

# AQUALINE EMITTERLINE



Jain is a fully integrated global food / plant production company recognized by Harvard Business to be one of five global sustainability champions, the G-20 for lifting people out of poverty, and Fortune magazine for being a "Change the World Company." Our irrigation manufacturing capabilities include everything from behind the pump to the flush valve at the end of the lateral and everything in between. We lead the industry in manufacturing technology, owning both our extrusion and mold manufacturing equipment providers.

Jain leads plant science research globally across a variety of food crops and is staffed with some of the world's leading research scientists. With the Gandhi Library, Jain now houses the leading collection of the world's best plant science knowledge in a single facility. Our agronomic knowledge is integrated from our world class plant tissue culture operations through our food processing businesses. We research, educate, advance, manufacture, finance, propagate plants, and purchase produce for processing all in an effort to fulfill the Jain mission:

**"Leave This World Better Than You Found It"**

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**World Leader in Irrigation Technology**

**JAIN**

## Product Features

- Wide selection of diameters and flow rates
- Unique flow path design offers superior clogging resistance
- Multiple inlet filters
- Dual opposing outlets prevent clogging and/or back-siphoning
- Extremely low flow variations
- Integral emitterline offers lower frictional losses and allows longer length of run
- Easy to install and easy to retrieve
- Lower labor and installation costs
- Enhanced water and fertilizer management
- Suitable for both above and underground installation
- Unlimited spacing options for design flexibility
- Custom lengths manufactured as special orders to fit the field dimensions

### Aqualine Emitterline

#### Your Natural Choice for Vineyards and Orchards

Aqualine—the Jain Integral Emitterline is the natural and most economical choice for vineyards, orchards and row crops. Signature Aqualine (pressure compensating) and Traditional Aqualine (turbulent flow, non-pressure compensating) integral emitterline with its unique flow path and large multiple inlet filters offers superior clogging resistance for the most demanding applications including poor quality and effluent water.

For efficient, quick and low cost installation—make Aqualine your natural choice.



## Signature Aqualine

### Pressure Compensating Integral Emitterline

Jain Signature Aqualine is a pressure compensating integral emitterline featuring the NaanPC emitter. The NaanPC emitter is a revolutionary self-compensated turbulent flow labyrinth inline emitter, produced under a world wide registered patent. The NaanPC emitter has a newly formulated silicone diaphragm ensuring reliable and accurate performance with diverse water qualities, chemicals and fertilizers.

- Cylindrical PC dripper, with unique regulating labyrinth with self-flushing operation at the beginning and end of each irrigation cycle
- Silicone PC membrane with variable length flow path ensures performance consistency for life
- Precision emitter manufacturing using medium to high density PE materials for long life and high chemical resistance
- Dual opposed inlet filters offers filter area 10 times larger than competition of similar emitters
- Self cleaning, high-clog resistance



### Signature Aqualine Emitter Specification

Size	GPH	Cv	K	x	Kd
16 mm	0.42	0.05	0.42	0	1.12
	0.55	0.05	0.55	0	1.12
	1.00	0.05	1.00	0	1.12
18 mm	0.40	0.05	0.40	0	1.00
	0.50	0.05	0.50	0	1.00
	0.90	0.05	0.90	0	1.00
20 mm	0.42	0.05	0.42	0	0.90
	0.55	0.05	0.55	0	0.90
	0.92	0.05	0.92	0	0.90

## Signature Aqualine

### Available Configurations

Nominal Diameter	16 mm	18 mm	20 mm
Outside Diameter	0.640 in	0.730 in	0.800 in
Inside Diameter	0.550 in	0.640 in	0.710 in
Wall Thickness	0.045 in	0.045 in	0.045 in
Available Roll Lengths	100	100	100
	500	500	500
	1,000	1,000	1,000
Available Flow Rates	0.42 gph / 1.6 lph	0.40 gph / 1.5 lph	0.42 gph / 1.60 lph
	0.50gph / 1.89 lph	0.55 gph / 2.07 lph	0.55 gph / 2.08 lph
	1.00 gph / 3.78 lph	.90 gph / 3.40 lph	0.92 gph / 3.48 lph
Operating Range	10-60 psi	10-60 psi	10-60 psi

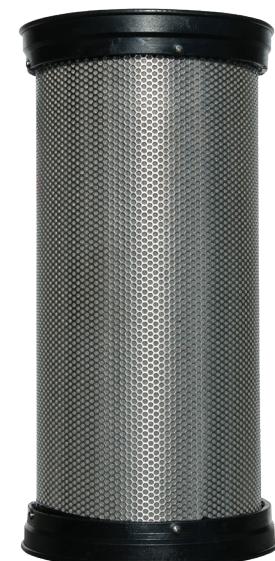
### Signature Aqualine Ordering Guide

Size	Flow	Spacing (in)	Indicator	Length (ft)
A16	0.42	12	PC	100
	0.55	18		500
	1.00	24		1,000
A18	0.40	36		
	0.50	42		
	0.90	48		
A20	0.42			
	0.55			
	0.92			

#### Example:

Model#: A18-50-36PC-1000

Description: Signature Aqualine PC 18 mm 0.50 gph @ 30" spacing 1000 ft.



