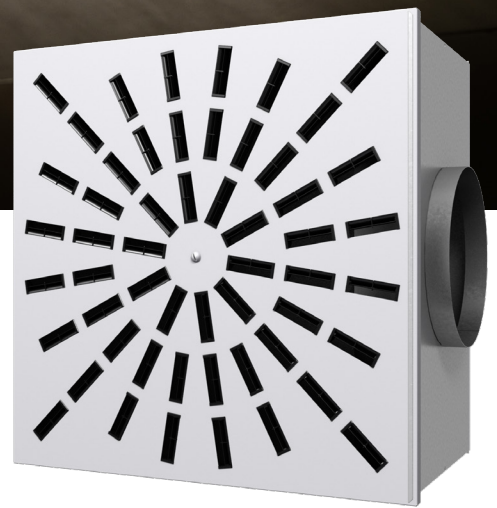


# RSD

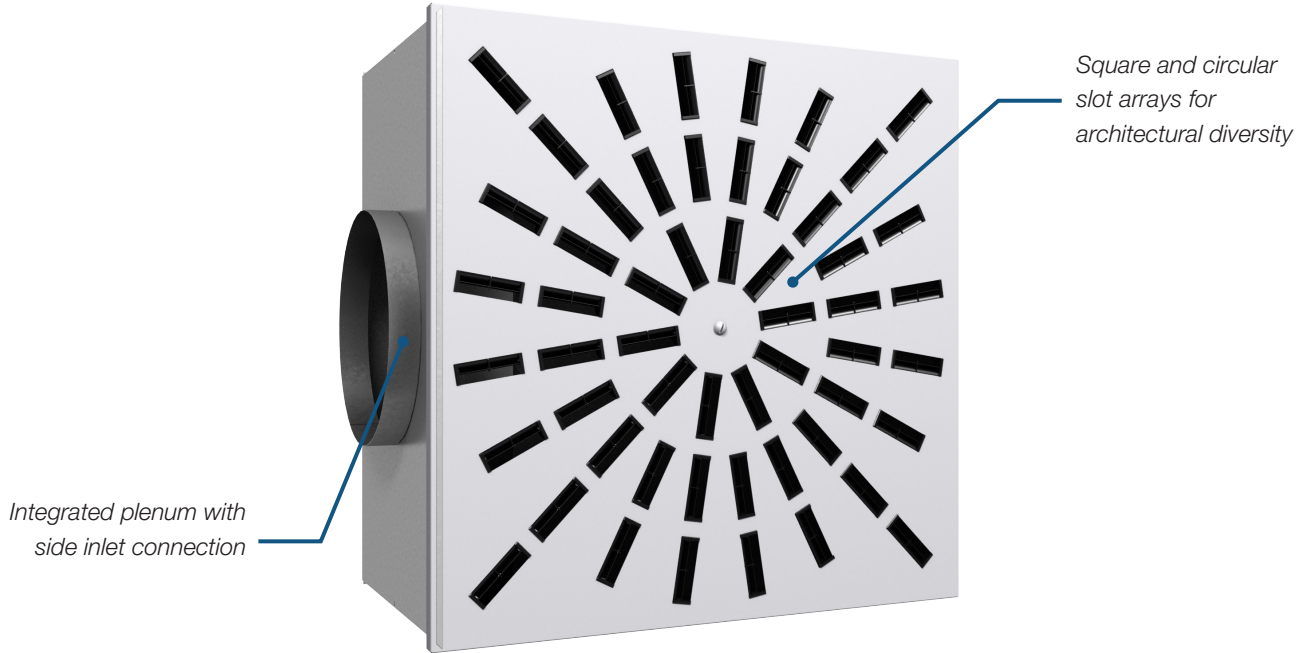
RADIAL SLOT DIFFUSER



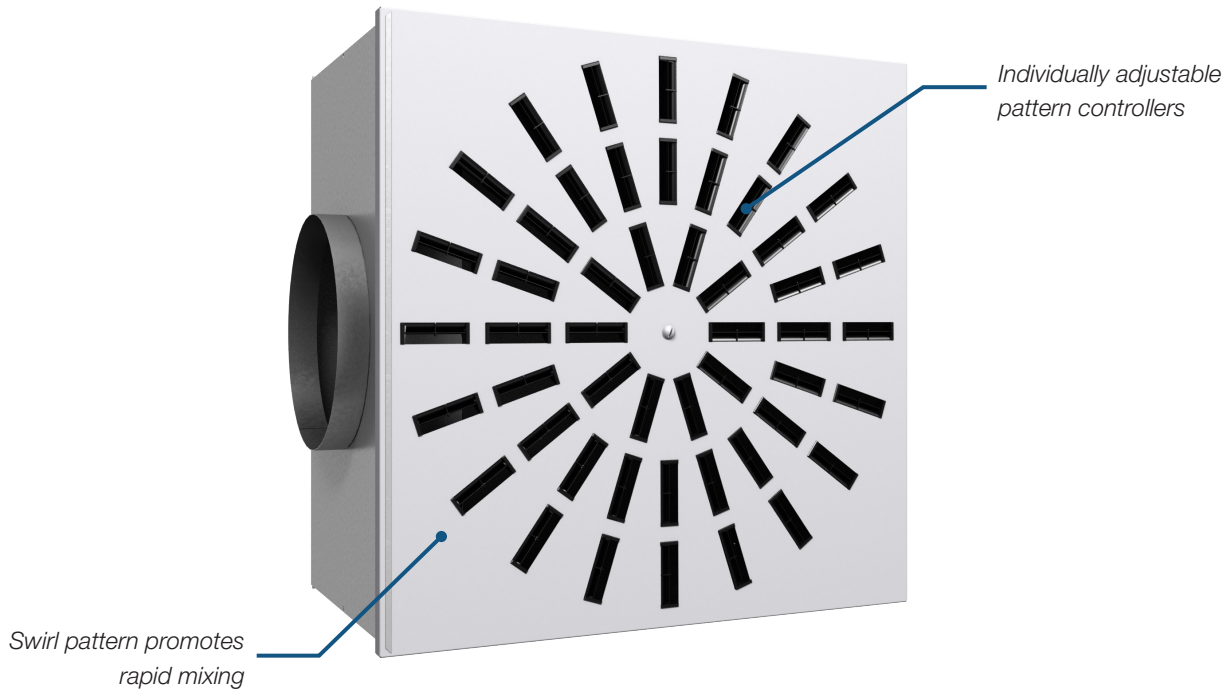
# RSD

## Radial Slot Diffuser

The Radial Slot Diffuser (RSD) produces a high induction radial swirl pattern which promotes rapid temperature equalization and is suitable for VAV applications where high turndown is present. This product can be installed in standard 24 in. x 24 in. lay-in ceiling grids or surface mounted using a plaster frame.



**Square slot array**



**Circular slot array**

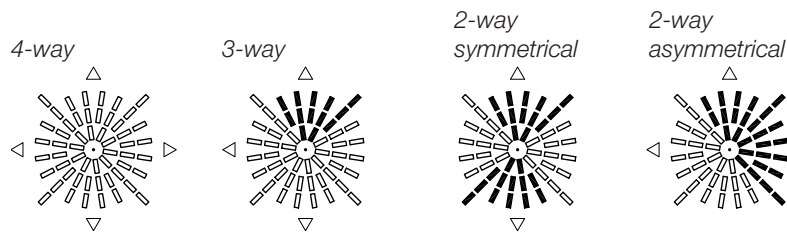
## ARCHITECTURAL APPEAL

- + The RSD features a radial slot design and is available with either square or round face patterns.
- + The face is available in all of our standard finish options as well as custom finishes upon request.
- + Pattern controllers by SMARTEMP:
  - USA Patent - Application 13/643034
  - Canada Patent - Application 2797196
  - EU Patent - Application 11771390.9

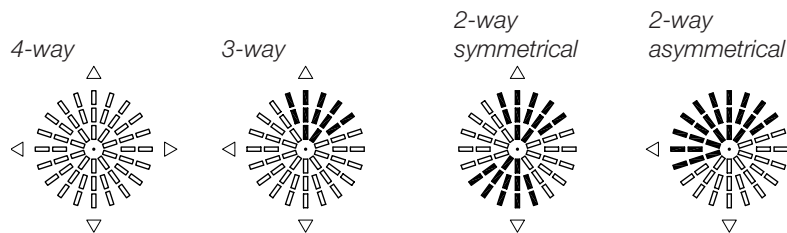
## ADJUSTABLE DISCHARGE PATTERN

- + The patented pattern controllers are individually field adjustable to allow for multiple discharge patterns, including 4-way, 3-way, 2-way symmetrical and 2-way asymmetrical flow.

