

Air Atomizing Spray Nozzles



Siphon Fed Round Pattern - 1/8 NPT

Model SR8010SS, SR8020SS, SR8030SS, SR8040SS and SR8050SS

1/8 NPT siphon fed round pattern nozzles are great where no liquid pressure is available and a thin coating is needed at a specific area. Flow rate is adjustable via the adjusting valve. Siphon nozzles work best with a suction height of 36" (914mm) or less. Since these nozzles are siphon fed, the compressed airflow draws the liquid in and mixes it internally. Liquid flow is dependent both on the gravity or suction height and the airflow. Siphon fed round pattern nozzles provide the most liquid flow of any siphon fed nozzle.

Siphon or gravity fed for non-pressurized applications.

Model: SR8010SS

Material: Type 303 Stainless Steel



Model: SR8020SS

Material: Type 303 Stainless Steel



Model: SR8030SS

Material: Type 303 Stainless Steel



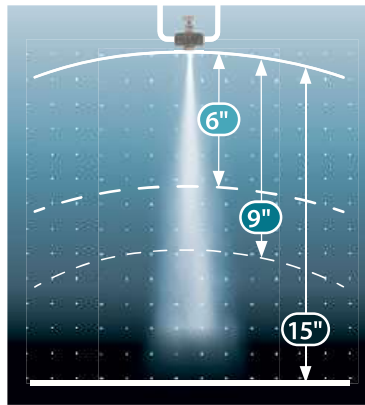
Model: SR8040SS

Material: Type 303 Stainless Steel



Model: SR8050SS

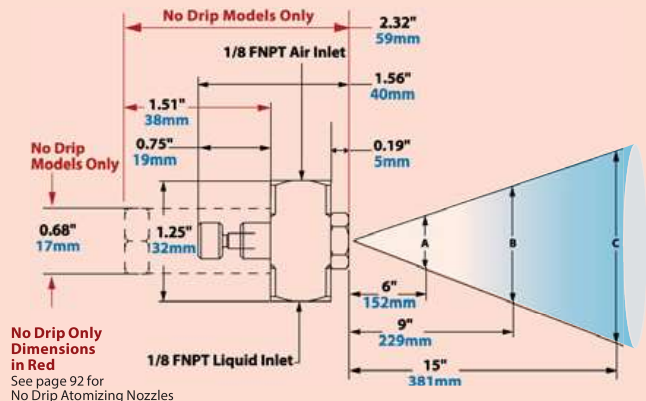
Material: Type 303 Stainless Steel



The amount of liquid applied by the Siphon Fed atomizing nozzles varies depending on valve or inlet pressures.

Dimensions and Airflow Pattern

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No Drip Only Dimensions in Red
 See page 92 for No Drip Atomizing Nozzles

For more information about droplet size and spray angle, see page 97.

