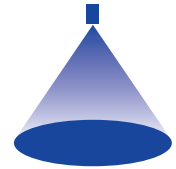


# ➤ Axial-flow full cone nozzles Series 490/491



### Features:

- Extremely uniform liquid distribution
- Very stable spray angle
- Non clogging due to large free cross sections

### Applications:

- Cleaning and washing processes
- Surface spraying
- Chemical process engineering
- Foam control

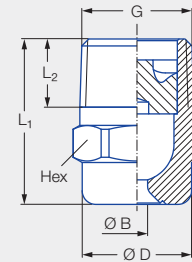


Figure 1

Series 490/491

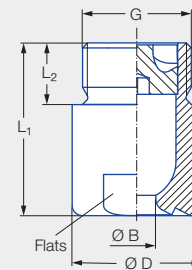


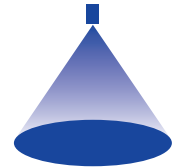
Figure 2

Connection	Figure	G	Dimensions [in]				Weight [lb] (brass)
			L <sub>1</sub>	L <sub>2</sub>	Ø D	Hex (mm)	
BA	1	1/8 NPT	0.71	0.26	0.39	11	0.03
BC	1	1/4 NPT	0.87	0.39	0.51	14	0.04
BE	1	3/8 NPT	0.96	0.39	0.63	17	0.07
BE	1	3/8 NPT	1.18	0.39	0.63	17	0.11
BG	1	1/2 NPT	1.28	0.51	0.83	22	0.13
BG	1	1/2 NPT	1.65	0.51	0.83	22	0.19
BK	2	3/4 NPT	1.65	0.59	1.26	27	0.42
BM	2	1 NPT	2.20	0.67	1.57	36	0.77

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]	
		1Y	30	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	75	100			145
45°	490.403	●	●	BA						0.049	0.049	0.15	0.20	0.27	1.00	0.31	0.39	0.43	0.50	8	16
	490.523	●	●	BA						0.067	0.067	0.30	0.41	0.54	2.00	0.63	0.77	0.87	1.01	8	16
	490.603	●	●		BC	BE <sup>1</sup>				0.079	0.079	0.47	0.64	0.84	3.15	0.99	1.22	1.37	1.58	8	16
	490.643	●	●		BC	BE <sup>1</sup>				0.096	0.096	0.60	0.81	1.07	4.00	1.26	1.55	1.73	2.01	8	16
	490.683		●			BE				0.100	0.100	0.75	1.01	1.34	5.00	1.57	1.93	2.17	2.51	8	16
	490.703		●			BE				0.104	0.104	0.84	1.14	1.50	5.60	1.76	2.16	2.43	2.82	8	17
	490.723	●	●			BE				0.112	0.112	0.94	1.28	1.69	6.30	1.98	2.43	2.73	3.17	8	17
	490.783		●				BG			0.136	0.136	1.35	1.83	2.41	9.00	2.83	3.48	3.90	4.53	8	17
	490.843		●				BG			0.150	0.150	1.87	2.54	3.35	12.50	3.94	4.83	5.42	6.29	9	17

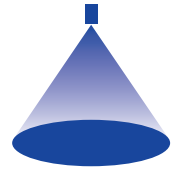
<sup>1</sup> Only available in material 30.






