

Architectural Shadowline Air Diffusion



PSD Series Perimeter Slot Diffuser



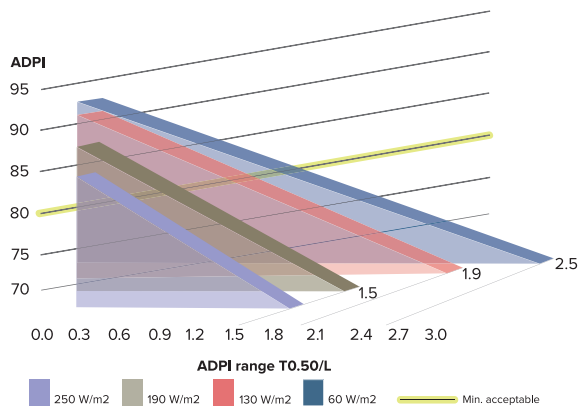
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AIR MANAGEMENT SOLUTIONS

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In cooling mode, diffuser selection should be based on the ratio of the diffusers throw to the length of the zone/area being supplied, at all design airflow rates, to achieve an acceptable Air Diffusion Performance Index (ADPI). In heating mode, the diffuser to room temperature difference (Δt) should not exceed 15°C, to avoid excessive temperature stratification.

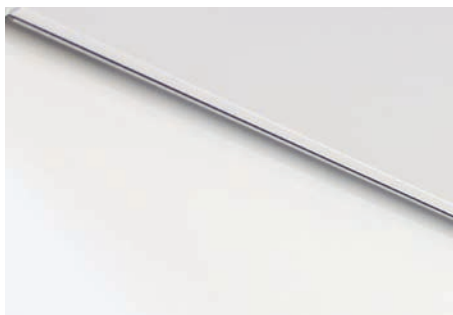
ASHRAE has defined a term for describing the mixing of supply and room air as Air Change Effectiveness, or ACE. This term is used in both ASHRAE Standard 129, the Method of Test for Air Change Effectiveness, and in ASHRAE Ventilation Standard 62.1-2013. When a high ADPI is measured, the ACE is always high as well. Holyoake have simplified ADPI analysis by combining a diffuser's throw performance with a $l/s/m^2$ analysis and diffuser spacing to produce an ADPI Performance Envelope graph.



- ┌ Blends seamlessly into the ceiling
- ┌ No visible flange
- ┌ Suitable for plaster ceilings and walls
- ┌ White, black and LED options
- ┌ Up to 5.8m continuous individual segments
- ┌ ADPI Greensmart performance graphs

Perimeter Slot Diffuser

SEAMLESS INTEGRATION



PSD White | Natural Anodised



PSD Black | Black Anodised



PSD LED Lighting



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Perimeter Slot Diffuser PSD

A unique new product from Holyoake is the perimeter slot diffuser (PSD). The PSD creates a stunning negative detail around the perimeter of the room while providing unobtrusive, draftless air distribution over a wide range of airflows.

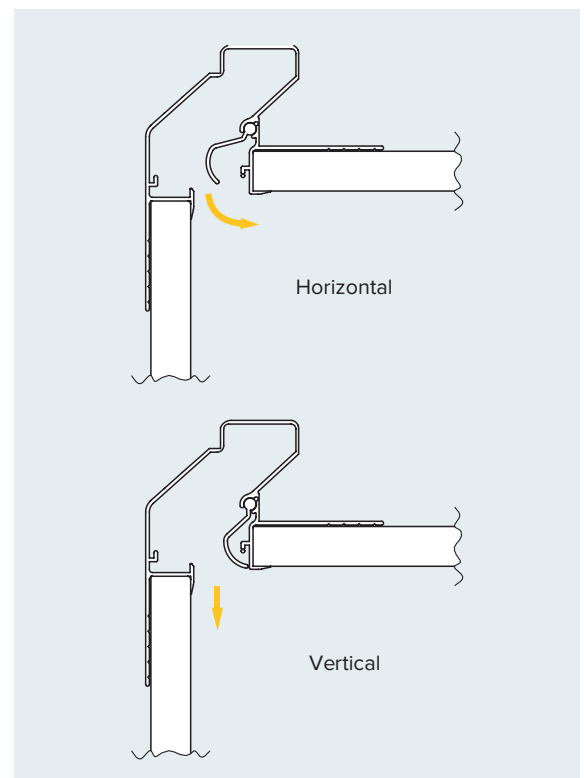
Features

- A unique new architectural product.
- Standard universal pattern control is aluminium, black or natural anodised for best visual effect and can be adjusted to give full control of air pattern.
- For use with diffuser Adapter PSDAI, plenum supply or linear duct.
- Specially designed clip-on supply adapter with foam seal requires no fixings.
- Straightforward installation with no plastering required.
- Accepts 10 or 13mm plasterboard via punch down tabs.
- Snap out tabs on rear of diffuser for active airflow section.
- Up to 5.8 metres single piece length, but can be joined to adjacent lengths to provide seamless look.
- Mitred corner available to create continuous negative detail around room perimeter.
- Optional LED ribbon light strip.

