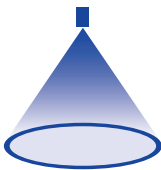


» Tangential-flow hollow cone nozzles,
stainless steel/brass version
Series 302

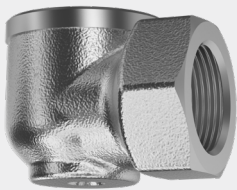


Features:

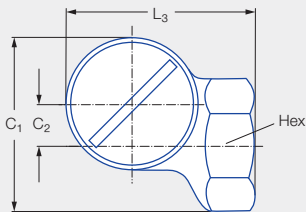
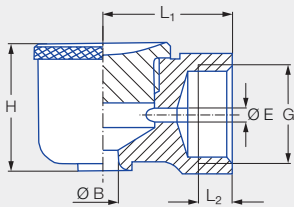
- Uniform atomization
- Non-clogging nozzle without swirl insert

Applications:

- Humidification of air
- Dust control
- Sprinkling
- Foam control
- Adiabatic cooling



Series 302



G	Dimensions [mm]							Weight [g] (Brass)
	C ₁	C ₂	H	L ₁	L ₂	L ₃	Hex	
3/8 BSPP	34.0	8.0	23.0	23.0	6.5	36.0	22	90.0

Spray angle	Ordering no.			Bore diameter B [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]							Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.				p [bar]								
		1Y	30											
		Stainless steel 316L	Brass			0.5	1.0	2.0	3.0	5.0	7.0	10.0		H = 250 [mm]
60°	302.364		●	1.50	1.50	0.32	0.45	0.63	0.77	1.00	1.18	1.41	280	420
	302.464	●	●	2.00	2.00	0.70	0.99	1.40	1.71	2.21	2.62	3.13	280	460
80°	302.545	●	●	4.90	2.30	1.12	1.58	2.24	2.74	3.54	4.19	5.01	360	660
90°	302.606	●	●	4.60	4.00	1.58	2.23	3.15	3.86	4.98	5.89	7.04	470	810
130°	302.368	●	●	3.00	1.00	0.32	0.45	0.63	0.77	1.00	1.18	1.41	660	1,080
	302.468	●	●	5.00	1.70	0.70	0.99	1.40	1.71	2.21	2.62	3.13	810	1,370
	302.548		●	5.00	2.50	1.12	1.58	2.24	2.74	3.54	4.19	5.01	960	1,640
	302.608	●	●	5.00	3.50	1.58	2.23	3.15	3.86	4.98	5.89	7.04	1,060	1,800
	302.668		●	7.50	3.60	2.25	3.18	4.50	5.51	7.12	8.42	10.06	1,120	1,950
	302.748	●	●	7.50	4.80	3.55	5.02	7.10	8.70	11.23	13.28	15.88	1,160	2,150

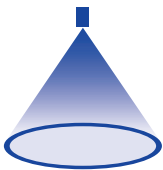
Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering	Type	+	Material no.	=	Ordering no.
example:	302.364	+	30	=	302.364.30

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



Tangential-flow hollow cone nozzles,
plastic version
Series 302

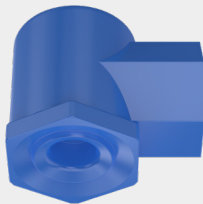


Features:

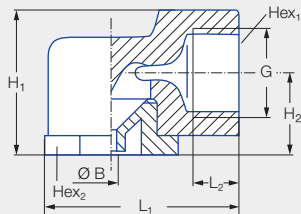
- Uniform atomization
- Non-clogging nozzle without swirl insert

Applications:

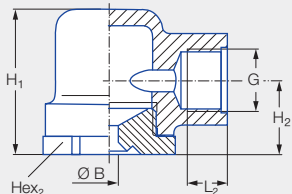
- Humidification of air
- Dust control
- Sprinkling
- Foam control
- Adiabatic cooling



Series 302



Type 302.32x-302.48x



Type 302.52x-302.96x

Type	G	Dimensions [mm]						Weight [g]	p _{max} [bar]
		H ₁	H ₂	L ₁	L ₂	Hex ₁	Hex ₂		
302.32x-302.48x	3/8 BSPP	27.5	16.5	43.5	10.0	22	22	13.0	5.0
302.52x-302.96x	3/8 BSPP	34.0	18.5	37.0	10.0	22	22	18.0	5.0

