



**RD** *Round Diffuser*



MADE IN MALAYSIA





## Introduction

The Round Diffuser (RDA/RDPA/RPDA) has a versatile design to provide a wide range of flow, ceiling height and supply temperature. Due to its design, the Round Diffuser is suitable for use in wide variety of buildings and applications. The multicore design is mainly for high flow requirements and the single plate/perforated core is mainly suited for high-end interior designs, albeit lower flow.

The Round diffuser is also suited for both ceiling and exposed duct installation. For switching between horizontal and vertical throw, it is adjusted via rotation of the center core (clockwise/anti-clockwise rotation).

Due to the air flow adjustment flexibility, the Round Diffuser is suitable for use in individual, conventional uniform zone or with VAV terminals.

## CONSTRUCTIONS & MATERIALS

- Available in multiple/single core configurations
- Adjustable flow direction
- Removable center cores
- Standard sizes of 8", 10", 12" & 14"

### Outer Cone Construction



Extruded Aluminium

### Outer Cone Construction



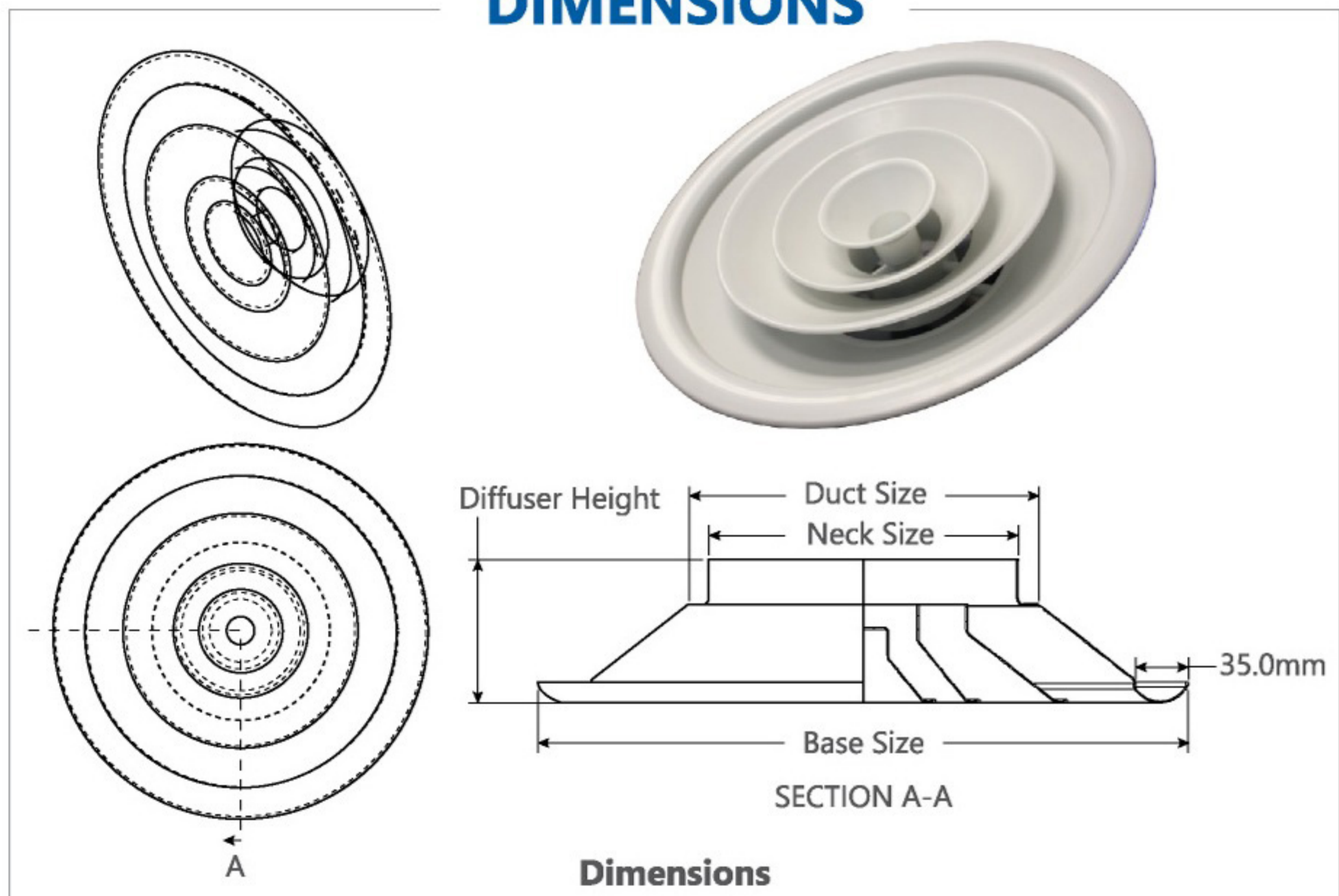
Extruded Aluminium

### Surface Finishing



White (Matt)

