

MicroWhirl®

Fine Atomization



DESIGN FEATURES

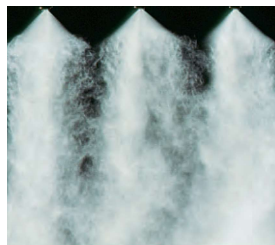
- Outstanding atomization
- Rugged pinless design
- Drip-free performance
- Standard: 70 micron polypropylene filter
 - Optional: 200-mesh 316SS screen
- Safety wire hole available
- Patented design
- Minimum operating pressure 100 psi

SPRAY CHARACTERISTICS

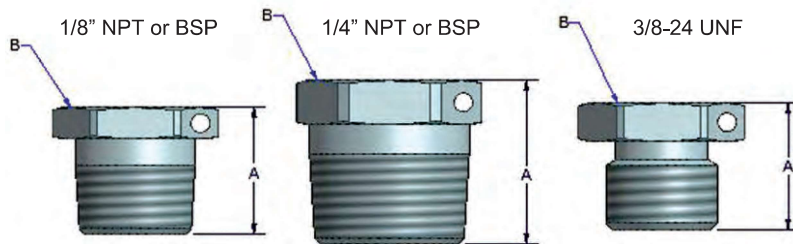
- Mist at low pressure; fog at high pressure

Spray pattern: Cone-shaped Fog

Flow rates: 0.009 - 0.380 gpm



Fog



Shown with optional 1/16" diameter safety wire hole

Dimensions (in.)

Pipe Size	A	B
1/8"	0.485	0.438
1/4"	0.690	0.563
3/8-24UNF	0.425	0.5

Dimensions are approximate. Check with BETE for critical dimension applications.

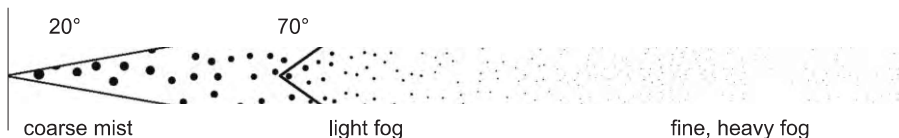
MicroWhirl Flow Rates and Dimensions

Fogging, 70° Spray Angle, 1/8", 1/4" BSP or NPT or 3/8" - 24 UNF Pipe Sizes

Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI								Wt (oz)
			100 psi	300 psi	600 psi	1000 psi	1500 psi	2000 psi	2500 psi	3000 psi	
1/8" or	MW085	0.00085	0.009	0.015	0.021	0.027	0.033	0.038	0.043	0.047	0.25
	MW105	0.00105	0.011	0.018	0.026	0.033	0.041	0.047	0.053	0.058	
	MW125	0.00125	0.013	0.022	0.031	0.040	0.048	0.056	0.063	0.068	
1/4" or	MW145	0.00145	0.015	0.025	0.036	0.046	0.056	0.065	0.073	0.079	
	MW195	0.00195	0.020	0.034	0.048	0.062	0.076	0.087	0.098	0.107	
	MW275	0.00275	0.028	0.048	0.067	0.087	0.107	0.123	0.138	0.151	
3/8"-24UNF	MW695	0.00693	0.069	0.120	0.170	0.219	0.268	0.310	0.347	0.380	

Nominal Angle

Atomization Level



$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Pattern with increasing pressure from nozzle

Standard Materials: 303 and 316 Stainless Steel, Polypropylene filter, and Viton O-ring seal* (*supplied for 3/8"-24 UNF connection)

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

MISTING

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.

PJ

Fine Atomization

DESIGN FEATURES

- High energy efficiency
- No whirl vanes or internal parts
- 1/8" or 1/4" male connection
- Standard: 100-mesh 316SS screen
 - Optional: 200-mesh 316SS screen
 - Optional: 20 micron paper filter
 - Optional: 70 micron polypropylene filter
- Optional welded pin and optional safety wire hole

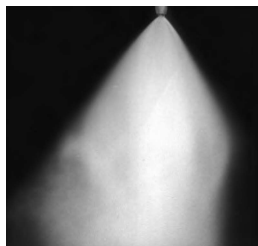
SPRAY CHARACTERISTICS

- Finest fog of any direct pressure nozzle

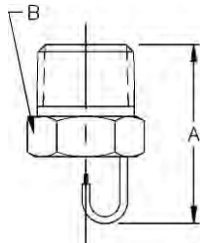
Spray pattern: Cone-shaped Fog

Spray angle: 90°. For best 90° pattern operate nozzle at or above 60 psi

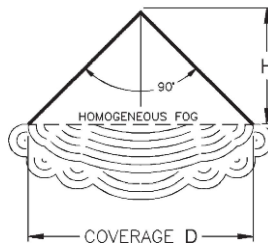
Flow rates: 0.013 to 1.4 gpm



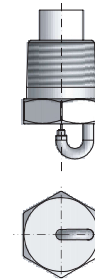
Fog



Male



Fog Pattern



PJ with polypropylene filter

Dimensions are approximate. Check with BETE for critical dimension applications.

