

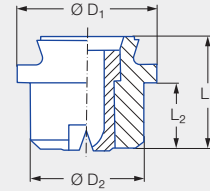
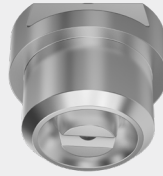
# Low pressure flat fan nozzles with dovetail guide

## Series 660



### Features:

- Uniform, parabolic liquid distribution
- Stable spray angle
- Spray automatically aligned approx. 5° to the longitudinal axis of the pipe due to dovetail guide
- Assembly with retaining nut
- Non-clogging
- High spray energy



Series 660

### Applications:

- Cleaning installations
- Spray pipes
- Cooling pipes

Code	Dimensions [mm]				Weight [g] Brass
	L <sub>1</sub>	L <sub>2</sub>	Ø D <sub>1</sub>	Ø D <sub>2</sub>	
Assembly with retaining nut 3/8 BSPP and dovetail guide	12.0	7.0	14.8	12.0	10.0

Spray angle	Ordering no.				Equivalent bore diameter A [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]						Spray width B [mm] (at p = 5 bar)	
	Type	Mat. no.					p [bar]							
		16	17 <sup>1</sup>	30										
		Stainless steel 303	Stainless steel 316Ti / Stainless steel 316L	Brass			0.5	1.0	2.0	3.0	5.0	10.0	H = 250 [mm]	H = 500 [mm]
20°	660.301	●	●	●	0.70	0.60	0.16*	0.23*	0.32	0.40	0.51	0.72	85	160
	660.361	●	●	●	1.00	0.80	0.32*	0.45*	0.63	0.77	1.00	1.41	85	160
	660.441	●	●	●	1.35	1.10	0.63*	0.89	1.25	1.53	1.98	2.80	85	160
	660.481	●	●	●	1.50	1.20	0.80*	1.13	1.60	1.96	2.53	3.58	85	160
30°	660.302	●	●	●	0.60	0.50	0.16*	0.23*	0.32	0.40	0.51	0.72	120	220
	660.362	●	●	●	1.00	0.70	0.32*	0.45*	0.63	0.77	1.00	1.41	120	220
	660.402	●	●	●	1.20	0.90	0.50*	0.71	1.00	1.22	1.58	2.23	120	230
	660.482	●	●	●	1.50	1.10	0.80*	1.13	1.60	1.96	2.53	3.58	130	230
	660.562	●	●	●	2.00	1.50	1.25	1.77	2.50	3.06	3.95	5.59	130	240
45°	660.303	●	●	●	0.70	0.50	0.16*	0.23*	0.32	0.40	0.51	0.72	170	330
	660.363	●	●	●	1.00	0.60	0.32*	0.45*	0.63	0.77	1.00	1.41	190	350
	660.403	●	●	●	1.20	0.90	0.50*	0.71	1.00	1.22	1.58	2.23	200	370
	660.483	●	●	●	1.50	1.10	0.80*	1.13	1.60	1.96	2.53	3.58	200	390
	660.563	●	●	●	2.00	1.40	1.25	1.77	2.50	3.06	3.95	5.59	210	410
	660.643	●	●	●	2.50	1.80	2.00	2.83	4.00	4.90	6.33	8.95	220	410
60°	660.304	●	●	●	0.70	0.40	0.16*	0.23*	0.32	0.40	0.51	0.72	260	480
	660.334	●	●	●	0.90	0.50	0.22*	0.32*	0.45	0.55	0.71	1.00	260	490
	660.364	●	●	●	1.00	0.60	0.32*	0.45*	0.63	0.77	1.00	1.41	260	500
	660.404	●	●	●	1.20	0.80	0.50*	0.71	1.00	1.22	1.58	2.23	260	510
	660.444	●	●	●	1.35	0.90	0.63*	0.89	1.25	1.53	1.98	2.80	260	510





