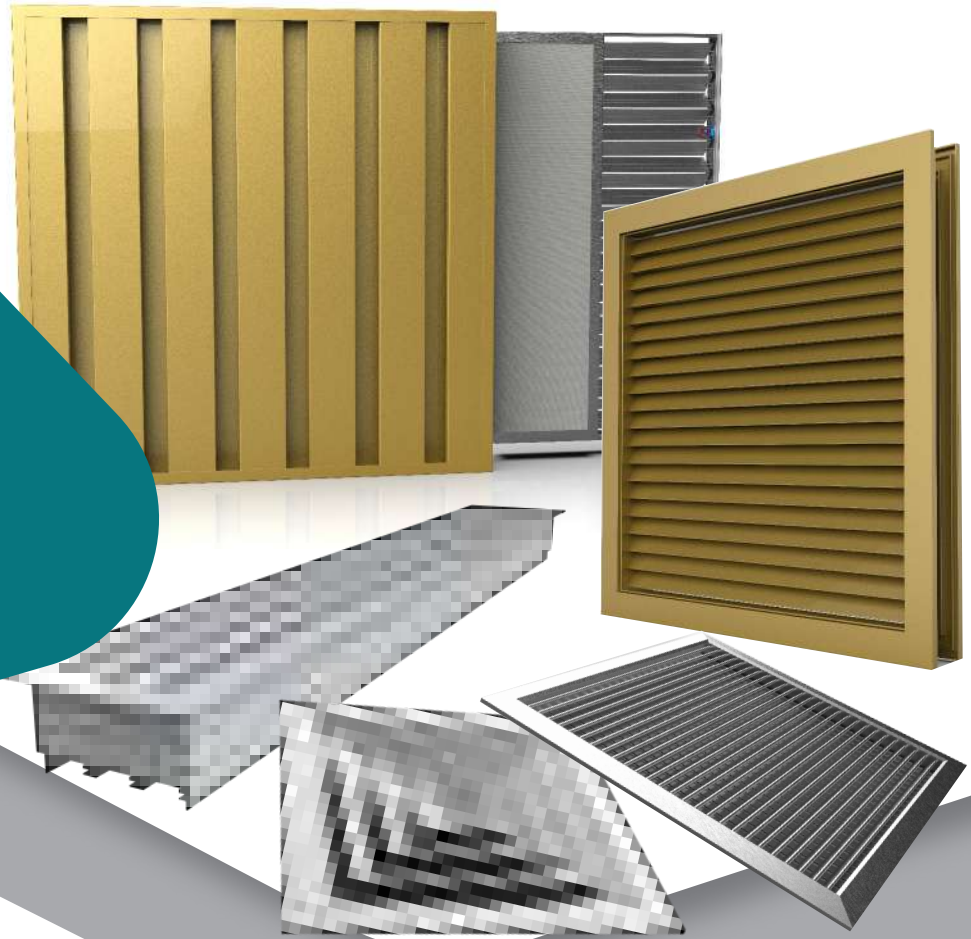




CASTLE
ENGINEERING
INDUSTRIES



AIR OUTLETS

AIR OUTLETS

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Ball Jet Diffuser

Chapter 8

Table Of Content:

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- **Standard Construction**
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- **Construction Details and Dimensions**
- **Engineering and Performance Data**
- **Installation Details**

Description

Type: Ball Jet Diffuser Construction: Aluminum (AL)

CASTLE produces a unique type of Ball Jet Diffuser engineered to provide precise and forceful airflow across extended distances.

These jet nozzles are primarily utilized within HVAC systems for targeted cooling purposes, particularly in situations where air must travel considerable distances to reach occupied areas and where conventional ceiling diffusers are not viable.

Positioned strategically in corners and high-level spaces, the Ball Jet Diffusers can be installed at various angles, allowing for flexibility in directing airflow patterns.

The unique angular adjustment of the Eyeball type Ball Jet Diffuser enables the airflow to be distributed across a broad area, either in a full jet position or with reduced jet position for controlled trajectory. This feature makes them ideal for various applications requiring vertical, inclined, or horizontal air discharge, particularly in spots where targeted heating or cooling is necessary. These diffusers are commonly employed in entrances and areas with concentrated machinery generating high heat loads, typically found in spacious environments like malls, airports, auditoriums, sports arenas, hypermarkets, zoos, and similar large-scale settings.

