Liquid Atomizing Spray Nozzles

Pressurized liquid nozzles increase liquid flow for cooling, washing and rinsing!

What are Liquid Atomizing Spray Nozzles?

EXAIR's Liquid Atomizing Spray Nozzles require no air to operate. They produce droplets by spinning the liquid and breaking its surface tension through a precision orifice or by impacting the liquid on to a surface of the nozzle. Compared to EXAIR's Air Atomizing Spray Nozzles, liquid atomizing spray nozzles generate more liquid volume and produce a coarse spray pattern. The higher liquid flow rates benefit some common industrial applications like cleaning, cooling, rinsing, dust suppression and washing. Many liquid atomizing spray nozzles operate well when the liquid they are spraying contains particulate or is a slurry.

Why Liquid Atomizing Spray Nozzles?

They are good general-purpose nozzles for industry and are commonly used with inexpensive liquids like water, rinse aids or detergents while also very effective with chemicals, pesticides and herbicides. Adjustment of the liquid flow rate can be done with varying liquid pressure but without the same adjustability or refinement of Air Atomizing Spray Nozzles. Their smaller footprint allows for mounting in smaller spaces and with less plumbing required, since no air line is needed. Liquid nozzles, made of Type 303 stainless steel are durable and rugged, with no moving parts and have a maximum operating temperature of 800°F (427°C).

Built to Last 5 yr. WARRANTY

See page 4 for complete details.

Applications

- Cooling
- Quenching
- Coating
- Dust suppression
- Washing
- Rinsing
- Foam breaking
- Slurry spraying
- Sanitizing
- Degreasing
- Lubricating

Advantages

- High liquid flow rates
- Increase the liquid's surface area
- Increase the liquid coverage area on your target
- All stainless steel construction
- Compact footprint
- Versatile

For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
Toll Free FAX (866) 329-3924 • E-mail: techelp@exair.com • www.exair.com
blog.exair.com @EXAIR

FullStream™ Cone Nozzles - 1/4 NPT

Model: FL1008SS
Material: Type 303 Stainless Steel

Model: FL1010SS
Material: Type 303 Stainless Steel

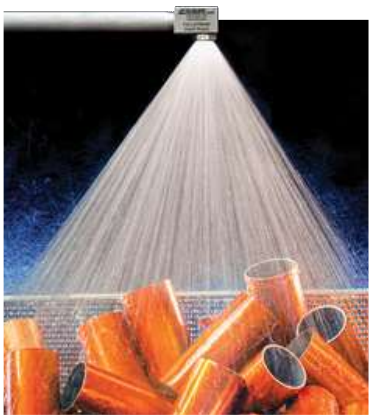
Model: FL1011SS
Material: Type 303 Stainless Steel

Model FL1008SS, FL1010SS and FL1011SS

EXAIR's 1/4 NPT FullStream Cone Nozzles, with a full cone spray pattern, are among the most common type of spray nozzles. Full cone spray nozzles are applied to solve cooling, cleaning, washing, rinsing and dust suppression applications throughout industry. Their tangential flow design is vaneless, which creates wide open internal features to resist clogging. This produces a uniform distribution in a full cone round pattern and medium to large droplets. Their right-angle design is compact and operates at up to 250 PSI liquid pressure. FullStream nozzles also work well with liquids containing particulate.

Compared to EXAIR's Air Atomizing Spray Nozzles the FullStream will have higher liquid flow rates.

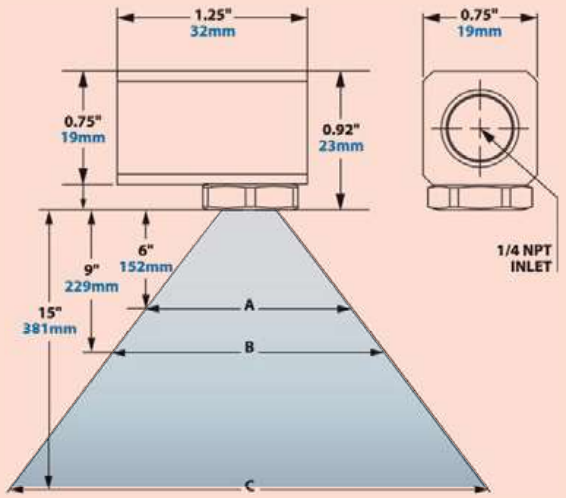
For maximum liquid conservation and spray control visit page 70.



