

FSD – Floor Swirl Diffuser

Model: FSD / FSD-DD

The FSD Floor Swirl Diffuser is designed for use in raised floor air distribution systems, where the floor cavity is used as a pressurised supply air plenum.

The FSD core design produces a high velocity “swirl” discharge air pattern. This achieves high induction rates of room air which optimises mixing for maximum comfort conditions.

Construction

The Holyoake FSD is constructed of either die cast aluminium or high impact polycarbonate, complying with UL Standard 94-5V for flammability. It includes a low pressure drop core, dirt and dust collection basket, (which catches anything that might fall through the diffuser face and is removable for cleaning); with a combined volume control damper assembly.

A unique adjustment Pentagon allows for 5 control positions at 30, 35, 45, 65 and 85% of design flow. Default is set at 30%.

By rotating the fascia the desired airflow can be obtained between the minimum (set position) and maximum (fully open) positions.

A trim ring flange, compliments contemporary décor and lies flush with the low profile face design (of a nominal 220 mm diameter), secures the carpet and prevents the edges from fraying.

A unique adjustable mounting clamp adapts for variable floor thicknesses and permits simple and secure installation from above, without removal of the floor panel, or carpet.

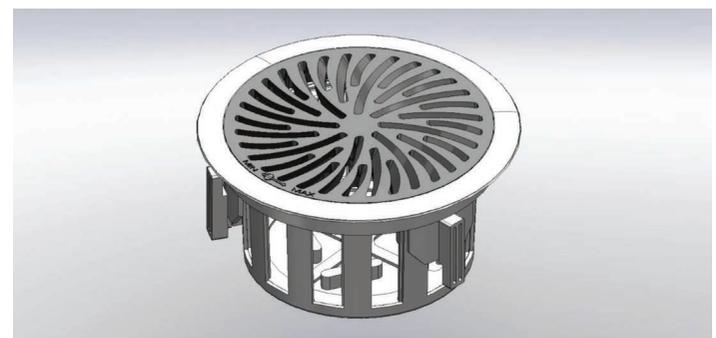
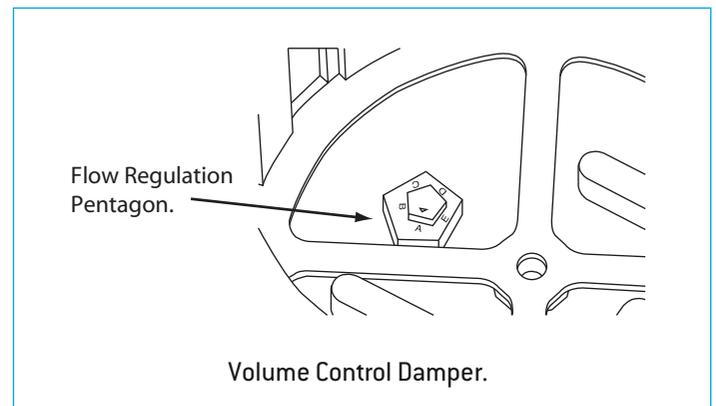
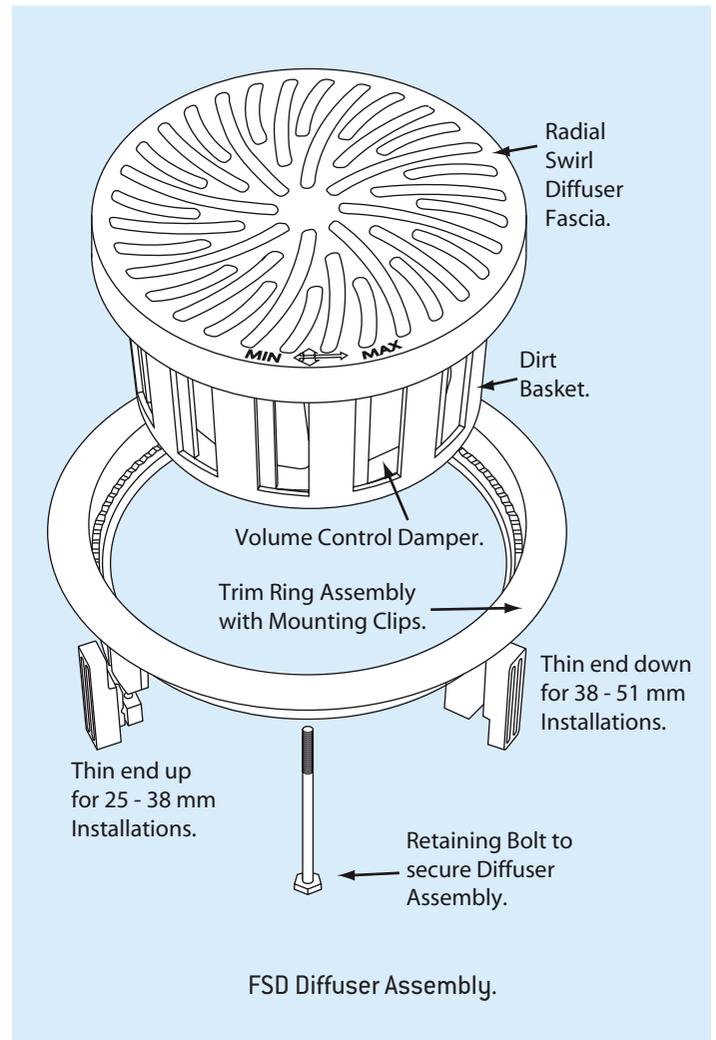
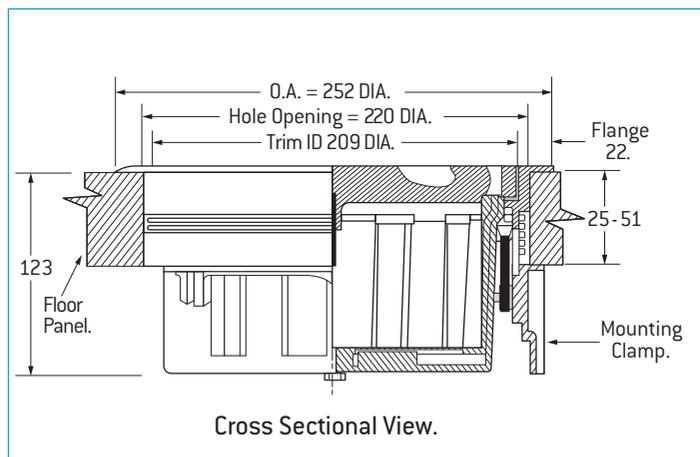
The FSD is also available in a directional model, the FSD-DD. The swirl discharge is offset by 15° and the direction can be user adjusted. The performance and swirl pattern is identical to the FSD, see the figure on the following page.

Both the aluminium and polycarbonate FSD have been load tested by the Australian Wool Testing Authority (AWTA) and supported loads of 1600kg and 700kg respectively before failure.

