The flow rates are printed on the upper body.
TechFlow™ Junior LCNL is identified by the rings around the dripper base.



Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
TechFlow™ Junior In-line drippers	4000	56 x 27 x 25	6.3	32	114 x 114 x 112	212

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
TechFlow™ Junior In-line dripper	PCJ TECH JR

Model	
Not added features	-
Anti-drain	LCNL

Flow rate	
0.5	0.5L/H
1.2	1.2L/H
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H
8.0	8.0L/H

Special features	
In-line	INL

Emitters per package	
1	-
10	10/BAG
50	50/BAG
100	100/BAG

PCJ TECH JR LCNL 2.0L/H INL50/BAG

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Model	Material group (MG)
TechFlow™ Junior In-line dripper	21600

TechFlow™ Junior Self-piercing

Compact pressure-compensated on-line dripper, designed to deliver reliable and uniform irrigation performance across a wide range of applications. Features an ultra-sharp tip that allows direct insertion into distribution tubing without pre-drilling.



Benefits & Features

Uniform water distribution	Ensures precise and stable flow regulation across a wide pressure range, delivering uniform water distribution along irrigation lines and across varying topographies.
Prevents drainage (LCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution.
Long-lasting clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. A built-in filtration area helps reduce the risk of suspended particle ingress, ensuring dependable performance across a wide range of water qualities. The labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including press-fit or straight barbed connections, supporting flexible system design and compatibility with many different accessories. The ultra-sharp tip is color-coded, allowing quick and easy identification of the dripper's flow rate.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain, sloping and variable topographies.
- Ideal for gardens, flower beds, shrubs, nurseries, greenhouses and trees.



Specifications

- Dripper flow rates: 2.0, 4.0, 8.0 l/h.
- Compatibility: Insertable into thick wall blank PE pipes (0.90, 1.00, 1.20 mm).
- Pressure-compensated range: depending on the selected model.
- Shut-off pressure (LCNL model): 0.12 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Drippers technical data

Model	Flow rate (l/h)	Working pressure range (bar)	Shut-off pressure (bar)	Base color code	Upper body color code	Pin color code
TechFlow™ Junior Self-piercing	2.0	0.5 - 4.0	-	Brown	Black	Red
	4.0			Brown	Black	Black
	8.0			Brown	Black	Green
TechFlow™ Junior LCNL Self-piercing	2.0	0.7- 4.0	0.12	Brown	Black	Red
	4.0			Brown	Black	Black
	8.0			Brown	Black	Green



The flow rates are printed on the upper body.
TechFlow™ Junior SP LCNL is distinguished by the rings around the barb water inlet connector.

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
TechFlow™ Junior Self-piercing drippers, straight barbed outlet	13000	57 x 28 x 27	14.4	32	114 x 114 x 112	470
TechFlow™ Junior Self-piercing drippers, nipple outlet	12000		13.7			448



*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
TechFlow™ Junior Self-piercing	PCJ SP

Model	
Not added features	-
Anti-drain	LCNL

Flow rate	
2.0	2.0L/H
4.0	4.0L/H
8.0	8.0L/H

Outlet	
3 mm barb	3MM
4 mm barb	4MM
Nipple	NIP

Packaging	
1 unit	-
10 units/bag	10U/BAG
25 units/bag	25U/BAG
50 units/bag	50U/BAG
100 units/bag	100U/BAG
250 units/bag	250U/BAG
500 units/bag	500U/BAG
10000 units/bag	1000U/BAG

PCJ SP LCNL 2.0L/H 3MM 50U/BAG

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Model	Material group (MG)
TechFlow™ Junior Self-piercing	21500

Button and Pot drippers

On-line non-pressure-compensated dripper designed for flexible and reliable irrigation in greenhouses, nurseries and pot applications.



Benefits & Features

Hydraulic performance adaptability	Flow rate varies according to operating pressure, enabling flexible system design under specific application conditions.
Long-lasting clogging resistance	Ensures reliable performance even under challenging water quality conditions through a self-cleaning labyrinth that continuously flushes debris during operation. The labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to the irrigation layout. Available with a range of outlet options, including flat, straight barbed or press-fit connections, supporting flexible system design and compatibility with many different accessories. Flow rate is color-coded for quick identification, and the nominal flow rate is marked directly on the emitter, simplifying installation and operation.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Delivers stable hydraulic performance in flat terrain and slightly sloping areas.
- Ideal for gardens, flower beds, shrubs, nurseries, greenhouse applications and trees.



Specifications

Button dripper

- Flow rates: 2.0, 3.0, 4.0, 8.0 l/h.
- Designed for insertion into thick wall blank PE pipes (0.90, 1.00, 1.20 mm).

Pot dripper

- Flow rates: 2.0, 4.0, 8.0 l/h.
- To be screwed onto a 3 mm micro-tube.

- Maximum working pressure: 2.0 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Drippers technical data

Model	Flow rate (l/h)	Maximum working pressure (bar)	Base color code	Upper body color code
Button dripper	2.0	2.0	Red	Black
	3.0		Blue	Black
	4.0		Black	Black
	8.0		Green	Black
Pot dripper	2.0	2.0	Red	Black
	4.0		Black	Black
	8.0		Green	Black



Drippers package data (on carton box)

Button dripper	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
Flat outlet	10000	57 x 28 x 27	13.0	32	114 x 114 x 112	427
Barb outlet	9500		10.4			344
Nipple outlet	8500		12.0			395

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.

Pot dripper	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
Flat outlet	10000	57 x 28 x 27	13.0	32	114 x 114 x 112	427
Nipple outlet	8500		12.0			395

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
Button dripper	BUTTON
Pot dripper	POT ST

Flow rate	
2.0	2.0L/H
3.0	3.0L/H
4.0	4.0L/H
8.0	8.0L/H
2.0	2.0L/H
4.0	4.0L/H
8.0	8.0L/H

Outlet	
Flat	FL
3 mm barb	3MM
Nipple	NIP

Packaging	
1 unit	-
10 units/bag	10U/BAG
25 units/bag	25U/BAG
50 units/bag	50U/BAG
100 units/bag	100U/BAG
500 units/bag	500U/BAG
10000 units/bag	1000U/BAG

BUTTON 3.0L/H FL 50U/BAG

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Model	Material group (MG)
Button dripper, flat outlet	20000
Button dripper barb or nipple outlet	20020

Model	Material group (MG)
Pot dripper, flat outlet	20500
Pot dripper barb or nipple outlet	20520

Arrow on-line drippers

On-line non-pressure-compensated dripper with integrated drop-leading stake, designed for precise water delivery in pots, planters and container applications. Functions as a key component in multi-outlet irrigation systems, ensuring accurate and uniform water distribution at each irrigation point.



