

master

# Chapter 8

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# Perforated ceiling diffuser

- with plenum box

→ Model: APCD + P

## Construction:

- **Frame:** High quality extruded aluminium profiles with 30 mm flange width as standard. 12, 16, 24 mm flange widths are optional.
- **Perforated panel:** 0.8 mm thick galvanized perforated steel sheet.
- **Plenum box:** Steel construction.

## Description:

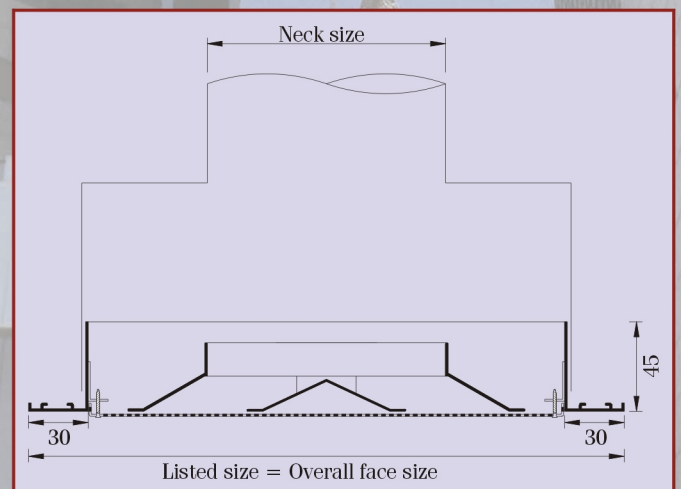
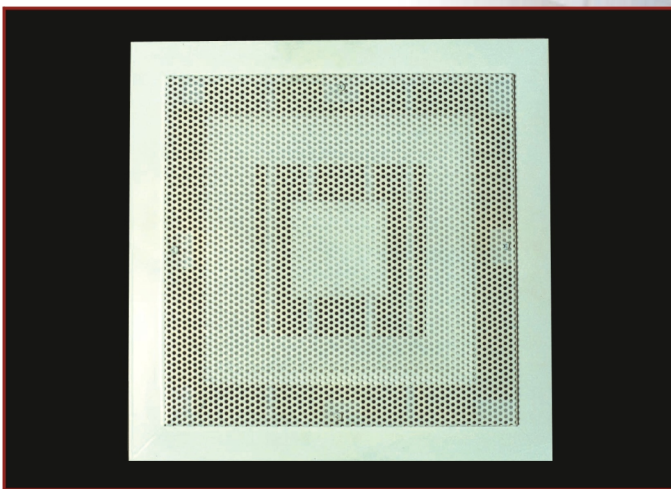
- Frame is fabricated from high quality extruded aluminium profiles with the advantages of corrosion resistance and rigidity.
- Perforated panel is fixed to the frame by screws. Panel can be removed easily by loosening the screws.
- For supply air diffusers, Perforated sheet is slightly lowered below the centre line. This arrangement provides improved horizontal airflow.
- Different types of internal cores can be fixed inside the perforated panel as option. Core is fixed to the frame with aluminium pins loaded with steel springs. Core can be easily removable and interchangeable to allow for maximum flexibility in installation and maintenance.



- Frame gasket is sealed around the back of the frame as option to avoid air leakage.
- Supply air diffusers are provided with plenum box.
- Because of high induction rates, velocity and temperature will be equalized quite rapidly above the occupied zone.

## Standard finishes:

- Powder coated colour finish as per RAL colour codes.
- Flexibility of finishing is available as option.





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## Perforated ceiling diffuser

Model: APCD

### Construction:

- **Frame:** High quality extruded aluminium profiles with 30 mm flange width as standard. 12, 16, 24 mm flange widths are optional.
- **Perforated panel:** 0.8 mm thick galvanized perforated steel sheet.

