

# RVD

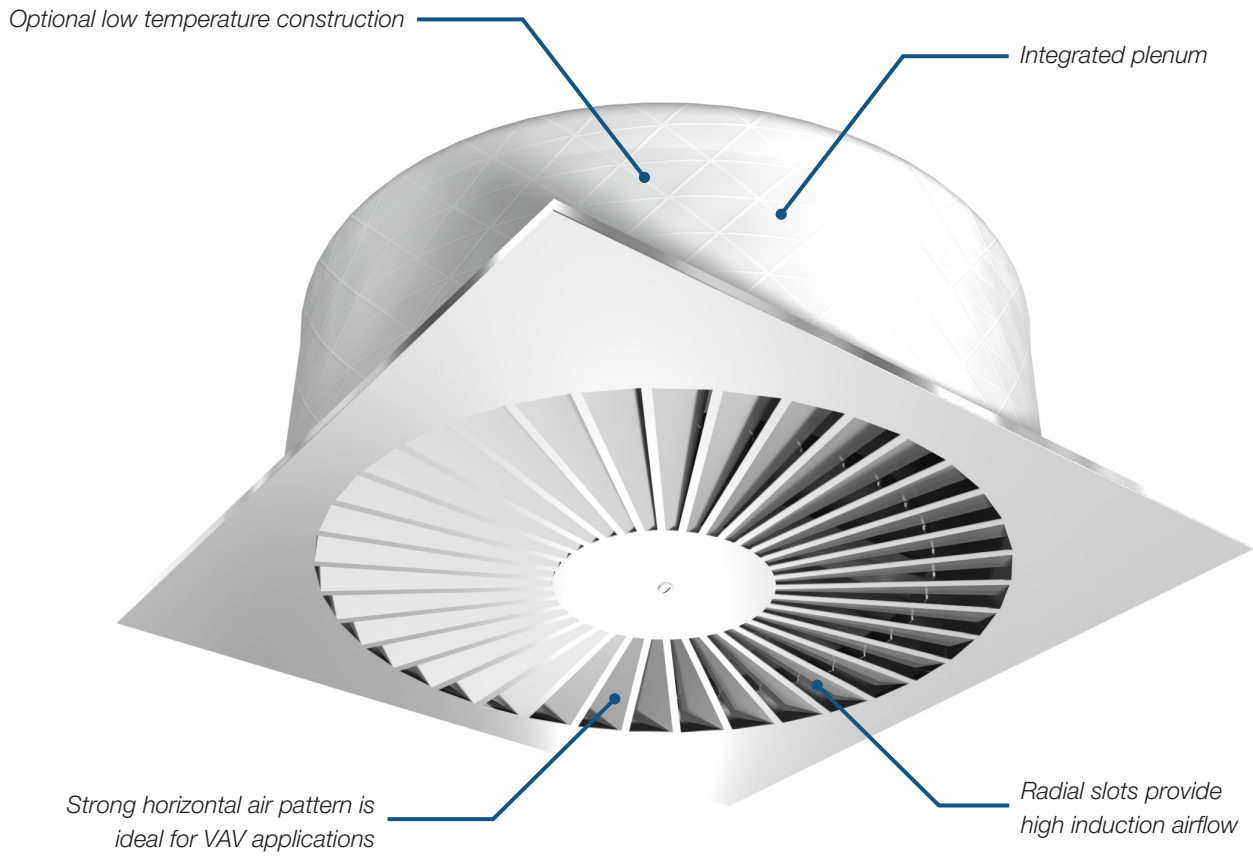
RADIAL VANE DIFFUSER



# RVD

## Radial Vane Diffuser

The Radial Vane Diffuser (RVD) features fixed radial slots that provide a high induction vortex airflow that discharges horizontally from the face of the diffuser.



## THERMAL COMFORT

- + The high induction airflow provides rapid mixing of supply air with the room air while maintaining relatively short throws, allowing large quantities of air to be introduced while maintaining thermal comfort.

## IDEAL FOR VAV APPLICATIONS

- + The RVD produces a strong horizontal air pattern over a wide range of airflows, making it an ideal selection for VAV applications with high turndown ratios.

