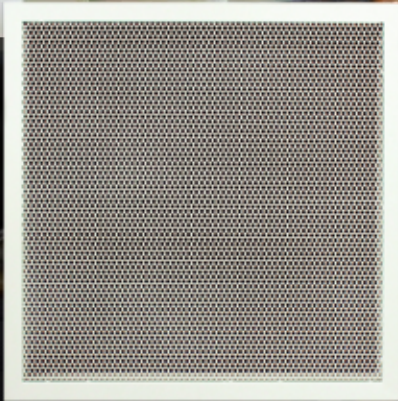


**PD** *Perforated Diffuser*





## Introduction

Designed for delivering large laminarized air flow, the Perforated Diffuser provides an effective area of about 40% (see-through area of >70%). With Prudent Aire's proprietary Radial OBD design, the Perforated Diffuser is capable of providing multiple directional configurations (up to five possible directional configurations) with minimal pressure loss. Available in both T-bar and flush ceiling installation, efficient induction of secondary air occurs right at diffuser's faceplate (available in both fixed and removable configurations) and thus providing a well mixed air distribution systems.

Used for both supply and exhaust functionalities, the Perforated Diffuser is best suited in facilities with high ceiling height (up to 4 m).

## CONSTRUCTIONS & MATERIALS

- Average effective area of 40%
- Hole pitch: 8 mm
- Hole diameter: 6 mm
- Adjustable multi-directional air flow
- Fixed/removable faceplate configurations
- Different material construction available

### Frames Construction



Aluminium



Galvanized Steel



Stainless Steel

### Diffuser Faceplate



Aluminium

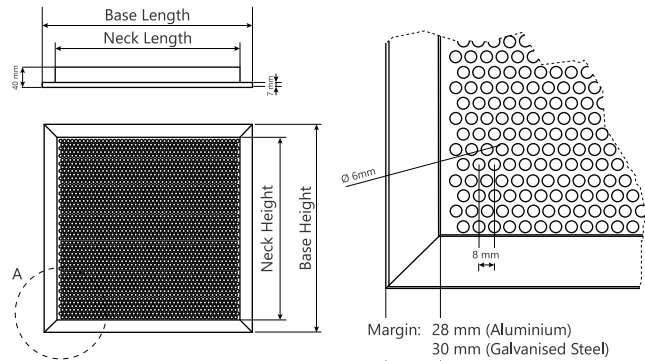


Galvanized Steel



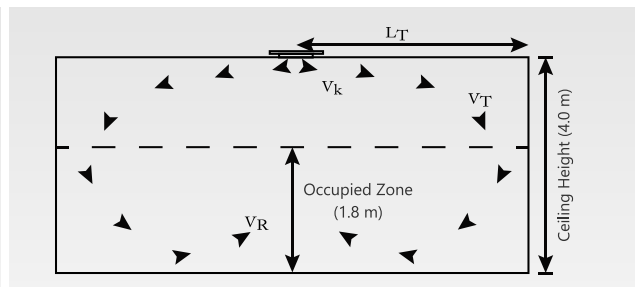
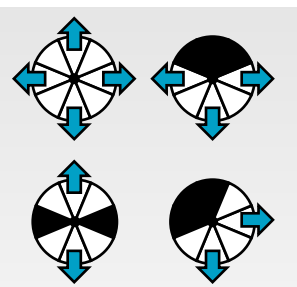
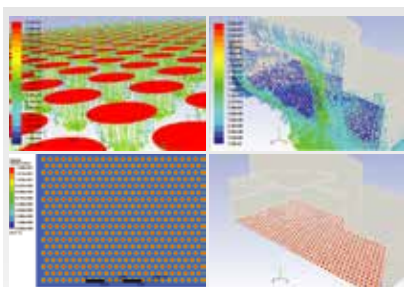
Stainless Steel

## DIMENSIONS



Dimensions

Neck Size (mm)	Al Base Size (mm)	GI Base Size (mm)
240 x 240	296 x 296	300 x 300
340 x 340	396 x 396	400 x 400
440 x 440	496 x 496	500 x 500
540 x 540	596 x 596	600 x 600
1080 x 1080	1136 x 1136	1140 x 1140
1080 x 540	1136 x 596	1140 x 600



Supply



\* Diffuser performance data factored in Coanda effect & fully opened Radial OBD conditions.

