



**COMPLETE AIR  
SUPPLIES LTD.**

# LSD

*Linear Slot Diffuser*



- Popular diffuser series suitable for both extract and supply functions.
- Can be supplied in sections to create runs of unlimited length.
- Redesigned with numerous design improvements.
- Plaster-in variant now available.
- Simple and effective alignment method for multiple section units.
- Slot boxes for connection to ductwork available

Series LSD 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 in 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 to 8 slots and a full range of options including internal deflectors to enable throw direction adjustment, end caps and polyester 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 any visible face fixings.

## Design features

Material	Extruded aluminium sections Steel fixings
Frame	Standard: Flanged Optional: Plaster-in
Sizes	1 to 8 slots Minimum length: 300mm Maximum length: Unlimited when made in sections Maximum section length: 2000mm
Fixings	Standard: None Optional: See page 8
Finish	Standard: Mill finish Optional: See page 10



## 2020 redesign

LSD linear slot diffusers have been completely redesigned in order to simplify installation, introduce new features and address common complaints about our old model.

### Plaster-in frame

Linear slot diffusers are now available with a plaster-in frame

The new 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.

The new plaster-in frame uses the ordering code PLS.



### Improved goalpost brackets

Goalpost brackets are now shallower and are manufactured with a folded return across their width, greatly increasing strength.

Where goalpost brackets are ordered, bolts will be sent secured to diffusers using bolt retainers.

Goalpost brackets are not available for diffusers fitted with OBDs.

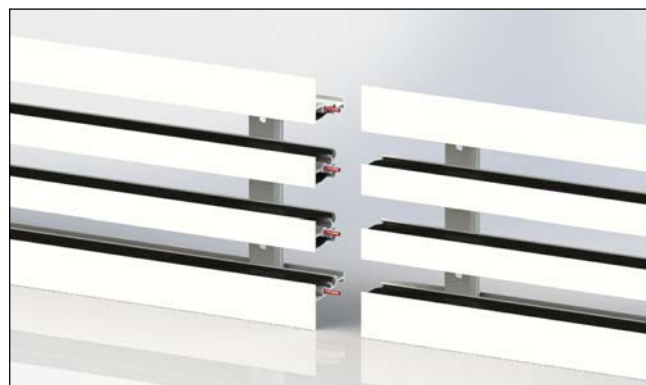


### Improved alignment of sections

Multi-section alignment is now much improved.

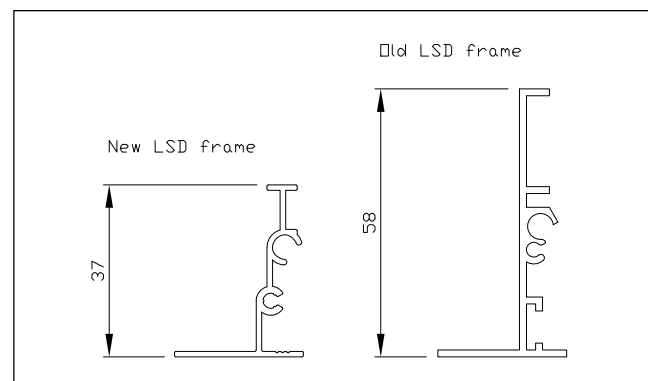
Roll pins, inserted into integrated ports in the outer and inner profiles act to align adjacent sections. Ports are collapsed near the end of each profile to prevent pins being pushed completely into the ports.

Roll pins are supplied loose with any multi-section diffuser.

