Aircell Diffusers

2300 / 2600

Introduction

The Waterloo Aircell 2000 series presents a contemporary diffuser style combining high performance and robust construction with the significant cost advantage of injection moulded engineering polymers.
The diffusers are available in 2 sizes to integrate with standard 300mm or 600mm lay-in or concealed 'T' ceiling systems.

Product Description

2300 300 sq diffusers
2600 600 sq diffusers
O Black polymer opposed blade damper
P Black polymer plenum box
F Fixing kit
B Blanking kit

Features

- Contemporary style designed for visual integration with luminaires and other ceiling elements
- Ease of installation with concealed, single point fixing into P series plenum or rigid ducting
- Full range of integrated accessories available including directional or core blanking kits, universal plenums and opposed blade dampers

Finishes

Diffusers are self-coloured white.
Damper and plenum are self-coloured black

Weights

2300 0.6 kg
2600 3.2 kg

Authority

Patents: 2221530, 2223840, 8818337 others pending
Registered Designs: 1052716, 106216
Fire Rating: BS476 Pt 7 Class 0. BS476 Pt 5, P Rating.
Maximum supply air temperature must not exceed 50°C.

Selection Criteria

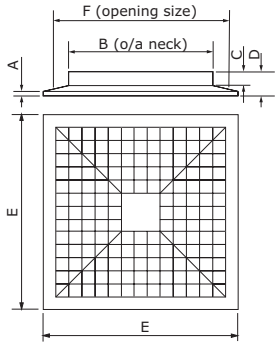
Ceiling Height 2.7 m
Temperature Differential - 10K
Average room velocity v_r 0.25 m/s
Noise level = peak level on noise rating curves based on Sound Power Level less 8dB room absorption
All performance data includes the plenum box

Selection Example

Aircell 2300-4

Air flow rate	75 l/s
Throw	1.1 m
Static Pressure Loss	17 Pa
Noise level	27 dBA

Note: Sizes are overall



Aircell 2000	A	B	C	D	E	F
2300	3	229	41	53	296	269
2600	6	459	31	56	596	546

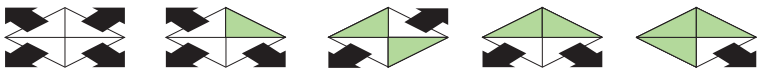
Performance Table

2000 Air Volume			Supply 2300				Supply 2600				Extract	
l/s	m³/h		4 way	3 way	2 way	1 way	4 way	3 way	2 way	1 way	2300	2600
25	90	T (m)	0.6	0.7	0.8	1.7						
		P_s	2	5	8	28					4	
		L_w	-	-	-	35					-	
50	180	T (m)	0.8	1.4	1.7					0.9		
		P_s	8	17	28					10	15	
		L_w	-	25	35					25	24	
75	270	T (m)	1.1	1.7	2.3					1.8		
		P_s	17	28	60					22	30	
		L_w	27	35	46					36	33	
100	360	T (m)	1.7	2.2					0.9	2.5		
		P_s	28	50					10	40	50	
		L_w	35	43					25	43	40	
125	450	T (m)	2.0	2.5			0.3	0.7	1.4			
		P_s	44	66			4	8	15		75	
		L_w	41	48			-	22	31		45	
150	540	T (m)	2.3				0.5	0.9	1.8			
		P_s	60				6	10	22		100	6
		L_w	46				-	25	36		50	-
200	720	T (m)					0.9	1.6	2.5			
		P_s					10	18	40			12
		L_w					25	33	43			-
250	900	T (m)					1.4	2.1				
		P_s					15	28				20
		L_w					31	38				25
300	1080	T (m)					1.8	2.5				
		P_s					22	40				29
		L_w					36	43				32
350	1260	T (m)					2.2					
		P_s					30					41
		L_w					40					37
400	1440	T (m)					2.5					
		P_s					40					54
		L_w					43					42

Order Example

Aircell 2300/O300/P300/F300/B300
Type
Damper
Plenum
Fixing Kit
Blanking Kit

Blanking Arrangements



4 way 3 way 2 way 2 way 1 way

Aircell Diffusers

Controls and Fixing Options

Performance

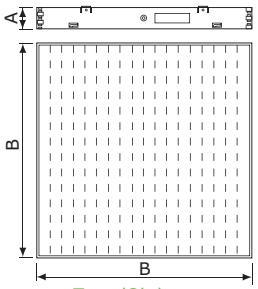
The unique integrated design of the plenum, damper and diffuser assembly has been specifically developed to promote smooth flow lines, ensuring an exceptional aerodynamic and acoustic performance.
Aircell products can be used in any air distribution system where temperatures do not exceed 50° C.