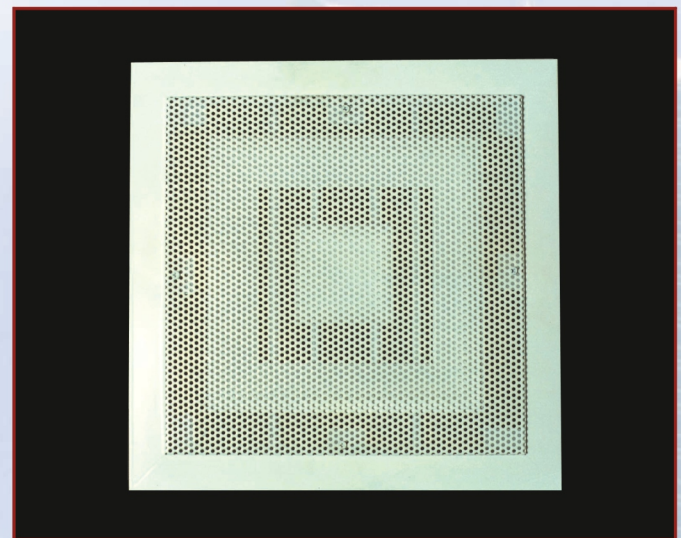
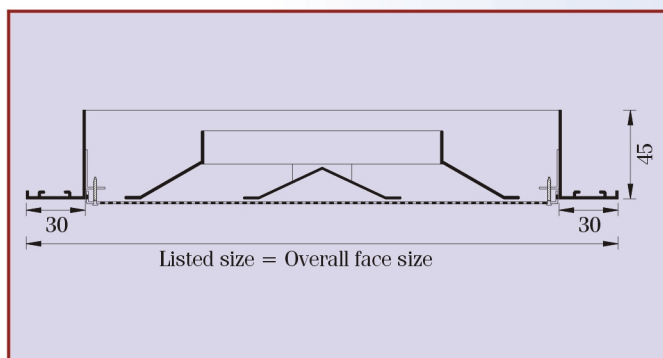
### Description:

- Frame is fabricated from high quality extruded aluminium profiles with the advantages of corrosion resistance and rigidity.
- Perforated panel is fixed to the frame by screws. Panel can be removed easily by loosening the screws.
- Different types of internal cores can be fixed inside the perforated panel as option. Core is fixed to the frame with aluminium pins loaded with steel springs. Core can be easily removable and interchangeable to allow for maximum flexibility in installation and maintenance.

Foam gasket is sealed around the back of the frame as option to avoid air leakage.

### Standard finishes:

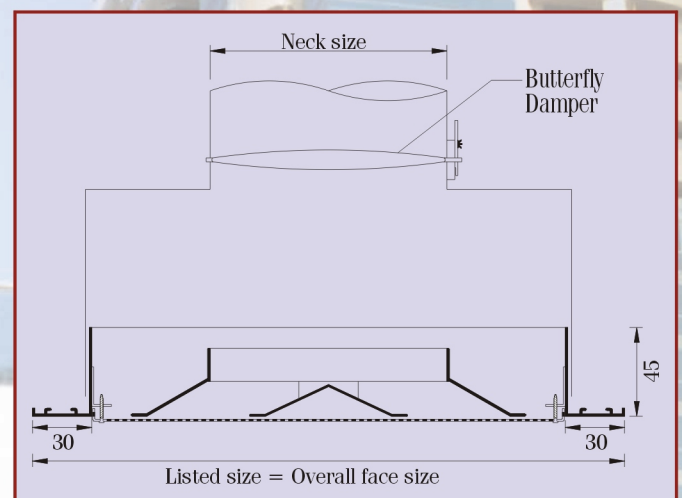
- Powder coated colour finish as per RAL colour codes.
- Flexibility of finishing is available as option.



Model : APCD+D

Type: Perforated ceiling diffuser with damper.

Construction is same as APCD+P, but with butterfly damper at the neck of the plenum.