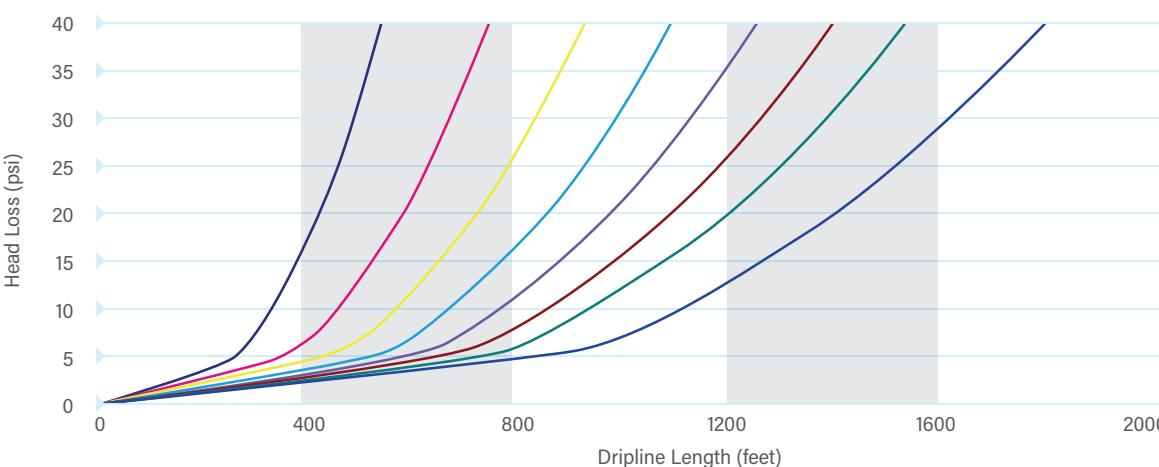
### Filtration Requirements

Minimum filtration is 120 mesh. In addition to filtration, control of algae and bacterial slime growth and control of chemical precipitates should be taken into consideration.

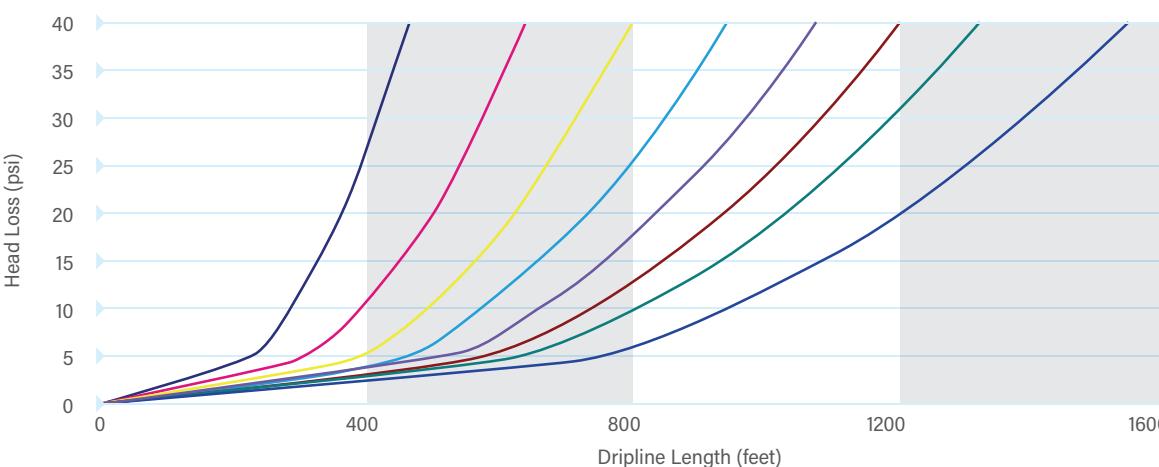
## Head Loss vs. Dripline Length—Signature Aqualine

12"	18"	24"	30"	36"	42"	48"	60"
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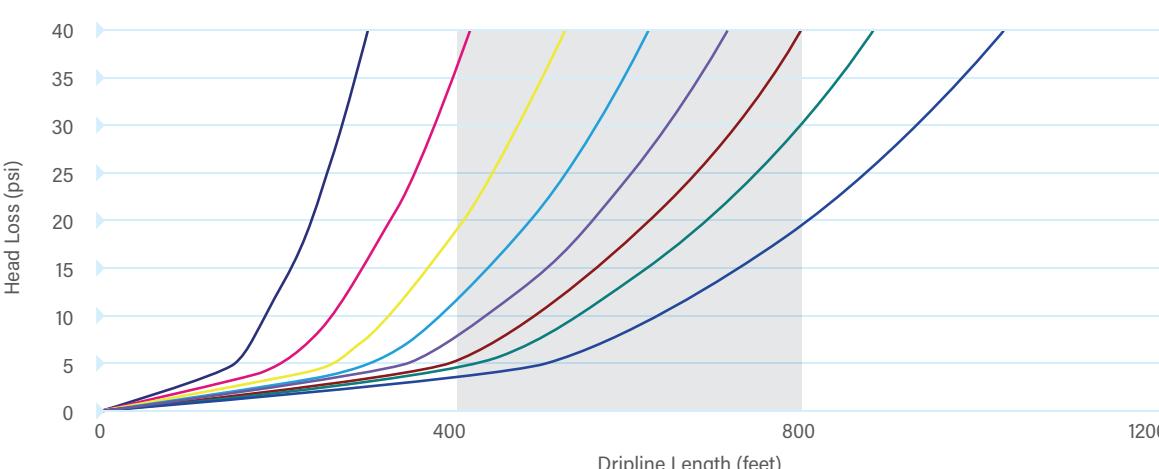
### Signature Aqualine™ 16mm 0.42 gph, 0% Slope