PJ Flow Rates and Dimensions

Impingement, 90° Spray Angle, 1/8" or 1/4" Pipe Sizes

Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI										Approx. Orifice Dia. (in.)	Approx. Coverage (inches) D	Approx. Spray Height H (in.)	Approx. Dim. (in.)		Wt. (oz.) Metal
			10 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI	400 PSI	Pipe Size				A	B	
1/8	PJ6	0.00095				0.006	0.007	0.008	0.010	0.013	0.019	0.006	10	5	1/8	0.75	0.44	0.25
	PJ8	0.00180				0.013	0.014	0.016	0.018	0.025	0.036	0.008	10	5				
	PJ10	0.00269			0.017	0.019	0.021	0.024	0.027	0.038	0.054	0.010	10	5				
	PJ12	0.00364			0.023	0.026	0.028	0.033	0.036	0.051	0.073	0.012	10	5				
OR	PJ15	0.00585		0.032	0.037	0.041	0.045	0.052	0.059	0.083	0.117	0.015	10	5	1/4	0.97	0.56	0.25
	PJ20	0.0106	0.034	0.058	0.067	0.075	0.082	0.095	0.11	0.15	0.21	0.020	12	6				
	PJ24	0.0158	0.050	0.087	0.10	0.11	0.12	0.14	0.16	0.22	0.32	0.024	16	8				
1/4	PJ28	0.0206	0.065	0.11	0.13	0.15	0.16	0.18	0.21	0.29	0.41	0.028	18	9	1/4	0.97	0.56	0.25
	PJ32	0.0285	0.090	0.16	0.18	0.20	0.22	0.25	0.28	0.40	0.57	0.032	22	11				
	PJ40	0.0443	0.14	0.24	0.28	0.31	0.34	0.40	0.44	0.63	0.89	0.040	24	12				

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, 303 Stainless Steel and 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

P

Fine Atomization

DESIGN FEATURES

- High energy efficiency
- No whirl vanes or internal parts
- Highly efficient laminar jet impinges on target pin generating fine fog
- Male connection

SPRAY CHARACTERISTICS

- Finest fog of any direct pressure nozzle

Spray pattern: Cone-shaped Fog

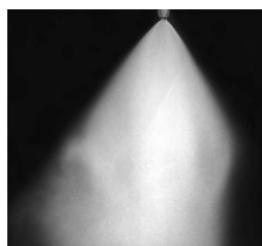
Spray angle: 90°. For best 90° pattern

operate nozzle at or above 60 psi

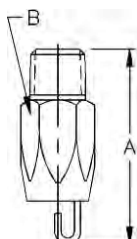
Flow rates: 0.034 to 7.68 gpm



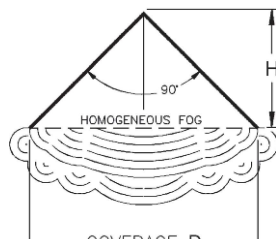
MISTING



Fog



Male



Fog Pattern

Dimensions are approximate. Check with BETE for critical dimension applications.

P Flow Rates and Dimensions

Cone-Shaped Fog, 90° Spray Angle, 1/4" Pipe Size

Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI												Approx. Orifice Dia. (in.)	Approx. Coverage (inches) D	Approx. Spray Height (in.) H	Approx. Dim. (in.)		Wt. (oz.) Metal
			10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	200 PSI	400 PSI				A	B	
1/4	P20	0.0106	0.034	0.047	0.058	0.067	0.075	0.082	0.089	0.095	0.10	0.11	0.15	0.21	0.020	12.0	6	1.83	0.63	2
	P24	0.0158	0.050	0.071	0.087	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.22	0.32	0.024	16.0	8			
	P28	0.0206	0.065	0.09	0.11	0.13	0.15	0.16	0.17	0.18	0.20	0.21	0.29	0.41	0.028	18.0	9			
	P32	0.0285	0.090	0.13	0.16	0.18	0.20	0.22	0.24	0.25	0.27	0.28	0.40	0.57	0.032	22.0	11			
	P40	0.0443	0.14	0.20	0.24	0.28	0.31	0.34	0.37	0.40	0.42	0.44	0.63	0.89	0.042	24.0	12			
	P48	0.0633	0.20	0.28	0.35	0.40	0.45	0.49	0.53	0.57	0.60	0.63	0.89	1.26	0.047	28.0	14			
	P54	0.0838	0.27	0.37	0.46	0.53	0.59	0.65	0.70	0.75	0.80	0.84	1.19	1.68	0.054	30.0	15			
	P66	0.119	0.38	0.53	0.65	0.75	0.84	0.92	0.99	1.06	1.13	1.19	1.68	2.37	0.065	36.0	18			
	P80	0.171	0.54	0.76	0.94	1.08	1.21	1.32	1.43	1.53	1.62	1.71	2.41	3.42	0.085	48.0	24			
P120	0.384	1.22	1.72	2.10	2.43	2.72	2.98	3.21	3.44	3.65	3.84	5.43	7.68	0.130	60.0	30				

