

SERIES JSL

Ultra High Capacity Linear
Slot Diffuser

PUBLICATION

MAY 2026

Features

- 5 ultra high capacity slot widths
- Adjustable for horizontal & vertical Distribution
- Air deflection blades provide a continuous appearance
- Comprehensive series of matching plenums
- Alternative border options to suit popular ceiling designs
- Extruded aluminium construction



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SERIES JSL

Ultra High Capacity Linear Slot Diffuser

Introduction

Gilberts JSL Series of linear slot diffuser has been designed to meet the exacting performance requirements and standards of modern slot diffuser applications. Combining up to date styling and design technology to blend with modern architecture the JSL complements our standard slot diffuser design by offering a ultra high capacity slot design.

The JSL features a much wider than normal slot gap allowing for 5 different slot widths ranging from 30mm up to the ultra wide 80mm slot width offering which contrasts with the 23mm slot width of our standard slot diffuser [Type GSL]. This larger slot width permits a higher air flow rate per metre of slot length allowing an 80mm slot JSL model to deliver as much as 250 l/s/m.

The JSL maintains excellent air distribution characteristics providing smooth, accurate and flexible airflow control making the unit suitable for both fan coil, VAV and conventional linear slot applications.

Available in five different slot widths [30, 40, 50, 60 and 80mm] the unit is suitable for sidewall or ceiling mounting applications and is manufactured from extruded aluminium with a plastic air deflection vane. Single units can be supplied up to 2.0m in length with longer runs supplied in sections and joined almost invisibly, by a simple, accurate and effective alignment feature.

The diffuser incorporates discreet directional control vanes in the slot to direct the airflow across the ceiling, left or right, or discharge vertically downwards. Arranged in standard 2000mm lengths, the deflection vane offers a clean unbroken appearance and is easily clipped and unclipped from the diffuser to allow for fixing.

This product is only to be used with supply air below 40°C.

Also available as a thermally adjustable unit, to automatically correct rise and fall from temperature differentials. See Series JSL-T, part of our **ThermAstute®** range of intelligent diffusers.

Features

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- Comprehensive series of matching plenums
- Alternative border options to suit popular ceiling designs
- Extruded aluminium construction



The standard border detail comprises a 35mm flange border with end flanges or end caps optionally available to complement contemporary ceiling design, and mitred corners can also be included. In addition, the JSL is complemented by a comprehensive range of purpose built plenum boxes. Manufactured from galvanised or zinc coated mild steel the boxes can be supplied to suit all diffusers in sectional box lengths up to 2000mm.

Connection between the boxes and the diffusers can be accomplished either by drill and rivet through the diffuser neck or where access is limited, via concealed bracket fixings accessible through the diffuser face [standard fixing is concealed bracket]. The diffuser includes fixing holes for drop rod support as standard.

For volume control the standard plenum inlet can be fitted with quadrant or Iris type dampers and where adjustment via the slot face is preferred, both cord and Teleflex operated spigot dampers can be installed.

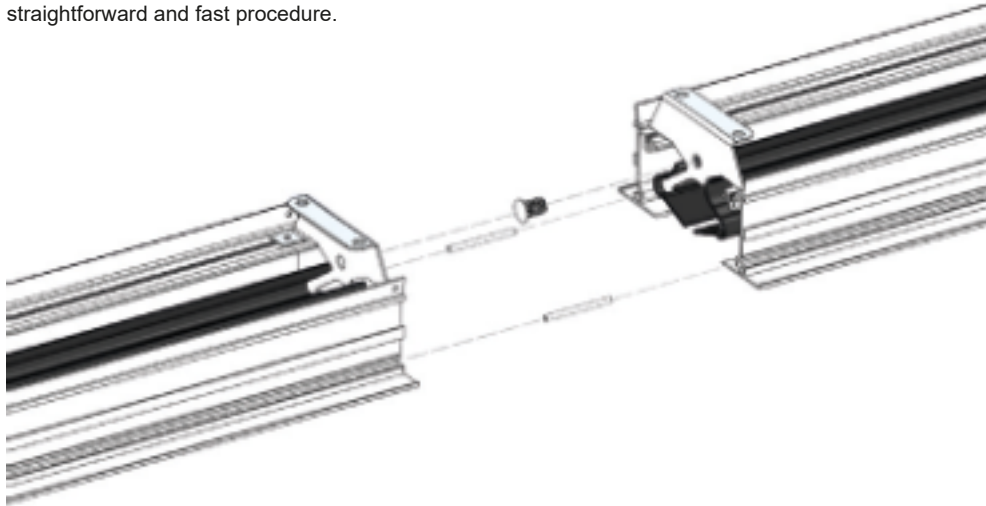
Standard finish on JSL units with a border [JSL/A] is white polyester powder coated face with internal control vanes matt black. The borderless plaster in model [JSL/P] is all in black. Other colours and finishes are available on request.

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ALIGNMENT FEATURE

For long diffuser runs a concealed alignment feature is provided for positive and accurate joining of diffuser lengths whilst maintaining a clean unbroken appearance. Simply align the units on site using the dowels and then push the 'fir tree' studs through the adjoining backstraps. A simple, straightforward and fast procedure.