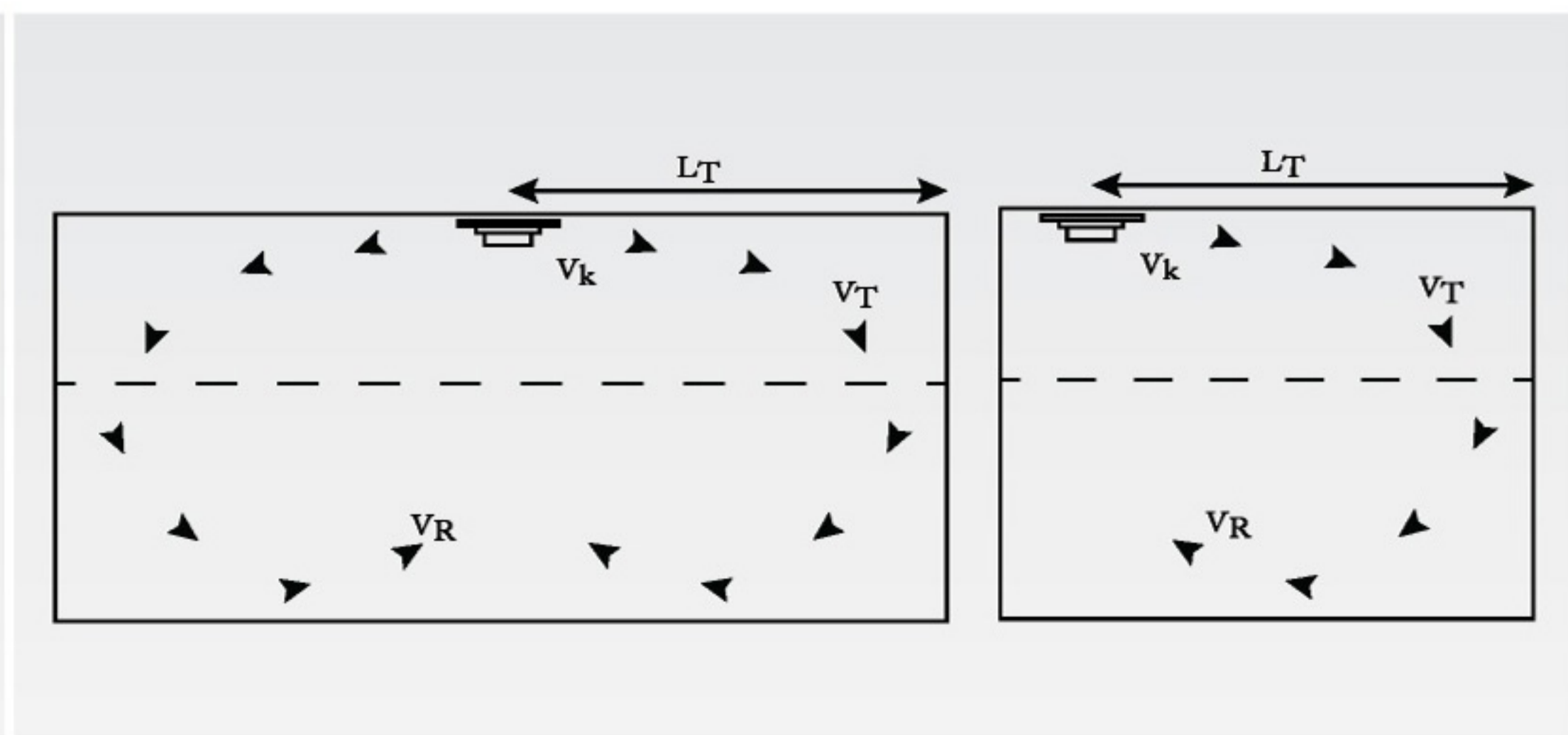
