

Linear Slot Diffusers

CS-F / CS-P / CS-J / CS-M / CS-S&E / CS-TW / CS Plank

Introduction

The OC Waterloo Small Format Continuous Slot Diffuser series (CS), has for many years set the industry standard in terms of highest aerodynamic and acoustic performance. The CS range is ideally suited to variable volume applications due to its excellent low flow rate air diffusion characteristics and high air handling capacity. The novel air pattern control element design allows any air diffusion to vertical projection, without any change in the facial appearance.

CS diffusers are suitable for all commercial and industrial projects requiring single or multi-slot diffusers for ceilings, bulkheads or sidewall supply and exhaust.

Diffusers are manufactured from aluminium alloy extrusions fixed or clipped to cross stays allowing easy removal of internal vanes and pattern control elements.

Product Description

- CS-F** Standard 28mm flange for general purpose
- CS-P** Narrow 18mm flange for flush / recess mounting
- CS-J** Medium 25mm flange for general purpose
- CS-M** For Tegular 30mm, 16mm & 8mm drop fitting
- CS-S&E** Supply and Exhaust (or dual supply) system diffuser
- CS-TW** Extra wide flange
- CS Plank** Plank replacement unit (Refer to Head Office for details)
- Ends** Standard end caps
- MEC** Mitred end caps
- BP** Blanking plate - supplied loose in 1250 lengths (for fitting on site by others)
- ED** Equalising deflector

Features

- High air capacity
- Wide dynamic range perfect for VAV systems
- Strong coanda effects for good low flow performance
- Fully adjustable air pattern from horizontal to vertical
- Hidden flow control vanes for consistent facial appearance
- Continuous joint detail for ceiling integrations

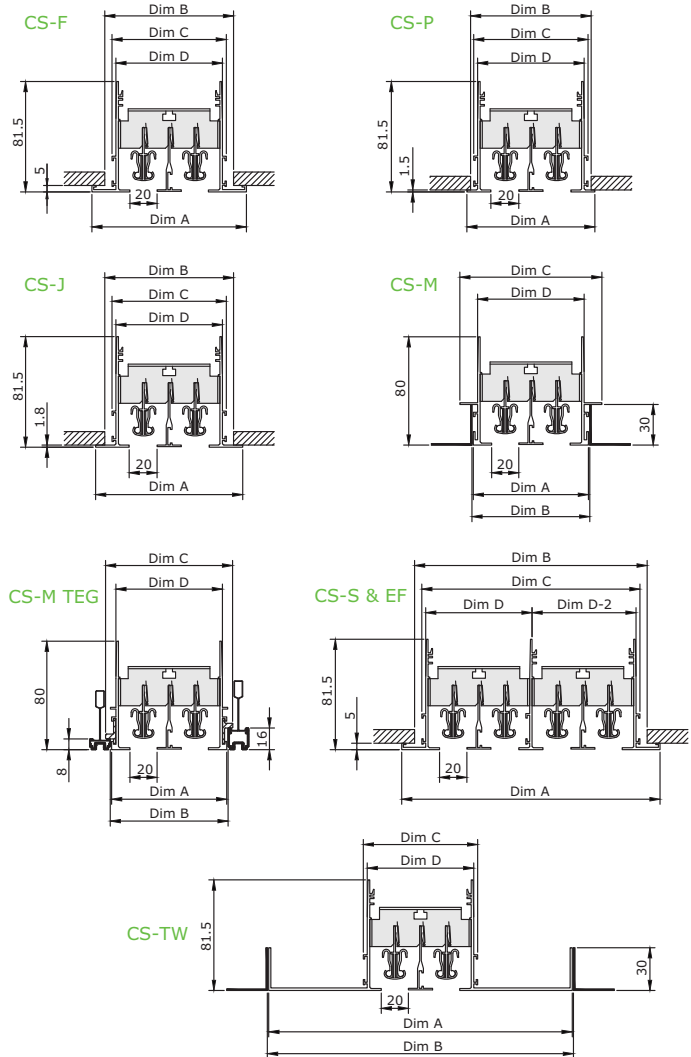
Finishes

- PPG9010 (RAL 9010 Gloss - 80% Gloss White)
- PPM9010 (RAL 9010 Matt - 20% Gloss White)
- PPM9006 (RAL 9006 Matt - 30% Gloss Silver)
- Other colours available on request

Pattern control elements are supplied with the same finish as the frame (standard) but can be supplied in black.

