



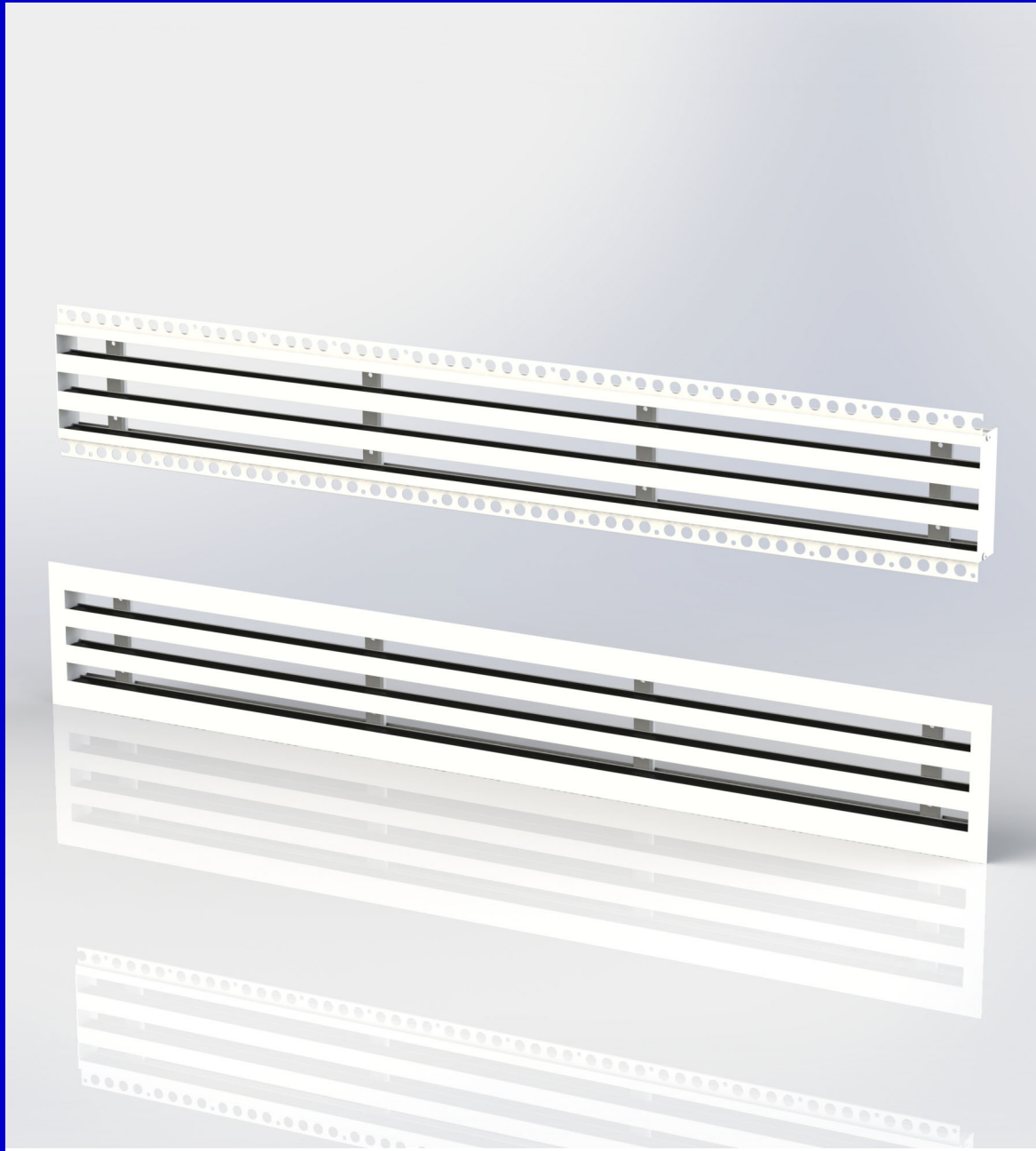
Incorporating



## Grilles & Diffusers

### Series LSD Linear slot diffusers

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



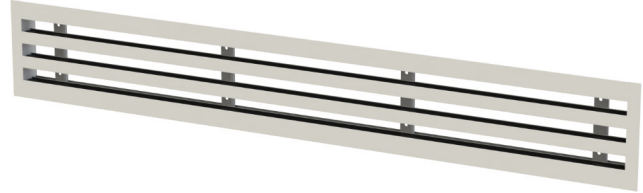
## Series LSD

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

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

## Quality assurance

HVC Supplies (Stourbridge) Ltd is an ISO9001 certified company



Assessed to ISO 9001  
Cert/Ref no. 1186

## Notable features

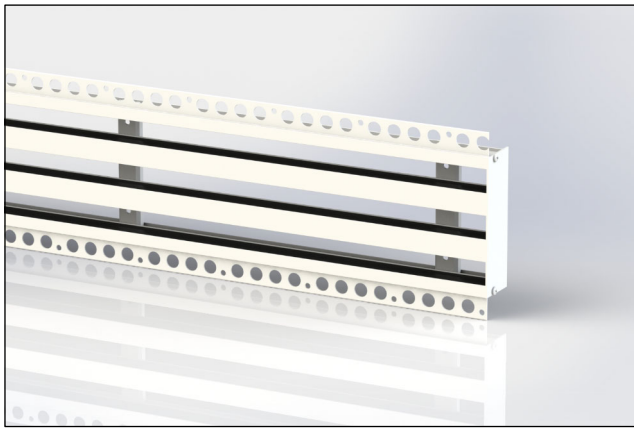
Series LSD linear slot diffusers incorporate a wealth of notable features designed to improve installation and operation.