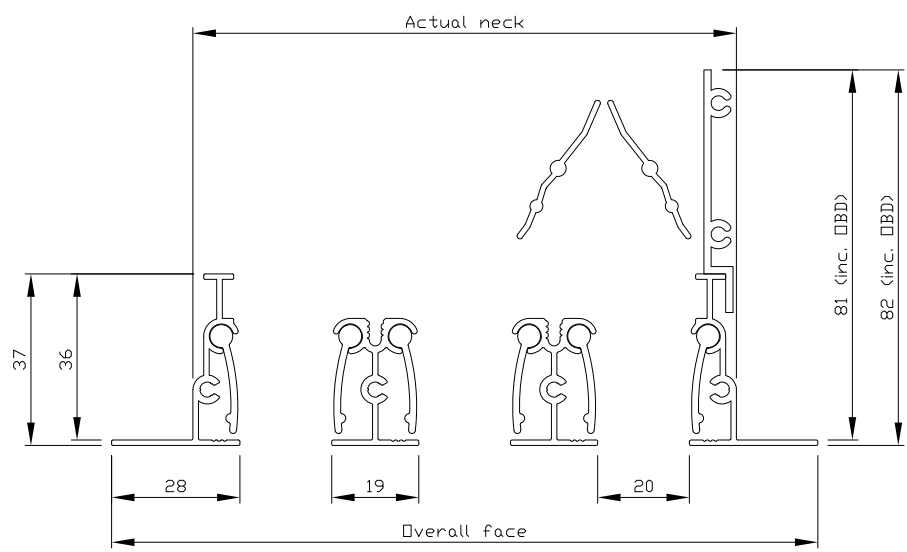


### Reduced depth

Now just 37mm deep, Series LSD linear slot diffusers are suitable for more installations where space is at a premium.



# Technical drawings - Standard diffuser

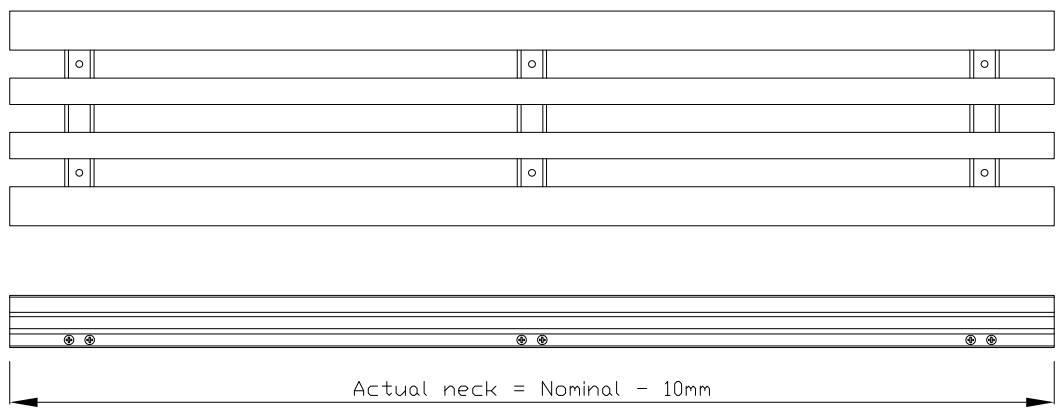


Number of slots	Actual neck (mm)	Overall face (mm)
1	41	76
2	80	115
3 (shown)	119	154
4	158	193
5	197	232
6	236	271
7	275	310
8	314	349

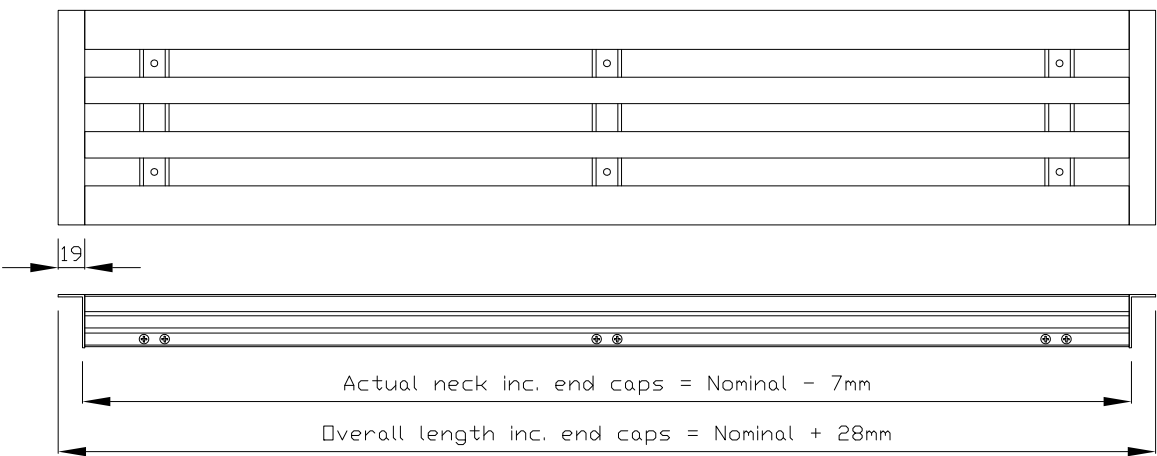
Non-standard slot widths are possible. Please contact for more information.

