



Series 6500

Ceiling 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 coanda 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, beveled or deep drop face) and T-Bar panel types (Standard 25mm, Threadline, Fineline, Spline, Tegular or Metal Snap-in). These models therefore offer a great degree of design flexibility. The Advanced Air Model Series 6550 Adjustable Pattern Ceiling Diffusers offer the same features as the 6500 Series, however, they feature four hinged, individually adjustable deflecting vanes. These vanes allow air pattern adjustment from horizontal to vertical and further enhance the flexibility of the diffuser. Ideal for applications with higher ceiling heights or for heating applications to minimise stratification.

- **Louvred Face**
- **High Capacity**
- **Square, Rectangular or Round Necks**





- 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 and rectangular neck sizes.
 - Clean lines with no unsightly visible screws.
 - Square-to-round transition adaptors are available (SQR option).
 - Optional opposed blade damper with screwdriver slot operator.

Material: Extruded aluminium.

Finish: White polyester powder RAL 9010 semi-gloss finish. 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: 150mm x 150mm square neck. 225mm x 150mm rectangular neck (most core styles).

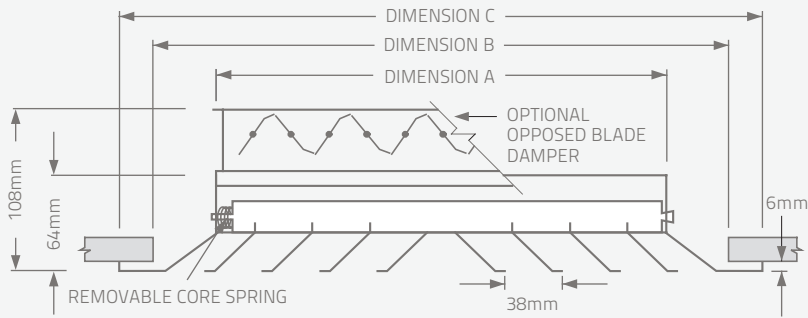
Maximum size: Type S, B and D: 900mm x 900mm.
Type L, SP, TL, M and F

Models: 6500 Fixed Pattern
6550 Adjustable Pattern
(Suffix 'OA' adds opposed blade damper)

Model Series 6500 Diffusers

Dimensions ■ Frame Types

Type S - Surface Mount Frame



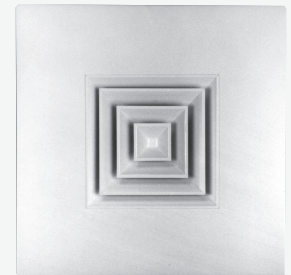
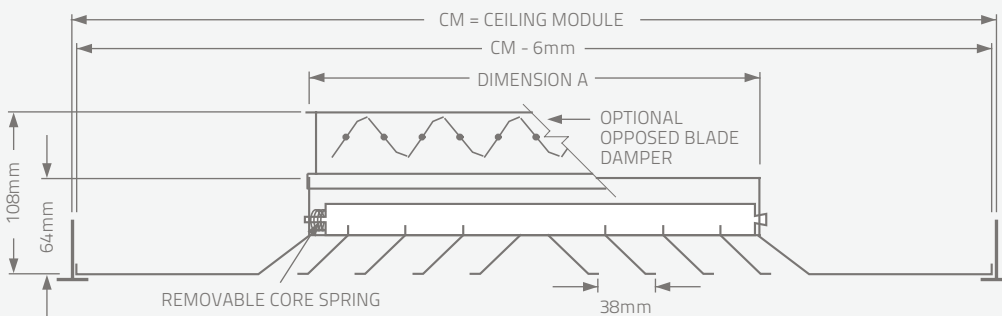
Dimensions			
Nominal Unit Size	Actual Neck Dimension 'A'	Minimum Opening Dimension 'B'	Overall Flanges Dimension 'C'
150 x 150	146 x 146	228 x 288	290 x 290
225 x 225	223 x 223	305 x 305	367 x 367
300 x 300	299 x 299	381 x 381	443 x 443
375 x 375	375 x 375	457 x 457	519 x 519
450 x 450	451 x 451	533 x 533	595 x 595

Dimensions are in mm.

Extended Panel Diffusers Frame Types L, SP, and TL

If the ceiling module is more than 75mm larger than the neck size of the diffuser in either or both dimensions, a module-sized extended panel will be added.