Liquid Flow in GPH/LPH														Spray Dimensions at 8" (20cm) Siphon Height																
Model	Air				Gravity Head					Siphon Height								Air Pressure PSI/BAR	Width						Max. Depth feet/m					
	Pressure PSI/BAR	SCFM/SLPM	18"	46cm	12"	30cm	6"	15cm	4"	10cm	8"	20cm	12"	30cm	24"	61cm	36"		91cm	A in	A cm	B in	B cm	C in		C cm				
SR8010SS	10	0.7	0.48	13.6	0.35	1.3	0.33	1.2	0.27	1.0	0.21	0.8	0.21	0.8	0.17	0.7	—	—	—	—	10	0.7	1.5	4	2	5	3	8	1.5	0.5
	20	1.4	0.68	19.2	0.41	1.6	0.40	1.5	0.43	1.6	0.27	1.0	0.26	1.0	0.24	0.9	0.23	0.9	—	—	20	1.4	1.5	4	2	5	3	8	1.5	0.5
	40	2.8	1.35	38.3	0.49	1.9	0.48	1.8	0.46	1.7	0.35	1.3	0.32	1.2	0.30	1.1	0.26	1.0	0.23	0.9	40	2.8	1.5	4	2	5	3	8	2	0.6
	60	4.1	2.12	59.9	0.53	2.0	0.52	2.0	0.50	1.9	0.40	1.5	0.42	1.6	0.33	1.3	0.28	1.1	0.25	0.9	60	4.1	1.5	4	2	5	3	8	3	0.9
SR8020SS	10	0.7	0.59	16.7	0.61	2.3	0.53	2.0	0.48	1.8	0.35	1.3	0.33	1.2	0.24	0.9	—	—	—	—	10	0.7	1.5	4	2	5	3	8	1.5	0.5
	20	1.4	1.16	32.8	0.73	2.8	0.7	2.6	0.66	2.5	0.58	2.2	0.55	2.1	0.4	1.5	0.35	1.3	—	—	20	1.4	1.5	4	2	5	3	8	2	0.6
	40	2.8	1.9	53.8	0.88	3.3	0.8	3.0	0.76	2.9	0.66	2.5	0.58	2.2	0.53	2.0	0.45	1.7	0.38	1.4	40	2.8	1.5	4	2	5	3	8	3	0.9
	60	4.1	2.62	74.2	0.96	3.6	0.92	3.5	0.82	3.1	0.75	2.8	0.68	2.6	0.6	2.3	0.52	2.0	0.46	1.7	60	4.1	1.5	4	2	5	3	8	4	1.2
SR8030SS	10	0.7	0.55	15.6	1.31	5.0	1.22	4.6	0.96	3.6	0.76	2.9	0.61	2.3	0.53	2.0	—	—	—	—	10	0.7	1.5	4	2	5	3	8	1.5	0.5
	20	1.4	1.06	30.0	1.66	6.3	1.59	6.0	1.23	4.7	1.07	4.1	1.13	4.3	0.92	3.5	0.76	2.9	—	—	20	1.4	1.5	4	2	5	3	8	3	0.9
	40	2.8	1.86	52.7	1.89	7.2	1.8	6.8	1.53	5.8	1.34	5.1	1.49	5.6	1.19	4.5	1.05	4.0	0.82	3.1	40	2.8	1.5	4	2	5	3	8	4	1.2
	60	4.1	2.45	69.4	1.98	7.5	1.86	7.0	1.58	6.0	1.46	5.5	1.74	6.6	1.34	5.1	1.29	4.9	1.04	3.9	60	4.1	1.5	4	2	5	3	8	5	1.5
SR8040SS	10	0.7	1.40	39.5	2.65	10.0	2.43	9.2	2.12	8.0	1.22	4.6	1.00	3.8	—	—	—	—	—	—	10	0.7	1.5	4	2	5	3	8	3	0.9
	20	1.4	2.03	57.5	3.01	11.4	2.86	10.8	2.53	9.6	1.78	6.7	1.57	6.0	1.37	5.2	—	—	—	—	20	1.4	1.5	4	2	5	3	8	4	1.2
	40	2.8	3.17	89.8	3.58	13.6	3.55	13.4	3.29	12.0	2.54	9.6	2.48	9.4	2.18	8.2	1.98	7.5	1.22	4.6	40	2.8	1.5	4	2	5	3	8	4	1.2
	60	4.1	4.42	125	4.09	15.5	3.99	15.1	3.75	14.0	3.03	11.5	2.98	11.3	2.85	11.0	2.59	9.8	2.11	8.0	60	4.1	1.5	4	2	5	3	8	5	1.5
SR8050SS	10	0.7	1.84	52.1	1.84	7.0	4.16	15.7	3.83	14.0	3.28	12.4	3.1	11.7	2.45	9.3	0.74	2.8	—	—	10	0.7	1.5	4	2	5	3	8	5	1.5
	20	1.4	2.93	82.9	2.93	11.1	5.53	20.9	3.7	14.0	4.12	15.6	3.51	13.3	3.98	15.0	3.35	12.7	1.8	6.8	20	1.4	1.5	4	2	5	3	8	7	2.1
	40	2.8	4.02	114	4.02	15.2	5.83	22.1	4.39	17.0	4.6	17.4	4.31	16.3	5.08	19.0	4.16	15.7	2.93	11.1	40	2.8	1.5	4	2	5	3	8	9	2.7
	60	4.1	5.12	145	5.12	19.4	5.92	22.4	5.56	21.0	5.5	20.8	5.09	19.3	5.33	20.0	5.18	19.6	3.84	14.5	60	4.1	1.5	4	2	5	3	8	10	3.0



