

CSS – Ceiling Slot Swirl Diffuser

Model: CSS

The Holyoake CSS range of Square and Round Face Ceiling Slot Swirl Diffusers have been designed to provide attractive, non-obtrusive, high quality indoor air diffusion. The CSS is comprised of slots in a radial angled pattern that produce a circular swirling airflow.

The CSS is able to achieve high room air diffusion quality, due to the swirling motion of the discharge. Strong Induction draws room air up into the supply air flow path, which results in mixing at high level, reducing draughts and uneven temperature gradients.

The airflow pattern from the CSS Ceiling Slot Swirl Diffuser can be easily adjusted from the diffuser face, without the need to access the rear of the diffuser. By rotating the pattern blades the airflow can be directed to an external (horizontal), reduced throw (horizontal), or vertical discharge swirl. It can also be used for exhaust situations by either removing the pattern blades, or adjusting them to the horizontal position.

Other directional airflow patterns can be achieved by blade adjustment, refer to your local Holyoake Branch.

CSS Square Model Installation

Installation is simple due to the square lay-in type design. The diffuser can be placed into a 'T-rail' system quickly and easily and the supply duct attached. The supply air can be fed vertically onto the back of the diffuser, or through a specifically designed side entry box. The inlet duct is available at 150, 200 or 250 mm diameter, see table on following page.

CSSR Circular Model Installation

Installation of this model is also made easy, when supplied with a Top Entry round cushion head plenum. The diffuser outer edge can be flush mounted against the ceiling surface.

CSSF Fixed Model

The CSSF is a fixed non adjustable model of the CSS diffuser. The product still achieves the same high induction and ceiling effect as the adjustable model. Performance data is identical to CSS with pattern blades.

Construction

The CSS face plate is constructed of powder coated zinc coated steel (aluminium option available, contact your local Holyoake branch) and the air pattern elements from a tough UV stabilized and fire rated engineering polymer. These are available in white or black. They have a unique slightly convex profile which has been designed to maximize the free area, generate a strong ceiling effect and provide low noise operation over a wide range of flow rates.

A part blanked Low Volume blade is also available for CSS16.

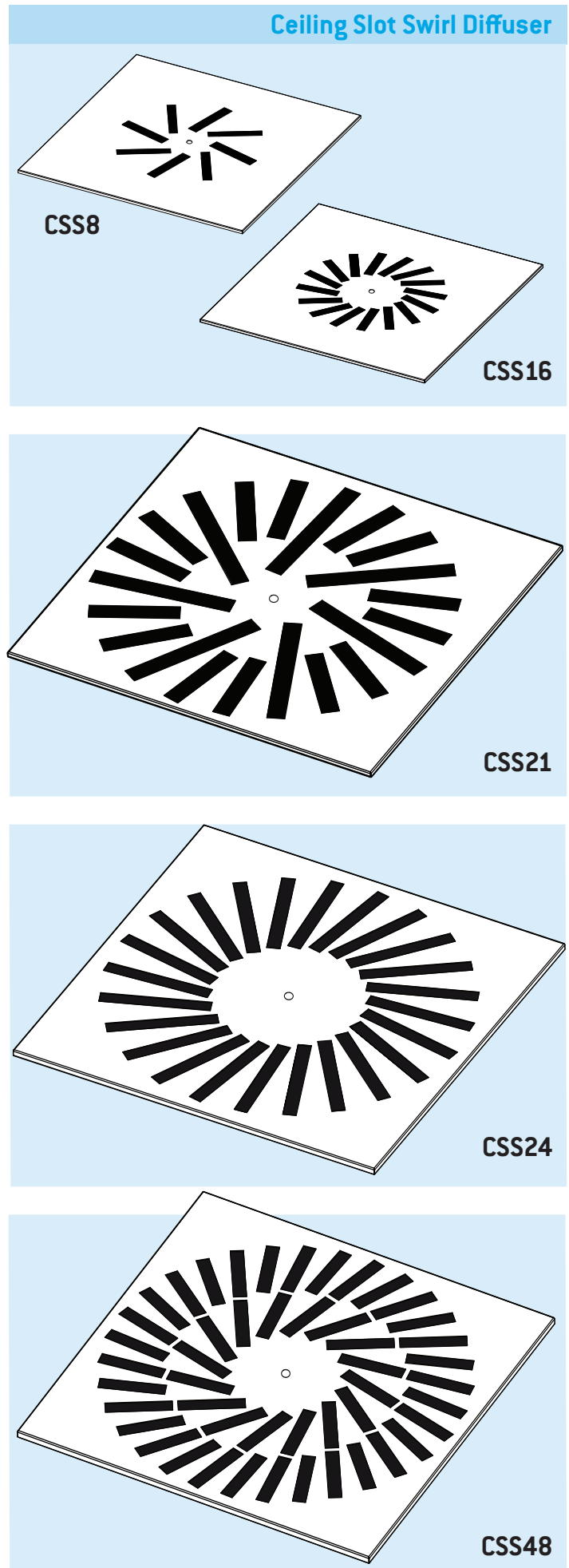
Nominal Square Face sizes of 295 x 295 mm for CSS8, 445 x 445 mm for CSS16 and CSS21; and 595 x 595 mm for all models are available, to lay in to 'T' Rail ceiling grids.