### Square Array Pattern Options



### Round Array Pattern Options



Note: white = open | black = closed

## TYPICAL APPLICATIONS

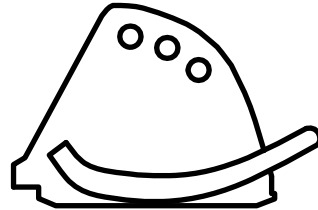
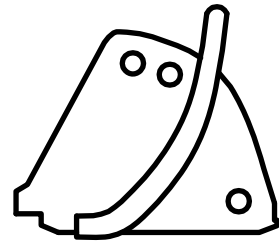
The Radial Slot Diffuser (RSD) is suitable for high turndown applications and is able to maintain occupant comfort over a wide airflow range, even in cooling. With adjustable pattern controllers arranged in a radial slot array, this model is ideal for applications where adjustable air pattern and architectural appeal is desired.

### CONFIGURATION OPTIONS

- + Available Sizes
  - 24 in. x 24 in.
- + Mounting
  - Lay-in
  - Plaster frame surface mount
- + Face Pattern
  - Square slot array
  - Circular slot array

## OPERATION

- + The direction of the discharge air jet can be manually modified by adjusting the polycarbonate pattern controllers in each slot.
- + In the default setting, all pattern controllers will be in the first position, providing a horizontal, radial swirl pattern.
- + Alternative patterns such as 3-way, 2-way symmetrical and 2-way asymmetrical can be achieved by closing off certain quadrants.
- + Pattern controller adjustment is performed using a specialized adjustment tool (ordered separately).