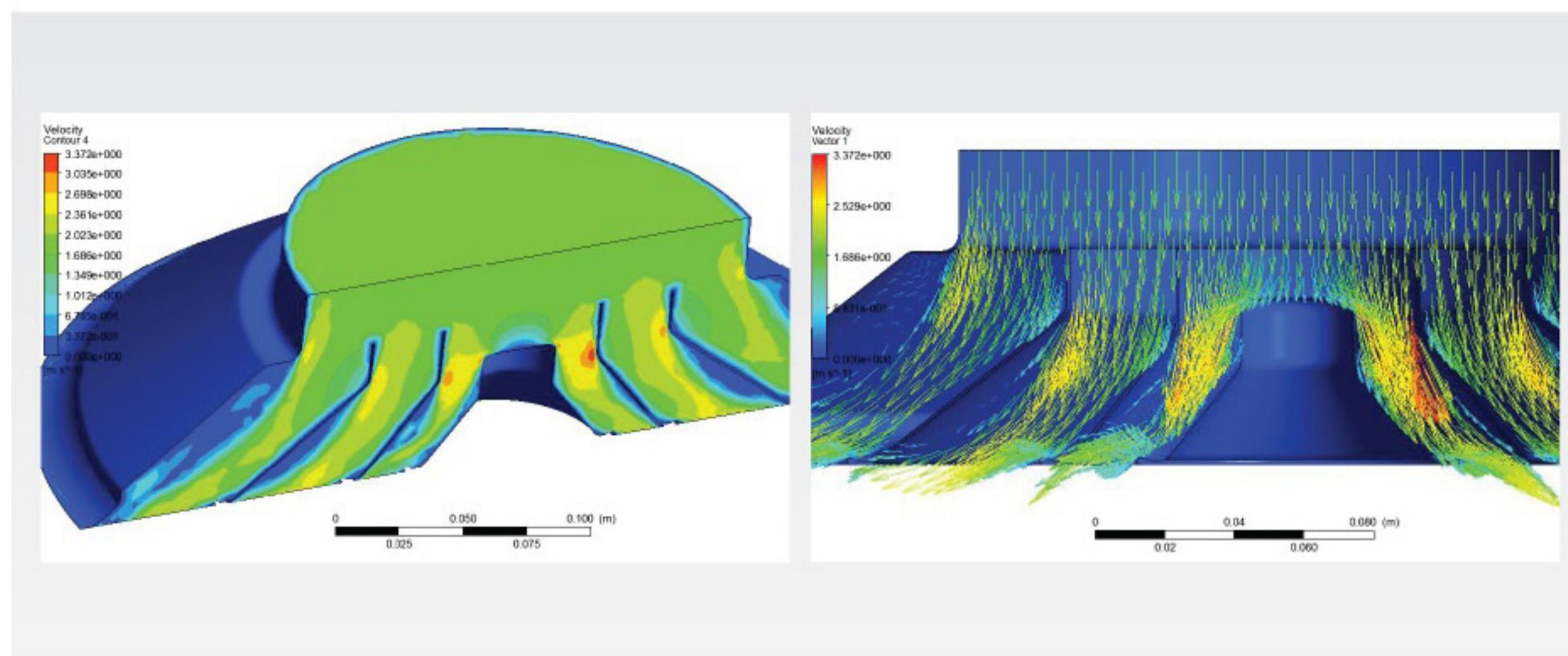
## DIMENSIONS



