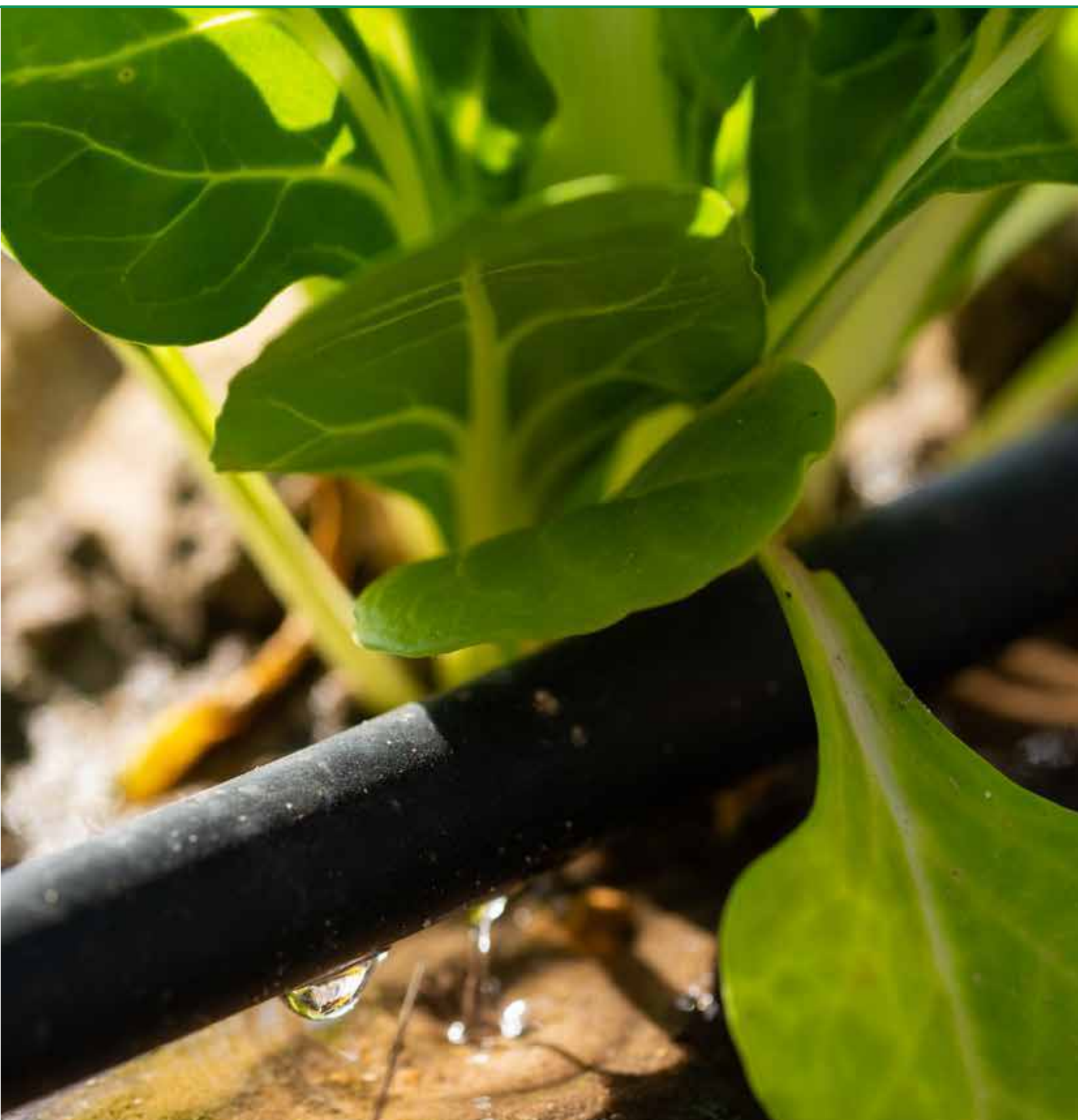
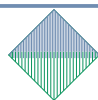
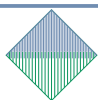


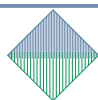




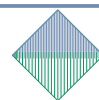
aster



aster



aster

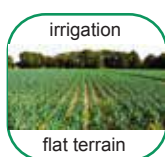


aster



water efficiency

high-quality irrigation!



irrigation

flat terrain



irrigation

protected

not regulated

labyrinth type
dripper

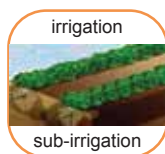


irrigation

on slope

PC

pressure compensating
dripper

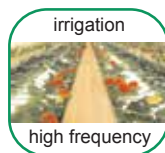


irrigation

sub-irrigation

PC AS

pressure compensating
anti-siphon
dripper



irrigation

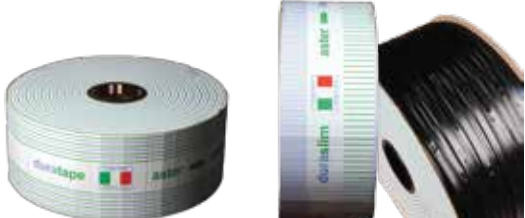
high frequency

PC AS ND

pressure compensating
anti-siphon
no-drain
dripper



drip tapes

	duratape		03
	duratape	PC PC AS PC AS ND	06
	duraslim		10
	duralex		14
	duralex	PC PC AS PC AS ND	17

drip lines

	duradrip		21
	duradrip	PC PC AS PC AS ND	24
	duragrey	PC AS ND	28

gardening drip lines

	duragarden		32
	duragarden	PC AS ND	34

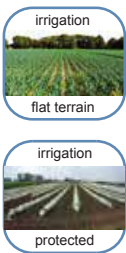
pipings & fittings

	duraflex		38
	duratube		40
	duraflat		41
	durafitting	for drip tapes	42
	durafitting	for drip lines	44



Drip tape with labyrinth type dripper

non regulated



series:
2016
2022
2025
2029



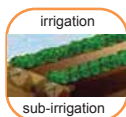
with pressure compensating dripper

PC



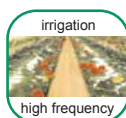
series:
2316
2322

PC AS



series:
2416
2422

PC AS ND



series:
2516
2522

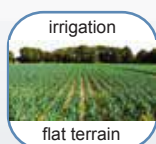


Drip tape with flat not regulated dripper



Series:
2016 - 2022 - 2025 - 2029

- Made with 100% virgin raw materials
- Suitable for open field seasonal and multi-seasonal application
- Resistant to UV, acid and common agricultural chemicals
- Compact dripper welded on the inner wall of the drip line in the extrusion process
- Large turbulent flow path prevents clogging
- Excellent uniformity of emission (CV)

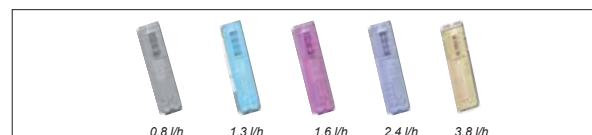


Drip tape specifications

Nominal diameter	Internal diameter	Outside diameter	Wall thickness		Max pressure
			MIL	mm	
16	16.10	16.30	4	0.10	0.50
		16.36	5	0.13	0.60
		16.40	6	0.15	0.80
		16.46	7	0.18	0.90
		16.50	8	0.20	1.00
		16.60	10	0.20	1.20
		16.70	12	0.30	1.50
		16.86	15	0.38	1.80
		17.00	18	0.45	2.00
		17.30	24	0.60	2.50
22	22.20	22.50	6	0.15	0.60
		22.56	7	0.18	0.70
		22.60	8	0.20	0.80
		22.70	10	0.25	1.00
		22.80	12	0.30	1.20
		22.96	15	0.38	1.50
		23.10	18	0.45	1.80
		23.40	24	0.60	2.20
25	25.00	25.40	8	0.20	0.80
		25.50	10	0.25	0.90
		25.60	12	0.30	1.10
		25.76	15	0.38	1.30
		25.90	18	0.45	1.50
29	28.50	28.90	8	0.20	0.60
		29.00	10	0.25	0.70
		29.10	12	0.30	0.90
		29.26	15	0.38	1.00
		29.40	18	0.45	1.30

Dripper specification

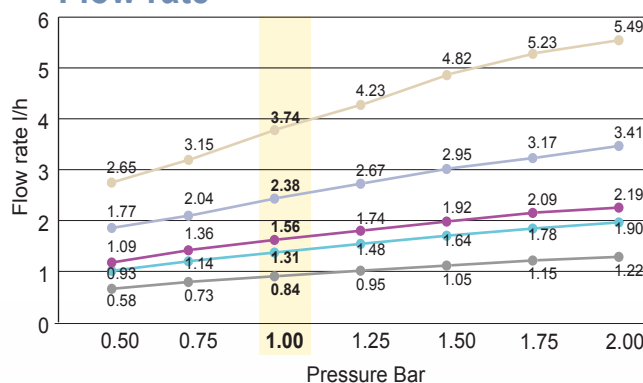
Dripper flow rate: (l/h ad 1 Bar)	0.8 - 1.3 - 1.6 - 2.4 - 3.8
Standard spacing : (cm)	10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing :	groups by request



Dripper data

Nominal flow rate	l/h	0,80	1,30	1,60	2,40	3,80
Coefficient of variation CV	%	2,50	1,10	1,25	2,00	2,00
Exponent X		0,49	0,50	0,50	0,50	0,50
Maximum working pressure	bar	2,0	2,0	2,0	2,0	2,0
Minimum working pressure	bar	0,5	0,5	0,5	0,5	0,5
Dripper flow path	Depth	mm	0,62	0,70	0,70	0,75
	Width	mm	0,62	0,62	0,67	0,85
	Lenght	mm	67	67	67	34
Filtration degree	mesh	120	120	120	120	120
	micron	130	130	130	130	130

Flow rate



Packaging and shipping

bobbins 	2.500 m Rif. duratape 16/8 30cm purely indicative data
Pallet 	small 32 bobbins 114x114xh190 cm maxi 40 bobbins 114x114xh252 cm
truck 	22 maxi pallets 880 bobbins
container 	10 small pallets 320 bobbins
container 	20 maxi pallets 800 bobbins

Fittings

Derivation with grommet drill hole,: 10 mm		4657	17
Derivation with grommet Drill hole: 16mm		4659	22
		4660	29
Male thread starter		4670	3/4" x 17
		4672	3/4" x 22
		4673	3/4" x 29
PE starter valve with grommet		4619	17
		4618	22
LAY FLAT starter valve		4613	17
		4612	22
Coupling		4661	17 x 17
		4662	22 x 22
		4663	29 x 29

For other fittings see durafittings

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Maximum recommended length on flat terrain (m) - E.U. 85%

