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**VENTUS**



Custom air technologies  
that define your ideal living  
environment

# CONTENTS

General Information .....	2
Introduction .....	3
Material General Information .....	4
Fire Standards and Comparison .....	5
Testing Procedure .....	8
Fastening Methods of Air Grilles .....	10
Reverse Grilles .....	12
Regular Grilles .....	14
Level Grilles .....	15
False Ceiling Grilles .....	15
Perforated Access Panels .....	16
Linear Bar Grilles .....	18
LBG 8-5 .....	20
LBG 12-5 .....	22
LBG 10-7 V-Cut .....	24
3-Slot .....	26
Extraction Grilles .....	28
V-Slot Diffusers .....	30
V-Slot 25 / 35 / 45 mm .....	32
Look Like Canyon Grille .....	34
LLC 25 / 35 / 45 mm .....	36
4-Way Canyon .....	38
Canyon Flow Bar System .....	42
CFS 25/50mm .....	44
Canyon Flow Bar System with Free return .....	46
Accessories .....	47
Fastening Methods .....	48
C2020 Grilles .....	50
C2020 30 / 50 / 65mm .....	52
C2020 Free Return .....	54
Fastening Methods .....	55
Certified Installations .....	56
Finishing Process CFS & C2020 .....	57
Which Grille to Choose? .....	58
Plenum Boxes .....	60
Suggested Dimensions .....	64
Fastening Methods .....	66
How to Order .....	67
Plenum Boxes Grille Fastening Methods .....	68
Custom-made .....	70
Flexible .....	72



Following the ever-increasing market trend for the use of "green" and sustainable materials, all cutting residues are returned to the factory for recycling and production of new PVC sheets, in order to implement environmentally eco-friendly projects.



Ventus Air Technologies is a subsidiary company of D. Ellinas Factory Products Ltd which has been established in 2009 and it is based in Cyprus (Limassol). The company is well known for the innovative way of approaching challenges within the construction industry in different sectors especially in the grille technologies sector.

The company specializes in the design and manufacture of PVC grilles and diffusers through a very well-equipped factory, which responds to both limited and mass production. The factory and the whole production team is able to achieve the development and establishment of various high-quality products and custom-made technological structures.

Our main goal is providing products with competitive prices, short delivery time and excellent services. Having established ourselves in the construction of the island, D. Ellinas Factory Products aspires to grow even more each year in being another creative "tool" for the lovers of modern design and innovative products.

In the framework of the collaboration between D. Ellinas Factory Products Ltd and the Laboratory of fluid dynamics of the University of Patra, ECOVAG, we would like to thank Professor Mr. Margaris Dionysios-Eleftherios for the impeccable supervision throughout the testing procedure of the study. Secondly, we would like to thank all the scientific staff for their effort and hard work that led the study to a successful outcome.



Aerodynamics Laboratory  
University of Patra

# MATERIAL

## GENERAL INFORMATION

### PVC GRILLES

Ventus grilles and air conditioning systems are made of high-tech material. They provide an effective solution to a major problem, which is nothing more than liquefaction on the outer surface of the grille. PVC sheets have an extremely low coefficient of thermal conductivity (0.05 W/mK), eliminate the phenomenon of liquefaction and highlight the Ventus grilles as the perfect combination of performance and aesthetics.

Ventus grilles are available in a variety of standard sizes, fastening methods, finishes and can also be customized to your needs and project standards.

### PVC MATERIAL SPECIFICATIONS

(Polyvinyl chloride)

PVC Foam Sheet is a chemically foamed, rigid and light weight extruded sheet with a closed cell structure, that comes with a smooth matt surface finish on both sides.

### ΤΕΧΝΙΚΑ ΣΤΟΙΧΕΙΑ

Property	Test Method	Units	Value
Density	DIN 53479	g/cm <sup>3</sup>	0.55
Hardness	DIN 53505	Shore 'D'	≥ 42
Water Absorption	DIN 53495	%	≤ 1.0
Tensile strength*	DIN 53455	MPa	≥ 15
Elongation at break**	DIN 53455	%	≥ 15
Modulus of elasticity	DIN 53457	MPa	900 - 1500
Impact strength Izod	ASTM D 256	KJ/ m <sup>2</sup>	≥ 9.0
Impact strength Charpy	DIN 53253	KJ/ m <sup>2</sup>	≥ 15
Flexural strength	DIN 53452	MPa	> 32
Compressive Strength at 10% Deformation	DIN 53421	MPa	> 6.5
Surface resistivity	ASTM D 257	Ω	> 1 x 10 <sup>14</sup>
Volume resistivity	ASTM D 257	Ω-cm	> 1 x 10 <sup>15</sup>
Dielectric Constant at 1 MHZ	ASTM D 150	F/m	1.56
Dielectric strength	DIN 53481	KV / cm	≥ 90
Vicat softening temperature	DIN 53460	°C	≥ 73
Heat Deflection temperature @ 1.8 MPa	DIN 53461	°C	58
Coefficient of Linear Expansion	DIN 53752	mm / m °C	0.08
<b>Thermal conductivity</b>	<b>DIN 52616</b>	<b>W / m K</b>	<b>0.05</b>
<b>Flammability</b>	<b>EN 13501-1</b>	<b>FIGRA 0,2 (W/s) FIGRA 0,4 (W/s)</b>	<b>Class B</b>
<b>Smoke Production</b>	<b>EN 13501-1</b>	<b>SMOGRA (m<sup>2</sup>/s)</b>	<b>Class s1</b>
<b>Flaming Droplets</b>	<b>EN 13823</b>	<b>pc</b>	<b>Class d0</b>