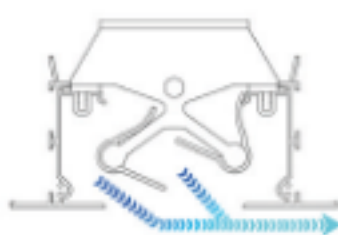


DIRECTIONAL CONTROL

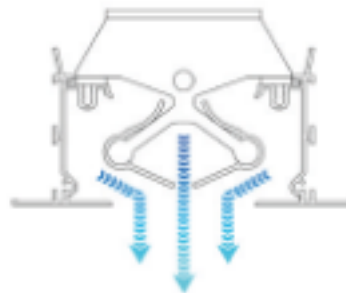
Directional control is achieved by adjustment of the two air control vanes housed within the air slot. Each vane can be moved individually up or down to achieve horizontal, angled or vertical distribution as illustrated below. As standard airflow

direction can be altered every 2000mm although smaller intervals can easily be achieved on site by simply cutting the blades and inserting spacer brackets [see installation leaflet for details].

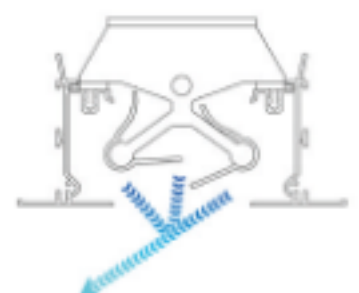
DIRECTIONAL CONTROL



Coanda ceiling throw
2 internal air paths



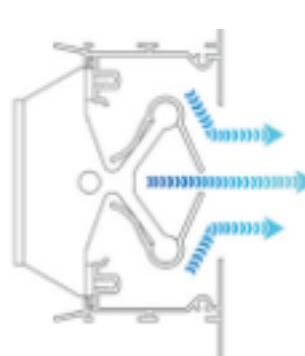
Vertical throw
3 internal air paths



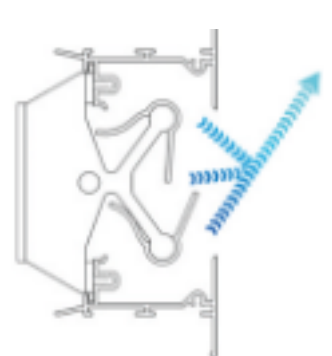
Angled throw
3 internal air paths



Coanda wall throw
2 internal air paths



Straight throw
3 internal air paths

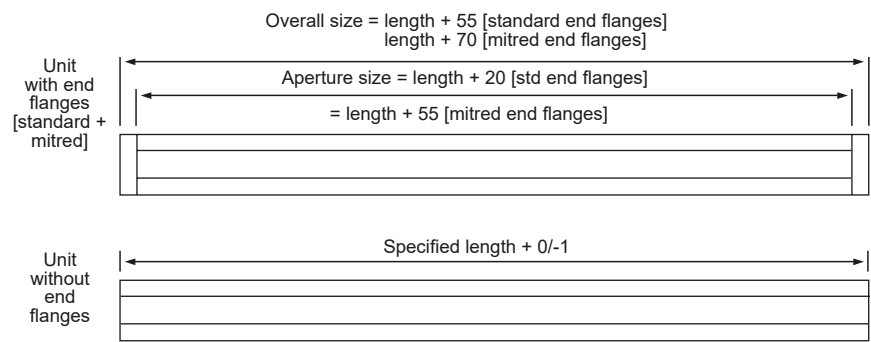
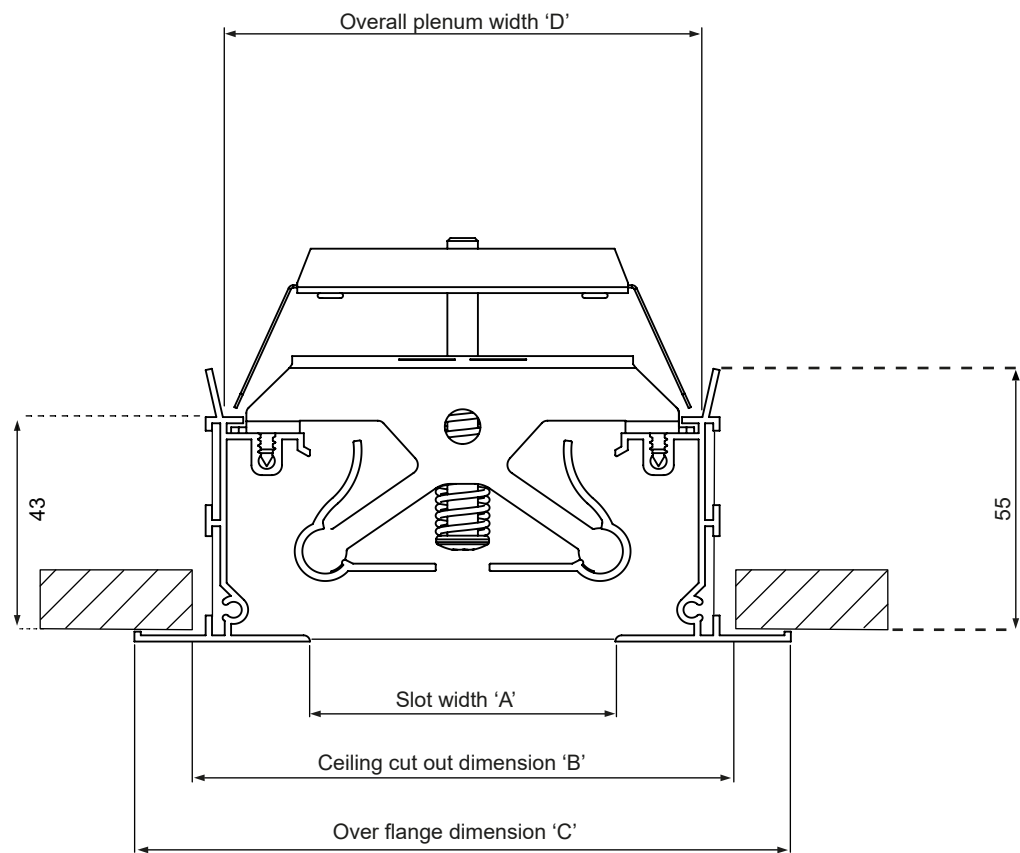