### Signature Aqualine™ 16mm 0.55 gph, 0% Slope



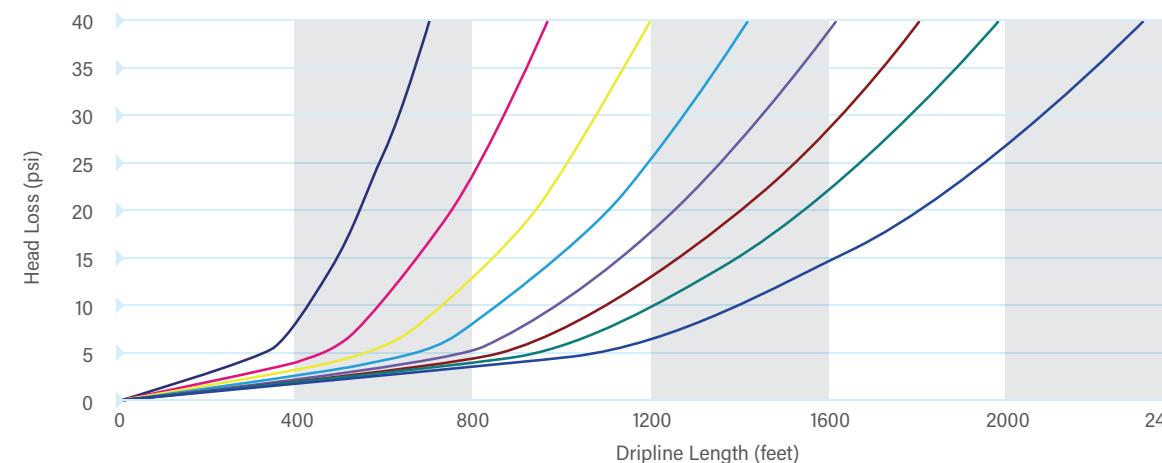
### Signature Aqualine™ 16mm 1.00 gph, 0% Slope



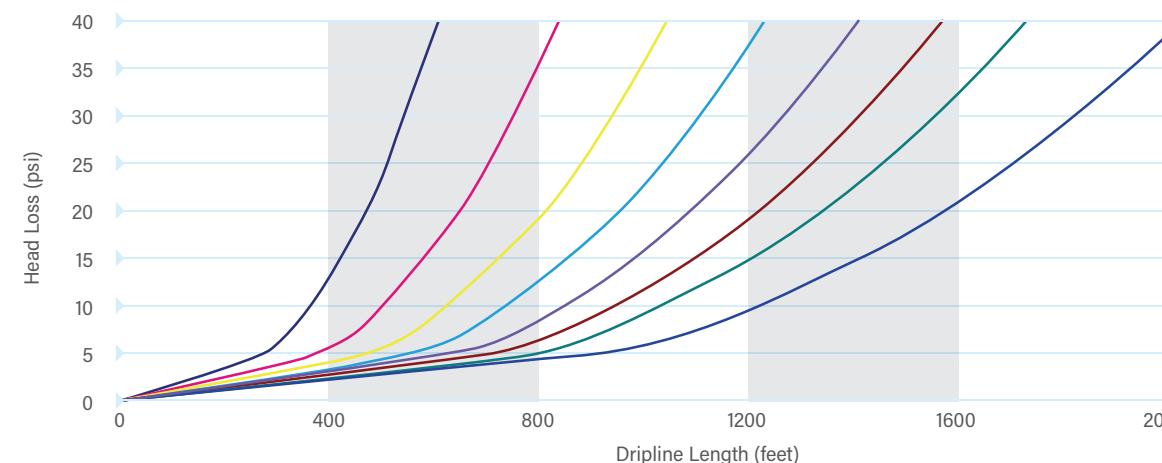
## Head Loss vs. Dripline Length—Signature Aqualine



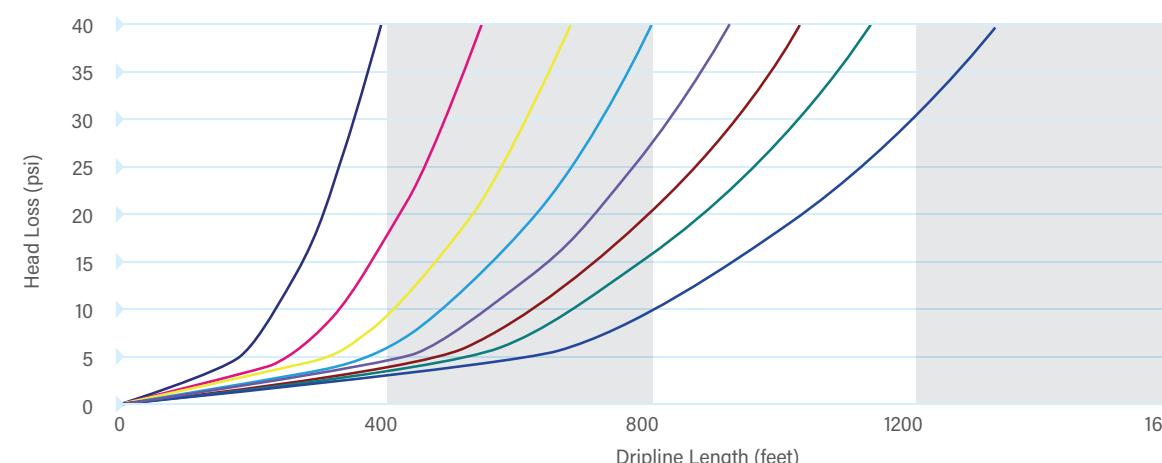
**Signature Aqualine™ 18mm 0.40 gph, 0% Slope**



