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25 YEARS OF EXCELLENCE

PERFORATED CEILING DIFFUSERS

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PERFORATED CEILING DIFFUSERS

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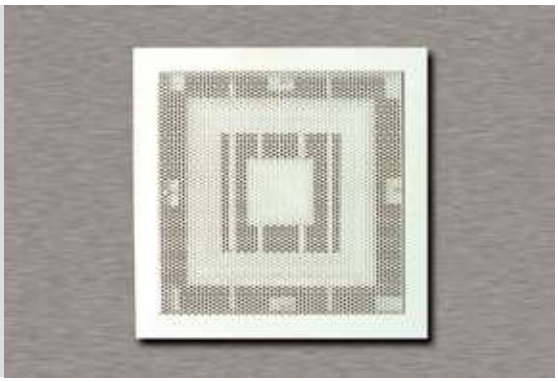
Cover Page Photo Etisalat Building, Dubai.

CONSTRUCTION:

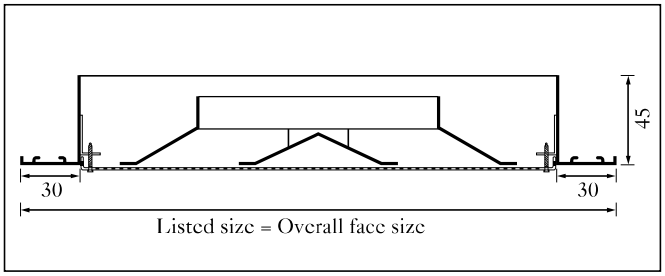
Frame: High quality extruded aluminium profiles with 30 mm flange width as standard. 12, 20, 24 mm flange widths are optional.

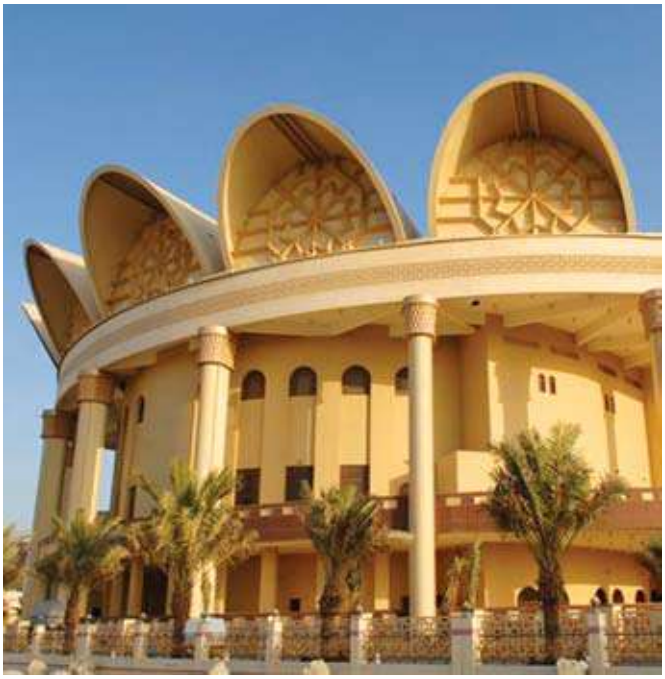
Perforated panel: 0.8 mm thick galvanized perforated steel sheet.



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.
- For supply air diffusers, Perforated sheet is slightly lowered below the centre line. This arrangement provides improved horizontal airflow.
- Perforated Ceiling Diffusers can be manufactured for horizontal 1-way, 2-way, 3-way and 4-way throw applications.





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Standard finishes:

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

ACCESSORIES

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1. DAMPER (Model: APCD+D)

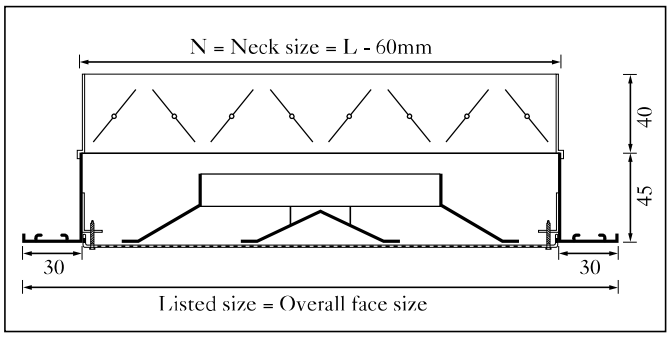
Description:

a. Damper is fixed rigidly to the frame by aluminium rivets. Fixing by spring clips is optional.

b. Damper blades are separated from its frame by nylon bushes.

c. Opposed blade damper is screw operated from the face opening of the diffuser after removing the internal core. Lever operated damper as option.