Spray angle	Ordering no.			Bore diameter B [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]					Spray diameter D [mm] (at p = 2 bar)		
	Type	Mat. no.				p [bar]							
		51	5E									53	
		PA	PVDF			PP	0.5	1.0	2.0	3.0		5.0	H = 250 [mm]
60°	302.364	●		●	1.30	1.30	0.32	0.45	0.63	0.77	1.00	320	600
	302.464	●		●	1.95	1.95	0.70	0.99	1.40	1.71	2.21	330	620
90°	302.326	●	●		1.05	1.05	0.20	0.28	0.40	0.49	0.63	470	770
	302.366	●	●		1.30	1.30	0.32	0.45	0.63	0.77	1.00	480	790
	302.406	●	●	●	1.55	1.55	0.50	0.71	1.00	1.22	1.58	490	810
	302.486	●		●	2.10	2.10	0.80	1.13	1.60	1.96	2.53	510	850
	302.526	●		●	5.00	2.00	1.00	1.41	2.00	2.45	3.16	520	870
	302.566	●		●	5.00	2.40	1.25	1.77	2.50	3.06	3.95	520	900
	302.606	●		●	5.00	3.20	1.58	2.23	3.15	3.86	4.98	530	940
	302.686	●			7.50	3.40	2.50	3.54	5.00	6.12	7.91	540	1,010
	302.766	●			9.00	4.30	4.00	5.66	8.00	9.80	12.65	540	1,040
	302.846	●		●	11.00	5.20	6.25	8.84	12.50	15.31	19.67	540	1,050
	302.886	●	●	●	11.00	6.40	8.00	11.31	16.00	19.60	25.30	540	1,050
	302.966	●			11.00	8.60	12.50	17.68	25.00	30.62	39.53	540	1,050





Spray angle	Ordering no.				Bore diameter B [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]					Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.					p [bar]						
		51	5E	53									
		PA	PVDF	PP			0.5	1.0	2.0	3.0	5.0	H = 250 [mm]	H = 500 [mm]
130°	302.328		●		1.35	0.80	0.20	0.28	0.40	0.49	0.63	640	930
	302.368	●	●		1.85	1.10	0.32	0.45	0.63	0.77	1.00	660	1,010
	302.408	●	●		3.65	1.30	0.50	0.71	1.00	1.22	1.58	680	1,110
	302.488	●		●	5.20	1.60	0.80	1.13	1.60	1.96	2.53	720	1,250
	302.528	●			5.00	2.00	1.00	1.41	2.00	2.45	3.16	750	1,330
	302.568	●			5.00	2.40	1.25	1.77	2.50	3.06	3.95	780	1,410
	302.608	●	●	●	5.00	3.20	1.58	2.23	3.15	3.86	4.98	820	1,500
	302.648	●			7.50	3.00	2.00	2.83	4.00	4.90	6.32	860	1,590
	302.688	●			7.50	3.40	2.50	3.54	5.00	6.12	7.91	900	1,650
	302.728	●			7.50	4.10	3.15	4.45	6.30	7.72	9.96	920	1,700
	302.768	●			9.00	4.30	4.00	5.66	8.00	9.80	12.65	940	1,730
	302.848	●			11.00	5.20	6.25	8.84	12.50	15.31	19.76	960	1,760
	302.888	●		●	11.00	6.40	8.00	11.31	16.00	19.60	25.30	970	1,780
	302.968	●	●		11.00	8.60	12.50	17.68	25.00	30.62	39.53	1000	1,800

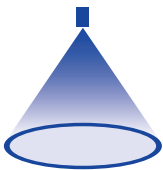
Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{p_2}{p_1}}$

Ordering Type + Material no. = Ordering no.
example: 302.328 + 5E = 302.328.5E

 Assembly accessories can be found in Chapter 9 “Accessories”.