**Signature Aqualine™ 18mm 0.50 gph, 0% Slope**



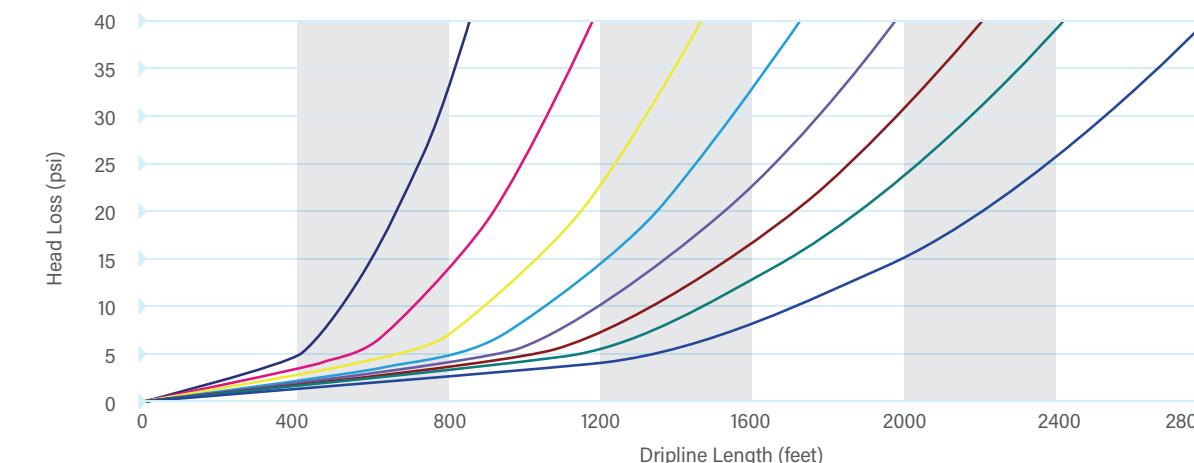
**Signature Aqualine™ 18mm 0.90 gph, 0% Slope**



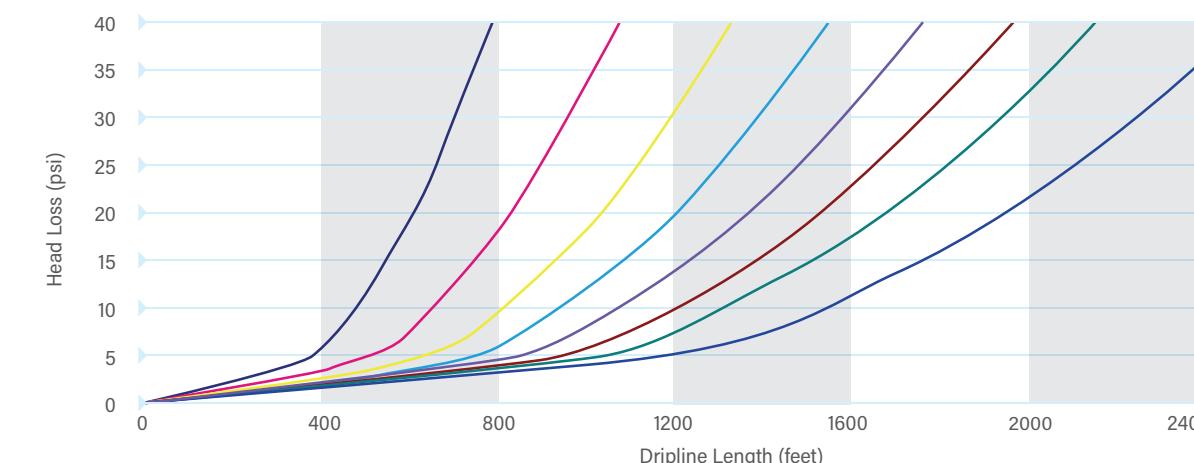
## Head Loss vs. Dripline Length—Signature Aqualine



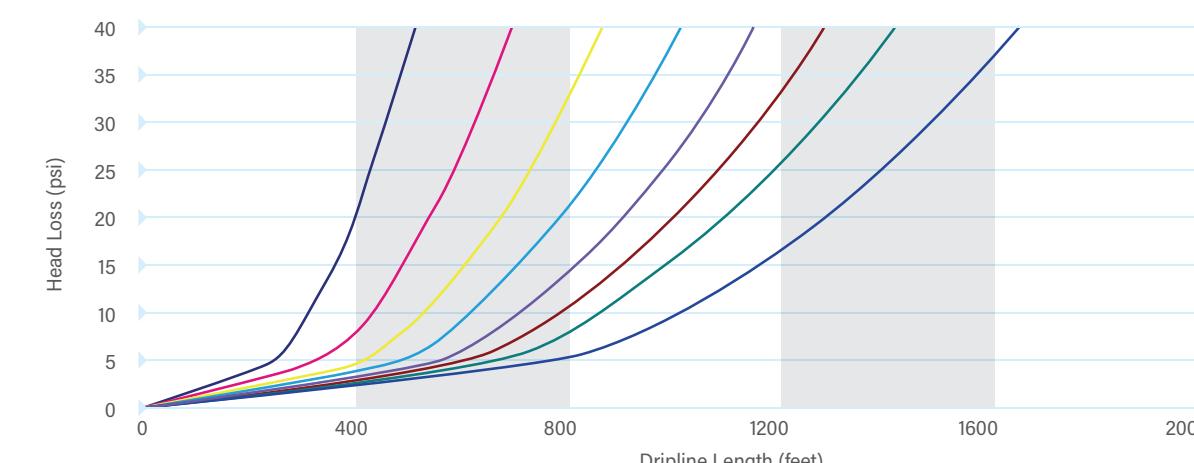
**Signature Aqualine™ 20mm 0.42 gph, 0% Slope**



