

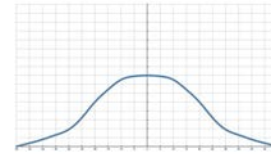
## H Single piece flat fan nozzle



【 Top view of nozzle spray pattern 】



【 Flow distribution 】



- PP material:
- Recommended working pressure: 3.0 kgf/cm<sup>2</sup>
  - Flowrate tolerance: ± 10% @ 3.0 ± 0.1 kgf/cm<sup>2</sup>
  - Angle tolerance: ± 10° @ 3.0 ± 0.1 kgf/cm<sup>2</sup>
  - Jet angle tolerance: 3°
- Other materials:
- Recommended working pressure: 3.0 kgf/cm<sup>2</sup>
  - Flowrate tolerance: ± 5% @ 3.0 ± 0.1 kgf/cm<sup>2</sup>
  - Angle tolerance: ± 5° @ 3.0 ± 0.1 kgf/cm<sup>2</sup>
  - Jet angle tolerance: 3°

### Features

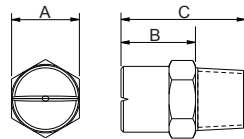
- The spraying type is fan type, and the spray shape is single line and two sides are tapered (tapered edge), which presents a bell curve shape flow field distribution with weaker ends compared to the middle.
- Single-piece design, if there is frequent maintenance or replacement requirements, it is recommended to use quick install with multiple pieces nozzles.
- Fan nozzle angle can be 0°~110°, 0° spray angle spray type

is straight column, spray Fog shape is a single point, providing the best impact in all nozzle types.

- When the fan nozzle is used in high pressure environment, choose HSS material (hardened stainless steel Steel), can operate under 200Kgf/cm<sup>2</sup> pressure

### Applications

- Cleaning: Vehicles, Containers, Filters, Dust, Gravel, Metals, Metal Parts, Machinery, Steel Plates, Various Containers, High Pressure Cleaning, Wet Processing Display Pane, machine tool cleaning, etc.
- Cooling: gas, tank, machinery, metal, roof etc.
- Dispersion: Humidifying, Chemicals (etching solution, lubricants, insect repellent, etc.), water screens (fire, dust, deodorization etc.).



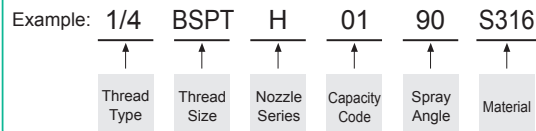
Appearance dimensions may vary depending on model, material. Please ask for details.

Material	Serie	Unit (mm)			Thread Type	Weight (g)				
		A	B	C		S303	S316	Brass	HSS	PP
Metal	1/8H	12	12	19	1/8M	10.8	10.8	12.5	10.8	-
	1/4H	14	15	26	1/4M	11.5	11.5	14	11.5	-
	3/8H	18	15	30	3/8M	39	44.5	48	44.5	-
Plastic	1/8H	11.8	10.3	19	1/8M	-	-	-	-	1.5
	1/4H	13.7	13.7	25	1/4M	-	-	-	-	2.0
	3/8H	18	18	30	3/8M	-	-	-	-	8.0

### Material

- Metal: Stainless 303, Stainless 316, BRASS, HSS
- Plastic: PP

#### How to place an order for LORRIC nozzles?



※ Standard Pressure: Column in red.  
 ※ This product for spray angle 0°, 15°, 25°, 40°, 50°, 100° and 110° is able to be made to order.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure										Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm <sup>2</sup>	1.0 kgf/cm <sup>2</sup>	2.0 kgf/cm <sup>2</sup>	3.0 kgf/cm <sup>2</sup>	4.0 kgf/cm <sup>2</sup>	6.0 kgf/cm <sup>2</sup>	8.0 kgf/cm <sup>2</sup>	10.0 kgf/cm <sup>2</sup>	15.0 kgf/cm <sup>2</sup>				
0°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-	
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-	
35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-		
40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-		
50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-		
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-		

※ For MPa / bar / psi units, please refer to LORRIC.com.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure									Average particle size (µm)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm <sup>2</sup>	1.0 kgf/cm <sup>2</sup>	2.0 kgf/cm <sup>2</sup>	3.0 kgf/cm <sup>2</sup>	4.0 kgf/cm <sup>2</sup>	6.0 kgf/cm <sup>2</sup>	8.0 kgf/cm <sup>2</sup>	10.0 kgf/cm <sup>2</sup>	15.0 kgf/cm <sup>2</sup>			
15°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-	
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-	
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-	
25°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-	
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-	
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-	
40°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-	
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-	
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-	