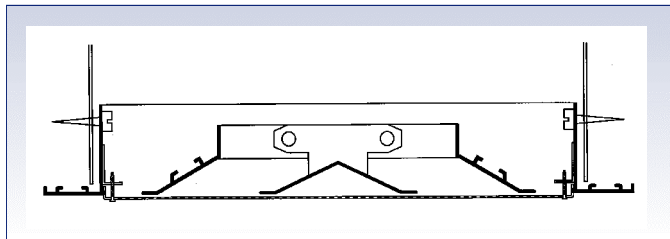


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**Standard sizes:**

- Available in square and rectangular sizes.
- Any combination of W x D.
- Non standard sizes are available.

W = width in mm	150	225	300	375	450	525	600
D = Depth in mm	150	225	300	375	450	525	600



**Fixing details:**

- Concealed screw fixing from neck of the diffuser to the duct.

**How to order:**

Model	Size	Quantity	Finish
APCD+P	Specify listed size in mm x mm	Specify in numbers	B = RAL - 9010
APCD			C = Other RAL colours.
APCD+D			

Tick the required item.

**Selection example:**

To select perforated ceiling diffuser with plenum of size 450 x 450. Quantity 60 nos, with RAL 9010 colour finish.

**Order as :** APCD+P-450 x 450 - 60 - B



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# Perforated ceiling diffusers

Model: APCD+P

## Table 8.1 Air flow data

### a) Plenum Neck Size=150mm Ø, Module Size=300x300mm

Air flow in CFM Air flow in m <sup>3</sup> /sec	75 0.0354	115 0.0543	150 0.071	200 0.0945	250 0.118	300 0.142
Neck velocity in m/sec.	2	3	4	5	6	7
P <sub>s</sub> loss in mm H <sub>2</sub> O	0.279	0.61	1.16	1.82	2.76	3.74
Throw in meters	0.3-0.3-0.4	0.3-0.6-1.2	0.3-0.6-1.5	0.3-0.9-1.8	0.3-1.2-2.4	0.6-1.2-2.7
NC	<15	16	24	30	38	45

### b) Plenum Neck Size=200mm Ø, Module Size=400x400mm

Air flow in CFM Air flow in m <sup>3</sup> /sec	140 0.066	210 0.099	280 0.132	350 0.165	420 0.198	490 0.231
Neck velocity in m/sec.	2	3	4	5	6	7
P <sub>s</sub> loss in mm H <sub>2</sub> O	0.44	1.02	1.85	2.96	4.4	5.95
Throw in meters	0.3-0.3-0.9	0.3-0.6-1.8	0.3-0.9-2.4	0.6-1.5-3.1	0.9-1.8-3.7	1.2-2.1-4.3
NC	<15	19	27	34	42	49

### c) Plenum Neck Size=250mm Ø, Module Size=500x500mm

Air flow in CFM Air flow in m <sup>3</sup> /sec	220 0.104	325 0.154	440 0.208	550 0.26	650 0.307	760 0.359
Neck velocity in m/sec.	2	3	4	5	6	7
P <sub>s</sub> loss in mm H <sub>2</sub> O	0.62	1.41	2.6	4.05	6.04	8.35
Throw in meters	0.3-0.3-1.5	0.3-0.9-2.4	0.6-1.5-3.4	1.2-2.1-4.3	1.5-2.4-5.2	1.8-3.1-6.1
NC	18	27	35	43	51	57

### d) Plenum Neck Size=300mm Ø, Module Size=600x600mm

Air flow in CFM Air flow in m <sup>3</sup> /sec	310 0.146	470 0.222	630 0.298	780 0.368	950 0.449	1100 0.52
Neck velocity in m/sec.	2	3	4	5	6	7
P <sub>s</sub> loss in mm H <sub>2</sub> O	0.8	1.83	3.34	5.23	7.76	10.72
Throw in meters	0.3-0.6-2.1	0.6-1.5-3.4	1.2-2.1-4.3	1.8-2.7-5.5	2.1-3.4-6.7	2.4-4.0-8.0
NC	24	33	43	50	58	>60

- Neck size measured in mm dia.
- P<sub>s</sub>: Static pressure loss is in mm of H<sub>2</sub>O.
- Throw (meters) is measured for a terminal velocities of 0.75, 0.5 & 0.25 m/sec.
- Noise criteria (NC) is based on room attenuation of 10 dB.