Air Atomizing Spray Nozzles

Siphon Fed Flat Fan Pattern - 1/8 NPT



Model: SF8010SS
Material: Type 303 Stainless Steel



Model: SF8020SS
Material: Type 303 Stainless Steel

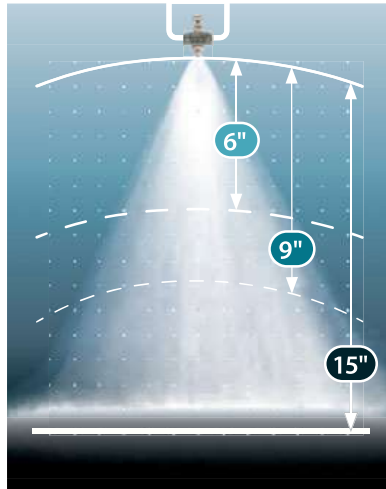


Model: SF8030SS
Material: Type 303 Stainless Steel

Model SF8010SS, SF8020SS and SF8030SS

1/8 NPT siphon fed flat fan pattern nozzles are great where no liquid pressure is available and a thin coating is needed over a wide band. Flow rate is adjustable via the adjusting valve. Siphon nozzles work best with a suction height of 36" (914mm) or less. Since these nozzles are siphon fed, the compressed airflow draws the liquid in and mixes it internally. Liquid flow is dependent both on the gravity or suction height and the airflow. Siphon fed flat fan pattern nozzles are the best choice where liquid is needed over a broad band such as a moving assembly line.

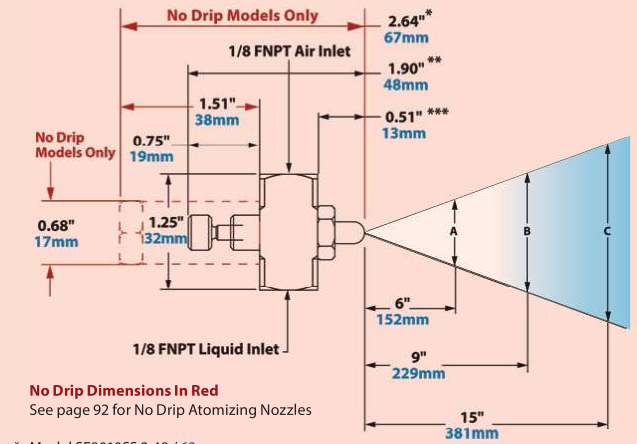
Siphon or gravity fed for non-pressurized applications.



1/8 NPT Siphon Fed Flat Fan atomizing nozzles apply a light coating of liquid over a wide band.

Dimensions and Airflow Pattern

DOWNLOAD drawings at EXAIR.com



No Drip Dimensions In Red
See page 92 for No Drip Atomizing Nozzles

* Model SF8010SS 2.48 / 63mm
** Model SF8010SS 1.74 / 44mm
*** Model SF8010SS 0.36 / 9mm

For more information about droplet size and spray angle, see page 97.