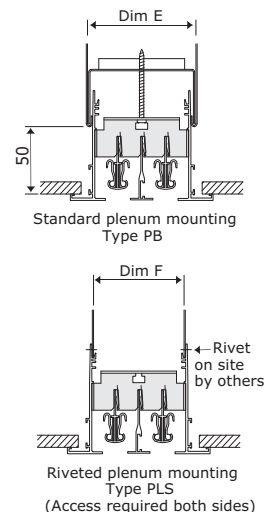
Sizes

Standard from 1 to 8 slots wide in 1500mm long sections (excluding flanged ends).
Continuous diffuser lengths are supplied in sections for butt jointing on site. (Alignment plates supplied)



Style	Weights kg/m							
	No of slots							
CS-F	1.9	2.7	3.5	4.3	5.1	5.9	6.7	7.5
CS-P	1.8	2.6	3.4	4.2	5.0	5.8	6.6	7.4
CS-J	1.9	2.7	3.5	4.3	5.1	5.9	6.7	7.5
CS-M	1.8	2.6	3.4	4.2	5.0	5.8	6.6	7.4
CSM -TEG	1.8	2.6	3.4	4.2	5.0	5.8	6.6	7.4
CS-S & E-F	2.0	2.8	3.6	4.4	5.2	6.0	6.8	7.6
CS-TW	2.6	3.4	4.2	5.0	5.8	6.6	7.4	8.2

	Type PB	Type PLS
Slots	Dim E	Dim F
1 Slot	46	34
2 Slot	84	72
3 Slot	122	110
4 Slot	160	148
5 Slot	198	186
6 Slot	236	225
7 Slot	274	263
8 Slot	312	301



ORDER EXAMPLE

CS-F/3000/S1/PPM9010/ENDS

Type _____

Length _____

No of Slots _____

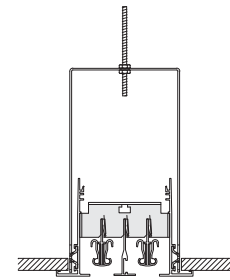
Finish _____

Ends caps _____

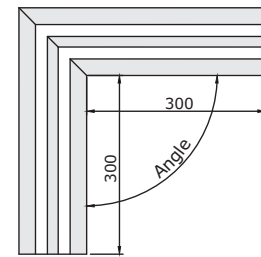
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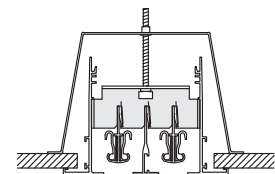
Diffuser Type	Dimension Reference	No of slots							
		1	2	3	4	5	6	7	8
CS-F	Dim A = O/A Face Flange Width	76	114	152	190	228	266	304	343
	Dim B = Ceiling Cutout Width	57	95	133	171	209	247	285	324
	Dim C = O/A Stack Width	45	84	122	160	198	236	274	312
	Dim D = Outside Stack Width	40	79	117	155	193	231	269	307
CS-P	Dim A = O/A Face Flange Width	56	95	133	171	209	247	285	323
	Dim B = Ceiling Cutout Width	50	89	127	165	203	241	279	317
	Dim C = O/A Stack Width	45	84	122	160	198	236	274	312
	Dim D = Outside Stack Width	40	79	117	155	193	231	269	307
CS-J	Dim A = O/A Face Flange Width	70	108	146	184	222	260	298	337
	Dim B = Ceiling Cutout Width	57	95	133	171	209	247	285	324
	Dim C = O/A Stack Width	45	84	122	160	198	236	274	312
	Dim D = Outside Stack Width	40	79	117	155	193	231	269	307
CS-M	Dim A = O/A Face Flange Width	46	84	122	160	198	236	274	313
	Dim B = Ceiling Cutout Width	48	86	124	162	200	238	276	315
	Dim C = O/A Stack Width	67	105	143	181	219	257	295	334
	Dim D = Outside Stack Width	40	79	117	155	193	231	269	307
CS-M TEG	Dim A = O/A Face Flange Width	46	84	122	160	198	236	274	313
	Dim B = Ceiling Cutout Width	48	86	124	162	200	238	276	315
	Dim C = O/A Fitting Lug Width	56	94	132	170	208	246	284	323
	Dim D = Outside Stack Width	40	79	117	155	193	231	269	307
CS-S & E-F	Dim A = O/A Face Flange Width	-	114	152	190	228	266	304	343
	Dim B = Ceiling Cutout Width	-	95	133	171	209	247	285	324
	Dim C = O/A Stack Width	40	79	117	155	193	231	269	-
	Dim D = Outside Stack Width	-	84	122	160	198	236	274	312
CS-TW	Dim A = O/A Face Flange Width	184	223	261	299	337	375	413	451
	Dim B = Ceiling Cutout Width	185	224	262	300	338	376	414	452
	Dim C = O/A Stack Width	45	84	122	160	198	236	274	312
	Dim D = Outside Stack Width	40	79	117	155	193	231	269	307