\* 15 MPa for free foam sheet with typical density 0.7 g/cc  
\* 13 MPa for free foam sheet with typical density 0.55 g/cc

\*\* 15% for free foam sheet with typical density 0.7 g/cc  
\*\* 13% for free foam sheet with typical density 0.55 g/cc

# FIRE STANDARDS

## AND COMPARISON

The EN-standard is based on a test for the actual materials response to fire, smoke development and droplets while burning.

EN-classification Standards:

<b>Fire behaviour:</b>	Class A1	(highest level)
	Class A2	(not burnable materials)
	<b>Class B</b>	<b>(inflammable materials)</b>
	Class C	(normal flammable materials)
	Class D	(normal flammable materials)
	Class E	(normal flammable materials)
Class F	(not classified materials)	
<b>Smoke development:</b>	<b>Class S1</b>	<b>(Very limited smoke development)</b>
	Class S2	(Limited smoke development)
	Class S3	(no demands on smoke development)
<b>Burning droplets:</b>	<b>Class d0</b>	<b>(No burning droplets or particles)</b>
	Class d1	(limited burning droplets)
	Class d2	(no demands on burning droplets)

Euro Airs textile materials (HDC and DFC-line) are certified and approved according to:

**B-s1, d0**

The table below shows our main export countries standards and what test textile materials have passed.

Country	Tested according to..	Classification
EU	EN 13501-1	Class B-S1, d0
Germany	DIN EN 13501-1 DIN 4102	Class B-S1, d0 Class B1 (flame retardant)
Austria	ÖNORM EN 13501-1 ÖNORM b 3800	Class B-S1, d0 Q1 (limited smoke development)
Holland	NEN EN 13501-1	Class B-S1, d0
France	NFP 92501-1	M1 (Non-combustible)
England	BS 476, Part 6 MoD HH52/92	Class 1 (expected to pass) Passed
USA (Underwriters lab.)	NFPA 90A-1993	< 25 Smoke developed index < 50 Passed

## AIR FLOW FUNDAMENTALS

Those aspects that characterize each air outlet in order to ensure the desired conditions for the intended application are:

- ▶ Pressure air drop (DP)
- ▶ Air Throw Range
- ▶ Drop - Rise
- ▶ Noise Level
- ▶ Air Spread
- ▶ Air outlet velocity

## DISTRIBUTION OF AIR CONDITIONING OUTLETS

The purpose of the experimental and computational study of air distribution vents with air grilles, manufactured by Ventus is to acknowledge and develop the appropriate operating range of air grilles and the fundamental values that characterize them. The study took place at the Laboratory of fluid dynamics at the University of Patra, under the supervision of Mr.

Dionysios-Eleftherios Margaritis. Every air-conditioned area should be ventilated evenly to avoid any discomfort caused by temperature changes or air velocity. The following table shows the range of optimum air velocity depending on the application.

ROOM AIR VELOCITY (m/s)	PERSONS REACTIONS	APPLICATION
0-0.08	Sweltering environment	None
0.13	Optimal speed	Everywhere
0.25	Maximum tolerated speed for individual sitting space	Everywhere
0.33	Adverse	Several
0.38	Maximum limit per person moving in a space	Commercial shops
0.38-1.52	High air speeds	Only Industrial

## AIR OUTLET VELOCITY AND LIMIT VELOCITY RANGE

Air velocity at a distance of approximately 2,5cm from the grille is known as the air exit velocity  $V_c$  (m/s). Under the regulation followed in this study and shown in the above figure, the maximum velocity in forming the boundary of the range and diffusion is 0.5m/s. Table below presents the ranges of air output velocities depending on the application.

VELOCITY OUT $V_c$ (M/S)	SPACE / APPLICATION
1.5-2.5	Libraries
2.5-3.8	Hotels, offices, houses
4.0	Restaurants and dining rooms
5.0	Gyms, assembly hall
7.0	Factories, commercial stores

## PRESSURE AIR DROP

Diffusers cause a pressure drop in the airstream that must be considered in calculating the pressure drop of the fan. The passage of air through a diffuser causes a pressure drop due to the conversion of the air energy to speed and due to friction phenomena in the diffuser itself.

## THROW

As presented in the figure above, throw is defined as the horizontal distance from the diffuser to a point in the mixed airstream, where the maximum sustained velocity has been reduced to a specific value (0.5 m/s) defined by the regulations under the CYPRUS STANDARD (CYS EN: 12238:2001).

