

FF

Extra-Wide Angle

DESIGN FEATURES

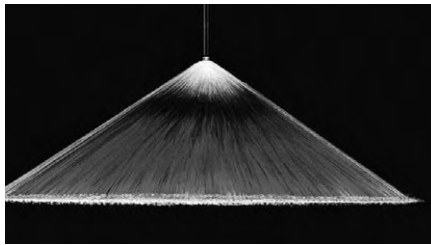
- One-piece construction
- Clog-resistant
- Durable
- All 3/8" FFs in Brass have UL approval; 3/8" FF187145 in Brass has FM approval
- Male connection

SPRAY CHARACTERISTICS

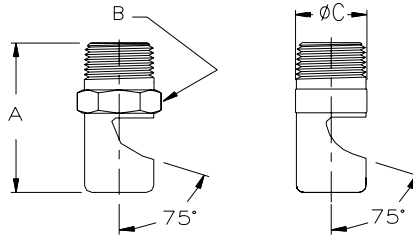
- Extra-wide 145° spray angle
 - Medium-impact spray
 - Spray discharge deflected 75° from inlet axis
 - Coarse atomization
- Spray pattern:** Flat Fan
Spray angle: 105° and 145°
Flow rates: 0.014 to 235 gpm



Plastic



Fan 145°



Metal

Plastic

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

FF Flow Rates Fan, 105° and 145° Spray Angles, 1/8" to 1" Pipe Sizes

Male Pipe Size	Nozzle Number	Spray Angle	K Factor	GALLONS PER MINUTE @ PSI											Approx. Orifice Dia. (in.)
				3 PSI	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI	
1/8	FF016	105°	0.00791	0.014	0.018	0.025	0.035	0.043	0.050	0.056	0.061	0.071	0.079	0.112	0.016
	FF024	105°	0.0158	0.027	0.035	0.050	0.071	0.087	0.100	0.112	0.122	0.141	0.158	0.224	0.024
	FF028	105°	0.0237	0.041	0.053	0.075	0.106	0.130	0.150	0.168	0.184	0.212	0.237	0.335	0.028
	FF033	105°	0.0316	0.055	0.071	0.100	0.141	0.173	0.200	0.224	0.245	0.283	0.316	0.447	0.033
	FF041	145°	0.0474	0.082	0.106	0.150	0.212	0.260	0.300	0.335	0.367	0.424	0.474	0.671	0.041
	FF046	145°	0.0632	0.110	0.141	0.200	0.283	0.346	0.400	0.447	0.490	0.566	0.632	0.894	0.046
	FF052	145°	0.0791	0.137	0.177	0.250	0.354	0.433	0.500	0.559	0.612	0.707	0.791	1.11	0.052
	FF057	145°	0.0949	0.164	0.212	0.300	0.424	0.520	0.600	0.671	0.735	0.849	0.949	1.34	0.057
	FF065	145°	0.126	0.219	0.283	0.400	0.566	0.693	0.800	0.894	0.980	1.13	1.26	1.79	0.065
1/8 or 1/4	FF073	145°	0.158	0.274	0.354	0.500	0.707	0.866	1.00	1.12	1.22	1.41	1.58	2.24	0.073
	FF093	145°	0.237	0.411	0.530	0.750	1.06	1.30	1.50	1.68	1.84	2.12	2.37	3.35	0.093
	FF104	145°	0.316	0.548	0.707	1.00	1.41	1.73	2.00	2.24	2.45	2.83	3.16	4.47	0.104
	FF116	145°	0.379	0.657	0.849	1.20	1.70	2.08	2.40	2.68	2.94	3.39	3.79	5.37	0.116
	FF125	145°	0.395	0.685	0.884	1.25	1.77	2.17	2.50	2.80	3.06	3.54	3.95	5.59	0.125
	FF129	145°	0.474	0.822	1.06	1.50	2.12	2.60	3.00	3.35	3.67	4.24	4.74	6.71	0.129
	FF141	145°	0.569	0.986	1.27	1.80	2.55	3.12	3.60	4.02	4.41	5.09	5.69	8.05	0.141
	FF148	145°	0.632	1.10	1.41	2.00	2.83	3.46	4.00	4.47	4.90	5.66	6.32	8.94	0.148
1/4	FF156	145°	0.696	1.20	1.56	2.20	3.11	3.81	4.40	4.92	5.39	6.22	6.96	9.84	0.156
	FF161	145°	0.759	1.31	1.70	2.40	3.39	4.16	4.80	5.37	5.88	6.79	7.59	10.7	0.161
	FF173	145°	0.854	1.48	1.91	2.70	3.82	4.68	5.40	6.04	6.61	7.64	8.54	12.1	0.173

FF Dimensions

Pipe Size	Dim. (in.)		
	A	B	C
1/8	1.00	0.44	0.50
1/4	1.38	0.56	0.63

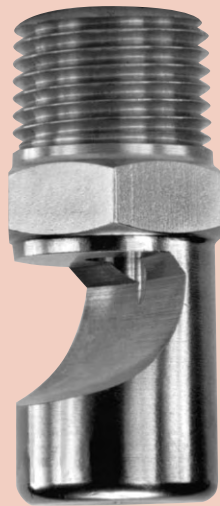
$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, 303 Stainless Steel, 316 Stainless Steel, PVC, and PTFE (PTFE not available in nozzle numbers FF016 to FF065).