Due to policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

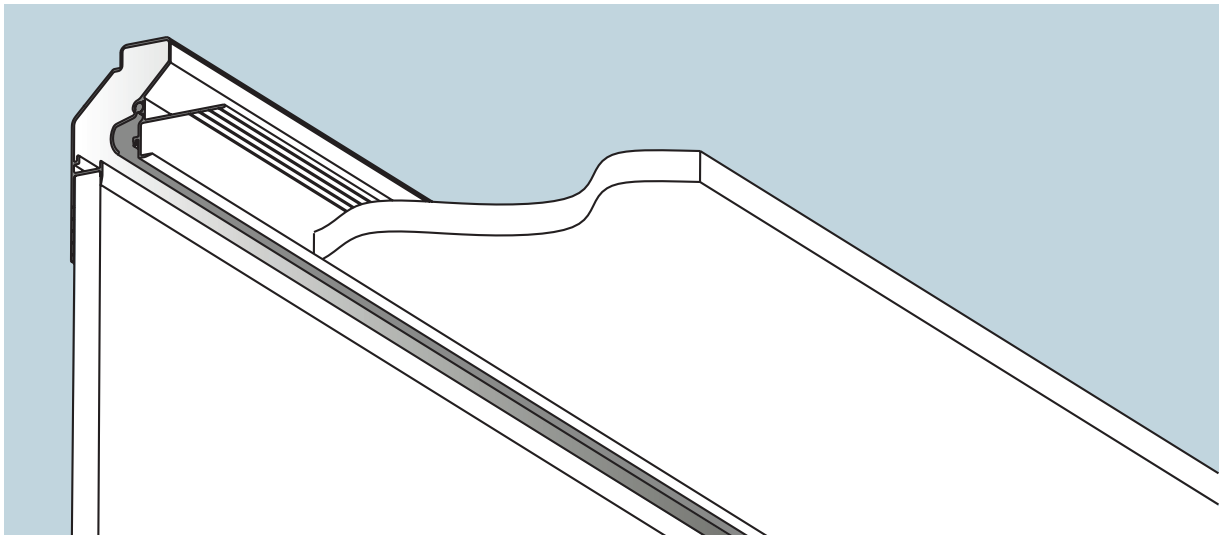


Typical PSD Throw Options