\* The effective area given is to the best estimation & knowledge of Prudent Aire's engineers at the point of entry.

Order Size, inch	Neck Area (Eff. Area) m <sup>2</sup>	Unit Volume Flowrate, m <sup>3</sup> /hr Unit Volume Flowrate, l/s	NR25	NR35	NR40	NR50					
			250 70	300 84	400 112	500 140	600 168	800 224	1000 280	1400 392	1600 448
240 x 240	0.0576 (0.023)	Throw Distance (0.37 m/s), m	<1.5	1.6	2.2	2.7	3.2	-	-	-	-
		Face Velocity, m/s	3.0	3.6	4.8	6.0	7.2	-	-	-	-
		Total Pressure Loss, Pa	14	19	35	55	82	-	-	-	-
		Noise Rating (NR)	30	36	44	50	>50	-	-	-	-
		Temperature Quotient	0.16	0.14	0.08	0.06	0.045	-	-	-	-
Induction Ratio	10	12	18	25	30	-	-	-	-		
340 x 340	0.1156 (0.046)	Throw Distance (0.37 m/s), m	-	-	1.6	1.8	2.3	3.0	3.8	-	-
		Face Velocity, m/s	-	-	2.4	3.0	3.6	4.8	6.0	-	-
		Total Pressure Loss, Pa	-	-	9	14	19	35	55	-	-
		Noise Rating (NR)	-	-	<25	28	34	41	48	-	-
		Temperature Quotient	-	-	0.19	0.17	0.13	0.09	0.07	-	-
Induction Ratio	-	-	7.5	9	12	16	22	-	-		
390 x 390	0.1521 (0.061)	Throw Distance (0.37 m/s), m	-	-	-	1.7	2.2	2.7	3.3	4.5	>5.0
		Face Velocity, m/s	-	-	-	2.3	2.7	3.6	4.6	6.4	7.3
		Total Pressure Loss, Pa	-	-	-	9	12	19	30	65	85
		Noise Rating (NR)	-	-	-	<25	26	35	42	50	>50
		Temperature Quotient	-	-	-	0.24	0.17	0.13	0.11	0.07	<0.06
Induction Ratio	-	-	-	7	9	12	14	22	>25		
440 x 440	0.1936 (0.076)	Throw Distance (0.37 m/s), m	-	-	-	-	1.8	2.4	3.0	4.0	4.5
		Face Velocity, m/s	-	-	-	-	2.2	2.9	3.7	5.1	5.8
		Total Pressure Loss, Pa	-	-	-	-	9	14	20	40	52
		Noise Rating (NR)	-	-	-	-	<25	29	35	43	47
		Temperature Quotient	-	-	-	-	0.27	0.2	0.15	0.1	0.085
Induction Ratio	-	-	-	-	5.5	8	11	15	18		
540 x 540	0.2916 (0.11)	Throw Distance (0.37 m/s), m	-	-	-	-	-	2.0	2.4	3.2	3.8
		Face Velocity, m/s	-	-	-	-	-	2.0	2.5	3.5	4.0
		Total Pressure Loss, Pa	-	-	-	-	-	8	9	19	25
		Noise Rating (NR)	-	-	-	-	-	<25	26	34	38
		Temperature Quotient	-	-	-	-	-	-	-	-	-
Induction Ratio	-	-	-	-	-	-	-	-	-		

Exhaust



\* The effective area given is to the best estimation & knowledge of Prudent Aire's engineers at the point of entry.