**Signature Aqualine™ 20mm 0.55 gph, 0% Slope**



**Signature Aqualine™ 20mm 0.92 gph, 0% Slope**



## Signature Aqualine Maximum Lateral Lengths (0% Slope)

### 16 mm (0.630 x 0.540) Signature Aqualine

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.42	25	314	437	546	647	741	829	913	1069
	35	404	562	703	832	953	1066	1174	1375
	45	469	651	815	965	1104	1236	1361	1594
	55	521	723	904	1071	1226	1372	1511	1770
0.55	25	269	371	462	546	624	697	766	895
	35	346	477	595	702	802	896	985	1152
	45	401	553	689	814	930	1039	1142	1335
	55	445	614	765	904	1032	1153	1268	1482
1.0	25	195	270	338	401	459	513	565	662
	35	251	348	435	516	590	661	727	852
	45	290	403	505	597	684	765	843	987
	55	322	448	560	663	759	850	936	1096

### 18 mm (0.730 x 0.640) Signature Aqualine

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.40	25	415	573	714	843	963	1076	1183	1383
	35	534	737	919	1085	1239	1385	1522	1780
	45	619	854	1065	1257	1436	1605	1764	2062
	55	687	949	1182	1396	1595	1781	1959	2290
0.50	25	360	496	619	730	834	932	1025	1198
	35	463	639	796	940	1074	1199	1319	1542
	45	536	740	922	1089	1244	1390	1528	1787
	55	595	822	1024	1209	1381	1543	1697	1984
0.90	25	240	333	413	488	557	622	684	800
	35	309	426	531	627	717	801	880	1029
	45	358	494	616	727	831	928	1020	1193
	55	397	549	684	807	922	1030	1133	1325

### 20 mm (0.800 x 0.710) Signature Aqualine

GPH	PSI Inlet	Emitter Spacing (inches)							
		12	18	24	30	36	42	48	60
0.42	25	519	713	887	1045	1192	1331	1462	1707
	35	668	918	1141	1345	1534	1712	1881	2196
	45	774	1064	1322	1558	1778	1984	2180	2545
	55	859	1181	1468	1730	1974	2203	2420	2826
0.55	25	474	644	794	931	1058	1178	1291	1502
	35	610	828	1022	1198	1362	1515	1661	1933
	45	707	960	1184	1389	1578	1756	1925	2240
	55	784	1066	1315	1542	1752	1950	2137	2487
0.92	25	300	413	513	605	690	770	845	987
	35	386	531	660	778	887	990	1088	1270
	45	447	615	765	901	1028	1148	1261	1472
	55	497	683	849	1001	1142	1274	1400	1634

## Traditional Aqualine

### Turbulent Flow Integral Emitterline

Jain Traditional Aqualine is a Turbulent flow integral emitterline featuring the NaanDanJain emitter.

Select NaanDanJain emitters use the Cascade Labyrinth technology™ to design and manufacture its turbulent flow emitters. The unique structure of the Cascade labyrinth dripper facilitates intensified self cleaning, prevents clogging and vastly improves durability.

- Cylindrical dripper, with unique Cascade labyrinth technology ensuring long-term flow accuracy and uniformity
- Unique self-cleaning operation
- Wider flow path facilitates constant flushing of sand and dirt particles
- Very high resistance to clogging
- Dual inlet filters guarantees high performance
- Low coefficient of variation (Cv) <5%
- Dual opposing outlets prevent clogging and/or back-siphoning
- Precision emitter manufacturing using medium to high density PE materials for long life and high chemical resistance

## Aqualine Emitterline

Traditional Aqualine Emitter Specification

Size	GPH	Cv	K	x	Kd
16 mm	0.53	0.05	0.13	0.542	1.0
	1.0	0.05	0.255	0.494	1.0
18 mm	0.53	0.05	0.143	0.49	0.45
	1.0	0.05	0.253	0.5	0.45
20 mm	0.53	0.05	0.143	0.49	0.4
	1.0	0.05	0.268	0.481	0.4

Traditional Aqualine Configurations

Nominal Diameter	16 mm	18 mm	20 mm
Outside Diameter	0.640 in	0.710 in	0.800 in
Inside Diameter	0.550 in	0.620 in	0.710 in
Wall Thickness	0.045 in	0.045 in	0.045 in
Available Roll Lengths	100	100	100
	500	500	500
	1,000	1,000	1,000
Available Flow Rates	0.53 gph / 2.00 lph		0.53 gph / 2.00 lph
	1.00 gph / 3.78 lph	0.53 gph / 2.00 lph	
			1.00 gph / 3.78 lph
		1.00 gph / 3.78 lph	
Operating Range	10–60 psi	10–60 psi	10–60 psi

Traditional Aqualine Ordering Guide

Size	Flow	Spacing	Length
A16	53	12	100
	10	18	500
A18		24	1,000
	53	30	
		36	
A20	10	42	
	53	48	
		60	
	10		

**Example:**

Model#: A18-53-30-1000

Description: Traditional Aqualine 18 mm 0.53 gph @ 30" spacing 1000 ft.