### Plaster-in frame

Linear slot diffusers are available with a 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.

The plaster-in frame uses the ordering code PLS.

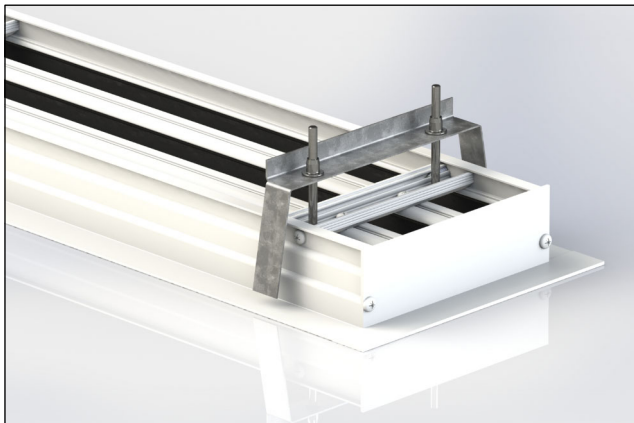


### Improved goalpost brackets

Goalpost brackets are of a shallow design, with a folded return across their width for 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.

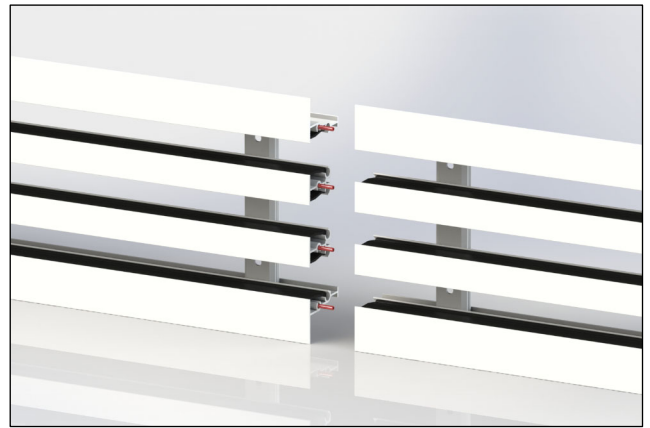


### Improved alignment of sections

Multi-section alignment is facilitated by roll pins.

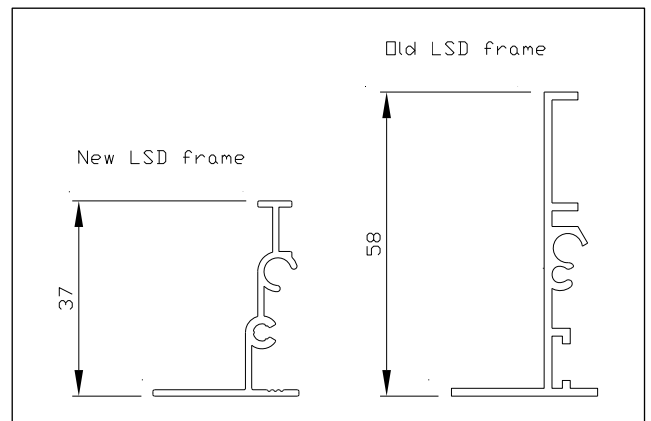
Inserted into integrated ports in the outer and inner profiles act to align adjacent sections. Ports are collapsed near the end of each profile to prevent pins being pushed completely into the ports.

