

LINEAR SLOT

Model: LSD



The Polyaire Linear Slot Diffusers are an attractive alternative to the ceiling or high sidewall supply diffusers.

The linear slot diffusers are a consistently popular diffuser series, well regarded due to their modern understated appearance, high air handling capacity and ability to perform both supply and extract functions.

Normally fitted into ceilings or at high level sidewalls, slot diffusers are particularly suitable for installation in large open plan areas like offices or shopping centres. Through the use of multiple sections of diffuser, runs of unlimited length can be created.

Available with either a standard flanged or plaster-in frame, with 1-8 slots and a full range of options including internal deflectors to enable throw direction adjustment, end caps and powder coating to any RAL or BS colour.

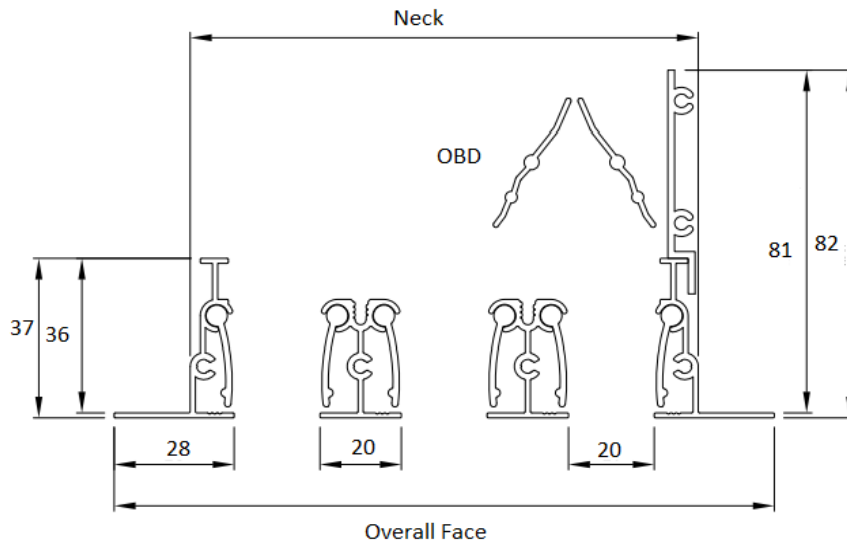
Linear slot diffusers are normally supplied complete with a specially adapted plenum box (side entry as standard) and brackets to suit.

This not only connects the diffuser easily and effectively to ductwork, but also provides a discreet fixing method, avoiding visible face fixings.

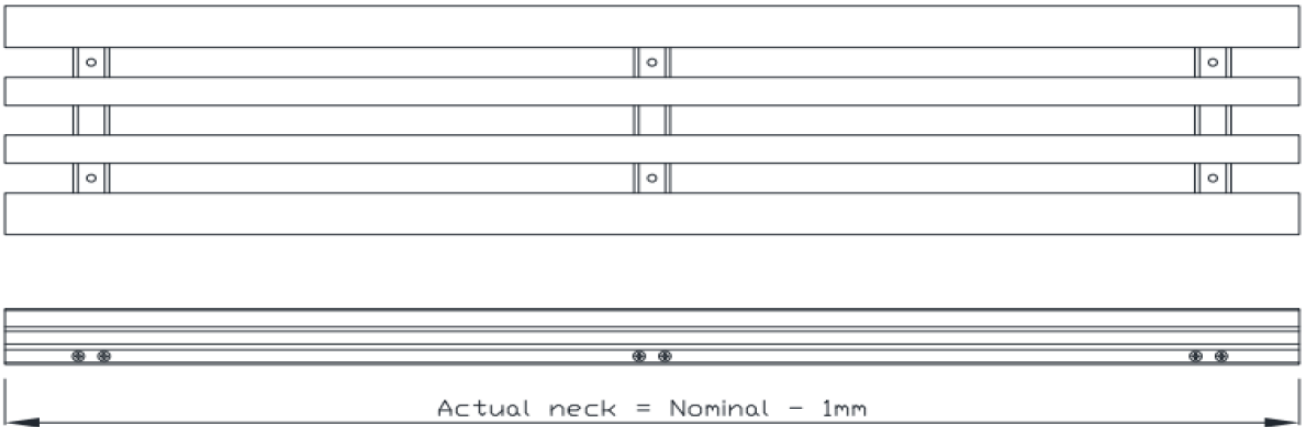
Material	Extruded aluminium sections. Steel Fixings
Frame	Standard: Flanged Optional: Plaster-in
Sizes	1 to 8 slots Minimum Length: 300mm Maximum Length: Unlimited (in sections) Maximum Section: 2000mm
Fixings	Standard: None Optional: Goalpost brackets for slot box Plasterboard goalpost brackets
Finish	Standard: Mill Finish Optional: Powder Coated to any RAL colour