1/4 NPT FullStream Cone Nozzle with cone spray pattern is rinsing anodized aluminium pipe.

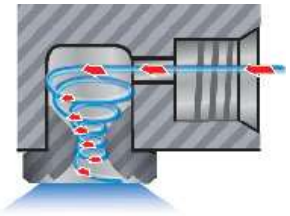
Dimensions and Spray Pattern

DOWNLOAD drawings at EXAIR.com



How FullStream and HollowStream Cone Nozzles Work

With FullStream and HollowStream nozzles, the atomizing fluid is supplied into the body of the nozzle creating a swirling action within the vortex chamber. This vortex produces a full cone spray pattern when the precisely machined nozzle breaks the liquid surface tension as it exits the orifice at a controlled spray angle.



FullStream Cone Nozzles

Inlet Connection	Model	Capacity	Max Free Passage		Flow Rate GPM/LPM 3 psi	5 psi	7 psi	10 psi	20 psi	40 psi	60 psi
1/4 NPT	FL1008SS	8	0.109"	GPM	0.50	0.60	0.70	0.80	1.15	1.55	1.80
				LPM	1.89	2.27	2.65	3.03	4.35	5.87	6.81
	FL1010SS	10	0.125"	GPM	0.48	0.67	0.83	1.00	1.34	1.88	2.36
				LPM	1.82	2.54	3.14	3.79	5.07	7.12	8.93
	FL1011SS	11	0.144"	GPM	0.62	0.85	0.96	1.10	1.51	2.21	2.66
				LPM	2.35	3.22	3.63	4.16	5.72	8.36	10.07

Spray Angle

Inlet Pressure PSI	BAR	Width A in	A cm	B in	B cm	C in	C cm
7	0.5	5.7	14	8.6	22	14.3	36
20	1.4	7.4	19	11.0	28	18.4	47
60	4.1	8.4	21	12.6	32	21.0	53
7	0.5	6.8	17	10.2	26	17.0	43
20	1.4	8.7	22	13.1	33	21.8	55
60	4.1	10.1	26	15.1	38	25.2	64
7	0.5	6.8	17	10.2	26	17.0	43
20	1.4	8.7	22	13.1	33	21.8	55
60	4.1	10.1	26	15.1	38	25.2	64

