FINE SPRAY NOZZLES

GAS COOLING · LIGHT MISTING
HUMIDIFYING · FOGGING
DUST CONTROL · MOISTENING
EVAPORATIVE COOLING
FIRE SUPPRESSION · AERATING
CHEMICAL PROCESSING

FULL RANGE OF HYDRAULIC ATOMIZING NOZZLES — SMALL DROPS WITHOUT COMPRESSED AIR

Styles:
- Conventional

Spray patterns:
- Standard
- Narrow
- Wide angle

Spray angles: 30° to 165°

Flow rate range: 49.2 to 8,160 gph (186 to 30,948 lph)

Operating pressure range: up to 1000 psi (69 bar)

Connections:
- 1/4" to 1-1/2" pipe sizes
- Female and male NPT and BSPT

Materials:
- Brass
- 303 stainless steel
- 316 stainless steel
- Polyvinyl chloride
- Other specialty materials available

See Trademark Registration and Ownership, page i-1.

OPTIMIZE THE PERFORMANCE OF FINE SPRAY NOZZLES:

Use a **high-pressure strainer** to protect fine spray nozzles from contaminants. Maximum operating pressure of 2000 psi at 150°F (138 bar at 66°C) and 5000 psi at 150°F (345 bar at 66°C).
See page F5

Regulate liquid pressure from 5 to 125 psi (0.3 to 8.5 bar) with our durable diaphragm-type non-relieving **liquid regulators**. Choose from brass, brass-plated zinc or stainless steel.
See page F36

CV check valves minimize pressure drop and ensure positive drip-free shut off. Choose from a wide range of inlet and outlet options and opening pressure of 5, 10 or 20 psi (0.35, 0.7 or 1.5 bar).
See page F26

FINE SPRAY NOZZLES

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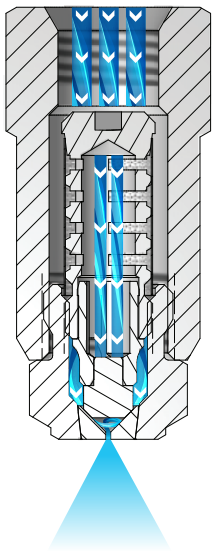
HYDRAULIC ATOMIZING NOZZLES

S STANDARD ANGLE SPRAY | W WIDE ANGLE SPRAY

OVERVIEW: HYDRAULIC ATOMIZING

- Finely atomized, hollow cone spray without compressed air
- Very small drops often achieving misting performance
- Ideal for use in dust control and humidification applications
- Wall-mount options for installation on room walls, vessel bulkheads or pipeline
- Orifice inserts, cores and strainers are easily removed for inspection or cleaning
- Most models can be supplied with an internal strainer
- Spray angles: Standard – 43° to 94°, Wide – 112° to 120°
- Uniform spray distribution from .82 to 130 gph (3.1 to 492 lph)
- Operating pressures from 20 to 1000 psi (1.5 to 69 bar)



Hydraulic Atomizing Nozzles

The liquid passes through slots in the core component. The slots make the liquid spin in a circle at a very high speed. The energy from the spinning action causes the liquid to break up into very small droplets and form a hollow cone pattern as it exits the orifice.

HYDRAULIC ATOMIZING OPTIONS

S W

LN
1/4" female conn.
Integral strainer

S W

LNN
1/4" male conn.
Integral strainer

S

LND
1/4" female conn. with 1/2" male wall-mounting threads
Wall-mount
Integral strainer

S

LNND
1/4" male conn. with 1/2" male wall-mounting threads
Wall-mount
Integral strainer

S W

N
1/4" female conn.

S W

NN
1/4" male conn.

S

M
1/4" male conn.
Two-piece design

RELATIVE DROP SIZE IN MICRONS

10 to 100	100 to 500	500 to 1000	1000 to 5000

Drop size will vary based on flow rate and pressure.

ORDERING INFORMATION

HYDRAULIC ATOMIZING LN, LND, N AND M

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size

Example: **1/4** **LN** – **SS** **8**

BSPT connections require the addition of a "B" prior to the inlet connection.
To order M with strainer, use ML as Nozzle Type.

HYDRAULIC ATOMIZING LN AND N

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size

Example: **1/4** **LN** – **SS** **8W**

BSPT connections require the addition of a "B" prior to the inlet connection.