Benefits & Features

Flexible hydraulic performance	Flow rate varies according to operating pressure, enabling flexible system design under specific application conditions.
Long-lasting clogging resistance	Ensures reliable performance through a self-cleaning labyrinth that continuously flushes debris during operation. The filtration area prevents suspended particles from entering the dripper. The labyrinth features wide, deep flow passages with large cross-sections that enhance clogging resistance.
Precise water delivery	The drop-leading design directs water accurately to the root zone, improving irrigation efficiency and minimizing water losses.
Integrated stake for stable positioning	The integrated stake allows secure positioning in pots, grow bags and containers.
System integration capability	Can be connected to Netafim™ on-line drippers via barbs, manifolds or adapters, enabling pressure-compensated and anti-drain functionality when required. Ensures uniform water distribution across multiple outlets when used as part of "Spider" irrigation systems.
Flexible configurations	Available in multiple configurations (angled, straight, with plug or splitter), allowing adaptation to a wide range of irrigation layouts and crop requirements.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- For irrigation in decorative pots, planters, nursery applications and landscape containers.
- Designed for precise water delivery in multi-outlet irrigation systems.



Specifications

- Maximum operating pressure: 2.0 bar.
- Filtration requirements: 130 micron/120 mesh.
- Connectable to 3 x 5 mm micro-tubes.
- High UV resistance and compatible with commonly used fertilizers and nutrients in landscape irrigation systems.
- Available in black and gray colors. The gray version helps improve light reflection under high-temperature conditions.

Assembly guidelines

When supplied as a standalone unit (not factory-connected to a micro-tube), proper assembly is essential to ensure accurate flow performance.
The micro-tube must be cut cleanly and perpendicular to its axis, avoiding angled or irregular cuts.
It must then be inserted fully until it reaches the internal stop (end of the dripper labyrinth).
Incorrect assembly may result in flow rate variation.

Drippers technical data

Flow rate* (l/h)	Water passages dimensions width-depth-length (mm x mm x mm)	Filtration area (mm²)	Constant K	Exponent X	Recommended filtration (micron)/(mesh)
1.6**	0.83 x 0.56 x 20	9.0	0.529	0.48	130/120
2.30	0.83 x 0.84 x 20	13.0	0.761	0.48	130/120

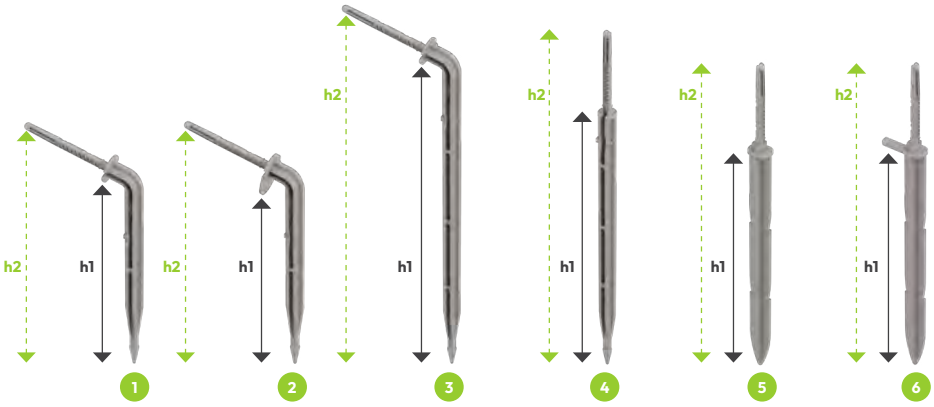


* Nominal flow rate at 1.0 bar. **Only in angled model

Both the K constant and the X exponent are fundamental hydraulic parameters used to calculate the actual flow rate of each dripper at a given operating pressure as detailed in the following pages.

Drippers models and technical data

Arrow	Model	h1 (cm)	h2 (cm)
1	Angled short	8.49	10.12
2	Angled short DS	8.49	10.12
3	Angled long	15.00	16.51
4	Straight with splitter	13.07	16.76
5	Straight	10.97	14.87
6	Straight wth plug	10.97	14.87





DS - Drop Splitter. Surface drip delivery solution ideal for small plants and potted applications.
Water is discharged at the surface, creating a wider initial wetting pattern.

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
Angled short	3000	57 x 28 x 27	5.7	32	114 x 114 x 112	192
Angled short DS	3000		6.0	32		202
Angled long	1250		4.0	32		138
Straight with splitter	2500		10.4	32		343
Straight	3000		9.8	32		324
Straight with plug	2000		5.3	32		180

*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.



Catalog numbers

Catalog number 22000 - (any of the below 6 digits)

Model	Flow rate* (l/h)	1 unit	50 units/bag	100 units/bag	1000 units/box
Angled short (gray)	2.3	001500		001550	
Angled short (black)	2.3	000900	000930	000920	000940
Angled short DS (gray)	1.6	001560			
Angled short DS (black)	1.6	000950	000980	000970	000960
Angled short (black)	1.6	001250			
Angled long (gray)	2.3	001420	001440	001450	
Angled long (black)	2.3	001300	001317	001320	001350
Straight with splitter (gray)	2.3	001160	001170	001180	
Straight with splitter (black)	2.3	001100		001120	001140
Straight (gray)	2.3				
Straight (balck)	2.3	001000	001020	001030	001040
Straight with plug (gray)	2.3				
Straight with plug (black)	2.3	001200	001220	001230	001245

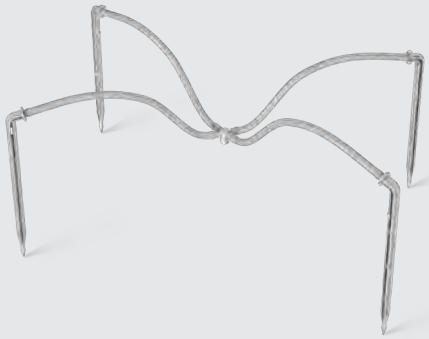
*Nominal flow rate at 1.0 bar. **Missing catalog numbers available upon request



Other Irrigation Products

Spider assemblies

Pre-assembled multi-outlet irrigation assemblies designed to distribute water from a single hub dripper to multiple irrigation points.