Liquid Atomizing Spray Nozzles

FullStream™ Cone Nozzles - 3/8 NPT


Model: FL3011SS
Material: Type 303 Stainless Steel


Model: FL3013SS
Material: Type 303 Stainless Steel


Model: FL3016SS
Material: Type 303 Stainless Steel


Model: FL3020SS
Material: Type 303 Stainless Steel


Model: FL3023SS
Material: Type 303 Stainless Steel


Model: FL3026SS
Material: Type 303 Stainless Steel


Model: FL3029SS
Material: Type 303 Stainless Steel

Model FL3011SS, FL3013SS, FL3016SS, FL3020SS, FL3023SS, FL3026SS and FL3029SS

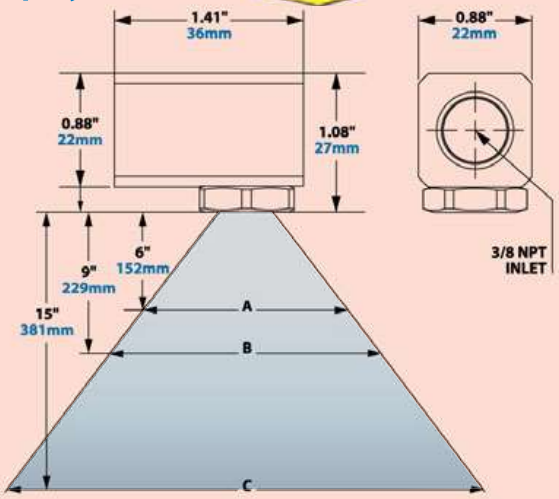
EXAIR's 3/8 FullStream Cone Nozzles, with a full cone spray pattern, are among the most common type of spray nozzles. Full cone spray nozzles are applied to solve cooling, cleaning, washing, rinsing and dust suppression applications throughout industry. Their tangential flow design is vaneless, which creates wide open internal features to resist clogging. This produces a uniform distribution in a full cone round pattern and medium to large droplets. Their right-angle design is compact and operates at up to 250 PSI liquid pressure. FullStream nozzles also work well with liquids containing particulate.

Compared to EXAIR's Air Atomizing Spray Nozzles the FullStream will have higher liquid flow rates.

For maximum liquid conservation and spray control visit page 70.

Dimensions and Spray Pattern

DOWNLOAD drawings at EXAIR.com



3/8 NPT FullStream Cone Nozzle washing the inside of a 55 gallon drum.

FullStream Cone Nozzles

Inlet Connection	Model	Capacity	Max Free Passage		Flow Rate GPM/LPM 3 psi	5 psi	7 psi	10 psi	20 psi	40 psi	60 psi
3/8 NPT	FL3011SS	11	0.128"	GPM	0.57	0.76	0.91	1.10	1.52	2.20	2.70
				LPM	2.16	2.88	3.44	4.16	5.75	8.33	10.22
	FL3013SS	13	0.144"	GPM	0.75	0.95	1.13	1.30	1.86	2.60	3.34
				LPM	2.84	3.60	4.28	4.92	7.04	9.84	12.64
	FL3016SS	16	0.154"	GPM	0.98	1.10	1.25	1.60	2.23	2.90	3.60
				LPM	3.71	4.16	4.73	6.06	8.44	10.98	13.63
	FL3020SS	20	0.172"	GPM	1.22	1.64	1.88	2.00	2.98	4.24	4.82
				LPM	4.62	6.21	7.12	7.57	11.28	16.05	18.24
	FL3023SS	23	0.189"	GPM	1.36	1.76	1.96	2.30	3.18	4.56	5.38
				LPM	5.15	6.66	7.42	8.71	12.04	17.26	20.36
	FL3026SS	26	0.204"	GPM	1.26	1.80	2.02	2.60	3.30	5.18	6.12
				LPM	4.77	6.81	7.65	9.84	12.49	19.61	23.17
	FL3029SS	29	0.221"	GPM	1.30	1.84	2.28	2.90	3.62	5.48	6.48
				LPM	4.92	6.97	8.63	10.98	13.70	20.74	24.53

Spray Angle

Inlet Pressure PSI/BAR		Width A in	A cm	B in	B cm	C in	C cm
7	0.5	8.1	21	12.1	31	20.2	51
20	1.4	9.9	25	14.8	38	24.7	63
60	4.1	10.4	26	15.6	40	26.1	66
7	0.5	7.6	19	11.5	29	19.1	49
20	1.4	9.0	23	13.6	35	22.6	57
60	4.1	10.4	26	15.6	40	26.1	66
7	0.5	7.6	19	11.5	29	19.1	49
20	1.4	9.7	25	14.6	37	24.3	62
60	4.1	10.4	26	15.6	40	26.1	66
7	0.5	8.4	21	12.6	32	21.0	53
20	1.4	9.9	25	14.8	38	24.7	63
60	4.1	11.2	28	16.8	43	28.0	71
7	0.5	9.0	23	13.6	35	22.6	57
20	1.4	10.2	26	15.4	39	25.6	65
60	4.1	11.2	28	16.8	43	18.0	46
7	0.5	9.7	25	14.6	37	24.3	62
20	1.4	10.8	27	16.2	41	27.0	69
60	4.1	12.0	30	18.0	46	30.0	76
7	0.5	9.9	25	14.8	38	24.7	63
20	1.4	10.8	27	16.2	41	27.0	69
60	4.1	12.0	30	18.0	46	30.0	76