Angled throw
3 internal air paths

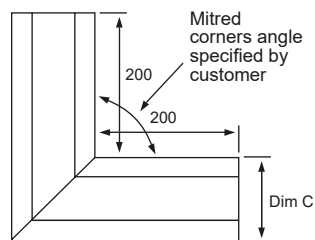
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Ultra High Capacity Linear Slot Diffuser

Slot Diffuser
Standard
Border A



MITRED CORNERS

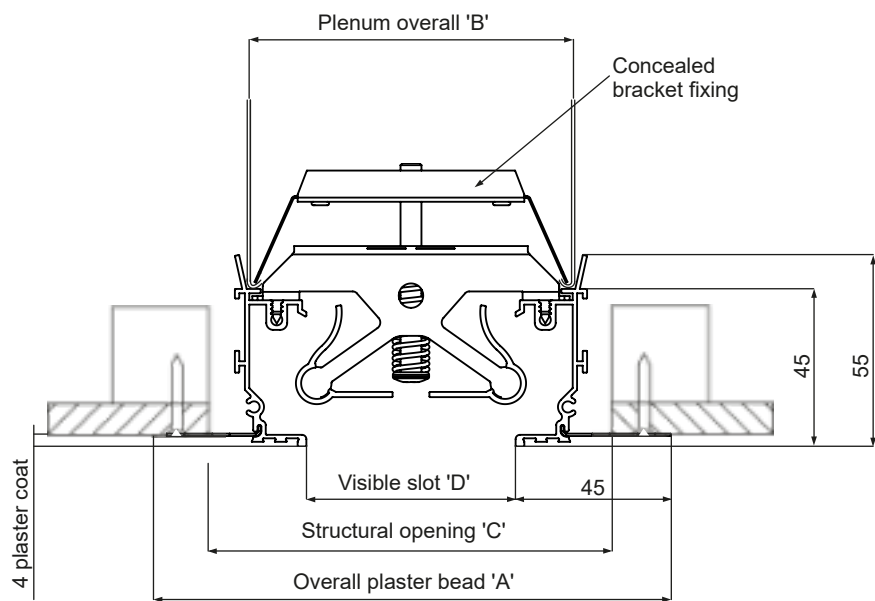


Type	Dim A	Dim B	Dim C	Dim D
JSL 30	30	85	99	64
JSL 40	40	95	109	74
JSL 50	50	105	119	84
JSL 60	60	115	129	94
JSL 80	80	135	149	114

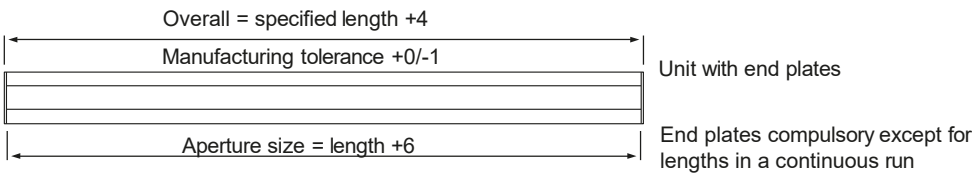
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Plaster
Ceiling
[Option P]



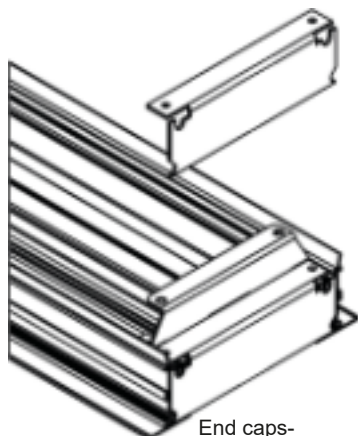
Type	Dim A	Dim B	Dim C	Dim D
JSL 30	119	64	85	30
JSL 40	129	74	95	40
JSL 50	139	84	105	50
JSL 60	149	94	115	60
JSL 80	169	114	135	80