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

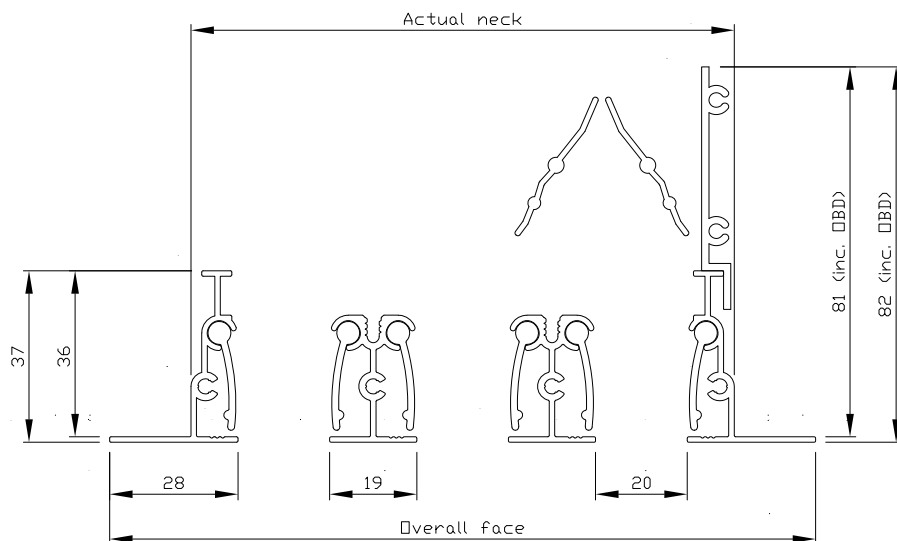


### Reduced depth

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



## Technical drawings - Standard diffuser



No. 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

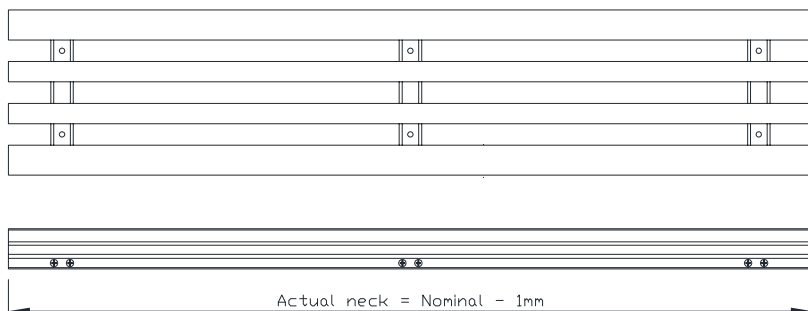
Recommended nominal height = actual neck + 15mm.

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

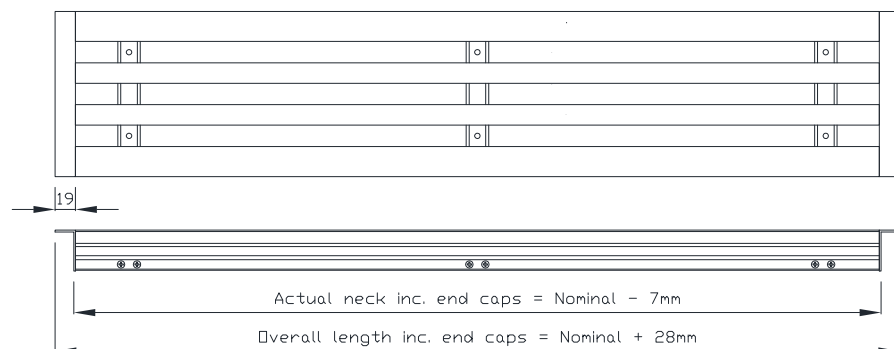
OBD (opposed blade damper) blades shown in incorrect orientation for clarity, in reality would run across diffuser neck (at 90° to shown).

Please note opposed blade dampers are not recommended for use with linear slot diffusers - Where volume control functionality is required, this is best achieved using a slot box with spigot mounted single blade damper.