Standard Construction

High Quality Aluminum Construction

Optional Construction

Mounting Plate:

Constructed from 1.2 mm thick aluminum sheet.

Foam Gasket:

Installed around the frame to ensure air-tightness and prevent leakage.

Plenum Chamber:

The plenum is equipped with circular, square, or rectangular spigots for both top and side entry applications.

Plenum Casing:

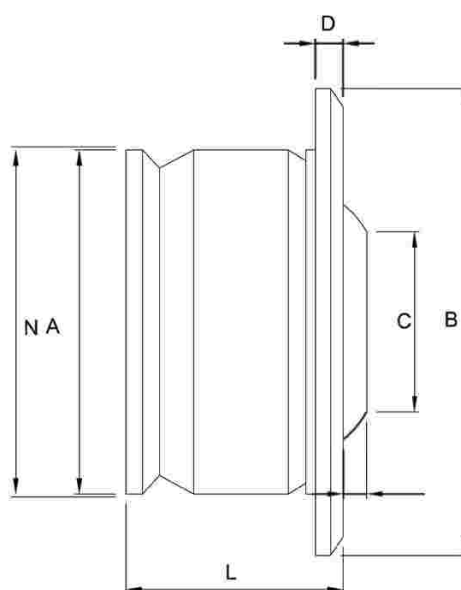
Made of 0.7 mm thick galvanized steel sheet.

Insulation:

Features a 13 mm thick acoustic liner with a density of

Finish:

Options include RAL powder coating in various colors; please specify your desired color.

**Jet Nozzle****BJD**

Sizes and Dimensions

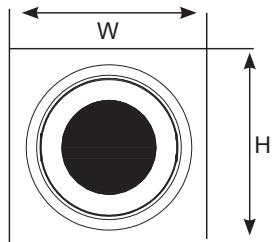
Neck Size	A	B	C	D	E	L
150 Ø	146	195	80	22	10	100
200 Ø	198	260	108	20	12	32
250 Ø	248	310	128	28	15	170
300 Ø	313	380	165	30	29	205
350 Ø	348	430	190	29	33	220
400 Ø	398	483	210	38	33	250

Construction Details and Dimensions

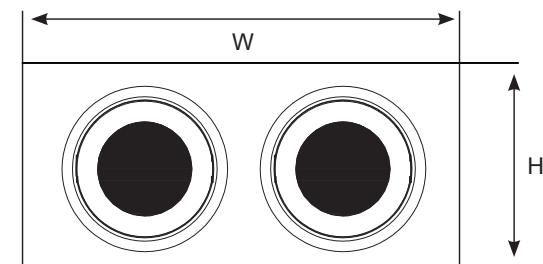
Model: BJD

Type: Ball Jet Diffuser

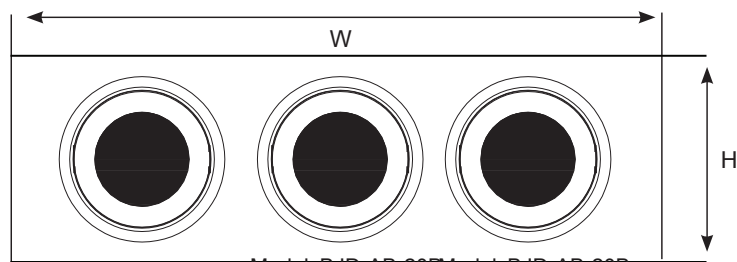
Construction: Aluminum (AL)