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



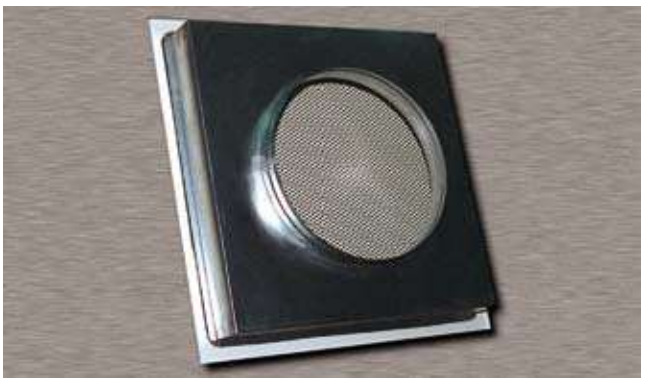
2. PLENUM / ADAPTOR (MODEL : APCD+P)

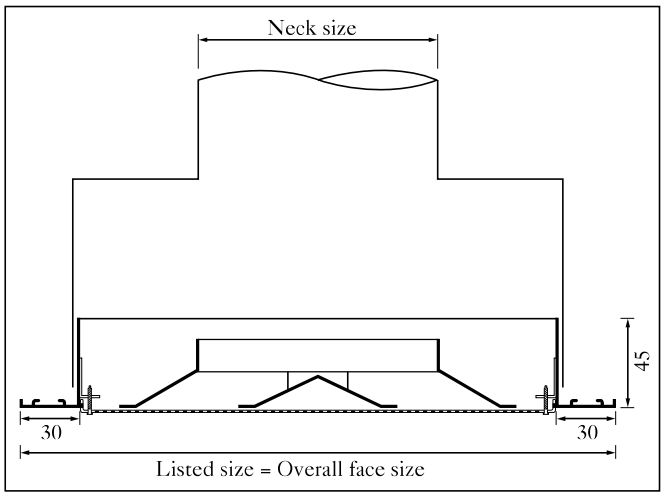
Description:

a. The plenum/adaptor is constructed using G.I.

b. The neck diameter ranges from 100mm - 450mm.

- For more details about plenum box kindly refer *Chapter-15*

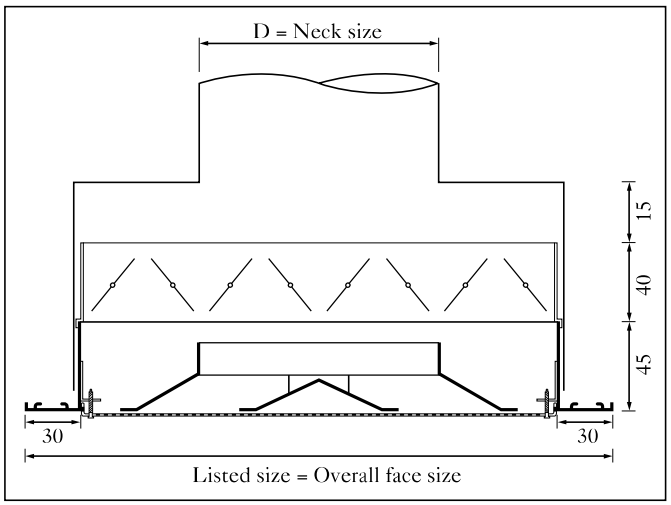




3. PLENUM & DAMPER (MODEL : APCD+D+P)

Description:

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



PERFORATED 4 WAY ADJUSTABLE CEILING DIFFUSER

With removable panel

CONSTRUCTION:

Frame: High quality extruded aluminium profile.

Blades: Aerofoil blades from aluminium profile.

Outer frame: High quality aluminium sheet.

Perforated panel: 8 mm thick galvanised perforated steel sheet.

Description:

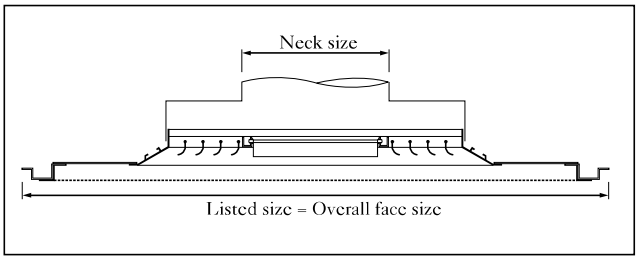
- These curved blades are specially designed so that the diffuser blades can be arranged in such a way when it is fully open deflects air equally in four directions.
- The diffuser pattern can be made as 1, 2, 3 way by arranging the blades.
- Perforated panel is fixed to the outer frame with adjustable 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.
- Supply air diffusers can be provided with plenum box with round neck.