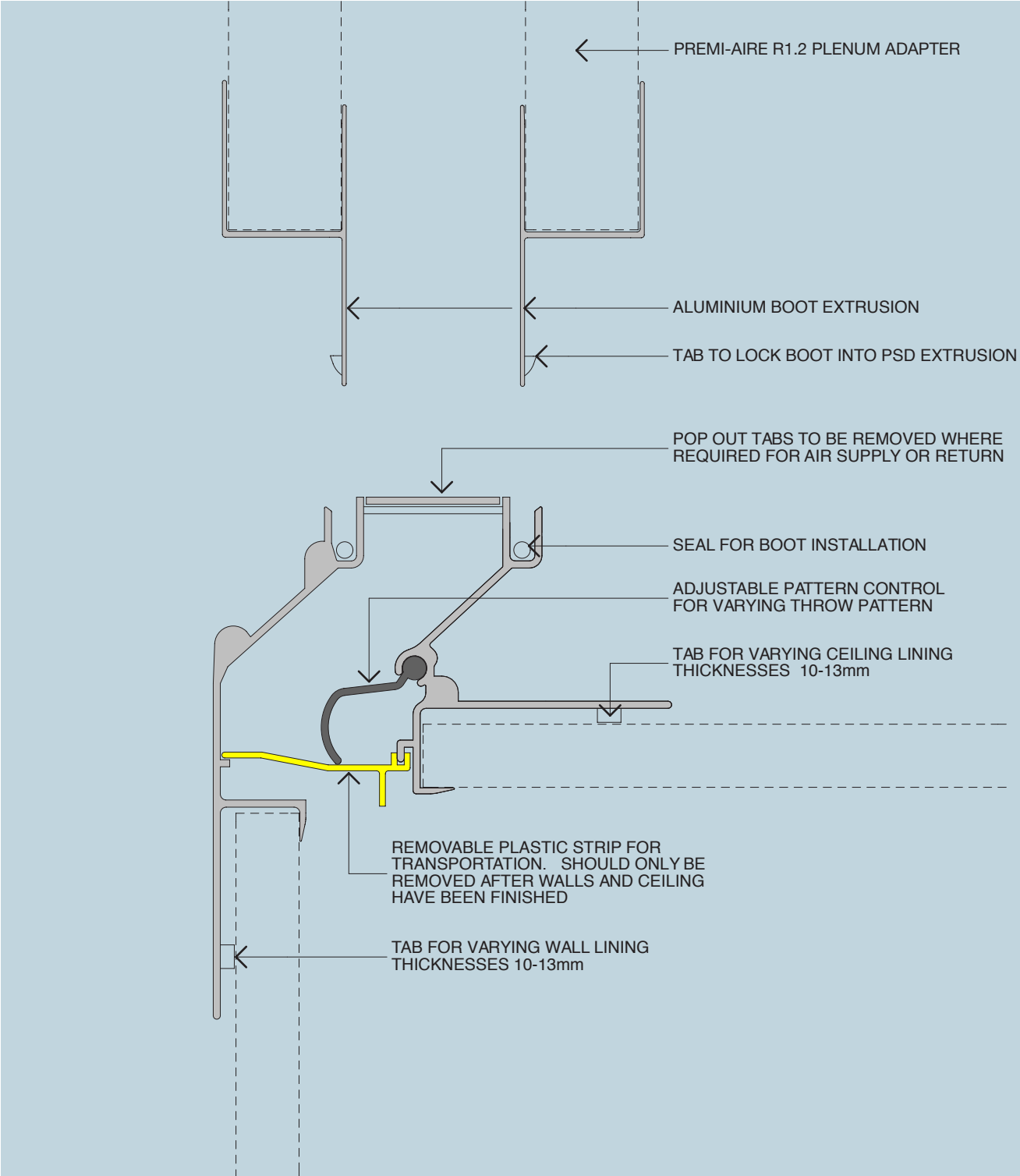


Model PSD

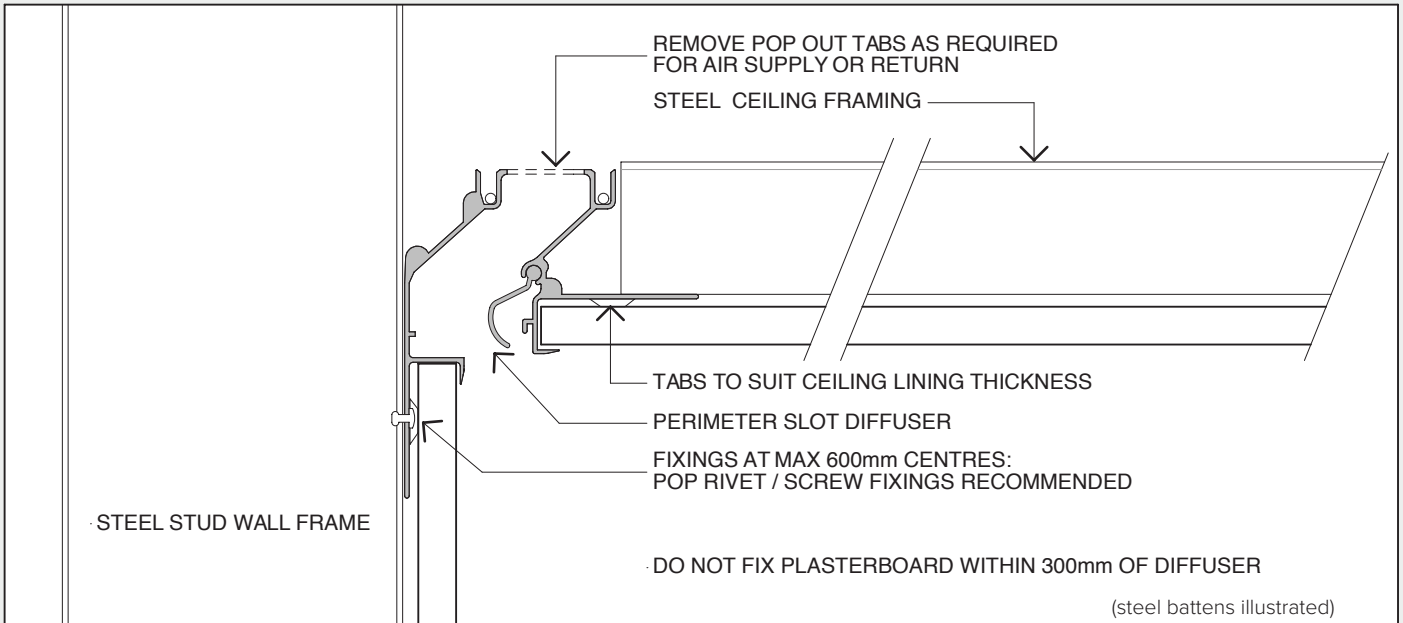


Perimeter Slot Diffuser