Spray angle	Ordering number									Bore diameter B [in]	Narrowest free cross sections Ø [in]	V water [gal/min]							Spray diameter D [in] (at p = 30 psi)		
	Type	Mat. no.		Connection								p [psi]							H = 10 [in]	H = 20 [in]	
		1Y	30	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT			Liters per min. 2 bar	45	75	100	145					
		Stainless steel 316L	Brass														7	15			30
60°	490.404	●	●	BA						0.045	0.045	0.15	0.20	0.27	1.00	0.31	0.39	0.43	0.50	10	20
	490.444	●		BA						0.049	0.049	0.19	0.25	0.33	1.25	0.39	0.48	0.54	0.63	10	20
	490.484	●	●	BA						0.057	0.057	0.24	0.32	0.43	1.60	0.50	0.62	0.69	0.80	10	20
	490.524	●	●	BA						0.063	0.063	0.30	0.41	0.54	2.00	0.63	0.77	0.87	1.01	11	21
	490.564	●	●	BA						0.071	0.071	0.37	0.51	0.67	2.50	0.79	0.97	1.08	1.26	11	21
	490.604	●	●	BA	BC	BE				0.081	0.081	0.47	0.64	0.84	3.15	0.99	1.22	1.37	1.58	11	21
	490.644	●	●		BC	BE				0.091	0.091	0.60	0.81	1.07	4.00	1.26	1.55	1.73	2.01	11	21
	490.684	●	●		BC	BE				0.102	0.102	0.75	1.01	1.34	5.00	1.57	1.93	2.17	2.51	11	22
	490.724	●	●		BC	BE				0.116	0.110	0.94	1.28	1.69	6.30	1.98	2.43	2.73	3.17	11	22
	490.764	●	●			BE				0.128	0.128	1.20	1.62	2.14	8.00	2.52	3.09	3.47	4.02	11	22
	490.804	●	●			BE				0.146	0.146	1.50	2.03	2.68	10.00	3.15	3.86	4.33	5.03	11	22
	490.844	●	●				BG			0.159	0.159	1.87	2.54	3.35	12.50	3.94	4.83	5.42	6.29	11	22
	490.884	●	●				BG			0.183	0.183	2.39	3.25	4.28	16.00	5.04	6.18	6.93	8.05	12	23
	490.924	●	●					BK		0.205	0.205	2.99	4.06	5.36	20.00	6.30	7.73	8.67	10.06	12	23
	490.964	●	●					BK		0.228	0.228	3.74	5.07	6.69	25.00	7.87	9.66	10.83	12.57	12	23
	491.044	●	●						BM	0.285	0.285	5.98	8.12	10.71	40.00	12.60	15.45	17.34	20.11	12	24
491.084	●	●						BM	0.320	0.320	7.48	10.15	13.39	50.00	15.74	19.31	21.67	25.14	12	24	
90°	490.406	●	●	BA					0.047	0.047	0.15	0.20	0.27	1.00	0.31	0.39	0.43	0.50	19	35	
	490.446		●	BA					0.051	0.051	0.19	0.25	0.33	1.25	0.39	0.48	0.54	0.63	19	35	
	490.486	●	●	BA					0.057	0.057	0.24	0.32	0.43	1.60	0.50	0.62	0.69	0.80	20	35	
	490.526	●	●	BA					0.067	0.061	0.30	0.41	0.54	2.00	0.63	0.77	0.87	1.01	20	36	
	490.566	●	●	BA					0.075	0.075	0.37	0.51	0.67	2.50	0.79	0.97	1.08	1.26	20	36	
	490.606	●	●	BA		BE			0.083	0.081	0.47	0.64	0.84	3.15	0.99	1.22	1.37	1.58	20	37	
	490.646	●	●		BC	BE			0.094	0.094	0.60	0.81	1.07	4.00	1.26	1.55	1.73	2.01	20	37	
	490.686	●	●		BC	BE			0.106	0.106	0.75	1.01	1.34	5.00	1.57	1.93	2.17	2.51	20	38	
	490.726	●	●		BC	BE			0.126	0.110	0.94	1.28	1.69	6.30	1.98	2.43	2.73	3.17	21	38	
	490.746	●	●			BE			0.124	0.124	1.06	1.44	1.90	7.10	2.24	2.74	3.08	3.57	21	39	
	490.766	●	●			BE			0.134	0.134	1.20	1.62	2.14	8.00	2.52	3.09	3.47	4.02	21	39	
	490.806	●	●			BE			0.154	0.154	1.50	2.03	2.68	10.00	3.15	3.86	4.33	5.03	22	39	
	490.846	●	●			BE			0.183	0.157	1.87	2.54	3.35	12.50	3.94	4.83	5.42	6.29	22	39	
	490.886	●	●				BG		0.215	0.177	2.39	3.25	4.28	16.00	5.04	6.18	6.93	8.05	22	40	
	490.926	●	●				BG		0.232	0.177	2.99	4.06	5.36	20.00	6.30	7.73	8.67	10.06	22	40	
	490.966	●	●				BG		0.258	0.191	3.74	5.07	6.69	25.00	7.87	9.66	10.83	12.57	22	40	
	491.006	●	●					BK	0.297	0.217	4.78	6.31	8.32	31.50	9.79	12.01	13.73	15.84	22	41	
	491.046	●	●					BK	0.339	0.260	5.98	8.12	10.71	40.00	12.60	15.45	17.34	20.11	22	41	
491.086	●	●						BM	0.372	0.285	7.48	10.15	13.39	50.00	15.74	19.31	21.67	25.14	22	41	
491.126	●	●						BM	0.409	0.315	9.42	12.78	16.87	63.00	19.84	24.34	27.30	31.68	22	41	
491.146	●							BM	0.433	0.295	10.62	14.41	19.01	71.00	22.36	27.43	30.77	35.70	22	41	
120°	490.368	●	●	BA					0.033	0.026	0.09	0.13	0.17	0.63	0.20	0.24	0.27	0.32	28	49	
	490.408	●	●	BA					0.047	0.047	0.15	0.20	0.27	1.00	0.31	0.39	0.43	0.50	28	50	
	490.448	●	●	BA					0.051	0.051	0.19	0.25	0.33	1.25	0.39	0.48	0.54	0.63	29	50	
	490.488	●	●	BA					0.057	0.057	0.24	0.32	0.43	1.60	0.50	0.62	0.69	0.80	30	51	
	490.528	●	●	BA					0.067	0.067	0.30	0.41	0.54	2.00	0.63	0.77	0.87	1.01	31	52	
	490.568	●	●	BA					0.075	0.075	0.37	0.51	0.67	2.50	0.79	0.97	1.08	1.26	31	53	