Model: BJD-AB-20B



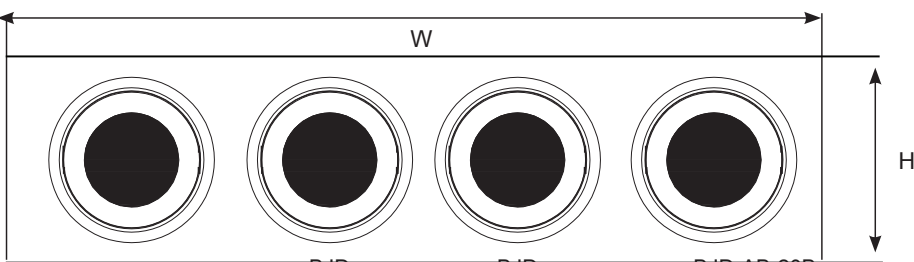
Model: BJD-2E



Model: BJD-3E

Model: BJD-AB-20B

Model: BJD-AB-20B



Model: BJD-4E

BJD

BJD-

BJD-AB-20B

Model	Face Plate	
	Width (mm)	Height (mm)
BJD-AB-20B-1P		
150 mm Neck Dia	225	225
200 mm Neck Dia	290	290
250 mm Neck Dia	340	340
315 mm Neck Dia	410	410
350 mm Neck Dia	460	460
400 mm Neck Dia	515	515

Model	Face Plate	
	Width (mm)	Height (mm)
BJD-AB-20B-2P		
150 mm Neck Dia	450	225
200 mm Neck Dia	580	290
250 mm Neck Dia	680	340
315 mm Neck Dia	820	410
350 mm Neck Dia	920	460
400 mm Neck Dia	1030	515

Model	Face Plate	
	Width (mm)	Height (mm)
BJD-AB-20B-3P		
150 mm Neck Dia	675	225
200 mm Neck Dia	870	290
250 mm Neck Dia	1020	340
315 mm Neck Dia	1230	410
350 mm Neck Dia	1380	460
400 mm Neck Dia	1545	515

Model	Face Plate	
	Width (mm)	Height (mm)
BJD-AB-20B-4P		
150 mm Neck Dia	900	225
200 mm Neck Dia	1160	290
250 mm Neck Dia	1360	340
315 mm Neck Dia	1640	410
350 mm Neck Dia	1840	460
400 mm Neck Dia	2060	515

Engineering and Performance Data

Model: BJD

Type: Ball Jet Diffuser

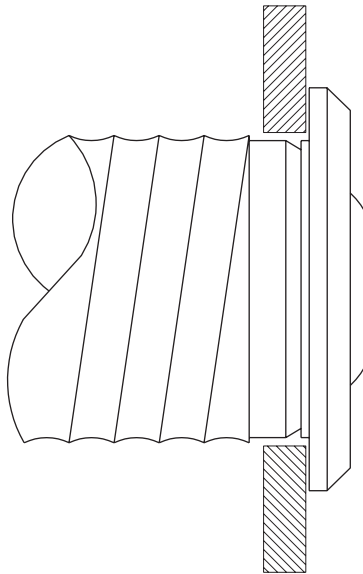
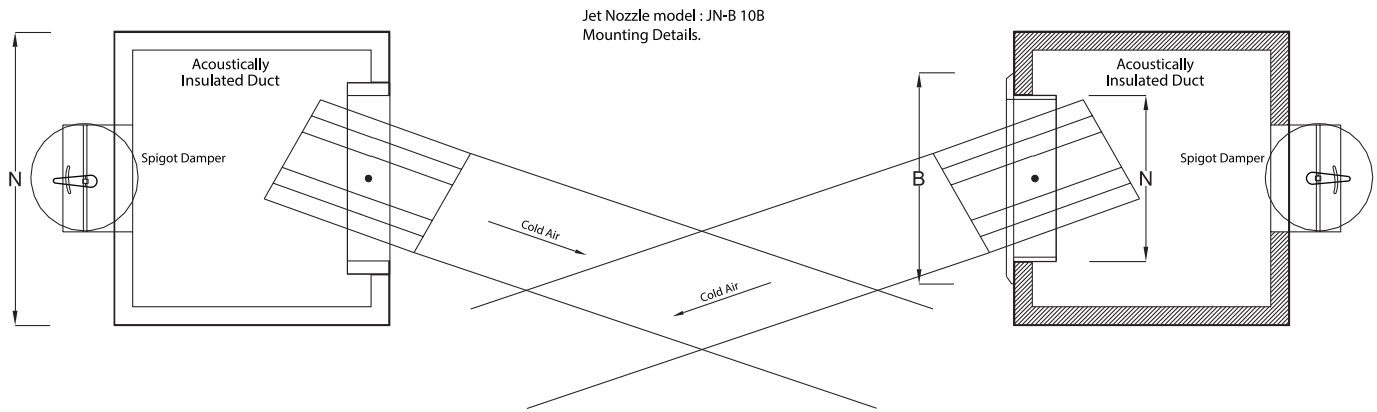
Construction: Aluminum (AL)

