



HOLLOW CONE NOZZLES

GAS COOLING · SULFUR BURNING
DUST CONTROL · WATER AERATING
CHEMICAL PRODUCTION · COOLING
METAL TREATING · WASHING
GAS SCRUBBING · BRINE SPRAYING
PRODUCT DEGREASING



HOLLOW CONE NOZZLES INTRODUCTION



WIDE RANGE OF CAPACITIES, CONNECTIONS AND MATERIALS TO MATCH YOUR APPLICATION

Styles:

- Conventional
- Quick-connect

Spray patterns:

- Standard
- Extra wide angle
- Wide angle

Spray angles: 43° to 180°

Flow rate range: .05 to 3320 gpm (.19 to 12568 lpm)

Operating pressure range: up to 2000 psi (138 bar)

Connections:

- 1/8" to 6" pipe sizes
- Flange
- Female and male NPT and BSPT

Materials:

- Brass
- Mild steel
- 303 stainless steel
- 309 stainless steel
- 316 stainless steel
- Hardened stainless steel
- Polypropylene
- Polyvinyl chloride
- PTFE
- Other specialty materials available

See Trademark Registration and Ownership, page i-1.

OPTIMIZE THE PERFORMANCE OF HOLLOW CONE NOZZLES:

Prevent clogging problems by using a **T-style strainer**. Our 124 strainers are available in several styles for use in high flow rate applications. Options include self-cleaning versions, large screen sizes to reduce cleaning frequency and more. **See page F4**



For quick and easy in-line manual shut-off, use our **23220 ball valve**. Two activation options – handle or hex Allen wrench. Available with a wide range of connection options. **See page F29**



Accurately monitor liquid pressure with durable, accurate **pressure gauges**. Grade B accuracy, corrosion resistance, impact resistance and psi/bar dual scales are just a few of the features these gauges offer. **See page F38**



HOLLOW CONE NOZZLES

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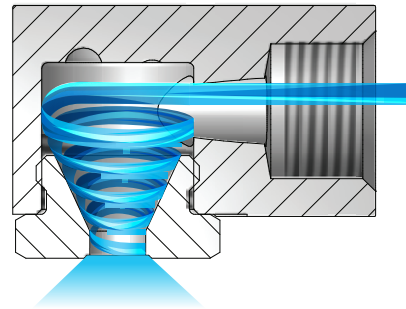


OVERVIEW: WHIRLJET STANDARD, WIDE AND EXTRA WIDE ANGLE NOZZLES

- Hollow cone spray pattern with a circular impact area
- Large, unobstructed flow passages minimize clogging
- Good atomization of liquids at lower pressures – ideal for fluid cooling applications
- Removable caps for easy inspection and cleaning on some models
- Slope-bottom design models reduce the drilling effect of the fluid vortex in the fluid chamber and premature wear
- AX and BX nozzles form smaller drops; ideal for use in air washers and dust suppression applications
- CX, CF, CRC and D nozzles feature higher flow rates; ideal for use in larger, evaporative cooling spray ponds
- AP, LAP and LBP nozzles are constructed of polypropylene and feature excellent corrosion resistance at temperatures up to 160°F (71°C); patented center post design provides extended wear life of the nozzle
- Standard, wide and extra wide spray angles

WhirlJet Nozzles

As liquid enters the nozzle, it passes into a whirlchamber and begins to spin in a circle at high speed. The rotation forces the liquid away from the center toward the edges of the whirlchamber. This causes the liquid to exit the orifice in a hollow cone pattern. Some WhirlJet nozzles have a slope bottom in the whirlchamber that helps extend wear life.



WHIRLJET AX, BX, CX AND D NOZZLES

- Spray angles: Standard – 43° to 91°, Wide – 112° to 120°
- Uniform spray distribution:
 - AX and BX nozzles – from .03 to 38 gpm (.19 to 145 lpm)
 - CX, CRC, CF and D nozzles – from 2.0 to 2362 gpm (7.3 to 9010 lpm)
- Operating pressures from 3.0 to 100 psi (0.2 to 7.0 bar)

Contact your local sales engineer for information about junction boxes.

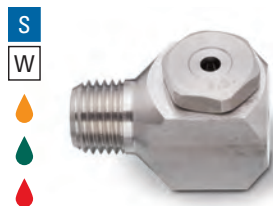


AX
1/8" to 3/4" female conn.
Slope-bottom design
Removable cap

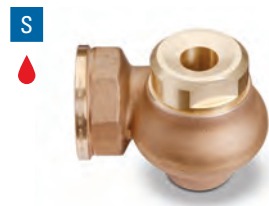


CX
1" to 2-1/2" female conn.
Slope-bottom design
One-piece cast-type

WHIRLJET OPTIONS



BX – 1/8" to 3/4" male conn.
Slope-bottom design
Removable cap



CRC
1-1/4" to 4" female conn.
Two-piece cast-type



CF
4" to 6" flange conn.
Two-piece cast-type



D
1/2" to 3/4" male conn.
One-piece cast-type

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.

WHIRLJET AP, LAP, LBP AND E NOZZLES

- Spray angles: Standard – 43° to 91°,
Wide – 112° to 120°, Extra wide – 144° to 165°
- Uniform spray distribution:
 - AP, LAP and LBP nozzles – from .14 to 18.9 gpm
(.20 to 15.9 lpm)
 - E nozzles – from .11 to 16.8 gpm (.41 to 64 lpm)
- Operating pressures from 3.0 to 100 psi
(0.2 to 7.0 bar)



AP
1/4" to 3/8" female conn.



E
One-piece bar stock
1/4" to 3/8" female conn.

WHIRLJET OPTIONS



ORDERING INFORMATION

WHIRLJET AX

Inlet Conn.	Nozzle Type	—	Material Code	Capacity Size
Example	1/4	AX	—	SS 10

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

WHIRLJET AP-W (9360)

Nozzle Series No.	—	Inlet Conn.	Nozzle Type	—	Material Code	Capacity Size
Example	9360	—	3/8	AP	—	PP 3-5W

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

WHIRLJET CF FLANGE CONNECTION

Inlet Conn.	Nozzle Type	—	Material Code	Capacity Size
Example	6	CF	—	SS 550-65

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

WHIRLJET E

Inlet Conn.	Nozzle Type	—	Material Code	Capacity Size
Example	1/4	E	—	SS 10

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
AX	F	1/8 to 3/4	Brass, Mild steel (I), 303 stainless steel (SS), 316 stainless steel (316SS)	D6–D7	D15
BX	M	1/8 to 3/4		D6–D7	
AX-W	F	1/8 to 1/2		D8	
BX-W	M	1/8 to 1/2		D8	
CX	F, Cast	1 to 2-1/2	Brass, 316 stainless steel (SS)	D9	D16
CF	Flange, Cast	4 to 6		D10	
CRC	F, Cast	1-1/4 to 4		D10	
D	M, Cast	1/2 to 3/4	Brass	D11	
AP (9360)	F	1/4 to 3/8	Polypropylene (PP)	D11–D12	D17
LAP (9360)	F	3/8 to 1/2		D11–D12	
LBP (9360)	M	3/8		D11–D12	
AP-W (9360)	F	1/4 to 3/8		D13	D16
LAP-W (9360)	F	3/8 to 1/2		D14	D17
LBP-W (9360)	M	3/8		D14	
E	F	1/4 to 1/2	303 stainless steel (SS)	D14–D15	
E	F, Cast	3/8 to 1/2	Brass, 316 stainless steel (SS)	D14–D15	

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	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
	AX	BX				3 psi	5 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	10 psi	20 psi	80 psi
1/8	●	●	.5	.031	.047	—	—	.05	.06	.07	.09	.10	.12	.14	.16	39	58	69
	●	●	1	.063	.063	—	—	.10	.12	.14	.17	.20	.24	.28	.32	41	64	76
	●	●	2	.078	.078	—	.14	.20	.24	.28	.35	.40	.49	.57	.63	52	61	69
	●	●	3	.094	.094	—	.21	.30	.37	.42	.52	.60	.73	.85	.95	52	64	77
	●	●	5	.125	.125	.27	.35	.50	.61	.71	.87	1.0	1.2	1.4	1.6	56	67	76
	●	●	8	.156	.156	.44	.57	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	56	65	70
	●	●	10	.172	.172	.55	.71	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	55	65	72

Intermediate capacities: Caps are interchangeable for in-between capacities within each pipe size group. Request Data Sheets 3055, 3986 and 3987.

Spray dimension data: Request Data Sheets 15350 and 15362.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type		Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
	AX	BX				3 psi	5 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	10 psi	20 psi	80 psi
1/4	●	●	1	.063	.063	—	—	.10	.12	.14	.17	.20	.24	.28	.32	47	53	67
	●	●	2	.078	.078	—	—	.20	.24	.28	.35	.40	.49	.57	.63	56	62	71
	●	●	3	.094	.094	—	.21	.30	.37	.42	.52	.60	.73	.85	.95	51	65	78
	●	●	5	.141	.141	.27	.35	.50	.61	.71	.87	1.0	1.2	1.4	1.6	63	73	79
	●	●	8	.156	.156	.44	.57	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	61	69	73
	●	●	10	.188	.172	.55	.71	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	63	70	74
	●	●	15	.234	.203	.82	1.1	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	63	71	72
3/8	●	●	5	.140	.125	.27	.35	.50	.61	.71	.87	1.0	1.2	1.4	1.6	64	73	79
	●	●	8	.172	.156	.44	.57	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	62	70	74
	●	●	10	.203	.172	.55	.71	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	64	72	75
	●	●	15	.234	.219	.82	1.1	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	64	72	74
	●	●	20	.281	.250	1.1	1.4	2.0	2.4	2.8	3.5	4.0	4.9	5.7	6.3	63	70	74
	●	●	25	.297	.297	1.4	1.8	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	63	70	74
	●	●	30	.328	.313	1.6	2.1	3.0	3.7	4.2	5.2	6.0	7.3	8.5	9.5	63	70	74
1/2	●	●	25	.375	.250	1.4	1.8	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	63	66	71
	●	●	30	.375	.297	1.6	2.1	3.0	3.7	4.2	5.2	6.0	7.3	8.5	9.5	67	71	75
	●	●	40	.375	.359	2.2	2.8	4.0	4.9	5.7	6.9	8.0	9.8	11.3	12.6	72	76	78
	●	●	50	.375	.438	2.7	3.5	5.0	6.1	7.1	8.7	10.0	12.2	14.1	15.8	74	79	82
	●	●	60	.375	.516	3.3	4.2	6.0	7.3	8.5	10.4	12.0	14.7	17.0	19.0	77	82	86
3/4	●	●	40	.500	.313	2.2	2.8	4.0	4.9	5.7	6.9	8.0	9.8	11.3	12.6	70	73	74
	●	●	50	.500	.344	2.7	3.5	5.0	6.1	7.1	8.7	10.0	12.2	14.1	15.8	72	75	77
	●	●	60	.500	.406	3.3	4.2	6.0	7.3	8.5	10.4	12.0	14.7	17.0	19.0	74	76	79
	●	●	70	.500	.469	3.8	4.9	7.0	8.6	9.9	12.1	14.0	17.1	19.8	22	76	79	83
	●	●	80	.500	.531	4.4	5.7	8.0	9.8	11.3	13.9	16.0	19.6	23	25	78	82	84
	●	●	90	.500	.578	4.9	6.4	9.0	11.0	12.7	15.6	18.0	22	25	28	81	84	84
	●	●	100	.500	.625	5.5	7.1	10.0	12.2	14.1	17.3	20	24	28	32	83	86	86
	●	●	110	.500	.672	6.0	7.8	11.0	13.5	15.6	19.1	22	27	31	35	85	88	88
	●	●	120	.500	.719	6.6	8.5	12.0	14.7	17.0	21	24	29	34	38	87	90	90

Intermediate capacities: Caps are interchangeable for in-between capacities within each pipe size group. Request Data Sheets 3055, 3986 and 3987.

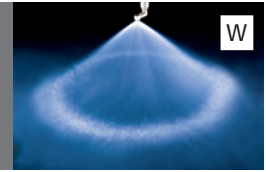
Spray dimension data: Request Data Sheets 15350 and 15362.