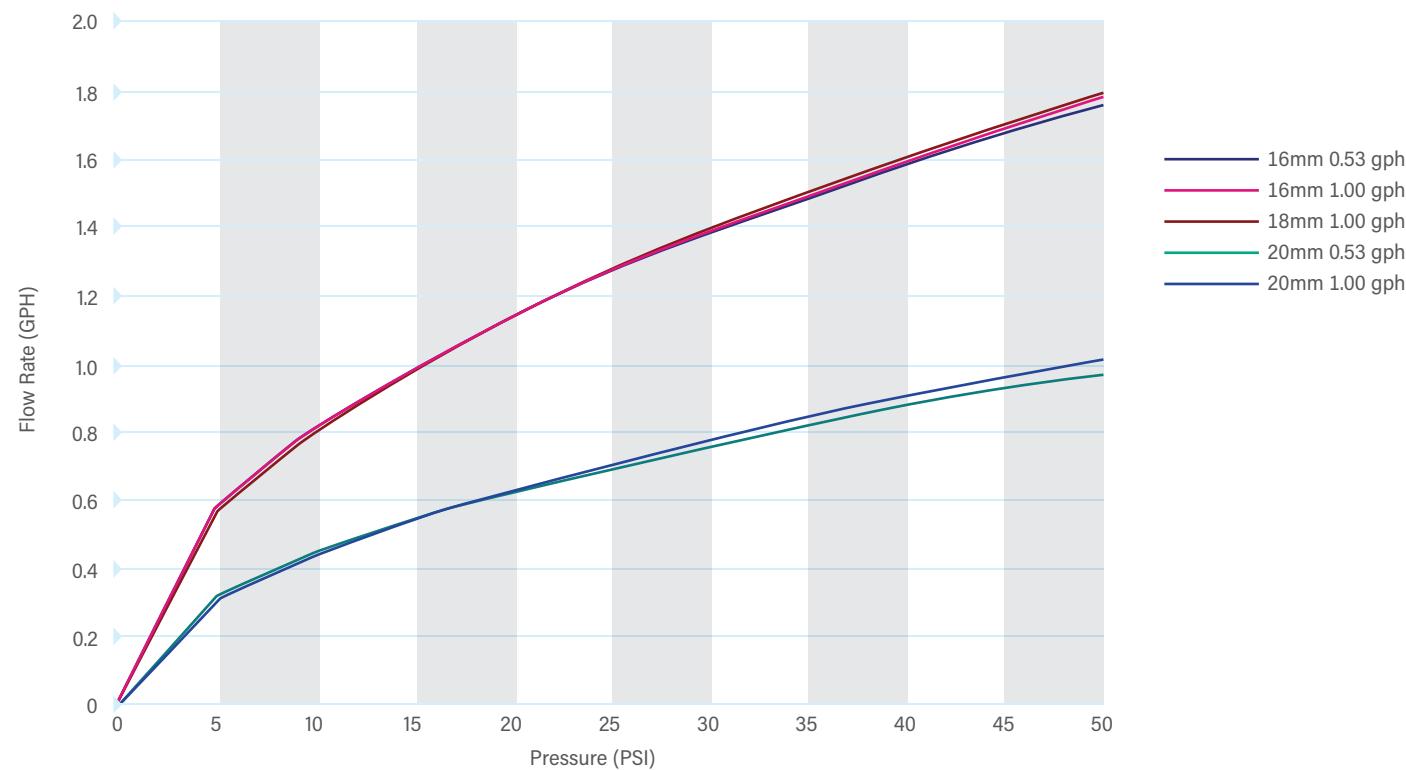


## Aqualine Emitterline

Pressure vs Flow

Size	GPH	PSI										
		0	5	10	15	20	25	30	35	40	45	50
16 mm	0.53	0.53	0.30	0.43	0.54	0.62	0.70	0.77	0.84	0.90	0.96	1.01
	1	1	0.57	0.80	0.98	1.13	1.26	1.38	1.49	1.59	1.68	1.78
18 mm	0.53	0.53	0.31	0.44	0.54	0.62	0.69	0.76	0.82	0.87	0.92	0.97
	1	1	0.57	0.80	0.98	1.13	1.27	1.39	1.50	1.60	1.70	1.79
20 mm	0.53	0.53	0.31	0.44	0.54	0.62	0.69	0.76	0.82	0.87	0.92	0.97
	1	1	0.58	0.58	0.99	1.13	1.26	1.38	1.48	1.58	1.67	1.76