Type L - Lay-In T-Bar Frame



Dimensions			
Nominal Unit Size	Actual Neck Dimension 'A'	Minimum Opening Dimension 'B'	Overall Flanges Dimension 'C'
150 x 150	146 x 146	228 x 288	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
525 x 525			

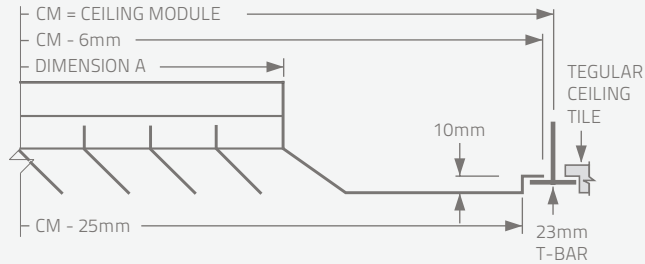
Dimensions are in mm.



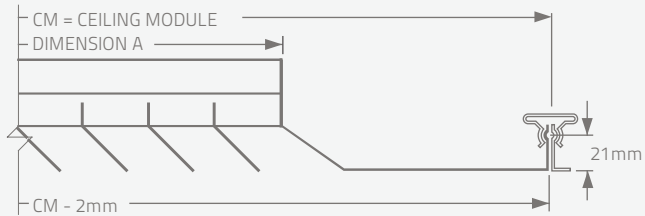
Model 6500

Frame Types

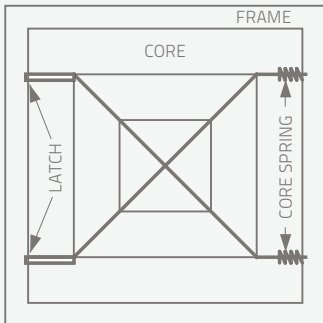
Type TL Tegular Lay-in Frame



Type M Metal Pan (Snap-in)



4 way diffusers can be blanked off using a blanking quadrant that is clipped to the rear of the diffuser core.



Removable Core

- Standard feature of Models 6500, 6550.
- 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.

Installation

Remove transportation clips once diffuser has been installed.

Model 6500

Standard Core Styles

	STANDARD SQUARE	SPECIAL OPTIONAL RECTANGULAR	CORE	SIZES AVAILABLE	
				MINIMUM	MAXIMUM
→ 1-WAY			1S	150 x 150	900 x 900
			1A	225 x 150	900 x 835
			1B	225 x 150	900 x 835
↕ 2-WAY			2S	150 x 150	900 x 900
			2A	225 x 150	900 x 835
			2B	225 x 150	900 x 835
↙↘ 2-WAY CORNER			2G	150 x 150	900 x 900
			2C	225 x 150	900 x 835
			2D	225 x 150	900 x 835
			2E	225 x 150	900 x 835
			2F	225 x 150	900 x 835
			2F	225 x 150	900 x 835
↕↔ 3-WAY			3A	150 x 150	900 x 900
			3A1	225 x 150	900 x 825
			3A2	225 x 150	900 x 825
			3B	300 x 150	900 x 450
			3C	225 x 150	900 x 825
			3E	375 x 150	900 x 375
↕↔↕ 4-WAY			4A	150 x 150	900 x 900
			4B	225 x 150	900 x 825
			4C	300 x 150	900 x 750
			4E	375 x 150	900 x 675
			4E	375 x 150	900 x 675

Contact factory for special core configurations.

Dimensions are in mm.

Notes:

1. Duct sizes are available in 75mm increments.
2. Unless otherwise specified, the "x" dimension on 3C and 4E patterns will be such that cataloged flow division is obtained.
3. Patterns are shown in plan view (looking down into inlet).





How To Specify or To Order

Example: Pattern Ceiling Diffusers - Model Series 6500

6500 - OA - 300x300 - 600x600 - L - AW - 4A - SQR

Model

- Fixed Pattern 6500

Damper

- No Damper —
- Aluminium Damper OA

Neck Size (W x H)

Panel Size (Types L, SP, M, TL and F Only)

Metric mm

- 300 x 300
- 500 x 500
- 600 x 300
- 600 x 600
- 1200 x 600

Frame Type

- Surface Mount Flat S
- T-Bar Lay-In L
- Tegular (Drop Face) TL

Accessories

- None (default) —
- Square to Round Transition Collar (specify) SQR
- Radial Sliding Blade Damper 4250
- Radial Opposed Blade Damper 4275
- Butterfly Damper 4675

Core Style

- See Below.

