TECHNICAL DATASHEET

6500
Louvre Face Diffuser

Advanced Air (UK) Ltd

Burrell Way
Thetford
Norfolk
IP24 3QU



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LOUVRE FACE DIFFUSERS



Square and rectangular pattern ceiling diffusers

The Advanced Air Model Series 6500 pattern ceiling diffusers have been specially designed to provide a high capacity louvred face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 6mm horizontal lip on all angular discharge louvres creates a stable horizontal air pattern that is tight to the ceiling.

Ideal for applications in VAV systems, these diffusers create a strong ceiling Coandă effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, bevelled or deep drop face) and T-bar panel types (tegular or metal snap-in). These models therefore offer a great degree of design flexibility.

Features

- Spring loaded core. Removable without the use of tools.
- Core attached by cord for safe removal.
- High neck collars for solid connection.
- Secure core attachment.
- A wide variety of frame styles to suit most ceiling applications.
- Optional extended panels to suit modular ceilings systems.
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square neck sizes.
- Clean lines with no unsightly visible screws.
- Optional opposed blade damper with screwdriver slot operator.

Material

Extruded aluminium.

Finish

AW Appliance White polyester power finish RAL 9010 semi-gloss.

Other finishes are available.

Available sizes

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct sizes are available in 75mm increments.

Minimum size – 150 x 150mm square neck.

Maximum size – 450 x 450mm square neck.

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Models 6500 – dimensions and sizing

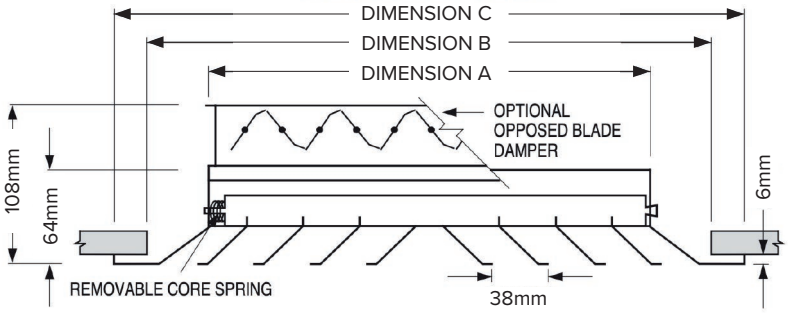
	A	B	C
Nominal unit size (mm)	Actual neck dimension (mm)	Minimum opening dimension (mm)	Overall flanges dimension (mm)
150 x 150	146 x 146	228 x 228	290 x 290
225 x 225	223 x 223	305 x 305	367 x 367
300 x 300	299 x 299	381 x 381	443 x 443
375 x 375	375 x 375	457 x 457	519 x 519
450 x 450	451 x 451	533 x 533	595 x 595

Type S – Surface mount frame



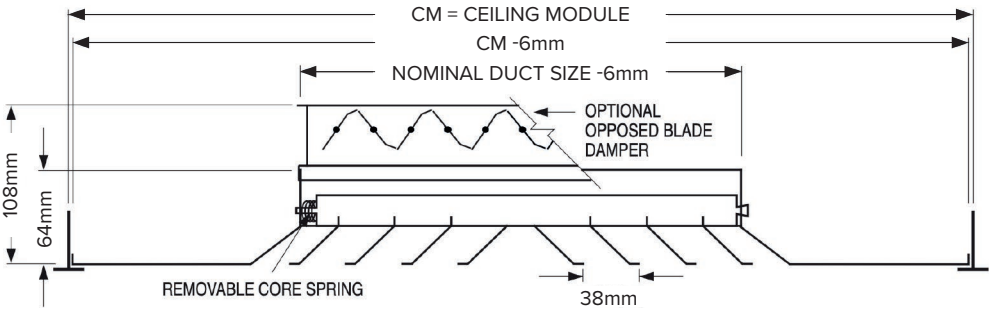
Type SE – Surface mount frame



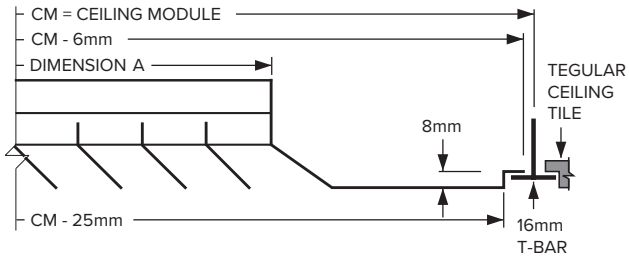


Type L – Lay-in T-bar frame

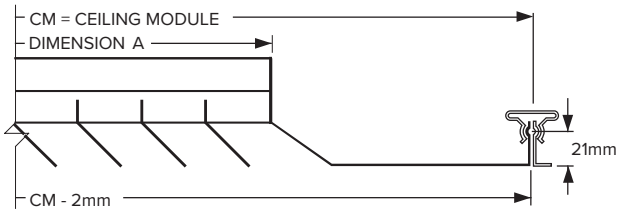




Type TL – Tegular lay-in frame



Type M – Metal pan (snap-in)