Highlighted column shows the rated pressure.





**PERFORMANCE DATA:
WIDE ANGLE SPRAY**



Inlet Conn. (in.)	Nozzle Type		Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
	AX-W	BX-W				5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	10 psi	20 psi	80 psi	
1/8	●	●	0.5-0.5W	.031	.047	—	—	.05	.06	.07	.09	.10	.12	.14	103	117	98	
	●	●	1-1W	.063	.063	—	—	.10	.12	.14	.17	.20	.25	.28	110	125	110	
	●	●	2-3W	.078	.109	—	.21	.25	.31	.35	.43	.50	.61	.71	114	114	97	
	●	●	3-3W	.094	.109	—	.25	.30	.37	.42	.52	.60	.73	.85	114	114	97	
	●	●	3-5W	.094	.125	—	.29	.34	.42	.48	.59	.68	.83	.96	116	110	95	
	●	●	2-10W	.078	.172	—	.35	.41	.51	.59	.72	.82	1.0	1.2	130	135	120	
	●	●	5-5W	.125	.125	—	.42	.50	.61	.71	.86	1.0	1.2	1.4	116	110	92	
	●	●	5-10W	.125	.172	.46	.54	.65	.80	.92	1.1	1.3	1.6	1.8	126	121	95	
	●	●	8-10W	.156	.172	.64	.75	.90	1.1	1.3	1.6	1.8	2.2	2.5	124	112	90	
1/4	●	●	1-1W	.063	.063	—	—	.10	.12	.14	.17	.20	.25	.28	110	117	111	
	●	●	1-5W	.063	.125	—	—	.17	.21	.24	.29	.34	.42	.48	100	123	124	
	●	●	1-10W	.063	.172	—	—	.21	.26	.30	.36	.42	.51	.60	140	144	139	
	●	●	1-15W	.063	.219	—	—	.24	.29	.34	.42	.48	.59	.68	105	128	132	
	●	●	2-5W	.078	.125	—	.29	.34	.42	.49	.60	.68	.84	.89	118	123	113	
	●	●	2-10W	.078	.172	—	.35	.41	.51	.59	.72	.82	1.0	1.2	138	136	126	
	●	●	5-5W	.141	.125	—	.42	.50	.61	.71	.86	1.0	1.2	1.4	114	113	104	
	●	●	5-10W	.141	.172	.46	.54	.65	.80	.92	1.1	1.3	1.6	1.8	130	130	119	
	●	●	5-15W	.141	.219	.52	.64	.77	.94	1.1	1.3	1.5	1.8	2.2	130	132	120	
	●	●	8-10W	.156	.172	.64	.75	.90	1.1	1.3	1.6	1.8	2.2	2.5	129	122	103	
	●	●	10-10W	.188	.172	.71	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.8	120	108	95	
	●	●	8-15W	.156	.219	.78	.92	1.1	1.4	1.6	1.9	2.2	2.7	3.1	129	122	107	
	●	●	10-15W	.188	.219	.86	1.0	1.2	1.5	1.7	2.1	2.4	3.0	3.4	120	108	97	
	●	●	15-15W	.234	.219	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	101	95	88	
3/8	●	●	5-10W	.141	.172	.46	.54	.65	.80	.92	1.1	1.3	1.6	1.8	130	123	102	
	●	●	5-15W	.141	.219	.52	.64	.77	.94	1.1	1.3	1.5	1.8	2.2	138	131	112	
	●	●	8-10W	.172	.172	.64	.75	.90	1.1	1.3	1.6	1.8	2.2	2.5	122	110	96	
	●	●	10-10W	.203	.172	.71	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.8	116	108	93	
	●	●	8-15W	.172	.219	.78	.92	1.1	1.4	1.6	1.9	2.2	2.7	3.1	133	120	105	
	●	●	10-15W	.203	.219	.86	1.0	1.2	1.5	1.7	2.1	2.4	3.0	3.4	126	115	100	
	●	●	8-25W	.172	.297	.92	1.1	1.3	1.6	1.9	2.3	2.6	3.2	3.7	122	118	109	
	●	●	10-20W	.203	.234	.97	1.1	1.4	1.7	1.9	2.4	2.7	3.3	3.9	118	112	102	
	●	●	15-15W	.234	.219	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	116	106	95	
	●	●	15-20W	.234	.234	1.2	1.5	1.7	2.1	2.5	3.0	3.5	4.3	4.9	113	108	98	
	●	●	20-20W	.281	.234	1.4	1.7	2.0	2.4	2.8	3.5	4.0	4.9	5.6	106	102	95	
	●	●	15-30W	.234	.313	1.6	1.8	2.2	2.7	3.1	3.8	4.4	5.4	6.2	116	110	102	
	●	●	25-25W	.297	.297	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	105	100	93	
	●	●	25-30W	.297	.313	2.0	2.3	2.8	3.4	4.0	4.9	5.6	6.9	7.9	105	101	94	
1/2	●	●	50-50W	.375	.438	3.5	4.2	5.0	6.1	7.1	8.6	10.0	12.3	14.2	110	102	93	

Intermediate capacities: Caps are interchangeable for in-between capacities within each pipe size group. Request Data Sheets 3055, 3986 and 3987.

Spray dimension data: Request Data Sheets 15350 and 15362.

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)												Spray Angle (°)		
	CX				3 psi	4 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	60 psi
1	●	7	.688	.453	4.6	5.3	5.9	7.0	8.4	10.2	11.8	14.5	16.7	20	24	26	64	65	66
	●	8	.688	.500	5.2	6.0	6.8	8.0	9.6	11.7	13.5	16.6	19.1	23	27	30	65	66	67
	●	9	.688	.563	5.9	6.8	7.6	9.0	10.8	13.2	15.2	18.6	22	26	30	34	66	67	69
	●	10	.688	.609	6.5	7.6	8.5	10.0	12.0	14.6	16.9	21	24	29	34	38	67	69	71
	●	12	.688	.672	7.9	9.1	10.1	12.0	14.3	17.6	20	25	29	35	41	45	70	73	75
	●	15	.688	.813	9.8	11.3	12.7	15.0	17.9	22	25	31	36	44	51	57	76	79	81
1-1/4	●	10	.844	.563	6.5	7.6	8.5	10.0	12.0	14.6	16.9	21	24	29	34	38	65	67	67
	●	12	.844	.641	7.9	9.1	10.1	12.0	14.3	17.6	20	25	29	35	41	45	68	70	71
	●	14	.844	.719	9.2	10.6	11.8	14.0	16.7	20	24	29	33	41	47	53	71	73	75
	●	16	.844	.797	10.5	12.1	13.5	16.0	19.1	23	27	33	38	47	54	60	74	75	77
	●	20	.844	.953	13.1	15.1	16.9	20	24	29	34	41	48	59	68	76	76	77	79
1-1/2	●	16	1.094	.688	10.5	12.1	13.5	16.0	19.1	23	27	33	38	47	54	60	64	67	69
	●	20	1.094	.859	13.1	15.1	16.9	20	24	29	34	41	48	59	68	76	69	72	74
	●	25	1.094	1.016	16.4	18.9	21	25	30	37	42	52	60	73	85	94	72	74	76
	●	30	1.094	1.125	19.6	23	25	30	36	44	51	62	72	88	101	113	74	76	78
2	●	30	1.438	.938	19.6	23	25	30	36	44	51	62	72	88	101	113	66	67	70
	●	35	1.438	1.063	23	26	30	35	42	51	59	72	84	102	118	132	68	70	73
	●	40	1.438	1.188	26	30	34	40	48	59	68	83	96	117	135	151	70	72	75
	●	45	1.438	1.297	29	34	38	45	54	66	76	93	108	132	152	170	72	74	78
	●	50	1.438	1.422	33	38	42	50	60	73	85	104	120	146	169	189	74	77	82
	●	60	1.438	1.563	39	45	51	60	72	88	101	124	143	176	203	227	77	79	84
2-1/2	●	60	1.875	1.422	39	45	51	60	72	88	101	124	143	176	203	227	67	68	71
	●	70	1.875	1.594	46	53	59	70	84	102	118	145	167	205	237	265	69	71	74
	●	80	1.875	1.734	52	60	68	80	96	117	135	166	191	234	270	302	71	73	77
	●	90	1.875	1.875	59	68	76	90	108	132	152	186	215	263	304	340	73	75	80
	●	100	1.875	2.000	65	76	85	100	120	146	169	207	239	293	338	378	77	79	83

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type		Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
	CF	CRC				3 psi	5 psi	7 psi	10 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	60 psi
1-1/4		●	10-45	.844	.516	6.5	8.5	10.0	12.0	16.9	21	24	29	34	38	45	49	52
		●	12-45	.844	.563	7.9	10.1	12.0	14.3	20	25	29	35	41	45	45	49	51
		●	14-45	.844	.656	9.2	11.8	14.0	16.7	24	29	33	41	47	53	45	48	51
		●	16-45	.844	.750	10.5	13.5	16.0	19.1	27	33	38	47	54	60	45	48	50
		●	20-45	.844	.875	13.1	16.9	20	24	34	41	48	59	68	76	45	47	49
2		●	30-45	1.438	.938	19.6	25	30	36	51	62	72	88	101	113	45	49	52
		●	35-45	1.438	1.063	23	30	35	42	59	72	84	102	118	132	45	49	51
		●	40-45	1.438	1.188	26	34	40	48	68	83	96	117	135	151	45	48	50
		●	45-45	1.438	1.266	29	38	45	54	76	93	108	132	152	170	45	48	50
		●	50-45	1.438	1.375	33	42	50	60	85	104	120	146	169	189	45	47	49
		●	55-45	1.438	1.453	36	46	55	66	93	114	131	161	186	208	45	47	49
3		●	70	2.250	1.375	46	59	70	84	118	145	167	205	237	265	65	66	69
		●	85	2.250	1.578	56	72	85	102	144	176	203	249	287	321	67	68	71
		●	100	2.250	1.750	65	85	100	120	169	207	239	293	338	378	69	72	74
		●	120	2.250	2.063	79	101	120	143	203	248	287	351	406	454	71	73	77
		●	140	2.250	2.313	92	118	140	167	237	290	335	410	473	529	73	75	80
		●	70-45	2.250	1.375	46	59	70	84	118	145	167	205	237	265	45	49	52
		●	85-45	2.250	1.578	56	72	85	102	144	176	203	249	287	321	45	49	51
		●	100-45	2.250	1.750	65	85	100	120	169	207	239	293	338	378	45	48	51
		●	120-45	2.250	2.016	79	101	120	143	203	248	287	351	406	454	45	48	50
		●	140-45	2.250	2.313	92	118	140	167	237	290	335	410	473	529	45	47	49
4	●	●	150	3.125	2.000	98	127	150	179	254	311	359	439	507	567	66	67	70
	●	●	175	3.125	2.328	115	148	175	209	296	362	418	512	592	661	68	70	71
	●	●	200	3.125	2.688	131	169	200	239	338	414	478	586	676	756	70	72	74
	●	●	225	3.125	2.938	147	190	225	269	380	466	538	659	761	850	72	74	77
	●	●	250	3.125	3.250	164	211	250	299	423	518	598	732	845	945	74	76	81
	●	●	275	3.125	3.625	180	232	275	329	465	569	657	805	930	1039	78	80	83
	●	●	150-45	3.125	2.000	98	127	150	179	254	311	359	439	507	567	45	49	52
	●	●	175-45	3.125	2.328	115	148	175	209	296	362	418	512	592	661	45	49	51
	●	●	200-45	3.125	2.688	131	169	200	239	338	414	478	586	676	756	45	48	51
	●	●	225-45	3.125	2.938	147	190	225	269	380	466	538	659	761	850	45	48	50
	●	●	250-45	3.125	3.250	164	211	250	299	423	518	598	732	845	945	45	47	49
6	●		250	4.875	2.453	164	211	250	299	423	518	598	732	845	945	65	67	69
	●		300	4.875	2.750	196	254	300	359	507	621	717	878	1014	1134	66	68	70
	●		350	4.875	3.000	229	296	350	418	592	725	837	1025	1183	1323	68	70	72
	●		400	4.875	3.250	262	338	400	478	676	828	956	1171	1352	1512	70	73	75
	●		450	4.875	3.469	295	380	450	538	761	932	1076	1317	1521	1701	72	75	77
	●		500	4.875	3.828	327	423	500	598	845	1035	1195	1464	1690	1890	74	76	79
	●		550	4.875	4.266	360	465	550	657	930	1139	1315	1610	1859	2079	76	79	83
	●		625	4.875	5.125	409	528	625	747	1056	1294	1494	1830	2113	2362	78	81	86
	●		440-65	4.875	3.469	288	372	440	526	744	911	1052	1288	1487	1663	60	61	62
	●		550-65	4.875	4.266	360	465	550	657	930	1139	1315	1610	1859	2079	64	65	66
	●		625-65	4.875	5.125	409	528	625	747	1056	1294	1494	1830	2113	2362	65	66	67