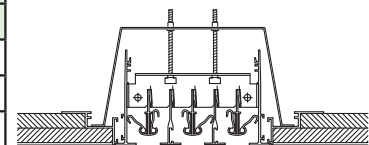
Dummy hanging bracket fixing available for 1 to 8 slot



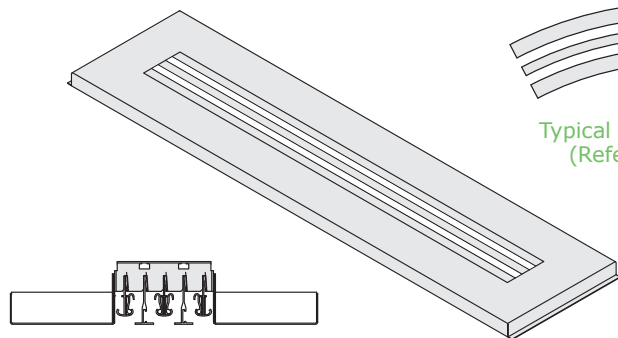
Standard CS Mitred Corner



Plasterboard bracket fixing available for 1 to 6 slot

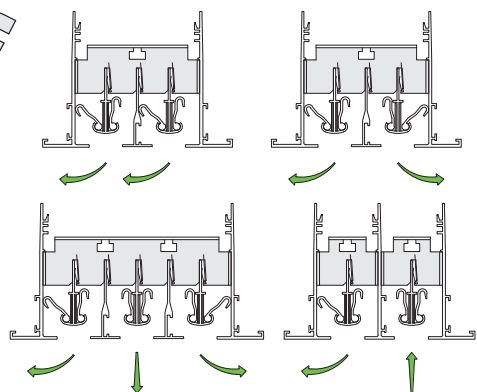


CSP Plaster Frame

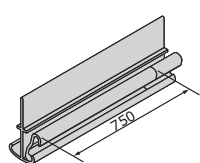


Typical CS curved section (Refer to head office)

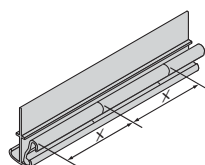
CS Plank (Typical size is 1200 x 150 with internal 2 slot or 1200 x 300 with internal 3/4 slot)



Typical PCE Settings

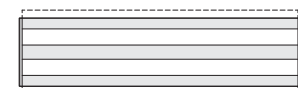
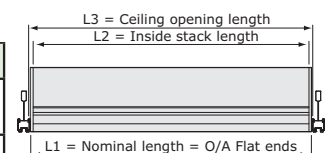


Standard
Diffusers are supplied with flow control vanes in lengths up to 750mm (to suit diffuser length).



Special
To provide finer control of the air pattern, flow control vanes may be supplied in any specified length.