Spray angle	Ordering no.				Equivalent bore diameter A [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]						Spray width B [mm] (at p = 5 bar)	
	Type	Mat. no.					p [bar]						H = 250 [mm]	H = 500 [mm]
		16	17 <sup>1</sup>	30			0.5	1.0	2.0	3.0	5.0	10.0		
		Stainless steel 303	Stainless steel 316Ti/ Stainless steel 316L	Brass										
60°	660.484	●	●	●	1.50	1.00	0.80*	1.13	1.60	1.96	<b>2.53</b>	3.58	260	520
	660.514	●	●	●	1.65	1.10	0.95*	1.34	1.90	2.32	<b>3.00</b>	4.24	270	520
	660.564	●	●	●	2.00	1.30	1.25	1.77	2.50	3.06	<b>3.95</b>	5.59	270	530
	660.604	●	●	●	2.20	1.50	1.57	2.23	3.15	3.86	<b>4.98</b>	7.04	270	540
	660.644	●	●	●	2.50	1.60	2.00	2.83	4.00	4.90	<b>6.33</b>	8.95	270	540
	660.724	●	●	●	3.00	2.10	3.15	4.45	6.30	7.71	<b>9.96</b>	14.09	280	560
660.804	●	●	●	4.00	2.60	5.00	7.07	10.00	12.25	<b>15.81</b>	22.36	290	580	
75°	660.145	●		●	0.20	0.14	–	0.04*	0.05	0.06	<b>0.08</b>	0.11	380	690
	660.165	●		●	0.20	0.14	–	0.05*	0.07	0.08	<b>0.10</b>	0.15	380	690
	660.185	●		●	0.20	0.16	–	0.06*	0.08	0.10	<b>0.13</b>	0.18	380	690
	660.215	●		●	0.50	0.20	–	0.08*	0.11	0.14	<b>0.18</b>	0.25	380	690
	660.245	●		●	0.50	0.30	–	0.12*	0.16	0.20	<b>0.26</b>	0.37	380	690
	660.275	●		●	0.60	0.30	0.11*	0.16*	0.22	0.27	<b>0.35</b>	0.49	380	690
90°	660.216	●		●	0.40	0.20	–	0.08*	0.11	0.14	<b>0.18</b>	0.25	420	780
	660.276	●		●	0.60	0.30	0.11*	0.16*	0.22	0.27	<b>0.35</b>	0.49	430	790
	660.306	●	●	●	0.70	0.40	0.16*	0.23*	0.32	0.40	<b>0.51</b>	0.72	440	800
	660.336	●	●	●	0.90	0.50	0.22*	0.32*	0.45	0.55	<b>0.71</b>	1.00	440	820
	660.366	●	●	●	1.00	0.50	0.32*	0.45*	0.63	0.77	<b>1.00</b>	1.41	450	830
	660.406	●	●	●	1.20	0.70	0.50*	0.71	1.00	1.22	<b>1.58</b>	2.23	450	840
	660.446	●	●	●	1.35	0.80	0.63*	0.89	1.25	1.53	<b>1.98</b>	2.80	460	860
	660.486	●	●	●	1.50	0.80	0.80*	1.13	1.60	1.96	<b>2.53</b>	3.58	470	870
	660.516	●	●	●	1.65	0.90	0.95*	1.34	1.90	2.32	<b>3.00</b>	4.24	480	880
	660.566	●	●	●	2.00	1.10	1.25	1.77	2.50	3.06	<b>3.95</b>	5.59	490	900
	660.606	●	●	●	2.20	1.20	1.57	2.23	3.15	3.86	<b>4.98</b>	7.04	500	910
	660.646	●	●	●	2.50	1.30	2.00	2.83	4.00	4.90	<b>6.33</b>	8.95	510	930
	660.676	●	●	●	2.70	1.40	2.37	3.36	4.75	5.82	<b>7.51</b>	10.62	510	950
	660.726	●	●	●	3.00	1.70	3.15	4.45	6.30	7.71	<b>9.96</b>	14.09	520	980
660.806		●	●	4.00	2.40	5.00	7.07	10.00	12.25	<b>15.81</b>	22.36	530	1,030	
120°	660.187	●		●	0.35	0.20	–	0.06*	0.08	0.10	<b>0.13</b>	0.18	630	1,060
	660.217	●		●	0.40	0.20	–	0.08*	0.11	0.14	<b>0.18</b>	0.25	650	1,080
	660.247	●		●	0.50	0.30	–	0.12*	0.16	0.20	<b>0.26</b>	0.37	660	1,100
	660.277	●		●	0.60	0.30	–	0.16*	0.22	0.27	<b>0.35</b>	0.49	670	1,150
	660.307	●		●	0.70	0.30	0.16*	0.23*	0.32	0.40	<b>0.51</b>	0.72	710	1,240
	660.337	●	●	●	0.90	0.40	0.22*	0.32*	0.45	0.55	<b>0.71</b>	1.00	740	1,350
	660.367	●	●	●	1.00	0.40	0.32*	0.45*	0.63	0.77	<b>1.00</b>	1.41	800	1,430
	660.407	●	●	●	1.20	0.60	0.50*	0.71	1.00	1.22	<b>1.58</b>	2.23	830	1,480
	660.447	●	●	●	1.35	0.60	0.63*	0.88	1.25	1.53	<b>1.98</b>	2.80	840	1,520
	660.487	●	●	●	1.50	0.60	0.80*	1.13	1.60	1.96	<b>2.53</b>	3.58	850	1,540
	660.517	●	●	●	1.65	0.90	0.95*	1.34	1.90	2.32	<b>3.00</b>	4.24	850	1,560
	660.567	●	●	●	2.00	0.90	1.25	1.77	2.50	3.06	<b>3.95</b>	5.59	870	1,590
	660.607	●	●	●	2.20	1.10	1.57	2.23	3.15	3.86	<b>4.98</b>	7.04	870	1,620
	660.647	●	●	●	2.50	1.30	2.00	2.83	4.00	4.90	<b>6.33</b>	8.95	880	1,640
	660.727	●	●	●	3.00	1.60	3.15	4.45	6.30	7.71	<b>9.96</b>	14.09	890	1,680
	660.807	●		●	4.00	2.00	5.00	7.07	10.00	12.25	<b>15.81</b>	22.36	900	1,710

\* Differing spray pattern.

<sup>1</sup> We reserve the right to supply material 316Ti or 316L under material no. 17.

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering Type + Material no. = Ordering no.  
example: 660.484 + 16 = 660.484.16



Assembly accessories can be found in Chapter 9 "Accessories".