Size In Inches	Neck FPM		800	1200	1600	2000	2400	2800	3200	3600	4000	
6	Ak 0.077	CFM	62	92	123	154	185	216	246	277	308	
		Sp in.wg	0.052	0.117	0.209	0.326	0.470	0.639	0.835	1.057	1.305	
		NC	<15	<15	21	26	31	35	38	41	44	
		Throw	25,16,12	34,21,16	40,24,18	45,27,21	48,29,22	52,31,24	54,33,25	57,34,26	59,36,27	
8	Ak 0.122	CFM	98	146	195	244	293	342	390	439	488	537
		Sp in.wg	0.021	0.046	0.082	0.129	0.185	0.252	0.329	0.416	0.514	0.622
		NC	<15	<15	<15	<15	<15	20	25	29	32	36
		Throw	35,19,11	44,26,14	51,30,17	56,34,19	60,37,21	63,39,22	66,42,24	69,43,25	71,45,26	73,47,27
10	Ak 0.175	CFM	140	210	280	350	420	490	560	630	700	770
		Sp in.wg	0.009	0.021	0.037	0.058	0.084	0.114	0.149	0.189	0.233	0.282
		NC	<15	<15	<15	<15	<15	<15	18	23	27	31
		Throw	41,21,11	51,28,14	58,33,17	64,37,18	68,40,21	71,42,21	75,45,23	78,47,24	80,48,25	82,51,26
12	Ak 0.236	CFM	189	283	378	472	566	661	755	850	944	1038
		Sp in.wg	0.018	0.042	0.074	0.116	0.166	0.227	0.296	0.375	0.462	0.560
		NC	<15	<15	<15	<15	<15	<15	19	24	28	32
		Throw	44,22,12	55,28,15	62,33,17	68,36,19	72,39,21	76,41,22	80,43,23	83,45,24	85,46,25	88,48,26
14	Ak 0.301	CFM	241	361	481	601	721	841	961	1081	1201	1321
		Sp in.wg	0.027	0.062	0.075	0.1	0.124	0.152	0.174	0.2	0.223	0.247
		NC	<15	<15	<15	<15	20	25	27	31	34	37
		Throw	46,24,12	56,30,16	64,35,18	70,38,21	74,40,22	77,43,24	81,46,25	83,47,26	86,48,27	90,50,28
16	Ak 0.375	CFM	300	450	600	750	900	1050	1200	1350	1500	1650
		Sp in.wg	.098	0.221	0.392	0.613	0.882	1.201	1.569	1.985	2.451	2.966
		NC	<15	<15	17	25	31	37	41	46	49	>50
		Throw	38,21,17	54,19,23	58,24,20	67,22,24	68,22,24	77,24,27	81,21,23	84,26,24	86,24,25	91,24,26

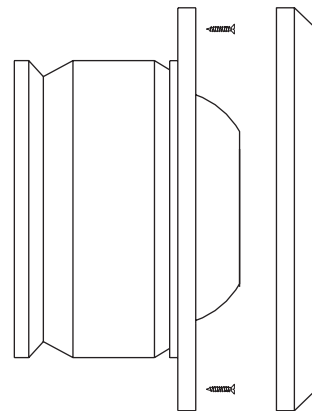
Note:

1. Airflow is measured in Cubic foot/ minute (CFM).
2. Static Pressure (Ps) is measured in inch water gauge (in.w.g).
3. Noise Criteria (NC) is measured in decibels (dB).
4. Neck velocity is measured in feet/ minute (fpm).

Installation Details



2. Connection into a circular metallic duct.



1. Wall or ceiling mounting by means of hidden screw behind the ring.



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Location