Inside diameter (mm)	flow rate (l/h)	spacing (cm)													pressure (bar)
		10	15	20	25	30	33	40	50	60	75	80	90	100	
16.10	0.8	72	97	120	141	161	172	196	229	259	301	314	339	364	0.6
		101	137	170	200	227	243	278	324	366	426	445	481	516	0.8
		118	161	199	234	267	285	326	380	430	500	522	565	607	1.0
	1.3	52	71	88	103	117	125	144	167	189	220	230	248	267	0.6
		74	100	124	146	166	178	203	237	268	311	326	352	378	0.8
		86	118	146	171	195	209	238	278	315	366	382	414	444	1.0
	1.6	46	62	77	90	103	110	125	146	165	192	201	217	233	0.6
		64	88	108	127	145	155	177	207	234	272	284	308	330	0.8
		75	103	127	150	170	182	208	243	275	320	334	362	388	1.0
	2.4	35	48	59	69	79	84	96	112	127	148	154	167	179	0.6
		49	67	83	98	111	119	136	159	179	209	218	236	253	0.8
		58	79	98	115	130	140	160	187	211	245	256	277	298	1.0
	3.8	26	35	44	51	58	62	71	83	94	109	114	123	132	0.6
		36	50	62	72	82	88	101	118	133	155	162	175	188	0.8
		43	58	72	85	97	103	118	138	157	182	190	205	220	1.0
22.20	0.8	166	229	285	337	385	412	472	553	627	731	763	827	888	0.8
		195	269	335	395	451	483	554	649	736	858	897	971	1043	1.0
	1.3	121	167	208	246	281	301	346	404	459	535	558	605	650	0.8
		142	196	244	289	330	353	406	475	539	628	656	711	763	1.0
	1.6	106	146	182	215	245	263	302	353	401	467	488	528	568	0.8
		124	171	213	252	288	309	354	415	470	548	573	621	667	1.0
	2.4	81	112	139	165	188	202	232	271	307	359	374	406	436	0.8
		95	131	164	193	221	237	272	318	361	421	440	477	512	1.0
	3.8	60	83	103	122	139	149	172	201	228	266	278	301	323	0.8
		70	97	121	143	164	175	201	236	268	312	326	353	379	1.0
25.00	0.8	233	324	404	478	547	587	674	790	897	1046	1094	1185	1274	1.0
	1.3	170	236	295	350	400	429	493	578	656	766	800	868	932	1.0
	1.6	148	206	258	305	349	375	430	505	573	669	699	758	814	1.0
	2.4	114	158	197	234	268	287	330	387	440	513	537	581	625	1.0
	3.8	84	117	146	173	198	213	244	287	326	380	398	431	463	1.0
28.50	0.8	106	146	182	215	245	263	302	353	401	467	488	528	568	0.7
		124	171	213	252	288	309	354	415	470	548	573	621	667	1.0
	1.3	156	218	273	324	371	398	458	537	611	713	746	808	869	0.7
		208	289	363	431	494	530	610	717	815	953	996	1080	1161	1.0
	1.6	136	190	238	283	324	347	400	469	533	623	651	706	759	0.7
		181	252	317	376	431	463	533	626	712	832	870	943	1014	1.0
	2.4	104	146	183	217	248	266	306	360	409	478	500	542	583	0.7
		139	193	243	288	331	355	409	480	546	638	668	724	778	1.0
	3.8	77	108	135	160	184	197	227	267	303	354	370	401	432	0.7
		102	143	180	213	245	263	303	356	404	473	494	536	577	1.0

Drip tape with pressure compensating dripper



Series:

2316 - 2322 **PC**
 2416 - 2422 **PC AS**
 2516 - 2522 **PC AS ND**



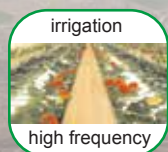
- Made with 100% virgin raw materials
- Suitable for multi-seasonal, sub-irrigation and greenhouse application
- Resistant to UV, acid and common agricultural chemicals

Dripper available in the following styles:

- **pressure-compensating PC**
 It keeps the same flow rate at different pressures in all the dripline emitters. Suitable for projects on slope.
- **anti-siphon PC AS**
 It avoids the suction of debris during the dripline discharge. Suitable for sub-irrigation and soil laying projects.
Requires the installation of a double-acting vent valve on each sector.
- **no-drain PC AS ND**
 The emitter closes at 0.25 (bar) to avoid water emission at the end of the irrigation cycle and to reduce the dripline filling time to the next irrigation cycle. Suitable for looping irrigation.
- **self-cleaning**
 The anti-deposit silicone membrane and the large maze one guarantee the continuous cleaning of the dripper.

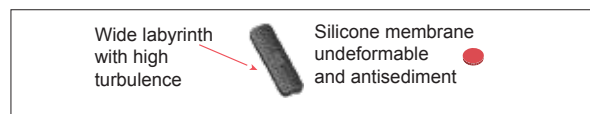
Drip tape specification

Nominal diameter	Inside diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	
16	16.10	16.70	12	0.30	1.50
		16.86	15	0.38	1.80
		17.00	18	0.45	2.00
		17.30	24	0.60	2.50
		17.90	36	0.90	3.00
22	22.20	22.96	15	0.38	1.50
		23.10	18	0.45	1.80
		23.40	24	0.60	2.20
		24.00	36	0.90	2.80



Dripper specifications

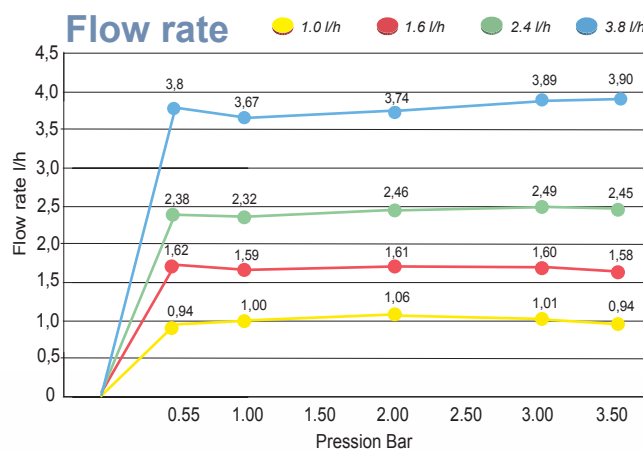
Dripper flow rate : (l/h)	1.0 - 1.6 - 2.4 - 3.8
Standard spacing : (cm)	10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing : groups by request	



Dripper data

Nominal flow rate		l/h	1,00	1,60	2,40	3,80
Coefficient of variation CV		%	3,60	6,60	3,50	3,50
Costant K		bar	1,00	1,60	2,30	3,60
Exponent		X	0,0	0,0	0,0	0,0
Maximum working pressure		bar	4,0	4,0	4,0	4,0
Minimum working pressure		bar	0,5	0,5	0,5	0,5
Closing pressure*		bar	0,25	0,25	0,25	0,25
Dripper flow path	Depth	mm	0,76	0,85	0,90	0,90
	Width	mm	0,82	1,06	1,19	1,30
	Length	mm	139,0	132,0	89,6	78,7
Filtration area		mm ²	37,37	37,37	37,37	37,37
Filtration degree	mesh		150	120	120	120
	micron		100	130	130	130

* only PC AS ND



Packaging and shipping

bobbins	2.500 m
	Re. duratape 16/8 30cm purely indicative data
Pallet	small 32 bobbins 114x114xh190 cm
	maxi 40 bobbins 114x114xh252 cm
truck	22 pallets maxi
	880 bobbins
container	10 pallets small
	320 bobbins
container	20 pallets maxi
	800 bobbins

Fittings

Derivation with grommet drill hole,: 10 mm		4657	17
Derivation with grommet drill hole: 16mm		4659	22
		4660	29
Male thread starter		4670	3/4" x 17
		4672	3/4" x 22
		4673	3/4" x 29
PE starter valve with grommet		4619	17
		4618	22
LAY FLAT starter valve		4613	17
		4612	22
Coupling		4661	17 x 17
		4662	22 x 22
		4663	29 x 29

For other fittings see durafittings

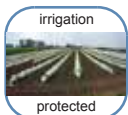
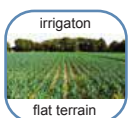
The information contained in this catalog is purely indicative, Aster reserves the right to modify it at any time and in no case can it be held responsible for errors in the data contained in this document.

Maximum recommended length on flat terrain (m)

internal diameter (mm)	flow rate (l/h)	spacing (cm)														pressure (bar)
		10	15	20	25	30	33	40	50	60	75	80	90	100		
16.10	1.0	83	119	152	183	212	229	266	316	362	427	447	487	525	1.5	
		96	137	175	210	244	263	306	363	416	491	514	561	604	2.0	
		105	151	193	232	269	290	338	401	460	542	569	619	668	2.5	
		114	162	208	250	290	313	364	433	497	586	614	669	721	3.0	
	1.6	61	87	112	134	156	168	196	232	266	314	329	358	386	1.5	
		70	100	128	154	179	193	225	267	306	361	378	412	444	2.0	
		77	110	141	170	197	213	248	295	338	399	418	455	491	2.5	
		83	119	152	184	213	230	268	318	365	431	451	491	530	3.0	
	2.4	47	67	85	103	119	129	150	178	204	241	252	275	296	1.5	
		54	77	98	118	137	148	172	205	235	277	290	316	341	2.0	
		59	84	108	130	151	163	190	226	259	306	321	349	377	2.5	
		64	91	117	141	163	176	205	244	280	330	346	377	407	3.0	
	3.8	36	51	65	79	91	98	115	136	157	185	194	211	227	1.5	
		41	59	75	90	105	113	132	157	180	212	222	242	261	2.0	
		45	65	83	100	116	125	146	173	199	235	246	267	289	2.5	
		49	70	89	108	125	135	157	187	214	254	266	289	312	3.0	
22.20	1.0	132	191	246	298	347	375	439	525	604	716	752	821	887	1.5	
		151	219	282	342	398	431	504	603	695	824	865	944	1020	2.0	
		167	241	311	377	439	475	556	665	767	909	954	1042	1127	2.5	
	1.6	97	140	180	218	254	275	322	385	444	527	553	603	652	1.5	
		111	160	207	251	292	316	370	443	510	605	635	694	750	2.0	
		122	177	228	276	322	349	408	488	563	668	702	766	829	2.5	
	2.4	74	107	138	167	195	211	247	295	340	404	424	463	500	1.5	
		85	123	158	192	224	242	284	339	391	464	487	532	575	2.0	
		93	135	174	211	247	267	313	374	431	512	538	588	635	2.5	
	3.8	57	82	105	128	149	161	189	226	260	309	325	355	383	1.5	
		65	94	121	147	171	185	217	260	299	356	374	408	441	2.0	
		71	103	133	162	189	204	240	287	331	393	412	451	487	2.5	

Drip tape with labyrinth compact type dripper

non PC



series:
2216
2222
2225
2229



Drip tape with labyrinth compact type dripper



Series:

2216 - 2222 - 2225 - 2229

- Made with 100% virgin raw material
- Suitable for open field seasonal and multi-seasonal application
- Resistant to UV, acid and common agricultural chemicals
- Mini dripper with excellent resistance to obturation thanks to the wide labyrinth and an extensive filtering surface



Drip tape specification

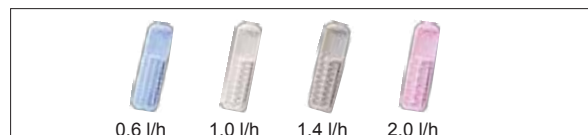
Nominal diameter	Inside diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	16.10	16.30	4	0.10	0.50
		16.36	5	0.13	0.60
		16.40	6	0.15	0.80
		16.46	7	0.18	0.90
		16.50	8	0.20	1.00
		16.60	10	0.25	1.20
		16.70	12	0.30	1.50
		16.86	15	0.38	1.80
		17.00	18	0.45	2.00
22	22.20	22.50	6	0.15	0.60
		22.56	7	0.18	0.70
		22.60	8	0.20	0.80
		22.70	10	0.25	1.00
		22.80	12	0.30	1.20
		22.96	15	0.38	1.50
		23.10	18	0.45	1.80
25	25.00	25.40	8	0.20	0.80
		25.50	10	0.25	0.90
		25.60	12	0.30	1.10
		25.76	15	0.38	1.30
		25.90	18	0.45	1.50
29	28.50	28.90	8	0.20	0.60
		29.00	10	0.25	0.70
		29.10	12	0.30	0.90
		29.26	15	0.38	1.00
		29.40	18	0.45	1.30