Nominal Circular Face models are available in 500 mm for CSS8, CSS16 and CSS21; and in 615 mm for all models.

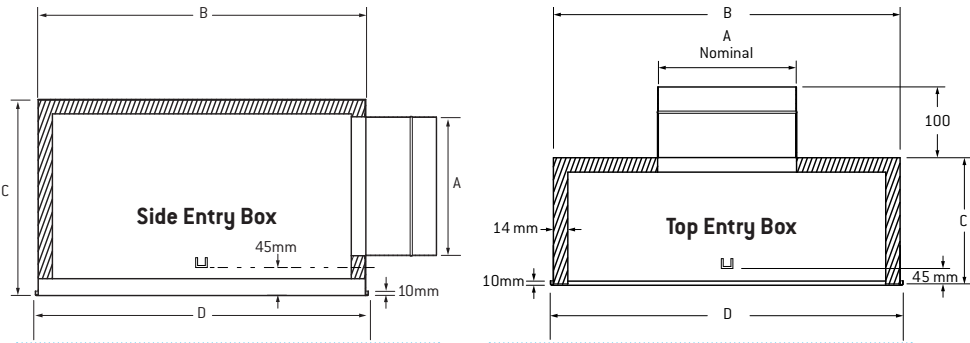
Features

- Unique Convex Profile Adjustable Pattern Blades.
- Infinite Range of Throw Patterns.
- Low Noise Operation.
- Strong Ceiling Effect.
- High Induction Swirl.
- Easy Lay-in Installation.

Ceiling Slot Swirl Diffuser

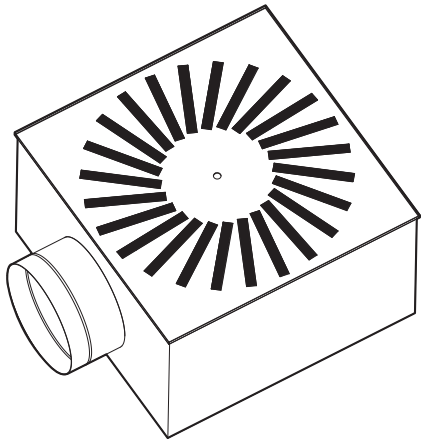


Dimensional Details

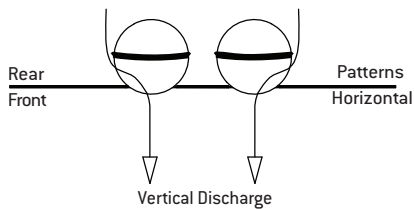
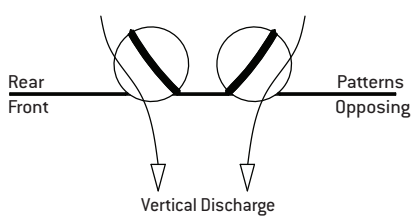
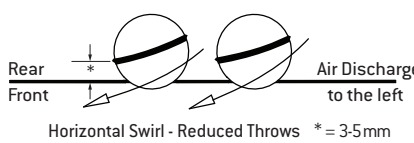
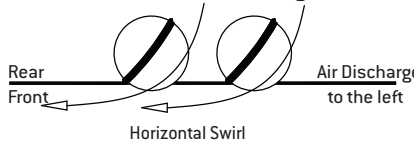