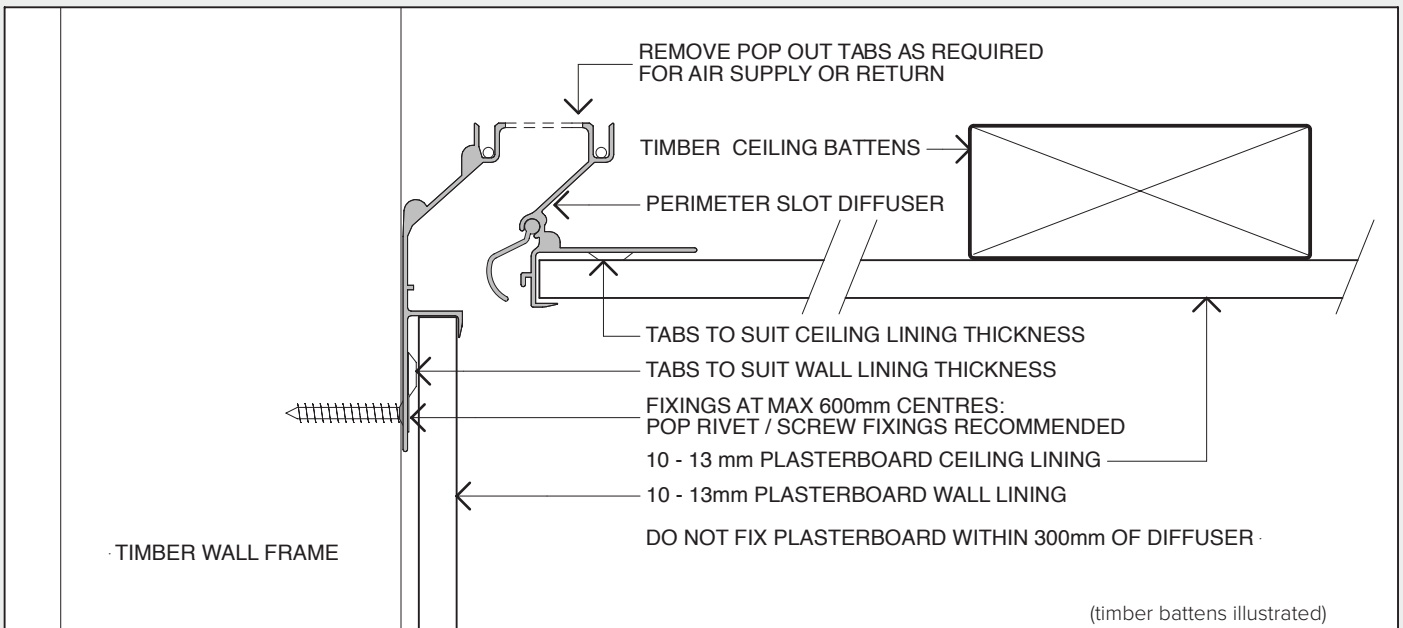
PSD



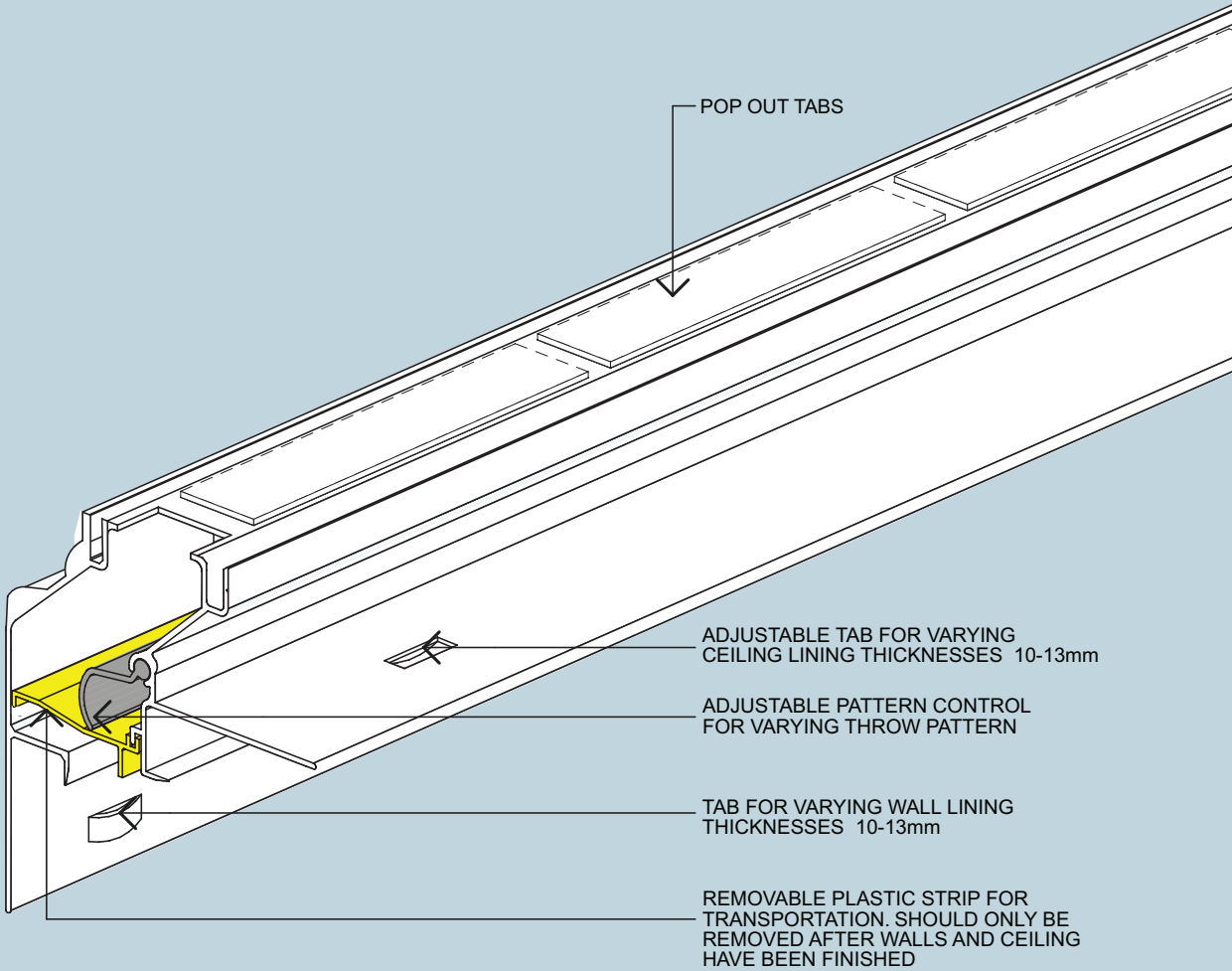
Installation - Battens perpendicular to diffuser