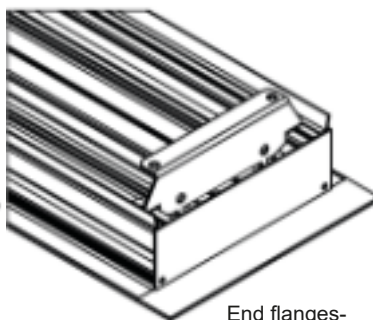
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Ultra High Capacity Linear Slot Diffuser

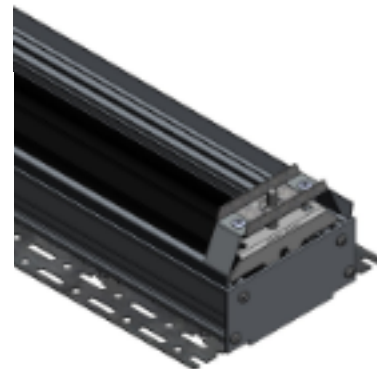
End Flanges & End Caps



End caps-
ref: EC



End flanges-
ref: EF



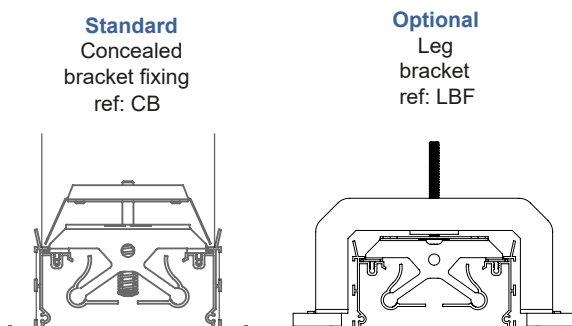
End plates-
ref: PF

Fixing Options

The standard fixing option for the JSL slot diffuser is the popular concealed bracket fixing. The concealed brackets are fixed to the rear of the diffuser and quickly push fit into the plenum. Unclipping the diffuser blade allows access to the captive nuts on the brackets to tighten and align the unit in place.

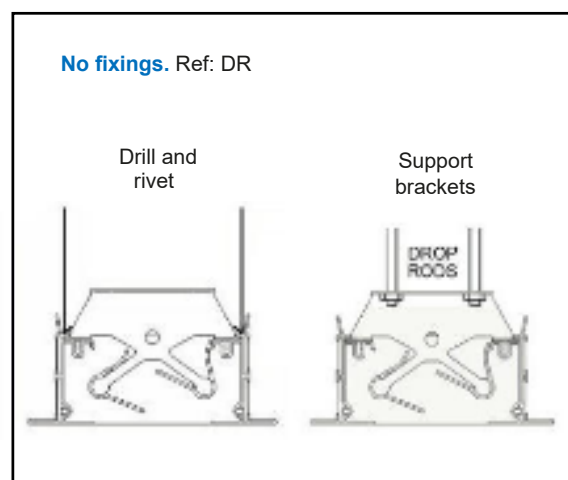
Where access is easily available to the ceiling void an alternative fixing option is to simply drill through the neck of the diffuser and the plenum box and then rivet into place. Whilst lower in upfront cost this method can take a little more time to install.

For installations without a plenum the diffuser automatically includes holes for drop rod support on the diffuser back straps which are spaced on approx 300mm centres. For plaster ceiling applications a leg bracket or goal post type fixing can also be specified.



