SLD LINEAR SLOT

LINEAR SLOT DIFFUSER

SLD LINEAR SLOT

Linear Slot Diffuser

The JPR model slot is designed to combine a high air change rate capacity with maximum flexibility in air pattern and volume control, suitable for either ceiling or sidewall applications linear slot diffusers offer unobstructive good looks together with functional efficiency.

Linear slot diffusers are particularly suited to large open place offices, where changing occupancy layouts demand air distribution system that includes built in adaptability to suit the relocation of internal partitioning.

Available in two slot widths; a 20mm wide or 25mm wide and from 1 to 6 sizes offers the widest range of variations to provide the designer with performance for higher airflows when required. SLOT20 and SLOT25 are both suitable for use in either ceiling or sidewall applications; the internal vanes are adjustable to provide either a horizontal or vertical air pattern discharge.

SLD series slot diffuser is also suitable for exposed applications where there is no ceiling, supplied as a combined unit with full size plenum boxes to suit.

The standard flange border is 32mm but a multitude of different flange types are also available to allow the slot diffuser to be fully integrated with the ceiling design.

Purpose designed and correctly selected sheet metal plenum boxes may also be provided to ensure the overall performance and characteristics of the diffuser are maintained.

25/32mm Flanged Surface Mounted Type

31P Fixed Core Plaster-in Type

Tegular Panel Replacement Slot

25P Removable Core Plaster-in Type

SLD LINEAR SLOT

Material
Extruded aluminium.

Blade Options
Extruded aluminium in black or powder coated to client spec.

End Flanges
Welded end flanges are supplied as standard.
Fitted on both ends for single pieces.
Linear runs will be supplied with 1 end flange on each end piece.
Make-up pieces will be open-ended.

Fixing
Multi-purpose 'U' bracket fixing allows for fitting to a hemmed-edge plenum box and also to plasterboard ceiing.

Width
1-6 Slots in 20mm or 25mm width

Length
Individual sections up to 1800mm made in one piece.
Linear runs are supplied in 1800mm long sections with end flanges as necessary.
Exact lengths will be achieved with intermediate make-up sections, sized to suit.

Mitred Corners
Mitred corner sections are available as standard in 90° sections.
Other angles and configurations are available, templates or drawings will be required.

Special Frames
Special frame arrangement can be manufactured to suit most applications, please call the Salees Office to discuss your requirements.

