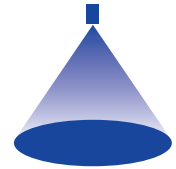


# ➤ Axial-flow full cone nozzles Series 460/461



### Features:

- Extremely uniform liquid distribution

### Applications:

- Cleaning and washing processes
- Cooling
- Surface spraying
- Chemical process engineering



Series 460/461

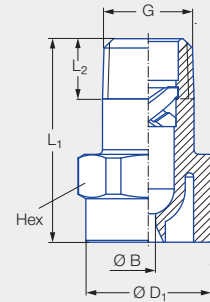


Figure 1

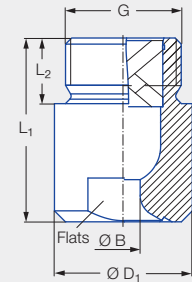


Figure 2

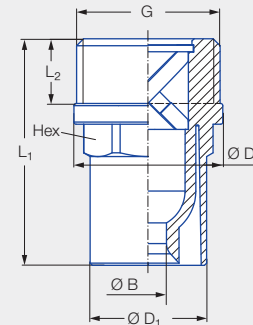

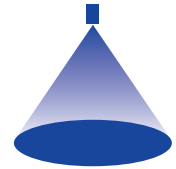


Figure 3

Connection	Figure	G	Dimensions [in]					Weight [lb]
			L <sub>1</sub>	L <sub>2</sub>	Ø D <sub>1</sub>	Ø D <sub>2</sub>	Hex (mm)	
BA	1	1/8 NPT	0.87	0.26	0.51	–	14	0.006
BC	1	1/4 NPT	0.87	0.38	0.51	–	14	0.007
BE	1	3/8 NPT	1.18	0.39	0.67	–	17	0.014
BG	1	1/2 NPT	1.71	0.52	0.87	–	22	0.032
BK	2	3/4 NPT	1.65	0.59	1.24	–	27	0.044
BM	3	1 NPT	2.07	0.59	1.06	1.36	27	0.076

Spray angle	Ordering number							Bore diameter B [in]	Narrowest free cross sections Ø [in]	V̇ water [gal/min]							Spray diameter D [in] (at p = 30 psi)					
	Type	Mat. no.	Connection							p [psi]												
			5E	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT			3/4 NPT	1 NPT	7	15	30	Liters per min. 2 bar				45	60	75	145
															2.00	0.63	0.71	0.77				
60°	460.524	●	BA						0.063	0.063	0.30	0.41	0.54	2.00	0.63	0.71	0.77	1.01	8	15		
	460.644	●		BC					0.094	0.075	0.60	0.81	1.07	4.00	1.26	1.41	1.55	2.01	9	17		
	460.724	●		BC					0.110	0.083	0.94	1.28	1.69	6.30	1.98	2.23	2.43	3.17	10	18		
	460.964	●					BK		0.228	0.193	3.74	5.07	6.69	25.00	7.87	8.83	9.66	12.57	12	22		