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Models 6500 – Installation

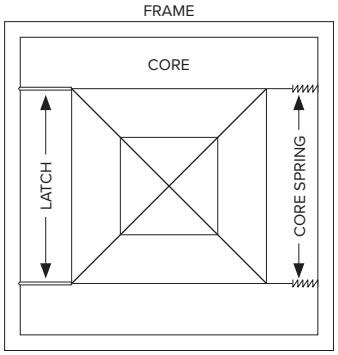
Remove transportation clips once diffuser has been installed.

Removable core

- Standard feature of Models 6500.
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

How to remove “removable” core

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.



6500 Series – standard core styles

Pattern	Core	Available sizes
1-way 	1S	150 x 150 225 x 225 300 x 300 375 x 375 450 x 450
2-way 	2S	150 x 150 225 x 225 300 x 300 375 x 375 450 x 450
2-way corner 	2G	150 x 150 225 x 225 300 x 300 375 x 375 450 x 450
3-way 	3A	300 x 300 375 x 375 450 x 450
4-way 	4A	150 x 150 225 x 225 300 x 300 375 x 375 450 x 450

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6500 Series – performance data

Nominal neck size (mm)	Blow pattern									
		Neck velocity (m/s)	1	1.25	1.5	1.75	2	2.5	3	3.5	4
		Discharge velocity (m/s)	2	2.5	3	3.5	4	5	6	7	8
		Pressure drop (Pa)	2	4	6	9	13	18	22	28	36
150 x 150		**Flowrate (l/s)**	**22**	**27.5**	**33**	**38.5**	**44**	**55**	**66**	**77**	**88**
		NC level	<15	<15	<15	<15	<15	16	20	24	28
	4A	Throw (m)	0.5-0.7	0.6-0.9	0.7-1.0	0.8-1.2	0.9-1.4	1.2-1.7	1.4-2.1	1.6-2.4	1.9-2.8
	2S		0.6-0.8	0.6-0.8	0.7-1.3	1.0-1.5	1.1-1.7	1.4-2.1	1.7-2.5	2.0-3.0	2.3-3.4
	2G		0.7-1.0	0.7-1.0	1.0-1.5	1.1-1.7	1.4-2.0	1.6-2.4	2.0-2.9	2.3-3.4	2.6-3.9
	1S		0.9-1.4	0.9-1.4	1.4-2.1	1.6-2.4	1.8-2.8	2.3-2.5	2.8-4.2	3.2-4.8	3.7-5.5
225 x 225		**Flowrate (l/s)**	**50**	**62.5**	**75**	**87.5**	**100**	**125**	**150**	**175**	**200**
		NC level	<15	<15	<15	<15	<15	20	25	30	35
	4A	Throw (m)	0.7-1.0	0.9-1.3	1.0-1.6	1.2-1.8	1.4-2.1	1.7-2.6	2.1-3.1	2.4-3.7	2.8-4.2
	2S		0.9-1.3	1.1-1.6	1.3-1.9	1.5-2.2	1.7-2.6	2.1-3.2	2.6-3.8	3.0-4.5	3.4-5.1
	2G		1.0-1.5	1.2-1.8	1.2-2.2	1.7-2.6	2.0-3.0	2.5-3.7	3.0-4.4	3.4-5.2	3.9-5.9
	1S		1.4-2.1	1.7-2.6	2.1-3.1	2.4-3.7	2.8-4.2	3.5-5.2	4.2-6.3	4.9-7.3	5.6-8.3
300 x 300		**Flowrate (l/s)**	**90**	**112.5**	**135**	**157.5**	**180**	**225**	**270**	**315**	**360**
		NC level	<15	<15	<15	<15	17	23	28	33	35
	4A	Throw (m)	0.9-1.4	1.2-1.8	1.4-2.1	1.6-2.5	1.9-2.8	2.3-3.5	2.8-4.2	3.3-4.9	3.7-5.6
	3A		0.9-1.4	1.2-1.8	1.4-2.1	1.6-2.5	1.9-2.8	2.3-3.5	2.8-4.2	3.3-4.9	3.7-5.6
	2S		1.1-1.7	1.4-2.1	1.7-2.6	2.0-3.0	2.3-3.4	2.9-4.3	3.4-5.1	4.6-6.0	4.6-6.9
	2G		1.3-2.0	1.7-2.5	2.0-3.0	2.3-3.5	2.6-4.0	3.3-5.0	4.0-5.9	4.6-6.9	5.3-7.9
	1S		1.9-2.8	2.3-3.5	2.8-4.2	3.3-4.9	3.7-5.6	4.7-7.0	5.6-8.4	6.5-9.8	7.5-11.2
375 x 375		**Flowrate (l/s)**	**140**	**175**	**210**	**245**	**280**	**350**	**420**	**490**	**560**
		NC level	<15	<15	<15	16	19	25	30	33	39