Side Entry Box Dimension (mm)					
Model	A	B	C	D	T RAIL
CSS8	150	285	285	295	300 - 600
CSS16	200	440	300	445	450 or 600
CSS21	250	440	350	445	450 or 600
CSS24	250	585	350	595	600
CSS48	250	585	350	595	600

Top Entry Box Dimension (mm)				
Model	A	B	C	D
CSS8	150	477 or 592	150	500 or 615
CSS16	200	477 or 592	150	500 or 615
CSS21	250	477 or 592	150	500 or 615
CSS24	250	592	150	615
CSS48	250	592	150	615



Adjustable Pattern Blade Settings
Viewed from diffuser outer edge.

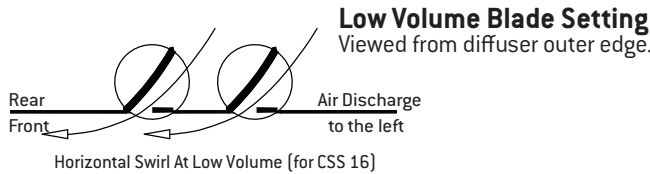


Performance Data								
Model	Flowrate [l/s]	25	50	75	100	125	150	175
CSS8	Static Pressure [Pa]	8	26	56				
	Total Pressure [Pa]	11	32	61				
	Throw [m] 0.75m/s	0.3	0.6	0.9				
	Throw [m] 0.50m/s	0.5	0.8	1.3				
	Throw [m] 0.25m/s	0.8	1.4	1.9				
CSS16	NC	20	29	36				
	Static Pressure [Pa]	-	4	9	17	26	37	
	Total Pressure [Pa]	-	7	15	27	41	60	
	Throw [m] 0.75m/s	-	N/A	0.4	0.7	0.8	0.9	
	Throw [m] 0.50m/s	-	0.5	0.6	1.0	1.1	1.4	
CSS21	NC	-	-	21	28	35	39	
	Static Pressure [Pa]	-	3	7	18	23	28	33
	Total Pressure [Pa]	-	5	9	25	29	34	45
	Throw [m] 0.75m/s	-	N/A	0.4	0.5	0.7	0.8	0.9
	Throw [m] 0.50m/s	-	0.6	0.7	0.9	1.1	1.3	1.5

Performance Data															
Model	Flowrate [l/s]	25	50	75	100	125	150	175	200	225	250	275	300	350	400
CSS24	Static Pressure [Pa]	-	2	3	5	8	10	14	18	23	29	35	40		
	Total Pressure [Pa]	-	3	6	10	16	20	27	36	46	55	68	80		
	Throw [m] 0.75m/s	-	N/A	N/A	N/A	0.6	0.8	1.1	1.4	1.7	2.0	2.2	2.4		
	Throw [m] 0.50m/s	-	N/A	0.3	0.8	1.1	1.5	1.8	2.1	2.4	2.7	2.8	3.0		
	Throw [m] 0.25m/s	-	0.8	1.2	1.4	2.1	2.3	2.7	3.0	3.3	3.5	3.7	3.9		
CSS48	NC	-	-	-	-	-	-	20	24	29	34	36	37		
	Static Pressure [Pa]	-	-	-	4	6	8	10	13	17	20	25	29	37	50
	Total Pressure [Pa]	-	-	-	9	12	17	23	29	37	44	53	63	86	120
	Throw [m] 0.75m/s	-	-	-	0.7	0.8	1.1	1.4	1.5	1.7	2.0	2.3	2.6	2.9	3.4
	Throw [m] 0.50m/s	-	-	-	1.2	1.5	1.7	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9

Notes on Performance Data

1. Pressure, Throw and NC values above, are based on a specifically designed side entry box, with spigot dimensions as table above.
2. Listed throw values refer to a terminal velocity of 0.75, 0.50 and 0.25 m/s.
3. NC values are based on a standard room attenuation of 10dB re 10⁻¹² Watts.
4. Values less than NC20 not shown.
5. For larger panel sizes 4 way spider brackets can be provided.
6. [CSS16 Only] For ultra low volume applications a special low volume blade is available. (When tested at 10 l/s @ 10 °C, ceiling effect is maintained).
7. Product Weights are available on page 140D.



Diffusers - Ceiling Swirl