Benefits & Features

Fast and efficient installation	Pre-assembled components significantly reduce installation time and labor costs in the field. Advanced assembly processes ensure consistent quality and reliable performance.
Long-lasting clogging resistance	High resistance to UV radiation and compatibility with commonly injected nutrients used in landscape and nursery irrigation systems.
Flexible system design	Emitters can be positioned precisely according to project requirements, enabling accurate adaptation to the irrigation layout. Allows uniform distribution of the hub dripper flow across multiple outlets.
Consistent quality and sustainability	All drippers and assembly components are designed and manufactured under Netafim™ quality standards, ensuring uniform performance and system reliability. The tubes are made from recyclable materials, similar to integral driplines, supporting environmentally responsible use.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Ideal for irrigation in nurseries, pots, planters, container applications and landscape installations.
- Recommended for extending the irrigation capabilities of on-line drippers and Netafim™ Hybrid driplines.



Specifications

- Maximum operating pressure must comply with the specifications of all Spider assembly components.
- The minimum operating pressure depends on the technical specifications of the selected hub dripper.
- When multiple irrigation points are required, it is recommended to use Spider assemblies with Netafim™ Arrow drippers at each outlet to ensure uniform flow distribution.
- For single irrigation points, Netafim™ Spikes can be used as the end component.
- Recommended minimum flow per outlet: 0.5 l/h. The number of outlets should be defined accordingly. For example: 2.0 l/h hub dripper → maximum 4 outlets. 1.2 l/h hub dripper → maximum 2 outlets.
- High resistance to UV radiation and compatibility with nutrients used in landscape and nursery irrigation systems.

Single-outlet configuration

Step 1 – Select the inlet connection

Straight or angled adapter

Adapters can be connected to press-fit outlets of on-line drippers or to the Hybrid outlet of Netafim™ integral driplines.
Alternatively, TechFlow™ Junior or PCJ™ drippers with a 3 mm straight or angled barbed outlet can be used (available in all models and flow rates).

Step 2 – Select the micro-tube

Type: SPE (Soft PE) or SSPE (Super Soft PE).
Color: black or light gray.
Length: according to project requirements (e.g., 40, 60, 80 cm or other).

Step 3 – Select the end accessory

Netafim™ Spike model (according to crop requirements).



Catalog numbers

Because of the wide range of available configurations (different flow rates, components and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Prefix		Initial component		Dripper flow rate (l/h)		Dripper outlet type		Adapter tupe		Micro-tube		Micro-tube length (m)		Spike model		Spike color	
Assembled Spiders	SR	Without hub dripper	W/OD	Without hub dripper	-	Without hub dripper	-	Straight adapter black	ST-ADP	Soft PE Black	S-	0.2	0.20M	Long	SPK-L	Black	BK
		PCJ™ AS	PCJ	Select flow rate based on the selected hub dripper model	XLH	3 mm straigth	BRB	Straight adapter gray	ST-ADP-G	Soft PE Gray	SG-	0.3	0.30M	Short	SPK-S	Gray	GR
		PCJ™ LCNL	PCJL			3 mm angled	ABRB	Angled adapter black	MEL-FPE	Super Soft PE Black	SS-	0.4	0.40M	Drop splitter	SPK-DS		
		PCJ™ HCNL	PCJH					Angled adapter gray	MEL-FPE-G	Super Soft PE Gray	SSG-	0.5	0.50M				
		PCJ™ PRO AS	PCJP					Without adapter	-			0.6	0.60M				
		PCJ™ PRO LCNL	PCJPL									0.7	0.70M				
		PCJ™ PRO HCNL	PCJPH									0.8	0.80M				
												0.9	0.90M				
												1.0	1.00M				
												*Other lengths can be ordered.					

SR W/OD MEL-FPE-G SSG-0.50M SPK-S-G

Catalog description example

Multiple-outlet configuration

Step 1 – Select the inlet adapter

2-outlet or 4-outlet adapter

Expandable 4-outlet adapter for extended configurations (up to 6 or 8 outlets using stacked adapters).

All adapters are compatible with male press-fit outlets of Netafim™ on-line drippers and with Hybrid outlets of Netafim™ integral driplines.

The minimum operating pressure depends on the technical specifications of the selected hub dripper.

Hub dripper flow rates must be selected to meet the recommended design criteria (not less than 0.5 l/h per outlet).

For further technical information and hydraulic design guidelines, please consult your local Netafim™ representative.



Step 2 – Select the micro-tubes

Quantity: according to the number of outlets.
Type: SPE (Soft PE) or SSPE (Super Soft PE).
Color: black or light gray.
Length: according to project requirements (e.g., 40, 60, 80 cm or other).

Step 3 – Select the end dripper

Netafim™ Arrow dripper (according to crop requirements).

Catalog numbers

Because of the wide range of available configurations (different flow rates, components and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following flow chart.
How to use: Select one option from each category in the chart to define the most appropriate product configuration for your application.