25/32mm Flanged Surface Mounted Type

31P Fixed Core Plaster-in Type

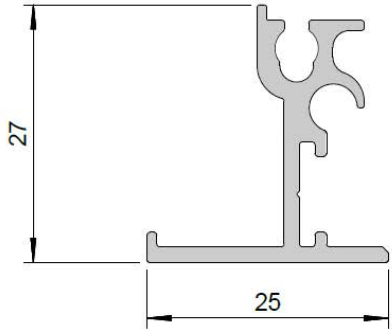
Tegular Panel Slot

25P Removable Core Plaster-in Type

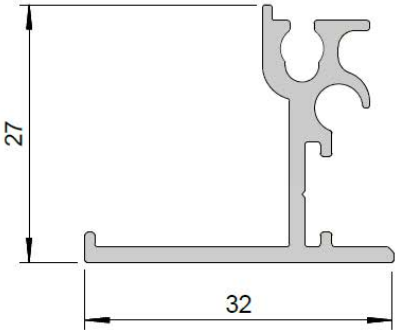
SLD LINEAR SLOT

Flange Styles

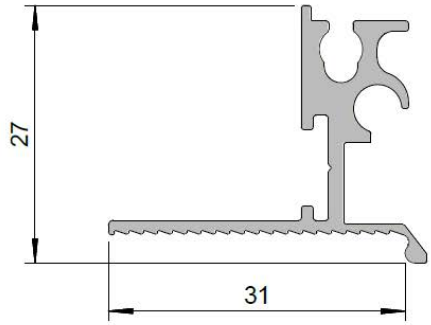
25mm Surface Mounted



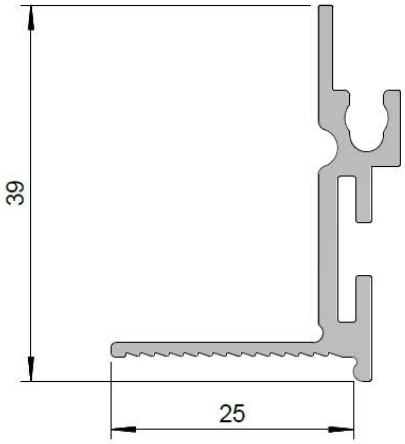
32mm Surface Mounted



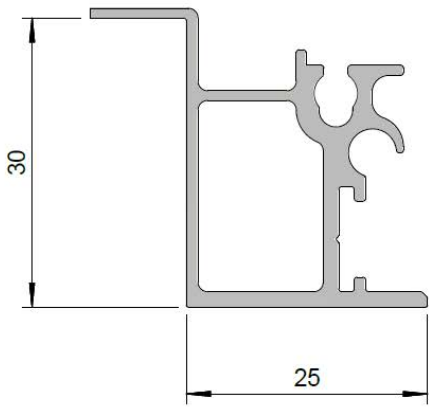
31mm Plaster-in



25mm Plaster-in



30mm Tegular



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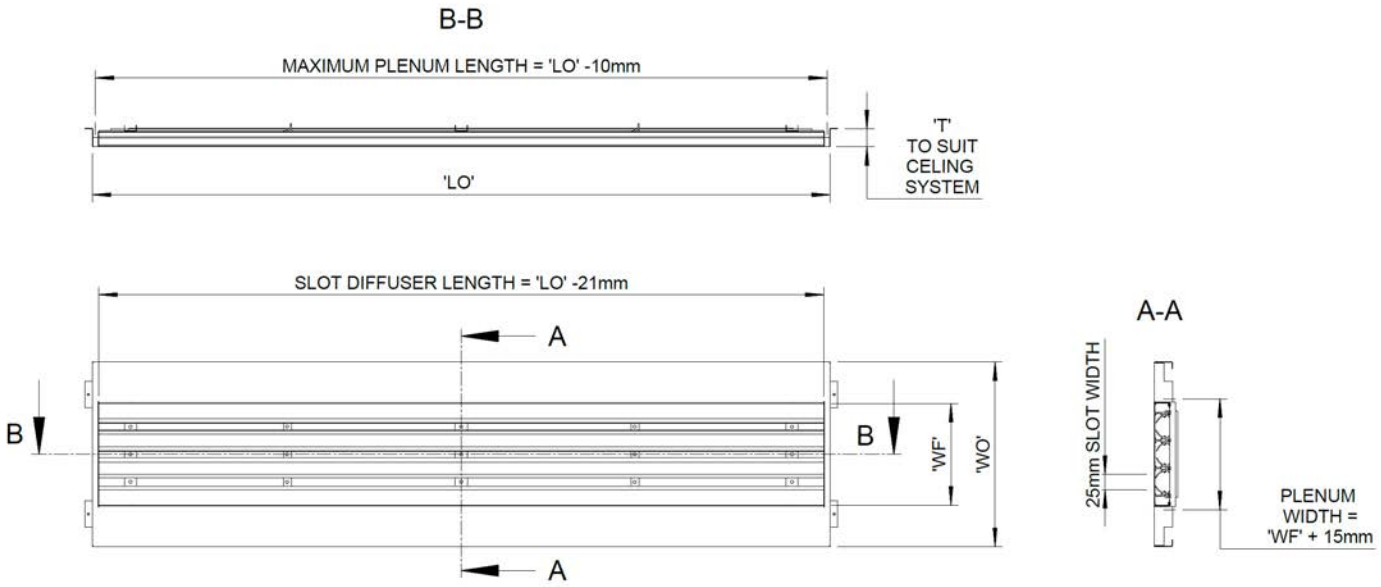
Tegular Panel Replacement Slot



No. OF SLOTS	WF (mm)	PLENUM WIDTH (mm)
1	75	90
2	120	135
3	165	180
4	210	225
5	255	270

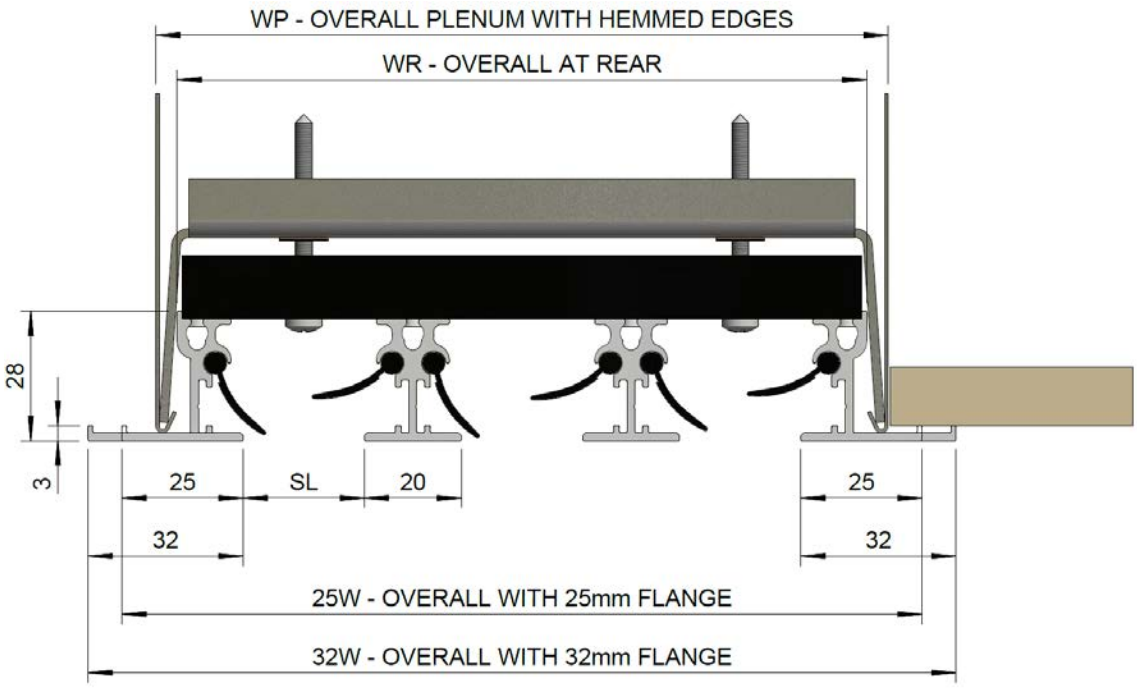
NOTES:-

1). MAXIMUM OF 5 SLOTS ON A 300mm WIDE PLANK.
(WIDER PLANKS ARE AVAILABLE)

2). PERFORATED SIDE PANELS ARE AVAILABLE ON REQUEST.