Finish

- RAL 9010 semi gloss white AW
- Aluminium AL
- Special SP

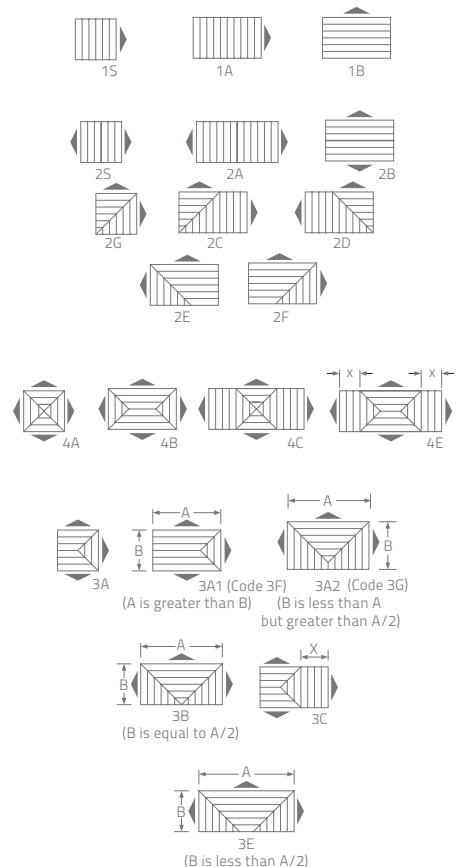
Suggested Specification:

Ceiling air diffusers shall be Advanced Air Model Series 6500 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 38mm. Visible screws or mechanical fasteners for core attachment shall not be acceptable.

Notes:

1. Consult text as to limitations of panel, neck size and core style combinations.

Core Style Chart



Performance Data

Models 6500 ■ Square Louvre Faced Diffuser

Nominal Neck Size	Blow Patterns	Neck Velocity m/s Discharge Velocity (m/s) Pressure Drop Pa	1	1.25	1.6	1.75	2	2.5	3	3.5	4
			2	2.6	3	3.6	4	5	6	7	8
			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	<16	<16	<16	<16	<16	16	20	24	28
		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	1.8-2.8
			0.6-0.8	0.6-0.8	0.7-1.3	1.0-1.6	1.1-1.7	1.4-2.1	1.7-2.6	2.0-3.0	2.3-3.4
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
		Throw (m)	0.7-1.0	0.8-1.3	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
			0.8-1.3	1.1-1.6	1.3-1.9	1.5-2.2	1.7-2.6	2.1-3.2	2.6-3.8	3.0-4.6	3.4-6.1
300 x 300		Flowrate L/S	90	112.5	135	157.5	180	225	270	315	380
		NC Level	<15	<15	<15	<15	17	23	28	33	36
		Throw (m)	0.8-1.4	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	3.7-5.5
			1.1-1.7	1.4-2.1	1.7-2.5	2.0-3.0	2.3-3.4	2.8-4.3	3.4-5.1	4.0-6.0	4.6-6.9
375 x 375		Flowrate L/S	140	176	210	246	280	360	420	490	580
		NC Level	<15	<15	<15	16	19	25	30	33	39
		Throw (m)	1.2-1.7	1.5-2.2	1.7-2.6	2.0-3.1	2.3-3.5	2.8-4.4	3.6-5.2	4.1-6.1	4.7-7.0
			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	6.0-7.5	5.7-8.6
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
		Throw (m)	1.4-2.1	1.7-2.6	2.1-3.1	2.4-3.7	2.8-4.2	3.6-6.2	4.2-6.3	4.9-7.3	5.6-8.3
			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	5.8-10.2

Selection Guidelines

Throws are too 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)

NC Level	Factor
Pressure Drop	+10 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	Extract Pressure Drop (Pa)	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:

1. Throw values are given for terminal velocities of 0.5m/s - 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%
2. The sound pressure levels stated are based on a 10dB sound absorption with diffuser opposed blade damper in the fully open position.