Prefix	Initial component	Dripper flow rate (l/h)	Dripper outlet type	Adapter tupe	Micro-tube	Micro-tube length (m)	Arrow dripper model	Arrow dripper color
Assembled Spiders SR	Without hub dripper W/OD	Without hub dripper -	Without hub dripper -	Adapter 2 outlets black M2-F	Soft PE Black S-	0.2 0.20M	Angled 1.6 A1.6	Black BK
	PCJ™ AS PCJ	Select flow rate based on the selected hub dripper model XLH	Nipple NIP	Adapter 2 outlets gray M2-F-G	Soft PE Gray SG-	0.3 0.30M	Angled 2.3 A2.3	Gray GR
	PCJ™ LCNL PCJL			Adapter 4 outlets black M4-F	Super Soft PE Black SS-	0.4 0.40M	Angled 1.6 DS A16DS	
	PCJ™ HCNL PCJH			Adapter 4 outlets gray M4-F-G	Super Soft PE Gray SSG-	0.5 0.50M	Short angled 2.3 AS2.3	
	PCJ™ PRO AS PCJP			Expandable 4 outlets black M4E-F		0.6 0.60M	Straight 2.3 SA2.3	
	PCJ™ PRO LCNL PCJPL			Expandable 4 outlets gray M4E-F-G		0.7 0.70M	Straight with plug 2.3 SAP2.3	
	PCJ™ PRO HCNL PCJPH					0.8 0.80M	Straight with splitter 2.3 SAS2.3	
	PC AS PC					0.9 0.90M		
	PC LCNL PCL					1.0 1.00M		
	PC HCNL PCH					*Other lengths can be ordered.		

SR PCJL 4LH NIP M4-F-G SSG- 0.50M A2.3 GR

Catalog description example

To simplify the definition of the required Spider assembly configuration, considering inlet connection, micro-tube type and length and end accessories, Netafim™ configuration software can be used.

PCJ™ HF bubbler

Compact pressure-compensated high-flow on-line emitter (bubbler), designed to deliver controlled, high-volume water application for trees with large root zones.



Benefits & Features

Uniform water distribution	Ensures stable and precise flow regulation across a wide pressure range, delivering uniform water application even in variable topographies and long irrigation lines.
Prevents drainage (LCNL) (optional)	The LCNL (anti-drain) mechanism prevents drainage from emitters located in low areas, maintaining system pressure and ensuring uniform water distribution.
Long-lasting clogging resistance	Designed with large water passages to handle high flow rates while maintaining reliable performance. The flow path geometry promotes continuous flushing of debris during operation, ensuring stable emitter performance even under varying water qualities.
Flexible system design and installation	Emitters can be positioned precisely where required, enabling accurate adaptation to tree spacing and irrigation layout. Flow rate is color-coded for quick identification. The emitter is designed to operate with an outlet accessory to prevent splashing. Available with a barbed outlet for connection to a micro-tube, or with a cylindrical (press-fit) outlet for connection to distribution accessories such as “Spider" assemblies. When used as a stand-alone emitter, a dedicated deflector cap must be installed to prevent splashing and ensure proper water application. The deflector cap can be factory-installed or field-installed onto emitters with a cylindrical (press-fit) outlet.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation.
- Delivers uniform hydraulic performance on flat terrain, sloping and variable topographies.
- Used for tree irrigation or as a flow regulator upstream of devices distributing water to multiple irrigation points.



Specifications

- Bubbler flow rates: 20, 25, 30, 35, 40 l/h.
- Compatibility: Insertable into thick wall blank PE pipes (0.90, 1.00, 1.20 mm).
- Pressure-compensated range: depending on the selected model.
- Shut-off pressure (LCNL model): 0.12 bar.
- Recommended filtration: 130 micron / 120 mesh.
- Standardization: manufactured in compliance with ISO 9261 international standards.

Bubblers technical data

Model	Flow rate (l/h)	Working pressure range (bar)	Shut-off pressure (bar)	Base color code	Upper body color code
PCJ™ HF Bubbler	20.0	1.0 - 4.0	-	Orange	Black
	25.0			Orange	Light gray
	30.0			Orange	Brown
	35.0			Orange	Light blue
	40.0	1.3 - 4.0		Orange	Blue
PCJ™ HF LCNL Bubbler	20.0	1.0 - 4.0	0.12	Orange	Black
	25.0			Orange	Light gray
	30.0			Orange	Brown
	35.0			Orange	Light blue
	40.0	1.3 - 4.0		Orange	Blue



PCJ™ HF LCNL Bubbler is distinguished by the rings around the barb water inlet connector

Drippers package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
PCJ™ HF bubblers (straight barb 3 and 4 mm outlet)	13000	57 x 28 x 27	14.4	32	114 x 114 x 112	470
PCJ™ HF bubblers (nipple outlet)	12000		13.7			448
PCJ™-HF bubblers + assembled cap	9500		13.4			438



*Values shown are average weights and may vary due to injection tolerances.Refer to the official Netafim™ disclaimers for details.

Catalog numbers

Because of the wide range of available configurations (different flow rates and additional specifications), the final catalog number must be confirmed with your local Netafim™ representative after completing the product definition.

Complete the product specification using the options provided in the following selection chart.
How to use: Select one option from each category to define the most appropriate product configuration for your application.

Product name	
PCJ™ HF Bubbler	PCJ BUB

Model	
Not added features	-
Anti-drain	LCNL

Flow rate	
20.0	20L/H
25.0	25L/H
30.0	30L/H
35.0	35L/H
40.0	40L/H

Outlet	
3 mm barb	3MM
4 mm barb	4MM
Nipple	NIP
Nipple + assembled cap	NIPCAP

Packaging	
1 unit	-
50 units/bag	50U/BAG
100 units/bag	100U/BAG
500 units/bag	500U/BAG
10000 units/bag	1000U/BAG

PCJ BUB 30L/H NIPCAP 50U/BAG

Catalog description example

A Netafim™ catalog number consists of two components:
a) The first five digits, identifying the material group.
b) The following six digits, identifying the specific product within that group.

Material group numbers associated with the products featured in this product sheet include:

Model	Material group (MG)
PCJ™ HF LCNL Bubbler	21620
PCJ™ HF LCNL Bubbler	21630

NetBow™

Innovative and user-friendly multi-outlet arc designed for uniform irrigation in pots, planters and container applications.



Benefits & Features

User-friendly installation	Simple and fast installation, reducing labor requirements during both system setup and crop rotations.
Uniform water distribution	NetBow™ integrates four or eight of Netafim™'s high clogging-resistant labyrinths, ensuring uniform water distribution across the container with reduced clogging risk.
Long-lasting clogging resistance	Ensures reliable performance through multiple self-cleaning labyrinths that continuously flush debris during operation. A large filtration area before each outlet significantly reduces the risk of suspended particle ingress, maintaining dependable performance across a wide range of water qualities. The labyrinth at each outlet features wide, deep flow passages with large cross-sections that enhance clogging resistance.