SLD LINEAR SLOT

25W / 32W Flanged Surface Mount Type Options & Dimensions

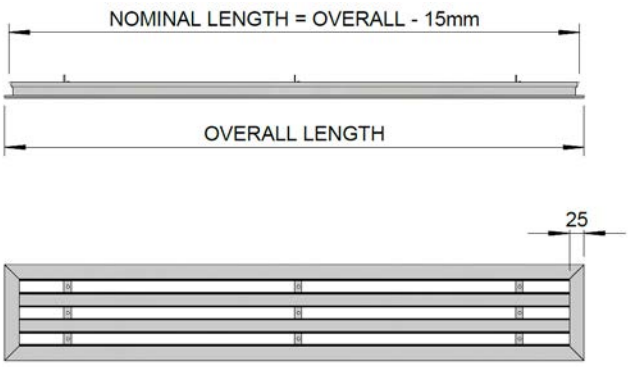


SL20 20mm SLOT WIDTH				
SLOT	25W	32W	WR	WP
1	70	84	48	56
2	110	124	88	96
3	150	164	128	136
4	190	204	168	176
5	230	244	208	216
6	270	284	248	256

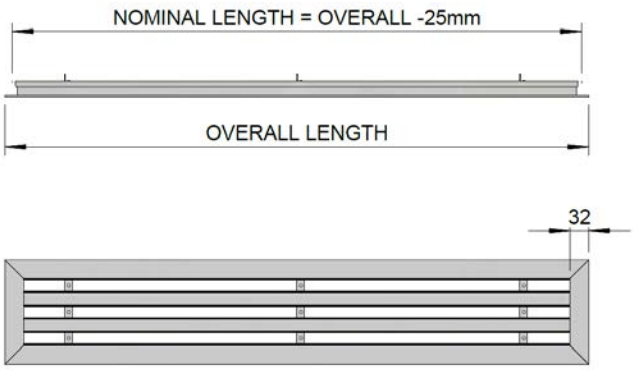
SL25 25mm SLOT WIDTH				
SLOT	25W	32W	WR	WP
1	75	89	53	61
2	120	134	98	106
3	165	179	143	151
4	210	224	188	196
5	255	269	233	241
6	300	314	278	286

Nominal (plenum box) to overall length

25mm Flange

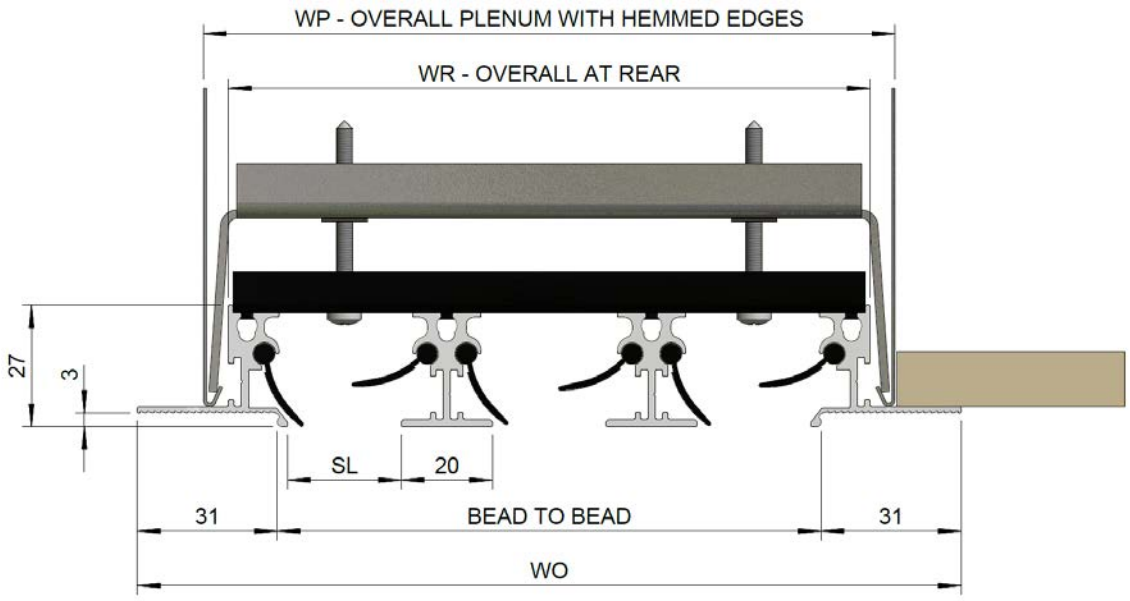


32mm Flange



SLD LINEAR SLOT

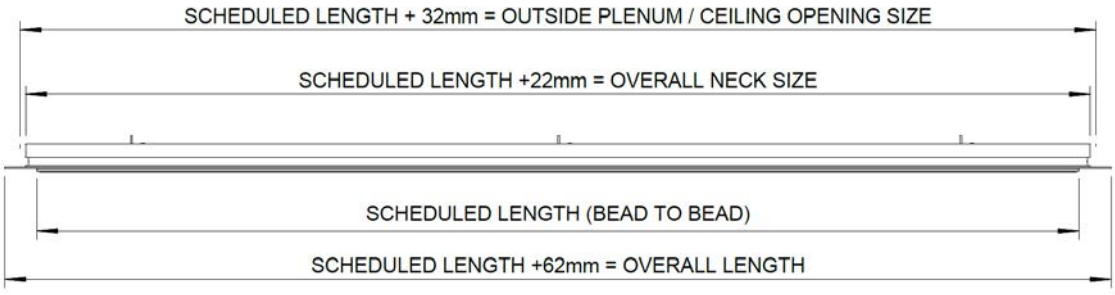
31P Fixed Core, Plaster-in Type Frame Dimensions