Dripper specification

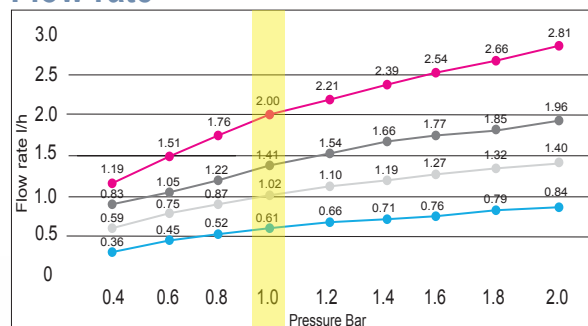
Dripper flow rate: (l/h ad 1 Bar)	0.6 - 1.0 - 1.4 - 2.0
Standard spacing : (cm)	10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing :	groups by request

Dripper data

Nominal flow rate		l/h	0,60	1,00	1,40	2,00
Coefficient of variation CV		%	2,85	2,52	2,62	2,74
Exponent X			0,41	0,43	0,42	0,45
Maximum working pressure		bar	2,0	2,0	2,0	2,0
Minimum working pressure		bar	0,5	0,5	0,5	0,5
Dripper flow path	Depth	mm	0,75	0,55	0,75	0,65
	Width	mm	0,33	0,60	0,60	0,85
	Length	mm	32	22	22	22
Filtration degree		mesh	150	150	120	120
		micron	100	100	130	130



Flow rate



Packaging and shipping

bobbin 	2.700 (m) Re. duraslim 16/8 30cm purely indicative data
Pallet 	small 32 bobbins 114x114xh190 cm maxi 40 bobbins 114x114xh252 cm
truck 	22 maxi pallets 880 bobbins
container 	10 small pallets 320 bobbins
container 	20 maxi pallets 800 bobbins

Fittings

Derivation with grommet drill hole,: 10 mm		4657	17
Derivation with grommet drill hole: 16mm		4659	22
		4660	29
Male thread starter		4670	3/4" x 17
		4672	3/4" x 22
		4673	3/4" x 29
PE starter valve with grommet		4619	17
		4618	22
LAY FLAT starter valve		4613	17
		4612	22
Coupling		4661	17 x 17
		4662	22 x 22
		4663	29 x 29

For other fittings see durafittings

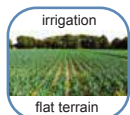
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Maximum recommended length on flat terrain (m) - E.U. 85%

Inside diameter (mm)	flow rate (l/h)	spacing (cm)														pressure (bar)
		10	15	20	25	30	33	40	50	60	75	80	90	100		
16.10	0.6	155	211	260	305	347	371	424	495	559	650	679	734	788	0.6	
		156	213	263	309	351	376	430	501	567	659	688	744	799	1.0	
		157	214	265	311	354	379	433	505	572	665	694	751	806	1.5	
	1.0	114	155	192	225	256	274	313	365	413	480	501	542	581	0.6	
		115	157	194	228	259	277	317	370	418	486	508	549	589	1.0	
		116	158	195	229	261	279	319	373	422	491	512	554	594	1.5	
	1.4	93	126	156	184	209	223	255	298	337	392	409	442	474	0.6	
		94	128	158	185	211	225	258	301	340	396	414	447	480	1.0	
		95	129	159	187	213	228	260	304	344	400	418	452	485	1.5	
	2.0	39	52	65	76	87	93	106	124	140	162	170	184	197	0.6	
		64	87	108	127	144	154	176	206	233	271	283	306	329	1.0	
		76	104	129	151	172	184	211	246	278	324	338	366	393	1.5	
22.20	0.6	256	352	437	516	589	630	722	845	958	1115	1166	1262	1355	0.6	
		258	355	441	521	595	637	731	855	970	1130	1181	1279	1373	1.0	
		259	356	443	523	597	640	733	858	973	1133	1185	1283	1377	1.2	
	1.0	188	259	322	380	434	465	533	623	706	823	860	931	1000	0.6	
		190	261	325	384	439	470	539	631	715	834	871	943	1013	1.0	
		191	262	326	385	440	472	541	633	719	838	875	948	1018	1.2	
	1.4	153	211	262	310	354	379	434	508	576	671	702	760	816	0.6	
		154	213	265	313	357	382	439	513	583	679	710	769	825	1.0	
		155	213	266	314	359	384	440	516	585	682	712	771	829	1.2	
	2.0	64	88	109	129	147	157	180	211	239	279	291	316	339	0.6	
		105	145	181	214	244	261	300	352	399	465	486	526	565	1.0	
		116	161	200	237	271	290	333	390	443	516	539	585	628	1.2	
25.00	0.6	307	424	529	625	714	766	878	1028	1167	1361	1422	1541	1655	0.6	
		309	427	534	631	721	773	888	1041	1182	1379	1441	1562	1677	1.0	
	1.0	226	312	390	461	527	564	648	758	861	1004	1049	1137	1221	0.6	
		227	315	393	465	532	571	655	768	872	1017	1062	1152	1237	1.0	
	1.4	184	254	317	375	429	460	528	618	702	819	856	927	996	0.6	
		185	256	320	379	433	464	533	625	709	828	865	938	1007	1.0	
	2.0	76	105	132	156	178	191	219	257	292	341	356	385	414	0.6	
		126	174	218	259	296	317	365	428	486	567	593	643	690	1.0	
28.50	0.6	406	563	705	834	955	1024	1177	1381	1568	1830	1913	2075	2228	0.6	
		408	568	710	842	964	1035	1189	1395	1587	1853	1936	2100	2256	1.0	
	1.0	276	383	479	568	651	698	802	941	1070	1249	1306	1416	1521	0.6	
		278	386	484	574	658	706	812	952	1083	1265	1322	1434	1541	1.0	
	1.4	224	312	390	463	530	569	654	767	872	1019	1065	1155	1241	0.6	
		226	314	394	467	535	574	660	775	881	1030	1077	1167	1254	1.0	
	2.0	93	129	162	192	220	236	272	319	362	424	442	480	516	0.6	
		153	214	268	319	365	392	452	530	604	705	738	800	860	1.0	

Drip tape with labyrinth type dripper

not regulated



series:
2616
2620
2623



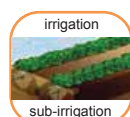
with pressure compensating dripper

PC



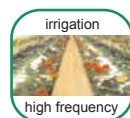
series:
2716
2720
2723

PC AS



series:
2816
2820
2823

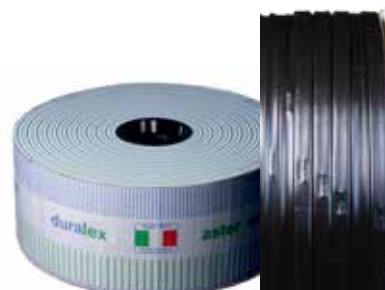
PC AS ND



series:
2916
2920
2923



Drip line with flat not regulated dripper

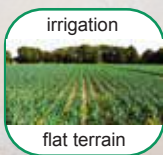


Series:
2616 - 2620 - 2623

- All the advantages of a round dripline packed inside a compact bobbin
- Made with 100% virgin raw materials
- Suitable for open field seasonal and multi-seasonal application
- Resistant to UV, acid and common agricultural chemicals
- Compact dripper welded on the inner wall of the drip line in the extrusion process
- Large turbulent flow path prevents clogging
- Excellent uniformity of emission (CV)

Drip tape specifications

Nominal diameter	Internal diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.00	24	0.60	2.50
		15.20	28	0.70	2.80
		15.40	32	0.80	3.00
		15.60	36	0.90	3.50
		15.80	40	1.00	3.50
20	17.60	19.40	36	0.90	3.00
23	20.80	22.60	36	0.90	3.00



Dripper specification

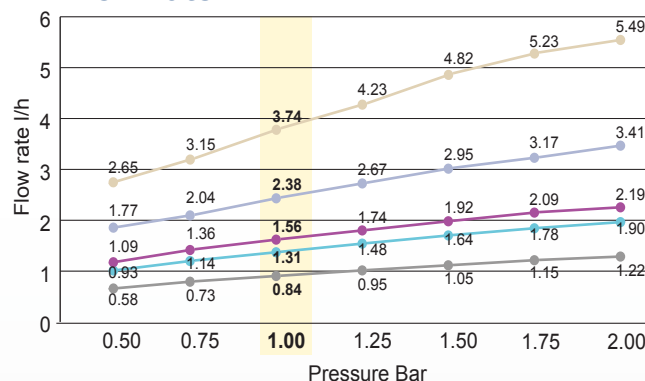
Dripper flow rate: (l/h ad 1 Bar)	0.8 - 1.3 - 1.6 - 2.4 - 3.8
Standard spacing: (cm)	10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing :	groups by request



Dripper data

Nominal flow rate	l/h	0,80	1,30	1,60	2,40	3,80
Coefficient of variation CV	%	2,50	1,10	1,25	2,00	2,00
Exponent X		0,49	0,50	0,50	0,50	0,50
Maximum working pressure	bar	2,0	2,0	2,0	2,0	2,0
Minimum working pressure	bar	0,5	0,5	0,5	0,5	0,5
Dripper flow path	Depth	mm	0,62	0,70	0,75	0,97
	Width	mm	0,62	0,62	0,67	0,85
	Length	mm	67	67	67	34
Filtration degree	mesh	120	120	120	120	120
	micron	130	130	130	130	130

Flow rate



Packaging and shipping

bobbins 	450 (m) Rif. duralex 16/36 30cm (purely indicative)
Pallet 	small 32 bobbins 114x114xh190 cm maxi 40 bobbins 114x114xh252 cm
truck 	22 maxi pallets 880 bobbins
container 	10 small pallets 320 bobbins
container 	20 maxi pallets 800 bobbins

Fittings

PE starter	5563	16
	5565	20
drill hole 8 mm	9653	23
PVC starter	4782	16
with grommet	4887	20
Coupling	5083	16 x 16
	5471	20 x 20
	9867	23 x 23

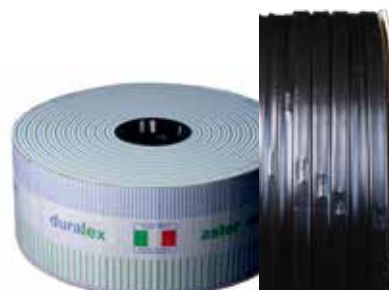
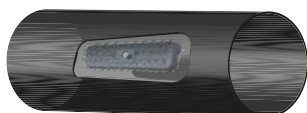
For other fittings see durafitting

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Maximum recommended length on flat terrain (m) - E.U. 85%