Tangential-flow hollow cone nozzles, plastic version with bayonet quick-release system

Series 302

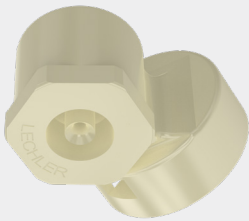


Features:

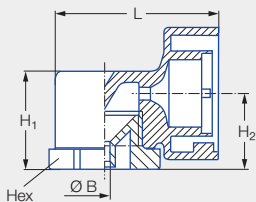
- Uniform atomization
- Non-clogging nozzle without swirl insert
- Quick and secure assembly thanks to bayonet quick-release system
- Setting of spray direction

Applications:

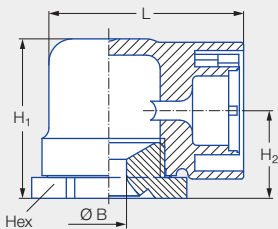
- Humidification of air
- Dust control
- Sprinkling
- Foam control
- Adiabatic cooling



Series 302



Type 302.32x-302.54x



Type 302.606.51.KB

Type	Code	Dimensions [mm]				Weight [g]	P _{max} [bar]
		H ₁	H ₂	L	Hex		
302.32x-302.54x	KB	21.8	16.8	36.0	22	12.0	5.0
302.606.51.KB	KB	34.0	19.0	42.0	30	19.0	5.0

Spray angle	Ordering no.				Bore diameter B [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]					Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.		Code			p [bar]						
		51	56										
		PA	POM									Bayonet quick-release system	0.5
45°	302.503	●		KB	2.05	2.05	0.90	1.27	1.80	2.20	2.85	210	430
60°	302.464		●	KB	1.95	1.95	0.70	0.99	1.40	1.71	2.21	290	540
80°	302.545		●	KB	2.30	2.30	1.12	1.58	2.24	2.74	3.54	450	810
90°	302.326	●	●	KB	1.05	1.05	0.20	0.28	0.40	0.49	0.63	400	720
	302.406	●	●	KB	1.55	1.55	0.50	0.71	1.00	1.22	1.58	400	740
	302.486	●		KB	2.10	2.10	0.80	1.13	1.60	1.96	2.53	450	800
	302.606	●		KB	5.00	3.20	1.58	2.23	3.15	3.86	4.98	530	1,000
	302.686		●	KB	7.50	3.40	2.50	3.54	5.00	6.13	7.91	540	1,010
130°	302.368		●	KB	1.30	1.30	0.32	0.45	0.63	0.77	1.00	660	1,100
	302.408	●	●	KB	2.00	2.00	0.50	0.71	1.00	1.22	1.58	680	1,200
	302.468	●		KB	2.40	2.40	0.70	0.99	1.40	1.71	2.21	680	1,250
	302.488	●		KB	2.75	2.75	0.80	1.13	1.60	1.96	2.53	720	1,300

Conversion formula for this series: $\dot{V}_2 = \dot{V}_1 \cdot \sqrt{\frac{P_2}{P_1}}$

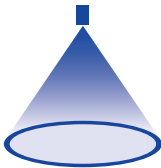
Ordering	Type	+	Material no.	+	Code	=	Ordering no.
example:	302.503	+	51	+	KB	=	302.503.51.KB



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



» Tangential-flow hollow cone nozzles
Series 308



- Features:
- Uniform atomization
 - Non-clogging nozzle without swirl insert
 - Adjustable flow rate

- Applications:
- Humidification of air in air washers
 - Dust control
 - Spraying onto filters
 - Foam control
 - Cooling

Series 308

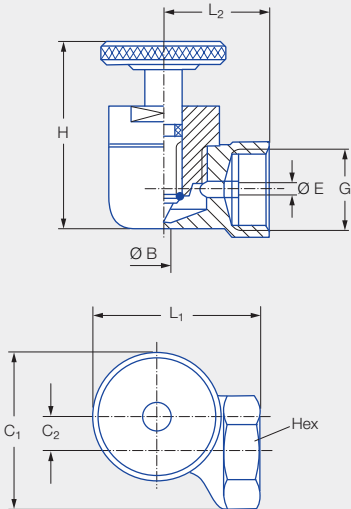


Table with dimensions (G, C1, C2, H, L1, L2, Hex) and weight (150.0 g).

Table with spray angle, ordering no., bore diameter B, narrowest free cross section Ø, flow rate Vmax water, pressure p, and spray diameter D.