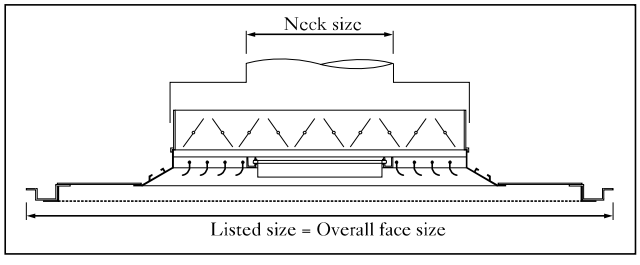
Standard finishes:

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

Model - APCS+D:

Construction same as APCS with opposed blade damper and foam gasket to avoid leakage.





DISPLACEMENT DIFFUSER

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Product Features:

- 360°/180° air distribution pattern.
- Low noise.
- No visible joints.
- Aesthetic appearance/architecturally appealing.
- Shapes to suit interior design.
- Removable face plate.
- Circular air inlet for efficient air distribution.
- Can add more if necessary.

Material/Construction:

- **Face plate** – Perforated GI/SS/MS/Aluminium.
- **Thickness** – 16 Ga to 22 Ga depending upon diameter and height of the displacement diffuser.

Technical data:

- **Air volume:** From 50 L/s to 1500 L/s.
- **Noise levels:** Between 20 db to 35 db.
- **Free Area:** 20% to 30% depending upon perforation pattern.

Product Description:

- The Air Master displacement diffuser is designed to achieve thermal comfort, efficient ventilation and improve indoor air quality.
- The distribution unit can be constructed in cylindrical, semi-cylindrical, quarter cylindrical, triangular, rectangular, square shapes to suit the interior design.
- The air inlet connection can be circular or rectangular and can be located either at the top or bottom of the diffuser.
- The diffuser can be constructed with fixed vertical vanes to restrict the directional flow or adjustable horizontal vanes to control the air velocity, as option.
- Accessories: Mounting base/plate.

LAMINAR FLOW PANELS

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 in-built plenum box.
- Air Master laminar flow panels used for a low velocity, evenly distributed, downward throw. Mostly used in operation theatres.

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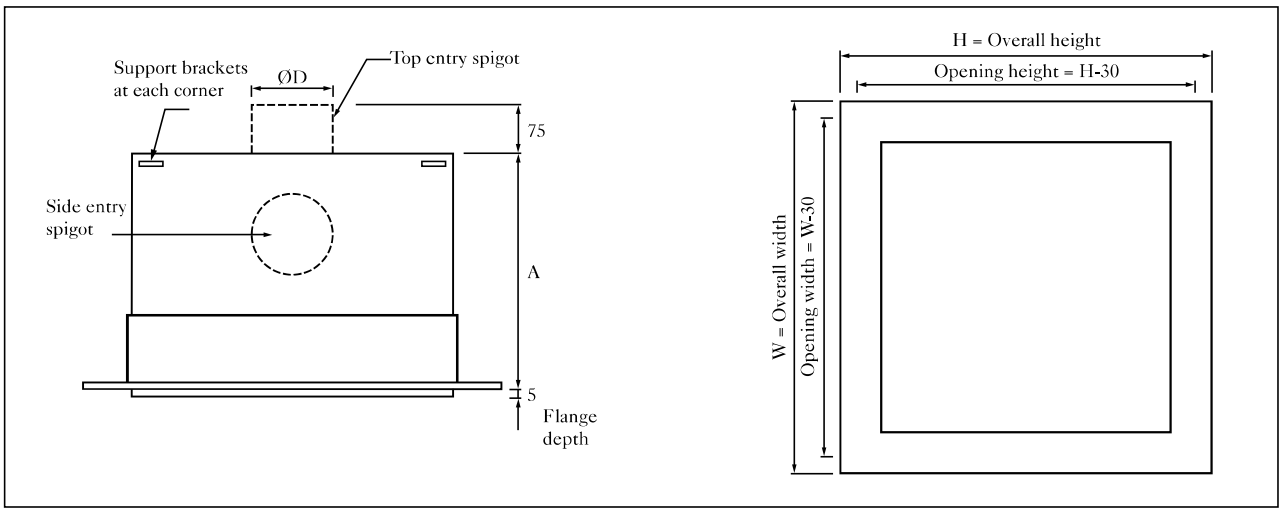
Standard finishes:

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



STANDARD SIZES, FIXING DETAILS & PRODUCT SUMMARY

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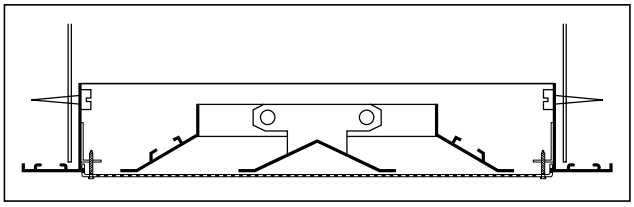
Standard sizes:

- 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.