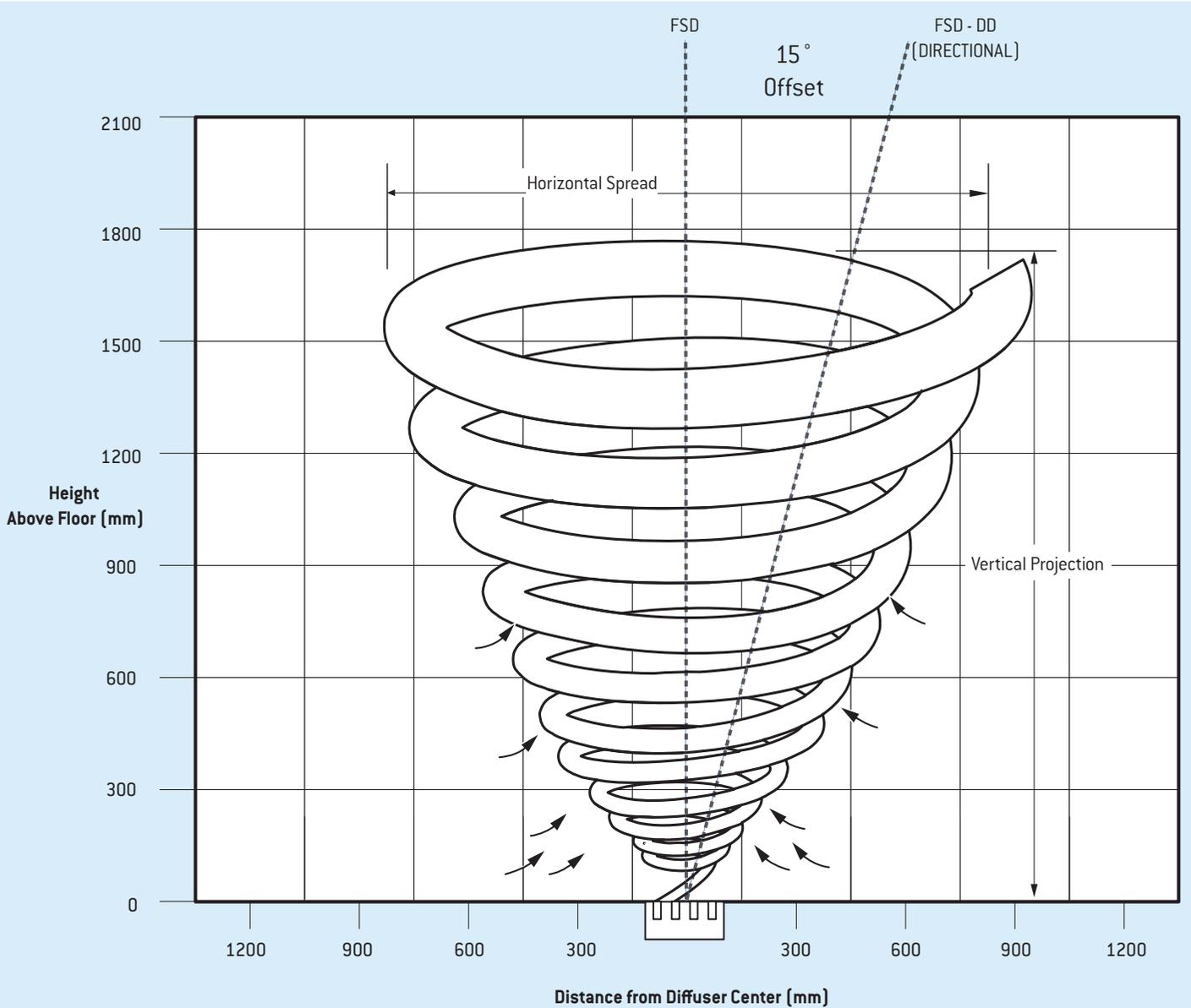
The polycarbonate version comes finished standard in grey, or black. Please specify when ordering.

Features

- Rotatable Swirl Fascia.
- Volume Control Damper, with Unique Adjustment Pentagon.
- Dirt and Dust Collection Basket.
- Adjustable Mounting Clamps, with Trim Ring.
- Architecturally Pleasing.
- High Impact Polycarbonate or Die Cast Aluminium.



Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.



High Induction "Swirl" Pattern 50 l/s supply @12°C ΔT.
Outline Indicates Maximum Room Air Velocity of 0.25 m/s.