Nominal Diameter	Internal diameter (mm)	Flow rate l/h	Spacing cm													pressure bar
			10	15	20	25	30	33	40	50	60	75	80	90	100	
16	13.80	0.8	93	126	155	182	207	221	252	294	332	386	403	436	467	1.0
			103	139	172	202	229	245	280	326	368	428	447	483	519	2.0
		1.3	68	92	113	133	151	161	184	215	243	282	294	319	342	1.0
			78	106	131	153	174	186	212	248	280	326	340	368	394	2.0
		1.6	59	80	99	116	132	141	161	188	212	247	258	278	299	1.0
			68	92	113	133	151	161	184	215	243	283	295	319	342	2.0
		2.4	45	61	76	89	101	108	124	144	163	189	198	213	229	1.0
			51	69	85	100	113	121	138	161	182	212	221	239	257	2.0
		3.8	34	45	56	66	75	80	92	107	121	140	146	158	170	1.0
			37	51	63	74	84	90	102	120	135	157	164	177	190	2.0
20	17.60	0.8	136	186	230	271	309	330	378	441	500	581	607	657	705	1.0
			150	206	255	300	342	366	419	489	554	644	674	729	782	2.0
		1.3	99	136	168	198	226	242	276	323	365	425	444	481	516	1.0
			114	156	194	228	260	278	318	372	421	491	512	554	595	2.0
		1.6	86	119	147	173	197	211	241	282	319	371	388	420	451	1.0
			99	135	168	198	225	241	276	323	365	425	444	481	516	2.0
		2.4	66	91	113	133	151	162	185	216	245	285	298	322	346	1.0
			74	101	126	148	169	181	207	242	274	319	333	361	387	2.0
		3.8	49	67	83	98	112	120	137	160	182	212	221	239	256	1.0
			55	75	93	110	125	134	153	179	203	236	247	267	287	2.0
23	20.80	0.8	177	243	303	357	407	436	500	585	663	773	807	874	938	1.0
			193	266	331	391	446	478	548	641	727	848	886	959	1030	2.0
		1.3	128	177	220	260	297	318	364	426	483	563	588	637	684	1.0
			148	204	253	299	342	366	420	491	557	649	678	734	789	2.0
		1.6	112	154	192	227	259	278	318	372	422	492	514	556	597	1.0
			128	176	220	259	296	317	364	426	483	563	588	637	684	2.0
		2.4	86	118	147	174	199	213	244	286	324	377	394	427	459	1.0
			96	132	164	194	222	238	273	319	362	422	441	478	513	2.0
		3.8	177	243	303	357	407	436	500	585	663	773	807	874	938	1.0
			193	266	331	391	446	478	548	641	727	848	886	959	1030	2.0

Drip line with flat pressure compensating dripper



Series:

2716 - 2720 - 2723 **PC**

2816 - 2820 - 2823 **PC AS**

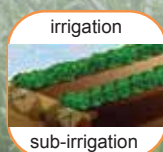
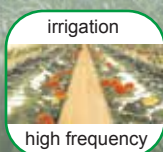
2916 - 2920 - 2923 **PC AS ND**

- All the advantages of a round dripline packed inside a compact bobbin
- Made with 100% virgin raw materials
- Suitable for multi-seasonal, sub-irrigation and greenhouse application
- Resistant to UV, acid and common agricultural chemicals
- Dripper available in the following styles:
 - **pressure-compensating PC**
It keeps the same flow rate at different pressures in all the dripline emitters. Suitable for projects on slope.

- **anti-siphon PC AS**
It avoids the suction of debris during the dripline discharge. Suitable for sub-irrigation and soil laying projects. **Requires the installation of a double-acting vent valve on each sector.**

- **no-drain PC AS ND**
The emitter closes at 0.25 (bar) to avoid water emission at the end of the irrigation cycle and to reduce the dripline filling time to the next irrigation cycle. Suitable for looping irrigation.

- **self-cleaning**
The anti-deposit silicone membrane and the large maze one guarantee the continuous cleaning of the dripper.



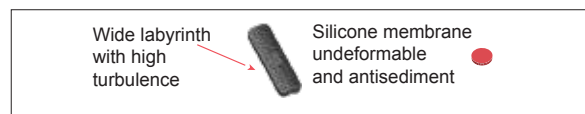
Drip tape specifications

Nominal diameter	Internal diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.00	24	0.60	2.50
		15.20	28	0.70	2.80
		15.40	32	0.80	3.00
		15.60	36	0.90	3.50
		15.80	40	1.00	3.50
20	17.60	19.40	36	0.90	3.00
23	20.80	22.60	36	0.90	3.00



Dripper specifications

Dripper flow rate: (l/h ad 1 Bar)	1.0 - 1.6 - 2.4 - 3.8
Standard spacing : (cm)	10 - 15 - 20 - 25 - 30 - 33 - 40 - 50 - 60 and more...
Special spacing :	groups by request



Dripper data

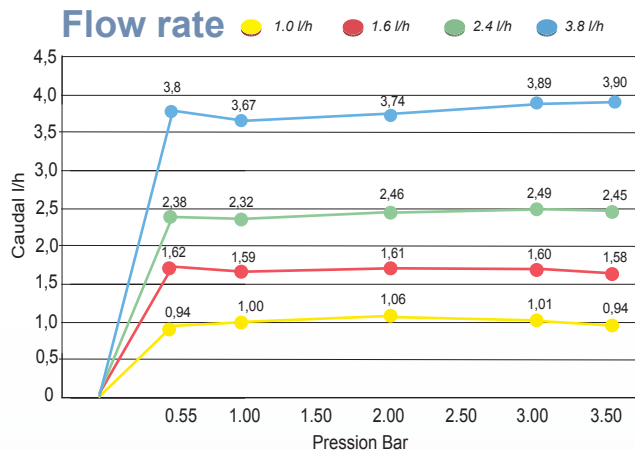
Nominal flow rate	l/h	1,00	1,60	2,40	3,80
Coefficient of variation CV	%	3,60	6,60	3,50	3,50
Costant K	bar	1,00	1,60	2,30	3,60
Exponent	X	0,0	0,0	0,0	0,0
Maximum working pressure	bar	4,0	4,0	4,0	4,0
Minimum working pressure	bar	0,5	0,5	0,5	0,5
Closing pressure*	bar	0,25	0,25	0,25	0,25
Dripper flow path	Depth	mm	0,76	0,85	0,90
	Width	mm	0,82	1,06	1,19
	Length	mm	139,0	132,0	89,6
Filtration area	mm ²	37,37	37,37	37,37	37,37
Filtration degree	mesh	150	120	120	120
	micron	100	130	130	130

*only pc as nd

Packaging and shipping

bobbins 	400 (m) Re. duralex PC 16/36 30cm (purely indicative data)
Pallet 	small 32 bobbins 114x114xh190 cm maxi 40 bobbins 114x114xh252 cm
truck 	22 maxi pallets 880 bobbins
container 	10 small pallets 320 bobbins
container 	20 maxi pallets 800 bobbins

Flow rate



Fittings

PE starter 	5563	16
	5565	20
drill hole 8 mm	9653	23
PVC starter with grommet 	4782	16
	4887	20
Coupling 	5083	16 x 16
	5471	20 x 20
	9867	23

For other fitting see durafitting

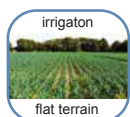
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Maximum recommended length on flat terrain (m)

Nominal diameter	Inside diameter (mm)	Flow rate (l/h)	Spacing (cm)													Pressure (bar)
			10	15	20	25	30	33	40	50	60	75	80	90	100	
16	13.80	1.0	67	95	120	144	167	180	208	246	281	332	347	377	406	1.5
			76	108	138	166	191	206	239	283	324	381	399	434	468	2.0
			91	129	164	197	228	246	285	338	386	455	476	518	558	3.0
		1.6	49	69	88	106	122	132	153	181	207	244	255	277	299	1.5
			56	80	101	122	141	151	176	208	238	281	294	319	344	2.0
			67	95	121	145	167	181	210	249	284	335	350	382	411	3.0
		2.4	37	53	67	81	94	101	117	139	158	187	195	212	229	1.5
			43	61	77	93	108	116	135	160	182	215	225	245	264	2.0
			51	72	92	111	128	138	160	190	218	257	269	293	315	3.0
		3.8	28	39	50	60	70	75	87	103	118	139	146	158	171	1.5
			32	45	57	69	80	86	100	119	136	160	167	182	196	2.0
			38	54	68	82	95	103	119	141	162	191	199	217	234	3.0
20	17.60	1.0	97	139	178	214	248	268	313	372	427	504	529	576	621	1.5
			111	159	204	246	295	308	359	427	490	579	607	661	714	2.0
			131	189	242	292	339	366	427	508	584	690	724	788	851	3.0
		1.6	69	99	127	154	179	193	224	267	307	362	380	414	446	1.5
			80	114	146	177	205	221	258	307	353	416	437	476	514	2.0
			94	136	174	210	244	264	307	366	421	497	521	568	613	3.0
		2.4	53	76	97	118	136	148	172	205	235	278	291	317	342	1.5
			61	87	112	135	157	169	198	235	270	320	334	364	394	2.0
			72	104	133	161	187	202	235	280	322	381	399	436	470	3.0
		3.8	39	56	72	87	101	110	128	152	175	206	216	236	255	1.5
			45	65	83	100	116	126	146	175	200	237	249	271	293	2.0
			53	77	98	119	138	149	174	208	239	283	297	323	349	3.0
23	20.80	1.0	121	174	224	271	315	341	398	475	547	648	680	742	801	1.5
			138	200	257	311	362	391	457	546	628	744	781	852	920	2.0
			164	237	305	369	430	465	544	649	748	887	930	1015	1097	3.0
		1.6	88	128	164	199	231	250	292	349	402	476	499	545	589	1.5
			101	146	188	228	265	287	336	401	461	547	574	626	677	2.0
			120	174	223	271	315	341	399	477	550	651	684	746	806	3.0
		2.4	68	98	126	152	177	191	224	268	308	365	383	418	452	1.5
			77	112	144	174	203	220	257	307	353	419	440	481	519	2.0
			92	133	171	207	242	261	306	366	421	500	524	572	619	3.0
		3.8	52	75	97	118	137	148	174	207	239	283	297	324	350	1.5
			59	84	108	132	153	166	194	232	267	317	332	363	392	2.0
			65	93	120	146	170	183	214	257	295	350	367	400	433	3.0

Drip line with labyrinth type dripper

non PC



series:

3016

3020

3023

3025



with pressure compensating dripper

PC



series:

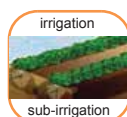
3316

3320

3323

3325

PC AS



series:

3416

3420

3423

3425



PC AS ND



series:

3516

3520

3523

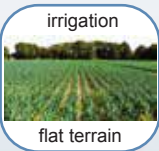
3525

Drip line with flat not regulated dripper



Series:
3016 - 3020 - 3023 - 3025

- Made with 100% virgin raw materials
- Suitable for open field seasonal and multi-seasonal application
- Resistant to UV, acid and common agricultural chemicals
- Compact dripper welded to the inner wall of the drip line during the process of extrusion
- Large turbulent flow path prevents clogging
- Excellent uniformity of emission (CV)



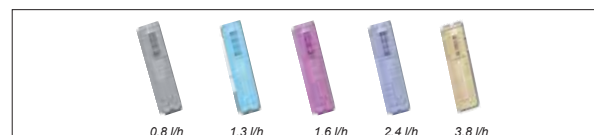
Drip line specifications

Nominal diameter	Internal diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.60	36	0.90	3.50
		15.80	40	1.00	3.50
		16.00	44	1.10	4.00
		16.20	48	1.20	4.00
20	17.60	19.40	36	0.90	3.00
		19.60	40	1.00	3.50
		19.80	44	1.10	4.00
		20.00	48	1.20	4.00
23	20.80	22.80	40	1.00	3.00
		23.00	44	1.10	3.50
		23.20	48	1.20	4.00
25	22.20	24.60	48	1.20	3.00
		24.80	52	1.30	3.50
		25.00	56	1.40	4.00
		25.20	60	1.50	4.00