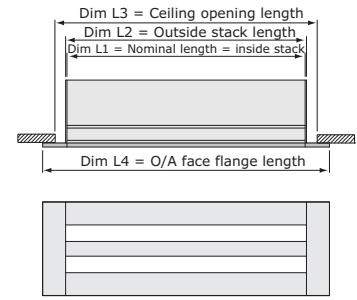
FLAT END CAPS			
Diffuser Style	Dim L1	Dim L2	Dim L3
CS-M	Nominal Length	Nominal Length - 6	Nominal Length + 2
CS-M TEG	Nominal Length	Nominal Length - 6	Nominal Length + 2



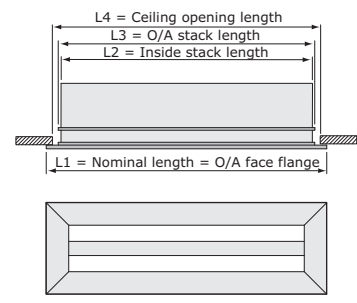
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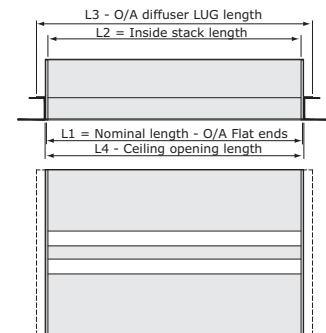
STANDARD END CAPS				
Diffuser Style	Dim L1	Dim L2	Dim L3	Dim L4
CS-F	Nominal Length	Nominal Length + 3	Nominal Length + 19	Nominal Length + 56
CS-P	Nominal Length	Nominal Length + 3	Nominal Length + 19	Nominal Length + 36
CS-J	Nominal Length	Nominal Length + 3	Nominal Length + 19	Nominal Length + 53
CS-S & E-F	Nominal Length	Nominal Length + 3	Nominal Length + 19	Nominal Length + 56



MITRED END CAPS				
Diffuser Style	Dim L1	Dim L2	Dim L3	Dim L4
CS-F	Nominal Length	Nominal Length - 39	Nominal Length - 30	Nominal Length - 19
CS-P	Nominal Length	Nominal Length - 20	Nominal Length - 11	Nominal Length - 7
CS-J	Nominal Length	Nominal Length - 33	Nominal Length - 24	Nominal Length - 12
CS-S & E-F	Nominal Length	Nominal Length - 39	Nominal Length - 30	Nominal Length - 19



FLAT END CAPS				
Diffuser Style	Dim L1	Dim L2	Dim L3	Dim L4
CS-TW	Nominal Length	Nominal Length - 6	Nominal Length + 25	Nominal Length + 2



Length corrections					
Active Length (m)	0.5	1.25	2.0	2.5	3.0
dBA Reduction	-8	-5	-3	-2	0
Throw multiplier	0.45	0.65	0.8	0.9	1.0

Note: Refer to Waterloo website for typical installation guide

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Selection Criteria

Ceiling height 2.75m, increase throw by 1m for each 1m increase in ceiling height. Horizontal diffusion is based on a cooling differential of 11°C.

For isothermal diffusion apply a factor of 1.1 to throw values.

For heating in horizontal diffusion apply a factor of 1.2 to throw values.

Vertical projection is based on a heating differential of 11°C.

Noise level is based on diffuser sound power level less 8dB room absorption.

V_r = mean room air velocity (m/s)

V_t = terminal velocity of supply air jet (m/s)

Selection Example CS2/1800

Total air flow rate 180 l/s = 100 l/s/m

1 Way Throw

Minimum throw 2.8m (3.5 x 0.8 factor)

Maximum throw 7.2m (9.0 x 0.8 factor)

Pressure drop 25Pa

Noise level 34dBA (37dBA - 3dB length correction)

2 Way Throw

Minimum throw 2.0m (2.5 x 0.8 factor)

Maximum throw 5.2m (6.5 x 0.8 factor)

Pressure drop 25Pa

Noise level 30dBA (33dBA - 3dB length correction)

Performance Nomogram