FullStream™ Cone Nozzles - 1/2 NPT

Model: FL5032SS
Material: Type 303 Stainless Steel

Model: FL5040SS
Material: Type 303 Stainless Steel

Model: FL5048SS
Material: Type 303 Stainless Steel

Model: FL5056SS
Material: Type 303 Stainless Steel

Model: FL5064SS
Material: Type 303 Stainless Steel

Model: FL5072SS
Material: Type 303 Stainless Steel

Model FL5032SS, FL5040SS, FL5048SS, FL5056SS, FL5064SS and FL5072SS

EXAIR's 1/2 NPT FullStream Cone Nozzles, with a full cone spray pattern, are among the most common type of spray nozzles. Full cone spray nozzles are applied to solve cooling, cleaning, washing, rinsing and dust suppression applications throughout industry. Their tangential flow design is vaneless, which creates wide open internal features to resist clogging. This produces a uniform distribution in a full cone round pattern and medium to large droplets. Their right-angle design is compact and operates at up to 250 PSI liquid pressure. FullStream nozzles also work well with liquids containing particulate.

Compared to EXAIR's Air Atomizing Spray Nozzles the FullStream will have higher liquid flow rates.

For maximum liquid conservation and spray control visit page 70.

Dimensions and Spray Pattern

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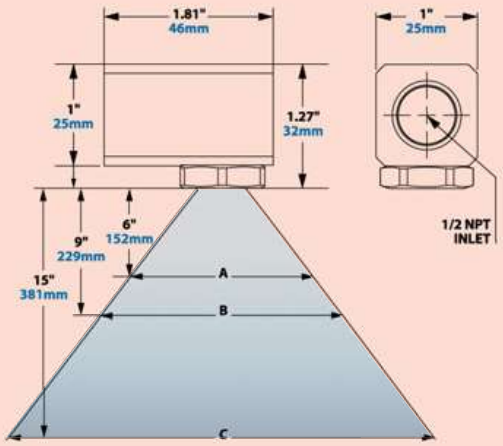


1/2 NPT FullStream Cone Nozzle with cone spray pattern is cleaning red potatoes.

Spray Nozzles

FullStream Cone Nozzles														Spray Angle									
Inlet Connection	Model	Capacity	Max Free Passage	Flow Rate GPM/LPM										Inlet		Width							
														Pressure PSI/BAR		A		B		C			
					3 psi	5 psi	7 psi	10 psi	20 psi	40 psi	60 psi					in	cm	in	cm	in	cm		
1/2 NPT	FL5032SS	32	0.201"	GPM	1.74	2.46	2.80	3.20	4.46	6.28	7.30			7	0.5	9.4	23.9	14.1	35.81	23.4	59.4		
				LPM	6.59	9.31	10.60	12.11	16.88	23.77	27.63			20	1.4	10.1	25.7	15.1	38.3	25.2	64.0		
														60	4.1	12.0	30.5	18.0	45.7	30.0	76.2		
	FL5040SS	40	0.242"	GPM	2.68	3.14	3.52	4.00	5.60	7.80	8.76			7	0.5	10.1	25.7	15.1	38.4	25.2	64.0		
				LPM	10.14	11.89	13.32	15.14	21.20	29.53	33.16			20	1.4	12.0	30.5	18.0	45.7	30.0	76.2		
														60	4.1	13.1	33.3	19.6	49.8	32.7	83.1		
	FL5048SS	48	0.281"	GPM	3.06	3.56	3.96	4.80	6.81	9.58	11.73			7	0.5	10.1	25.7	15.1	38.4	25.2	64.0		
				LPM	11.28	13.48	15.00	18.17	25.78	39.26	44.40			20	1.4	12.0	30.5	18.0	45.7	30.0	76.2		
														60	4.1	13.1	33.3	19.6	49.8	32.7	83.1		
	FL5056SS	56	0.295"	GPM	3.32	4.18	4.67	5.60	7.89	11.22	13.74			7	0.5	11.0	28.0	16.5	42.0	27.5	69.9		
				LPM	12.57	15.82	17.68	21.20	29.87	42.47	52.01			20	1.4	12.0	30.5	18.0	45.7	30.0	76.2		
														60	4.1	13.1	33.3	19.6	49.8	32.7	83.1		
	FL5064SS	64	0.328"	GPM	3.50	4.50	5.15	6.40	9.13	12.70	15.81			7	0.5	11.0	28.0	16.5	42.0	27.5	69.9		
				LPM	13.25	17.03	19.49	24.23	34.56	48.07	59.85			20	1.4	12.0	30.5	18.0	45.7	30.0	76.2		
														60	4.1	13.1	33.3	19.6	49.8	32.7	83.1		
	FL5072SS	72	0.359"	GPM	4.08	5.00	6.17	7.20	10.17	14.40	17.64			7	0.5	11.0	28.0	16.5	42.0	27.5	69.9		
				LPM	15.44	18.93	23.36	27.25	38.50	54.51	66.77			20	1.4	12.0	30.5	18.0	45.7	30.0	76.2		
														60	4.1	13.1	33.3	19.6	49.8	32.7	83.1		