Spray Nozzles

Model	Liquid Flow in GPH/LPH																		Spray Dimensions at 8" (20cm) Siphon Height											
	Air				Gravity Head					Siphon Height									Air Pressure PSI/BAR	Width				Max. Depth feet/m						
	Pressure PSI/BAR	SCFM/SLPM	18"	46cm	12"	30cm	6"	15cm	4"	10cm	8"	20cm	12"	30cm	24"	61cm	36"	91cm		A in	B in	C in								
SF8010SS	10	0.7	1.07	30.3	0.32	1.2	0.30	1.1	0.25	1.0	0.24	0.9	0.23	0.9	0.18	0.7	0.17	0.7	0.14	0.5	10	0.7	7	18	9	23	12	30	2	0.6
	20	1.4	1.31	37.1	0.36	1.4	0.35	1.3	0.31	1.2	0.31	1.2	0.30	1.1	0.25	0.9	0.23	0.9	0.19	0.7	20	1.4	7	18	9	23	12	30	2	0.6
	60	4.1	1.69	47.9	0.43	1.6	0.40	1.5	0.35	1.3	0.34	1.3	0.32	1.2	0.27	1.0	0.26	1.0	0.24	0.9	30	2.1	7	18	9	23	12	30	2	0.6
SF8020SS	20	1.4	1.81	51.3	1.52	5.8	1.33	5.0	1.10	4.2	0.80	0.9	0.76	2.9	0.71	2.7	0.50	1.9	0.36	1.4	20	1.4	8	20	9	23	12	30	2	0.6
	30	2.1	2.30	65.1	1.18	4.5	1.16	4.4	1.06	4.0	0.85	3.2	0.79	3.0	0.77	2.9	0.52	2.0	0.44	1.7	30	2.1	9	23	11	28	13	33	2	0.6
	40	2.8	2.83	80.2	1.01	3.8	0.90	3.4	0.83	3.1	0.70	2.6	0.67	2.5	0.63	2.4	0.42	1.6	0.27	1.0	40	2.8	9	23	10	25	13	33	2	0.6
	50	3.4	3.34	94.6	0.85	3.2	0.71	2.7	0.59	2.2	0.48	1.8	0.41	1.6	0.51	1.9	0.32	1.2	—	—	50	3.4	7	18	8	20	9	23	3	0.9
SF8030SS	20	1.4	1.78	50.3	1.45	5.5	1.40	5.3	1.38	5.2	0.94	3.6	0.90	3.4	0.77	2.9	0.72	2.7	0.61	2.3	20	1.4	7	18	8	20	9.5	24	2	0.6
	30	2.1	2.24	63.5	1.16	4.4	1.12	4.2	1.10	4.2	1.00	3.8	0.98	3.7	0.86	3.2	0.81	3.1	0.69	2.6	30	2.1	7	18	8	20	9.5	24	2	0.6
	40	2.8	2.75	77.8	0.98	3.7	0.96	3.6	0.85	3.2	0.90	3.4	0.87	3.3	0.79	3.0	0.66	2.5	0.52	2.0	40	2.8	7	18	8	20	9.5	24	3	0.9
	50	3.4	3.00	85.0	0.83	3.2	0.79	3.0	0.70	2.6	0.75	2.8	0.69	2.6	0.66	2.5	0.51	1.9	0.44	1.7	50	3.4	7	18	8	20	9.5	24	3	0.9



Air Atomizing Spray Nozzles



Siphon Fed Flat Fan Pattern - 1/4 NPT



Model: SF1010SS
Material: Type 303 Stainless Steel

Model SF1010SS, SF1020SS and SF1030SS

1/4 NPT siphon fed flat fan pattern nozzles are great where no liquid pressure is available and a thin coating is needed over a wide band. Flow rate is adjustable via the adjusting valve. Siphon nozzles work best with a suction height of 36" (914mm) or less. Since these nozzles are siphon fed, the compressed airflow draws the liquid in and mixes it internally. Liquid flow is dependent both on the gravity or suction height and the airflow. Siphon fed flat fan pattern nozzles are the best choice where liquid is needed over a broad band such as a moving assembly line.



Model: SF1020SS
Material: Type 303 Stainless Steel

Siphon or gravity fed for non-pressurized applications.



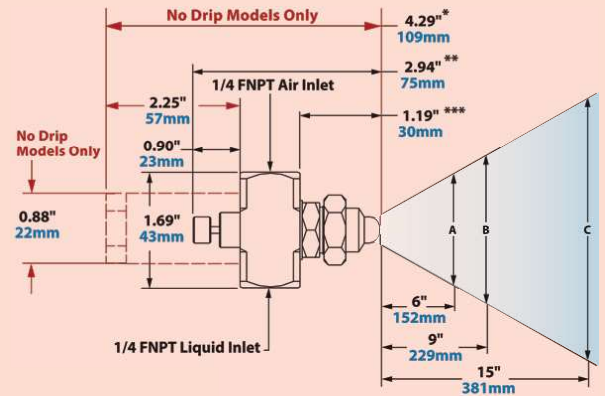
Model: SF1030SS
Material: Type 303 Stainless Steel



A Model SF1020SS is used to apply a light coating of oil to prevent sockets from rusting prior to a packaging operation.

Dimensions and Airflow Pattern

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No Drip Only Dimensions in Red
See page 92 for No Drip Atomizing Nozzles

*Model SF2010SS: 4.15" / 105mm
**Model SF1010SS: 2.80" / 71mm
***Model SF1010SS: 1.05" / 27mm

For more information about droplet size and spray angle, see page 97.