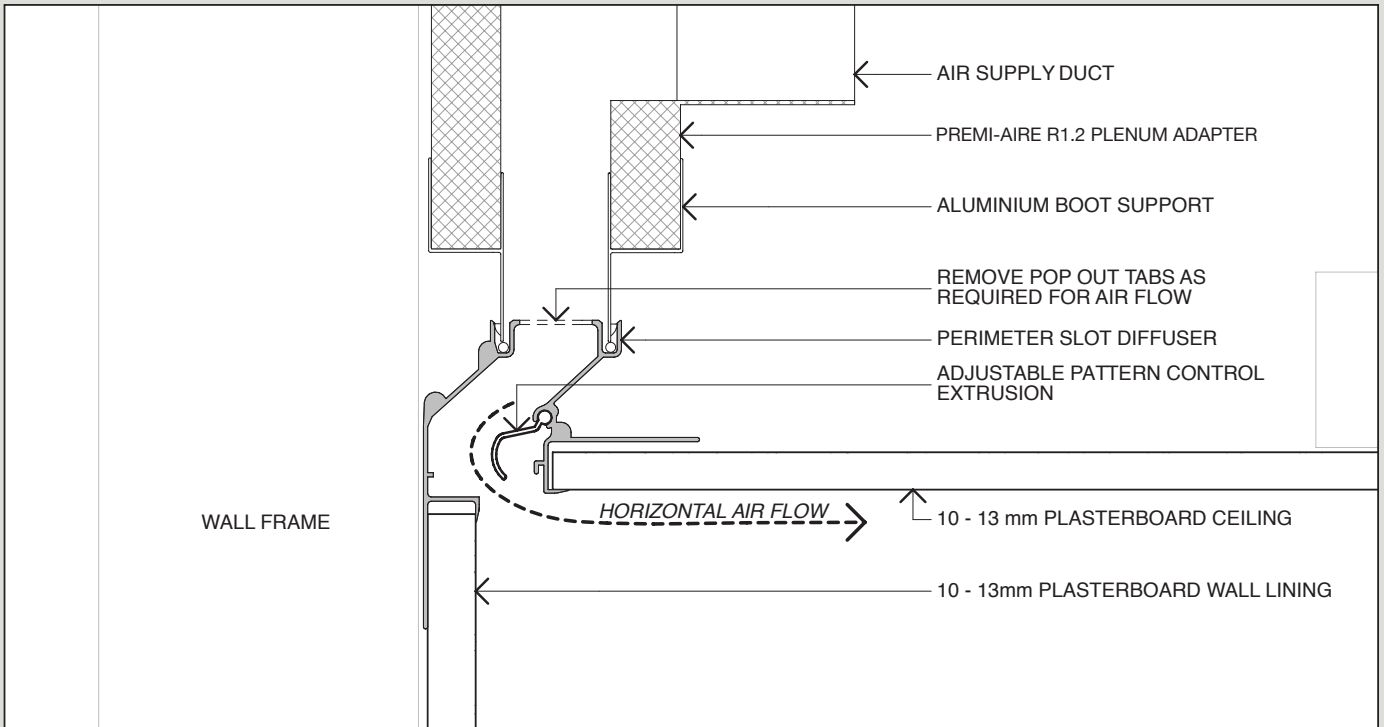
Installation - Battens parallel to diffuser