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]									
		1Y	30	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	75	100	145			H = 10 [in]
		Stainless steel 316L	Brass																			
120°	490.608	●	●	BA							0.083	0.081	0.48	0.63	0.83	3.15	0.98	1.20	1.37	1.58	32	54
	490.648	●	●		BC	BE					0.094	0.094	0.61	0.80	1.06	4.00	1.24	1.52	1.74	2.01	33	55
	490.688	●	●		BC	BE					0.108	0.108	0.76	1.00	1.32	5.00	1.55	1.90	2.18	2.51	33	56
	490.728	●	●		BC	BE					0.126	0.110	0.96	1.26	1.66	6.30	1.96	2.40	2.75	3.17	34	58
	490.748	●	●			BE					0.126	0.126	1.08	1.42	1.88	7.10	2.21	2.71	3.10	3.57	34	59
	490.768	●	●			BE					0.136	0.136	1.21	1.60	2.11	8.00	2.49	3.05	3.49	4.02	35	60
	490.808	●	●			BE					0.154	0.154	1.52	2.00	2.64	10.00	3.11	3.81	4.36	5.03	35	62
	490.848	●	●			BE					0.185	0.157	1.90	2.50	3.30	12.50	3.88	4.76	5.45	6.29	36	64
	490.888	●	●				BG				0.201	0.177	2.43	3.20	4.23	16.00	4.97	6.10	6.98	8.05	36	66
	490.928	●	●				BG				0.228	0.187	3.04	4.00	5.28	20.00	6.21	7.62	8.72	10.06	37	67
	490.968	●	●				BG	BK			0.262	0.191	3.79	5.01	6.60	25.00	7.77	9.53	10.90	12.57	37	67
	491.048	●	●					BK			0.358	0.230	6.07	8.01	10.57	40.00	12.43	15.25	17.44	20.11	37	68
	491.128	●	●						BM		0.425	0.305	9.56	12.61	16.64	63.00	19.57	24.01	27.47	31.68	37	69
	491.148	●							BM		0.449	0.301	10.77	14.22	18.76	71.00	22.06	27.06	30.96	35.70	37	69

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: 490.608 + 1Y + BA = 490.608.1Y.BA

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