Spray Nozzles

Model	Liquid Flow in GPH/LPH																Spray Dimensions at 8" (20cm) Siphon Height													
	Air				Gravity Head					Siphon Height							Air Pressure PSI/BAR	Width			Max. Depth feet/m									
	Pressure PSI/BAR	SCFM/SLPM	18"	46cm	12"	30cm	6"	15cm	4"	10cm	8"	20cm	12"	30cm	24"	61cm		36"	91cm	A in/cm		B in/cm	C in/cm							
SF1010SS	10	0.7	0.9	25.5	0.4	1.5	0.3	1.1	0.3	1.1	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.1	0.4	10	0.7	9	23	11	28	13	33	5	1.5
	20	1.4	1.3	36.8	0.4	1.5	0.3	1.1	0.3	1.1	0.3	1.1	0.3	1.1	0.3	1.1	0.2	0.8	0.2	0.8	20	1.4	10	25	12	30	14	36	6	1.8
	30	2.1	1.7	48.1	0.3	1.1	0.3	1.1	0.3	1.1	0.3	1.1	0.3	1.1	---	---	---	---	---	---	---	30	2.1	11	28	13	33	15	38	7
SF1020SS	20	1.4	2.3	65.1	1.2	4.5	1.1	4.2	1.0	3.8	0.9	3.4	0.8	3.0	0.8	3.0	0.6	2.3	0.5	1.9	20	1.4	10	25	14	36	19	48	6	1.8
	30	2.1	2.9	82.1	1.1	4.2	1.1	4.2	1.0	3.8	0.8	3.0	0.8	3.0	0.8	3.0	0.6	2.3	0.5	1.9	30	2.1	11	28	15	38	21	53	7	2.1
	40	2.8	3.5	99.1	1.0	3.8	0.9	3.4	0.8	3.0	0.7	2.6	0.7	2.6	0.7	2.6	0.5	1.9	0.4	1.5	40	2.8	13	33	16	41	23	58	6	1.8
	50	3.4	4.3	122	0.8	3.0	0.7	2.6	0.5	1.9	0.5	1.9	0.4	1.5	0.3	1.1	---	---	---	---	---	50	3.4	14	36	18	46	25	64	6
SF1030SS	20	1.4	2.2	62.3	1.8	6.8	1.6	6.1	1.5	5.7	1.4	5.3	1.4	5.3	1.3	4.9	1.1	4.2	1.0	3.8	20	1.4	9	23	11	28	15	38	8	2.4
	30	2.1	2.8	79.2	1.9	7.2	1.8	6.8	1.8	6.8	1.7	6.4	1.7	6.4	1.6	6.1	1.4	5.3	1.2	4.5	30	2.1	10	25	13	33	17	43	9	2.7
	40	2.8	3.3	93.4	1.8	6.8	1.8	6.8	1.7	6.4	1.6	6.1	1.6	6.1	1.5	5.7	1.3	4.9	1.2	4.5	40	2.8	11	28	14	36	17	43	10	3.0
	50	3.4	4.0	113	1.6	6.1	1.5	5.7	1.4	5.3	1.4	5.3	1.3	4.9	1.3	4.9	1.1	4.2	1.0	3.8	50	3.4	11	28	14	36	18	46	11	3.4

Air Atomizing Spray Nozzles



Siphon Fed Round Pattern - 1/2 NPT



Model: SR5010SS
Material: Type 303 Stainless Steel

Model SR5010SS
1/2 NPT siphon fed round pattern nozzles are great where no liquid pressure is available and a heavy coating is needed at a specific area. Flow rate of these larger atomizing nozzles is adjustable via the adjusting valve. Siphon nozzles work best with a suction height of 24" or less. Since these nozzles are siphon fed, the compressed airflow draws the liquid in and mixes it internally. Liquid flow is dependent both on the gravity or suction height and the airflow. 1/2 NPT siphon fed round pattern nozzles provide the most liquid flow of any siphon fed nozzle.

Siphon or gravity fed for non-pressurized applications.



Use a siphon fed nozzle when no liquid pressure is available.

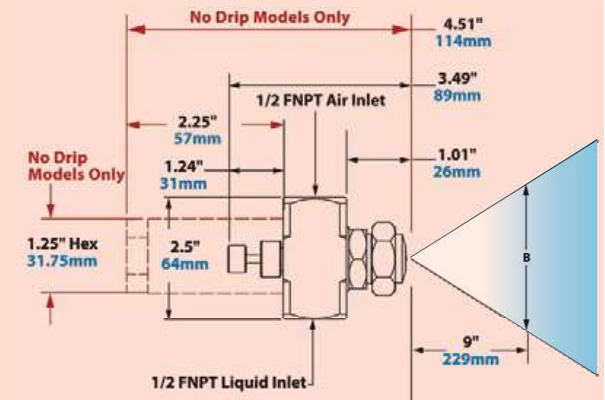
Spray Nozzles

Air and Liquid Caps are Interchangeable!