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)												Spray Angle (°)		
	D				3 psi	4 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	10 psi	20 psi	60 psi
1/2	●	3	.438	.313	2.0	2.3	2.5	3.0	3.6	4.4	5.1	6.2	7.2	8.8	10.1	11.3	62	65	67
	●	4	.438	.391	2.6	3.0	3.4	4.0	4.8	5.9	6.8	8.3	9.6	11.7	13.5	15.1	68	71	73
	●	5	.438	.469	3.3	3.8	4.2	5.0	6.0	7.3	8.5	10.4	12.0	14.6	16.9	18.9	74	77	80
	●	7	.438	.547	4.6	5.3	5.9	7.0	8.4	10.2	11.8	14.5	16.7	20	24	26	77	80	83
3/4	●	4	.563	.359	2.6	3.0	3.4	4.0	4.8	5.9	6.8	8.3	9.6	11.7	13.5	15.1	63	66	67
	●	5	.563	.422	3.3	3.8	4.2	5.0	6.0	7.3	8.5	10.4	12.0	14.6	16.9	18.9	67	69	70
	●	6	.563	.484	3.9	4.5	5.1	6.0	7.2	8.8	10.1	12.4	14.3	17.6	20	23	71	73	77
	●	7	.563	.547	4.6	5.3	5.9	7.0	8.4	10.2	11.8	14.5	16.7	20	24	26	73	75	80
	●	10	.563	.656	6.5	7.6	8.5	10.0	12.0	14.6	16.9	21	24	29	34	38	77	80	84

Highlighted column shows the rated pressure.

S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Nozzle Type/ Inlet Conn. (in.)					Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
AP		LAP		LBP				3 psi	5 psi	7 psi	10 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	10 psi	20 psi	80 psi
1/4	3/8	3/8	1/2	3/8				3 psi	5 psi	7 psi	10 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	10 psi	20 psi	80 psi
●	●				2	.078	.078	—	.14	.17	.20	.28	.35	.40	.49	.57	.63	53	70	80
●	●				2-3	.078	.094	—	.17	.20	.24	.34	.42	.48	.59	.68	.76	61	76	83
●	●				2-5	.078	.109	—	.20	.23	.28	.40	.48	.56	.69	.79	.89	63	81	90
●	●				2-8	.078	.141	—	.23	.28	.33	.47	.57	.66	.81	.93	1.0	71	87	95
●	●				2-10	.078	.172	—	.25	.30	.36	.51	.62	.72	.88	1.0	1.1	72	94	104
●	●				2-15	.078	.203	—	.28	.33	.39	.55	.68	.78	.96	1.1	1.2	77	100	111
●	●				2-20	.078	.234	—	.31	.37	.44	.62	.76	.88	1.1	1.2	1.4	81	103	113
●	●				3-2	.094	.078	—	.18	.22	.26	.37	.45	.52	.64	.74	.82	58	67	76
●	●				3	.094	.094	—	.21	.23	.30	.43	.52	.60	.73	.85	.95	55	79	80
●	●				3-5	.094	.109	—	.25	.30	.36	.51	.62	.72	.88	1.0	1.1	72	82	86
●	●				3-8	.094	.141	—	.31	.37	.44	.62	.76	.88	1.1	1.2	1.4	73	88	92
●	●				3-10	.094	.172	—	.34	.40	.48	.68	.83	.96	1.2	1.4	1.5	81	94	97
●	●				3-15	.094	.203	—	.39	.46	.55	.78	.95	1.1	1.3	1.6	1.7	83	93	100
●	●				3-20	.094	.234	—	.44	.52	.62	.88	1.1	1.2	1.5	1.8	2.0	90	100	107
●	●				5-2	.141	.078	—	—	—	.36	.51	.62	.72	.88	1.0	1.1	49	61	67
●	●				5-3	.141	.094	—	—	.34	.41	.58	.71	.82	1.0	1.2	1.3	57	68	69
●	●				5	.141	.109	—	.35	.42	.50	.70	.86	1.0	1.2	1.4	1.6	70	75	79
●	●				5-8	.141	.141	—	.42	.50	.60	.85	1.0	1.2	1.5	1.7	1.9	80	78	82
●	●				5-10	.141	.172	—	.48	.56	.67	1.0	1.2	1.4	1.7	1.9	2.1	80	87	89
●	●				5-15	.141	.203	—	.57	.67	.80	1.1	1.4	1.6	2.0	2.3	2.6	83	91	95
●	●				5-20	.141	.234	—	.61	.72	.86	1.2	1.5	1.7	2.1	2.4	2.7	88	98	102

Highlighted column shows the rated pressure.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Nozzle Type/ Inlet Conn. (in.)					Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
AP		LAP		LBP				3	5	7	10	20	30	40	60	80	100	10	20	80
1/4	3/8	3/8	1/2	3/8				psi	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi
•	•				8-5	.172	.109	—	.42	.50	.60	.85	1.0	1.2	1.5	1.7	1.9	60	68	71
•	•				8	.172	.141	.44	.57	.67	.80	1.1	1.4	1.6	2.0	2.3	2.5	65	72	74
•	•				8-10	.172	.172	.51	.66	.79	.94	1.3	1.6	1.9	2.3	2.7	3.0	73	81	81
•	•				8-15	.172	.203	.59	.76	.90	1.1	1.5	1.9	2.2	2.6	3.1	3.4	78	84	87
•	•				8-20	.172	.234	.65	.83	.99	1.2	1.7	2.0	2.4	2.9	3.3	3.7	84	89	92
•	•				10-5	.188	.109	—	—	.54	.65	.92	1.1	1.3	1.6	1.8	2.0	55	64	67
•	•				10-8	.188	.141	—	.61	.72	.86	1.2	1.5	1.7	2.1	2.4	2.7	60	64	66
•	•				10	.188	.172	.55	.72	.84	1.0	1.4	1.7	2.0	2.4	2.8	3.1	70	76	75
•	•				10-15	.188	.203	.67	.86	1.0	1.2	1.7	2.1	2.4	3.0	3.5	3.9	76	81	79
•	•				10-20	.188	.234	.75	1.0	1.2	1.4	2.0	2.4	2.8	3.5	3.9	4.4	78	85	98
•	•				15-5	.234	.109	—	—	—	.76	1.1	1.3	1.5	1.9	2.2	2.4	52	65	60
•	•				15-8	.234	.141	—	—	.85	1.0	1.4	1.8	2.0	2.5	2.9	3.2	55	68	64
•	•				15-10	.234	.172	—	.85	1.0	1.2	1.7	2.1	2.4	2.9	3.4	3.8	65	75	71
•	•				15	.234	.203	.82	1.1	1.3	1.5	2.1	2.6	3.0	3.7	4.2	4.7	70	72	75
•	•				15-20	.234	.234	.93	1.2	1.4	1.7	2.4	2.9	3.4	4.2	4.8	5.4	78	80	82
		•			20-5	.250	.125	—	—	—	.83	1.2	1.4	1.7	2.0	2.3	2.6	33	40	55
		•			20-8	.250	.172	—	—	.90	1.1	1.5	1.9	2.2	2.6	3.1	3.4	40	47	60
		•			20-10	.250	.188	—	.97	1.2	1.4	2.0	2.4	2.8	3.4	3.9	4.4	39	55	65
		•			20-15	.250	.234	.99	1.3	1.5	1.8	2.5	3.1	3.6	4.4	5.1	5.7	55	63	68
		•			20	.250	.250	1.1	1.4	1.7	2.0	2.8	3.5	4.0	4.9	5.6	6.3	59	66	70
		•			20-25	.250	.297	1.4	1.8	2.1	2.5	3.5	4.3	5.0	6.2	7.1	7.9	60	73	77
		•			20-40	.250	.359	1.6	2.0	2.4	2.9	4.0	5.0	5.7	7.0	8.1	9.0	80	82	86
		•			20-50	.250	.438	1.9	2.5	2.9	3.5	4.9	6.1	7.0	8.5	9.9	11.0	83	90	97
		•			20-60	.250	.516	2.2	2.8	3.3	4.0	5.7	6.9	8.0	9.8	11.3	12.6	86	94	99
		•			25-8	.281	.172	—	—	—	1.2	1.7	2.1	2.4	2.9	3.4	3.8	27	42	57
		•			25-10	.281	.188	.82	1.1	1.3	1.5	2.1	2.6	3.0	3.7	4.2	4.7	35	50	59
		•			25-15	.281	.234	1.0	1.3	1.6	1.9	2.7	3.3	3.8	4.6	5.3	6.0	44	57	64
		•			25-20	.281	.250	1.2	1.5	1.8	2.2	3.1	3.7	4.3	5.3	6.1	6.8	53	63	68
		•			25	.281	.297	1.4	1.8	2.1	2.5	3.5	4.3	5.0	6.2	7.1	7.9	60	70	74
		•			25-40	.281	.359	1.7	2.2	2.7	3.2	4.5	5.5	6.4	7.8	9.0	10.1	69	73	79
		•			25-50	.281	.438	2.1	2.8	3.3	3.9	5.5	6.8	7.8	9.6	11.0	12.3	76	81	85
		•			25-60	.281	.516	2.5	3.2	3.8	4.5	6.4	7.8	9.0	11.0	12.7	14.2	83	86	92
		•	•	•	40-8	.359	.172	—	—	—	1.5	2.2	2.7	3.1	3.7	4.3	4.8	30	41	48
		•	•	•	40-10	.359	.188	—	—	1.5	1.8	2.5	3.1	3.6	4.4	5.1	5.7	34	45	53
		•	•	•	40-15	.359	.234	1.3	1.7	2.0	2.4	3.4	4.2	4.9	5.9	6.9	7.7	44	48	57
		•	•	•	40-20	.359	.250	1.5	1.9	2.2	2.7	3.8	4.6	5.3	6.5	7.5	8.4	45	52	59
		•	•	•	40-25	.359	.297	1.8	2.3	2.7	3.2	4.5	5.5	6.4	7.8	9.0	10.1	48	56	61
		•	•	•	40	.359	.359	2.2	2.8	3.3	4.0	5.7	6.9	8.0	9.8	11.3	12.6	67	71	73
		•	•	•	40-50	.359	.438	2.8	3.6	4.2	5.0	7.1	8.7	10.0	12.3	14.1	15.9	68	80	84
		•	•	•	40-50.1	.359	.422	2.8	3.6	4.2	5.0	7.1	8.7	10.0	12.3	14.1	15.9	40	47	50
		•	•	•	40-60	.359	.516	3.3	4.2	5.0	6.0	8.4	10.3	11.9	14.6	16.7	18.9	80	86	90

Highlighted column shows the rated pressure.