	4A	Throw (m)	1.2-1.7	1.5-2.2	1.7-2.6	2.0-3.1	2.3-3.5	2.9-4.4	3.5-5.2	4.1-6.1	5.6-7.0
	3A		1.2-1.7	1.5-2.2	1.7-2.6	2.0-3.1	2.3-3.5	2.9-4.4	3.5-5.2	4.1-6.1	5.6-7.0
	2S		1.4-2.1	1.8-2.7	2.1-3.2	2.5-3.7	2.9-4.3	3.6-5.3	4.3-6.4	5.0-7.5	5.7-8.6
	2G		1.6-2.5	2.1-3.1	2.5-3.7	2.9-4.3	3.3-4.9	4.1-6.2	4.9-7.4	5.8-8.6	6.6-9.9
	1S		2.3-3.5	2.9-4.4	3.5-5.2	4.1-6.1	4.7-7.0	5.8-8.7	7.0-10.5	8.1-12.2	9.3-14.0
450 x 450		**Flowrate (l/s)**	**200**	**250**	**300**	**350**	**400**	**500**	**600**	**700**	**800**
		NC level	<15	<15	<15	<15	21	27	31	36	39
	4A	Throw (m)	1.4-2.1	1.7-2.6	2.1-3.1	2.4-3.7	2.8-4.2	3.5-5.2	4.2-6.3	4.9-7.3	5.6-8.3
	3A		1.4-2.1	1.7-2.6	2.1-3.1	2.4-3.7	2.8-4.2	3.5-5.2	4.2-6.3	4.9-7.3	5.6-8.3
	2S		1.7-2.6	2.1-3.2	2.6-3.8	3.0-4.5	3.4-5.1	4.3-6.4	5.1-7.7	6.0-8.9	6.8-10.2
	2G		2.0-3.0	2.5-3.7	3.0-4.4	3.4-5.2	3.9-5.9	4.9-7.4	5.9-8.9	6.9-10.3	7.9-11.8
	1S		2.8-4.2	3.5-5.2	4.2-6.3	4.9-7.3	5.6-8.3	7.0-10.4	8.3-12.5	9.7-14.6	11.1-16.7

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6500 Series – performance data

Selection guidelines

Throws are two terminal velocities of 0.75 and 0.5 m/s respectively. For comfort cooling use the following guidelines on terminal velocity.

Ceiling height (m)	Recommended terminal velocity (m/s)
2.7-3.2	0.5
>3.3	0.75

Corrections for side entry plenum (damper 100% open).

	Factor
NC level	+10
Pressure drop	x2

Guidance on sizing of spigot (damper 100% open).

Spigot velocity m/s	2	2.5	3	3.5	4
	20	25	30	35	40

Return factors

Use the scale factors below to determine the performance for extract applications.

Neck size	Core	NC level
150 x 150	Supply pressure drop x 1.1	Supply NC +1
225 x 225	Supply pressure drop x 1.2	Supply NC +2
300 x 300	Supply pressure drop x 1.3	Supply NC +4
375 x 375	Supply pressure drop x 1.8	Supply NC +4
450 x 450	Supply pressure drop x 2.1	Supply NC +6

Performance notes

- Throw values are given for terminal velocities of 0.5-0.25m/s under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 35%.
- The sound pressure levels stated are based on a 10dB sound absorption with diffuser opposed blade damper in the fully open position.

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6500 Series plenum – PL65

Plenum boxes are designed to give even airflow across the Advanced Air range of grilles and diffusers.

Manufactured from 0.6 to 0.8mm galvanised mild steel, the plenum boxes come with a range of spigots suitable for rectangular, circular or flat oval duct connections in either side or top entry applications. Plenums are flangeless as standard. Hanging brackets are standard.