## Perforated 4 way adjustable ceiling diffuser

Model: APCS

### Construction:

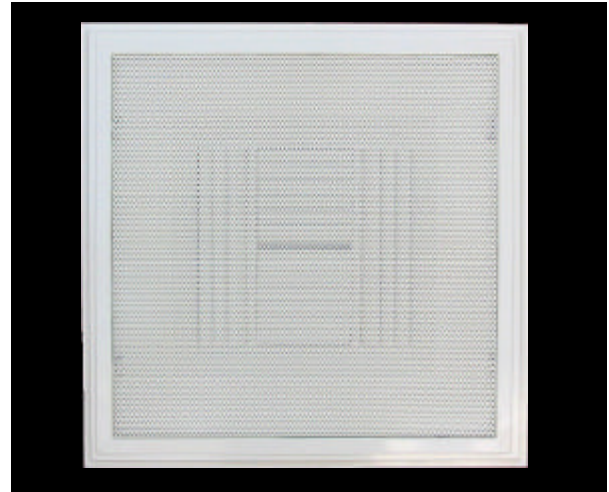
- **Frame:** High quality extruded aluminium profile.
- **Blades:** Aerofoil blades from aluminium profiles.
- **Outer frame:** High quality aluminium sheet.
- **Perforated panel:** 8mm thick galvanised perforated steel sheet.

### Description:

- This curved blades are specially designed so that the diffuser blades can be arranged in such a way when it is fully open deflects air equally in four directions.
- The diffuser pattern can be made as 1,2,3 way by arranging the blades.
- Perforated panel is fixed to the outer frame with adjustable slides. Panel can be removed easily by pulling it out.
- The internal core is made of curved blades which are individually adjustable. Core is fixed to the frame by screws and can be removed by loosening screws and interchangeable to allow for maximum flexibility in installation and maintenance.
- Foam gasket is sealed around the back of the frame as option to avoid air leakage.
- Supply air diffusers are provided with plenum box with round neck.

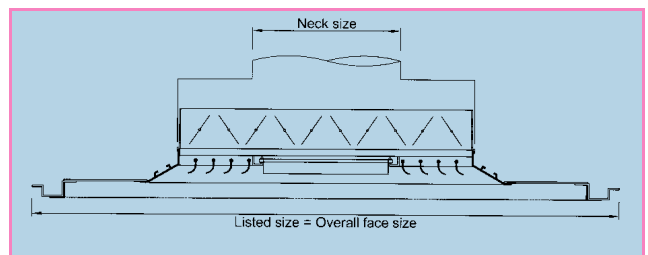
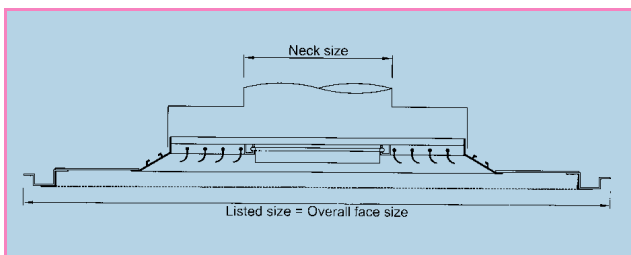
### Standard finishes:

- Powder coated as per RAL color codes.
- Flexibility of finishing is available as option.