Diffuser Neck Size, mm	Neck Area (Eff. Area) m <sup>2</sup>	Unit Volume Flowrate, m <sup>3</sup> /hr Unit Volume Flowrate, l/s	NR25	NR35	NR45	NR50					
			200 56	300 84	400 112	500 140	600 168	800 224	1000 280	1500 420	2000 560
240 x 240	0.0576 (0.023)	Face Velocity, m/s	2.3	3.5	4.6	5.8	6.9	-	-	-	-
		Total Pressure Loss, Pa	6.5	9	15	28	>40	-	-	-	-
		Noise Rating (NR)	<25	28	36	43	47	-	-	-	-
340 x 340	0.1156 (0.046)	Face Velocity, m/s	1.2	1.7	2.3	2.9	3.5	4.6	5.8	-	-
		Total Pressure Loss, Pa	<5	<5	6.5	8	9	15	28	-	-
		Noise Rating (NR)	<25	<25	<25	29	32	38	45	-	-
390 x 390	0.1521 (0.061)	Face Velocity, m/s	0.9	1.3	1.8	2.2	2.7	3.5	4.5	6.7	-
		Total Pressure Loss, Pa	<5	<5	<5	6	7.5	9	15	40	-
		Noise Rating (NR)	<25	<25	<25	27	30	33	38	>50	-
440 x 440	0.1936 (0.076)	Face Velocity, m/s	0.7	1.1	1.4	1.8	2.1	2.8	3.5	5.3	7.0
		Total Pressure Loss, Pa	<5	<5	<5	<5	6	7.5	9	22	>40
		Noise Rating (NR)	<25	<25	<25	<25	<25	32	34	44	>50
540 x 540	0.2916 (0.11)	Face Velocity, m/s	0.5	0.7	0.9	1.2	1.4	1.9	2.3	3.5	4.6
		Total Pressure Loss, Pa	<5	<5	<5	<5	<5	5.5	6.5	9.0	15
		Noise Rating (NR)	<25	<25	<25	<25	<25	28	32	36	>50

PERFORATED DIFFUSERS TECHNICAL SPECIFICATION

Frame Construction

1. Frame to be in extruded aluminum. Frame thickness should be in minimum 1.2mm thick, unless otherwise stated.
2. The margin to be in 28mm from the neck height to the edge.
3. Frame height to be in 40mm.
4. The corner of the frame should be pressed with a 90° corner piece to ensure the frames are in 90°.

Core Construction

1. Diffusers core to be perforated surface with 6mm holes diameter, 8mm holes pitch.
2. Diffusers core should be removable at the surface to permit access to cleaning without removing the diffuser.

Finishing

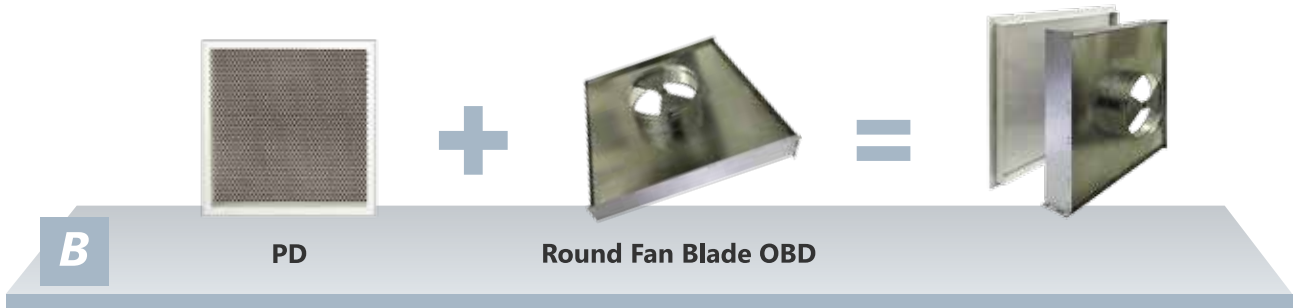
1. Finishing should be in powder coated RAL 9010 SG white matt, unless otherwise stated.