PERFORMANCE DATA:
WIDE ANGLE SPRAY

Nozzle Type/ Inlet Conn. (in.)		Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
AP-W					3 psi	5 psi	7 psi	10 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
1/4	3/8																
●	●	2-5W	.078	.125	—	.20	.23	.28	.40	.48	.56	.69	.79	.89	126	135	131
●	●	2-8W	.078	.156	—	.22	.26	.31	.44	.54	.62	.76	.88	.98	121	133	130
●	●	2-10W	.078	.172	—	.24	.28	.34	.48	.59	.68	.83	.96	1.1	121	135	127
●	●	2-15W	.078	.219	—	.27	.32	.38	.54	.66	.76	.93	1.1	1.2	120	133	132
●	●	2-20W	.078	.234	—	.30	.35	.42	.60	.73	.84	1.0	1.2	1.3	111	132	135
●	●	3-5W	.094	.125	—	.25	.30	.36	.51	.62	.72	.88	1.0	1.1	133	131	109
●	●	3-8W	.094	.156	—	.30	.35	.42	.60	.73	.84	1.0	1.2	1.3	133	131	110
●	●	3-10W	.094	.172	—	.37	.44	.52	.74	.90	1.0	1.3	1.5	1.6	128	130	115
●	●	3-15W	.094	.219	—	.40	.47	.56	.79	.97	1.1	1.4	1.6	1.8	128	130	118
●	●	3-20W	.094	.234	—	.42	.49	.59	.83	1.0	1.2	1.5	1.7	1.9	119	134	136
●	●	5-5W	.141	.125	—	.35	.42	.50	.70	.86	1.0	1.2	1.4	1.6	125	112	98
●	●	5-8W	.141	.156	—	.42	.50	.60	.85	1.0	1.2	1.5	1.7	1.9	125	112	97
●	●	5-10W	.141	.172	—	.48	.56	.67	1.0	1.2	1.4	1.7	1.9	2.1	125	118	102
●	●	5-15W	.141	.219	—	.57	.67	.80	1.1	1.4	1.6	2.0	2.3	2.6	130	125	105
●	●	5-20W	.141	.234	—	.61	.72	.86	1.2	1.5	1.7	2.1	2.4	2.7	125	125	112
●	●	8-5W	.172	.125	—	.42	.50	.60	.85	1.0	1.2	1.5	1.7	1.9	119	102	99
●	●	8-8W	.172	.156	.44	.57	.67	.80	1.1	1.4	1.6	2.0	2.3	2.5	112	100	87
●	●	8-10W	.172	.172	.50	.64	.76	.91	1.3	1.6	1.8	2.2	2.6	2.9	115	102	90
●	●	8-15W	.172	.219	.59	.76	.90	1.1	1.5	1.9	2.2	2.6	3.1	3.4	121	110	98
●	●	8-20W	.172	.234	.65	.83	.99	1.2	1.7	2.0	2.4	2.9	3.3	3.7	121	113	106
●	●	10-5W	.188	.125	—	—	.54	.65	.92	1.1	1.3	1.6	1.8	2.0	115	98	85
●	●	10-8W	.188	.156	—	.61	.72	.86	1.2	1.5	1.7	2.1	2.4	2.7	110	95	84
●	●	10-10W	.188	.172	.55	.72	.84	1.0	1.4	1.7	2.0	2.4	2.8	3.1	111	97	89
●	●	10-15W	.188	.219	.67	.86	1.0	1.2	1.7	2.1	2.4	3.0	3.5	3.9	113	104	97
●	●	10-20W	.188	.234	.75	1.0	1.2	1.4	2.0	2.4	2.8	3.5	3.9	4.4	118	107	102
●	●	15-5W	.234	.125	—	—	—	.76	1.1	1.3	1.5	1.9	2.2	2.4	—	91	80
●	●	15-8W	.234	.156	—	—	.85	1.0	1.4	1.8	2.0	2.5	2.9	3.2	102	93	80
●	●	15-10W	.234	.172	—	.85	1.0	1.2	1.7	2.1	2.4	2.9	3.4	3.8	107	97	83
●	●	15-15W	.234	.219	.82	1.1	1.3	1.5	2.1	2.6	3.0	3.7	4.2	4.7	110	98	90
●	●	15-20W	.234	.234	.93	1.2	1.4	1.7	2.4	2.9	3.4	4.2	4.8	5.4	112	105	100

Highlighted column shows the rated pressure.



W PERFORMANCE DATA:
WIDE ANGLE SPRAY

Nozzle Type/ Inlet Conn. (in.)			Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
LAP-W		LBP-W				3	5	7	10	20	30	40	60	80	100	7	20	80
3/8	1/2	3/8				psi	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi	psi
●			20-8W	.250	.172	–	–	.90	1.1	1.5	1.9	2.2	2.6	3.1	3.4	99	96	86
●			20-10W	.250	.188	–	.94	1.2	1.4	2.0	2.4	2.8	3.4	3.9	4.4	101	98	88
●			20-15W	.250	.219	.99	1.3	1.5	1.8	2.5	3.1	3.6	4.4	5.1	5.7	104	100	91
●			20-20W	.250	.250	1.1	1.4	1.7	2.0	2.8	3.5	4.0	4.9	5.6	6.3	106	101	93
●			20-25W	.250	.281	1.4	1.8	2.1	2.5	3.5	4.3	5.0	6.2	7.1	7.9	109	104	95
●			20-40W	.250	.344	1.6	2.0	2.4	2.9	4.0	5.0	5.7	7.0	8.1	9.0	110	107	98
●			20-50W	.250	.406	1.9	2.5	2.9	3.5	4.9	6.1	7.0	8.5	9.9	11.0	111	108	100
●			25-8W	.281	.172	–	–	–	1.2	1.7	2.1	2.4	2.9	3.4	3.8	–	89	78
●			25-10W	.281	.188	–	–	1.3	1.5	2.1	2.6	3.0	3.7	4.2	4.7	100	92	81
●			25-15W	.281	.219	–	1.3	1.6	1.9	2.7	3.3	3.8	4.6	5.3	6.0	102	96	85
●			25-20W	.281	.250	1.2	1.5	1.8	2.2	3.1	3.7	4.3	5.3	6.1	6.8	104	99	88
●			25-25W	.281	.281	1.4	1.8	2.1	2.5	3.5	4.3	5.0	6.2	7.1	7.9	107	102	91
●			25-40W	.281	.344	1.7	2.2	2.7	3.2	4.5	5.5	6.4	7.8	9.0	10.1	109	105	94
●			25-50W	.281	.406	2.1	2.8	3.3	3.9	5.5	6.8	7.8	9.6	11.0	12.3	110	108	99
●	●	●	40-10W	.359	.188	–	–	1.5	1.8	2.5	3.1	3.6	4.4	5.1	5.7	95	85	80
●	●	●	40-15W	.359	.219	1.3	1.7	2.0	2.4	3.4	4.2	4.9	5.9	6.9	7.7	97	88	82
●	●	●	40-20W	.359	.250	1.5	1.9	2.2	2.7	3.8	4.6	5.3	6.5	7.5	8.4	100	94	88
●	●	●	40-25W	.359	.281	1.8	2.3	2.7	3.2	4.5	5.5	6.4	7.8	9.0	10.1	103	97	91
●	●	●	40-40W	.359	.344	2.2	2.8	3.3	4.0	5.7	6.9	8.0	9.8	11.3	12.6	106	99	93
●	●	●	40-50W	.359	.406	2.8	3.6	4.2	5.0	7.1	8.7	10.0	12.3	14.1	15.9	109	101	96

Highlighted column shows the rated pressure.

W PERFORMANCE DATA:
EXTRA WIDE ANGLE SPRAY


Inlet Conn. (in.)	Nozzle Type	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)											Spray Angle (°)		
	E Styles				3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
1/4	●	2	.063	.250	—	—	—	.20	.24	.28	.35	.40	.49	.57	.63	—	165	158
	●	5	.094	.250	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	164	154	147
	●	5.8	.109	.250	.32	.41	.49	.58	.71	.82	1.0	1.2	1.4	1.6	1.8	164	154	147
	●	8	.125	.313	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	164	160	151
	●	10	.141	.313	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	164	154	147

Highlighted column shows the rated pressure.

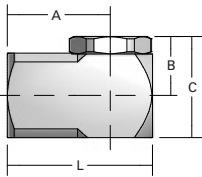
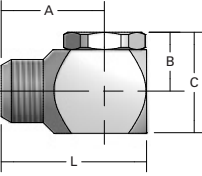
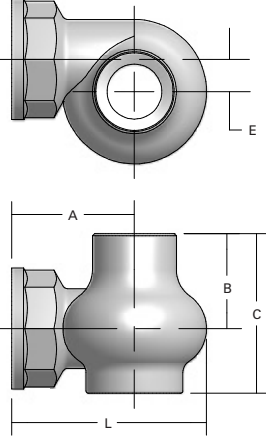


W PERFORMANCE DATA:
EXTRA WIDE ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)											Spray Angle (°)		
	E Styles				3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	8	.109	.484	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	164	160	157
	●	10	.125	.484	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	164	160	157
	●	15	.172	.484	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	165	163	155
	●	20	.203	.484	1.1	1.4	1.7	2.0	2.4	2.8	3.5	4.0	4.9	5.7	6.3	162	152	147
	●	25	.234	.484	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	162	158	154
	●	33	.266	.641	1.8	2.3	2.8	3.3	4.0	4.7	5.7	6.6	8.1	9.3	10.4	162	154	148
	●	53	.375	.641	2.9	3.7	4.4	5.3	6.5	7.5	9.2	10.6	13.0	15.0	16.8	159	152	149
1/2	●	25	.219	.641	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	162	158	154
	●	30	.250	.641	1.6	2.1	2.5	3.0	3.7	4.2	5.2	6.0	7.3	8.5	9.5	163	155	148
	●	40	.297	.641	2.2	2.8	3.3	4.0	4.9	5.7	6.9	8.0	9.8	11.3	12.6	160	152	144
	●	53	.375	.641	2.9	3.7	4.4	5.3	6.5	7.5	9.2	10.6	13.0	15.0	16.8	159	152	149

Highlighted column shows the rated pressure.

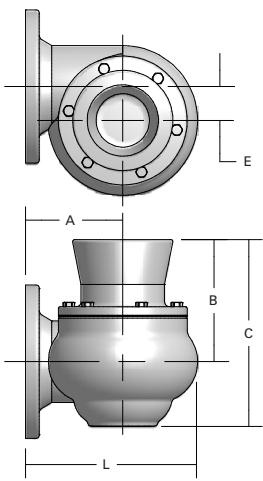
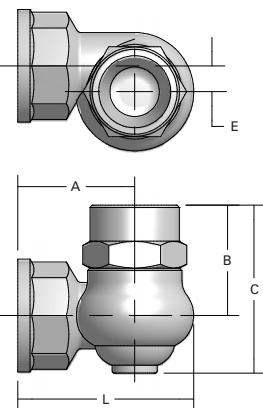
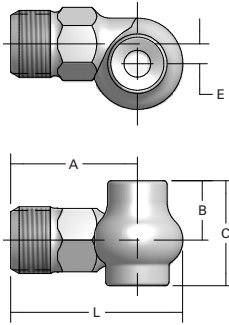
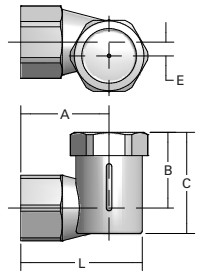
DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	A (in.)	B (in.)	C (in.)	E (in.)	Net Weight (oz.)
	AX (F) AX-W (F)	1/8	1.000	0.688	0.469	0.781	—	1.5
		1/4	1.250	0.875	0.531	0.906	—	2.8
		3/8	1.469	1.031	0.688	1.125	—	4.3
		1/2	1.938	1.375	0.785	1.348	—	8.8
		3/4	2.188	1.375	0.879	1.563	—	11
	BX (M) BX-W (M)	1/8	1.188	0.875	0.652	1.375	—	1.5
		1/4	1.375	1.000	0.531	1.563	—	2.5
		3/8	1.563	1.125	0.688	1.563	—	4
		1/2	1.938	1.375	0.844	1.938	—	7
		3/4	2.250	1.625	0.891	1.516	—	10.8
	CX (F)	1	2.625	1.750	1.250	1.844	0.348	11
		1-1/4	3.063	2.063	1.313	2.188	0.438	20
		1-1/2	3.688	2.438	1.500	2.875	0.563	28
		2	4.531	3.688	2.109	3.688	0.719	48
		2-1/2	5.531	3.500	2.688	4.500	0.469	68

Based on the largest/heaviest version of each type.