Standard
Concealed
bracket fixing
ref: CB

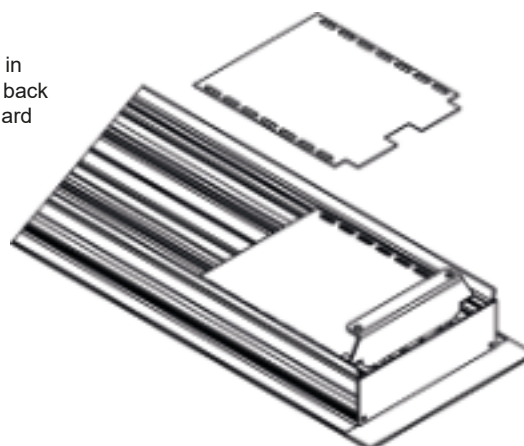
Optional
Leg
bracket
ref: LBF



No fixings. Ref: DR

Blanking Plates

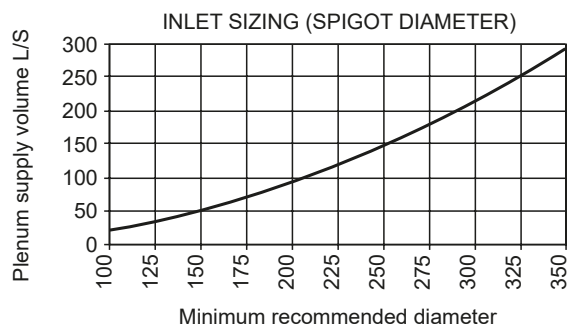
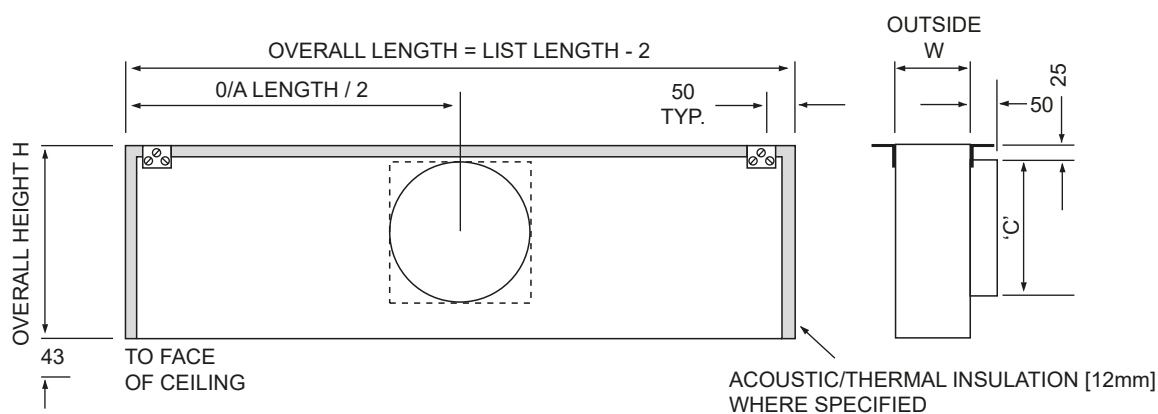
For inactive or dummy sections. Matt black blanking plates can be supplied. Blanking plates are supplied in standard 150mm lengths and simply locate onto the back of the diffuser where they can be secured with standard self-tapping screws.



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Plenum Box Series PB



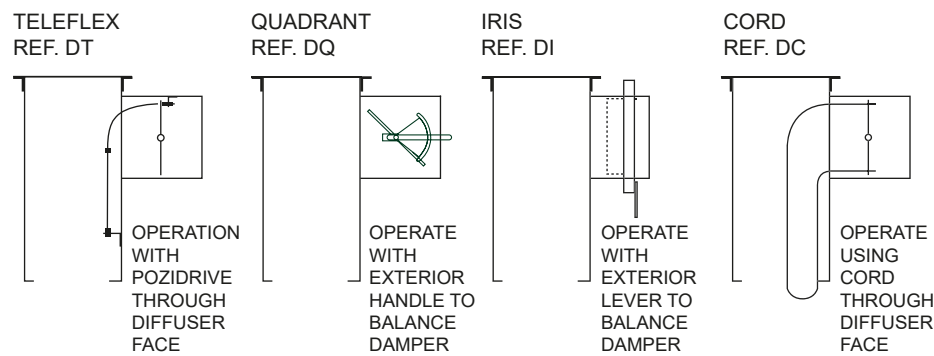
Slot type	Width
30	64
40	74
50	84
60	94
80	114

Nominal spigot Dia (or height) C	Standard height H
100	220
125	220
150	262.5
160	262.5
200	305
250	347.5
300	390
350	432.5

For low noise levels one size larger is recommended

General Specification
 0.7mm galvanised or zintec coated mild steel construction
 Spigot construction: Standard sizes use plastic clip in spigot
 Non standard, a sealed screw in spigot
 AT1 - Thermal insulation: 12mm Pyrosorb foam approx. U-value 4.7 Wm⁻² k⁻¹

Volume Control Options



Spigot length = spigot dia.

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JSL 30

Air volume l/s/m		20	35	50	60	70	85	100
Static pressure [PA]		1.5	5	10	15	22	32	46
Noise level								
With 10dB room absorption		NC10/dbA15	NC15/dbA20	NC15/dbA20	NC20/dbA26	NC25/dbA29	NC30/dbA35	NC35/dbA40
Without 10dB room absorption		NC20/dbA25	NC25/dbA30	NC25/dbA30	NC30/dbA36	NC35/dbA39	NC40/dbA45	NC45/dbA50
 Ceiling Side wall	Coanda throw in metres to 0.25 m/s	2.0	3.5	5.0	5.8	6.5	7.3	8.0
	Coanda throw in metres to 0.50 m/s	1.2	2.1	3.0	3.5	4.0	4.8	5.5
 Ceiling Side wall	Straight/angled throw in metres to 0.25 m/s No ceiling effect	1.5	2.5	3.5	4.0	4.5	5.0	5.5
	Straight/angled throw in metres to 0.50 m/s No ceiling effect	0.75	1.4	2.0	2.3	2.5	3.0	3.5