Number of Slots	Neck Size (mm)	Face Size (mm)
1	45	81
2	90	126
3	140	176
4	190	226
5	240	276
6	290	326
7	340	376
8	380	416

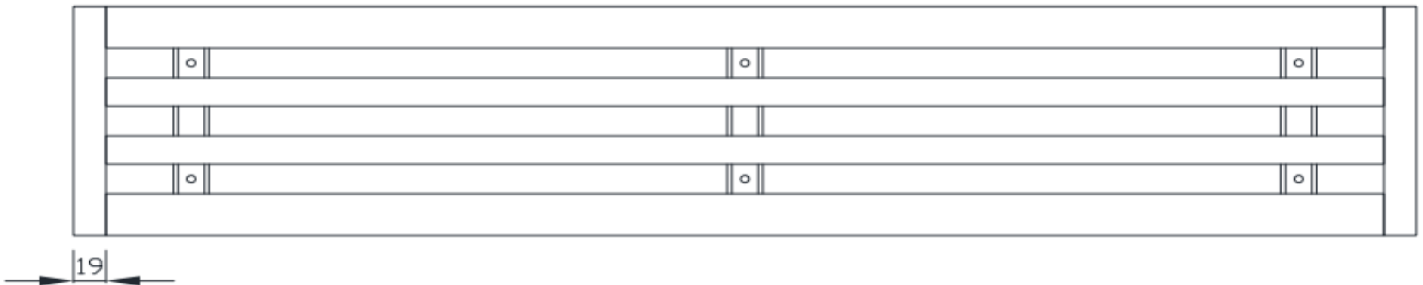




No end caps



With end caps

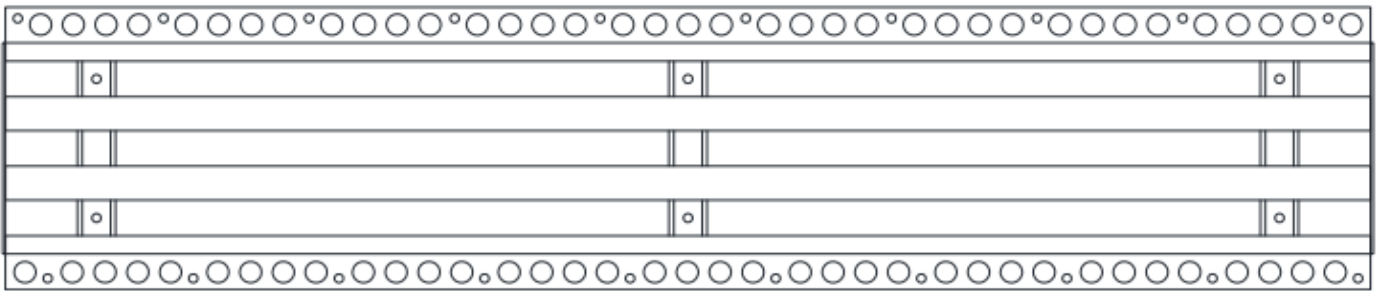


Plaster in Frame

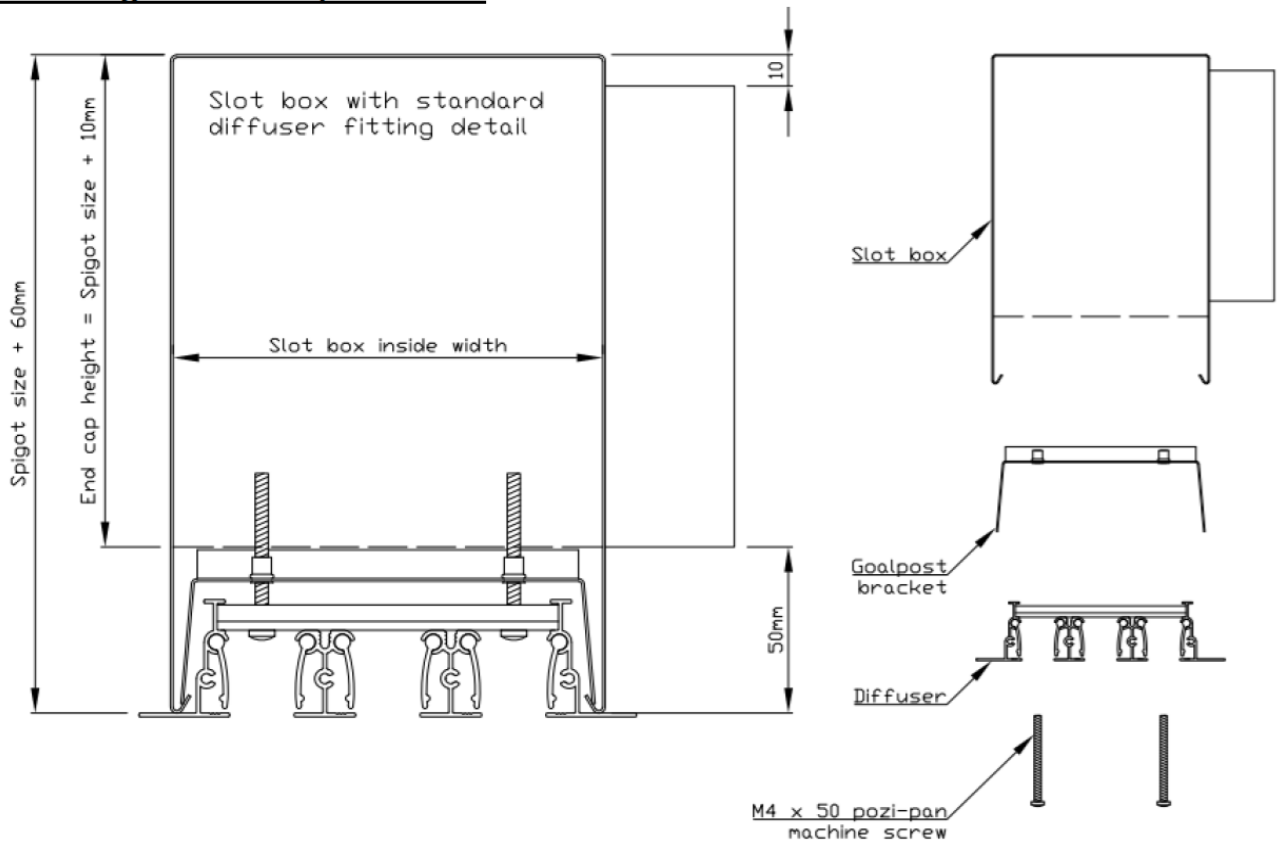
The frame has a 1.35mm thick, 20mm wide flange set 3mm back from the face of the diffuser. A repeating pattern of four 12mm holes and one 5mm hole is punched into this, with the 5mm hole serving as a fixing point for a screw, and the 12mm holes producing a large area for plaster to bind to supporting plasterboard.

Alignment of Sections

Roll pins, inserted into integrated ports in the outer and inner profiles act to align adjacent sections. Ports are collapsed near the end of each profile to prevent pins being pushed completely into the ports.



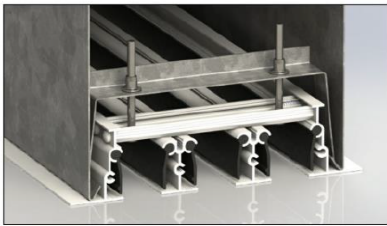
Technical drawings - Diffuser c/w slot box



Fixings

Goalpost Brackets

Required to connect a linear slot diffuser to a slot box. With the box pre-fitted into the aperture, brackets should be fitted to the diffusers using the supplied M4 machine screws. When the diffuser is pushed up into the box, the flared legs of the bracket will latch into the returns on the inside of the slot box. The bolts can then be tightened to draw the diffuser up snugly into position. Goalpost brackets cannot be used if the diffuser is fitted with an OBD (opposed blade damper).