*Pattern controller position:  
horizontal (top), closed (bottom)*



*Pattern Controllers*

# PERFORMANCE DATA

## 24 in. x 24 in. - Circular Array

Inlet Size	Neck Velocity (fpm) Velocity Pressure (in. w.g.)	200 0.002	300 0.006	400 0.010	500 0.016	600 0.022	700 0.031	800 0.040	900 0.050	1000 0.062	1200 0.090
8"ø	Static Pressure (in. w.g.)	0.006	0.013	0.022	0.032	0.045	0.059	0.075	0.093	0.112	0.155
	Flow Rate (cfm)	<b>70</b>	<b>105</b>	<b>140</b>	<b>175</b>	<b>209</b>	<b>244</b>	<b>279</b>	<b>314</b>	<b>349</b>	<b>419</b>
	Sound (NC)	-	-	-	-	16	21	25	28	31	36
	Throw (ft.)	1-1-2	1-2-3	1-2-4	2-3-6	2-3-7	3-4-8	3-4-9	3-5-10	4-6-11	4-7-12
10"ø	Static Pressure (in. w.g.)	0.013	0.027	0.045	0.067	0.092	0.122	0.155	0.191	0.231	
	Flow Rate (cfm)	<b>109</b>	<b>164</b>	<b>218</b>	<b>273</b>	<b>327</b>	<b>382</b>	<b>436</b>	<b>491</b>	<b>545</b>	
	Sound (NC)	-	-	18	24	29	33	37	41	44	
	Throw (ft.)	1-2-3	2-3-5	2-3-7	3-4-9	3-5-10	4-6-11	5-7-12	5-8-13	6-9-14	
12"ø	Static Pressure (in. w.g.)	0.025	0.052	0.086	0.129	0.178	0.235	0.298			
	Flow Rate (cfm)	<b>157</b>	<b>236</b>	<b>314</b>	<b>393</b>	<b>471</b>	<b>550</b>	<b>628</b>			
	Sound (NC)	-	20	28	34	39	44	48			
	Throw (ft.)	2-3-5	3-4-8	3-5-10	4-6-11	5-8-13	6-9-14	7-10-15			

## 24 in. x 24 in. - Square Array

Inlet Size	Neck Velocity (fpm) Velocity Pressure (in. w.g.)	200 0.002	300 0.006	400 0.010	500 0.016	600 0.022	700 0.031	800 0.040	900 0.050	1000 0.062	1200 0.090
8"ø	Static Pressure (in. w.g.)	0.006	0.013	0.021	0.030	0.041	0.054	0.067	0.083	0.099	0.135
	Flow Rate (cfm)	<b>70</b>	<b>105</b>	<b>140</b>	<b>175</b>	<b>209</b>	<b>244</b>	<b>279</b>	<b>314</b>	<b>349</b>	<b>419</b>
	Sound (NC)	-	-	-	-	17	21	25	28	31	36
	Throw (ft.)	0-0-2	0-1-3	1-2-4	1-2-6	2-3-7	2-4-8	3-4-9	3-5-10	4-6-11	4-7-13
10"ø	Static Pressure (in. w.g.)	0.011	0.022	0.038	0.057	0.079	0.105	0.134	0.167	0.202	
	Flow Rate (cfm)	<b>109</b>	<b>164</b>	<b>218</b>	<b>273</b>	<b>327</b>	<b>382</b>	<b>436</b>	<b>491</b>	<b>545</b>	
	Sound (NC)	-	-	18	24	29	34	37	41	44	
	Throw (ft.)	0-1-3	1-2-5	2-3-7	3-4-9	3-5-10	4-6-12	5-7-13	5-8-14	6-9-15	
12"ø	Static Pressure (in. w.g.)	0.026	0.053	0.089	0.132	0.182	0.239	0.303			
	Flow Rate (cfm)	<b>157</b>	<b>236</b>	<b>314</b>	<b>393</b>	<b>471</b>	<b>550</b>	<b>628</b>			
	Sound (NC)	-	20	28	34	39	44	48			
	Throw (ft.)	1-2-5	2-4-8	3-5-10	4-6-12	5-8-14	6-9-15	7-10-16			

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70 - 2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Airflow is in cubic feet per minute [cfm].
3. NC, sound pressure levels, are based on a room absorption of 10 dB re 10<sup>-12</sup> Watts, and a single diffuser/grille.
4. Blanks "-" indicate an NC level below 15.
5. All pressures are in inches of water column [in. w.g.].
6. Pressures not listed can be calculated using the following formula: P<sub>total</sub> = P<sub>static</sub> + P<sub>velocity</sub>
7. Throw data is based on supply air and room air being at isothermal conditions.
8. Throw data is given in feet [ft] to terminal velocities of:  
150 fpm (minimum)  
100 fpm (middle)  
50 fpm (maximum)



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