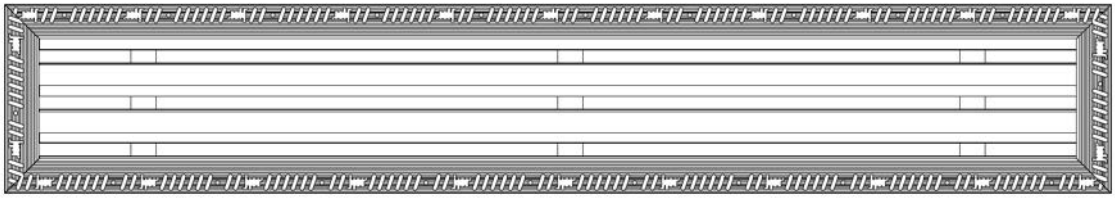


SL20				
SLOT	BEAD TO BEAD	WR	WP	WO
1	25	46	57	87
2	65	86	97	127
3	105	126	137	167
4	145	166	177	207
5	185	206	217	247
6	225	246	257	287

SL25				
SLOT	BEAD TO BEAD	WR	WP	WO
1	30	51	62	92
2	75	96	107	137
3	120	141	152	182
4	165	186	197	227
5	210	231	242	272
6	255	276	287	317

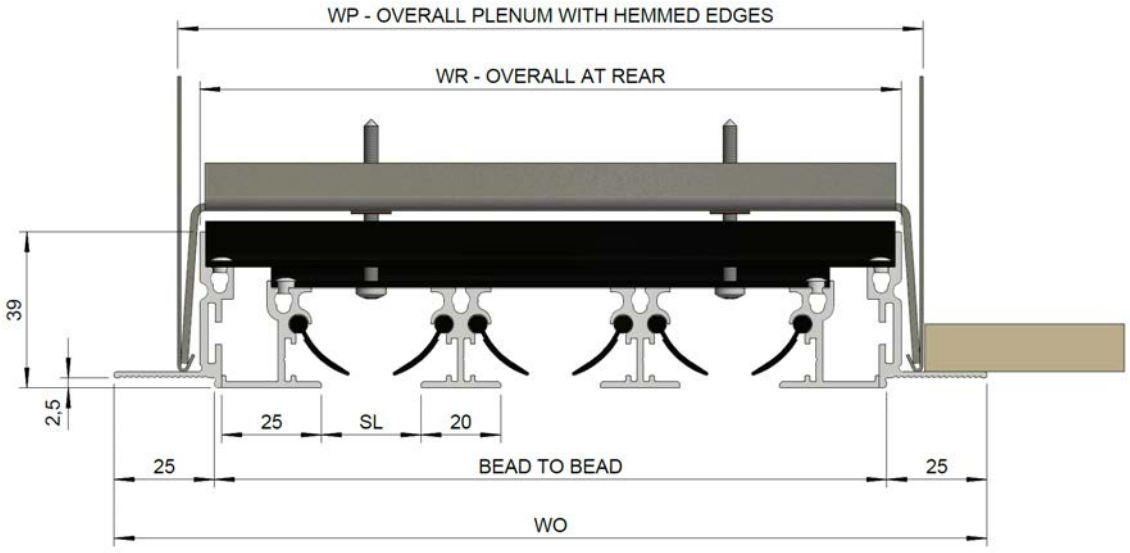
Scheduled length (bead to bead) to overall length dimensions





SLD LINEAR SLOT

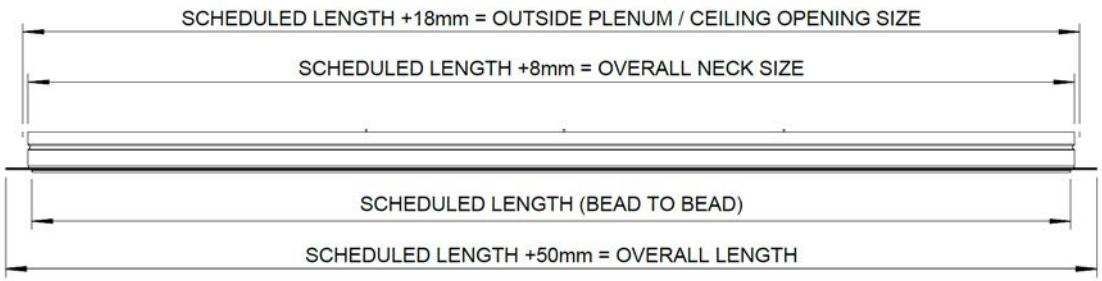
25P Removable Core, Plaster-in Type Frame Dimensions

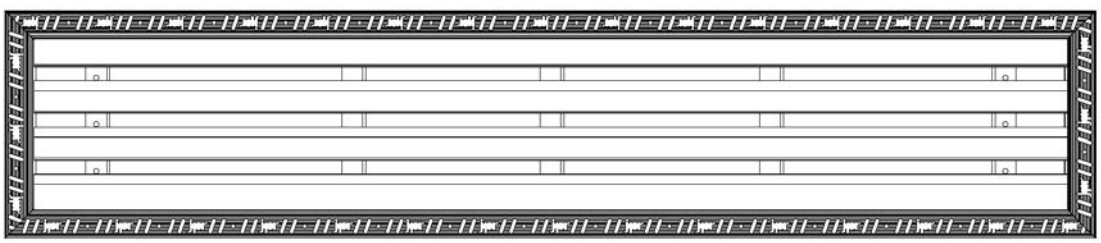


SL20				
SLOT	BEAD TO BEAD	WR	WP	WO
1	74	81	92	124
2	114	121	132	164
3	154	161	172	204
4	194	201	212	244
5	234	241	252	297
6	274	281	292	337