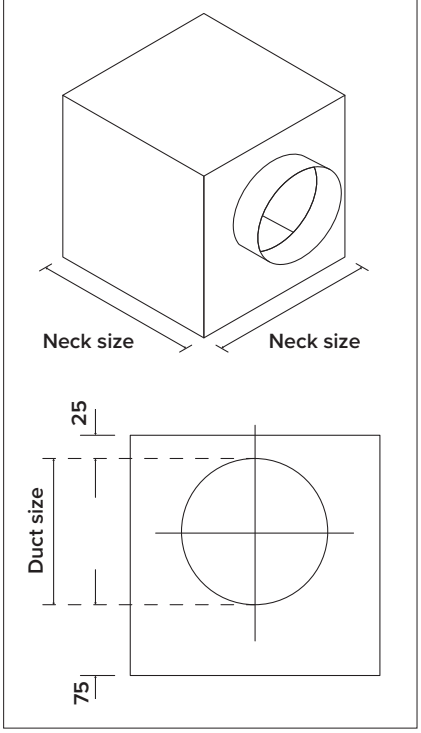
Plenums can also be supplied with optional balancing devices and thermal / acoustic lining where required. Plenum internals are natural finish as standard.

Please contact our Advanced Air Sales for further details, or for bespoke solutions.

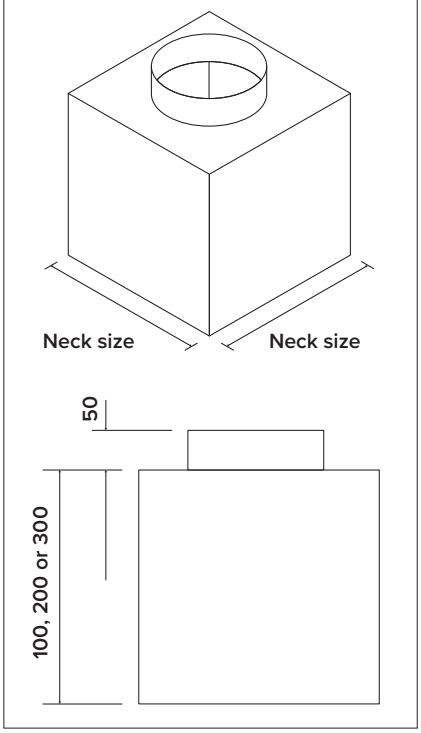
- Rectangular, circular or flat oval duct connections.
- Hanging brackets supplied as standard.
- Thermal / acoustic lining options.

As standard, side entry plenum height is determined by specified spigot size. Alternatively overall height can be specified. Please contact Advanced Air sales team for more details

PL65 – side entry



PL65 – top entry



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LOUVRE FACE DIFFUSERS

6500 Series – ordering codes

6500 – S – OA – 300x300 – 600x600 – 9010 – 4A

Model
Fixed pattern 6500

Frame Type
Surface mount S
Lay-in L
Tegular lay-in TL
Metal pan M
SE SE

Dampers
None –
Damper OA

Neck size

Panel size (Types L, TL and M)

Core style
4-way 4A
3-way 3A
2-way (corner) 2G
2-way (straight) 2S
1-way 1A

Finish
RAL White 9010
Aluminium AL
Special SP

Accessories
Neck adapter NAP

Suggested Specification

Ceiling air diffusers shall be Advanced Air 6500 Series of the sizes and capacities shown. Diffuser shall have a removable core complete with safety cord and shall be complete with a Polyester Powder finish. The frame and blades shall be mitred. Duct connection collars shall be not less than 38 mm. Visible screws or mechanical fasteners for core attachment shall not be acceptable.

Notes

- Duct sizes are available in 75 mm increments.
- Patterns are shown in plan view (looking down into inlet).
- Consult text as to limitations of panel, neck size and core style combinations.

6500 Series plenum – PL65 ordering codes

PL65 – 300x300 – SE – CR – STD – MI – HB

Model
6500 plenum PL65

Neck size
300 x 300mm

Spigot entry
Side entry SE
Top entry TE

Spigot
Circular (default) CR
Rectangular CSR
Flat oval CO

Plenum height
Standard (Ø +100mm) STD
Special SP

Hanging brackets
Hanging brackets HB

Finish
Mill finish MI
6mm internal lining IL6
12mm internal lining IL12

Accessories
Cord-operated spigot damper IDG
Internal baffle plate BP

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