OBD blades shown in incorrect orientation for clarity, in reality would run across diffuser neck (at 90° to shown).

No end caps



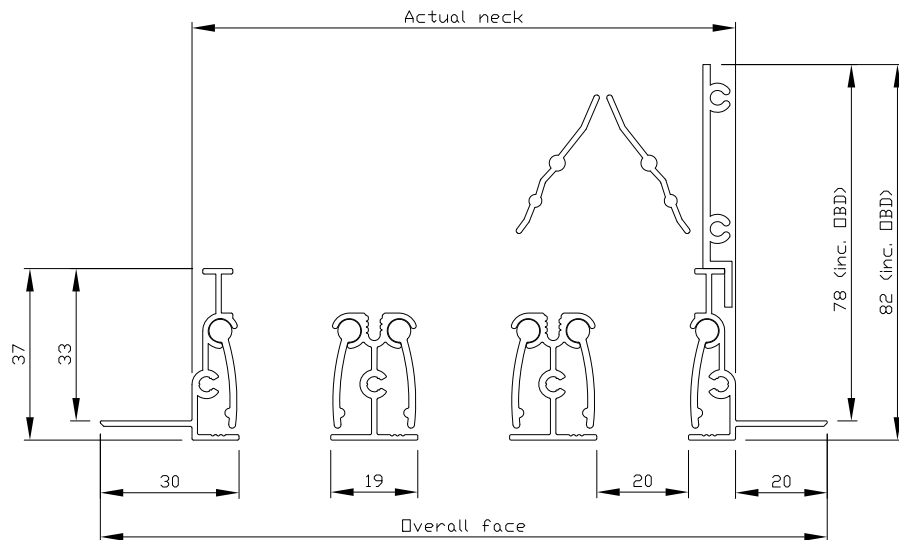
With end caps



Please note:  
Section drawing shows optional deflector blades



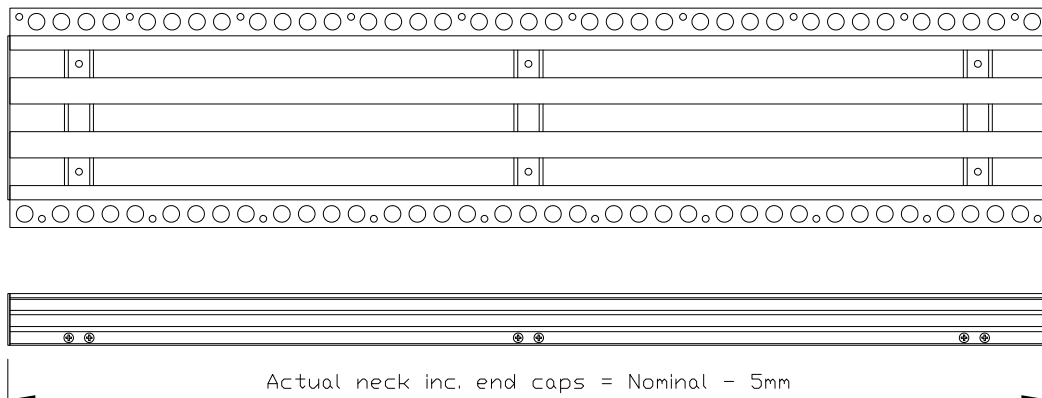
## Technical drawings - Plaster-in diffuser



Number of slots	Actual neck (mm)	Overall face (mm)
1	41	80
2	80	119
3 (shown)	119	158
4	158	197
5	197	236
6	236	275
7	275	314
8	314	353

