

**HOLLOW
CONE**

WHIRLJET® NOZZLES

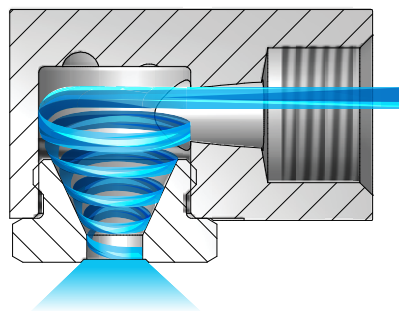
S STANDARD ANGLE SPRAY | **W** WIDE ANGLE SPRAY

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



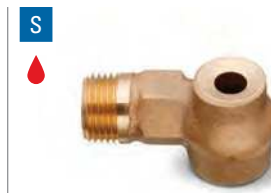
BX – 1/8" to 3/4" male conn.
Slope-bottom design
Removable cap



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® NOZZLES

HOLLOW CONE

S STANDARD ANGLE SPRAY | **W** WIDE ANGLE SPRAY

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

S
W

LAP
3/8" to 1/2" female conn.

S
W

LBP
3/8" male conn.

W

E
One-piece cast-type
3/8" to 1/2" female conn.

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	D17	
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.



HOLLOW
CONE

WHIRLJET® NOZZLES

W WIDE ANGLE SPRAY

W 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.

W PERFORMANCE DATA:
EXTRA WIDE ANGLE SPRAY

Inlet Conn. (in.)	Nozzle Type E Styles	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	●	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
1/2	●	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
	●	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	1.563	1.250	–	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.