QUICK REFERENCE GUIDE

Model	Connection/Type	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
LN	F	1/4	Brass, 303 stainless steel (SS), 316 stainless steel (316SS)	E6	E7
LNN	M	1/4			
LND	F, Wall-mount	1/4	Brass, 303 stainless steel (SS)		
LNND	M, Wall-mount	1/4			
N	F	1/4	Brass, 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)		
NN	M	1/4	Brass, 303 stainless steel (SS), 316 stainless steel (316SS)		
M	M	1/4	Brass, 303 stainless steel (SS), 316 stainless steel (316SS), Polyvinyl chloride (PVC)		
LN-W	F	1/4	Brass, 303 stainless steel (SS), 316 stainless steel (316SS)	E7	
LNN-W	M	1/4			
N-W	F	1/4			
NN-W	M	1/4			

F = female thread; M = male thread. There is no material code for brass. Leave material code blank when ordering. Other materials available upon request.
For more dimensions and sizes, contact your sales engineer.

S PERFORMANCE DATA: STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type							Capacity Size	Orifice Dia. Nom. (mm)	Core No.	Flow Rate Capacity (liters per hour)									Spray Angle (°)		
	LN	LNN	LND	LNND	N	NN	M				2 bar	3 bar	4 bar	7 bar	15 bar	20 bar	35 bar	45 bar	80 bar	3 bar	6 bar	20 bar
1/4	●	●						.30	.41	106	–	–	–	–	–	3.1	4.0	4.6	6.1	–	–	51
	●	●						.40	.41	108	–	–	–	–	–	4.1	5.4	6.1	8.2	–	–	58
	●							.50	.41	109	–	–	–	–	4.4	5.1	6.7	7.6	10.2	–	–	63
	●	●	●	●	●	●	●	.60	.41	206	–	–	–	3.6	5.3	6.1	8.1	9.2	12.2	–	35	65
	●	●	●	●	●	●	●	1	.51	210	–	3.9	4.6	6.0	8.8	10.2	13.5	15.3	20	45	62	72
	●	●	●	●	●	●	●	1.5	.51	216	4.8	5.9	6.8	9.0	13.2	15.3	20	23	31	65	70	72
	●	●	●	●	●	●	●	2	.71	216	6.4	7.9	9.1	12.1	17.7	20	27	31	41	70	75	77
	●	●	●	●	●	●	●	3	.71	220	9.7	11.8	13.7	18.1	26	31	40	46	61	65	70	73
	●	●	●	●	●	●	●	4	1.1	220	12.9	15.8	18.2	24	35	41	54	61	82	72	81	84
	●	●	●	●	●	●	●	6	1.1	225	19.3	24	27	36	53	61	81	92	122	73	79	81
	●	●	●	●	●	●	●	8	1.5	225	26	32	36	48	71	82	108	122	163	85	89	91
	●	●	●	●	●	●	●	10	1.6	420	32	39	46	60	88	102	135	153	204	82	84	86
	●	●	●	●	●	●	●	12	1.9	420	39	47	55	72	106	122	162	183	245	78	82	85
	●	●	●	●	●	●	●	14	1.9	421	45	55	64	84	124	143	189	214	285	85	88	90
					●	●		16	2.2	421	52	63	73	96	141	163	216	245	326	83	86	88
	●	●	●	●	●	●	●	18	1.9	422	58	71	82	109	159	183	243	275	367	81	84	86
	●						●	20	2.1	422	64	79	91	121	177	204	270	306	408	75	78	80
	●	●	●	●	●	●	●	22	1.9	625	71	87	100	133	194	224	297	336	449	70	72	75
	●	●	●	●	●	●	●	26	2.2	625	84	103	119	157	230	265	351	398	530	73	74	77

Maximum operating pressure depends on material and application. Contact your sales engineer for details.

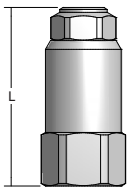
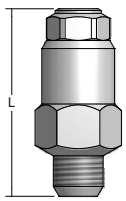
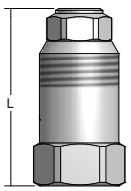
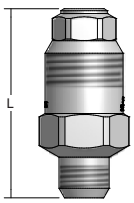
Highlighted column shows the rated pressure.