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, 303 Stainless Steel and 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.

L

Low Flow

DESIGN FEATURES

- A series of small spiral nozzles with orifice diameters of 0.04" to 0.12"
- Male connection

SPRAY CHARACTERISTICS

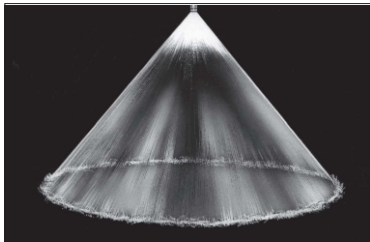
Spray pattern: Hollow Cone Fog, nearly as fine as P Series
Spray angles: 90° standard (120° available by special order)
Flow rates: 0.14 to 3.84 gpm



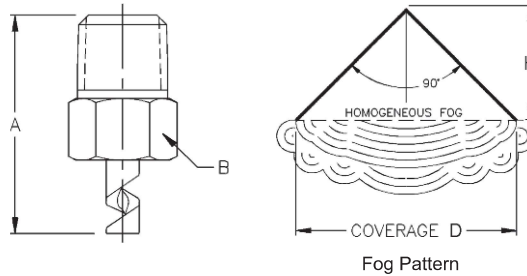
Metal



MISTING



Hollow Cone 90°



Dimensions are approximate. Check with BETE for critical dimension applications.

L Flow Rates

Hollow Cone, 90° Spray Angle, 1/8" and 1/4" Pipe Sizes, BSP or NPT

L Dimensions

BSP or NPT

Male Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI											Approx. Orifice Dia. (in.)	Spray Dimensions (in.)		Male Pipe Size	Dimensions (in.)		Wt. (oz.) Metal
			10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	70 PSI	80 PSI	90 PSI	100 PSI	D		H	A		B		
1/8	L40	0.044	0.14	0.20	0.24	0.28	0.31	0.34	0.37	0.40	0.42	0.44	0.040	24	12	1/8"	1.12	0.56	0.60	
	L48	0.063	0.20	0.28	0.35	0.40	0.45	0.49	0.53	0.57	0.60	0.63	0.048	27	14					
	L54	0.084	0.27	0.37	0.46	0.53	0.59	0.65	0.70	0.75	0.80	0.84	0.054	30	15					
1/4	L66	0.119	0.38	0.53	0.65	0.75	0.84	0.92	0.99	1.06	1.13	1.19	0.066	36	18	1/4"	1.31	0.56	0.75	
	L80	0.171	0.54	0.76	0.94	1.08	1.21	1.32	1.43	1.53	1.62	1.71	0.080	48	24					
	L120	0.384	1.22	1.72	2.10	2.43	2.72	2.98	3.21	3.44	3.65	3.84	0.120	60	30					

Flow Rate (GPM) = $K \sqrt{PSI}$

Standard Materials: Brass, 303 Stainless Steel, 316 Stainless Steel and PTFE (L40, L48, L54 not available in PTFE).

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

CALL 413-772-0846
 Call for the name of your nearest BETE representative.

UltiMist®

Misting Nozzles

DESIGN FEATURES

Metal:

- 416 Stainless Steel tip
- Brass body
- 1/8" and 1/4" sizes
- Male or female connections
- Integral 100 mesh strainer

Plastic:

- All plastic construction
- 1/8" male connection

SPRAY CHARACTERISTICS

- Very fine, fog-like mist
- Produces high number of droplets under 60 microns

Spray pattern: Hollow Cone
Medium angle

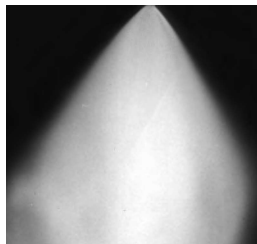
Flow rates: Metal: 0.37 - 16.4 gph
Plastic: 0.63 - 8.5 gph



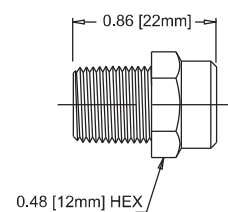
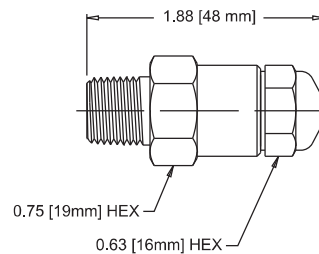
Plastic Nozzle



Metal



Mist



Dimensions are approximate. Check with BETE for critical dimension applications.