SL25				
SLOT	BEAD TO BEAD	WR	WP	WO
1	79	86	97	129
2	124	131	142	174
3	169	176	187	219
4	214	221	232	264
5	259	266	277	309
6	304	311	322	354

Scheduled length (bead to bead) to overall length dimensions





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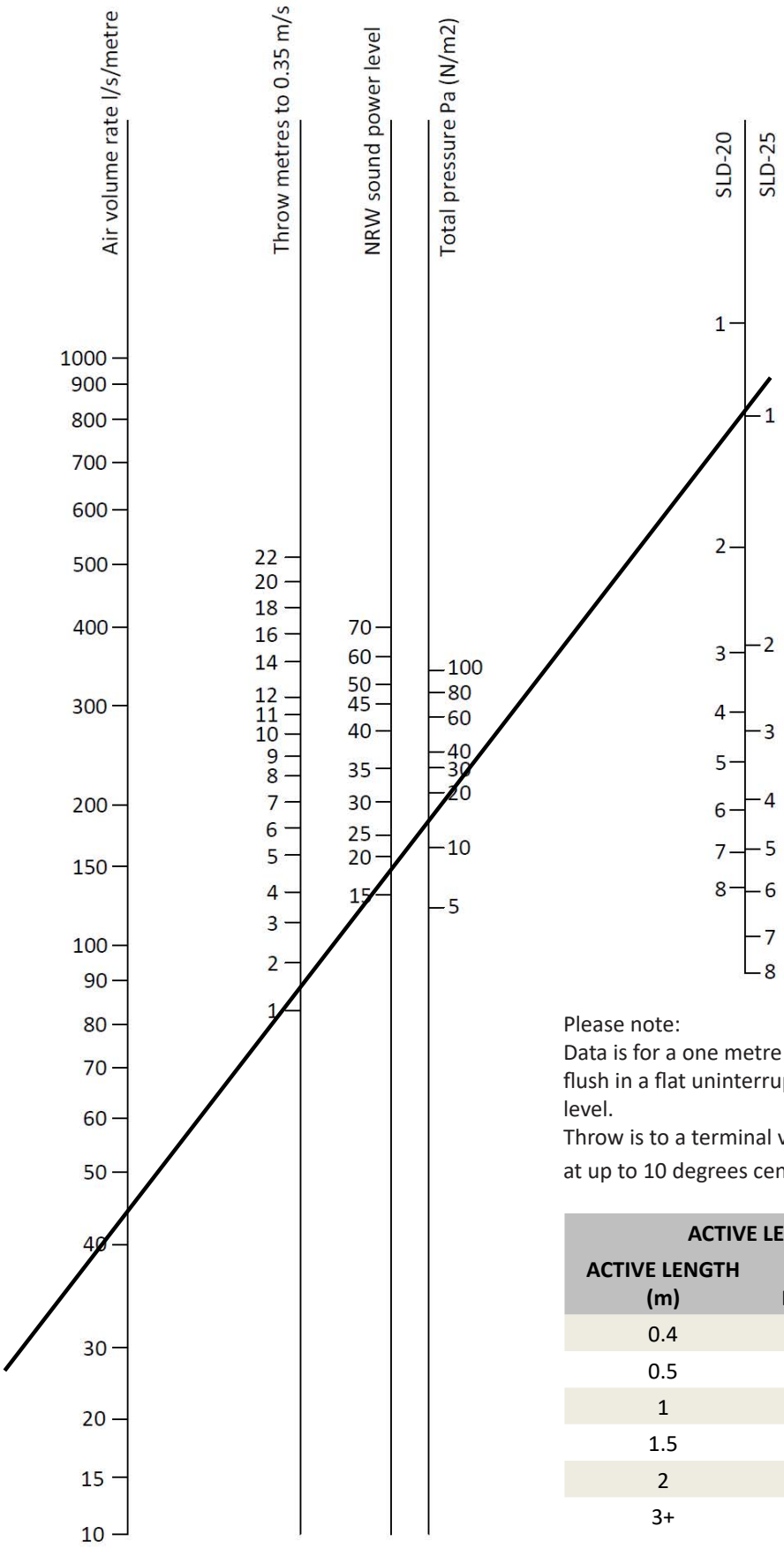
SLD LINEAR SLOT