Spray angle	Ordering number								Bore diameter B [in]	Narrowest free cross sections Ø [in]	V̇ water [gal/min]								Spray diameter D [in] (at p = 30 psi)	
	Type	Mat. no.	Connection								p [psi]								H = 10 [in]	H = 20 [in]
		5E	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT			7	15	30	Liters per min. 2 bar	45	60	75	145		
		PVDF												40						
90°	460.326	●	BA						0.031	0.022	0.06	0.08	0.11	0.40	0.13	0.14	0.15	0.20	17	30
	460.406	●	BA						0.047	0.033	0.15	0.20	0.27	1.00	0.31	0.35	0.39	0.50	17	31
	460.486	●	BA						0.057	0.047	0.24	0.32	0.43	1.60	0.50	0.57	0.62	0.80	18	31
	460.526	●	BA						0.065	0.051	0.30	0.41	0.54	2.00	0.63	0.71	0.77	1.01	18	32
	460.606	●	BA		BE				0.081	0.057	0.47	0.64	0.84	3.15	0.99	1.11	1.22	1.58	19	33
	460.646	●		BC					0.091	0.071	0.60	0.81	1.07	4.00	1.26	1.41	1.55	2.01	19	34
	460.726	●			BE				0.116	0.079	0.94	1.28	1.69	6.30	1.98	2.23	2.43	3.17	20	35
	460.746	●			BE				0.130	0.075	1.06	1.44	1.90	7.10	2.24	2.51	2.74	3.57	20	36
	460.766	●			BE				0.130	0.094	1.20	1.62	2.14	8.00	2.52	2.83	3.09	4.02	20	36
	460.806	●			BE				0.146	0.106	1.50	2.03	2.68	10.00	3.15	3.53	3.86	5.03	20	36
	460.846	●			BE				0.159	0.126	1.87	2.54	3.35	12.50	3.94	4.42	4.83	6.29	20	37
	460.886	●			BE	BG			0.185	0.122	2.39	3.25	4.28	16.00	5.04	5.65	6.18	8.05	20	37
	460.926	●				BG			0.201	0.110	2.99	4.06	5.36	20.00	6.30	7.07	7.73	10.06	20	37
	460.966	●				BG			0.228	0.150	3.74	5.07	6.69	25.00	7.87	8.83	9.66	12.57	20	37
	461.006	●				BG			0.252	0.150	4.71	6.39	8.43	31.50	9.92	11.13	12.17	15.84	20	37
	461.046	●					BK <sup>1</sup>		0.283	0.209	5.98	8.12	10.71	40.00	12.60	14.13	15.45	20.11	20	37
461.086	●					BK <sup>1</sup>		0.331	0.197	7.48	10.15	13.39	50.00	15.74	17.66	19.31	25.14	21	37	
120°	460.368	●	BA						0.037	0.026	0.09	0.13	0.17	0.63	0.20	0.22	0.24	0.32	26	41
	460.408	●	BA						0.047	0.033	0.15	0.20	0.27	1.00	0.31	0.35	0.39	0.50	27	43
	460.488	●	BA						0.059	0.039	0.24	0.32	0.43	1.60	0.50	0.57	0.62	0.80	28	46
	460.528	●	BA						0.065	0.047	0.30	0.41	0.54	2.00	0.63	0.71	0.77	1.01	28	47
	460.608	●	BA						0.083	0.055	0.47	0.64	0.84	3.15	0.99	1.11	1.22	1.58	29	50
	460.648	●		BC					0.096	0.063	0.60	0.81	1.07	4.00	1.26	1.41	1.55	2.01	30	52
	460.728	●			BE				0.122	0.075	0.94	1.28	1.69	6.30	1.98	2.23	2.43	3.17	31	54
	460.748	●			BE				0.130	0.075	1.06	1.44	1.90	7.10	2.24	2.51	2.74	3.57	31	55
	460.768	●			BE				0.138	0.075	1.20	1.62	2.14	8.00	2.52	2.83	3.09	4.02	31	56
	460.808	●			BE				0.150	0.095	1.50	2.03	2.68	10.00	3.15	3.53	3.86	5.03	32	56
	460.848	●			BE				0.165	0.107	1.87	2.54	3.35	12.50	3.94	4.42	4.83	6.29	32	57
	460.888	●				BG			0.181	0.122	2.39	3.25	4.28	16.00	5.04	5.65	6.18	8.05	33	58
	460.968	●				BG			0.232	0.161	3.74	5.07	6.69	25.00	7.87	8.83	9.66	12.57	33	59
	461.048	● <sup>1</sup>					BK <sup>1</sup>		0.300	0.193	5.98	8.12	10.71	40.00	12.60	14.13	15.45	20.11	34	60

<sup>1</sup> Material PP (mat. no. 53).  
Also available in metric thread.

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

Ordering Type + Material no. + Connection = Ordering no.  
example: 460.326 + 5E + CB = 460.326.5E.BA

 Assembly accessories can be found in Chapter 12 "Accessories".