Liquid Atomizing Spray Nozzles

HollowStream™ Cone Nozzles – 1/4 NPT

Model: HL1001SS
Material: Type 303 Stainless Steel

Model: HL1002SS
Material: Type 303 Stainless Steel

Model: HL1003SS
Material: Type 303 Stainless Steel

Model: HL1005SS
Material: Type 303 Stainless Steel

Model: HL1008SS
Material: Type 303 Stainless Steel

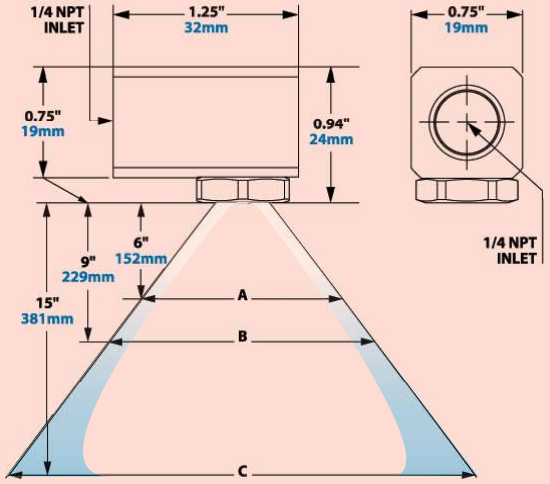
Model: HL1011SS
Material: Type 303 Stainless Steel

Model HL1001SS, HL1002SS, HL1003SS, HL1005SS, HL1008SS and HL1011SS

EXAIR's 1/4 NPT HollowStream Cone Nozzles produce a ring of liquid upon your target and are among the most common type of spray nozzles. Hollow cone spray nozzles generally use less liquid than full cone spray nozzles. These nozzles will be used when cooling, cleaning, washing, rinsing and dust suppression can be achieved with less liquid than a full cone nozzle. Their tangential flow design is vaneless which creates wide open internal features to resist clogging. They produce a uniform distribution in a hollow cone round pattern and medium to large droplets. The right-angle design is compact and operates at up to 250 PSI liquid pressure. HollowStream nozzles also work well with liquids containing particulate.

Dimensions and Spray Pattern

DOWNLOAD drawings at EXAIR.com



Compared to EXAIR's Air Atomizing Spray Nozzles the HollowStream will have higher liquid flow rates.

For maximum liquid conservation and spray control visit page 70.

See page 99 for How the FullStream and HollowStream Cone Nozzles Work.