JSL 40

Air volume l/s/m		30	45	60	75	90	110	130
Static pressure [PA]		2.5	5	9.5	14	20	29	40
Noise level								
With 10dB room absorption		NC10/dbA15	NC15/dbA17	NC15/dbA19	NC20/dbA24	NC20/dbA27	NC30/dbA34	NC35/dbA38
Without 10dB room absorption		NC20/dbA25	NC25/dbA27	NC25/dbA29	NC30/dbA34	NC30/dbA37	NC40/dbA44	NC45/dbA48
 Ceiling Side wall	Coanda throw in metres to 0.25 m/s	3.0	4.5	6.0	7.0	8.0	9.0	10.0
	Coanda throw in metres to 0.50 m/s	1.5	2.8	4.0	4.8	5.5	6.3	7.0
 Ceiling Side wall	Straight/angled throw in metres to 0.25 m/s No ceiling effect	2.0	3.0	4.0	5.0	6.0	6.8	7.5
	Straight/angled throw in metres to 0.50 m/s No ceiling effect	1.0	1.8	2.5	3.0	3.5	4.0	4.5

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JSL 50

Air volume l/s/m		40	60	80	100	120	140	160
Static pressure [PA]		4	9	16	24	35	46	64
Noise level								
With 10dB room absorption		NC10/dbA15	NC15/dbA17	NC15/dbA20	NC20/dbA25	NC25/dbA33	NC30/dbA36	NC35/dbA42
Without 10dB room absorption		NC20/dbA25	NC25/dbA27	NC25/dbA30	NC30/dbA35	NC35/dbA43	NC40/dbA46	NC45/dbA52
 Ceiling Side wall	Coanda throw in metres to 0.25 m/s	4.0	5.5	7.0	8.0	9.0	10.0	11.0
	Coanda throw in metres to 0.50 m/s	2.5	3.3	4.0	4.8	5.5	6.3	7.0
 Ceiling Side wall	Straight/angled throw in metres to 0.25 m/s No ceiling effect	3.0	4.0	5.0	5.8	6.5	7.3	8.0
	Straight/angled throw in metres to 0.50 m/s No ceiling effect	2.0	2.5	3.0	3.5	4.0	4.5	5.0

JSL 60

Air volume l/s/m		50	75	100	125	150	175	200
Static pressure [PA]		4	9	16	24	35	48	64
Noise level								
With 10dB room absorption		NC10/dbA15	NC15/dbA18	NC15/dbA20	NC25/dbA27	NC30/dbA34	NC35/dbA40	NC40/dbA43
Without 10dB room absorption		NC20/dbA25	NC25/dbA27	NC25/dbA30	NC35/dbA37	NC40/dbA44	NC45/dbA50	NC50/dbA53
 Ceiling Side wall	Coanda throw in metres to 0.25 m/s	4.5	6.0	7.5	9.0	10.5	11.8	13.0
	Coanda throw in metres to 0.50 m/s	2.5	3.0	3.5	4.8	6.0	6.5	7.0
 Ceiling Side wall	Straight/angled throw in metres to 0.25 m/s No ceiling effect	3.0	4.0	5.0	6.0	7.0	8.0	9.0
	Straight/angled throw in metres to 0.50 m/s No ceiling effect	2.0	2.5	3.0	3.5	4.0	4.5	5.0

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JSL 80

Air volume l/s/m		60	90	120	150	180	215	250
Static pressure [PA]		4.0	8	14	22	33	46	66
Noise level								
With 10dB room absorption		NC10/dbA15	NC15/dbA18	NC15/dbA20	NC20/dbA26	NC25/dbA31	NC30/dbA35	NC35/dbA40
Without 10dB room absorption		NC20/dbA25	NC25/dbA27	NC25/db30	NC30/dbA36	NC35/dbA41	NC40/dbA45	NC45/dbA50
 Ceiling Side wall	Coanda throw in metres to 0.25 m/s	5.0	6.5	8.0	9.3	10.5	12.0	13.5
	Coanda throw in metres to 0.50 m/s	3.0	3.8	4.5	5.3	6.0	6.8	7.5
 Ceiling Side wall	Straight/angled throw in metres to 0.25 m/s No ceiling effect	3.0	4.3	5.5	6.3	7.0	8.3	9.5
	Straight/angled throw in metres to 0.50 m/s No ceiling effect	2.0	2.8	3.5	3.8	4.0	4.5	5.0

ALL PERFORMANCE DATA BASED ON 1M LONG UNITS IN ISOTHERMAL CONDITIONS

5°C HEATING/COOLING CORRECTION FACTORS

- 1 : Ceiling Coanda projection: throw x 0.15 = fall in metres. See throw patterns, fig A and B on page 11.
- 2 : Ceiling straight [vertical] projection: throw x 1.3 for 5° cooling/ x 0.7 for 5° heating.
- 3 : Side wall straight projection: throw x 0.25 = rise/fall in metres.

THROW AND NOISE CORRECTIONS FOR VARYING LENGTHS

Length	0.9	1.0	1.2	1.5	2.0	3+
Throw multiplier	0.9	1.0	1.1	1.2	1.3	1.4
Add to NC level	-1	0	+1	+2	+3	+4

SIDE WALL WITH CEILING EFFECT

For side wall straight projection mounted 250mm or less from ceiling/bulkhead then use coanda throw data. See illustration on right.