## LOW TEMPERATURE OPTION

- + The low temperature option delivers low temperature supply without drafts or thermal stratification.
- + The radial slot design provides high induction airflow to rapidly mix low temperature supply air with room air to minimize drafts. The plenum and back of the faceplate are externally insulated to prevent condensation from forming and reduces heat gain through the diffuser in order to maintain the low supply air temperature.



*RVD round face*

## TYPICAL APPLICATIONS

The RVD is ideal for applications with high heat loads or high air change rate requirements where large quantities of supply air must be rapidly mixed with room air. Applications typically include server rooms, transient areas or schools.

## CONSTRUCTION

- + Material
  - Steel (RVD)
  - Aluminum (RVDAL)
  - Stainless steel (RVDSS)
- + Face size
  - 24 in. x 24 in. (Square)
  - 24 in. Diameter (Round)
- + Mounting style
  - Surface
  - T-bar
- + Options
  - Low temperature construction (RVDLT)

# PERFORMANCE DATA

RVD - 24 in. x 24 in.

Inlet Size 6 in.

<b>Neck Velocity (fpm)</b>	300	400	500	600	700	800	900	1000
<b>Velocity Pressure (in. w.g.)</b>	0.006	0.010	0.016	0.022	0.031	0.040	0.050	0.062
<b>Total Pressure (in. w.g.)</b>	0.010	0.018	0.028	0.040	0.054	0.071	0.090	0.111
<b>Flow Rate (cfm)</b>	59	79	98	118	137	157	177	196
<b>Sound (NC)</b>	-	-	-	-	-	18	21	24
<b>Throw (ft.)</b>	1-1-2	1-1-2	1-1-3	1-2-4	1-2-4	2-2-5	2-3-5	2-3-6

Inlet Size 8 in.

<b>Neck Velocity (fpm)</b>	300	400	500	600	700	800	900	1000
<b>Velocity Pressure (in. w.g.)</b>	0.006	0.010	0.016	0.022	0.031	0.040	0.050	0.062
<b>Total Pressure (in. w.g.)</b>	0.017	0.030	0.047	0.068	0.092	0.120	0.152	0.188
<b>Flow Rate (cfm)</b>	105	140	174	209	244	279	314	349
<b>Sound (NC)</b>	-	-	-	-	19	23	26	29
<b>Throw (ft.)</b>	1-2-3	1-2-4	2-3-5	2-3-6	2-4-7	3-4-7	3-5-8	3-5-8

Inlet Size 10 in.

<b>Neck Velocity (fpm)</b>	300	400	500	600	700	800	900	1000
<b>Velocity Pressure (in. w.g.)</b>	0.006	0.010	0.016	0.022	0.031	0.040	0.050	0.062
<b>Total Pressure (in. w.g.)</b>	0.048	0.051	0.079	0.114	0.156	0.203	0.257	0.318
<b>Flow Rate (cfm)</b>	164	218	273	327	382	436	491	545
<b>Sound (NC)</b>	-	15	22	27	31	35	38	41
<b>Throw (ft.)</b>	2-2-5	2-3-6	3-4-7	3-5-8	4-6-8	4-6-9	5-7-9	5-7-10

Inlet Size 12 in.

<b>Neck Velocity (fpm)</b>	300	400	500	600	700	800	900	1000
<b>Velocity Pressure (in. w.g.)</b>	0.006	0.010	0.016	0.022	0.031	0.040	0.050	0.062
<b>Total Pressure (in. w.g.)</b>	0.048	0.086	0.134	0.194	0.264	0.344	0.436	0.538
<b>Flow Rate (cfm)</b>	236	314	393	471	550	628	707	785
<b>Sound (NC)</b>	17	24	31	36	40	44	47	50
<b>Throw (ft.)</b>	2-4-7	3-5-8	4-6-8	5-7-9	5-7-10	6-8-11	7-8-11	7-8-12

Inlet Size 14 in.