Applications

Turf | Shrubs & Trees | Nurseries

- Suitable for on-surface installation across a wide range of landscape conditions.
- Delivers uniform hydraulic performance on flat terrain, sloping fields and variable topographies, in accordance with the selected hub dripper.
- Ideal for precision irrigation in pots, planters, decorative containers and landscape applications.



Specifications

- Flow distribution: Total flow is determined by the hub dripper and divided evenly between 4 or 8 outlets, depending on the model.
- Container compatibility: Suitable for containers from 10 to 60 liters.
- Diameter options: 120 mm and 250 mm.
- Flow rate range (hub dripper): 2.0–12.0 l/h for 250 mm model, 2.0–8.0 l/h for 120 mm model
- Maximum operating pressure: 4.0 bar.
- Minimum operating pressure (at hub dripper inlet): According to hub dripper specifications.
- Recommended minimum flow per outlet: 0.5 l/h.
- High resistance to chemicals and UV radiation for extended durability.
- Light gray color helps reduce heat absorption under high solar radiation conditions.

NetBow™ technical data

The total flow of the NetBow™ assembly is defined by the hub dripper and remains constant. The flow at each outlet is equal to the hub dripper flow divided by the number of outlets.
It is recommended that the actual flow per outlet is not less than 0.5 l/h.
The table below presents a few examples of the minimum inlet pressures required at the hub dripper to ensure proper flow at each outlet.

Hub dripper nominal flow rate (l/h) vs. minimum inlet pressure (bar)

NetBow™ diameter (mm)	Number of outlets (units)	TechFlow™		TechFlow™ LCNL		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
120	4	2.0	0.6	2.0	0.8	0.50
		3.0	0.7	3.0	0.9	0.75
		4.0	0.8	4.0	1.0	1.00
		8.0	1.5	8.0	1.7	2.00
250	8	4.0	0.6	4.0	0.8	0.50
		8.0	0.8	8.0	1.0	1.00
		12.0	1.1	12.0	1.3	1.50

NetBow™ diameter (mm)	Number of outlets (units)	TechLine™		TechLine™ CV		TechLine™ HCV		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
120	4	2.3	0.6	2.3	1.1	2.0	1.6	0.58 / 0.50
		3.5	0.7	3.5	1.2	2.9	1.7	0.88 / 0.73
		N/R	N/R	N/R	N/R	4.4	1.8	1.10
250	8	N/R	N/R	N/R	N/R	4.4	1.6	0.55

NetBow™ package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Average* box weight (kg)	Boxes p/pallet (units)	Pallet dimensions (cm x cm x cm)	Average* pallet weight (kg)
NetBow™ 250 mm/10", 8 outlets	50	35 x 28 x 57	5.1	24	106 x 113 x 130	132.4
NetBow™ 120 mm/5", 4 outlets	120	32 x 28 x 56	5.9	24	98 x 111 x 128	151.6

*Values shown are average weights and may vary due to injection tolerance. Refer to the official Netafim™ disclaimers for details.



Catalog numbers

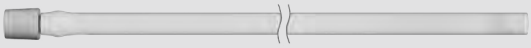
Catalog number 77470 - (any of the below digits)

Model	1 (unit)
NetBow™ 250 mm/10", 8 outlets, barb conn, gray, foldable	000210
NetBow™ 250 mm/10", 8 outlets, press fit conn, gray, foldable	000211
NetBow™ 120 mm/5", 4 outlets, barb conn, gray, foldable	000212
NetBow™ 120 mm/5", 4 outlets, press fit conn, gray, foldable	000213

The catalog numbers listed in this table refer to a single unit.
Orders must be placed in full box quantities or in multiples thereof.
Each box contains 50 or 120 units, depending on the selected model.

Related products

Netafim™ offers micro-tubes for connection between the hub dripper and the NetBow™, available in different lengths and configurations, with or without pre-assembled connectors.
These SSPE (Super Soft PE) micro-tubes are available in gray or black, depending on application requirements.
Available connection configurations include:

Illustration	Model
	Press-fit (hub dripper) to press-fit (NetBow™).
	Press-fit (hub dripper) to barbed (NetBow™).
	Barbed (hub dripper) to press-fit (NetBow™).
	Barbed (hub dripper) to barbed (NetBow™).

Ordering information

How to use: Select one option from each category to define the most appropriate product configuration for your application.

Prefix	Inlet connector		Micro tube		Tube length		Outlet connector	
SR W/OD	Barb-female press-fit gray	PF-ST-ADP-G	Super soft PE gray	SSG-	25 cm	0.25M	Barb-female press-fit gray	ST-ADP-PF-G
	Without connector	W/OIC	Super soft PE black	SSB-	30 cm	0.30M	Without connector	W/OC
					40 cm	0.40M		
					50 cm	0.50M		

*Other lengths can be ordered.

SR W/OD PF-ST-ADP-G SSG-0.25M W/OC

Catalog description example

Catalog description examples:

SR W/OD PF-ST-ADP-G SSG-0.30M W/OC	40200-000005
SR W/OD PF-ST-ADP-G SSG-0.30M ST-ADP-PF-G	40200-000164



Suitable connectors are available for field assembly of micro-tubes between the hub dripper and the NetBow™.

Illustration	Description	Catalog number
	Female press-fit / barbed connectors compatible with 3 mm ID micro-tubes.	32000-001970

A range of dedicated installation tools is available in the Netafim™ accessories catalog.



Foldable NetBow™

FlexBow™

Multi-outlet irrigation loop designed for pots, planters and container applications, providing uniform water distribution with high clogging resistance.



Benefits & Features

Uniform water distribution	FlexBow™ integrates multiple high clogging-resistant Netafim™ labyrinths, ensuring uniform water distribution throughout the container. Designed to provide consistent water application across a wide range of container sizes and planting configurations.
Simplified installation and maintenance	Flexible and user-friendly design enables quick installation and easy adaptation to different container layouts. A press-fit flushing connector allows fast and efficient system flushing whenever required.
Long-lasting clogging resistance	Ensures reliable performance through multiple self-cleaning labyrinths that continuously flush debris during operation. A large filtration area before each outlet helps reduce the risk of particle ingress, maintaining dependable performance across a wide range of water quality levels. The labyrinth integrated into each outlet features wide, deep flow passages with large cross-sections that significantly enhance clogging resistance.
Built for demanding landscape applications	Designed for long-term durability and reliable operation with minimal maintenance requirements. Highly resistant to UV radiation and to commonly used fertilizers and nutrients injected into landscape irrigation systems. Light gray color helps reduce heat absorption under high solar radiation conditions.