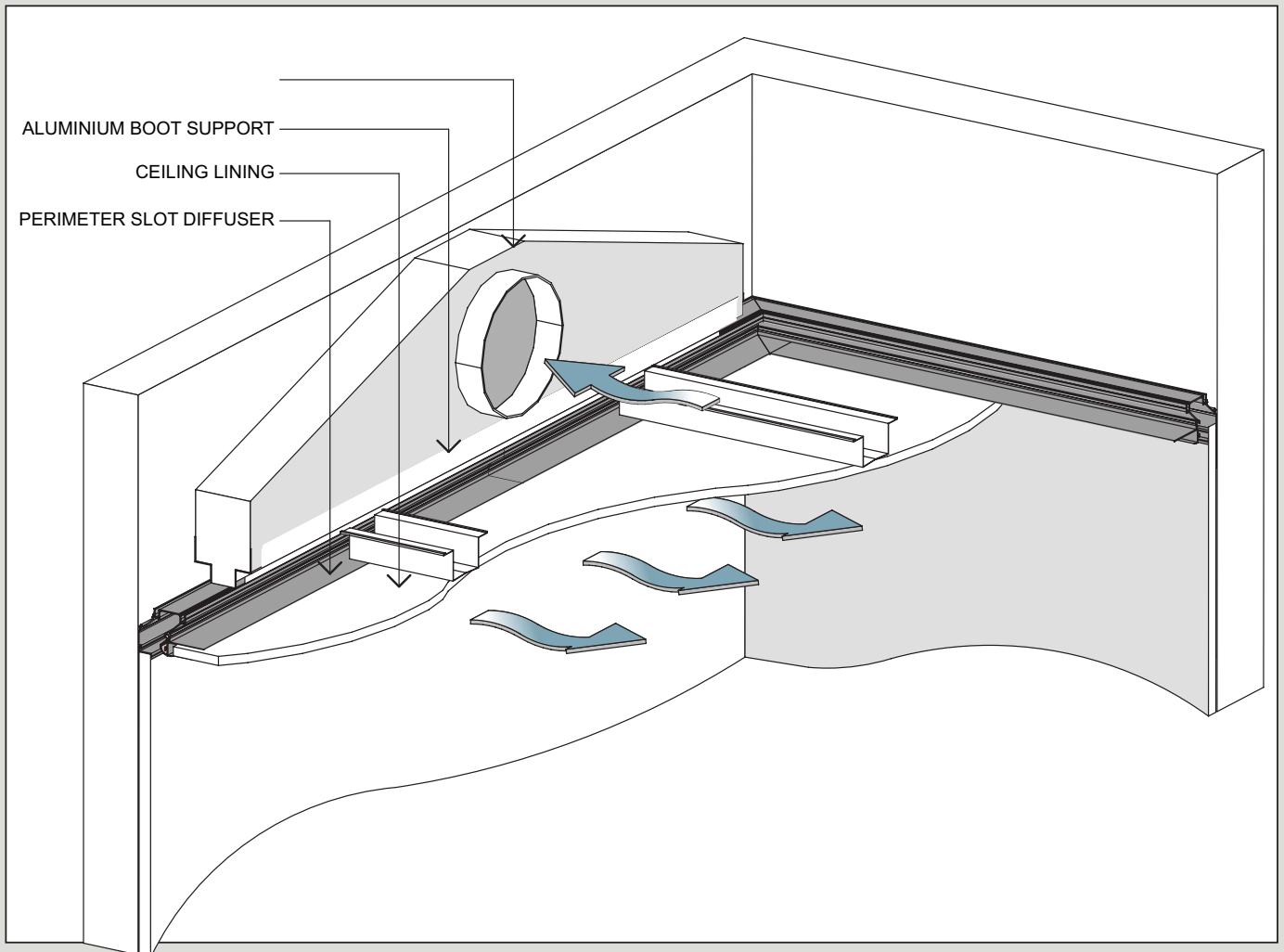
Perimeter Slot Diffuser PSD



Section Detail



Air Supply from Ceiling Plenum



Perimeter Slot Diffuser

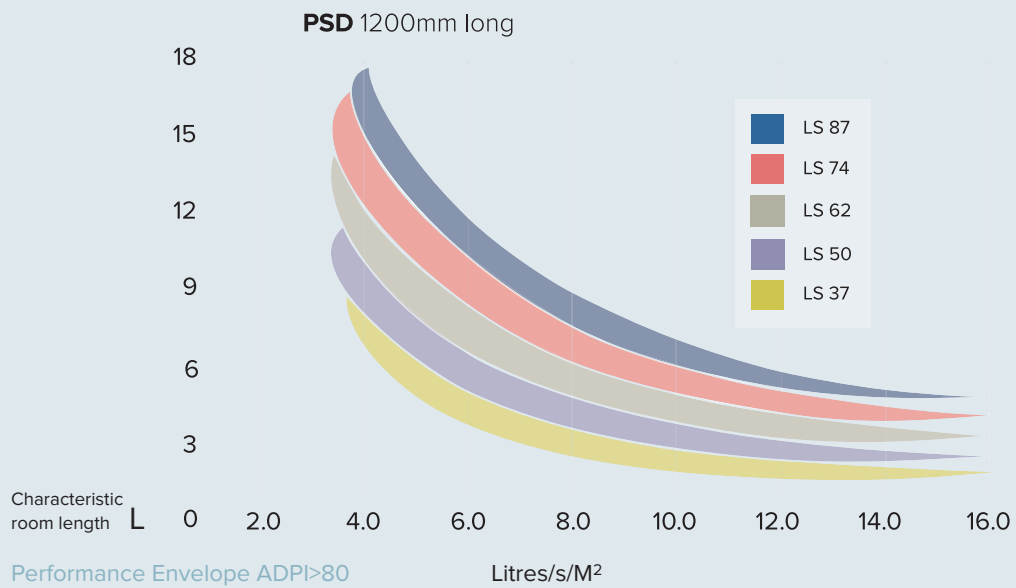
PSD



Aerodynamic performance



ADPI >80



Supply Air Model PSD with PSDAI Supply Adapter

Capacity m ³ /s		0.047	0.057	0.066	0.076	0.085	0.094	0.104	0.113	0.123	
Projection, m	H	1.2-3.4	1.5-3.7	1.8-4.0	2.1-4.3	2.4-4.6	2.7-4.9	3.1-5.2	3.1-5.2	3.1-5.6	
	V	0.6-1.8	0.9-2.1	0.9-2.1	0.9-2.4	1.2-2.4	1.2-2.7	1.5-2.7	1.5-2.7	1.8-3.1	
Nom. Length	Spread m	H	1.8-4.9	2.1-5.6	2.7-5.8	3.1-6.4	3.7-6.7	4.0-7.3	4.6-7.6	4.6-7.6	4.6-8.2
		V	0.9-2.4	1.2-2.7	1.2-2.7	1.2-3.1	1.5-3.1	1.5-3.7	1.8-3.7	1.8-3.7	2.4-4.0
0.9m	TP	42	60	80	105	134	162				
	NC	28	34	39	42	46	49				
1.2m	TP	21	31	42	55	68	83	103	122		
	NC	19	25	30	33	37	40	43	46		
1.5m	TP	13	19	25	33	41	51	61	72	88	
	NC	-	17	22	25	29	32	35	38	40	

Return Air

Neg. S.P	5	10	18	27	40	54	70	113
m ³ /s/m	0.031	0.047	0.062	0.078	0.093	0.109	0.124	0.155
NC	-	-	19	25	30	34	38	44

Perimeter Slot Diffuser

PSD Series - Performance Data

General Notes on performance

1. All pressures are in Pa (N/m²).
2. Projection (throw) values in metres are based upon the performance of a one metre long active section. When only 300mm is active, the values are 0.6 times those shown. For a 3 metre long continuous length, the values are 1.8 times those shown. See table below:

Length mm	300	400	500	600	700	800	900	1000	1200	1500	1800	2000	2400	3000