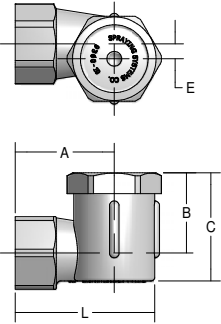
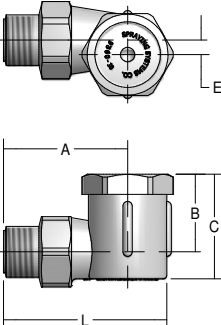
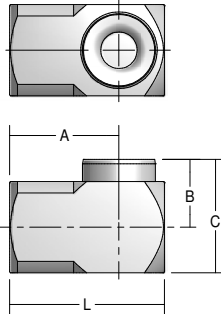
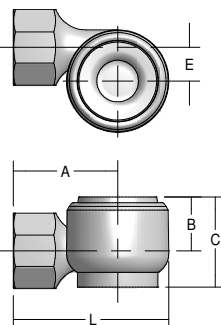


DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	A (in.)	B (in.)	C (in.)	E (in.)	Net Weight (oz.)
	CF (Flange)	4	8.250	4.406	9.250	12.375	1.563	114
		6	12.250	6.875	8.688	13.313	2.438	126
	CRC (F)	1-1/4	3.406	2.125	2.094	3.063	0.406	36
		2	4.844	3.188	3.063	4.656	0.719	80
		3	6.938	4.438	5.938	8.406	1.125	19
		4	9.000	5.563	9.125	12.250	1.563	40
	D (M)	1/2	2.313	1.750	0.719	1.313	0.250	5
		3/4	2.719	2.000	0.938	1.656	0.313	7.5
	AP (F) AP-W (F)	1/4	1.438	1.000	0.866	1.157	0.156	0.4
		3/8	1.469	1.094	0.866	1.157	0.156	0.4

Based on the largest/heaviest version of each type.

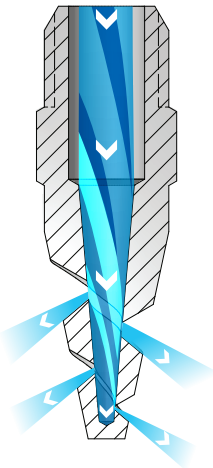
DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	A (in.)	B (in.)	C (in.)	E (in.)	Net Weight (oz.)
	LAP (F) LAP-W (F)	3/8	1.906	1.281	1.182	1.596	0.192	0.6
		1/2	2.031	1.406	1.182	1.596	0.192	0.8
	LBP (M) LBP-W (M)	3/8	2.094	1.563	1.236	1.596	0.192	0.6
	E (F)	1/4	1.250	0.875	0.500	0.750	—	2.3
		3/8	2.000	1.375	0.625	1.250	—	10.7
		1/2	2.375	1.625	0.766	1.625	—	17.3
	E (F) Cast	3/8	1.406	1.219	0.594	1.063	0.375	4.3
		1/2	2.188	1.438	0.688	1.250	0.500	6

Based on the largest/heaviest version of each type.

OVERVIEW: SPIRALJET

- Hollow cone spray pattern with a circular impact area
- Minimal clogging – maximum flow through passages of any nozzle of comparable size
- Spray angles: Standard – 50° to 180°
- Uniform spray distribution from .49 to 3320 gpm (2.0 to 11967 lpm)
- Operating pressures up to 400 psi (25 bar)
- Precision impact blade angles distribute drops and provide excellent coverage – ideal for washing, rinsing and cooling
- Compact size
- BSFJ flange-type nozzles available with reaction-bonded silicon carbide tips on FRP flanges available upon request



SpiralJet BSJ Nozzles

The liquid entering the nozzle passes through the orifice and exits the voids in the spiral. As it exits, the fluid deflects off the spiral surfaces to form the hollow cone pattern.

SPIRALJET OPTIONS



BSJ – 1/4" to 2" male conn.
Threaded/Hex. body style/brass



BSJ – 1/4" to 4" male conn.
Threaded/Round or flat body style/stainless steel

Custom sizes and other abrasion-resistant materials available. See Quick Reference Guide.

ORDERING INFORMATION

SPIRALJET

Inlet Conn.

Nozzle Type

—

Material Code

Spray Angle

Capacity Size

Example

1/4	BSJ	—	SS	120	07
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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
BSJ	M, Hex.	1/4 to 2	Brass, 316 stainless steel (316SS)	D19	D19
	M, Flats	1/4 to 4	316 stainless steel (316SS)		
	M, Flats, Cast	1/4 to 4	316 stainless steel (SS)		
	M, Round	1/4 to 4	PTFE (TEF), Polyvinyl chloride (PVC)		

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.

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.



PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type	Spray Angle at 10 psi					Capacity Size	Orifice Dia. Nom. (in.)	Max. Free Passage Dia. (in.)	Flow Rate Capacity (gallons per minute)					
	BSJ	50°	60°	90°	120°	180°				5 psi	10 psi	20 psi	40 psi	100 psi	400* psi
1/4	•	•	•	•	•		07	.094	.094	.49	.70	.99	1.4	2.2	4.4
	•	•	•	•	•	•	13	.125	.125	.92	1.3	1.8	2.6	4.1	8.2
	•	•	•	•	•	•	20	.156	.125	1.4	2.0	2.8	4.0	6.3	12.6
3/8	•	•	•	•	•	•	30	.188	.125	2.1	3.0	4.2	6.0	9.5	19.0
	•	•	•	•	•	•	40	.219	.125	2.8	4.0	5.7	8.0	12.6	25
	•	•	•	•	•	•	53	.250	.125	3.7	5.3	7.5	10.6	16.8	34
	•	•	•	•	•	•	82	.313	.125	5.8	8.2	11.6	16.4	26	52
1/2	•	•	•	•	•	•	120	.375	.188	8.5	12.0	17.0	24	38	76
	•	•	•	•	•	•	164	.438	.188	11.6	16.4	23	33	52	104
3/4	•	•	•	•	•	•	210	.500	.188	14.8	21	30	42	66	133
1	•		•	•	•	•	340	.625	.250	24	34	48	68	108	215
	•		•	•	•	•	470	.750	.250	33	47	66	94	149	297
1-1/2	•		•	•	•	•	640	.875	.313	45	64	91	128	202	405
	•		•	•	•	•	820	1.000	.313	58	82	116	164	259	519
	•		•	•	•	•	960	1.125	.313	68	96	136	192	304	607
2	•		•	•	•	•	1400	1.375	.438	99	140	198	280	443	885
	•		•	•	•	•	1780	1.500	.438	126	178	252	356	563	1126
3	•		•	•	•		2560	1.750	.563	181	256	362	512	810	1619
	•		•	•	•		3360	2.000	.563	238	336	475	672	1063	2125
4	•		•	•	•		5250	2.500	.625	371	525	742	1050	1660	3320

Maximum Free Passage Diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

For all 1/4" and 3/8" connections, optimum spray angle is achieved at 40 psi (2.8 bar).

*Maximum operating pressure depends on material, size and application. Contact your local sales engineer for specific recommendations.

Highlighted column shows the rated pressure.

DIMENSIONS AND WEIGHTS

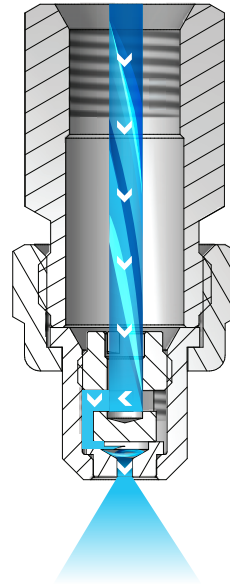
Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	Hex. / flats (in.)	Net Weight (oz.)
	BSJ (M)	1/4	1.875	9/16	1
		3/8	1.875	11/16	1.8
		1/2	2.500	7/8	3
		3/4	2.750	1-1/16	5
		1	3.625	1-3/8	11
		1-1/2	4.375	2	27
		2	6.875	2-1/2	48
		3	8.000	3-3/4	8 lbs.
		4	9.000	4-1/2	12.5 lbs.

Based on the largest/heaviest version of each type.



OVERVIEW: UNIJET

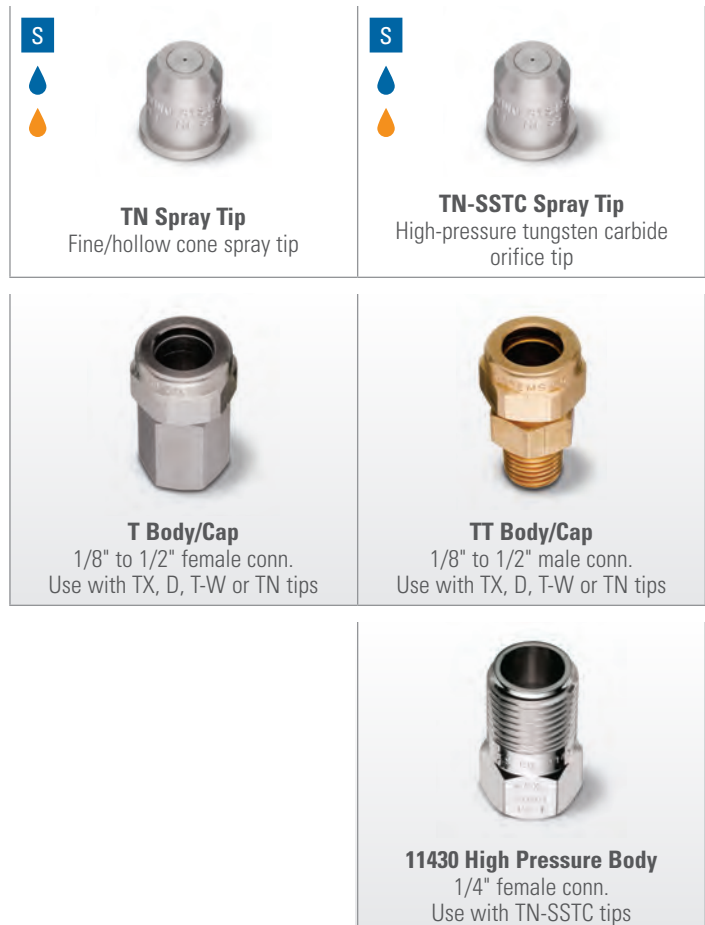
- Quick-connect nozzles reduce maintenance time – bodies remain on pipe/header
- Save on nozzle replacement costs – bodies can be reused, only spray tips are replaced; tips fit on male or female bodies
- Hollow cone spray pattern with a circular impact area
- Excellent atomization at relatively low pressures
- Spray angles: Standard – 13° to 114°, Wide – 130° to 140°
- Uniform spray distribution from 3.6 to 4,920 gph (13.2 to 17,760 lph)
- Operating pressures up to 400 psi (25 bar)
- Orifice inserts, cores and strainers are easily removed for inspection or cleaning
- TN versions provide very fine atomized sprays using liquid pressure alone; compressed air not required
 - Spray angles: Standard – 43° to 91°
 - Uniform spray distribution from .82 to 184 gph (3.1 to 701 lph)
 - Operating pressures up to 2000 psi (140 bar)



UniJet TX, D and TN Nozzles

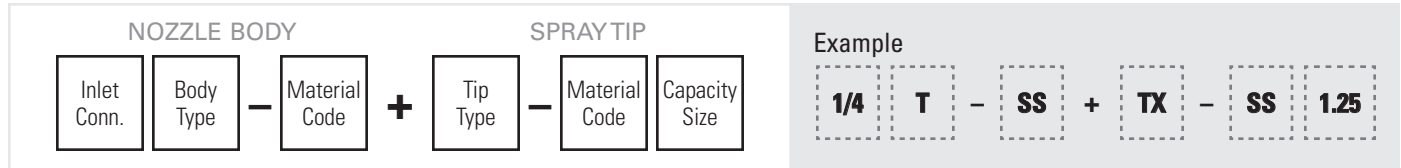
As the liquid passes through the nozzle, it is forced to pass through slots in the orifice. These slots make the liquid spin in a circle at a high speed as it exits the orifice, creating the hollow cone pattern.