Applications

Turf · Shrubs & Trees · Nurseries

- Suitable for on-surface installation.
- Ideal for pots, decorative containers, planters, rooftop gardens, urban landscaping and nursery applications.
- Provides uniform water distribution in containers of various sizes.



Specifications

- Container compatibility: suitable for a wide range of container diameters, depending on the selected configuration.
- Recommended minimum flow per outlet: 0.5 l/h.
- Maximum operating pressure: 4.0 bar.
- Minimum operating pressure (at hub dripper inlet): according to the performance table.
- High resistance to chemicals and UV radiation for extended service life.
- Light gray color for improved visual appearance and reduced heat absorption.

FlexBow™ and FlexBow™ Dual models

Loop diameter (mm)	Number of outlets
211	8
264	10
317	12
370	14
424	16

FlexBow™ and FlexBow™ Dual technical data

The total flow of the FlexBow™ assembly is defined by the hub dripper and remains constant. The flow at each outlet is equal to the hub dripper flow divided by the number of outlets.
It is recommended that the actual flow per outlet is not less than 0.5 l/h.
The table below presents a few examples of the minimum inlet pressures required at the hub dripper to ensure proper flow at each outlet.

Hub dripper nominal flow rate (l/h) vs. minimum inlet pressure (bar)

FlexBow™ and FlexBow™ Dual diameter (mm)	Number of outlets (units)	PC HCNL		PCJ™		PCJ™ HF Bubbler		Flow rate per outlet (l/h)
		Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	Flow rate (l/h)	Pressure (bar)	
211	8			4.0	0.71			0.50
				8.0	0.72			1.00
		12.0	1.46	12.0	0.76			1.50
				15.0	0.80			1.80
264	10	6.0	1.41					0.60
		12.0	1.42	12.0	0.72			1.20
				15.0	0.76			1.50
						20.0	1.10	2.00
317	12			8.0	0.71			0.50
				15.0	0.72			1.00
						20.0	1.06	1.67
						25.0	1.10	2.08
370	14			8.0	0.71			0.57
				15.0	0.72			1.07
						20.0	1.06	1.43
						30.0	1.10	2.14
424	16			8.0	0.71			0.50
				15.0	0.72			0.94
						25.0	1.06	1.56
						30.0	1.10	1.88

FlexBow™ and FlexBow™ Dual package data (on carton box)

Model	Quantity p/box (units)	Box dimensions (cm x cm x cm)	Box weight* (kg)		Boxes per pallet (units)	Units per pallet
			FlexBow™	FlexBow™ Dual		
211	300	85.0 x 28.5 x 28.5	5.5	6.0	12	3600
264	300	85.0 x 28.5 x 28.5	8.7	9.2	12	3600
317	150	57.0 x 49.0 x 31.0	5.9	6.5	12	1800
370	150	57.0 x 49.0 x 31.0	6.8	7.3	12	1800
424	150	57.0 x 49.0 x 31.0	8.0	8.5	12	1800

*Values shown are average weights and may vary due to injection tolerances. Refer to the official Netafim™ disclaimers for details.





Catalog numbers

FlexBow™

Catalog number 77470 - (any of the below 6 digits)

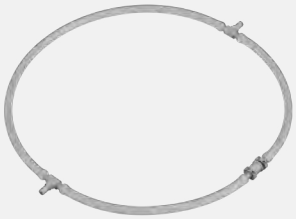
Illustration	Model	Catalog number
	FlexBow™ 211 mm / 8.3" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000600
	FlexBow™ 264 mm / 10.4" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000605
	FlexBow™ 317 mm / 12.5" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000606
	FlexBow™ 370 mm / 14.6" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000607
	FlexBow™ 424 mm / 16.7" loop, light gray tube color, with installed connectors 8*3*8 mm barbed + press fit (male/female)	000608
	FlexBow™ 211 mm / 8.3" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000750
	FlexBow™ 264 mm / 10.4" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm + press fit (male/female)	000755
	FlexBow™ 317 mm / 12.5" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000756
	FlexBow™ 370 mm / 14.6" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000757
	FlexBow™ 424 mm / 16.7" loop, light gray tube color, with installed connectors 8 mm*male press fit*8 mm +press fit (male/female)	000758

The catalog numbers listed in this table refer to a single unit.
Orders must be placed in full box quantities or in multiples thereof.
Each box contains 300 or 150 units, depending on the selected model.



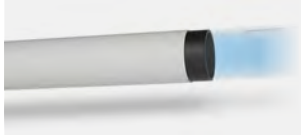
FlexBow™ Dual

Catalog number 77470 - (any of the below 6 digits)

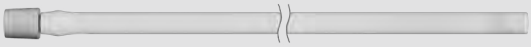
Illustration	Model	Catalog number
	FlexBow™ Dual 211 mm / 8.3" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000017
	FlexBow™ Dual 264 mm / 10.4" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000019
	FlexBow™ Dual 317 mm / 12.5" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000021
	FlexBow™ Dual 370 mm / 14.6" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000023
	FlexBow™ Dual 424 mm / 16.7" loop, light gray tube color, with installed connectors 2* (8*3*8 mm barbed) + press fit (male/female)	000025
	FlexBow™ Dual 211 mm / 8.3" loop, light gray tube color, with installed connectors 2* (8 mm*male press fit*8 mm) + press fit (male/female)	000016
	FlexBow™ Dual 264 mm / 10.4" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000018
	FlexBow™ Dual 317 mm / 12.5" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000020
	FlexBow™ Dual 370 mm / 14.6" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000022
	FlexBow™ Dual 424 mm / 16.7" loop, light gray tube color, with installed connectors 2* (8 mm*male press-fit*8 mm) + press fit (male/female)	000024

The catalog numbers listed in this table refer to a single unit.
Orders must be placed in full box quantities or in multiples thereof.
Each box contains 300 or 150 units, depending on the selected model.