UltiMist Metal Flow Rates and Dimensions Hollow Cone, Medium Spray Angle, 1/8" and 1/4" Pipe Sizes

NPT, BSP Male or Female Pipe Size	Nozzle Number	K Factor	GALLONS PER HOUR @ PSI				
			40 PSI	100 PSI	500 PSI	1000 PSI	1200 PSI
1/8	UM37M	0.059	0.37	0.59	1.3	1.9	2.0
	UM50M	0.079	0.50	0.79	1.8	2.5	2.7
	UM75M	0.119	0.75	1.2	2.7	3.8	4.1
or	UM100M	0.158	1.0	1.6	3.5	5.0	5.5
	UM150M	0.237	1.5	2.4	5.3	7.5	8.2
	UM200M	0.316	2.0	3.2	7.1	10.0	11.0
1/4	UM250M	0.395	2.5	4.0	8.8	12.5	13.7
	UM300M	0.474	3.0	4.7	10.6	15.0	16.4

Flow Rate (GPH) = $K \sqrt{\text{PSI}}$

Standard Material: 416 Stainless Steel Tip, Brass Adapter/Body

UltiMist Plastic Flow Rates Hollow Cone, Medium Spray Angle, 1/8" Pipe Size

NPT Male Pipe Size	Nozzle Number	K Factor	GALLONS PER HOUR @ PSI				
			40 PSI	60 PSI	100 PSI	200 PSI	1000 PSI
1/8	UML63M	0.100	0.63	0.77	1.0	1.4	3.2
	UML126M	0.200	1.3	1.5	2.0	2.8	6.3
	UML170M	0.270	1.7	2.1	2.7	3.8	8.5

Flow Rate (GPH) = $K \sqrt{\text{PSI}}$

Standard Material: Polyacetal

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

MISTING

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.

SS

Small Droplet Size Dense Mist

DESIGN FEATURES

- Twelve multiple flat fan patterns
- Solid one-piece construction
- Female connection

SPRAY CHARACTERISTICS

- Multiple flat fans produce coarser spray at lower pressures and dense, far reaching mist at higher pressures
- Relatively small droplets

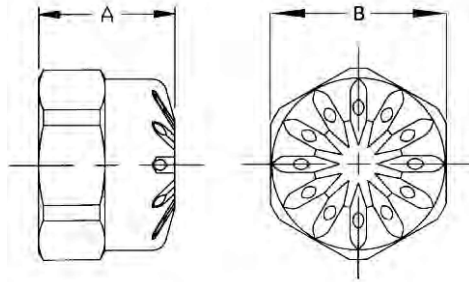
Spray pattern: Dense full cone

Flow rates: 2.40 to 157 gpm

Spray angles: **SS4.8** thru **SS25** - 35°
SS35 thru **SS70** - 45°



Mist



Dimensions are approximate. Check with BETE for critical dimension applications.

SS Flow Rates and Dimensions

Full Cone Mist, 3/4", 1" and 1-1/4" Pipe Size

Female Pipe Size	Nozzle Number	K Factor	GALLONS PER MINUTE @ PSI										Dimensions (in.)		Wt. (oz.)
			10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	150 PSI	200 PSI	A	B	
3/4	SS4.8	0.759	2.40	3.39	4.16	4.80	5.37	5.88	6.79	7.59	9.3	10.7	1.0	1.25	3
	SS9	1.42	4.50	6.36	7.79	9.00	10.1	11.0	12.7	14.2	17.4	20.1			
	SS12	1.90	6.00	8.49	10.4	12.0	13.4	14.7	17.0	19.0	23.2	26.8			
	SS18	2.85	9.00	12.7	15.6	18.0	20.1	22.0	25.5	28.5	34.9	40.2			
1	SS25	3.95	12.5	17.7	21.7	25.0	28.0	30.6	35.4	39.5	48.4	55.9	1.16	1.50	5
	SS35	5.53	17.5	24.7	30.3	35.0	39.1	42.9	49.5	55.3	67.8	78.3			
1 1/4	SS50	7.91	25.0	35.4	43.3	50.0	55.9	61.2	70.7	79.1	96.8	112	1.22	1.88	8
	SS70	11.1	35.0	49.5	60.6	70.0	78.3	85.7	99.0	111	136	157			

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, 303 and 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



MISTING

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