W PERFORMANCE DATA: WIDE ANGLE SPRAY

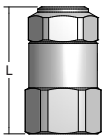
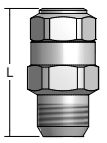
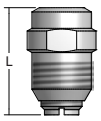
Inlet Conn. (in.)	Nozzle Type				Capacity Size	Orifice Dia. Nom. (mm)	Core No.	Flow Rate Capacity (liters per hour)				Spray Angle (°)	
	LN-W	LNN-W	N-W	NN-W				1.5 bar	2 bar	3 bar	6 bar	3 bar	6 bar
1/4	●	●	●	●	2W	.99	210	–	6.4	7.9	11.2	165	158
	●	●	●	●	3W	.99	216	8.4	9.7	11.8	16.8	157	152
	●	●	●	●	4W	1.5	220	11.2	12.9	15.8	22	156	155
	●	●	●	●	8W	1.5	225	22	26	32	45	152	153

Highlighted column shows the rated pressure.

DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Body Hex. (in.)	Cap Hex. (in.)	Net Weight (kg)
	**LN (F) LN-W (F)**	1/4	49.1	13/16	5/8	0.10
	**LNN (M) LNN-W (M)**	1/4	53.1	13/16	5/8	0.09
	**LND (F)**	1/4	47.6	7/8 dia.	5/8	0.09
	**LNND (M)**	1/4	51.6	7/8 dia.	5/8	0.09

Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	Body Hex. (in.)	Cap Hex. (in.)	Net Weight (kg)
	**N (F) N-W (F)**	1/4	33.3	11/16	5/8	0.05
	**NN (M) NN-W (M)**	1/4	35.7	11/16	5/8	0.05
	**M (M)**	1/4	21.4	9/16	–	0.02

Based on the largest/heaviest version of each type.

FOGJET® NOZZLES

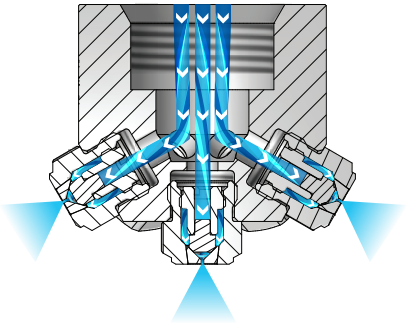
W WIDE ANGLE SPRAY | N NARROW ANGLE SPRAY

OVERVIEW: FOGJET

- Finely atomized sprays without use of compressed air; ideal for fogging a larger area with a single nozzle
  - 7N and 7G nozzles produce a shower-like full cone wide angle spray pattern
  - FF nozzles produce a dense, narrow, hollow cone spray pattern
- 7N and 7G assemblies include a nozzle body and seven removable caps. Each cap has an internal core or vane which is easily removed for cleaning
- Widely used in fire protection, dust control and rain simulation applications
- Uniform spray distribution from .11 to 136 gpm (.42 to 505 lpm)
- Operating pressures from 20 to 150 psi (1.5 to 10 bar)

FogJet Nozzles

The liquid passes through slots in the core component in each individual nozzle cap. The slots make the liquid spin in a circle at a very high speed. The energy from the spinning action causes the liquid to break up into very small droplets and form a hollow cone pattern as it exits the orifice.



FOGJET OPTIONS

W

7G
3/4" to 1-1/2" female conn.
Optional TWD strainer

W

7N
1" female conn.
Optional TWD strainer

N

FF
3/4" to 1-1/4" female conn.
One-piece

ORDERING INFORMATION

FOGJET 7G AND 7N

Inlet Conn.	–	Nozzle Type	–	Material Code	Capacity Size

Example: **1-1/2** – **7G** – **SS** **30**

BSPT connections require the addition of a "B" prior to the inlet connection.

FOGJET FF

Inlet Conn.	Nozzle Type	–	Material Code	Capacity Size

Example: **3/4** **FF** – **SS** **4.8**

BSPT connections require the addition of a "B" prior to the inlet connection.

RELATIVE DROP SIZE IN MICRONS

10 to 100	100 to 500	500 to 1000	1000 to 5000

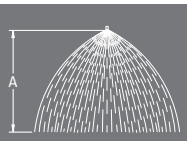
Drop size will vary based on flow rate and pressure.

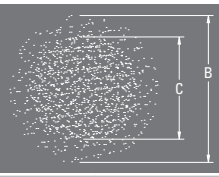
QUICK REFERENCE GUIDE

Model	Connection	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
7N	F	1	Brass, 303 stainless steel (SS), 316 stainless steel (316SS)	E9	E12
7G	F	3/4 to 1-1/2		E10	
FF	F	3/4 to 1-1/4	Brass, 303 stainless steel (SS)	E11–E12	

F = female thread. There is no material code for brass. Leave material code blank when ordering. Other materials available upon request.
For more dimensions and sizes, contact your sales engineer.