<b>Neck Velocity (fpm)</b>	300	400	500	600	700	800		
<b>Velocity Pressure (in. w.g.)</b>	0.006	0.010	0.016	0.022	0.031	0.040		
<b>Total Pressure (in. w.g.)</b>	0.082	0.146	0.228	0.328	0.446	0.583		
<b>Flow Rate (cfm)</b>	321	428	535	641	748	855		
<b>Sound (NC)</b>	24	32	38	43	47	51		
<b>Throw (ft.)</b>	3-5-8	4-6-9	5-7-10	6-8-11	7-8-12	7-9-12		

Inlet Size 16 in.

<b>Neck Velocity (fpm)</b>	300	400	500	600				
<b>Velocity Pressure (in. w.g.)</b>	0.006	0.010	0.016	0.022				
<b>Total Pressure (in. w.g.)</b>	0.139	0.247	0.385	0.555				
<b>Flow Rate (cfm)</b>	419	558	698	837				
<b>Sound (NC)</b>	30	38	44	49				
<b>Throw (ft.)</b>	4-6-9	6-7-10	6-8-11	7-9-12				

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70 – 2023 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum)
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10<sup>-12</sup> Watts and one diffuser.
7. Blanks "-" indicate an NC level below 15.

# PERFORMANCE DATA

RVDLT - 24 in. x 24 in.

Inlet Size 6 in.  $\varnothing$

Airflow (cfm)	Total Pressure (in. w.g.)	Static Pressure (in. w.g.)	Sound (NC)	Isothermal Conditions			Drop (in.)	Cooling Conditions			Drop (in.)
				Throw (ft)				Throw (ft)			
				150 fpm	100 fpm	50 fpm		150 fpm	100 fpm	50 fpm	
100	0.03	0.01	-	1	2	3	3	1	2	2	5
200	0.12	0.06	25	2	3	6	6	2	3	5	11
300	0.27	0.12	36	3	5	8	8	3	5	6	15
400	0.48	0.22	44	4	6	9	9	4	5	7	16
500	0.75	0.35	50	5	7	10	10	5	6	8	18
600	1.08	0.50	55	6	7	11	11	6	6	8	20

Inlet Size 8 in.  $\varnothing$

Airflow (cfm)	Total Pressure (in. w.g.)	Static Pressure (in. w.g.)	Sound (NC)	Isothermal Conditions			Drop (in.)	Cooling Conditions			Drop (in.)
				Throw (ft)				Throw (ft)			
				150 fpm	100 fpm	50 fpm		150 fpm	100 fpm	50 fpm	
100	0.01	0.01	-	1	2	3	3	1	2	2	5
200	0.06	0.04	-	2	3	6	6	2	3	5	11
300	0.13	0.08	24	3	5	8	8	3	5	6	15
400	0.23	0.15	32	4	6	9	9	4	5	7	16
500	0.36	0.23	38	5	7	10	10	5	6	8	18
600	0.51	0.33	44	6	7	11	11	6	6	8	20

Inlet Size 10 in.  $\varnothing$

Airflow (cfm)	Total Pressure (in. w.g.)	Static Pressure (in. w.g.)	Sound (NC)	Isothermal Conditions			Drop (in.)	Cooling Conditions			Drop (in.)
				Throw (ft)				Throw (ft)			
				150 fpm	100 fpm	50 fpm		150 fpm	100 fpm	50 fpm	
100	0.01	0.01	-	1	2	3	3	1	2	2	5
200	0.04	0.04	-	2	3	6	6	2	3	5	11
300	0.10	0.08	24	3	5	8	8	3	5	6	15
400	0.18	0.15	32	4	6	9	9	4	5	7	16
500	0.36	0.23	38	5	7	10	10	5	6	8	18
600	0.51	0.33	44	6	7	11	11	6	6	8	20

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70 – 2023 “Method of Testing for Rating the Performance of Air Outlets and Inlets.”
2. Air flow is in cfm.
3. All pressures are in in. w.g.  
TP = total pressure  
SP = static pressure
4. NC values are based on room absorption of 10 dB re 10<sup>-12</sup> Watts and one diffuser.
5. Blanks “-” indicate an NC level below 15.
6. Isothermal conditions indicate supply air temperature is equal to room air temperature.
7. Cooling conditions are based on a supply air temperature of 40 °F and a room temperature of 75 °F.
8. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum)
9. Drop is in inches at a terminal velocity of 50 fpm.







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