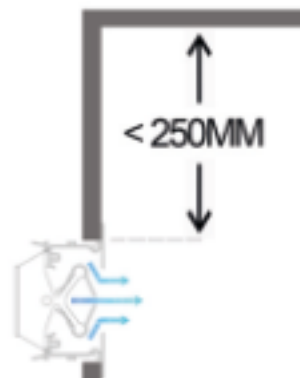
Note ~ Angled projection upward can also be used to gain ceiling effect from a side wall installation in isothermal conditions.

EXTRACT DATA

When used for extract add 10NC and multiply pressure drop by 1.35.

OTHER NOTES

Tests were conducted with no plenum for pressure drop. For a mid range volume with well sized spigot at 2m/s allow approximately 3Pa for plenum connections. Pressure drop stated is in horizontal projection. When in vertical projection pressure drop is 25% lower for JSL 30,40,50 and 60. For JSL80 both pressure drop in horizontal and vertical mode are equal.



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JSL Throw Patterns

FIG A, ISOTHERMAL COANDA THROW PATTERN
TYPICAL TRAJECTORY @ 60L/S/M

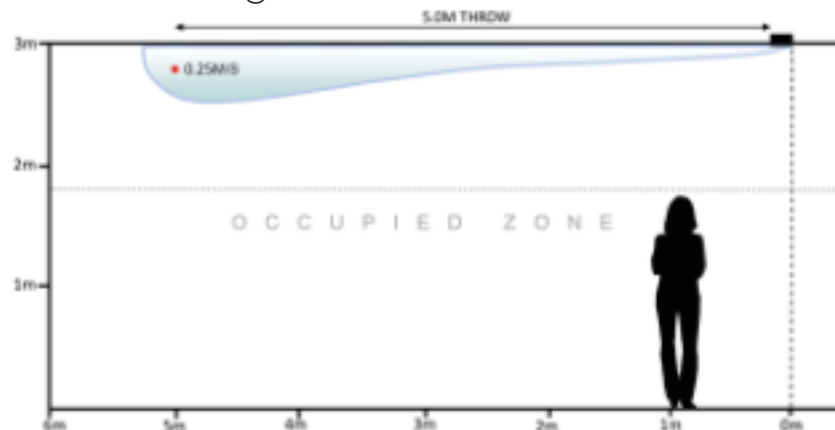


Fig A ~ Illustration showing typical throw pattern in isothermal conditions. Terminal velocity at 0.25m/s remains close to ceiling level with no drop due to temperature differential.

FIG B, 5° COOLING COANDA THROW PATTERN
TYPICAL TRAJECTORY @ 60L/S/M

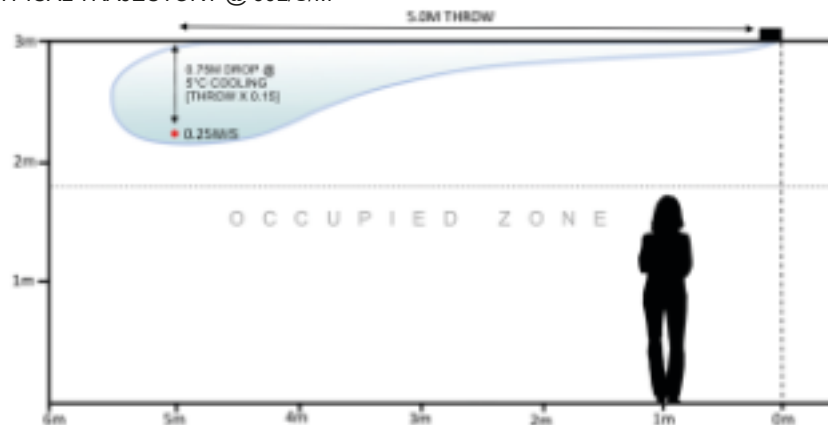
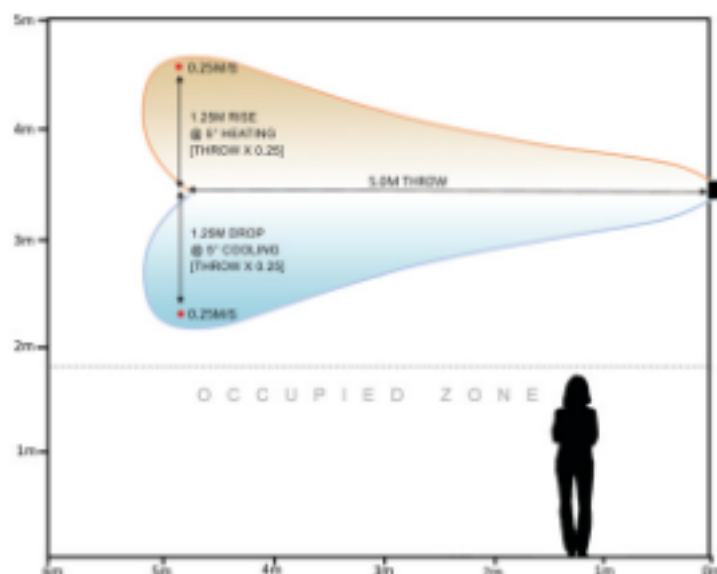


Fig B ~ Illustration showing typical throw pattern with 5° cooling. Terminal velocity at 0.25m/s has dropped 0.75m from ceiling due to temperature differential.