※ For MPa / bar / psi units, please refer to LORRIC.com.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure										Average particle size (um)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm <sup>2</sup>	1.0 kgf/cm <sup>2</sup>	2.0 kgf/cm <sup>2</sup>	3.0 kgf/cm <sup>2</sup>	4.0 kgf/cm <sup>2</sup>	6.0 kgf/cm <sup>2</sup>	8.0 kgf/cm <sup>2</sup>	10.0 kgf/cm <sup>2</sup>	15.0 kgf/cm <sup>2</sup>				
50°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-	
	25	V	V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-	
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-	
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-	
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-	
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-		
65°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	140	0.2	200	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.4	150	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.6	100	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.7	100	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.8	50	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.9	50	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	230	0.9	50	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	1.0	-	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	1.0	-	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.1	-	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.1	-	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.2	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	370	1.6	-	
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	2.0	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.3	-	
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.4	-	
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.5	-	
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-	
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	3.1	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.3	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	630	3.9	-		
80°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	135	0.2	200	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.6	100	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	220	0.7	50	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	0.7	50	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.9	50	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.9	50	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	1.0	-	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	1.0	-	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.1	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.3	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.4	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	340	1.6	-	
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.9	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	2.1	-	
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.3	-	
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.4	-	
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.8	-	
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	3.1	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	600	3.7	-		

※ For MPa / bar / psi units, please refer to LORRIC.com.

Spray Angle	Capacity Code	Thread Size			Capacity at Pressure										Average particle size (µm)	Min. Free Passage (mm)	Filter mesh
		1/8	1/4	3/8	0.5 kgf/cm <sup>2</sup>	1.0 kgf/cm <sup>2</sup>	2.0 kgf/cm <sup>2</sup>	3.0 kgf/cm <sup>2</sup>	4.0 kgf/cm <sup>2</sup>	6.0 kgf/cm <sup>2</sup>	8.0 kgf/cm <sup>2</sup>	10.0 kgf/cm <sup>2</sup>	15.0 kgf/cm <sup>2</sup>				
90°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	130	0.2	200	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	0.3	150	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	0.4	150	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	0.4	150	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	0.5	100	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	0.5	100	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	210	0.5	100	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	0.6	100	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	0.8	50	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	330	0.8	50	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	0.8	50	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	1.0	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	1.1	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	1.2	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	1.4	-	
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	1.6	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	1.8	-	
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	2.0	-	
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	2.1	-	
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	2.3	-	
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	2.5	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	2.7	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	570	3.3	-		
100°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-	
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-	
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-	
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-	
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-	
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-		
110°	1	V	V		0.16	0.23	0.32	0.39	0.45	0.55	0.64	0.71	0.87	-	-	-	
	2	V	V		0.32	0.45	0.64	0.78	0.90	1.11	1.28	1.43	1.75	-	-	-	
	2.5	V	V		0.40	0.56	0.80	0.98	1.13	1.38	1.60	1.78	2.19	-	-	-	
	3	V	V		0.48	0.68	0.96	1.17	1.35	1.66	1.92	2.14	2.62	-	-	-	
	4	V	V		0.64	0.90	1.28	1.56	1.81	2.21	2.55	2.86	3.50	-	-	-	
	5	V	V		0.80	1.13	1.60	1.96	2.26	2.76	3.19	3.57	4.37	-	-	-	
	6	V	V		0.96	1.35	1.92	2.35	2.71	3.32	3.83	4.28	5.25	-	-	-	
	7	V	V		1.12	1.58	2.23	2.74	3.16	3.87	4.47	5.00	6.12	-	-	-	
	7.5	V	V		1.20	1.69	2.39	2.93	3.39	4.15	4.79	5.35	6.56	-	-	-	
	8	V	V		1.28	1.81	2.55	3.13	3.61	4.42	5.11	5.71	6.99	-	-	-	
	9	V	V		1.44	2.03	2.87	3.52	4.06	4.98	5.75	6.42	7.87	-	-	-	
	10	V	V		1.60	2.26	3.19	3.91	4.51	5.53	6.39	7.14	8.74	-	-	-	
	12.5	V	V		2.00	2.82	3.99	4.89	5.64	6.91	7.98	8.92	10.93	-	-	-	
	15	V	V		2.39	3.39	4.79	5.87	6.77	8.29	9.58	10.71	13.11	-	-	-	
	20	V	V		3.19	4.51	6.39	7.82	9.03	11.06	12.77	14.28	17.49	-	-	-	
	25		V		3.99	5.64	7.98	9.78	11.29	13.82	15.96	17.85	21.86	-	-	-	
	30		V	V	4.79	6.77	9.58	11.73	13.54	16.59	19.16	21.42	26.23	-	-	-	
	35		V	V	5.59	7.90	11.17	13.69	15.80	19.35	22.35	24.99	30.60	-	-	-	
	40		V	V	6.39	9.03	12.77	15.64	18.06	22.12	25.54	28.55	34.97	-	-	-	
	50		V	V	7.98	11.29	15.96	19.55	22.57	27.65	31.93	35.69	43.72	-	-	-	
60			V	9.58	13.54	19.16	23.46	27.09	33.18	38.31	42.83	52.46	-	-	-		
80			V	12.77	18.06	25.54	31.38	36.12	44.24	51.08	57.11	69.94	-	-	-		
100			V	15.96	22.57	31.93	39.10	45.15	55.30	63.85	71.39	87.43	-	-	-		

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