Correction Factor	0.6	0.66	0.72	0.8	0.84	0.9	0.96	1	1.08	1.2	1.32	1.4	1.56	1.8

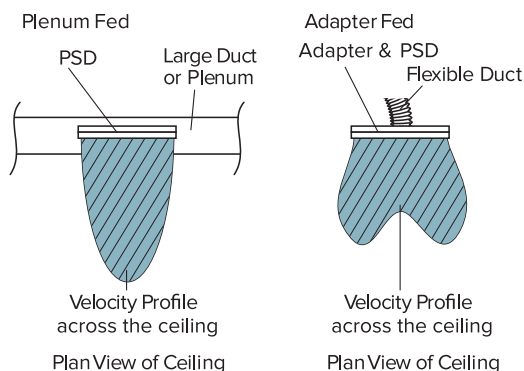
H : Horizontal projection : Minimum is to a terminal velocity of 0.75m/s and maximum to 0.25m/s. V : Vertical projection is to a terminal velocity of 0.25m/s.

3. Spread is the maximum width of the jet defined by the above velocities.
4. N.C. values are based upon horizontal projection from a three metre active section and a room absorption of 10dB re 10-12 watts. Vertical projection values are 11dB less than listed.
5. N.C. correction for length:

Length mm	300	600	1000	1200	1800	2400	3000	4500	6000	7500	9000
Supply	-16	-11	-7	-6	-3	-2	0	+3	+5	+6	+8
Return	-10	-7	-5	-4	-2	-1	0	+2	+3	+4	+5

6. Figures for plenum fed diffusers are for essentially zero inlet velocity. The velocity profile is relatively uniform for the length of the active section.
7. Figures for adapter fed diffusers take account of the effect of the adapter and inlet neck on diffuser velocities which tend to be less uniform and produce a velocity profile of the shape shown in the Velocity Throw diagram below. The 0.25m/s isovel generally shows a projection reduction at the centre of approximately 25%.

Typical Plenum and Adapter Fed Velocity Profiles



Typical Throw envelopes for PSDAI Adapter fed PSD section

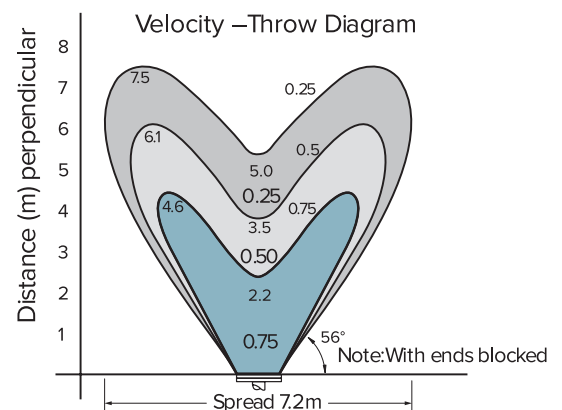
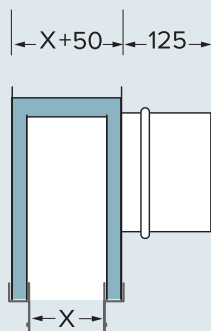