Dripper specification

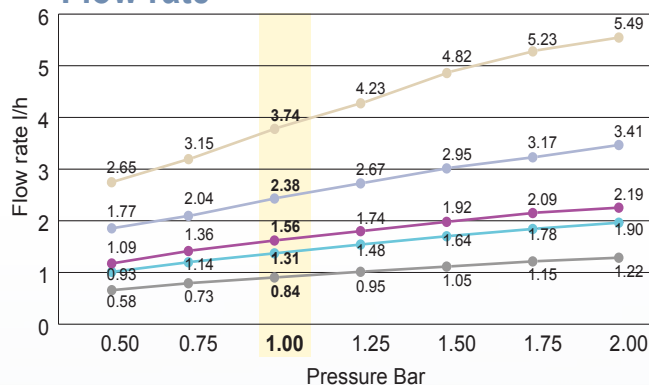
Dripper flow rate: (l/h ad 1 Bar)	0.8 - 1.3 - 1.6 - 2.4 - 3.8
Standard spacing : (cm)	10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing :	groups by request



Dripper data

Nominal flow rate		l/h	0,80	1,30	1,60	2,40	3,80
Coefficient of variation CV		%	2,50	1,10	1,25	2,00	2,00
Exponent X			0,49	0,50	0,50	0,50	0,50
Maximum working pressure		bar	2,0	2,0	2,0	2,0	2,0
Minimum working pressure		bar	0,5	0,5	0,5	0,5	0,5
Dripper flow path	Depth	mm	0,62	0,70	0,70	0,75	0,97
	Width	mm	0,62	0,62	0,67	0,85	0,85
	Length	mm	67	67	67	67	34
Filtration degree		mesh	120	120	120	120	120
		micron	130	130	130	130	130

Flow rate



Packaging and shipping

Nominal diameter	16	20	23	25
reel (m)	500	300	250	200
pallet (reels)	small 10 80x160xh170 cm	small 10 80x160xh170 cm	small 10 80x160xh170 cm	small 10 80x160xh170 cm
	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm
	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm
truck (reels)	384 bulk	384 bulk	384 bulk	320 bulk
container (reels)	160 bulk	160 bulk	160 bulk	130 bulk
container (reels)	330 bulk	330 bulk	330 bulk	280 bulk

* Only in full truck

Fittings

PE starter	5563	16
drill hole 8 mm	5565	20
PVC starter	4782	16
with grommet	4887	20
	4781	25
Male adaptor	5480	16 X 1/2"
	5481	16 X 3/4"
	5058	20 X 1/2"
	5485	20 X 3/4"
	9044	25 X 1/2"
	9043	25 X 3/4"
Coupling	5083	16 x 16
	5471	20 x 20
	9252	25 x 25

For other fittings see durafitting

The information contained in this catalog is purely indicative, Aster reserves the right to modify it at any time and in no case can it be held responsible for errors in the data contained in this document.

Maximum recommended length on flat terrain (m) - E.U. 85%

Nominal diameter	Inside diameter (mm)	Flow rate (l/h)	Spacing (cm)														Pressure (bar)
			10	15	20	25	30	33	40	50	60	75	80	90	100		
16	13.80	0.8	93	126	155	182	207	221	252	294	332	386	403	436	467	1.0	
			103	139	172	202	229	245	280	326	368	428	447	483	519	2.0	
		1.3	68	92	113	133	151	161	184	215	243	282	294	319	342	1.0	
			78	106	131	153	174	186	212	248	280	326	340	368	394	2.0	
		1.6	59	80	99	116	132	141	161	188	212	247	258	278	299	1.0	
			68	92	113	133	151	161	184	215	243	283	295	319	342	2.0	
		2.4	45	61	76	89	101	108	124	144	163	189	198	213	229	1.0	
			51	69	85	100	113	121	138	161	182	212	221	239	257	2.0	
		3.8	34	45	56	66	75	80	92	107	121	140	146	158	170	1.0	
			37	51	63	74	84	90	102	120	135	157	164	177	190	2.0	
20	17.60	0.8	136	186	230	271	309	330	378	441	500	581	607	657	705	1.0	
			150	206	255	300	342	366	419	489	554	644	674	729	782	2.0	
		1.3	99	136	168	198	226	242	276	323	365	425	444	481	516	1.0	
			114	156	194	228	260	278	318	372	421	491	512	554	595	2.0	
		1.6	86	119	147	173	197	211	241	282	319	371	388	420	451	1.0	
			99	135	168	198	225	241	276	323	365	425	444	481	516	2.0	
		2.4	66	91	113	133	151	162	185	216	245	285	298	322	346	1.0	
			74	101	126	148	169	181	207	242	274	319	333	361	387	2.0	
		3.8	49	67	83	98	112	120	137	160	182	212	221	239	256	1.0	
			55	75	93	110	125	134	153	179	203	236	247	267	287	2.0	
23	20.80	0.8	177	243	303	357	407	436	500	585	663	773	807	874	938	1.0	
			193	266	331	391	446	478	548	641	727	848	886	959	1030	2.0	
		1.3	128	177	220	260	297	318	364	426	483	563	588	637	684	1.0	
			148	204	253	299	342	366	420	491	557	649	678	734	789	2.0	
		1.6	112	154	192	227	259	278	318	372	422	492	514	556	597	1.0	
			128	176	220	259	296	317	364	426	483	563	588	637	684	2.0	
		2.4	86	118	147	174	199	213	244	286	324	377	394	427	459	1.0	
			96	132	164	194	222	238	273	319	362	422	441	478	513	2.0	
		3.8	177	243	303	357	407	436	500	585	663	773	807	874	938	1.0	
			193	266	331	391	446	478	548	641	727	848	886	959	1030	2.0	
25	22.20	0.8	195	269	335	395	451	483	554	649	736	858	897	971	1043	1.0	
			215	297	370	438	500	536	614	719	816	951	994	1077	1156	2.0	
		1.3	142	196	244	289	330	353	406	475	539	628	656	711	763	1.0	
			163	226	281	332	380	407	467	547	620	724	756	819	880	2.0	
		1.6	124	171	213	252	288	309	354	415	470	548	573	621	667	1.0	
			141	195	244	288	329	353	405	474	538	628	656	711	763	2.0	
		2.4	95	131	164	193	221	237	272	318	361	421	440	477	512	1.0	
			106	146	182	216	247	264	304	356	403	470	492	533	572	2.0	
		3.8	70	97	121	143	164	175	201	236	268	312	326	353	379	1.0	
			78	108	135	160	183	196	225	263	299	349	365	395	424	2.0	

Drip line with pressure compensating dripper



Series:

3316 - 3320 - 3323 - 3325 **PC**

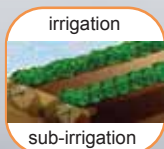
3416 - 3420 - 3423 - 3425 **PC AS**

3516 - 3520 - 3523 - 3525 **PC AS ND**

- Made with 100% virgin raw materials
- Suitable for multi-seasonal, sub-irrigation and greenhouse application
- Resistant to UV, acid and common agricultural chemicals

Dripper available in the following styles:

- **pressure-compensating PC**
It keeps the same flow rate at different pressures in all the dripline emitters. Suitable for projects on slope.
- **anti-siphon PC AS**
It avoids the suction of debris during the dripline discharge. Suitable for sub-irrigation and soil laying projects. **Requires the installation of a double-acting vent valve on each sector.**
- **no-drain PC AS ND**
The emitter closes at 0.25 (bar) to avoid water emission at the end of the irrigation cycle and to reduce the dripline filling time to the next irrigation cycle. Suitable for looping irrigation.
- **self-cleaning**
The anti-deposit silicone membrane and the large maze one guarantee the continuous cleaning of the dripper



Drip line specifications

Nominal diameter	Internal diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.60	36	0.90	3.50
		15.80	40	1.00	3.50
		16.00	44	1.10	4.00
		16.20	48	1.20	4.00
20	17.60	19.40	36	0.90	3.00
		19.60	40	1.00	3.50
		19.80	44	1.10	4.00
		20.00	48	1.20	4.00
23	20.80	22.80	40	1.00	3.00
		23.00	44	1.10	3.50
		23.20	48	1.20	4.00
25	22.20	24.60	48	1.20	3.00
		24.80	52	1.30	3.50
		25.00	56	1.40	4.00
		25.20	60	1.50	4.00



Dripper specifications

Nominal flow rate: (l/h) 1.0 - 1.6 - 2.4 - 3.8
Standard spacing : (cm) 10 - 15 - 20 - 25 - 30 - 33 - 40 - 50 and more
Special spacing : groups by request

Wide labyrinth
with high
turbulence



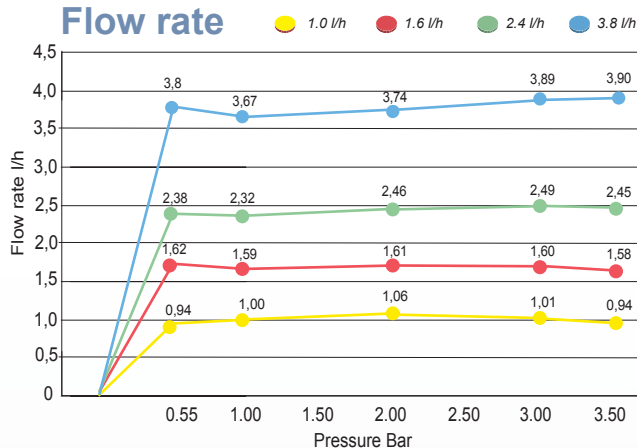
Silicone membrane
undeformable
and antisediment



Dripper data

Nominal flow rate	l/h	1,00	1,60	2,40	3,80
Coefficient of variation CV	%	3,60	6,60	3,50	3,50
Costant K	bar	1,00	1,60	2,30	3,60
Exponent	X	0,0	0,0	0,0	0,0
Maximum working pressure	bar	4,0	4,0	4,0	4,0
Minimum working pressure	bar	0,5	0,5	0,5	0,5
Closing pressure*	bar	0,25	0,25	0,25	0,25
Dripper flow path	Depth	mm	0,76	0,85	0,90
	Width	mm	0,82	1,06	1,19
	Length	mm	139,0	132,0	89,6
Filtration area	mm ²	37,37	37,37	37,37	37,37
Filtration degree	mesh	150	120	120	120
	micron	100	130	130	130

Flow rate



Packaging and shipping

Nominal diameter	16	20	23	25
reel (m)	500	300	250	200
pallet (reels)	small 10 80x160xh170 cm	small 10 80x160xh170 cm	small 10 80x160xh170 cm	small 10 80x160xh170 cm
	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm
	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm
truck (reels)	384 bulk	384 bulk	384 bulk	320 bulk
container (reels)	160 bulk	160 bulk	160 bulk	130 bulk
container (reels)	330 bulk	330 bulk	330 bulk	280 bulk

* Only in full truck

Fittings

PE starter		5563	16
drill hole 8 mm		5565	20
PVC starter		4782	16
with grommet		4887	20
		4781	25
Male adaptor		5480	16 X 1/2"
		5481	16 X 3/4"
		5058	20 X 1/2"
		5485	20 X 3/4"
		9044	25 X 1/2"
		9043	25 X 3/4"
Coupling		5083	16 x 16
		5471	20 x 20
		9252	25 x 25