No end caps

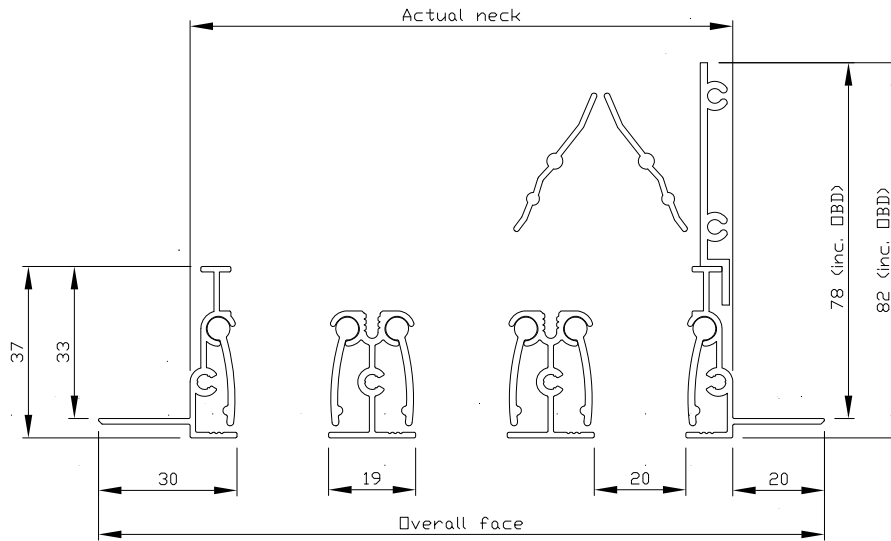


With end caps



**Please note:**  
Section drawing shows optional deflector blades

## Technical drawings - Plaster-in diffuser



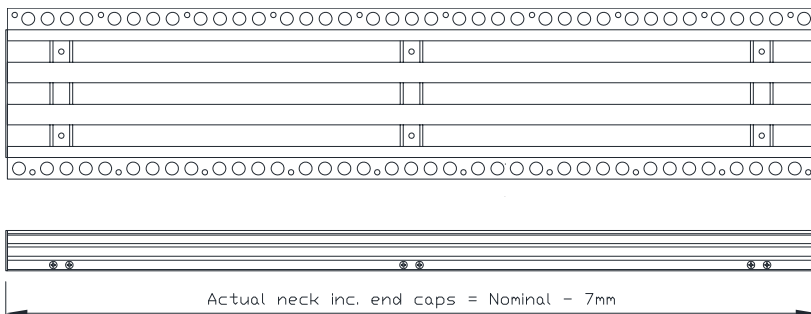
No. of slots	Actual neck (mm)	Overall face (mm)
1	41	80
2	80	119
3 (shown)	119	158
4	158	197
5	197	236
6	236	275
7	275	314
8	314	353

Recommended nominal height = actual neck + 15mm.

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

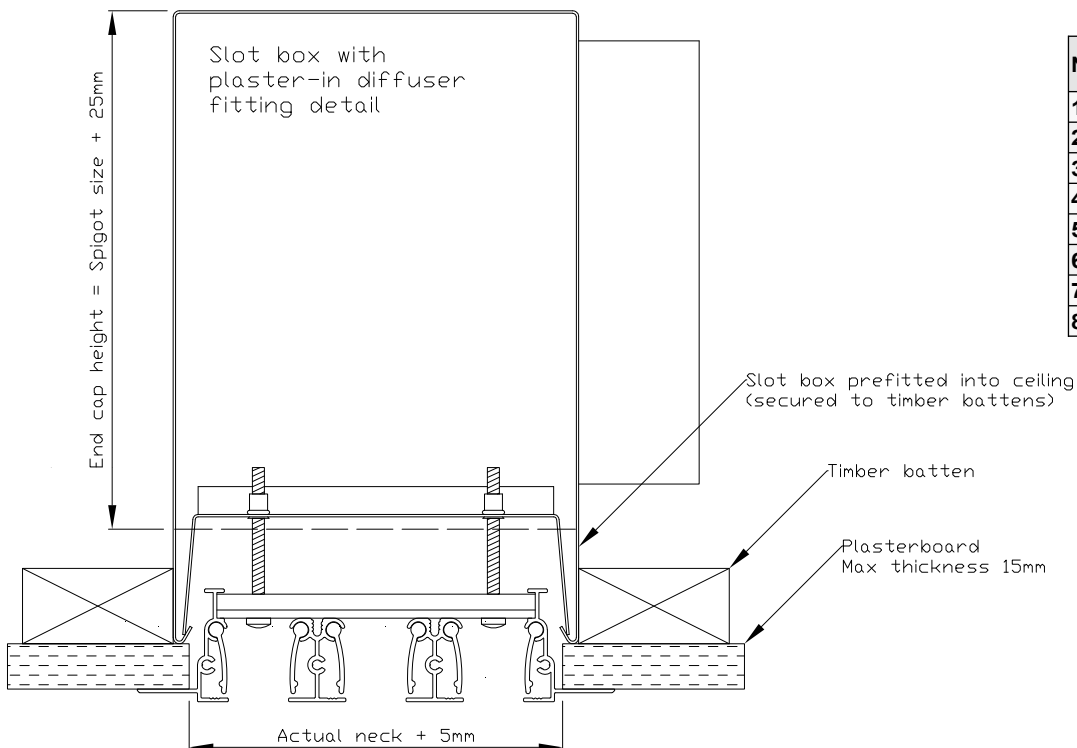
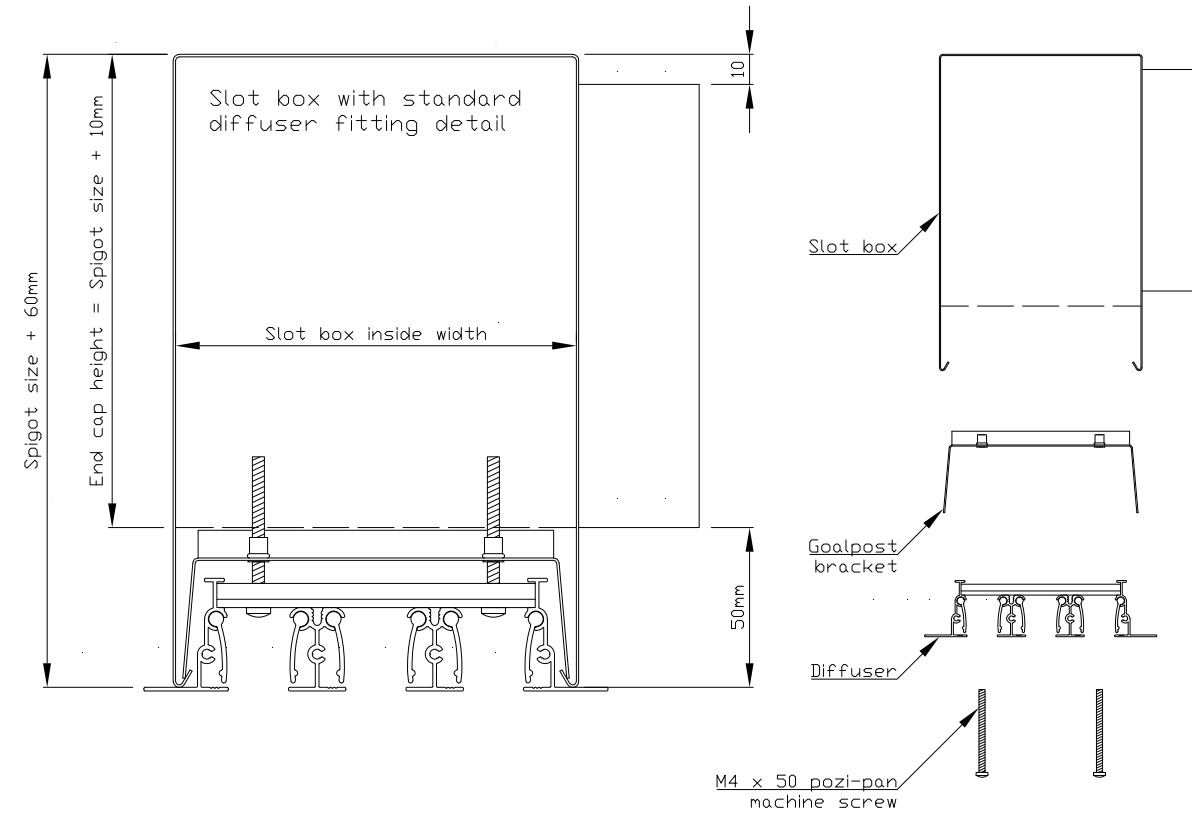
OBD (opposed blade damper) blades shown in incorrect orientation for clarity, in reality would run across diffuser neck (at 90° to shown).