Diagram shows isovel envelopes for PSD x 1000mm

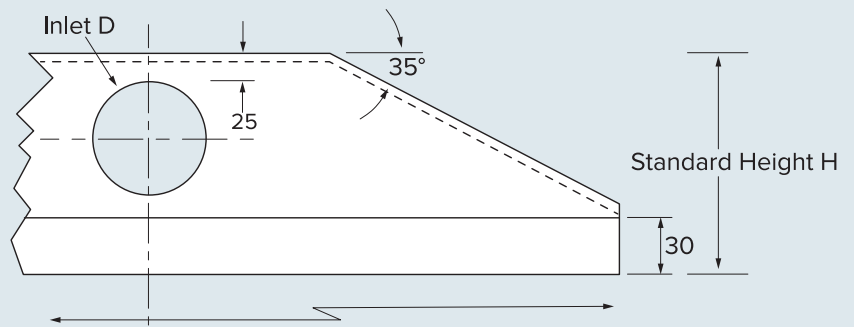
Perimeter Slot Diffuser

PSDAI Series - Adapter

PSDAI Adapter



Premi-Aire™ R1.2 Thermal Adapter



1200 (Standard) 900, 1000 & 1500 also available

PSDAI Dimensions

PSD		
D	H	X
125	220	30
150	245	30
200	295	30
250	345	30

Guide Weights
PSDAI
1200
5.08

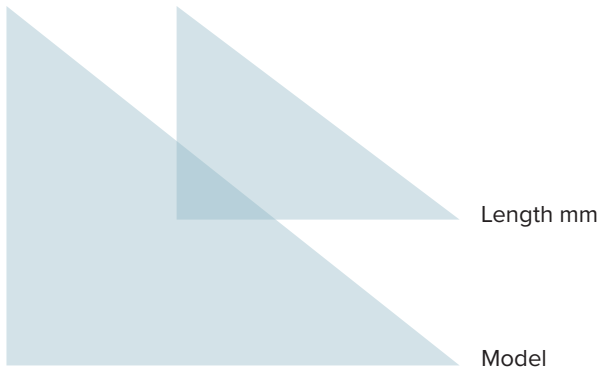
Notes

1. For sizes other than shown Standard Height H = inlet Diameter +100
 2. Construction details may vary*
 3. Ovalised inlet spigot options available
- * Please check with your local Holyoake branch

Perimeter Slot Diffuser

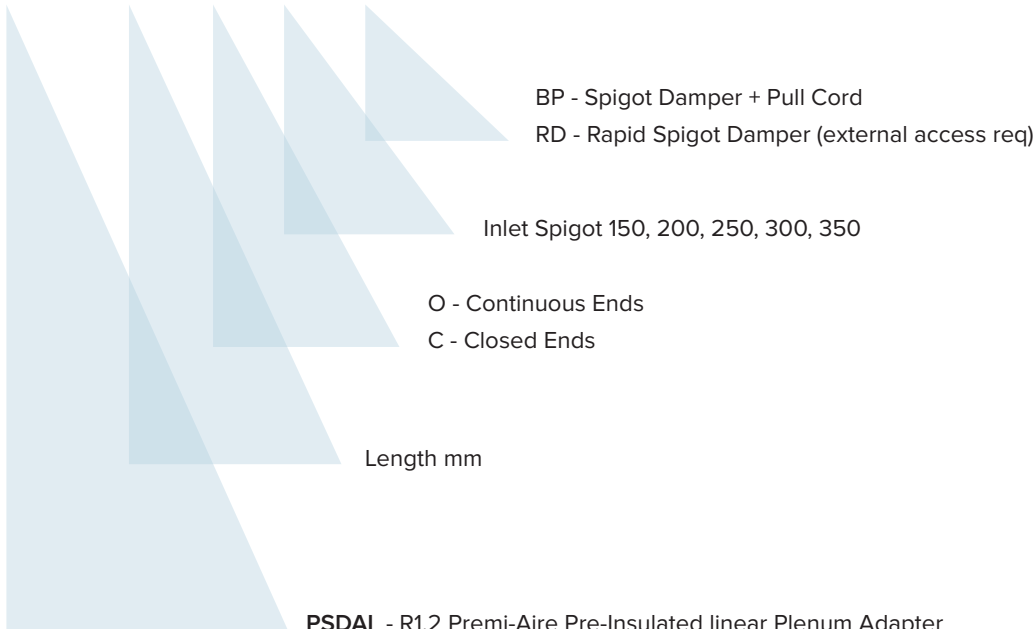
PSD Series - Nomenclature

PSD | Lmm |



PSD Adapter - Nomenclature

PSDAI | Lmm | O | 200 | BP



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