**Non-standard slot widths are possible. Please contact for more information.**

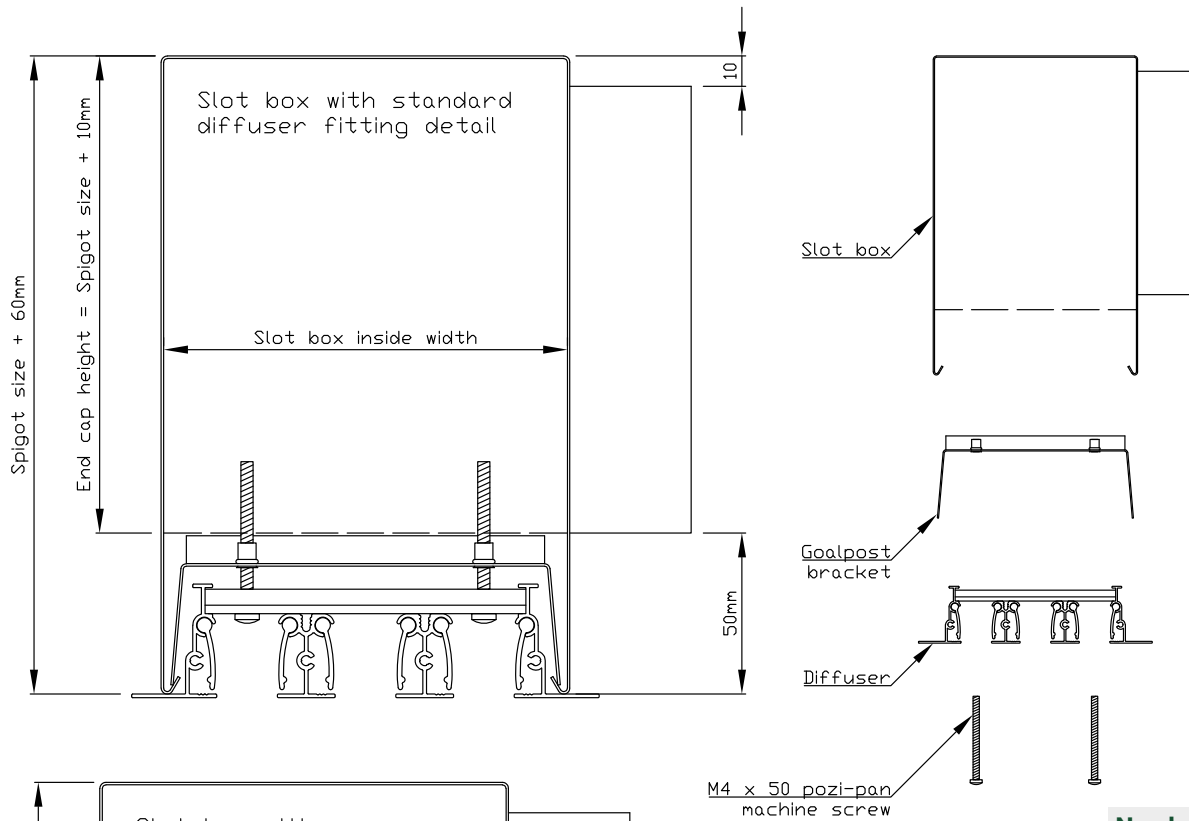
**OBD blades shown in incorrect orientation for clarity, in reality would run across diffuser neck (at 90° to shown).**



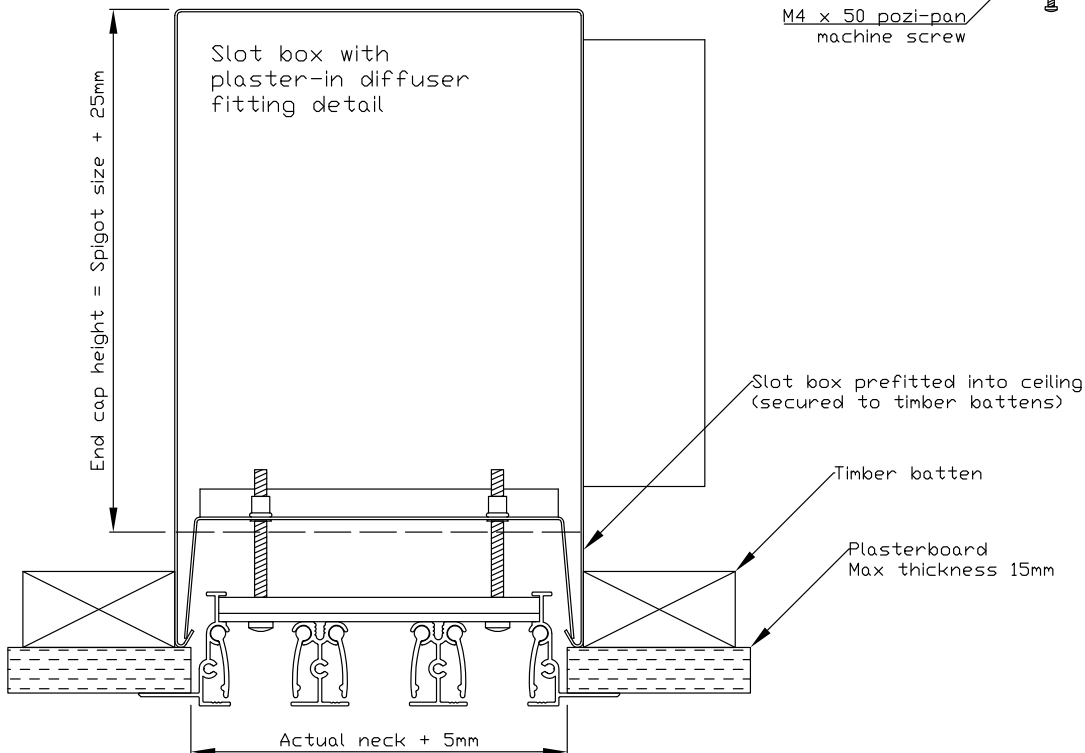
**Please note:**  
**Section drawing shows optional deflector blades**  
**Flat end caps are standard fit with plaster-in framed slot diffusers.**