Please note opposed blade dampers are not recommended for use with linear slot diffusers - Where volume control functionality is required, this is best achieved using a slot box with spigot mounted single blade damper.



**Please note:**  
Section drawing shows optional deflector blades

## Technical drawings - Diffuser c/w slot box



No. of slots	Slot box inside width (mm)
1	55
2	94
3 (shown)	133
4	172
5	211
6	250
7	289
8	328

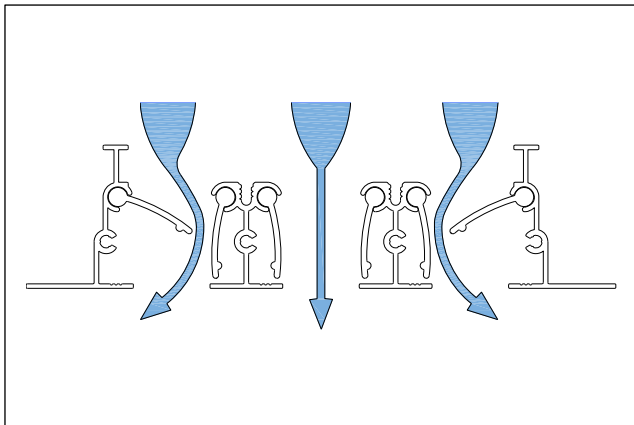
Slot boxes are supplied with brush seal strips fitted to end caps to reduce leakage from between the diffuser and the box.

## 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.

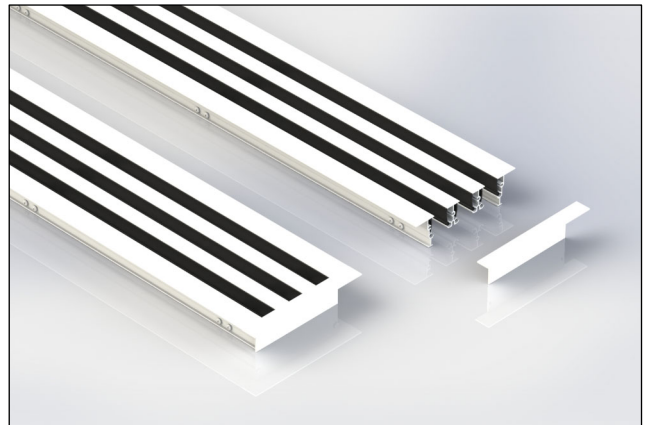


### End caps

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.