Flow Rate x Pressure



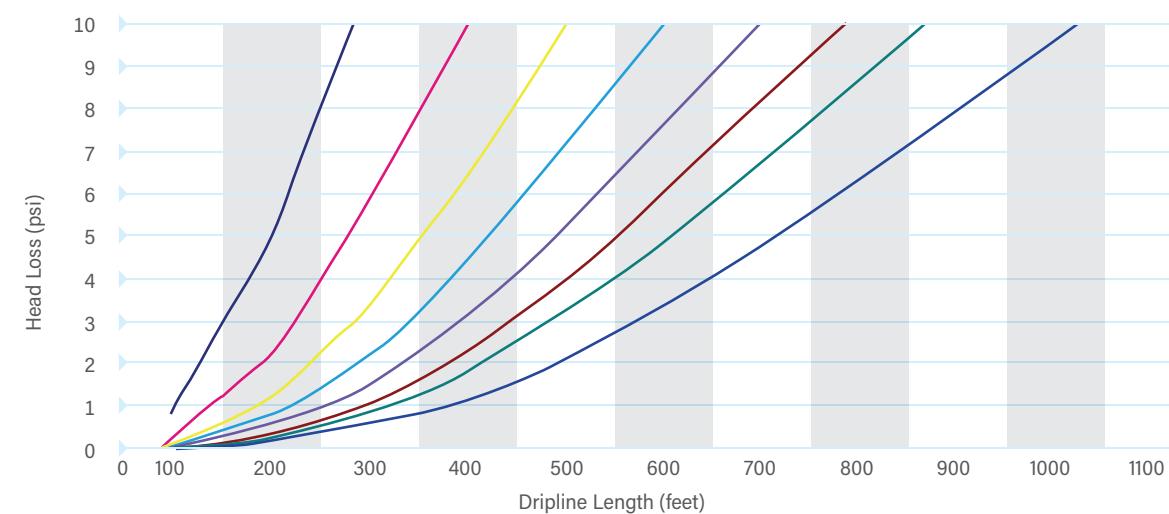
Maximum Recommended Run Lengths

	16 mm		18 mm		20 mm	
	0.53	1.0	0.53	1.0	0.53	1.0
12	198	136	286	192	358	243
18	278	192	393	264	494	335
24	350	242	488	328	614	416
30	418	288	575	388	723	493
36	480	333	657	441	825	561
42	539	375	735	494	921	627
48	596	412	808	544	1012	688
60	705	485	940	635	1185	805

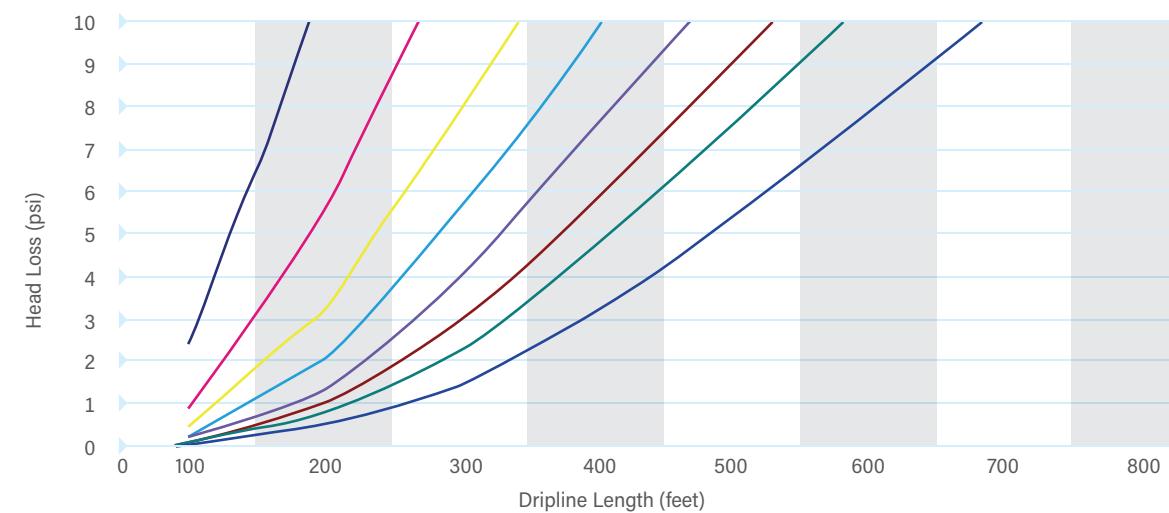
## Head Loss vs. Dripline Length—Traditional Aqualine

12" 18" 24" 30" 36" 42" 48" 60"

Traditional Aqualine™ 16mm 0.53 gph, 0% Slope



Traditional Aqualine™ 16mm 1.0 gph, 0% Slope



## Head Loss vs. Dripline Length—Traditional Aqualine

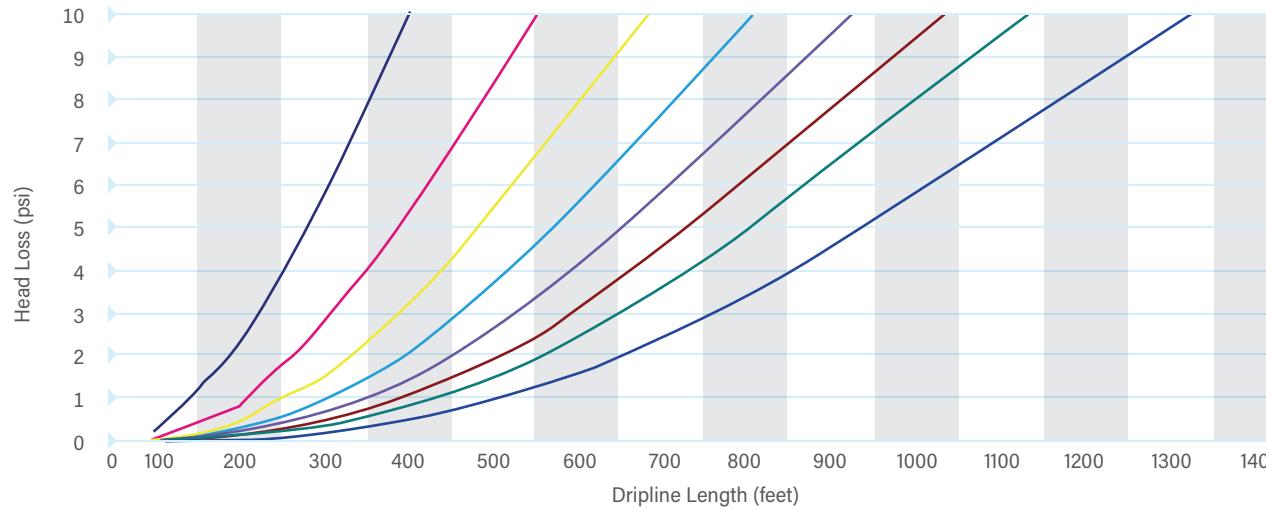
### How to Specify

The emitterline will be manufactured (16mm 18mm 20mm) O.D. with (0.045" or 0.050") wall thickness.