W PERFORMANCE DATA: WIDE ANGLE SPRAY

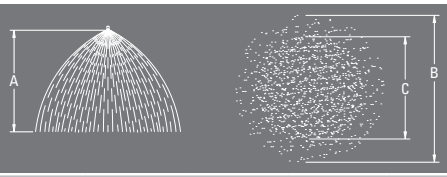




Inlet Conn. (in.)	Nozzle Type	Capacity Size	Dimensions			Flow Rate Capacity (liters per minute)						
	7N		A (m)	B (m)	C (m)	2 bar	3 bar	4 bar	6 bar	7 bar	8 bar	10 bar
1	●	.60	1*	1.1	.5	–	–	–	–	.42	.45	.50
	●	1	1*	1.2	.6	–	.46	.56	.65	.70	.75	.84
	●	1.5	1*	1.4	.8	–	.69	.85	.98	1.0	1.1	1.3
	●	2	1*	1.4	.8	–	.92	1.1	1.3	1.4	1.5	1.7
	●	3	1*	1.7	1.1	1.1	1.4	1.7	2.0	2.1	2.3	2.5
	●	4	1*	1.7	1.1	1.5	1.8	2.2	2.6	2.8	3.0	3.4
	●	6	1*	1.8	1.2	2.2	2.8	3.4	3.9	4.2	4.5	5.0
	●	8	1*	1.8	1.2	2.9	3.7	4.5	5.2	5.6	6.0	6.7
	●	10	1*	2.1	1.4	3.7	4.6	5.6	6.5	7.0	7.5	8.4
	●	12	1*	2.4	1.4	4.4	5.5	6.7	7.8	8.4	9.0	10.1
	●	14	1	2.4	1.4	5.1	6.4	7.9	9.1	9.8	10.5	11.8
	●	16	1 2*	2.4 2.6	1.5 1.7	5.9	7.4	9.1	10.4	11.2	12.0	13.5
	●	18	1 2*	2.4 2.7	1.5 1.8	6.6	8.3	10.2	11.7	12.6	13.5	15.1
	●	22	1 2*	2.9 3.4	1.7 2.1	8.0	10.1	12.4	14.3	15.3	16.5	18.5
	●	26	1 2*	3 3.7	1.8 2.4	9.5	12.0	14.7	16.9	18.1	19.6	22

*And higher.
Highlighted column shows the rated pressure.

W PERFORMANCE DATA: WIDE ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type	Capacity Size	Dimensions			Flow Rate Capacity (liters per minute)						
	7G		A (m)	B (m)	C (m)	2 bar	3 bar	4 bar	6 bar	7 bar	8 bar	10 bar
3/4	•	1	1 1.5 2.5 3.5	1.5 2 2.3 2.4	1 1.3 1.4 1.6	4.3	5.2	6.4	7.2	7.7	8.2	9.1
	•	1.5	1 1.5 2.5 3.5	2.4 2.7 3 3.2	1.7 2 2.3 2.4	6.5	7.8	9.6	10.8	11.6	12.3	13.6
	•	3	1 1.5 2.5 3.5	2.6 3 3.4 3.5	1.7 2 2.1 2.3	13.0	15.6	19.1	22	24	25	27
	•	5	1 1.5 2.5 3.5	2.9 3.4 3.7 3.8	1.9 2.1 2.4 2.4	22	26	32	36	39	41	45
1	•	6.5	1 1.5 2.5 3.5	3 3.5 4 4.1	2.7 2.8 3 3.5	28	34	42	47	50	53	59
	•	10	1 1.5 2.5 3.5	3.4 3.8 4.1 4.3	2.9 3 3.4 3.7	43	52	64	72	77	82	91
	•	12.5	1 1.5 2.5 3.5	3.7 4 4.3 4.4	3 3.4 3.7 3.8	54	65	80	90	97	102	113
	•	16	1 1.5 2.5 3.5	3.8 4.2 4.4 4.6	3.2 3.7 4 4	69	83	102	115	123	131	147
1, 1-1/2	•	25	1 1.5 2.5 3.5	4.2 4.9 5.2 5.3	2.7 3.2 3.4 3.5	109	130	159	179	192	205	225
	•	30	1 1.5 2.5 3.5	4.2 4.9 5.2 5.3	2.7 3.2 3.4 3.5	130	156	191	215	231	245	270
	•	32	1 1.5 2.5 3.5	4.2 4.9 5.2 5.3	2.7 3.2 3.4 3.5	138	167	205	230	247	260	290
	•	40	1 1.5 2.5 3.5	4.2 4.9 5.2 5.3	2.7 3.2 3.4 3.5	173	210	258	285	306	325	360
1-1/2	•	45	1 1.5 2.5 3.5	4.3 5 5.3 5.5	2.9 3.4 3.7 3.8	195	235	288	320	343	370	410
	•	50	1 1.5 2.5 3.5	4.4 5.2 5.5 5.8	3.2 3.7 4.1 4.3	215	260	319	360	386	410	455