FIG C, SIDEWALL +/-5° ΔT THROW RISE AND FALL DETAIL
TYPICAL TRAJECTORY @ 60L/S/M



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Ultra High Capacity Linear Slot Diffuser

Order Specification [Diffuser]

Customer string selection example:

SERIES Supply/extract..... JSL	JSL	30	A	5200	2EF	CB	P3000	BB	PPC RAL 9010 20% Gloss [standard finish]	15
SLOT WIDTH										
BORDER OPTIONS Standard A Plaster-in P										
SPECIFIED LENGTH [mm] [length of arc on type JSL]										
END FLANGES 'A' Border type only: Standard [x2]..... 2EF Standard [x1]..... 1EF Mitred flange [x2]..... 2MF Mitred flange [x1]..... 1MF End cap [x2]..... 2EC End cap [x1]..... 1EC 'P' Border type: End Plate [x2]..... 2PF End Plate [x1]..... 1PF										
FIXING Concealed bracket..... CB Leg bracket..... LB Drill & rivet..... DR										
BLANKING PLATE [P + length [mm]]										
BLADE COLOUR Black [standard]..... BB Generic white..... WB										
FINISH [please specify]										
NUMBER REQUIRED										

Fixing

Standard fixing options as listed. Fixings can be mixed and matched on long runs to suit the installation.

Concealed brackets[CB]: Standard for plenum box fixing.

Leg bracket[LB]: Alternative fixing to support brackets for plasterboard ceilings where no plenum box is fitted.

Drill & rivet [DR]: See page 6.

Support brackets.....[DR]:

Blanking Plates

Screw fix matt black blanking plates available for dummy/inactive sections and are fitted to the back of the diffuser. Supplied in modular 150mm lengths.

Finish

Standard finish: Units with a border [JSL/A] are Polyester Powder Coat White RAL 9010 20% Gloss with internal control vanes matt black. The borderless plaster in model JSL/P is finished all in black.

Special finishes: Polyester powder finish to stock BS/RAL colour.

Internal colour: Internal control vanes remain black although a generic white blade [ref: WB] can also be specified as standard. Special blade colour to match the diffuser finish can also be selected for larger projects.

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Order Specification [Plenum Box]

Customer string selection example:

SERIES PB/JSL	PB/JSL	30	AT1	1500	BH 500	BB	PM	ST	TSS/2x	DQ 250	15
----------------------------	--------	----	-----	------	--------	----	----	----	--------	--------	----

SLOT WIDTH	
THERMAL/ACOUSTIC INSULATION 12mm Pyro [std] AT1 25mm Pyro AT2 12mm closed cell* AT3	
SPECIFIED LENGTH [mm]	
BOX HEIGHT Where different from standard. BH+height [mm]	
MATT BLACK FINISH (internal & external) [if thermal/acoustic insulation not required] BB	
PERFORATED MESH PM	
FIXING ARRANGEMENT Standard ST	
MULTIPLE SPIGOTS TSS/Qty x	
SPIGOT & DAMPER OPTIONS Plus nominal spigot size* No damper SS+size Quadrant DQ+size Cord operated DC+size Teleflex DT+size Iris DI+size	
NUMBER REQUIRED	

Thermal/Acoustic Insulation [AT1, AT2 and AT3]

Plenum box can be fully lined with 12mm [standard] or 25mm Pyrosorb thermal/acoustic insulation. Alternatively 12mm closed cell* can also be specified.

*Class '0' fire-rated, closed cell, elastomeric PVC nitrile foam.

Exposed Plenums

Please advise where plenums are exposed. **Galvalike®** is the default finish for exposed plenum boxes. A unique powder coated finish formulated to best match British galvanised material, whilst protecting the products from finish variation and moisture damage etc.

Plenums may also be powder coated to suit grille/diffuser finish. For alternative plenum finishes, please contact head office.

Spigot & Damper Options

Plenums can be supplied with single or multiple spigot inlets. These would be mounted on the same side of the plenum [TSS] as standard. Each spigot can also be fitted with quadrant, cord, teleflex or iris dampers. For alternative spigot options, please contact head office.

Perforated Mesh [PM]

Plenum fitted internally with 50% perforated equalising mesh.

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Order Specification [Mitred Corner]

Customer string selection example:

SERIES Supply/extract..... MC/JSL	MC/JSL	30	A	90	BB	PPC RAL 9010 20% gloss [standard finish]	15
SLOT WIDTH							
BORDER OPTIONS Standard A Plaster-in P							
INTERNAL ANGLE OF MITRED CORNER [90 degrees as standard]							
BLADE COLOUR Black [standard]..... BB Generic white..... WB							
FINISH [please specify]							
NUMBER REQUIRED							

Note: All mitred corners supplied size 200x200 internal length
[see illustration on page 4].

Diffuser ordering specification: see page 12.
Plenum box ordering specification: see page 13.

GILBERTS

Head Office and Works

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Web: **www.gilbertsblackpool.com**

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