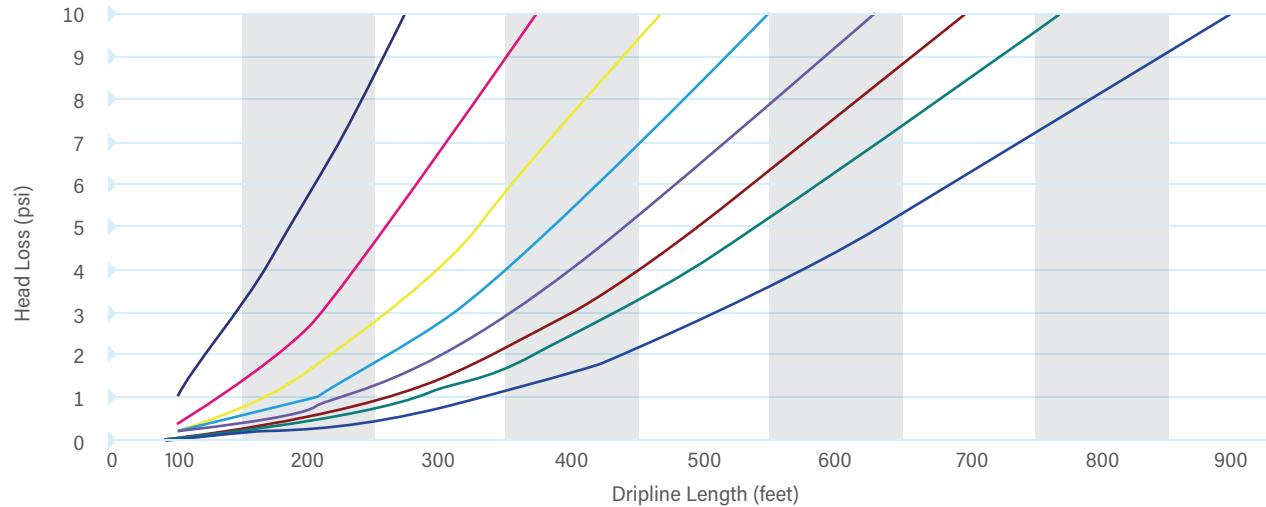
Each emitter will have multiple water entry slots and 2 opposed outlet holes with silicone diaphragm to be (pressure compensating or non-pressure compensating) used over a range of 10-60 PSI with a manufacturer's Cv less than 5%. Flow path is to be variable length turbulent flow labyrinth without emission slot. Flow rate will be (0.23 0.42 0.53 0.57 0.75 0.90 1.00) GPH with (12" 18" 24" 30" 36" 42" 48" 60") spacing and (brown or black) in color.



**Traditional Aqualine™ 18mm 0.53 gph, 0% Slope**



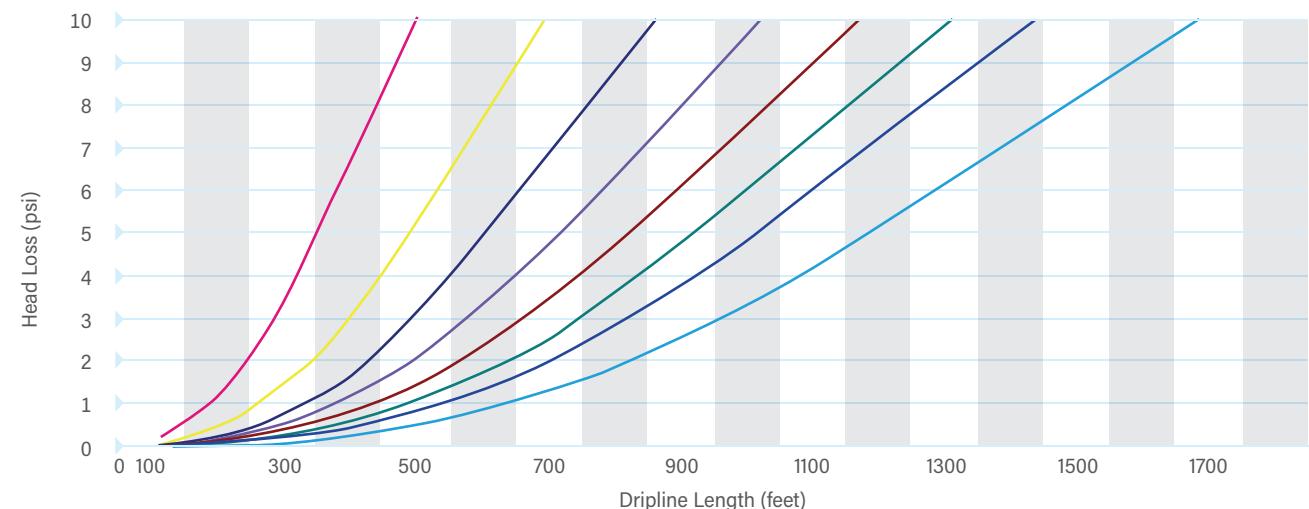
**Traditional Aqualine™ 18mm 1.0 gph, 0% Slope**



## Head Loss vs. Dripline Length—Traditional Aqualine



**Traditional Aqualine™ 20mm 0.53 gph, 0% Slope**



**Traditional Aqualine™ 20mm 1.0 gph, 0% Slope**