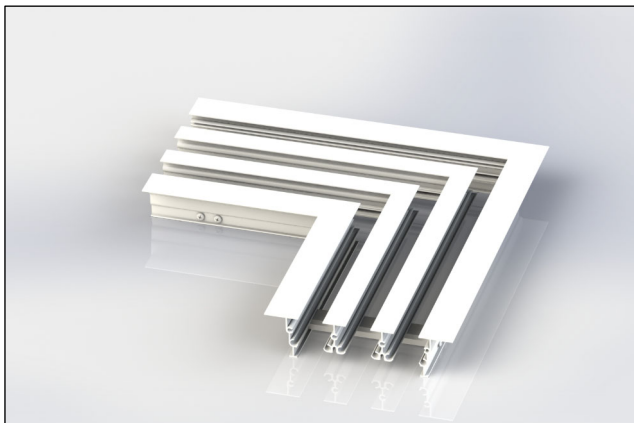


### Mitred corners

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.

Deflector blades can be fitted to mitred corners so as to give a continuous appearance with adjacent straight sections, however will be non-functional.



## 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

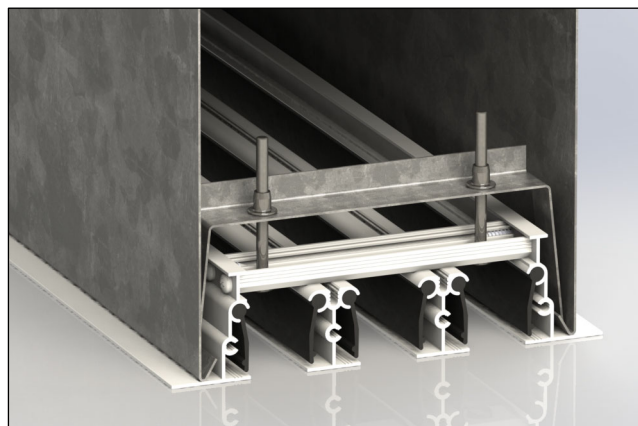
### Goalpost brackets

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

With the box prefitted into the aperture, fit brackets 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 machine screws 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).

A minimum of two goalpost brackets are required per plenum box. If length exceeds 1m, three are recommended.

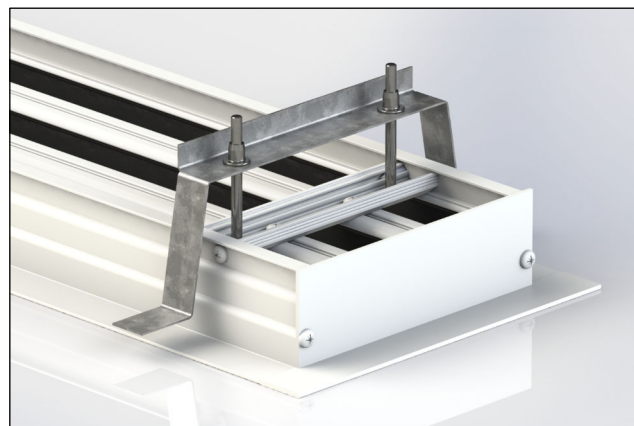


### Plasterboard ceiling goalpost brackets

Adapted from standard goalpost brackets, plasterboard ceiling goalposts have a 10mm flat extension on each leg.

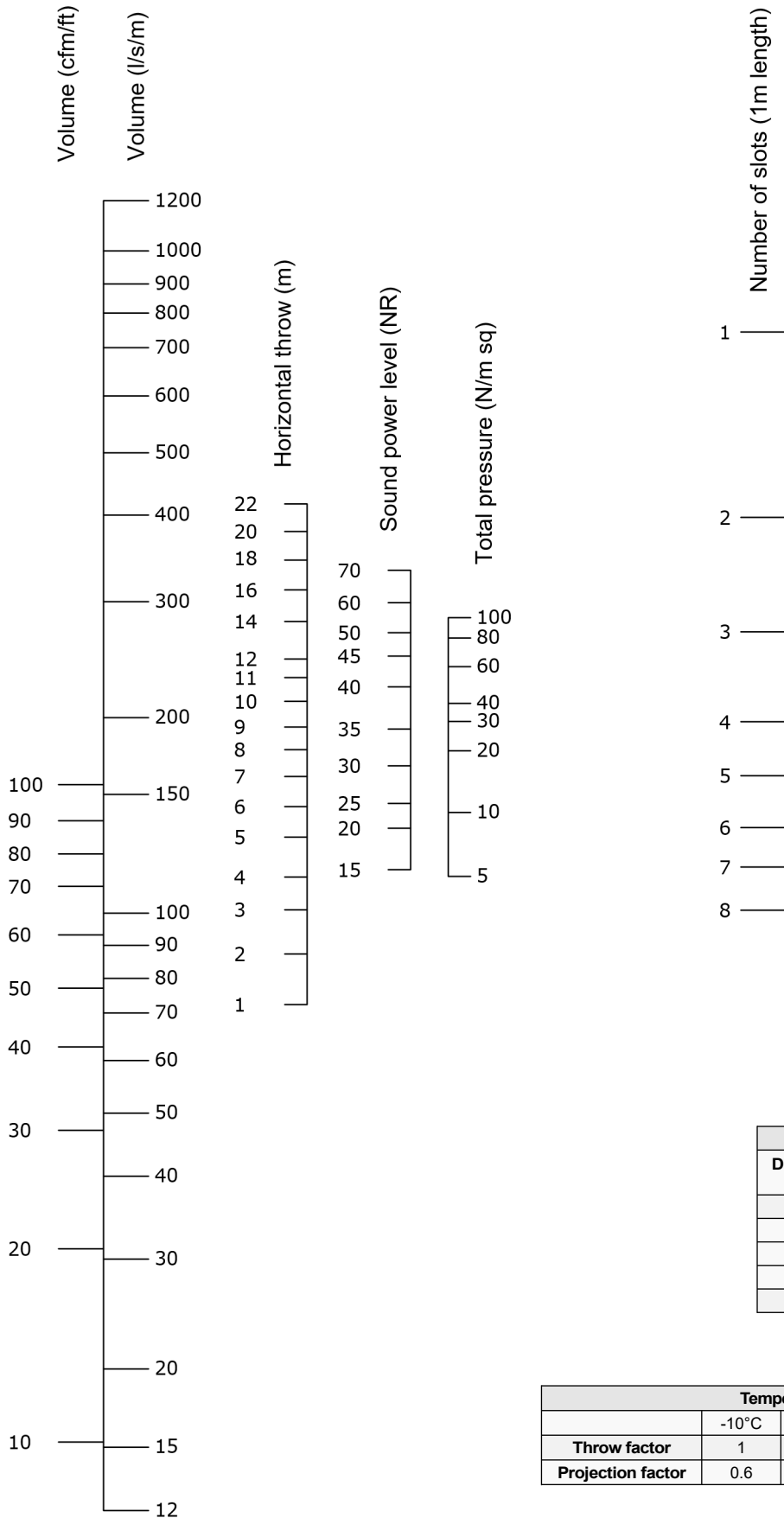
This permits diffusers to be fitted straight into plasterboard ceilings, without the requirement for a slot box.