Selection Nomogram for Ceiling Mounted Diffuser with Coanda Effect

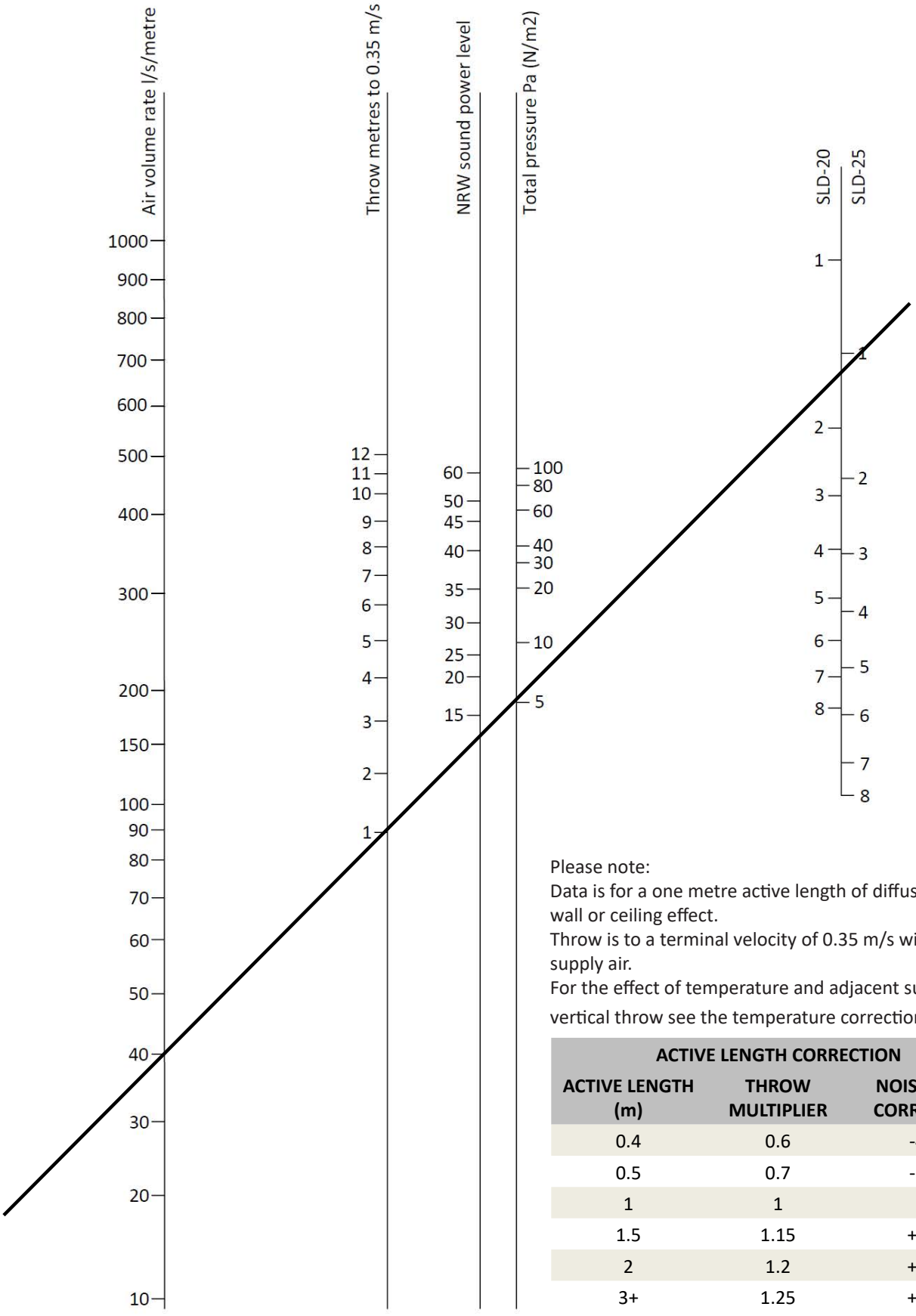


Please note:
Data is for a one metre active length of diffuser mounted flush in a flat uninterrupted ceiling 2.7 metres above floor level.
Throw is to a terminal velocity of 0.35 m/s with primary air at up to 10 degrees centigrade of cooling.

ACTIVE LENGTH CORRECTION		
ACTIVE LENGTH (m)	THROW MULTIPLIER	NOISE LEVEL CORRECTION
0.4	0.6	-4dB
0.5	0.7	-3dB
1	1	0
1.5	1.15	+2dB
2	1.2	+3dB
3+	1.25	+4dB

SLD LINEAR SLOT

Selection Nomogram for Vertical / Sidewall Throw in Free Space



Please note:
Data is for a one metre active length of diffuser with no wall or ceiling effect.
Throw is to a terminal velocity of 0.35 m/s with isothermal supply air.
For the effect of temperature and adjacent surfaces for vertical throw see the temperature correction table below.

ACTIVE LENGTH CORRECTION		
ACTIVE LENGTH (m)	**THROW MULTIPLIER**	**NOISE LEVEL CORRECTION**
0.4	0.6	-4dB
0.5	0.7	-3dB
1	1	0
1.5	1.15	+2dB
2	1.2	+3dB
3+	1.25	+4dB

SLD LINEAR SLOT

Linear Slot Diffuser Selection Procedure

Data

1. Horizontal projection with ceiling effect nomogram readings are based on 10 degrees cooling application. Use this nomogram for horizontal projection ceiling mounted diffusers or horizontal projection wall mounted diffusers with ceiling effect.

2. Vertical /sidewall projection nomogram readings are based on isothermal conditions in free space without wall effect. For supply / room temperature differential for vertical throw applications from ceiling see 'Vertical throw multipliers for differential temperatures' table.

3. Use vertical/sidewall projection nomogram readings for sidewall supply application in free space. Please note that throw values apply to isothermal conditions only and techincal advice should be sought before using this method of supply for heating or cooling.

4. Nomograms are based on 1.0 metre active slot lengths. For other active slot lengths see correction table.

5. Pressure drop and sound power level readings obtained from nomograms are for slot diffusers only.

6. For pressure drop additions and sound ratings for plenum boxes see separate table.

7. When using slot diffuser in extract applications select performance using vertical/sidewall projection nomogram and ignore throw values.

8. Sound values given for plenum boxes are approximate only and dependent on spigot entry conditions. Where sound requirements are critical acoustic lining of plenum boxes should be considered. Any space requirement to accommodate lining material must be added to selected box size.

Selection Procedure

The method set out below used in conjunction with the tabulated data allows slot 20 and 25 linear diffusers to be selected for supply or extract modes in either ceiling or sidewall applications. Air pattern is determined by the position of the pattern control blades.

Method – Slot Diffuser

1. Establish volume flow rate per metre by dividing total air volume by the active slot length to give litres/metre.

2. Using appropriate nomogram place a straight edge through the volume as calculated and position to pass through required throw value with satisfactory noise and pressure readings. Select suitable slot width and number of slots where straight edge passes through slot selection line. Finally realign straight edge through volume and slot selected points and read exact throw, sound and pressure figures.