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

FAN

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



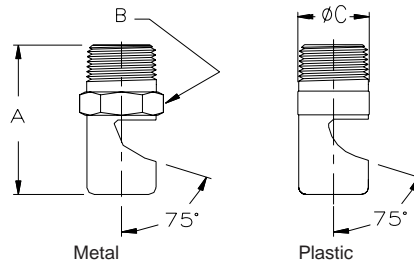
Metal



All 3/8" FFs in Brass have UL approval



3/8" FF187145 nozzles in Brass have FM approval



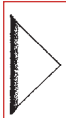
Dimensions are approximate. Check with BETE for critical dimension applications.

FF Flow Rates															FF Dimensions				
Fan, 105° and 145° Spray Angles, 1/8" to 1" Pipe Sizes																			
Male Pipe Size	Nozzle Number	Spray Angle	K Factor	GALLONS PER MINUTE @ PSI											Approx. Orifice Dia. (in.)	Pipe Size	Dim. (in.)		
				3 PSI	5 PSI	10 PSI	20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI	100 PSI	200 PSI			A	B	C
3/8	FF187	145°	0.949	1.64	2.12	3.00	4.24	5.20	6.00	6.71	7.35	8.49	9.49	13.4	0.187	3/8	1.75	0.68	0.75
	FF196	145°	1.11	1.92	2.47	3.50	4.95	6.06	7.00	7.83	8.57	9.90	11.1	15.7	0.196				
	FF209	145°	1.18	2.04	2.64	3.73	5.28	6.46	7.46	8.34	9.14	10.1	11.8	16.7	0.196				
	FF218	145°	1.26	2.19	2.83	4.00	5.66	6.93	8.00	8.94	9.80	11.3	12.6	17.9	0.218				
	FF221	145°	1.42	2.46	3.18	4.50	6.36	7.79	9.00	10.1	11.0	12.7	14.2	20.1	0.221				
1/2	FF209	145°	1.18	2.04	2.64	3.73	5.28	6.46	7.46	8.34	9.14	10.1	11.8	16.7	0.196	1/2	2.00	0.88	0.88
	FF218	145°	1.26	2.19	2.83	4.00	5.66	6.93	8.00	8.90	9.80	11.3	12.6	17.9	0.218				
	FF250	145°	1.66	2.88	3.71	5.25	7.42	9.09	10.5	11.7	12.9	14.8	16.6	23.5	0.250				
	FF256	145°	1.90	3.29	4.24	6.00	8.49	10.4	12.0	13.4	14.7	17.0	19.0	26.8	0.256				
	FF281	145°	2.21	3.83	4.95	7.00	9.90	12.1	14.0	15.7	17.1	19.8	22.1	31.3	0.281				
	FF312	145°	2.53	4.38	5.66	8.00	11.3	13.9	16.0	17.9	19.6	22.6	25.3	35.8	0.312				
	FF375	145°	3.79	6.57	8.49	12.0	17.0	20.8	24.0	26.8	29.4	33.9	37.9	53.7	0.375				
3/4	FF316	145°	2.85	4.93	6.36	9.00	12.7	15.6	18.0	20.1	22.0	25.5	28.5	40.2	0.316	3/4	2.63	1.38	1.50
	FF332	145°	3.16	5.48	7.07	10.0	14.1	17.3	20.0	22.4	24.5	28.3	31.6	44.7	0.332				
	FF348	145°	3.48	6.02	7.78	11.0	15.6	19.1	22.0	24.6	26.9	31.1	34.8	49.2	0.348				
	FF375	145°	3.79	6.57	8.49	12.0	17.0	20.8	24.0	26.8	29.4	33.9	37.9	53.7	0.375				
	FF406	145°	4.43	7.67	9.90	14.0	19.8	24.2	28.0	31.3	34.3	39.6	44.3	62.6	0.406				
	FF437	145°	5.06	8.76	11.3	16.0	22.6	27.7	32.0	35.8	39.2	45.3	50.6	71.6	0.437				
	FF453	145°	5.69	9.86	12.7	18.0	25.5	31.2	36.0	40.2	44.1	50.9	56.9	80.5	0.453				
	FF484	145°	6.64	11.5	14.8	21.0	29.7	36.4	42.0	47.0	51.4	59.4	66.4	93.9	0.484				
	FF500	145°	7.59	13.1	17.0	24.0	33.9	41.6	48.0	53.7	58.8	67.9	75.9	107	0.500				
1	FF578	145°	9.49	16.4	21.2	30.0	42.4	52.0	60.0	67.1	73.5	84.9	94.9	134	0.578	1	3.38	2.00	2.00
	FF625	145°	11.5	20.0	25.8	36.5	51.6	63.2	73.0	81.6	89.4	103	115	163	0.625				
	FF703	145°	14.2	24.6	31.8	45.0	63.6	77.9	90.0	101	110	127	142	201	0.703				
	FF750	145°	16.6	28.8	37.1	52.5	74.2	90.9	105	117	129	148	166	235	0.750				

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

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

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



FAN

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