UNIJET OPTIONS



ORDERING INFORMATION

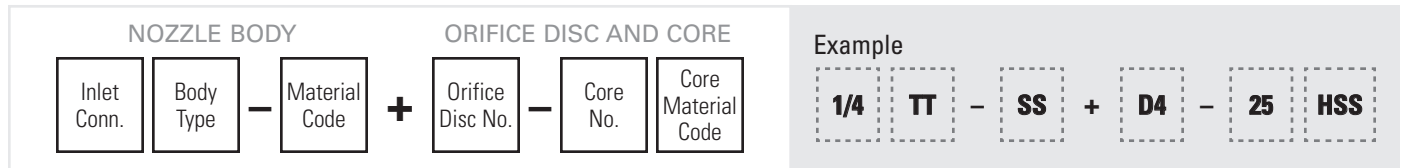
UNIJET



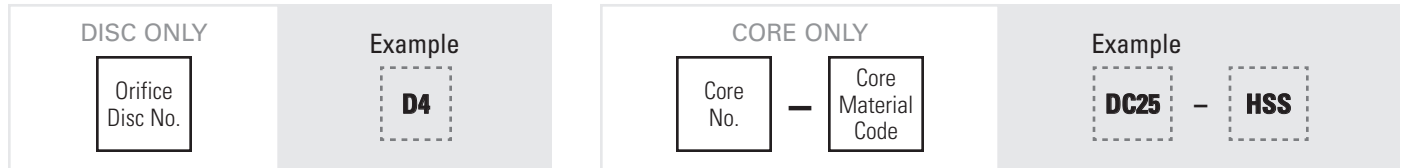
UniJet nozzle assemblies include a pre-sized wire mesh based on orifice diameter. When ordering just a UniJet spray tip, the mesh is not included. See Accessories, page F6 for a mesh selection guide and ordering information.

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

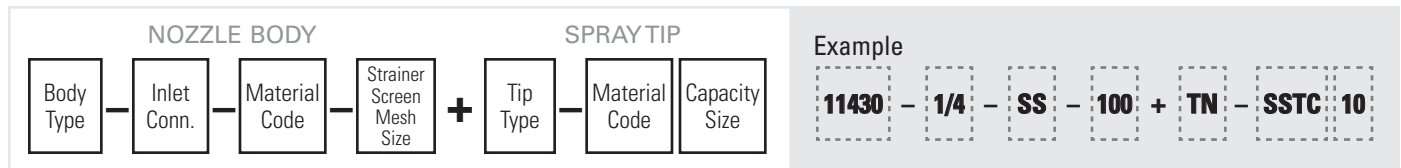
UNIJET – DISC AND CORE TYPE



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



UNIJET HIGH PRESSURE



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

QUICK REFERENCE GUIDE

Model	Connection	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
T body	F	1/8 to 1/2	Brass, 303 stainless steel (SS)	–	D26
TT body	M			–	
11430 body	F	1/4	303 stainless steel (SS)	–	
TX spray tip	NA	NA	Brass, 303 stainless steel (SS)	D22	
D spray tip	NA	NA	Brass, 303 stainless steel (SS), Hardened stainless steel (HSS)	D23–D24	
T-W spray tip	NA	NA	Brass, 303 stainless steel (SS)	D22	
TN spray tip	NA	NA		D25	
TN-SSTC spray tip	NA	NA	303 stainless steel with tungsten carbide orifice (SSTC)	D25–D26	

F = female thread; M = male thread; NA = not applicable. 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.

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.



S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Body Inlet Conn. (in.)	UniJet Tip Type	Capacity Size	Inlet Openings (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per hour)										Spray Angle (°)	
	TX				20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	150 psi	200 psi	400 psi	20 psi	40 psi	
1/4	●	.60	One .012 x .010	.014	—	—	—	.73	.85	.95	1.2	1.3	1.9	—	—	
	●	1	One .016 x .015	.020	—	.87	1.0	1.2	1.4	1.6	1.9	2.2	3.2	—	54	
	●	1.25	One .020 x .020	.022	—	1.1	1.3	1.5	1.8	2.0	2.4	2.8	4.0	—	59	
	●	1.5	One .024 x .020	.024	—	1.3	1.5	1.8	2.1	2.4	2.9	3.4	4.7	—	63	
	●	2	One .028 x .024	.028	1.4	1.7	2.0	2.4	2.8	3.2	3.9	4.5	6.3	40	68	
	●	2.5	One .030 x .029	.031	1.8	2.2	2.5	3.1	3.5	4.0	4.8	5.6	7.9	48	70	
	●	3	One .036 x .034	.034	2.1	2.6	3.0	3.7	4.2	4.7	5.8	6.7	9.5	57	72	
	●	4	One .040 x .034	.041	2.8	3.5	4.0	4.9	5.7	6.3	7.7	8.9	12.6	61	73	
	●	5	Two .032 x .032	.044	3.5	4.3	5.0	6.1	7.1	7.9	9.7	11.2	15.8	63	73	
	●	6	Two .040 x .032	.047	4.2	5.2	6.0	7.3	8.5	9.5	11.6	13.4	19.0	65	74	
	●	8	Two .040 x .036	.055	5.7	6.9	8.0	9.8	11.3	12.6	15.5	17.9	25	66	74	
	●	10	Two .050 x .030	.060	7.1	8.7	10.0	12.2	14.1	15.8	19.4	22	32	68	75	
	●	12	Two .050 x .034	.067	8.5	10.4	12.0	14.7	17.0	19.0	23	27	38	69	76	
	●	14	Two .055 x .034	.070	9.9	12.1	14.0	17.1	19.8	22	27	31	44	70	76	
	●	18	Two .060 x .031	.079	12.7	15.6	18.0	22	25	28	35	40	57	71	77	
	●	22	Two .065 x .030	.086	15.6	19.1	22	27	31	35	43	49	70	71	78	
	●	26	Two .065 x .030	.094	18.4	23	26	32	37	41	50	58	82	72	78	

Spray angle of all above tips is 80° at 100 psi (7 bar).
Other body types may be available. Contact your sales engineer for more information.
Highlighted column shows the rated pressure.

W PERFORMANCE DATA:
WIDE ANGLE SPRAY

Body Inlet Conn. (in.)	UniJet Tip Type	Capacity Size	Inlet Openings (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per hour)								Spray Angle (°)		
	T-W				10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	20 psi	40 psi	80 psi
1/4	●	T2W	Two .016 x .015	.031	—	—	1.4	1.7	2.0	2.4	2.8	3.2	130	140	136
	●	T3W	Two .020 x .019	.039	—	1.8	2.1	2.6	3.0	3.7	4.2	4.7	138	140	137
	●	T4W	Two .024 x .021	.044	—	2.4	2.8	3.5	4.0	4.9	5.7	6.3	140	140	138
	●	T5W	Two .028 x .027	.050	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	140	140	138
	●	T6W	Two .032 x .026	.055	3.0	3.7	4.2	5.2	6.0	7.3	8.5	9.5	140	140	138
	●	T8W	Two .036 x .029	.063	4.0	4.9	5.7	6.9	8.0	9.8	11.3	12.6	140	140	136
	●	T10W	Two .040 x .030	.070	5.0	6.1	7.1	8.7	10.0	12.2	14.1	15.8	140	140	136
	●	T12W	Two .044 x .029	.078	6.0	7.3	8.5	10.4	12.0	14.7	17.0	19.0	140	140	136

Other body types may be available. Contact your sales engineer for more information.
Highlighted column shows the rated pressure.

**S PERFORMANCE DATA:
STANDARD ANGLE SPRAY**

Body Inlet Conn. (in.)	UniJet Tip Type	Orifice Disc No. – Core No.	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
	D			10 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	150 psi	200 psi	300 psi	20 psi	40 psi	80 psi
1/4	●	D1-13	.031	–	–	.06	.07	.08	.09	.10	.12	.13	.15	–	51	62
	●	D1.5-13	.036	–	.06	.07	.08	.09	.10	.11	.13	.14	.17	38	55	66
	●	D2-13	.041	–	.06	.08	.08	.10	.11	.12	.14	.16	.18	49	67	72
	●	D3-13	.047	–	.07	.08	.09	.11	.12	.13	.16	.18	.20	53	70	75
	●	D4-13	.063	.07	.09	.11	.12	.14	.16	.17	.20	.23	.27	69	79	83
	●	D1-23	.031	–	–	.06	.07	.08	.10	.11	.12	.14	.16	–	47	58
	●	D1.5-23	.036	–	.06	.08	.09	.10	.12	.13	.16	.18	.21	34	51	62
	●	D2-23	.041	–	.08	.09	.10	.13	.14	.16	.19	.21	.25	51	63	70
	●	D3-23	.047	.07	.09	.10	.12	.14	.16	.18	.21	.24	.28	58	69	75
	●	D4-23	.063	.08	.11	.14	.15	.19	.21	.23	.28	.32	.38	68	82	87
	●	D5-23	.078	.10	.13	.16	.18	.22	.25	.28	.34	.38	.46	79	89	94
	●	D6-23	.094	.11	.15	.19	.21	.26	.29	.32	.39	.45	.54	84	93	98
	●	D1-25	.031	–	–	.09	.10	.12	.14	.16	.19	.21	.26	–	27	43
	●	D1.5-25	.036	–	–	.12	.14	.16	.19	.21	.25	.28	.33	–	38	49
	●	D2-25	.041	–	.12	.14	.16	.19	.22	.25	.29	.34	.41	39	51	58
	●	D3-25	.047	.10	.14	.17	.19	.23	.26	.29	.35	.40	.48	52	61	67
	●	D4-25	.063	.15	.21	.25	.29	.35	.40	.45	.54	.62	.75	67	74	80
	●	D5-25	.078	.18	.25	.30	.35	.42	.48	.54	.65	.75	.90	73	79	84
	●	D6-25	.094	.23	.32	.39	.44	.54	.62	.70	.85	.97	1.2	79	85	89
	●	D7-25	.109	.26	.37	.45	.52	.63	.73	.81	.98	1.2	1.4	85	91	93
	●	D8-25	.125	.31	.43	.53	.61	.75	.89	.97	1.2	1.4	1.7	91	96	97
	●	D10-25	.156	.38	.54	.65	.76	.93	1.1	1.2	1.5	1.7	2.1	97	102	103
	●	D12-25	.188	.46	.61	.80	.93	1.2	1.3	1.5	1.8	2.1	2.6	103	109	112
	●	D14-25	.219	.51	.72	.88	1.0	1.3	1.5	1.7	2.0	2.3	2.9	108	113	114

For nozzles using Orifice Disc Nos. 1, 1.5 and 2 or Core Nos. 13 and 23, Slotted Strainer No. 4514-20 equivalent to 25 mesh screen size is supplied. For all other larger capacity Discs and Cores, Slotted Strainer No. 4514-32 equivalent to 16 mesh screen size is supplied.

Other body types may be available. Contact your sales engineer for more information.

For additional information see Data Sheet 4498-1.

Highlighted column shows the rated pressure.