Related products

Illustration	Model	Catalog number
	Micro tube 3*5 mm (to connect the FlexBow™ to the hub dripper outlet)	
	SSPE, 200 meter coil, light gray	40005-000103
	SSPE, 500 meter coil, light gray	40005-000101
	SSPE, 1000 meter coil, light gray	40005-000104
	FlexBow™ barbed "T" connector 8*3*8, light gray	77470-000105
	FlexBow™ press fit "T" connector, 8*male*8, light gray	77470-000130
	8 mm barbed/ male press fit, light gray	77470-000650
	8 mm barbed/ female press fit, light gray	77470-000651
	Stake for fixing an 8 mm OD pipe	32500-002150

Netafim™ offers micro-tubes for connection between the hub dripper and the FlexBow™, available in different lengths and configurations, with or without pre-assembled connectors.
These SSPE (Super Soft PE) micro-tubes are available in gray or black, depending on application requirements.
Available connection configurations include:

Illustration	Model
	Press-fit (hub dripper) to press-fit (FlexBow™).
	Press-fit (hub dripper) to barbed (FlexBow™).
	Barbed (hub dripper) to press-fit (FlexBow™).
	Barbed (hub dripper) to barbed (FlexBow™).

Ordering information

How to use: Select one option from each category to define the most appropriate product configuration for your application.

Prefix	Inlet connector		Micro tube		Tube length		Outlet connector	
SR W/OD	Barb-female press-fit gray	PF-ST-ADP-G	Super soft PE gray	SSG-	25 cm	0.25M	Barb-female press-fit gray	ST-ADP-PF-G
	Without connector	W/OIC	Super soft PE black	SSB-	30 cm	0.30M	Without connector	W/OC
					40 cm	0.40M		
					50 cm	0.50M		

SR W/OD PF-ST-ADP-G SSG-0.25M W/OC

Catalog description example

Catalog description examples:

SR W/OD PF-ST-ADP-G SSG-0.30M W/OC	40200-000005	
SR W/OD PF-ST-ADP-G SSG-0.30M ST-ADP-PF-G	40200-000164	

Suitable connectors are available for field assembly of micro-tubes between the hub dripper and the FlexBow™.

Illustration	Description	Catalog number
	Female press-fit / barbed connectors compatible with 3 mm ID micro-tubes.	32000-001970

A range of dedicated installation tools is available in the Netafim™ accessories catalog.

Technical Terms

Standards

International standard ISO 9261
Most drippers and driplines presented in this catalog comply with ISO 9261, the international standard defining hydraulic performance and quality requirements for drip irrigation products.

International standards ISO 9001 and ISO 14001
These international standards define quality management and environmental management systems for manufacturing and operational processes. Netafim™ manufacturing facilities operate in accordance with these internationally recognized standards and certifications.

Hydraulic terms

Nominal flow rate – Non-pressure-compensated dripper
Flow rate, expressed in liters per hour, measured at 1.0 bar inlet pressure and water temperature of 23°C ±3°C.

Nominal flow rate – Pressure-compensated dripper
Flow rate, expressed in liters per hour, measured within the pressure regulation range at water temperature of 23°C ±3°C.

Dripper exponent (X)
Hydraulic coefficient describing the relationship between flow rate and pressure according to the formula:

$Q = K \times P^X$

Where:
- Q = flow rate (l/h)
- P = pressure (m)
- K = dripper constant
- X = dripper exponent

For X = 0, flow remains constant regardless of pressure variation.
For X = 1, flow varies linearly with pressure.

Pressure-compensated dripper/dripline
Dripper or dripline designed to maintain a constant flow rate across a specified operating pressure range.

Pressure regulation range
Operating pressure range within which a pressure-compensated dripper maintains nominal flow rate.

Flow variation (FV)
Hydraulic parameter expressing the difference between maximum and minimum dripper flow rates within the same irrigation zone.

Dripper technologies

Self-flushing
Hydraulic feature that continuously removes debris from the dripper during operation.

TurboNet™ labyrinth
Netafim™ turbulent-flow labyrinth technology designed to improve clogging resistance and hydraulic reliability.

TurbuNext™ labyrinth
Netafim™ turbulent-flow labyrinth technology designed to generate increased internal turbulence, helping reduce the risk of sediment accumulation within the flow path.

Anti-drain dripper/dripline
Dripper or dripline designed to stop water discharge whenever inlet pressure drops below the manufacturer's specified shut-off pressure.

Irrigation concepts

Pulse irrigation
Irrigation method based on short and frequent irrigation cycles to improve water and nutrient management.

Sub-surface drip irrigation (SDI)
Irrigation method where driplines are installed below the soil surface.

Operating parameters

Maximum operating pressure
Highest recommended water pressure at the dripper or dripline inlet ensuring proper hydraulic operation.

Flushing pressure
Maximum pressure permitted during system flushing operations. Flushing pressure values apply only during temporary flushing conditions with open dripline ends.

Recommended filtration level
Filtration recommendations presented in this catalog refer to standard agricultural water qualities. Whenever abnormal levels of suspended solids, sand or organic matter are present, consultation with a Netafim™ technical representative is recommended.

Netafim™ products warranty

All drippers, driplines and Netafim™ products

Netafim's products are warranted to be free from defects in material and workmanship under normal use and service, for the periods set out in the applicable table below in respect of each of the products (for each product, its respective "**Warranty Period**"), from the date of receipt of the product(s) by the person, firm, or company who purchases the products from Netafim™ (the "**Customer**"), as stated in a valid products acceptance certificate (the "**Commencement Date**"), subject to the Customer presenting such certificate.

Table 1 (driplines)
Table 2 (on line drippers)

Limited warranty

Netafim's products are warranted to be free from defects in material and workmanship under normal use and service, for the applicable Warranty Period, provided however, that with respect to items procured by Netafim™ from a third party, such warranty period shall be the shorter of (i) the Warranty Period; or (ii) the warranty period granted to Netafim™ by the third party from which it acquired such item.