For other fittings see durafitting

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Maximum recommended length on flat terrain (m)

Nominal diameter	Inside diameter (mm)	Flow rate (l/h)	Spacing (cm)													Pressure (bar)
			10	15	20	25	30	33	40	50	60	75	80	90	100	
16	13.80	1.0	67	95	120	144	167	180	208	246	281	332	347	377	406	1.5
			76	108	138	166	191	206	239	283	324	381	399	434	468	2.0
			91	129	164	197	228	246	285	338	386	455	476	518	558	3.0
		1.6	49	69	88	106	122	132	153	181	207	244	255	277	299	1.5
			56	80	101	122	141	151	176	208	238	281	294	319	344	2.0
			67	95	121	145	167	181	210	249	284	335	350	382	411	3.0
		2.4	37	53	67	81	94	101	117	139	158	187	195	212	229	1.5
			43	61	77	93	108	116	135	160	182	215	225	245	264	2.0
			51	72	92	111	128	138	160	190	218	257	269	293	315	3.0
		3.8	28	39	50	60	70	75	87	103	118	139	146	158	171	1.5
			32	45	57	69	80	86	100	119	136	160	167	182	196	2.0
			38	54	68	82	95	103	119	141	162	191	199	217	234	3.0
20	17.60	1.0	97	139	178	214	248	268	313	372	427	504	529	576	621	1.5
			111	159	204	246	295	308	359	427	490	579	607	661	714	2.0
			131	189	242	292	339	366	427	508	584	690	724	788	851	3.0
		1.6	69	99	127	154	179	193	224	267	307	362	380	414	446	1.5
			80	114	146	177	205	221	258	307	353	416	437	476	514	2.0
			94	136	174	210	244	264	307	366	421	497	521	568	613	3.0
		2.4	53	76	97	118	136	148	172	205	235	278	291	317	342	1.5
			61	87	112	135	157	169	198	235	270	320	334	364	394	2.0
			72	104	133	161	187	202	235	280	322	381	399	436	470	3.0
		3.8	39	56	72	87	101	110	128	152	175	206	216	236	255	1.5
			45	65	83	100	116	126	146	175	200	237	249	271	293	2.0
			53	77	98	119	138	149	174	208	239	283	297	323	349	3.0
23	20.80	1.0	121	174	224	271	315	341	398	475	547	648	680	742	801	1.5
			138	200	257	311	362	391	457	546	628	744	781	852	920	2.0
			164	237	305	369	430	465	544	649	748	887	930	1015	1097	3.0
		1.6	88	128	164	199	231	250	292	349	402	476	499	545	589	1.5
			101	146	188	228	265	287	336	401	461	547	574	626	677	2.0
			120	174	223	271	315	341	399	477	550	651	684	746	806	3.0
		2.4	68	98	126	152	177	191	224	268	308	365	383	418	452	1.5
			77	112	144	174	203	220	257	307	353	419	440	481	519	2.0
			92	133	171	207	242	261	306	366	421	500	524	572	619	3.0
		3.8	52	75	97	118	137	148	174	207	239	283	297	324	350	1.5
			59	84	108	132	153	166	194	232	267	317	332	363	392	2.0
			65	93	120	146	170	183	214	257	295	350	367	400	433	3.0
25	22.20	1.0	133	192	247	299	348	377	440	526	607	719	754	823	890	1.5
			152	219	283	342	399	432	506	604	696	826	866	946	1023	2.0
			180	260	336	407	474	513	601	719	829	983	1032	1128	1219	3.0
		1.6	97	140	181	219	255	276	323	387	446	528	554	606	654	1.5
			111	161	207	251	293	317	371	444	512	607	637	696	752	2.0
			132	191	246	298	348	377	441	528	609	723	758	829	896	3.0
		2.4	74	107	138	168	195	212	248	296	341	405	425	464	502	1.5
			85	123	158	192	224	243	284	340	392	465	488	534	577	2.0
			101	146	188	228	266	288	338	405	467	554	582	635	687	3.0
		3.8	55	79	102	124	144	156	183	219	253	299	314	344	371	1.5
			63	91	117	142	166	179	210	251	290	344	362	395	427	2.0
			74	108	139	169	197	213	250	299	345	410	430	471	509	3.0

Drip line for landscape with labyrinth dripper

series:

4016 **black**

4020 **color**

4016 **brown**

4020 **color**



with pressure compensating dripper

PC AS ND

series:

4516 **black**

4520 **color**

4516 **brown**

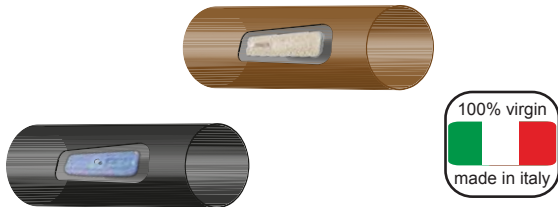
4520 **color**

4516 **violet**

4520 **color**



Drip line with labyrinth type dripper



Series :
4016 - 4020

- Made with 100% virgin raw material
- Suitable for residential and gardening applications
- Resistant to UV, acid and common agricultural chemicals
- Compact dripper welded to the inner wall of the dripline during the process of extrusion
- Large turbulent flow path prevents clogging
- Excellent uniformity of emission (CV)

Drip line specification

Nominal diameter	Inside diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.80	40	1.00	3.50
		16.00	44	1.10	4.00
		16.20	48	1.20	4.00
20	17.60	19.60	40	1.00	3.50
		19.80	44	1.10	4.00
		20.00	48	1.20	4.00

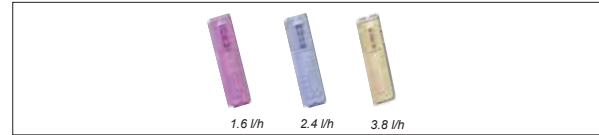


Maximum recommended length on flat terrain (m)

Nominal diameter	Inside diameter (mm)	Flow rate (l/h)								Pressure (bar)
			15	20	25	30	33	40	50	
16	13.80	1.6	80	99	116	132	141	161	188	1.0
			92	113	133	151	161	184	215	2.0
		2.4	61	76	89	101	108	124	144	1.0
			69	85	100	113	121	138	161	2.0
		3.8	45	56	66	75	80	92	107	1.0
			51	63	74	84	90	102	120	2.0
20	17.60	1.6	119	147	173	197	211	241	282	1.0
			135	168	198	225	241	276	323	2.0
		2.4	91	113	133	151	162	185	216	1.0
			101	126	148	169	181	207	242	2.0
		3.8	67	83	98	112	120	137	160	1.0
			75	93	110	125	134	153	179	2.0

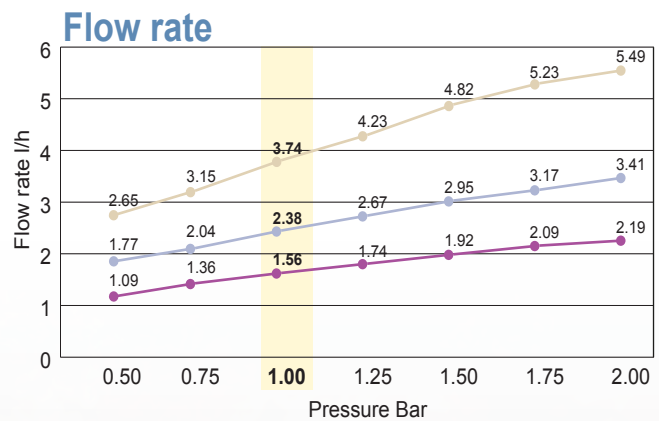
Dripper specifications

Nominal flow rate: (l/h) 1.6 - 2.4 - 3.8
Standard spacing : (cm) 10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing : groups by request



Dripper data

Nominal flow rate		l/h	1,60	2,40	3,80
Coefficient of variation CV		%	1,25	2,00	2,00
Exponent x			0,50	0,50	0,50
Maximum working pressure		bar	2,0	2,0	2,0
Minimum working pressure		bar	0,5	0,5	0,5
Dripper flow path	Depth	mm	0,70	0,75	0,97
	Width	mm	0,67	0,85	0,85
	Length	mm	67	67	34
Filtration degree		mesh	120	120	120
		micron	130	130	130



Packaging and shipping

Nominal diameter 	16				20	
reel (m) 	25	50	100	500	100	300
pallet (reel) 	84 114x114xh200 cm	50 114x114xh200 cm	44 114x114xh200 cm	10 80x160xh170 cm	44 114x114xh200 cm	10 80x160xh170 cm
truck 	22 (pallets) 1.848 (reels)	22 (pallets) 1.100 (reels)	22 (pallets) 968 (reels)	unpackaged 384 (reels)	22 (pallets) 968 (reels)	unpackaged 384 (reels)
container 	10 (pallets) 840 (reels)	10 (pallets) 500 (reels)	10 (pallets) 440 (reels)	unpackaged 160 (reels)	10 (pallets) 440 (reels)	unpackaged 160 (reels)
container 	20 (pallets) 1.680 (reels)	20 (pallets) 1.000 (reels)	20 (pallets) 880 (reels)	unpackaged 330 (reels)	20 (pallets) 880 (reels)	unpackaged 330 (reels)

Fittings

PE starter 	4384	17
drill hole 10 mm		
Coupling 	4381	17
Elbow 	4380	17
Tee 	4379	17
End line 	4378	17

For other fittings see durafitting

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Drip line with pressure compensating dripper



Series :
4516 - 4520

- Made with 100% virgin raw materials
- Suitable for residential and gardening applications
- Resistant to UV, acid and common agricultural chemicals

Dripper available in the following styles:

- **pressure-compensating PC**

It keeps the same flow rate at different pressures in all the dripline emitters. Suitable for projects on slope.

- **anti-siphon AS**

It avoids the suction of debris during the dripline discharge. Suitable for sub-irrigation and soil laying projects. **Requires the installation of a double-acting vent valve on each sector.**

- **no-drain ND**

The emitter closes at 0.15 (bar) to avoid water emission at the end of the irrigation cycle and to reduce the dripline filling time to the next irrigation cycle. Suitable for looping irrigation.