PERFORMANCE DATA: STANDARD ANGLE SPRAY

Body Inlet Conn. (in.)	UniJet Tip Type	Orifice Disc No. – Core No.	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)										Spray Angle (°)		
	D			10 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	150 psi	200 psi	300 psi	20 psi	40 psi	80 psi
1/4	●	D1-45	.031	–	–	–	.13	.15	.17	.19	.23	.26	.31	–	22	34
	●	D1.5-45	.036	–	–	.14	.16	.20	.23	.25	.31	.35	.43	–	33	44
	●	D2-45	.041	–	.14	.18	.20	.25	.28	.32	.38	.44	.53	32	46	55
	●	D3-45	.047	–	.17	.20	.23	.28	.33	.36	.44	.51	.62	40	53	60
	●	D4-45	.063	.18	.25	.31	.36	.43	.50	.56	.68	.78	.95	62	69	72
	●	D5-45	.078	.23	.32	.39	.45	.55	.64	.71	.86	.99	1.2	67	73	76
	●	D6-45	.094	.29	.41	.50	.58	.72	.83	.93	1.2	1.3	1.6	73	79	81
	●	D7-45	.109	.33	.48	.59	.68	.84	.97	1.1	1.4	1.6	1.9	81	86	87
	●	D8-45	.125	.41	.59	.72	.84	1.0	1.2	1.4	1.7	1.9	2.4	86	90	90
	●	D10-45	.156	.54	.77	.94	1.1	1.4	1.6	1.8	2.2	2.5	3.1	90	93	93
	●	D12-45	.188	.67	.95	1.2	1.4	1.7	2.0	2.2	2.7	3.1	3.8	97	100	102
	●	D14-45	.219	.75	1.1	1.3	1.5	1.9	2.2	2.5	3.0	3.5	4.3	101	104	105
	●	D16-45	.250	.86	1.3	1.5	1.8	2.2	2.6	2.9	3.5	4.1	5.2	108	111	112
	●	D1-46	.031	–	–	–	.15	.18	.21	.23	.28	.32	.39	–	13	15
	●	D1.5-46	.036	–	–	–	.21	.26	.30	.33	.41	.46	.56	–	15	17
	●	D2-46	.041	–	–	.24	.27	.33	.37	.42	.50	.57	.68	–	18	21
	●	D3-46	.047	–	.23	.28	.32	.39	.45	.51	.61	.70	.86	14	20	24
	●	D4-46	.063	.28	.39	.48	.56	.68	.78	.88	1.1	1.3	1.5	23	29	33
	●	D5-46	.078	.38	.54	.66	.77	.94	1.1	1.3	1.5	1.7	2.1	33	39	42
	●	D6-46	.094	.55	.78	.95	1.1	1.4	1.6	1.7	2.2	2.5	3.1	42	48	50
	●	D7-46	.109	–	.98	1.2	1.4	1.7	2.0	2.2	2.7	3.2	3.9	48	53	56
	●	D8-46	.125	–	–	1.6	1.8	2.3	2.6	2.9	3.6	4.2	5.1	–	60	62
	●	D10-46	.156	–	–	2.2	2.5	3.1	3.5	4.0	4.8	5.6	6.8	–	66	68
	●	D1-56	.031	–	–	–	–	.18	.21	.23	.28	.33	.40	–	–	13
	●	D1.5-56	.036	–	–	–	–	.26	.30	.33	.41	.47	.57	–	–	15

For nozzles using Orifice Disc Nos. 1, 1.5 and 2 or Core Nos. 13 and 23, Slotted Strainer No. 4514-20 equivalent to 25 mesh screen size is supplied. For all other larger capacity Discs and Cores, Slotted Strainer No. 4514-32 equivalent to 16 mesh screen size is supplied.

Other body types may be available. Contact your sales engineer for more information.

For additional information see Data Sheet 4498-1.

Highlighted column shows the rated pressure.



**S PERFORMANCE DATA:
STANDARD ANGLE SPRAY**

Body Inlet Conn. (in.)	UniJet Tip Type	Capacity Size	Orifice Dia. Nom. (in.)	Core No.	Flow Rate Capacity (gallons per hour)										Spray Angle (°)		
	TN				30 psi	40 psi	60 psi	100 psi	200 psi	300 psi	500 psi	700 psi	1000 psi	40 psi	80 psi	300 psi	
1/4	●	.30	.016	106	—	—	—	—	—	.82	1.1	1.3	1.5	—	—	51	
	●	.40	.016	108	—	—	—	—	—	1.1	1.4	1.7	2.0	—	—	58	
	●	.60	.016	206	—	—	—	.95	1.3	1.6	2.1	2.5	3.0	—	35	65	
	●	1	.020	210	—	1.0	1.2	1.6	2.2	2.7	3.5	4.2	5.0	45	62	72	
	●	1.5	.020	216	1.3	1.5	1.8	2.4	3.4	4.1	5.3	6.3	7.5	65	70	72	
	●	2	.028	216	1.7	2.0	2.4	3.2	4.5	5.5	7.1	8.4	10.0	70	75	77	
	●	3	.028	220	2.6	3.0	3.7	4.7	6.7	8.2	10.6	12.5	15.0	65	70	73	
	●	4	.042	220	3.5	4.0	4.9	6.3	8.9	11.0	14.1	16.7	20	72	81	84	
	●	6	.042	225	5.2	6.0	7.3	9.5	13.4	16.4	21	25	30	73	79	81	
	●	8	.060	225	6.9	8.0	9.8	12.6	17.9	22	28	33	40	85	89	91	
	●	10	.064	420	8.7	10.0	12.2	15.8	22	27	35	42	50	82	84	86	
	●	12	.076	420	10.4	12.0	14.7	19.0	27	33	42	50	60	78	82	85	
	●	14	.076	421	12.1	14.0	17.1	22	31	38	49	59	70	85	88	90	
	●	18	.076	422	15.6	18.0	22	28	40	49	64	75	90	81	84	86	
	●	22	.076	625	19.1	22	27	35	49	60	78	92	110	70	72	75	
	●	26	.086	625	23	26	32	41	58	71	92	109	130	73	74	77	

Other body types may be available. Contact your sales engineer for more information.

Highlighted column shows the rated pressure.

**S PERFORMANCE DATA:
STANDARD ANGLE SPRAY**

Body Inlet Conn. (in.)	UniJet Tip Type	Capacity Size	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per hour)					Approximate Spray Pattern Dia. (at 1 foot distance) (in.)
	TN-SSTC			400 psi	750 psi	1000 psi	1500 psi	2000 psi	
1/4	●	.60	.016	1.9	2.6	3.0	3.7	4.2	3
	●	.80	.014	2.5	3.5	4.0	4.9	5.7	3
	●	.90	.016	2.8	3.9	4.5	5.5	6.4	3
	●	1	.020	3.2	4.3	5.0	6.1	7.1	3-1/2
	●	1.5	.020	4.7	6.5	7.5	9.2	10.6	3-1/2
	●	1.8	.025	5.7	7.8	9.0	11.0	12.7	4-1/2
	●	2	.028	6.3	8.7	10.0	12.2	14.1	4-1/2
	●	3	.028	9.5	13.0	15.0	18.4	21	6

Spray pattern diameter is based on liquid with viscosity of 20 seconds #3 Zahn Cup spraying at 1600 psi (110 bar).

Coverage will vary with viscosities and pressures. Tabulated capacities are based on water.

Other body types may be available. Contact your sales engineer for more information.

Calibration pressure = 40 psi (3 bar).



PERFORMANCE DATA: STANDARD ANGLE SPRAY

Body Inlet Conn. (in.)	UniJet Tip Type	Capacity Size	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per hour)					Approximate Spray Pattern Dia. (at 1 foot distance) (in.)
	TN-SSTC			400 psi	750 psi	1000 psi	1500 psi	2000 psi	
1/4	●	4	.042	12.6	17.3	20	24	28	8
	●	6	.042	19.0	26	30	37	42	10
	●	8	.060	25	35	40	49	57	12
	●	9	.060	28	39	45	55	64	14
	●	10	.064	32	43	50	61	71	16
	●	12	.076	38	52	60	73	85	18
	●	14	.076	44	61	70	86	99	14
	●	15	.081	47	65	75	92	106	16
	●	16	.086	51	69	80	98	113	18
	●	18	.076	57	78	90	110	127	16
	●	20	.081	63	87	100	122	141	18
	●	22	.076	70	95	110	135	156	12
	●	24	.081	76	104	120	147	170	13
	●	26	.086	82	113	130	159	184	14

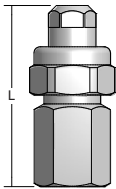
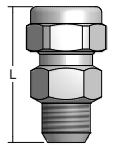
Spray pattern diameter is based on liquid with viscosity of 20 seconds #3 Zahn Cup spraying at 1600 psi (110 bar).

Coverage will vary with viscosities and pressures. Tabulated capacities are based on water.

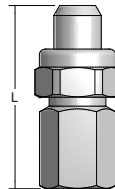
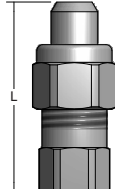
Other body types may be available. Contact your sales engineer for more information.

Calibration pressure = 40 psi (3 bar).

DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	Hex. (in.)	Net Weight (oz.)
	T (F) + TX TT (M) + TX	1/4	1.875	13/16	2.5
	T (F) + T-W TT (M) + T-W	1/4	1.875	13/16	2.5
	T (F) + D TT (M) + D	1/4	1.500	13/16	2.5

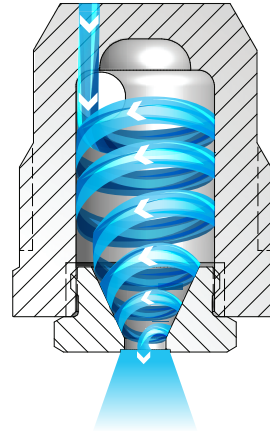
Based on the largest/heaviest version of each type.

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	Hex. (in.)	Net Weight (oz.)
	T (F) + TN TT (M) + TN	1/4	1.906	13/16	2.5
	T (F) + TN-SSTC TT (M) + TN-SSTC	1/4	1.906	13/16	2.5
	11430 (F) + TN-SSTC	1/4	1.938	13/16	2.6

Based on the largest/heaviest version of each type.

OVERVIEW: WHIRLJET IN-LINE, OFFSET AND DEFLECTED SPRAYS

- Hollow cone spray pattern
- In-line versions ideal for dust control in mining operations
 - BD versions have a lower profile projection for installation in a tee or pipe header
 - In-line BDM features recessed orifice area to protect from damage; self-locking cap to prevent loss due to vibration; fiberglass-reinforced nylon inlet body
- BA offset style ideal for installations with physical space limitations
- Spray angles: Standard – 43° to 94°, Wide – 102° to 125°
- Deflected spray versions available with 120°, 150° and 180° included angle of spray at 10 psi (0.7 bar)
- Uniform spray distribution from .11 to 38 gpm (.41 to 145 lpm)
- Operating pressures up to 500 psi (35 bar)



WhirlJet BD, BDM and BA Nozzles

Liquid passes through a hole on the inlet side of the nozzle. The liquid then enters a whirlchamber where it spins in a circle at high speed. The rotation forces the liquid away from the center toward the edges. This causes the liquid to exit the orifice in a hollow cone pattern.

WHIRLJET OPTIONS



BD
3/8" to 1-1/2" male conn.
In-line nozzle
Removable cap



BDM "Miner Nozzle"
3/8" male conn.
In-line nozzle
Removable cap/nylon body



BA
3/8" to 1/2" male conn.
Offset style nozzle
Removable cap



DeflectoJet® 8686
1/8" to 3/8" male conn.
Deflected nozzle
Removable deflector cap

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

WHIRLJET BD

Inlet
Conn.

Nozzle
Type

—

Material
Code

Capacity
Size

Example

3/8

BD

—

SS

10

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

WHIRLJET BDM

Inlet
Conn.

Nozzle
Type

—

Capacity
Size

Example

3/8

BDM

—

5

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

WHIRLJET BA

Inlet
Conn.

Nozzle
Type

—

Material
Code

Capacity
Size

Example

1/2

BA

—

SS

25

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

DEFLECTOJET 8686

Nozzle
No.

—

Inlet
Conn.

—

Material
Code

Capacity
Size

—

Spray
Angle

Example

8686

—

1/4

—

SS

—

1

—

120

BSPT connections require the addition of a "B" prior to the nozzle number.