This limited warranty shall be considered as null and void and shall not apply in any of the following events:

1. Where equipment is not used or has not been installed in accordance with Netafim's specifications and/or installation instructions for the recommended purpose. This warranty does not extend to repair or replacement (or attempts to repair or replace) of a Netafim™ product or part that results from misuse, negligence, alteration, tampering, use in conjunction with parts, products or services which have not been approved by Netafim™, improper or inadequate storage, installation or maintenance of the product, or any use not in accordance with the applicable user manual provided by Netafim™.
2. Where chemical concentrates are used or applied internally or externally to the product not according to Netafim's instructions, and cause harm to the product or its components.
3. If operating pressures are not within the limits specified by Netafim™ in the Technical Product Sheet of each individual component.
4. If water composition is not within the limits specified by Netafim™ in the Technical Product Sheet of each individual component.
5. Where damage, plugging or clogging is caused by insects, rodents or other animals.
6. Normal wear and tear.
7. Any part normally consumed in operation, or which has a normal life, inherently shorter than the specified Warranty Period, shall not be considered defective merely due to its consumption or failure prior to the end of the Warranty Period.
8. Loss or damage in transit in the event that the Customer was responsible for transporting the products.
9. Any acts or omissions which expose the products to any harmful environmental factors, including without limitation, use of toxic, corrosive, or caustic liquids, solids, and/or gases, exposure to severe weather conditions, or exposure to unsuitable water.
10. If failures are caused by any act or event beyond the reasonable control of Netafim™, including, without limitation: natural calamities and/or force majeure, which may include, but are not limited to, war, invasion, act of foreign enemy, terrorism, hostilities (whether war be declared or not), civil war or strike, rebellion, lockouts or other industrial disputes or actions, acts of God, acts of government or other prevailing authorities or defaults of third parties, storms, temperatures, flooding, gales, snow, landslides, fire, hailstorm, lightning, earthquakes, electrical or power failures or outages or power surges or electrical spikes, or damage due to freezing or mechanical damage, failure of energy or water supply.

Upon identifying a defect in a Netafim™ product or part thereof during the applicable Warranty Period, the Customer shall provide written notice of the claimed defect to Netafim™ within fifteen (15) calendar days of the discovery thereof or when the Customer should have become aware of such defect and return the defective Netafim™ product or part to Netafim™. Netafim™ will, at its sole discretion, either repair, replace, or refund a part or the full cost of the defective product's or part's purchase price.

Netafim's warranty does not cover spare parts required for routine maintenance. Netafim™ cannot and does not assume liability for defective parts, or damage or problems caused by products not manufactured or supplied by Netafim™, even though such products may be used in conjunction with Netafim™ products and the Customer assumes the risk of use of such third party products.

Netafim's obligation to repair, replace or refund the cost (in full or in part) of its products or parts as set forth above is the sole and exclusive warranty given by Netafim™. Netafim™ disclaims any and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose and/ or warranty of non-infringement. Netafim™ will not be liable to any party in strict liability, tort, contract, or any other manner for damages caused or claimed to be caused as a result of any design or defect in Netafim's products. In addition, Netafim™ shall not be liable, and a Customer and/or any third party shall not be entitled to recover from Netafim™, any, general, special, incidental, consequential, indirect, punitive, or exemplary damages of whatsoever nature and type (including, without derogating from the generality of the foregoing, damages to crops or equipment caused by product malfunction, losses or damages caused by shutdowns or service interruptions, loss of use, non-operation of the products or any equipment, loss of information, loss of power or cost of replacement power, loss of profits or revenue, loss of contracts, loss of capital inventory or use charges, cost of purchased or replacement power, interest charges or cost of capital or claims of Customer's clients or any third party) even if Netafim™ is aware or should have been aware of the possibility of such damages. In no event shall Netafim's liability exceed the purchase price of the Netafim™ products.

Netafim™ reserves the right to alter, modify or redesign its products, pricing and this warranty at all times without creating any liability for the obsolescence of Customer inventory or such parts or products.

This warranty shall be subject to, and shall be exclusively governed by, the laws of the State of Israel, to the exclusion of its conflict of law rules. Any dispute arising out of or in respect of this warranty shall be subject to the jurisdiction of the courts in the State of Israel.

Table 1 (driplines)

Product	Wall tickness (mm/mil)	Period (months)
Streamline™ X (11.8, 16.2, 22.2 mm ID)	0.13/5.0	6
	0.15/6.0	6
	0.18/7.0	8
	0.20/8.0	12
Typhoon™ Plus (11.8, 16.2, 22.2, 25.0 mm ID)	0.20/8.0	12
	0.25/10.0	12
	0.31/12.5	24
	0.38/15.0	36
Aries™ TWD and MWD (11.8, 14.2, 15.5, 16.2, 22.2, 25.0 mm ID)	0.31/12.5	24
	0.34/13.5	24
	0.38/15.0	24
	0.50/20.0	36
	0.63/25.0	48
	0.80/32.0	48
Aries™ HWD (12, 16, 20 mm OD)	0.90/35.0	60
	1.00/39.0	60
	1.20/47.0	60
Microdrip (8 mm OD)	0.80/ 32.0	36
Orion™ PC (11.8, 16.2, 22.2 mm ID)	0.15/6.0	6
	0.20/8.0	12
	0.25/10.0	12

Table 1 (driplines)

Product	Wall Tickness (mm/mil)	Period (Months)
DripNet PC™ TWD and MWD (11.8, 15.5, 16.2, 22.2, 25.0 mm ID)	0.31/12.5	24
	0.38/15.0	36
	0.50/20.0	36
	0.63/25.0	48
	0.80/32.0	48
DripNet PC™, DripWine™ (12, 16, 20 mm OD)	0.90/35.0	60
	1.00/39.0	60
	1.20/47.0	60
UniRam™, UniWine™, UniGray™, UniWhite™ (16, 20 mm OD)	0.90/35.0	60
	1.00/39.0	72
	1.20/47.0	72
Hybrid driplines	Same warranty as the dripline the Hybrid saddles are added on.	

Table 2 (on line drippers)

Product	Period (months)
On line Drippers	
PC, PCJ™ , PCJ™ PRO	48
Other dripping products	
PCJ™ Bubbler	48
NetBow™ , FlexBow™	24

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