Dimensions

Order Size (Inch)	Neck Size (mm)	Base Size (mm)	Duct Size (mm)	Height (mm)
8.0	196	412	234	90
10.0	240	476	290	85
12.0	296	508	323	96
14.0	346	600	378	100

## FOR SINGLE CORE PLATE DEFLECTOR





# TECHNICAL PERFORMANCE DATA

## RD (Cone Type)



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

\* Table values obtained below are for horizontal supply performance.

\* For vertical flow orientation, the throws are 70% of the table values below.

Order Size inch	Neck Area (Eff. Area) m <sup>2</sup>	Unit Volume Flowrate, m <sup>3</sup> /hr Unit Volume Flowrate, l/s	<div style="display: flex; justify-content: space-around; font-size: small;"> <span style="border: 1px solid black; padding: 2px;">NR20</span> <span style="border: 1px solid black; padding: 2px;">NR30</span> <span style="border: 1px solid black; padding: 2px;">NR40</span> </div>									
			250 70	400 112	500 140	800 224	1000 280	1400 392	1600 448	2000 560	2500 700	
8.0	0.030 (0.026)hor (0.019)vert	Throw Distance (0.25 m/s), m	1.7	2.8	3.5	5.6	6.8	-	-	-	-	
		Face Velocity, m/s	2.7	4.3	5.3	8.5	10.7	-	-	-	-	
		Total Pressure Loss, Pa	7.0	17.0	25.0	65.0	>90.0	-	-	-	-	
		Noise Rating (NR)	<20	<20	21	35	41	-	-	-	-	
		Temperature Quotient	0.14	0.065	0.045	-	-	-	-	-	-	
Induction Ratio	10.0	19.0	25	-	-	-	-	-	-			
10.0	0.048 (0.042)hor (0.027)vert	Throw Distance (0.25 m/s), m	-	2.2	2.7	4.5	5.5	7.7	8.6	-	-	
		Face Velocity, m/s	-	2.6	3.3	5.3	6.6	9.3	10.6	-	-	
		Total Pressure Loss, Pa	-	7.0	9.5	24.0	37.0	80	>90	-	-	
		Noise Rating (NR)	-	<20	<20	23	29	38	42	-	-	
		Temperature Quotient	-	0.14	0.095	0.045	-	-	-	-	-	
Induction Ratio	-	11.0	14.0	26.0	-	-	-	-	-			
12.0	0.069 (0.062)hor (0.043)vert	Throw Distance (0.25 m/s), m	-	-	-	3.7	4.8	6.7	7.7	9.4	-	
		Face Velocity, m/s	-	-	-	3.6	4.5	6.3	7.2	9.0	-	
		Total Pressure Loss, Pa	-	-	-	12.0	18.0	32.0	45.0	70.0	-	
		Noise Rating (NR)	-	-	-	<20	25	34	38	44	-	
		Temperature Quotient	-	-	-	0.09	0.055	-	-	-	-	
Induction Ratio	-	-	-	16.0	22.0	-	-	-	-			
14.0	0.094 (0.085)hor (0.058)vert	Throw Distance (0.25 m/s), m	-	-	-	-	3.8	5.1	5.9	7.6	9.4	
		Face Velocity, m/s	-	-	-	-	3.3	4.6	5.2	6.5	8.2	
		Total Pressure Loss, Pa	-	-	-	-	9.5	18.5	23.0	35.0	60.0	
		Noise Rating (NR)	-	-	-	-	<20	24	27	33	39	
		Temperature Quotient	-	-	-	-	0.11	0.07	-	-	-	
Induction Ratio	-	-	-	-	13.0	20.0	-	-	-			

## RDP (Plate Type)



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

\* Table values obtained below are for horizontal supply performance.

\* For vertical flow orientation, the throws are 70% of the table values below.

Order Size inch	Neck Area (Eff. Area) m <sup>2</sup>	Unit Volume Flowrate, m <sup>3</sup> /hr Unit Volume Flowrate, l/s	<div style="display: flex; justify-content: space-around; font-size: small;"> <span style="border: 1px solid black; padding: 2px;">NR20</span> <span style="border: 1px solid black; padding: 2px;">NR30</span> <span style="border: 1px solid black; padding: 2px;">NR40</span> </div>									
			250 70	400 112	500 140	800 224	1000 280	1400 392	1600 448	2000 560	2500 700	
8.0	0.030 (0.017)hor (0.013)vert	Throw Distance (0.25 m/s), m	1.7	2.7	3.5	5.6	-	-	-	-	-	
		Face Velocity, m/s	4.1	6.5	8.1	13.0	-	-	-	-	-	
		Total Pressure Loss, Pa	9.0	22.0	32.0	>50	-	-	-	-	-	
		Noise Rating (NR)	<20	22	30	40	-	-	-	-	-	
		Temperature Quotient	-	-	-	-	-	-	-	-	-	
Induction Ratio	-	-	-	-	-	-	-	-	-			
10.0	0.048 (0.027)hor (0.017)vert	Throw Distance (0.25 m/s), m	-	2.2	2.7	4.5	5.5	7.7	-	-	-	
		Face Velocity, m/s	-	4.1	5.1	8.2	10.3	14.4	-	-	-	
		Total Pressure Loss, Pa	-	9.0	14.0	32.0	>50	>50	-	-	-	
		Noise Rating (NR)	-	<20	21	32	38	47	-	-	-	
		Temperature Quotient	-	-	-	-	-	-	-	-	-	
Induction Ratio	-	-	-	-	-	-	-	-	-			
12.0	0.069 (0.043)hor (0.030)vert	Throw Distance (0.25 m/s), m	-	-	2.3	3.7	4.7	6.7	7.6	9.4	-	
		Face Velocity, m/s	-	-	3.2	5.2	6.5	9.0	10.3	12.9	-	
		Total Pressure Loss, Pa	-	-	5.2	14.5	23.0	40.0	>50	>50	-	
		Noise Rating (NR)	-	-	<20	22	27	36	41	46	-	
		Temperature Quotient	-	-	-	-	-	-	-	-	-	
Induction Ratio	-	-	-	-	-	-	-	-	-			
14.0	0.094 (0.068)hor (0.046)vert	Throw Distance (0.25 m/s), m	-	-	-	3.0	3.8	5.2	5.9	7.6	9.4	
		Face Velocity, m/s	-	-	-	3.3	4.1	5.7	6.5	8.2	10.2	
		Total Pressure Loss, Pa	-	-	-	5.5	9.0	17.0	23.0	32.0	>50	
		Noise Rating (NR)	-	-	-	<20	<20	25	29	35	42	
		Temperature Quotient	-	-	-	-	-	-	-	-	-	
Induction Ratio	-	-	-	-	-	-	-	-	-			