## Technical drawings - Diffuser c/w slot box



Number of slots inside	Slot box width (mm)
1	55
2	94
3 (shown)	133
4	172
5	211
6	250
7	289
8	328



Slot boxes are supplied with brush seal strips fitted to end caps to reduce leakage from between the diffuser and the box.

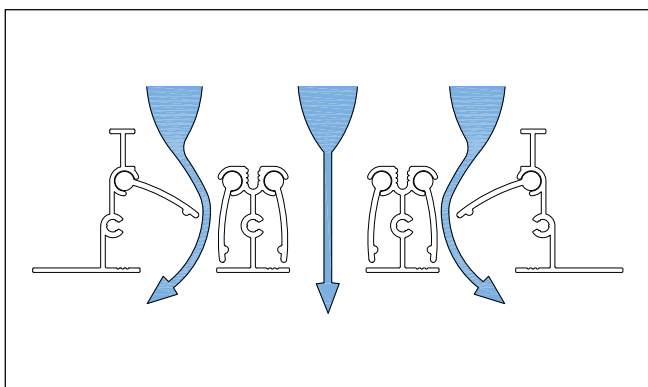


## Diffuser options

### 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.

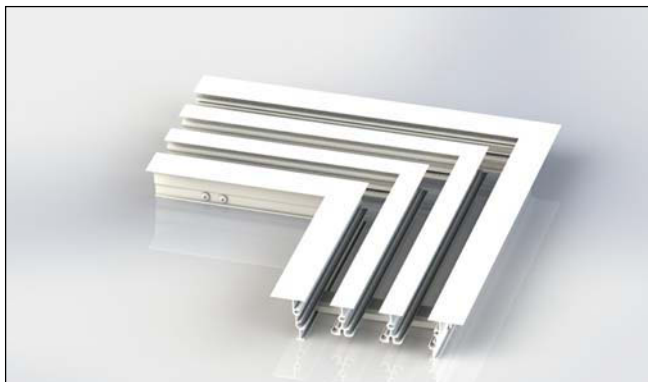
Flat end caps are standard fit with diffusers specified with a plaster-in frame.



### 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.

### 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 prepunched holes of 10mm diameter.

### Internals painted matt black

Slot boxes can be sprayed matt black internally if required.

### Equalising plates

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.

### 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.

A full specification sheet is available on request.

## Fixings

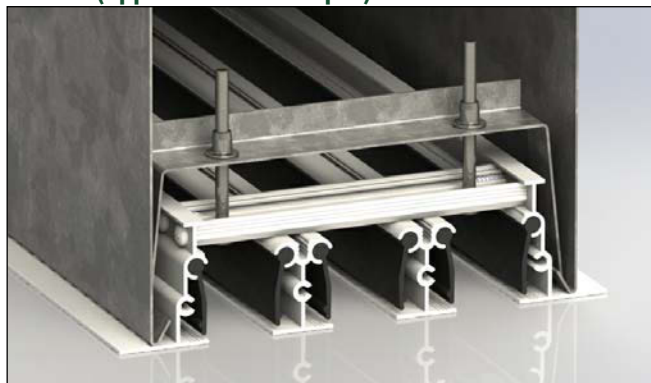
### Goalpost brackets

Required to connect a linear slot diffuser to a slot box.