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





## Selection data



Exhaust correction factors	
NR	-10
Pressure drop	0.8

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

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	0.6	1.25	1.15	1	0.73	0.62

## Finish

Mill aluminium

Polyester powder coating to any RAL or BS colour (diffuser only)



## Ordering codes

### Example

1 - 2000mm long - LSD3 - DEF - EC - GP - RAL9010 c/w 1 - 2000 long - SB3 - 1 of 200mm dia - SBD - FL - INS

### Codes - Diffuser

1)	Quantity		
2)	Length (mm)	Length in mm	Length of the diffuser (taken to be nominal unless stated)
3)	Series	LSD1-8	Number of slots
4)	Damper	D	Opposed blade damper fitted (not recommended, not with slot box)
5)	Frame type	*nothing* PLS	Flanged frame Plaster-in frame
6)	Internal deflectors	DEF	Internal deflectors fitted (recommended if diffuser is to be used for supply)
7)	End caps	EC	End caps fitted (flat end caps standard fit with PLS)
8)	Goalpost brackets	GP GPPB	Goalpost brackets (required if using a slot box, not with opposed blade damper) Goalpost brackets to suit a plasterboard ceiling (not with opposed blade damper)
9)	Finish	Mill RAL... BS...	Mill aluminium Polyester powder coated to RAL... Polyester powder coated to BS...

### Codes - Slot box

1)	Quantity		
2)	Length (mm)	Length in mm	
3)	Series	SB1-8 TESB1-8 SB-PLS1-8 TESB-PLS1-8	Side entry slot box (standard unless stated, state number of slots of diffuser) Top entry slot box (state number of slots of diffuser) Side entry slot box to suit LSD with plaster in frame (standard unless stated, state number of slots of diffuser) Top entry slot box to suit LSD with plaster in frame (state number of slots of diffuser)
4)	Spigots	Quantity and size	State quantity of spigots and size in mm
5)	Spigot mounted damper	SBD	Single blade flap damper factory fitted - Locking quadrant control as standard
6)	Equalising plate	EQ	Equalising plate fitted
7)	Drop rod brackets	DR	Drop rod brackets fitted (formerly 'fixing lugs')
8)	Internal insulation	INS	10mm closed cell insulation fitted to internal surfaces
9)	Internals painted black	IN-BLACK	Internal surfaces of box painted matt black