## RDPR (Perforated Type)



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

\* Table values obtained below are for horizontal supply performance.

\* For vertical flow orientation, the throws are 70% of the table values below.

Order Size, inch	Unit Volume Flowrate, m <sup>3</sup> /hr Unit Volume Flowrate, l/s	<div style="display: flex; justify-content: space-around; font-size: small;"> <span style="border: 1px solid black; padding: 2px;">NR20</span> <span style="border: 1px solid black; padding: 2px;">NR30</span> <span style="border: 1px solid black; padding: 2px;">NR40</span> </div>									
		250 70	400 112	500 140	800 224	1000 280	1400 392	1600 448	2000 560	2500 700	
8.0	Throw Distance (0.25 m/s), m	2.5	4.2	5.5	9.4	-	-	-	-	-	
	Total Pressure Loss, Pa	12.8	42.0	65.8	>150	-	-	-	-	-	
	Noise Rating (NR)	<20	26	33	>45	-	-	-	-	-	
	Temperature Quotient	-	-	-	-	-	-	-	-	-	
	Induction Ratio	-	-	-	-	-	-	-	-	-	
10.0	Throw Distance (0.25 m/s), m	-	3.0	4.2	7.2	11.5	-	-	-	-	
	Total Pressure Loss, Pa	-	19.0	35.3	91.4	136.2	-	-	-	-	
	Noise Rating (NR)	-	<20	21	37	>45	-	-	-	-	
	Temperature Quotient	-	-	-	-	-	-	-	-	-	
	Induction Ratio	-	-	-	-	-	-	-	-	-	
12.0	Throw Distance (0.25 m/s), m	-	-	3.0	5.1	6.5	9.3	-	-	-	
	Total Pressure Loss, Pa	-	-	17.5	46.3	65.5	104	-	-	-	
	Noise Rating (NR)	-	-	<20	25	34	>45	-	-	-	
	Temperature Quotient	-	-	-	-	-	-	-	-	-	
	Induction Ratio	-	-	-	-	-	-	-	-	-	
14.0	Throw Distance (0.25 m/s), m	-	-	-	4.9	5.0	5.2	-	-	-	
	Total Pressure Loss, Pa	-	-	-	33.0	43.0	63.0	-	-	-	
	Noise Rating (NR)	-	-	-	23	32	>45	-	-	-	
	Temperature Quotient	-	-	-	-	-	-	-	-	-	
	Induction Ratio	-	-	-	-	-	-	-	-	-	



## VOLUME CONTROL DAMPER TECHNICAL SPECIFICATION

### Frame Construction:

1. Frame to be in extruded aluminium. Frame thickness should be in minimum 1.2mm thick, unless otherwise stated.
2. Frame height to be in 85mm – 100mm depends on size.

### Core Construction:

1. Vanes to be in extruded aluminium.
2. Vanes to be in 1.0mm thick. 3 layer of vanes to be fix pattern for 360o directional air distribution.

### Finishing:

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

### Performance:

1. Free area of the Round Diffuser should be not less than 56%.
2. Jet 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.

## DIFFUSER + ACCESSORIES COMBINATION









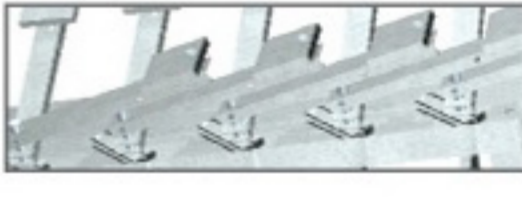



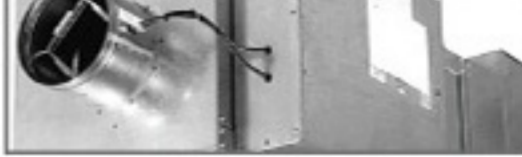




**RD** | *Round Diffuser*



**Products Range**

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



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