### Model APCS+D:

Construction same as APCS with opposed blade damper





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# Laminar flow panel

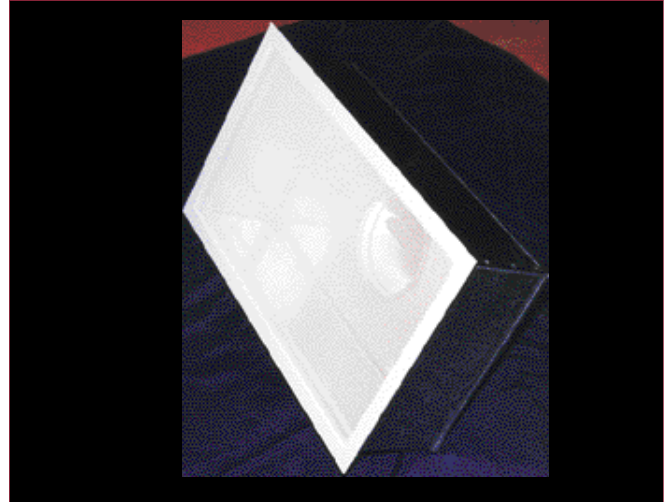
► Model: ALP

## Construction:

- **Frame:** High quality extruded aluminium profiles with 30 mm flange width as standard.
- **Perforated panel:** 0.8 mm thick galvanized perforated steel sheet.

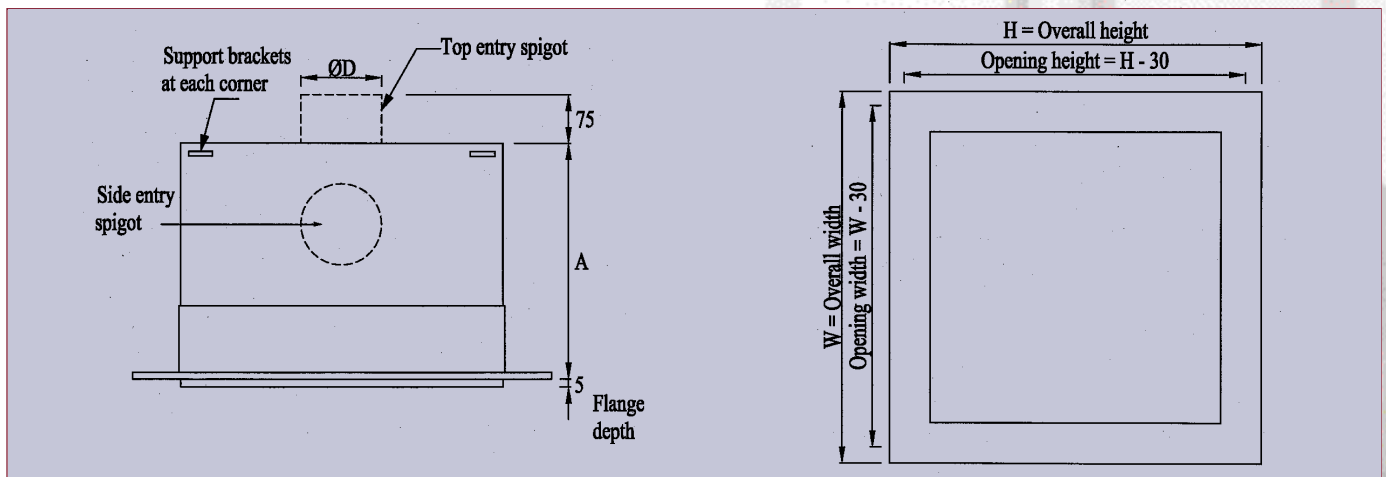
## Description:

- Frame is fabricated from high quality extruded aluminium profiles with the advantages of corrosion resistance and rigidity.
- Perforated panel is fixed to the frame by screws. Panel can be removed easily by loosening the screws.
- Laminar flow panels are supplied with an inbuilt plenum box.
- Air master laminar flow panels used for a low velocity, evenly distributed, down word throw. Mostly used in operation theatres.



## Standard finishes:

- Powder coated colour finish RAL 9010.
- Powder coated colour finish as per other RAL colour codes available.



## How to order:

Model	Size	Quantity	Finish
ALP	Specify ceiling module size mm x mm	Specify in numbers	B = RAL - 9010
			C = Other RAL colours.

To select laminar flow panel for a size 600 x 600 mm of quantity 75 nos with RAL9010.

**Order as :** ALP- 600 x 600 -75 -B.