With the box prefitted 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.

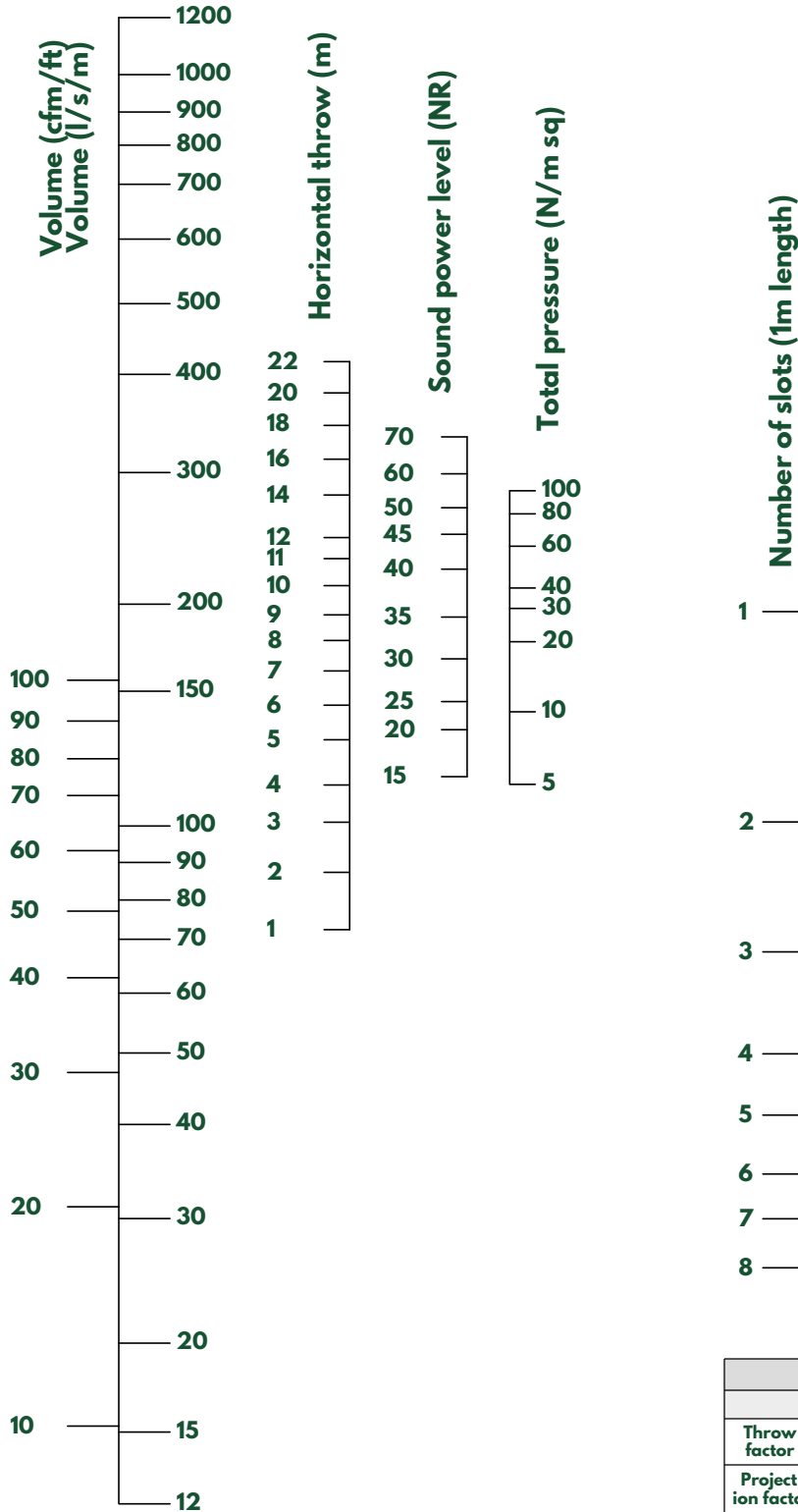
This permits diffusers to be fitted straight into plasterboard ceilings, without the requirement for a slot box.

Plasterboard goalpost brackets cannot be used if the diffuser is fitted with an OBD (opposed blade damper).





## 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



# NOTES





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