Opposed Blade Damper Type 'O'

The 'O' series opposed blade damper is designed to integrate with the plenum and diffuser range to provide a simple means of flow regulation from the diffuser face.
The unit is designed to snap-fit into the universal plenum, or alternatively can be easily screw or rivet fixed into steel ducting using the inbuilt mounting lugs.
Manufactured in black engineering grade polymer, the damper is inherently smooth and positive in operation.

Weights

O300 0.5 kg, O450 1.0 kg, O600 2.2 kg

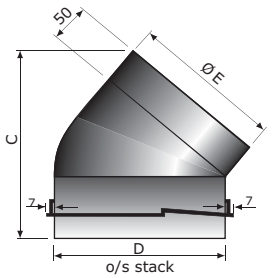


Type 'O' damper

Plenum Type 'P'

The 'P' series plenum is aerodynamically profiled to provide ideal flow conditions with either top or side entry duct arrangements.
Manufactured in black engineering grade polymer, the design incorporates features such as internal guide vanes to reduce air turbulence, and snap-in locks to retain the opposed blade damper and diffuser mounting bar.
The plenum can be fixed to the ceiling grid or suspended by drop rods from the slab. Either fixing method is carried out using patented mounting brackets which simply slide into the plenum retaining slots.

Model	A	B	C	D	E
O300	41	215	-	-	-
O450	41	290			
O600	41	440	-	-	-
P300	-	-	245	224	197
P450	-	-	277	299	247
P600	-	-	366	449	397



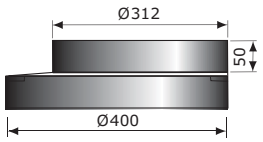
Type 'P' plenum

Weights

P300 0.7 kg, P450 1.0 kg, P600 1.7 kg

Neck Reducer R600

The R600 snap-fit neck reducer is available as an option to convert the P600 plenum spigot from 397 Ø to 312 Ø.



R600 neck reducer

Aircell Diffusers

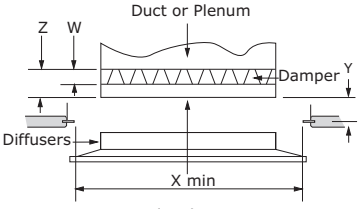
Installation and Specification

Installation

Particular attention has been paid to the installation method to minimise site fixing time. The plenum is easily installed using the slide-in brackets as support legs from above the ceiling 'T', or with drop rods from the slab. The damper and diffuser support bar can then be clipped in place, with the diffuser finally being secured by the single centre fixing screw.

Specification

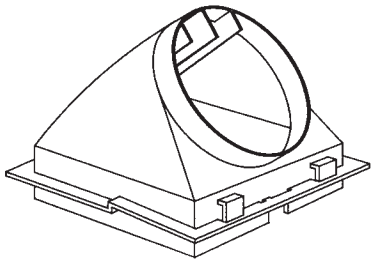
Aircell are manufactured from injection moulded engineering polymer, in self-coloured white as standard. Overall diffuser size shall be nominally 300 or 600mm to suit standard ceiling grids.
A captive centre line polymer fixing bolt and metal fixing bracket kit shall be provided.
Directional blanking is obtained with snap-in plates to provide 1, 2 or 3 way air patterns or reduced area blanking.
Opposed blade dampers (type 'O') is manufactured from injection moulded engineering polymer in self-coloured black as standard, operable through the diffuser face.
Plenum box (type 'P') is manufactured from injection moulded engineering polymer of a universal design and in self-coloured black, incorporating guide vanes and bracket location slots.

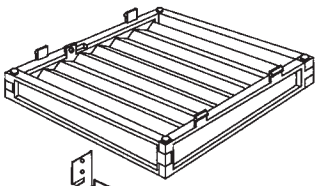


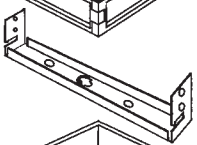
W = Damper depth
X = Ceiling opening (+5 -0)
Y = Face of T bar to underside of Duct or Plenum (+0 -10)
Z = Underside of duct to underside of damper

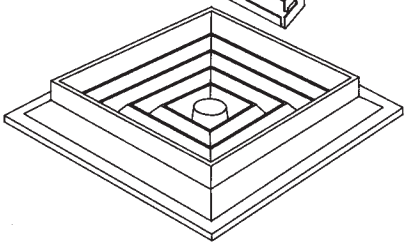
Model	W	X	Y	Z
2300	45	269	41	88
2600	45	546	41	88

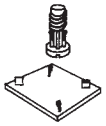
Note:
Specially designed clips mean that you can use a type 'O' damper with a diffuser without a universal Plenum.


Universal plenum type P


Face operated opposed blade damper type O


Diffuser fixing bracket type F - for fixing plenum or duct


Aircell diffuser


Captive fixing bolt

Removable core