Performance Notes

1. Projection and spread data were determined in a room with a 3.4m ceiling height and 12°C ΔT, between supply air and averaged occupied room temperature.
2. Vertical projection (throw) is the maximum height above the floor where the terminal velocities of 0.75, 0.5 and 0.25 m/s were observed. Horizontal spread is the total width of the isovel where terminal velocities of 0.75, 0.5 and 0.25 m/s were observed.
3. Noise Criteria (values) based on 10dB room absorption, re 10⁻¹² watts. Dash (-) in space denotes an NC value less than 15.
4. Pressure is in Pa.
5. Tests conducted with dirt basket/damper installed. Damper fully open.
6. Acoustic testing was performed by VIPAC and full noise spectrum data is available on request.

DT (°C)	-6	-8	-10	-12	-14	-16
Projection, m	x 1.33	x 1.11	x 1.00	x 1.06	x 0.92	x 0.91
Spread, m	x 0.87	x 0.94	x 1.00	x 1.06	x 1.11	x 1.16

Series	Approximate Weight in Kg.
FSD	1.41 Polycarbonate
FSD-A	2.75 Die Cast Aluminium

Airflow l/s	10	20	30	40	50	60	70	80
Plenum Pressure (Pa)	0	3	5	11	12	17	26	33
Vertical Projection, m	0.04 - 0.26 - 0.96	0.20 - 0.45 - 1.10	0.30 - 0.70 - 1.60	0.50 - 1.00 - 2.00	0.55 - 1.15 - 2.05	0.59 - 1.30 - 2.10	1.00 - 1.83 - 2.14	1.28 - 1.97 - 2.20
Horizontal Spread, m	0.07 - 0.19 - 0.38	0.13 - 0.19 - 0.38	0.16 - 0.25 - 0.64	0.17 - 0.30 - 0.70	0.18 - 0.36 - 0.71	0.20 - 0.40 - 0.76	0.30 - 0.51 - 0.83	0.41 - 0.64 - 0.92
NC	-	-	-	-	-	-	-	15

BHC, DFR, DS & JD

Product Ordering Key and Suggested Specifications

BHC	–	SIZE	–	OPTIONS	–	FINISH
High Capacity Barrel Diffuser		635 x 300 or 1270 x 300		24 V AC or, 230 V AC Actuators / Thermal Power Pill		Mill Aluminium Anodized Aluminium Holyoake White Powder Coat

High Capacity Barrel Diffusers shall be Holyoake Series BHC. They shall be designed to be mounted into a supply plenum that may contain a number of BHC units, which will provide high capacity and long throw diffusion. Adjustment is available to change the vertical and horizontal throw and spread.

Series BHC shall be finished in Mill Aluminium and fitted with accessories where indicated.

All shall be as manufactured by Holyoake.

DFR	–	FINISH
Displacement Floor Mounted Round Diffuser		Black Holyoake White Powder Coat

Displacement Floor Mounted Round Diffusers shall be Holyoake Series DFR. They shall be designed to mount into a supply plenum at floor level and to provide an even distribution of air flow at low velocity, thereby creating a draft-less environment. Pressure drop through the displacement diffusers will be such to provide balance within the supply plenum, while being low enough to generate very low noise levels.

Series DFR Displacement Diffusers shall be circular.

All shall be as manufactured by Holyoake.

DS	–	W x H	–	FLANGE	–	OPTION	–	FINISH
Displacement Step Mounted Diffuser		Hole Size		17mm 25mm		RC Removable Core (25 mm flange only).		Powder Coat Mill Aluminium

Displacement Step Mounted Diffusers shall be Holyoake Series DS. They shall be designed to mount into a supply plenum at floor level and to provide an even distribution of air flow at low velocity, thereby creating a draft-less environment. Pressure drop through the displacement diffusers will be such to provide balance within the supply plenum, while being low enough to generate very low noise levels.

Series DS Displacement Step Mounted Diffusers are designed to be face fixed, or supplied with the Holyoake Removable Core System (25 mm flange only).

All shall be as manufactured by Holyoake.