- **self-cleaning**

The anti-deposit silicone membrane and the large maze one guarantee the continuous cleaning of the dripper



Drip line specifications

Nominal diameter	Inside diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.80	40	1.00	3.50
		16.00	44	1.10	4.00
		16.20	48	1.20	4.00
20	17.60	19.60	40	1.00	3.50
		19.80	44	1.10	4.00
		20.00	48	1.20	4.00

Maximum recommended length on flat terrain (mt)

Nominal diameter	Inside diameter (mm)	Flow rate (l/h)	15	20	25	30	33	40	50	Pressure (bar)
16	13.80	1.6	69	88	106	122	132	153	181	1.5
			80	101	122	141	151	176	208	2.0
			95	121	145	167	181	210	249	3.0
		2.4	53	67	81	94	101	117	139	1.5
			61	77	93	108	116	135	160	2.0
			72	92	111	128	138	160	190	3.0
		3.8	39	50	60	70	75	87	103	1.5
			45	57	69	80	86	100	119	2.0
			54	68	82	95	103	119	141	3.0
		1.6	99	127	154	179	193	224	267	1.5
			114	146	177	205	221	258	307	2.0
			136	174	210	244	264	307	366	3.0
20	17.60	2.4	76	97	118	136	148	172	205	1.5
			87	112	135	157	169	198	235	2.0
			104	133	161	187	202	235	280	3.0
		3.8	56	72	87	101	110	128	152	1.5
			65	83	100	116	126	146	175	2.0
			77	98	119	138	149	174	208	3.0

Dripper specifications

Nominal flow rate: (l/h) 1.6 - 2.4 - 3.8
Standard spacing : (cm) 10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing : groups by request

Wide labyrinth
with high
turbulence



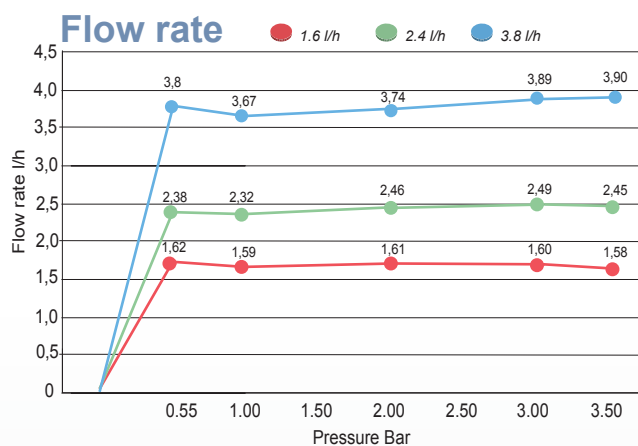
Silicone membrane
undeformable
and antisediment



Dripper data

Nominal flow rate		l/h	1,60	2,40	3,80
Coefficient of variation CV		%	6,60	3,50	3,50
Costant K		bar	1,60	2,30	3,60
Exponent		X	0,0	0,0	0,0
Maximum working pressure		bar	4,0	4,0	4,0
Minimum working pressure		bar	0,5	0,5	0,5
Closing pressure*		bar	0,25	0,25	0,25
Dripper flow path	Depth	mm	0,85	0,90	0,90
	Width	mm	1,06	1,19	1,30
	Length	mm	132,0	89,6	78,7
Filtration area		mm ²	37,37	37,37	37,37
Filtration degree	mesh		120	120	120
	micron		130	130	130

*only PC AS ND



Packaging and shipping

Nominal diameter	16				20	
reel (m)	25	50	100	500	100	300
pallet (reel)	84 114x114xh200 cm	50 114x114xh200 cm	44 114x114xh200 cm	10 80x160xh170 cm	44 114x114xh200 cm	10 80x160xh170 cm
truck	22 (pallets) 1.848 (reels)	22 (pallets) 1.100 (reels)	22 (pallets) 968 (reels)	unpacked 384 (reels)	22 (pallets) 968 (reels)	unpacked 384 (reels)
container	10 (pallets) 840 (reels)	10 (pallets) 500 (reels)	10 (pallets) 440 (reels)	unpacked 160 (reels)	10 (pallets) 440 (reels)	unpacked 160 (reels)
container	20 (pallets) 1.680 (reels)	20 (pallets) 1.000 (reels)	20 (pallets) 880 (reels)	unpacked 330 (reels)	20 (pallets) 880 (reels)	unpacked 330 (reels)

Fittings

PE starter	4384	17
drill hole 10 mm		
Coupling	4381	17
Elbow	4380	17
Tee	4379	17
End line	4378	17

For other fittings see durafitting

The information contained in this catalog is purely indicative. Aster reserves the right to modify it at any time and in no case can it be held responsible for errors in the data contained in this document.

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Duragarden applications with labyrinth type dripper



applications on flat terrain



applications on flat terrain

Duragarden applications with pressure compensating dripper



applications on slope



sub-irrigation



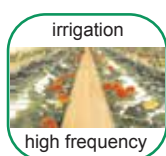
sub-irrigation



application on vertical garden

Drip line with no-drain dripper

PC AS ND



series:

3616

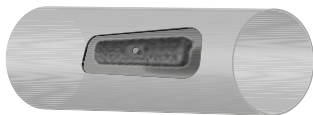
3620



Product suitable
for impulse
irrigation and
greenhouse
applications.



Drip line with no-drain dripper



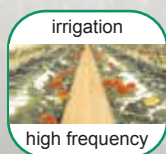
Series:

3616 - 3620 **PC AS ND**

- Made with 100% virgin raw materials
- Suitable for greenhouse application
- Resistant to UV, acid and common agricultural chemicals
- **no-drain**
The emitter closes at 0.25 (bar) to avoid water emission at the end of the irrigation cycle and to reduce the dripline filling time to the next irrigation cycle. Suitable for looping irrigation.
- **self-cleaning**
The anti-deposit silicone membrane and the large maze one guarantee the continuous cleaning of the dripper

Drip line specification

Nominal diameter	Inside diameter	Outside diameter	Wall thickness		Max pressure
	mm	mm	MIL	mm	Bar
16	13.80	15.60	36	0.90	3.50
		15.80	40	1.00	3.50
		16.00	44	1.10	4.00
		16.20	48	1.20	4.00
20	17.60	19.40	36	0.90	3.00
		19.60	40	1.00	3.50
		19.80	44	1.10	4.00
		20.00	48	1.20	4.00



Dripper specifications

Dripper flow rate : (l/h) 1.0 - 1.6 - 2.4 - 3.8
Standard spacing : (cm) 10 - 15 - 20 - 25 - 30 - 33 - 40 - 50
Special spacing : groups by request

Wide labyrinth
with high
turbulence



Silicone membrane
undeformable
and antisediment

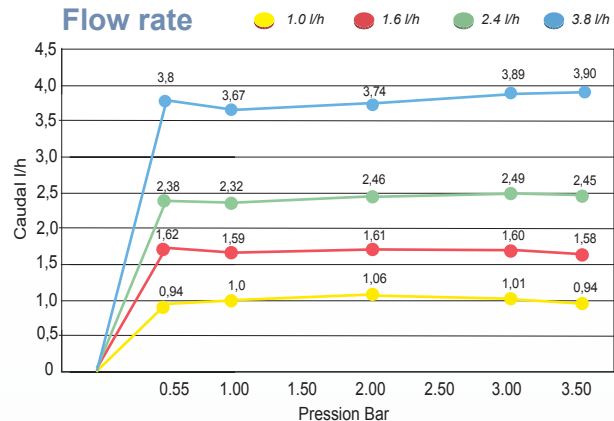


Dripper data

Nominal flow rate		l/h	1,00	1,60	2,40	3,80
Coefficient of variation CV		%	3,60	6,60	3,50	3,50
Costant K		bar	1,00	1,60	2,30	3,60
Exponent		X	0,0	0,0	0,0	0,0
Maximum working pressure		bar	4,0	4,0	4,0	4,0
Minimum working pressure		bar	0,5	0,5	0,5	0,5
Closing pressure*		bar	0,25	0,25	0,25	0,25
Dripper flow path	Depth	mm	0,76	0,85	0,90	0,90
	Width	mm	0,82	1,06	1,19	1,30
	Length	mm	139,0	132,0	89,6	78,7
Filtration area		mm ²	37,37	37,37	37,37	37,37
Filtration degree	mesh		150	120	120	120
	micron		100	130	130	130

*only PC AS ND

Flow rate



Packaging and shipping

Nominal diameter	16	20
reel (m)	500	300
pallet (reels)	small 10 80x160xh170 cm	small 10 80x160xh170 cm
	medium 12 80x160xh200 cm	medium 12 80x160xh200 cm
	*maxi 14 80x160xh230 cm	*maxi 14 80x160xh230 cm
truck (reels)	384 bulk	384 bulk
container (reels)	160 bulk	160 bulk
container (reels)	330 bulk	330 bulk

* Only in full truck

Fittings

PE starter	5563 5565	16 20
hole 8 mm		
Coupling	5083 5471	16 x 16 20 x 20

For other fittings see durafitting

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Maximum recommended length on flat terrain (m)

Nominal diameter	Inside diameter (mm)	Flow rate (l/h)	Spacing (cm)													Pressure (bar)
			10	15	20	25	30	33	40	50	60	75	80	90	100	
16	13.80	1.0	67	95	120	144	167	180	208	246	281	332	347	377	406	1.5
			76	108	138	166	191	206	239	283	324	381	399	434	468	2.0
			91	129	164	197	228	246	285	338	386	455	476	518	558	3.0
		1.6	49	69	88	106	122	132	153	181	207	244	255	277	299	1.5
			56	80	101	122	141	151	176	208	238	281	294	319	344	2.0
			67	95	121	145	167	181	210	249	284	335	350	382	411	3.0
		2.4	37	53	67	81	94	101	117	139	158	187	195	212	229	1.5
			43	61	77	93	108	116	135	160	182	215	225	245	264	2.0
			51	72	92	111	128	138	160	190	218	257	269	293	315	3.0
		3.8	28	39	50	60	70	75	87	103	118	139	146	158	171	1.5
			32	45	57	69	80	86	100	119	136	160	167	182	196	2.0
			38	54	68	82	95	103	119	141	162	191	199	217	234	3.0
20	17.60	1.0	97	139	178	214	248	268	313	372	427	504	529	576	621	1.5
			111	159	204	246	295	308	359	427	490	579	607	661	714	2.0
			131	189	242	292	339	366	427	508	584	690	724	788	851	3.0
		1.6	69	99	127	154	179	193	224	267	307	362	380	414	446	1.5
			80	114	146	177	205	221	258	307	353	416	437	476	514	2.0
			94	136	174	210	244	264	307	366	421	497	521	568	613	3.0
		2.4	53	76	97	118	136	148	172	205	235	278	291	317	342	1.5
			61	87	112	135	157	169	198	235	270	320	334	364	394	2.0
			72	104	133	161	187	202	235	280	322	381	399	436	470	3.0
		3.8	39	56	72	87	101	110	128	152	175	206	216	236	255	1.5
			45	65	83	100	116	126	146	175	200	237	249	271	293	2.0
			53	77	98	119	138	149	174	208	239	283	297	323	349	3.0

Duraflex

Series

1115

1118

Color : blue, black



Duratube

Series

1012

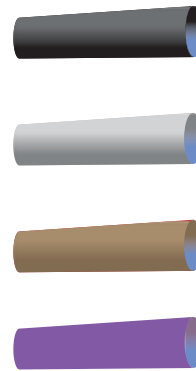
1014

1016

1020

1025

Color: black, brown, violet, grey



Duraflat

Series : 0250



Durafittings

Fittings for drip tape

Fittings for drip line

Fittings for pipes



duraflex blue



Series : 1115

- Made with 100% virgin raw material
- The excellent flexibility makes it suitable for installation in small spaces
- Quick installation with special fittings dedicated

Pipe specification

Nominal diameter	Outside diameter	Inside diameter	Wall thickness		Working pressure	Pressure max
	mm	mm	MIL	mm	Bar	Bar
15	15,00	11,00	79	2,00	8	16

Packaging and shipping

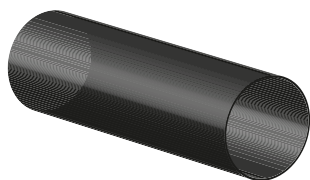
reel (m)		
	30	50
pallet (reels)		
	60 100x120x180 cm	60 100x120x190 cm
truck		
	26 (pallets) 1.560 (reels)	26 (pallets) 1.560 (reels)
container		
	10 (pallets) 600 (reels)	10 (pallets) 600 (reels)
container		
	24 (pallets) 1.440 (reels)	24 (pallets) 1.440 (reels)