Changing liquid volume and/or liquid air pattern can be done in the field. EXAIR's vast selection of caps are all interchangeable!

Dimensions and Airflow Pattern



No Drip Only Dimensions in Red
See page 92 for No Drip Atomizing Nozzles

For more information about droplet size and spray angle, see page 97.

Model	Liquid Flow in GPH/LPH														Spray Dimensions at 8" (20cm) Siphon Height							
	Air				Gravity Head					Siphon Height					Air		Width		Max. Depth			
	Pressure PSI/BAR	SCFM/SLPM	18"	46cm	12"	30cm	6"	15cm	4"	10cm	8"	20cm	12"	30cm	24"	61cm	Pressure PSI/BAR	B	in	cm	feet	m
SR5010SS	20	1.4	19.3	547	---	---	---	---	---	---	---	---	---	---	---	---	20	1.4	6	15	22	6.7
	30	2.1	25.2	714	---	---	---	---	---	---	---	---	---	---	---	---	30	2.1			25	7.6
	40	2.8	32.8	929	---	---	56.8	215	41	155	31.5	119	28.4	107	19.6	74	---	---			28	8.5
	50	3.4	36.7	1039	61	231	57.4	217	42.8	162	32.1	121	30.2	114	21.8	83	---	---			29	8.8
	60	4.1	42.2	1195	59.1	224	57.4	217	43.8	166	33.1	125	33	125	25.7	97	9.9	37			31	9.4
	70	4.8	47.7	1351	66	250	58.6	222	43.8	166	35.3	134	35.3	134	29.7	112	12.5	47			35	10.7
	80	5.5	52.9	1498	68.3	259	59.1	224	44.5	168	44.6	169	36.9	140	31.5	119	17.5	66			37	11.3

Air Atomizing Spray Nozzles



Droplet Size

One of the primary reasons atomizing spray nozzles are used is because of their fine droplet size. Benefits of fine droplet size include even coating and liquid conservation. For reference, a large raindrop is around 6,000 microns (0.236") in diameter. Standard liquid nozzles produce droplet sizes ranging from 4,000 microns (0.157") down to 300 microns (0.012") in diameter. EXAIR's Atomizing Nozzles produce minuscule droplet sizes in the range of 100 microns (0.004") to 20 microns (0.0008")!

Droplet size can be adjusted by varying either the air or liquid pressure. An increase in air pressure or decrease in liquid pressure will generally produce a smaller droplet size. Below is a chart showing various models of atomizing air nozzles and their droplet sizes at selected pressures.

Droplet Size			
Model	Liquid Pressure	Air Pressure	Droplet Size μm^*
AN1020SS	20 PSI	40 PSI	71
	40 PSI	65 PSI	83
ER1020SS	5 PSI	40 PSI	39
	20 PSI	40 PSI	57
SR1020SS	4" Siphon Height	20 PSI	25
	4" Siphon Height	40 PSI	22

* Volume Median Diameter $D_v(50.0)$ of liquid droplets.
1 μm = 1 micron = 0.00004". All tests performed with water.

Spray Angle

The Spray Angle is the trigonometric angle created by the width of the spray pattern and the distance at which it is measured. This angle can vary greatly within a given family of atomizing nozzles depending on flow rates and pressures, but will generally fall into the ranges below:

Spray Angle		
Family	Minimum Angle	Maximum Angle
Internal Mix Narrow Angle Round Pattern - AN1010SS, AN2010SS, etc.	20°	45°
Internal Mix Wide Angle Round Pattern - AW1010SS, AW2010SS, etc.	50°	90°
Internal Mix Flat Fan Pattern - AF1010SS, AF2010SS, etc.	50°	120°
Internal Mix Deflected Flat Fan Pattern - AD1010SS, AD2010SS, etc.	67°	90°
External Mix Round Pattern - ER1010SS, ER2010SS, etc.	25°	60°
External Mix Narrow Angle Flat Fan Pattern - EF1010SS, EF2010SS, etc.	35°	70°
External Mix Wide Angle Flat Fan Pattern - EB1010SS, EB2010SS, etc.	50°	105°
Siphon Fed Round Pattern - SR1010SS, SR2010SS, etc.	20°	50°
Siphon Fed Flat Fan Pattern - SF1010SS, SF2010SS, etc.	50°	100°