JD	–	250	–	OPTIONS	–	FINISH
Jet Diffusers		Nominal Size		Mounting Plate (Type 1, 2, 3 or 4)		Holyoake White Mill Aluminium Powder Coat

Circular Jet Diffusers shall be Holyoake Model JD constructed from spun aluminium cones. JD Jet Diffusers shall be capable of operating in either diffused, or jet air pattern configurations. The air patterns shall be achieved by rotating the cone assembly through 180 degrees. JD Jet Diffusers shall be complete with a mounting system suitable for wall, or ceiling applications.

Series JD shall be finished in powder coat and fitted with accessories where indicated.

All shall be as manufactured by Holyoake.

Note

For ceiling applications of JD Diffusers, Seismic Restraints would be required, but not supplied.

JND, EL, EL-P, FSD & TLC-EL

Product Ordering Key and Suggested Specifications

JND	-	SIZE	-	FINISH	<p>Holyoake Jet nozzle diffusers shall be of spun aluminium construction with a steel concealed mounting system. They shall be designed to supply large air quantities over large throws.</p> <p>Series JND shall be finished in powder coat and all shall be as manufactured by Holyoake.</p>
Jet Nozzle Diffuser		160, 200, 250, 360, 400		Powder coat white, special colours available on request	

FSD	OPTIONS	<p>Circular floor diffusers shall be Holyoake FSD Series manufactured in glass filled polycarbonate, in self-coloured grey, or black, as standard. Nominal FSD diffuser size shall be 220mm in diameter. The FSD diffuser shall contain a flow regulation damper and the fascia is complete with 'Min/Max' indication.</p> <p>Series FSD mounting clamp and trim ring shall also be manufactured in glass filled polycarbonate. FSD diffusers shall contain a dust/dirt collection basket.</p> <p>All Series FSD materials used are fire retardant and the diffusers shall resist permanent deformation when subject to point loads up to 500 Kg.</p> <p>All shall be as manufactured by Holyoake.</p>
Floor Swirl Diffuser	Die Cast Aluminium Mill Finish, or, Die Cast Aluminium Powder Coat Finish	

EL	-	2	-	S	-	300 x 300	-	ACCESSORIES	-	OPTIONS	-	FINISH	<p>Surface Mounted Eyelash Type</p> <p>EL surface mounted diffusers shall be of the "Eyelash", or curved blade type. They shall be of extruded aluminium construction, with each blade individually adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.</p> <p>All shall be as manufactured by Holyoake</p>
Series "Eyelash"		Core Model		Style		Duct Size		OBD-1 Opposed Blade damper		RC 25 RC 50 CMF Removable Core Frame Option		Holyoake White Mill Aluminium Powder Coat	

EL	-	P	-	2	-	S	-	300 x 150 - 600 x 600	-	ACCESSORIES	-	FINISH	<p>Panel Lay-in Eyelash Type</p> <p>EL-P Panel Lay-in diffusers shall be of the "Eyelash", or curved blade type. They shall be of extruded aluminium construction, with each blade individually adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.</p> <p>All shall be as manufactured by Holyoake.</p>	
Series "Eyelash"		Panel Lay-in Model		Core Model		Style		Duct Size		Module Size		OBD-1 Opposed Blade damper		Holyoake White Mill Aluminium Powder Coat

TLC-EL	-	2	-	L	-	400 x 150	-	ACCESSORIES	-	FINISH	<p>Curved Frame Eyelash Type</p> <p>TLC-EL diffusers shall be of the "Curved Frame Eyelash" type, with curved blades. They shall be of extruded aluminium construction, with each blade adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.</p> <p>All shall be as manufactured by Holyoake.</p>
Series Curved Frame "Eyelash"		Core Model		Style		Nominal Duct Size		OBD-1 Opposed Blade damper		Holyoake White Mill Aluminium Powder Coat	

Note

For ceiling applications of EL Diffusers, Seismic Restraints would be required, but not supplied.