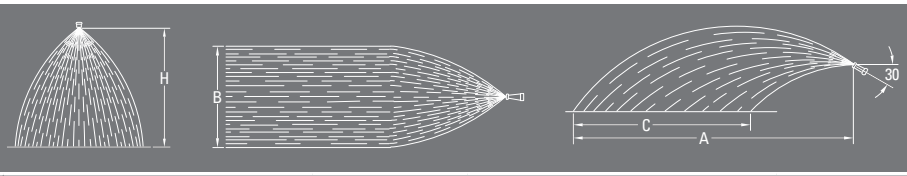
Highlighted column shows the rated pressure.

N PERFORMANCE DATA: NARROW ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type	Capacity Size	Flow Rate Capacity (liters per minute)					
	FF		1.5 bar	3 bar	4 bar	6 bar	7 bar	10 bar
3/4	●	4.8	13.4	19.0	22	27	29	35
	●	9	25	36	41	50	54	65
	●	12	34	47	55	67	72	86
	●	18	50	71	82	101	109	130
1	●	25	70	99	114	140	151	180
	●	35	98	138	160	195	211	252
1-1/4	●	50	140	197	228	279	302	360
	●	70	195	276	319	391	422	505

Highlighted column shows the rated pressure.

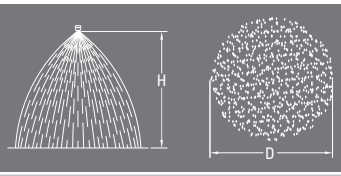
N PERFORMANCE DATA: NARROW ANGLE SPRAY



Nozzle Type	Capacity Size	"H" Height Above Floor (m)	Spray Dimensions and Coverage (m)					
			3 bar			7 bar		
FF			A	B*	C	A	B*	C
●	4.8	1	5.2	2.1	4	7.6	1.5	6.1
●	9	1	7	2.4	5.2	9.4	1.7	7.3
●	12	1	7.6	2.4	5.5	10.1	1.7	7.6
●	18	1	8.8	2.4	5.8	11	1.7	7.9
●	25	1	9.8	2.4	7.3	12.8	1.7	9.8
●	35	1	11	2.4	8.5	16.8	1.8	13.7
●	50	1	11.3	2.4	8.5	18.3	1.8	15.2
●	70	1	14	2.4	11	22	1.8	18.3

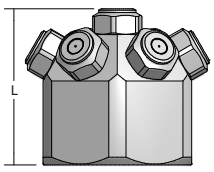
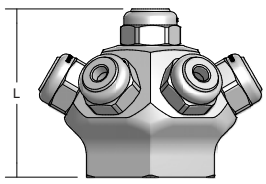
*B dimension is taken at widest portion of A.

N PERFORMANCE DATA: NARROW ANGLE SPRAY

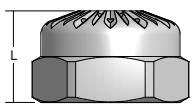


Nozzle Type	Capacity Size	"H" Height Above Floor (m)	Spray Coverage "D" at Various Pressures (m)			
FF			3 bar	4 bar	7 bar	10 bar
●	4.8, 9, 12	1	.60	.60	.60	.60
●		1.5	.90	.90	.90	.90
●		2.1	1.2	1.2	1.1	.90
●		3	1.5	1.4	1.2	1.1
●	18, 25	1	.60	.60	.60	.60
●		1.5	.90	.90	.90	.80
●		2.1	1.2	1.2	1.1	.90
●		3	1.7	1.5	1.3	1.2
●	35, 50, 70	1	.80	.80	.80	.60
●		1.5	1.2	1.2	1.1	.90
●		2.1	1.5	1.5	1.4	1.2
●		3	2	1.8	1.7	1.5

DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	D (Dia.) (mm)	Net Weight (kg)
	**7N (F)**	1	53.2	63.5	0.52
	**7G (F)**	3/4	46.2	54.0	0.28
		1	84.1	103.2	1.23
		1-1/2	81.0	108.0	0.97

Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (mm)	D (Dia.) (mm)	Net Weight (kg)
	**FF (F)**	3/4	25.4	34.9	0.09
		1	29.4	42.1	0.14
		1-1/4	30.9	53.2	0.20

Based on the largest/heaviest version of each type.