Plasterboard ceiling goalpost Brackets

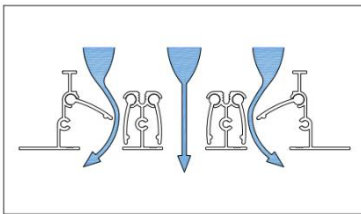
Adapted from standard goalpost brackets, plasterboard ceiling goalposts have a 10mm flat extension on each leg. This permits diffusers to be fitted straight into plasterboard ceilings, without the requirement for a slot box. Plasterboard goalpost brackets cannot be used if the diffuser is fitted with an OBD (opposed blade damper).



Diffuser Options

Internal deflector blades

Recommended for supply applications, internal deflectors are anodised matt black aluminium profiles factory fitted into each slot. Manually adjustable through the diffuser face, they allow the direction of airflow to be altered as required through the creation of low pressure zones beneath extended blades.



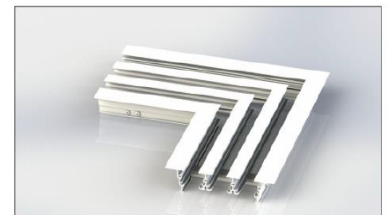
End caps

End caps incorporate a 19mm flange, contain the airflow within the diffuser, and finish off the installation aesthetically. Supplied in the same finish as the diffuser and factory fitted. Flat end caps are standard fit with diffusers specified with a plaster in frame.



Mitred corners

Mitred corners can be supplied for when the building design requires an unbroken length of diffuser, even through corners. Mitred corners are normally supplied as a 90° angle, but can be manufactured to any angle if required.