Fittings

Male interlocking elbow		7635	15 x 1/2"
		7636	15 x 3/4"
Female interlocking elbow		7637	15 x 1/2"
		7638	15 x 3/4"
Straight interlocking male		7639	15 x 1/2"
		7640	15 x 3/4"



duraflex black



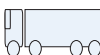
Series : 1118

- Made with 100% virgin raw material
- Kink-resistant
- Flexible enough to bend in tight spaces
- Safe installation using fittings in acetal-resin

Pipe specifications

Nominal diameter	Outside diameter	Inside diameter	Wall thickness		Working pressure	Pressure max
	mm	mm	MIL	mm	Bar	Bar
18	17,50	12,50	98	2,50	8	16

Packaging and shipping

reel(m) 	30	50
pallet (reels) 	60 100x120x180 cm	60 100x120x190 cm
truck 	26 (pallets) 1.560 (reels)	26 (pallets) 1.560 (reels)
container 	10 (pallets) 600 (reels)	10 (pallets) 600 (reels)
container 	24 (pallets) 1.440 (reels)	24 (pallets) 1.440 (reels)

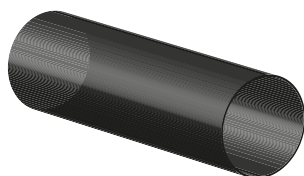
Fittings

Elbow male thread adaptor 	5494 5495	16 X 1/2" 16 X 3/4"
Female thread starter 	4786	16 x 3/4"
Male thread starter 	5480 5481	16 X 1/2" 16 X 3/4"

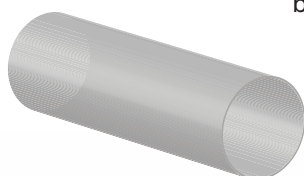
Polyethylene pipe

Series :

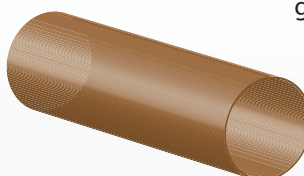
1012 - 1014 - 1016 - 1020 - 1025



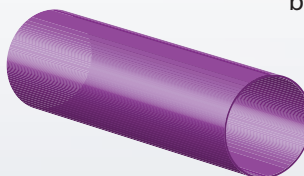
black



grey



brown



violet for non-potable water

Pipe specifications

Nominal diameter	Outside diameter	Inside diameter	Wall thickness		Pressure max
	mm	mm	MIL	mm	bar
12	12.00	10.00	40	1.00	3.00
		9.80	44	1.10	3.50
		9.60	48	1.20	4.00
		9.00	60	1.50	5.00
		8.00	80	2.00	6.00
14	14.00	12.00	40	1.00	3.00
		13.80	44	1.10	3.50
		13.60	48	1.20	4.00
		11.00	60	1.50	5.00
		10.00	80	2.00	6.00
16	16.00	14.20	36	0.90	2.50
		14.00	40	1.00	2.50
		13.80	44	1.10	3.00
		13.60	48	1.20	3.00
		13.40	52	1.30	3.30
		13.20	56	1.40	3.50
		13.00	60	1.50	3.80
		12.80	64	1.60	4.00
20	20.00	12.60	68	1.70	5.00
		18.20	36	0.90	2.00
		18.00	40	1.00	2.50
		17.80	44	1.10	3.00
		17.60	48	1.20	3.50
		17.40	52	1.30	3.50
		17.20	56	1.40	3.50
		17.00	60	1.50	4.00
25	25.00	16.80	64	1.60	4.00
		16.60	68	1.70	5.00
		22.60	48	1.20	4.20
		22.40	52	1.30	4.20
		22.20	56	1.40	4.80
		22.00	60	1.50	4.80
		21.80	64	1.60	5.00
		21.40	71	1.80	5.50
25	25.00	21.00	80	2.00	6.00

Made with 100% virgin raw materials



Layflat pipe

Series: 0250

For low pressure applications

- High tenacity polyester fiber
- Kink resistance
- Abrasion resistance
- 100 m reel
except model 10"-12" 50 m reel



Pipe specifications

Diameter		Inside diameter	Wall thickness	Pressure max
Inch	mm	mm	mm	Bars
1"	25	26,5	1,4	6,8
1¼"	32	33,5	1,4	5,8
1½"	40	40,0	1,4	4,8
2"	50	52,0	1,4	4,4
2½"	65	65,0	1,5	3,7
3"	75	77,0	1,5	3,7
4"	100	103,0	1,5	3,7
5"	125	128,0	1,8	3,1
6"	150	153,0	1,8	3,1
8"	200	205,0	2,1	3,1
10"	250	252,0	2,3	2,0
12"	300	302,0	2,5	2,0

Fittings for drip tape with pull ring

description		code	diameter
Stick starter with rubber hole : 10 mm		4657	17
Stick starter with rubber hole : 15mm		4659 4660	22 29
Stick starter from PVC		4667	17
Male starter threaded		4670 4672 4673	3/4" x 17 3/4" x 22 3/4" x 29
Coupling		4661 4662 4663	17 x 17 22 x 22 29 x 29
Plug		4664 4665 4666	17 22 29
Valve with rubber from PE		4619 4618	17 22
Valve with rubber from PVC		4617 4616	D x 17 D x 22
Male threaded valve		4608 4607	3/4" X 17 3/4" X 22
Female threaded valve		4604 4603	3/4" X 17 3/4" X 22
Starter valve from LAY FLAT		4613 4612	17 22
Valve tape - tape		4606	17 X 17
Valve PE - tape		4605	16 X 17

from 4 to 15 MIL



Fittings for drip tape with locking ring

description		code	diameter
Starter from PE		4410	17
hole 10 mm		4409	22
PVC starter		4408	17
hole 14 mm			
Male threaded starter		4407	3/4" X 17
		4406	3/4" X 22
LAY FLAT starter		4405	17
hole 14 mm			
Coupling		4404	17 X 17
		4403	22 X 22
Coupling PE-TAPE		4402	16 X 17
		4401	20 X 22
Plug		4400	17
		4399	22
Starter valve from PE		4398	17
hole : 10 mm		4397	22
Starter valve from PVC		4396	17
hole : 14 mm		4395	22
Threaded male valve		4394	3/4" X 17
		4393	3/4" X 22
Threaded female valve		4392	3/4" X 17
		4391	3/4" X 22
Starter valve from LAYFLAT		4390	17
hole 14 mm		4389	22
Valve PE-TAPE		4388	16 x 17
		4387	20 x 22

from 4 to 18 MIL



description

code

diameter

Stick start from PE hole 10 mm		4418	17
PVC starter with grommet hole 14 mm		4417	17
Male adaptor		4415	17 x 3/4"
Coupling		4414	17
Elbow		4413	17
Tee		4412	17
End line plug		4411	17

grey series



description

code

diameter

Stick start from PE hole 10 mm		4384	17
PVC starter with grommet hole 14 mm		4383	17
Male adaptor		4382	17 x 3/4"
Coupling		4381	17
Elbow		4380	17
Tee		4379	17
End line plug		4378	17

brown series



description		code	diameter
Stick starter		4602	17
		4601	22
hole : 10 mm		4600	25
Valve with hose connector		4599	16 x 16
		4598	20 x 20
		4597	25 x 25
Male threaded valve with hose connector		4588	3/4" x 16
		4587	3/4" x 20
		4586	3/4" x 25
Male threaded valve with locking ring		4584	3/4" x 16
		4582	3/4" x 20
Valve with locking ring		4581	16
		4580	20
PE starter valve with locking ring		4386	16
		4385	20
PVC starter valve with locking ring		4579	D x 16
hole : 14 mm		4578	D x 20
Dripbreaker hook		6974	16
		6973	20
		6972	25
Hook for drip line length 17 cm		4574	16
		4573	20



description		code	diameter
Coupling		5083	16 x 16
		5471	20 x 20
		9252	25 x 25
Coupling reduced		5473	20 x 16
		9253	25 x 20
Elbow		5533	16
		5535	20
		9108	25
Tee		8185	16
		5517	20
		9045	25
Y connector		5752	16
Cross connector		0844	16
PE starter hole 8 mm		5563	16
		5565	20
End line plug		5489	16
		5491	20
PVC starter with grommet drill hole : 16 mm		4782	16
		4887	20
		4781	25
PVC starter with elbow		4780	16
		4779	20
PVC TEE starter with grommet		4778	16
		4777	20



description

code

diameter

Male thread starter		5480	16 X 1/2"
		5481	16 X 3/4"
		5058	20 X 1/2"
		5485	20 X 3/4"
		9044	25 X 1/2"
		9043	25 X 3/4"
Male thread starter		6673	22 x 3/4"
		9043	25 x 3/4"
Elbow male thread adaptor		5494	16 X 1/2"
		5495	16 X 3/4"
		5497	20 X 1/2"
		5498	20 X 3/4"
		9003	25 X 1/2"
		8593	25 X 3/4"
Female thread starter		4786	16 x 3/4"
		4785	20 x 3/4"
Barb TEE male thread		5524	16x1/2"x16
		5052	20x1/2"x20
		8479	25x1/2"x25
		5053	16x3/4"x16
		5055	20x3/4"x20
		4784	25x3/4"x25
Y connector		5507	16X3/4"
		5509	20X3/4"
Fork connector		5503	16 X 3
		5505	20 X 3
Female three connector		5550	16 X3
		5553	20 X3
Female four connector		5538	16 X 4
		5541	20 X 4
Female six connector		5544	16 X 6
		5547	20 X 6



Flush valve

closing pressure 2 +/- 0.7 m.

Description

Code

Diameter

Flush valve male thread		4769	3/4"
-------------------------	---	------	------

pressure max 10 bar

Description

Code

Diameter

Tube puncher		9655	2 mm
		9656	3 mm
		9657	4 mm
		0556	3,5 mm
		5160	7 mm
LAY FLAT puncher		4766	14
4765		19	
LAY FLAT driver		4764	7
4763		10	
			
Grommet drill		4904	15.5
		4905	16.0
		4762	16.5
PVC start assembler		4761	
			





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DNV·GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
207334-2016-AQ-ITA-ACCREDIA

Initial certification date:
06 December 2016

Valid:
08 December 2019 - 07 December 2022

This is to certify that the management system of

ASTER S.r.l.

Contrada Dara, 625 D - 91025 Marsala (TP) - Italy

has been found to conform to the Quality Management System standard:

ISO 9001:2015

This certificate is valid for the following scope:

**Produzione e commercializzazione di componenti per impianti d'irrigazione
(IAF: 14)**

Place and date:
**Vimercate (MB), 20 November
2019**



SGQ N° 003 A
SGA N° 003 D
SGE N° 007 H
SCR N° 004 F

EMAS N° 009 P
PRD N° 003 B
PRD N° 004 C
SSI N° 002 G

Membro di MIA EA per gli schemi di accreditamento
SGQ, SGA, PRD, PRS, ISR, GHG, LAB e LAT, di MIA IAF
per gli schemi di accreditamento SGQ, SGA, SSI, FSH
e PRD e di MIA ILAC per gli schemi di accreditamento
LAB, MED, LAT e ISR

For the issuing office:
**DNV GL - Business Assurance
Via Energy Park, 14, - 20871 Vimercate
(MB) - Italy**

Zeno Beltrami
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

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