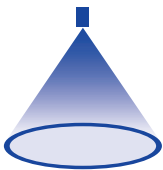
Conversion formula for this series: V2 = V1 * sqrt(p2/p1)

Ordering Type + Material no. = Ordering no.
example: 308.466 + 30 = 308.466.30

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

Tangential-flow hollow cone nozzles

Series 304/306/307

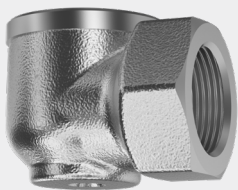


Features:

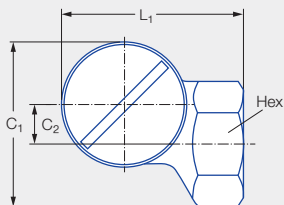
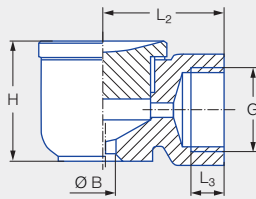
- Uniform atomization
- Non-clogging nozzle without swirl insert

Applications:

- Storage tank cooling
- Foam control
- Dust control
- Surface spraying
- Absorption



Series 304/306/307



Series	G	Dimensions [mm]							Weight [g] (Brass)
		C ₁	C ₂	H	L ₁	L ₂	L ₃	Hex	
304	1/2 BSPP	43.0	11.0	33.0	46.0	30.0	11.0	27	205.0
306/307	3/4 BSPP	54.0	13.0	43.0	60.0	40.0	13.0	36	410.0

Spray angle	Ordering no.			Bore diameter B [mm]	Narrowest free cross section Ø [mm]	G ISO 228	V̇ water [l/min]							Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.					p [bar]								
		1Y	30												
		Stainless steel 316L	Brass												
							0.5	1.0	2.0	3.0	5.0	7.0	10.0	H = 250 [mm]	H = 500 [mm]
90°	304.706	●	●	5.10	5.10	1/2	2.80	3.96	5.60	6.86	8.85	10.48	12.52	500	1,000
	304.796	●	●	8.90	6.00	1/2	4.75	6.72	9.50	11.64	15.02	17.77	21.24	500	1,000
	306.906	●	●	9.00	9.00	3/4	9.00	12.73	18.00	22.05	28.46	33.67	40.25	550	1,050
	306.976	●	●	13.50	10.00	3/4	13.25	18.74	26.50	32.46	41.90	49.58	59.26	550	1,050
130°	304.818		●	12.00	5.00	1/2	5.30	7.50	10.60	12.98	16.76	19.83	23.70	1,200	2,100
	304.898	●	●	12.00	7.00	1/2	8.50	12.02	17.00	20.82	26.88	31.80	38.01	1,250	2,200
	306.978		●	19.00	7.30	3/4	13.25	18.74	26.50	32.46	41.90	49.58	59.26	1,300	2,350
	307.018	●	●	19.00	8.60	3/4	16.75	23.69	33.50	41.03	52.97	62.67	74.91	1,300	2,350

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: 304.706 + 1Y = 307.706.1Y

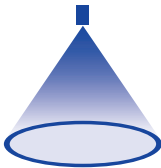


Assembly accessories can be found in Chapter 9 "Accessories".



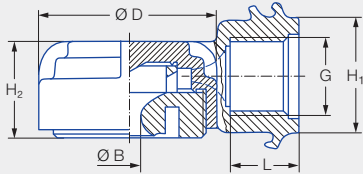
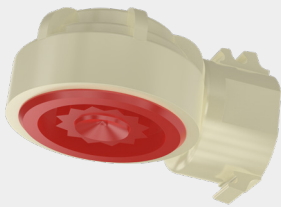
Tangential-flow hollow cone nozzles

Series 350



Features:

- High performance nozzle for humidification of air
- Very narrow droplet spectrum
- Extremely uniform liquid distribution over the entire spray pattern
- Quick-release clamp unit available for pipe mounting



Applications:

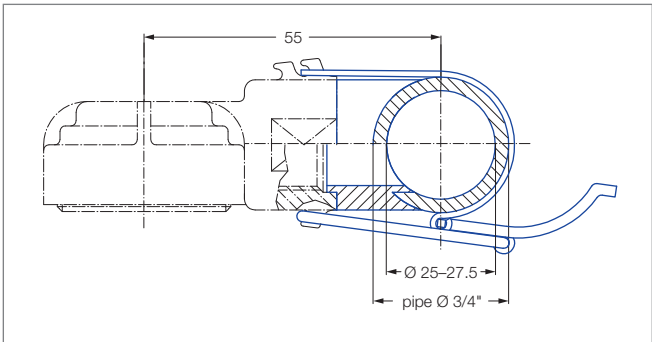
- Foam control
- Dust control
- Surface spraying
- Absorption