Performance

1. Free area of the diffuser to be minimum 40%.
2. Perforated surface to laminar the air flow.
3. Perforated Diffusers are designed to be ceiling mounted, round duct connection with damper should to be installed at the neck of the diffuser for volume control purpose, unless otherwise stated.
4. Where perforated diffuser return and exhaust inlet devices are used, these shall be similar to the above specifications for diffusers.

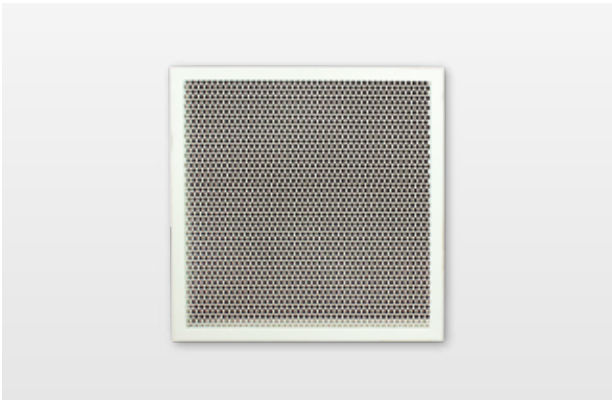


## DIFFUSER + ACCESSORIES COMBINATION





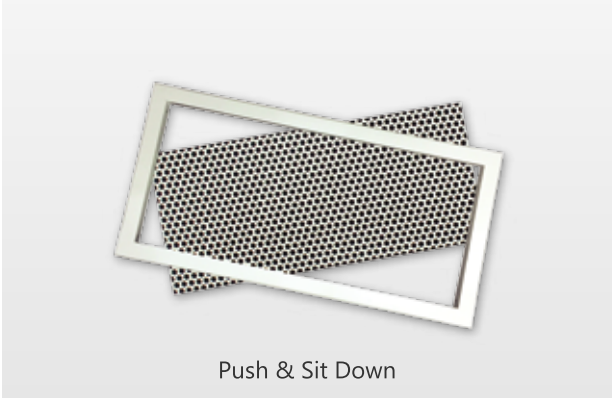
**AVAILABLE TYPES**



**Fixed**

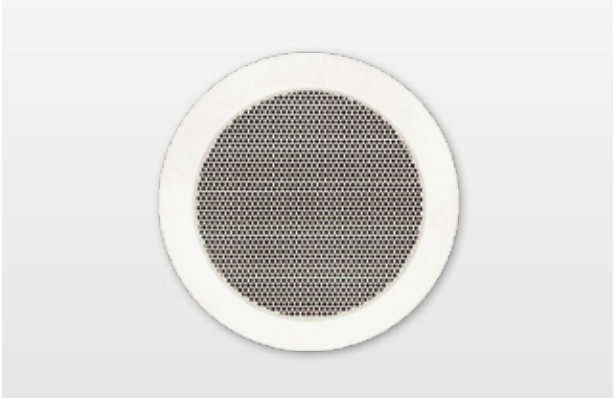


**Double Margin**



Push & Sit Down

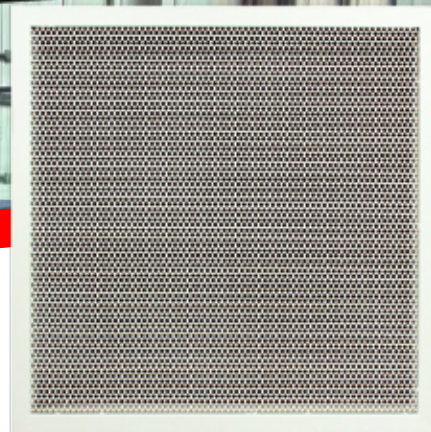
**Removable**







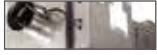


**Round**



# PD | Perforated Diffuser



## Products Range

- Grilles 
- Diffusers  ◀
- Dampers 
- Fire & Smoke Protection 
- VAV 
- Others 
- Accessories 



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