Slot Box Options

Spigot mounted volume control dampers

NCA Series 900 SBD single blade dampers can be factory fitted into slot box spigot/s. Dampers are fitted with a locking quadrant as standard, and are available with actuators or lengths of cord for remote operation if required.

Designed to equalise airflow throughout the length of the slot box, equalising plates consist of a factory fitted piece of perforated steel sheet positioned in front of the spigot. By forcing air to spread out into the whole box, a more equal flow through the diffuser length is created, rather than majority exiting the diffuser where the spigot is located.

Equalising plates

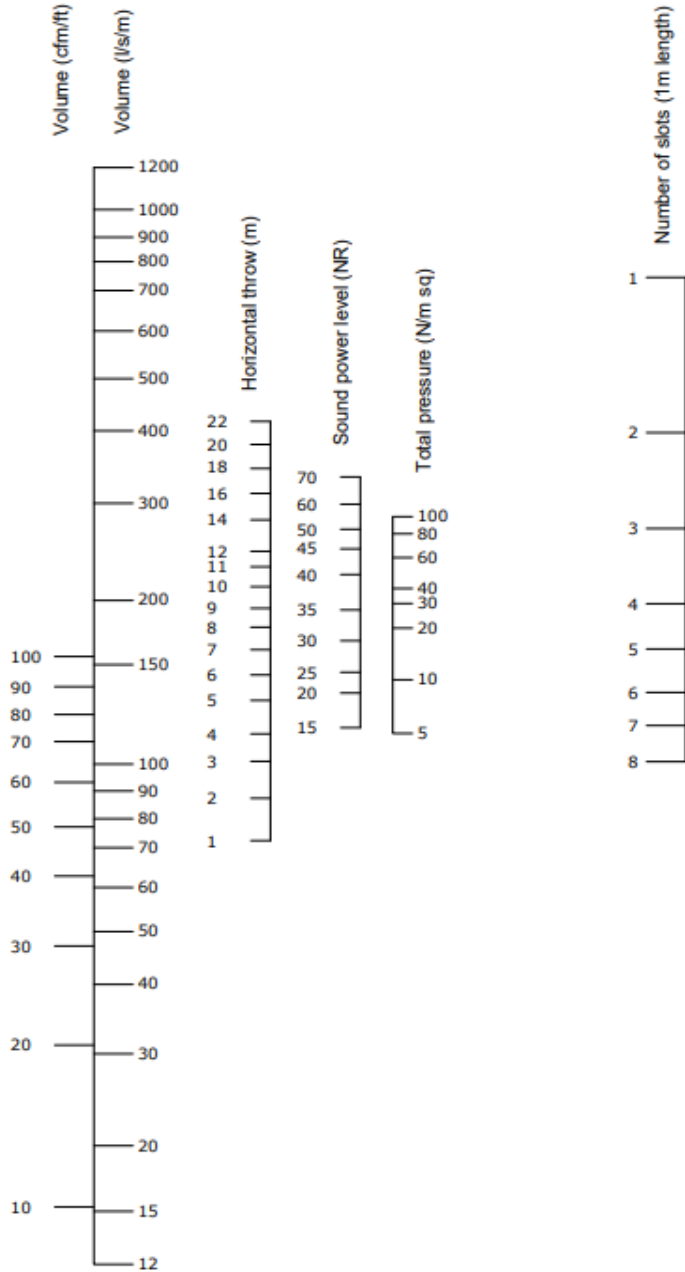
Fixing lugs

Factory fitted to the sides of slot boxes, fixing lugs enable use of slot boxes with drop rod fixing systems. Lugs protrude 40mm from each side of the box, and have centrally Pre-punched holes of 10mm diameter.

Internal insulation

To aid both thermal and acoustic performance, slot boxes can be internally lined with 10mm black self-adhesive foam insulation. Slot box insulation can reduce cross-talk between rooms, absorb noise from air handling units and prevent damage to building fabric due to condensation. Insulation is a closed cell type ensuring minimal absorption of moisture, and is Class O rated when tested against BS 476 pt 6 2000.

Selection Data



Throw values based on a 10°C cooling application, to a terminal velocity of 0.5m/s, to give an average room velocity of 0.18 m/s with a room height of 2.7m when mounted flush with an unobstructed ceiling.

Exhaust correction factors	
NR	-10
Pressure loss	0.8

Correction factors		
Diffuser active length (m)	Horizontal flow multiplier	Sound level correction
0.5	0.7	-3dB
1	1	As nomogram
1.5	1.1	+2dB
2	1.2	+3dB
3	1.3	+5dB

Temperature correction factors						
	-10°C	0°C	+5°C	+10°C	+15°C	+20°C
Throw factor	1	1.1	1.15	1.2		
Projection factor	1.6	1.25	1.15	1	0.73	0.62

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