QUICK REFERENCE GUIDE

Model	Connection	Connection Size (in.)	Materials	Page Number	
				Performance Data	Dimensions and Weights
BD	M	3/8 to 1-1/2	Brass, 303 stainless steel (SS)	D29	D32
BD-W	M	3/8 to 3/4	Brass, 303 stainless steel (SS)	D30	
BDM	M	3/8	Nylon/Brass cap	D30	
BA	M	3/8 to 1/2	Brass, 303 stainless steel (SS), 309 stainless steel (309SS)	D31	
8686	M	1/8 to 3/8	Brass, 303 stainless steel (SS)	D31	

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	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)											Spray Angle (°)		
	BD				3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	2	.094	.078	.11	.14	.17	.20	.24	.28	.35	.40	.49	.57	.63	51	60	70
	●	3	.094	.094	.16	.21	.25	.30	.37	.42	.52	.60	.73	.85	.95	52	64	77
	●	5	.109	.125	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	56	67	76
	●	8	.156	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	56	65	70
	●	10	.156	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	55	65	72
	●	20-10	.156*	.172	—	4.0	1.1	1.4	1.7	1.9	2.4	2.7	3.3	3.8	4.3	61	65	67
1/2	●	5	.125	.141	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	63	73	79
	●	8	.156	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	61	69	73
	●	10	.172	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	63	70	74
	●	15	.172*	.203	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	60	67	70
	●	20	.188*	.234	1.1	1.4	1.7	2.0	2.4	2.8	3.5	4.0	4.9	5.7	6.3	63	65	69
	●	25	.203*	.281	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	59	63	68
3/4	●	5	.141	.125	.27	.35	.42	.50	.61	.71	.87	1.0	1.2	1.4	1.6	64	73	79
	●	8	.172	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	62	70	74
	●	10	.203	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.4	2.8	3.2	64	72	75
	●	15	.250	.219	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.7	64	72	74
	●	20	.281	.250	1.1	1.4	1.7	2.0	2.4	2.8	3.5	4.0	4.9	5.7	6.3	63	70	74
	●	25	.281	.297	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.1	7.9	63	70	74
	●	50-50.3	.281*	.375	2.7	3.5	4.2	5.0	6.0	7.0	8.5	10.0	12.2	14.1	15.8	70	72	73
1-1/2	●	40	.375*	.313	2.2	2.8	3.3	4.0	4.9	5.7	6.9	8.0	9.8	11.3	12.6	70	73	74
	●	50	.375*	.375	2.7	3.5	4.2	5.0	6.1	7.1	8.7	10.0	12.2	14.1	15.8	72	75	77
	●	60	.375*	.438	3.3	4.2	5.0	6.0	7.3	8.5	10.4	12.0	14.7	17.0	19.0	74	76	79
	●	70	.375*	.500	3.8	4.9	5.9	7.0	8.6	9.9	12.1	14.0	17.1	19.8	22	76	79	83
	●	80	.375*	.563	4.4	5.7	6.7	8.0	9.8	11.3	13.9	16.0	19.6	23	25	78	82	84
	●	90	.375*	.578	4.9	6.4	7.5	9.0	11.0	12.7	15.6	18.0	22	25	28	81	84	84
	●	100	.375*	.625	5.5	7.1	8.4	10.0	12.2	14.1	17.3	20	24	28	32	83	86	86
	●	110	.375*	.672	6.0	7.8	9.2	11.0	13.5	15.6	19.1	22	27	31	35	85	88	88
	●	120	.375*	.719	6.6	8.5	10.0	12.0	14.7	17.0	21	24	29	34	38	87	90	90

*Dual inlets, each in diameter specified.

Highlighted column shows the rated pressure.



W PERFORMANCE DATA:
WIDE ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type BD-W	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)											Spray Angle (°)		
					3 psi	5 psi	7 psi	10 psi	15 psi	20 psi	30 psi	40 psi	60 psi	80 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	3-2W	.094	.078	—	—	.19	.22	.27	.31	.38	.44	.54	.62	.70	112	109	90
	●	3-3W	.094	.109	—	—	.25	.30	.37	.42	.52	.60	.73	.85	.95	115	112	97
	●	3-5W	.094	.125	—	—	.29	.34	.42	.48	.59	.68	.83	.96	1.1	117	113	103
	●	5-5W	.109	.125	—	—	.42	.50	.61	.71	.86	1.0	1.2	1.4	1.6	115	112	102
	●	5-10W	.109	.172	—	.46	.54	.65	.80	.92	1.1	1.3	1.6	1.8	2.1	119	119	109
	●	8-8W	.156	.156	—	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	116	110	98
	●	8-10W	.156	.172	—	.64	.75	.90	1.1	1.3	1.6	1.8	2.2	2.5	2.8	118	113	101
	●	10-10W	.156	.172	—	.71	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.8	3.1	118	111	100
1/2	●	5-3W	.125	.109	.18	.23	.27	.32	.39	.45	.55	.64	.78	.90	1.0	118	113	100
	●	5-5W	.125	.125	.27	.35	.42	.50	.61	.71	.86	1.0	1.2	1.4	1.6	121	116	102
	●	8-8W	.156	.156	.44	.57	.67	.80	.98	1.1	1.4	1.6	2.0	2.3	2.5	119	113	103
	●	10-15W	.172	.219	.66	.86	1.0	1.2	1.5	1.7	2.1	2.4	3.0	3.4	3.8	120	112	102
	●	15-15W*	.172	.219	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.8	4.2	4.8	117	111	104
3/4	●	8-25W	.172	.297	.71	.92	1.1	1.3	1.6	1.9	2.3	2.6	3.2	3.7	4.1	124	120	111
	●	10-10W	.203	.172	.55	.71	.84	1.0	1.2	1.4	1.7	2.0	2.5	2.8	3.1	118	111	100
	●	10-30W	.203	.312	1.0	1.3	1.6	1.9	2.3	2.6	3.2	3.7	4.5	5.2	5.9	124	117	108
	●	15-15W	.250	.219	.82	1.1	1.3	1.5	1.8	2.1	2.6	3.0	3.7	4.2	4.8	117	112	102
	●	15-25W	.250	.297	1.1	1.4	1.6	1.9	2.4	2.7	3.4	3.9	4.8	5.5	6.1	119	114	106
	●	20-25W	.281	.297	1.3	1.7	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.0	7.9	118	112	105
	●	20-30W	.281	.312	1.4	1.8	2.2	2.6	3.2	3.7	4.5	5.2	6.4	7.4	8.2	118	112	105
	●	25-25W	.281	.297	1.4	1.8	2.1	2.5	3.1	3.5	4.3	5.0	6.1	7.0	7.9	117	110	103
	●	25-30W	.281	.312	1.5	2.0	2.3	2.8	3.4	4.0	4.9	5.6	6.9	7.9	8.9	117	110	103

*Dual inlets, each in diameter specified.

Highlighted column shows the rated pressure.

S PERFORMANCE DATA:
STANDARD ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type BDM	Capacity Size	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)								Spray Angle (°)		
				10 psi	20 psi	40 psi	100 psi	200 psi	300 psi	400 psi	500 psi	20 psi	100 psi	500 psi
3/8	●	2-0.5	.047	—	—	.16	.25	.36	.44	.51	.57	—	52	45
	●	2-1	.063	—	.16	.22	.36	.51	.62	.72	.80	53	65	50
	●	2	.078	.20	.28	.40	.63	.89	1.1	1.3	1.4	60	69	62
	●	3-2	.078	.22	.31	.44	.69	.98	1.2	1.4	1.6	57	68	58
	●	3	.094	.30	.42	.60	.95	1.3	1.6	1.9	2.1	64	75	64
	●	5	.125	.50	.71	1.0	1.6	2.2	2.7	3.2	3.5	73	78	72
	●	10-2	.078	.35	.49	.70	1.1	1.6	1.9	2.2	2.5	30	46	40
	●	20-10	.172	1.4	1.9	2.7	4.3	6.0	7.4	8.5	9.5	61	60	49

Maximum recommended operating pressure is 500 psi (34.5 bar).

Highlighted column shows the rated pressure.



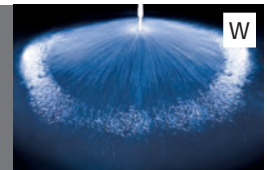
S PERFORMANCE DATA:
STANDARD ANGLE SPRAY



Inlet Conn. (in.)	Nozzle Type	Capacity Size	Inlet Dia. Nom. (in.)	Orifice Dia. Nom. (in.)	Flow Rate Capacity (gallons per minute)						Spray Angle (°)		
	BA				5 psi	10 psi	20 psi	40 psi	60 psi	100 psi	7 psi	20 psi	80 psi
3/8	●	3	.094	.094	.21	.30	.42	.60	.73	.95	52	64	77
	●	5	.141	.125	.35	.50	.71	1.0	1.2	1.6	64	73	79
	●	8	.188	.156	.57	.80	1.1	1.6	2.0	2.5	62	70	74
	●	10	.203	.172	.71	1.0	1.4	2.0	2.4	3.2	64	72	75
	●	15	.250	.219	1.1	1.5	2.1	3.0	3.7	4.7	64	72	74
	●	20	.281	.250	1.4	2.0	2.8	4.0	4.9	6.3	63	70	74
	●	25	.297	.297	1.8	2.5	3.5	5.0	6.1	7.9	63	70	74
1/2	●	25	.375	.250	1.8	2.5	3.5	5.0	6.1	7.9	63	66	71
	●	30	.375	.297	2.1	3.0	4.2	6.0	7.3	9.5	67	71	75
	●	40	.375	.359	2.8	4.0	5.7	8.0	9.8	12.6	72	76	78
	●	50	.375	.438	3.5	5.0	7.1	10.0	12.2	15.8	74	79	82
	●	60	.375	.516	4.2	6.0	8.5	12.0	14.7	19.0	77	82	86

Highlighted column shows the rated pressure.

W PERFORMANCE DATA:
WIDE ANGLE SPRAY

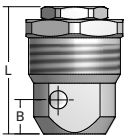
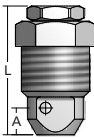
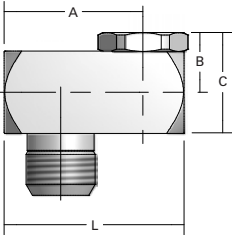
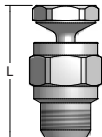


Inlet Conn. (in.)	Nozzle Type	Capacity Size	Flow Rate Capacity (gallons per minute)						
	DeflectoJet® 8686		5 psi	10 psi	20 psi	40 psi	60 psi	80 psi	100 psi
1/8	●	.37	.27	.38	.53	.75	.92	1.1	1.2
	●	.5	.35	.50	.70	1.0	1.2	1.4	1.6
	●	.75	.53	.75	1.1	1.5	1.8	2.1	2.4
1/4	●	1	.71	1.0	1.4	2.0	2.5	2.8	3.2
	●	1.5	1.1	1.5	2.1	3.0	3.7	4.2	4.7
	●	2	1.4	2.0	2.8	4.0	4.9	5.6	6.3
	●	2.5	1.8	2.5	3.5	5.0	6.1	7.1	7.9
3/8	●	3	2.1	3.0	4.2	6.0	7.3	8.5	9.5
	●	3.5	2.5	3.5	5.0	7.0	8.6	9.9	11.0
	●	4	2.8	4.0	5.7	8.0	9.8	11.3	12.6
	●	4.5	3.2	4.5	6.4	9.0	11.0	12.7	14.2
	●	5	3.5	5.0	7.1	10.0	12.3	14.2	15.8

Highlighted column shows the rated pressure.



DIMENSIONS AND WEIGHTS

Nozzle	Nozzle Type	Inlet Conn. (in.)	L (in.)	Hex. (in.)	A (in.)	B (in.)	C (in.)	Net Weight (oz.)
	BD (M)	3/8	1.250	11/16	—	0.266	—	1
		1/2	1.469	7/8	—	0.311	—	2
		3/4	1.750	1-1/16	—	0.375	—	4
		1-1/2	2.625	2	—	0.311	—	21
	BD-W (M)	3/8	1.250	11/16	—	0.266	—	1
		1/2	1.469	7/8	—	0.311	—	2
		3/4	1.750	1-1/16	—	0.375	—	4
	BDM (M)	3/8	1.281	11/16	0.266	—	—	0.5
	BA (M)	3/8	1.500	—	1.046	0.578	0.953	4
		1/2	2.188	—	1.688	0.578	1.078	9.5
	8686 (M)	1/8	1.188	1/2	—	—	—	0.8
		1/4	1.313	5/8	—	—	—	1
		3/8	1.750	7/8	—	—	—	2.8

Based on the largest/heaviest version of each type.