3. Readings obtained from the above using uhorizontal ceiling nomogram are based on 1 metre active slot length. (See note on nomogram) For other active lengths see "Active Length Correction Table" for throw multiplier and sound level adjustment.

4. Readings obtained from the methods above using vertical / sidewall projection, nomogram are based on isothermal conditions. For vertical throw values for temperature differential see "vertical Throw Multipliers For Differential Temperatures" correction table to obtain throw multiplier for varying number of slots.

Method -Plenum Boxes

1. Determined volume of plenum box by multiply chosen length of box x volume/metre of slot. (A maximum box size of 1.8mm long is recommended)

2. Select plenum spigot size from selection table a maximum entry velocity of 3.5m/sec is recommended. Velocities in excess of this may lead to noise generation.

3. From table of "Plenum Box Pressure Drops and Sound Ratings' read off additional pressure drop to be added to slot diffuser pressure drop from nomogram. Ensure that plenum box sound power level is no more than slot diffuser reading if latter is design criteria.

4. Where it is not possible to accommodate standard plenum boxes, special configurations are available, but should always maintain an equivalent cross-sectional area to a standard box, consideration should also be given to the inlet spigot in respect of positioning, sizing and inlet velocities. Consult our technical department for detailed advise.

Commissioning

Calculation
Volume 9m3/s=
Av. Measured velocity (m/s) x active length (m) x number of slots x flow factor.

The flow factor is simply the width of the slot in metres at the point where the velocity is measured.

Maximum flow factors

SLOT 20		SLOT 25	
Horizontal	Vertical	Horizontal	Vertical
0.009	0.011	0.011	0.011

It should be noted that throw figures given apply to maximum blade openings in the configurations listed. If blade opening size as measured (in metres) should be substituted.

Velocity Measurement

To measure the velocity, it is important that an instrument with a measuring head small enough to fit the blade opening is used. The most suitable instrument is a hot wire anemometer. Take velocity readings at the blade openings at a maximum of 150mm centres along the active length to obtain an accurate average velocity and use this value in the formula above.

Exhaust

Procedure same as supply but with the anemometer probe reversed.

SLD LINEAR SLOT

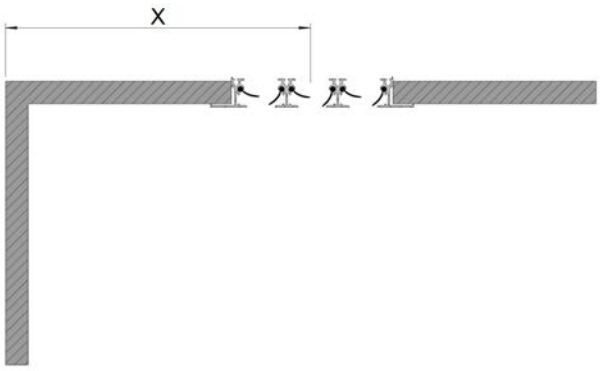
Linear Slot Diffuser Selection Procedure

Plenum box drops and sound ratings

	SPIGOT VELOCITY m/s					
	1.5	**6**	**2.5**	**3**	**3.5**	**4**
PRESSURE DROP Pa	2	4	6	8	12	16
SOUND POWER LEVEL N			25	30	35	40

Temperature multipliers for vertical throw

Relative Temperature	X = over 2.0 m	X = up to 0.5 m
+10	X 0.70	X 0.84
+8	X 0.75	X 0.90
+6	X 0.80	X 0.96
+4	X 0.88	X 1.06
+2	X 0.93	X 1.12
0	X 1.0	X 1.20
-2	X 1.08	X 1.30
-4	X 1.14	X 1.37
-6	X 1.25	X 1.50
-8	X 1.33	X 1.60
-10	X 1.4	X 1.70