HollowStream Cone Nozzles

Inlet Connection	Model	Capacity	Max Free Passage		Flow Rate GPM/LPM 3 psi	5 psi	7 psi	10 psi	20 psi	40 psi	60 psi
1/4 NPT	HL1001SS	1	0.052"	GPM	0.06	0.07	0.09	0.10	0.13	0.18	0.21
				LPM	0.23	0.26	0.34	0.38	0.49	0.68	0.79
	HL1002SS	2	0.086"	GPM	0.14	0.17	0.19	0.20	0.27	0.38	0.46
				LPM	0.53	0.64	0.72	0.76	1.02	1.44	1.74
	HL1003SS	3	0.109"	GPM	0.20	0.24	0.28	0.32	0.45	0.63	0.77
				LPM	0.76	0.91	1.06	1.21	1.70	2.38	2.91
	HL1005SS	5	0.120"	GPM	0.27	0.35	0.39	0.49	0.65	0.91	1.12
				LPM	1.02	1.32	1.47	1.85	2.46	3.44	4.23
	HL1008SS	8	0.166"	GPM	0.46	0.59	0.73	0.80	1.16	1.60	2.04
				LPM	1.74	2.23	2.76	3.02	4.38	6.05	7.71
	HL1011SS	11	0.180"	GPM	0.65	0.81	0.93	1.10	1.47	2.03	2.50
				LPM	2.46	3.06	3.52	4.16	5.56	7.67	9.45

Spray Angle

Inlet Pressure PSI	BAR	Width A in	A cm	B in	B cm	C in	C cm
7	0.5	4.8	12.3	6.1	15.5	7.8	19.8
20	1.4	7.3	18.5	9.2	23.3	11.7	29.7
60	4.1	12.1	30.8	15.3	38.8	19.5	49.5
7	0.5	6.1	15.5	8.6	21.7	11.2	28.4
20	1.4	9.2	23.3	12.8	32.6	16.8	42.6
60	4.1	15.3	38.8	21.4	54.4	28.0	71.1
7	0.5	6.8	17.2	10.4	26.5	13.3	33.9
20	1.4	10.2	25.9	15.6	39.7	20.0	50.8
60	4.1	17.0	43.1	26.1	66.2	33.3	84.6
7	0.5	8.4	21.3	9.7	24.7	14.3	36.3
20	1.4	12.6	32.0	14.6	37.0	21.5	54.5
60	4.1	21.0	53.4	24.3	61.7	35.8	90.8
7	0.5	7.1	18.0	7.8	19.8	10.1	25.6
20	1.4	10.6	26.9	11.7	29.7	15.1	38.4
60	4.1	17.7	44.9	19.5	49.5	25.2	63.9
7	0.5	9.5	24.2	12.0	30.5	14.8	37.6
20	1.4	14.3	36.4	18.0	45.7	22.2	56.5
60	4.1	23.9	60.6	30.0	76.2	37.0	94.1

NEW HollowStream™ Cone Nozzles – 3/8 NPT

Model: HL3005SS
Material: Type 303 Stainless Steel

Model: HL3008SS
Material: Type 303 Stainless Steel

Model: HL3010SS
Material: Type 303 Stainless Steel

Model: HL3015SS
Material: Type 303 Stainless Steel

Model: HL3020SS
Material: Type 303 Stainless Steel

Model: HL3025SS
Material: Type 303 Stainless Steel

Model: HL3030SS
Material: Type 303 Stainless Steel

Model HL3005SS, HL3008SS, HL3010SS, HL3015SS, HL3020SS, HL3025SS and HL3030SS

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Dimensions and Spray Pattern

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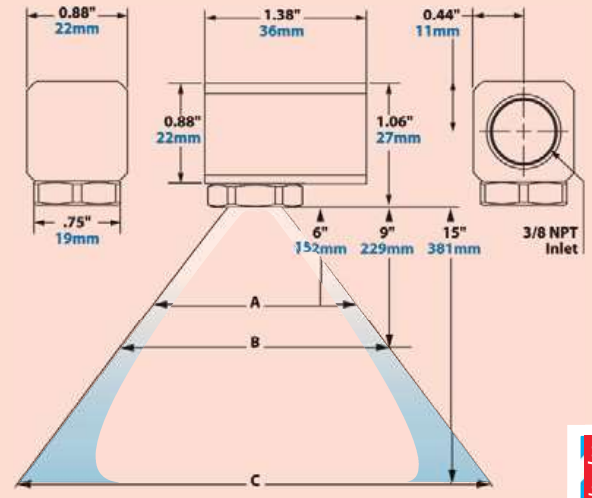

Compared to EXAIR's Air Atomizing Spray Nozzles the HollowStream will have higher liquid flow rates.