Product Summary:

MODEL	PRODUCT DESCRIPTION	REMARKS
APCD	Perforated Ceiling Diffuser	• 0.8 mm perforated sheet. • 30 mm standard flange width.
APCD+D	Perforated Ceiling Diffuser with Damper	
APCD+P	Perforated Ceiling Diffuser with Plenum	
APCD+D+P	Perforated Ceiling Diffuser with Damper and Plenum	
APCS	Perforated 4-way Adjustable Ceiling Diffuser	
APCS+D	Perforated 4-way Adjustable Ceiling Diffuser with Damper	
ALP	Laminar Flow Panel	
ADDV	Displacement Diffuser	

Product Order Checklist

- Model
- Size
- Quantity
- Plenum details - if plenum required.
- Colour (RAL 9010, 9016, Anodized aluminium finish or other RAL colours)

Table 8.1 Air flow data

a) Plenum Neck Size=150 mm Ø, Module Size=300x300 mm

Air flow in CFM Air flow in m^3/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_S loss in mm H_2O	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=200 mm Ø, Module Size=400x400 mm

Air flow in CFM Air flow in m^3/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_S loss in mm H_2O	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=250 mm Ø, Module Size=500x500 mm

Air flow in CFM Air flow in m^3/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_S loss in mm H_2O	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=300 mm Ø, Module Size=600x600 mm

Air flow in CFM Air flow in m^3/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_S loss in mm H_2O	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 velocity is measured in m/sec.
- P_S: Static pressure loss in mm of H_2O.
- Throw (meters) is measured for a terminal velocities of 0.75, 0.5 & 0.25 m/sec.
- Noise criteria (NC) based on a room attenuation of 10 dB.

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Table 8.2 Air flow data

a) Plenum Neck Size=150 mm DIA, Module Size=600x600 mm

Air flow in CFM	75	115	150	200	250	300
Air flow in m^3/sec	0.0354	0.0543	0.071	0.0945	0.118	0.142
Neck velocity in m/sec.	2	3	4	5	6	7
P_s loss in mm H_2O	0.495	1.152	2.120	3.490	4.789	6.129
Throw in meters	0.3-0.5	0.4-0.8	0.5-1.1	0.6-1.5	0.8-2.1	1.1-2.5
NC	<15	24	31	40	51	59

b) Plenum Neck Size=200 mm DIA, Module Size=600x600 mm

Air flow in CFM	140	210	280	350	420	490
Air flow in m^3/sec	0.066	0.099	0.132	0.165	0.198	0.231
Neck velocity in m/sec.	2	3	4	5	6	7
P_s loss in mm H_2O	0.596	1.380	1.727	2.070	3.489	4.119
Throw in meters	0.3-1.1	0.8-1.8	1.1-2.0	1.4-2.2	1.7-2.5	2.1-3.2
NC	17	26	33	40	47	54

c) Plenum Neck Size=250 mm DIA, Module Size=600x600 mm

Air flow in CFM	220	325	440	550	650	760
Air flow in m^3/sec	0.104	0.154	0.208	0.26	0.307	0.359
Neck velocity in m/sec.	2	3	4	5	6	7
P_s loss in mm H_2O	0.698	1.609	2.93	4.193	5.342	6.605
Throw in meters	0.5-1.7	1.1-2.3	1.8-3.2	2.6-4.1	3.1-4.9	3.7-6.1
NC	19	30	37	43	48	56

- Neck velocity is measured in m/sec.
- P_S: Static pressure loss in mm of H_2O.
- Throw (meters) is measured for a terminal velocities of 0.5 & 0.25 m/sec.
- Noise criteria (NC) based on a room attenuation of 10 dB.

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Air master Perforated Diffusers supplied to Etisalat Telecommunications building, Dubai

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AIR MASTER EQUIPMENTS EMIRATES LLC.
Post Box - 3180, Ajman, U.A.E.
Tel: +971 6 7436900, 7439600 Fax: +971 6 7436700
E-mail: airmastr@eim.ae, sales@airmaster.ae