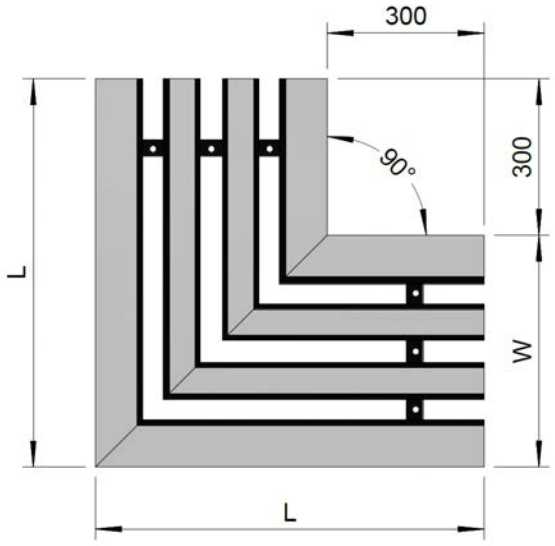


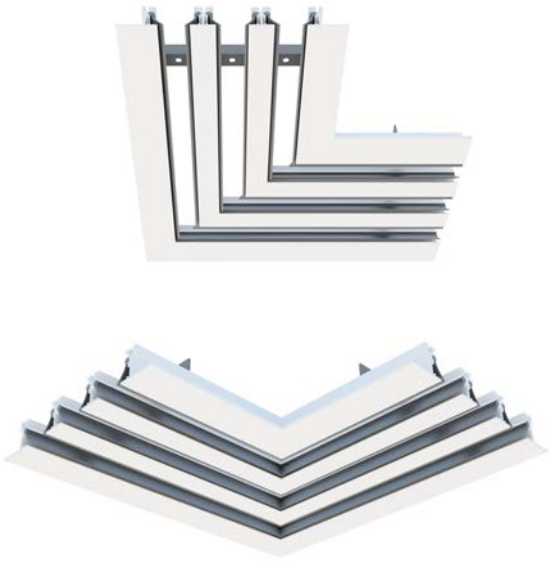
Plenum box spigot velocities

	SPIGOT VELOCITY m/s					
DIAMETER mm	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**
100	10	15	19	22	26	30
125	18	24	30	35	41	47
150	25	34	42	51	60	68
175	35	46	58	70	82	94
200	45	60	75	91	109	121
225	58	77	96	117	137	151
250	71	95	120	142	170	191
275	86	115	145	172	205	230
300	103	139	172	208	240	275
325	120	160	200	240	280	320
350	140	188	235	280	328	375
400	185	245	310	370	430	495

SLD LINEAR SLOT

Special Arrangements - Mitred Corners





90° Mitred Corner Dimensions

25W SLOT 20		
SLOTS	W	L
1	70	370
2	110	410
3	150	450
4	190	490
5	230	530
6	270	570

32W SLOT 20		
SLOTS	W	L
1	84	384
2	124	424
3	164	464
4	204	504
5	244	544
6	284	584

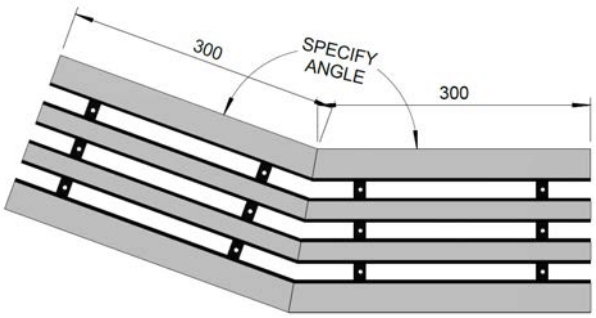
25W SLOT 25		
SLOTS	W	L
1	75	375
2	120	420
3	165	465
4	210	510
5	255	555
6	300	600

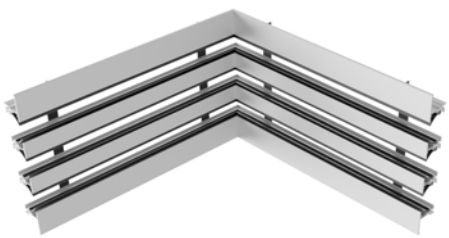
32W SLOT 25		
SLOTS	W	L
1	89	389
2	134	434
3	179	479
4	224	524
5	269	569
6	314	614

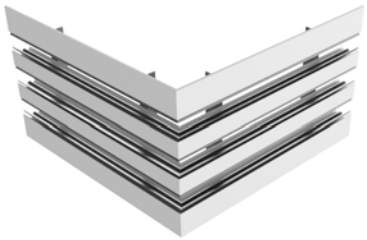
Alternative Configuration Mitred Corners

Mitred corners area available in a variety of different configurations.

Templates or drawing are probably required for mitred corners other than 90°, please contact the Sales Office to discuss your requirements.







SLD LINEAR SLOT

Special Arrangements - Curved Slot

SLD series slot diffusers can be supplied in curved sections to suit most architectural requirements.

To achieve the correct curvature, the normal procedure is to supply a curved wooden template and the extrusion can be rolled to match.

Short blades sections can be fitted to allow functional operation (depending on radius) or they can be supplied without blades

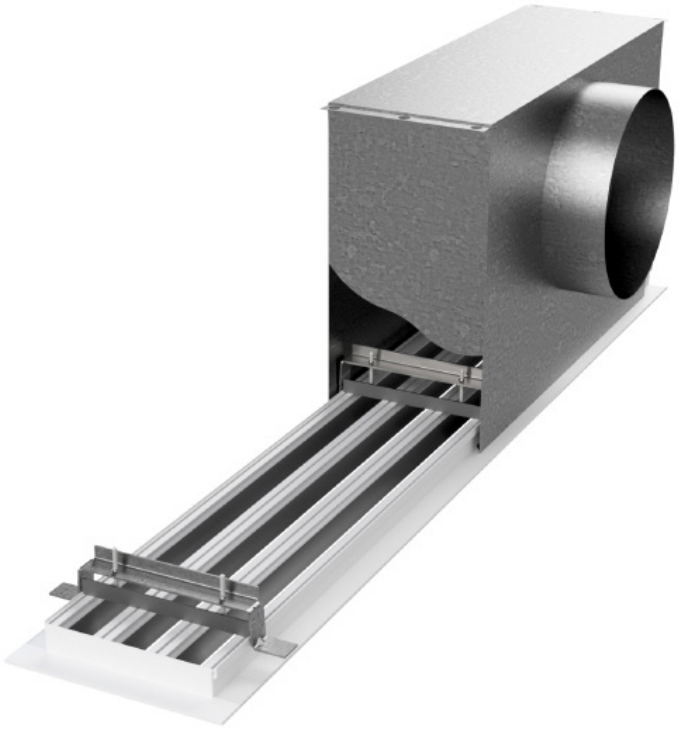
Fixing

Standard fixing method is via the multi-purpose goalpost fixing bracket.

The bracket is suitable for use in either a hemmed edge plenum box or on a plasterboard ceiling.

The sheet-metal bracket is supplied in flat form to be folded on site to suit the required type of installation.

Other fixing methods are available, please contact the Sales Office to discuss your requirements.



Unfolded (as supplied)

Folded for plasterboard ceiling

Folded for hemmed plenum