Series 350

G	Dimensions [mm]				Weight [g]	P _{max} [bar]
	H ₁	H ₂	L	Ø D		
3/8 BSPP	24.0	20.0	14.0	37.0	37.0	20.0

Spray angle	Ordering no.		Bore diameter B [mm]	Narrowest free cross section Ø [mm]	V̇ water [l/min]							Spray diameter D [mm] (at p = 2 bar)	
	Type	Mat. no.			p [bar]								
		56											
		POM											H = 250 [mm]
130°	350.368	●	1.55	0.70	0.32	0.45	0.63	0.77	1.00	1.18	1.41	950	1,250
	350.608	●	5.00	1.40	1.58	2.23	3.15	3.86	4.98	5.89	7.04	990	1,950

Accessories:



Recommended bore diameter 18 mm.
Quick-release clamp unit: Ordering no. 035.030.15.05.00.0.
Consisting of: Stainless steel clamp, polyurethane gasket.

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

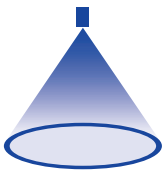
Ordering	Type	+	Material no.	=	Ordering no.
example:	350.368	+	56	=	350.368.56

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



Eccentric hollow cone nozzles

Series 373 Ramp Bottom

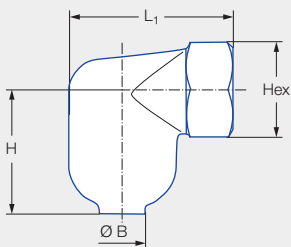
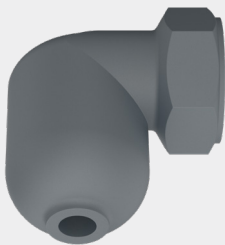


Features:

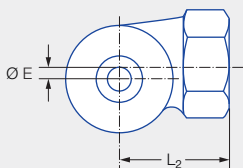
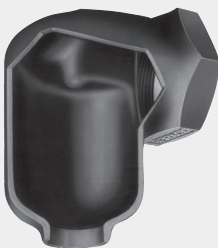
- Fine, uniform atomization even at low pressure
- Patented swirl chamber with built-in ramp extends service life

Applications:

- Gas cooling
- Water recooling
- Dust control



Series 373



Code	G	Dimensions [mm]					Weight [g]
		H	L ₁	L ₂	E	Hex	
AN	1 BSPP	52.0	67.0	45.0	6.3	41	285.0
AQ	1 1/4 BSPP	65.0	77.0	51.0	7.9	48	570.0
AS	1 1/2 BSPP	81.0	97.0	65.0	7.9	58	900.0

Spray angle	Ordering no.					Bore diameter B [mm]	V̇ water [l/min]						Spray diameter D [mm] (at p = 2 bar) 	
	Type	Mat. no.	Code											
		17	1 BSPP	1 1/4 BSPP	1 1/2 BSPP									
		Stainless steel 316												
							p [bar]						H = 500 [mm]	H = 1,000 [mm]
							0.3	0.5	1.0	2.0	5.0	10.0		
80°	373.115	●	AN			11.40	24.40	31.50	44.55	63.00	99.61	140.87	670	1,200
	373.175	●	AN			12.90	30.98	40.00	56.57	80.00	126.49	178.89	800	1,450
	373.235	●		AQ		16.20	45.70	59.00	83.44	118.00	186.57	263.86	750	1,300
	373.285	●		AQ		20.50	61.97	80.00	113.14	160.00	252.98	357.77	800	1,350
	373.325	●			AS	22.20	77.46	100.00	141.42	200.00	316.23	447.21	900	1,500
	373.365	●			AS	23.60	87.92	113.50	160.51	227.00	358.92	507.59	830	1,400

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

Ordering	Type	+	Material no.	+	Code	=	Ordering no.
example:	373.115	+	17	+	AN	=	373.115.17.AN



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