For maximum liquid conservation and spray control visit page 70.

See page 99 for
How the FullStream and HollowStream Cone Nozzles Work.

HollowStream Cone Nozzles

Inlet Connection	Model	Capacity	Max Free Passage		Flow Rate GPM/LPM 3 psi	5 psi	7 psi	10 psi	20 psi	30 psi	40 psi	60 psi
3/8 NPT	HL3005SS	5	0.111"	GPM	0.29	0.34	0.39	0.45	0.62	0.75	0.86	1.04
				LPM	1.11	1.30	1.48	1.71	2.35	2.83	3.25	3.95
	HL3008SS	8	0.159"	GPM	0.50	0.60	0.71	0.82	1.12	1.33	1.50	1.80
				LPM	1.88	2.28	2.68	3.09	4.25	5.04	5.68	6.80
	HL3010SS	10	0.172"	GPM	0.64	0.75	0.89	1.01	1.36	1.62	1.83	2.47
				LPM	2.42	2.84	3.36	3.81	5.16	6.13	6.93	9.35
	HL3015SS	15	0.166"	GPM	0.94	1.10	1.29	1.48	1.98	2.60	2.80	3.60
				LPM	3.54	4.16	4.88	5.60	7.48	9.84	10.60	13.63
	HL3020SS	20	0.203"	GPM	1.28	1.50	1.81	2.00	2.75	3.39	3.92	4.53
				LPM	4.86	5.69	6.86	7.57	10.41	12.84	14.83	17.13
	HL3025SS	25	0.219"	GPM	1.45	1.78	2.02	2.45	3.34	4.00	4.52	5.40
				LPM	5.49	6.75	7.63	9.27	12.65	15.14	17.10	20.44
	HL3030SS	30	0.281"	GPM	1.80	2.30	2.68	3.10	4.23	5.13	6.03	7.28
				LPM	6.81	8.71	10.13	11.73	15.99	19.40	22.81	27.54

Spray Angle

Inlet Pressure PSI/BAR		Width A in	A cm	B in	B cm	C in	C cm
7	0.5	10.1	25.6	15.1	38.4	25.2	63.9
20	1.4	11.0	27.9	16.5	41.9	27.5	69.8
60	4.1	11.8	30.0	17.7	44.9	29.5	74.9
7	0.5	7.5	19.0	11.2	28.6	18.7	47.6
20	1.4	8.4	21.3	12.6	32.0	21.0	53.4
60	4.1	10.1	25.6	15.1	38.4	25.2	63.9
7	0.5	8.4	21.3	12.6	32.0	21.0	53.4
20	1.4	9.5	24.2	14.3	36.4	23.9	60.6
60	4.1	10.4	26.5	15.6	39.7	26.1	66.2
7	0.5	11.4	28.9	17.1	43.4	28.5	72.3
20	1.4	13.1	33.3	19.6	49.9	32.7	83.2
60	4.1	13.8	35.1	20.7	52.6	34.5	87.7
7	0.5	11.4	28.9	17.1	43.4	28.5	72.3
20	1.4	12.0	30.5	18.0	45.7	30.0	76.2
60	4.1	13.1	33.3	19.6	49.9	32.7	83.2
7	0.5	10.1	25.6	15.1	38.4	25.2	63.9
20	1.4	11.0	27.9	16.5	41.9	27.5	69.8
60	4.1	12.0	30.5	18.0	45.7	30.0	76.2
7	0.5	8.2	20.9	12.4	31.4	20.6	52.4
20	1.4	8.7	22.1	13.1	33.2	21.8	55.4
60	4.1	10.1	25.6	15.1	38.4	25.2	63.9