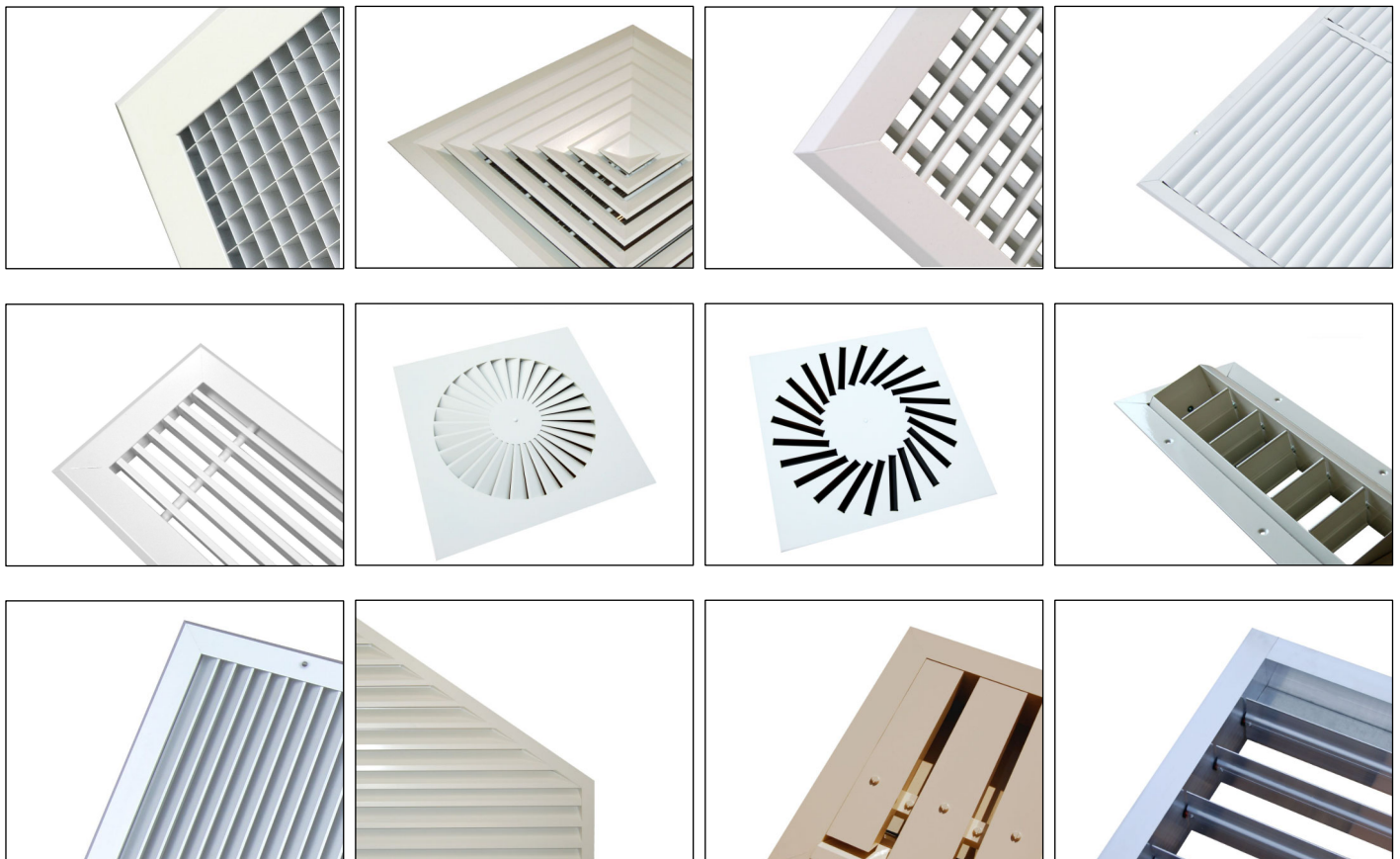
Leave code section blank if no option is required.

## HVC & NCA products

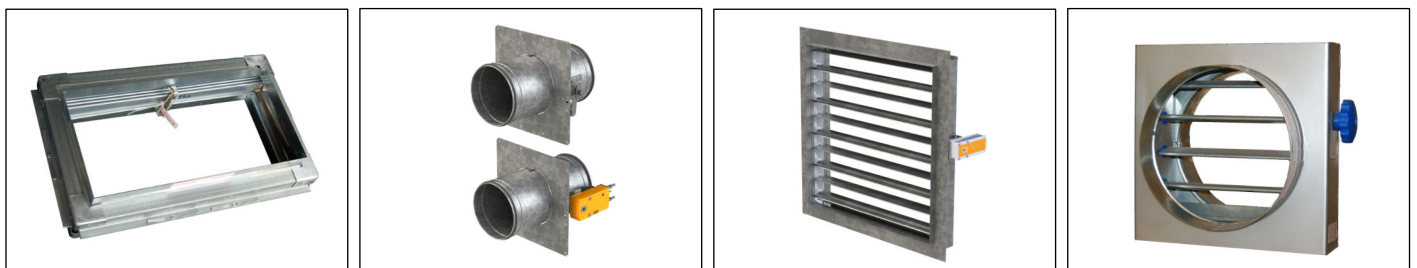
HVC offers the significant advantage of manufacturing both in duct and duct terminal equipment, making us a one stop shop for all your HVAC needs.

The products shown below are a selection, not an exhaustive list. Go to [www.h-v-c.com](http://www.h-v-c.com) for details on all HVC and NCA products.

### HVC: Grilles, diffusers, louvres and volume control dampers



### NCA: Fire and volume control dampers





Assessed to ISO 9001  
Cert/Ref no. 1186

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