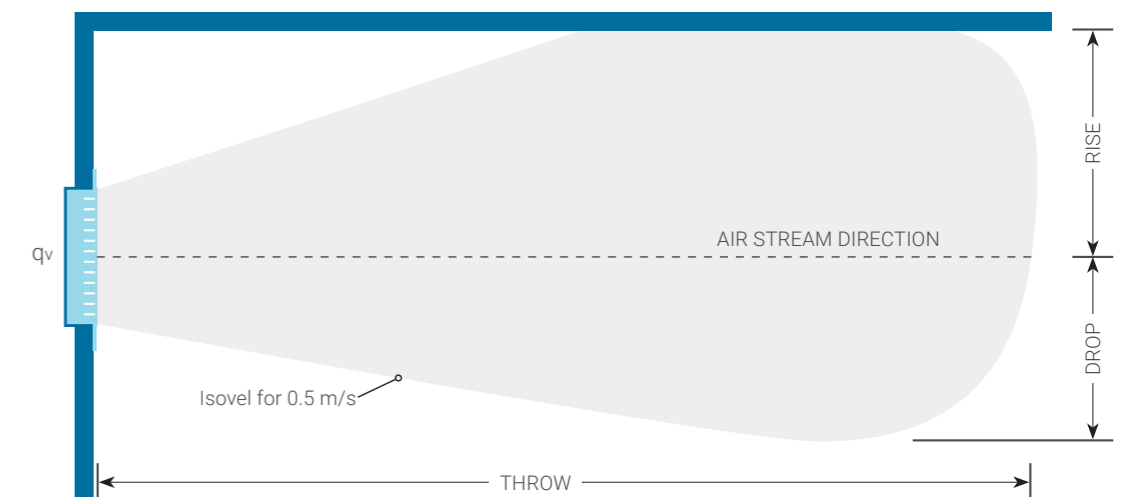
## NOISE LEVEL

Noise measurement is necessary in order to sustain the limits of comfort zone. As the noise level is related to the discharge velocity, the limitation of the velocity holds the noise within normal levels. Indicator values for the noise level are shown on the next table (TEEGreek Technical Chamber instructions).

NOISE LEVEL	SPACE / APPLICATION
25 dB	Concert halls, Recording studios
30 dB	Bedrooms, Lecture rooms, Libraries
35 dB	Residences, Hotel rooms, Hospital rooms, Offices, Restaurants, Cinemas
40 dB	Retail stores, Laboratories, Waiting rooms
45 dB	Kitchens, Server rooms, Super markets
50 dB	Light industry

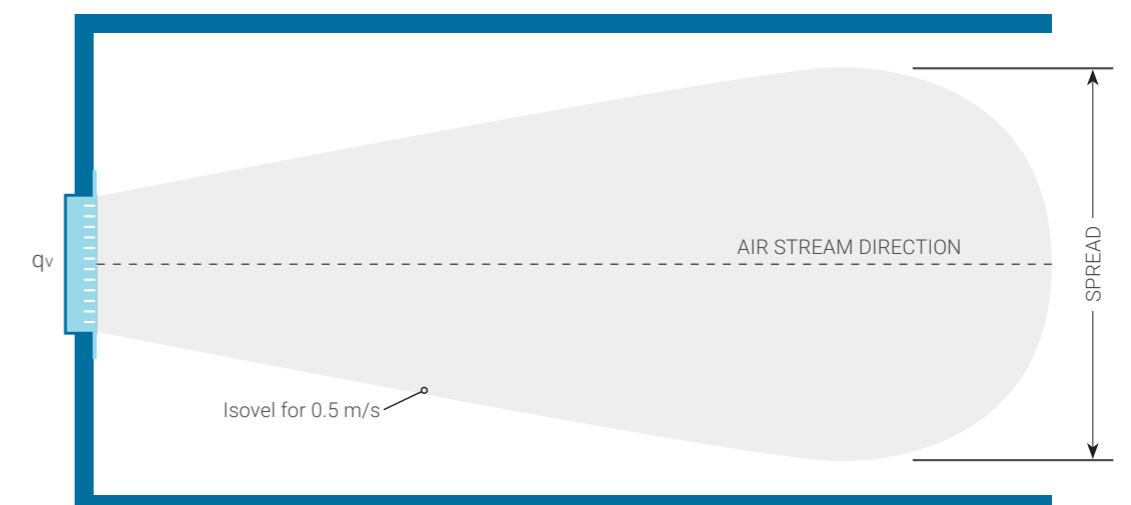
## DROP-RISE

Drop, as presented in the figure below, is the vertical distance between the centerline of the grille and the intersection of the airstream at the end of the throw. When the air that comes out from a diffuser is colder than air in the ventilated room, it has greater density and tends to (being heavier) descent, creating the phenomenon of drop. Also, when the density of the fed air is less than that of the air in the room, then the lighter-fed fluid rises to the ceiling creating the effect of the rise. This applies to wall-mounted grilles and is not applicable in ceiling appliances.



## SPREAD

Air passing through a diffuser, when there are no obstacles in the air stream, takes the form of asymmetrical beam. Spread is defined as the maximum distance between the two symmetrical ends normally formed by the beam.



# TESTING PROCEDURE

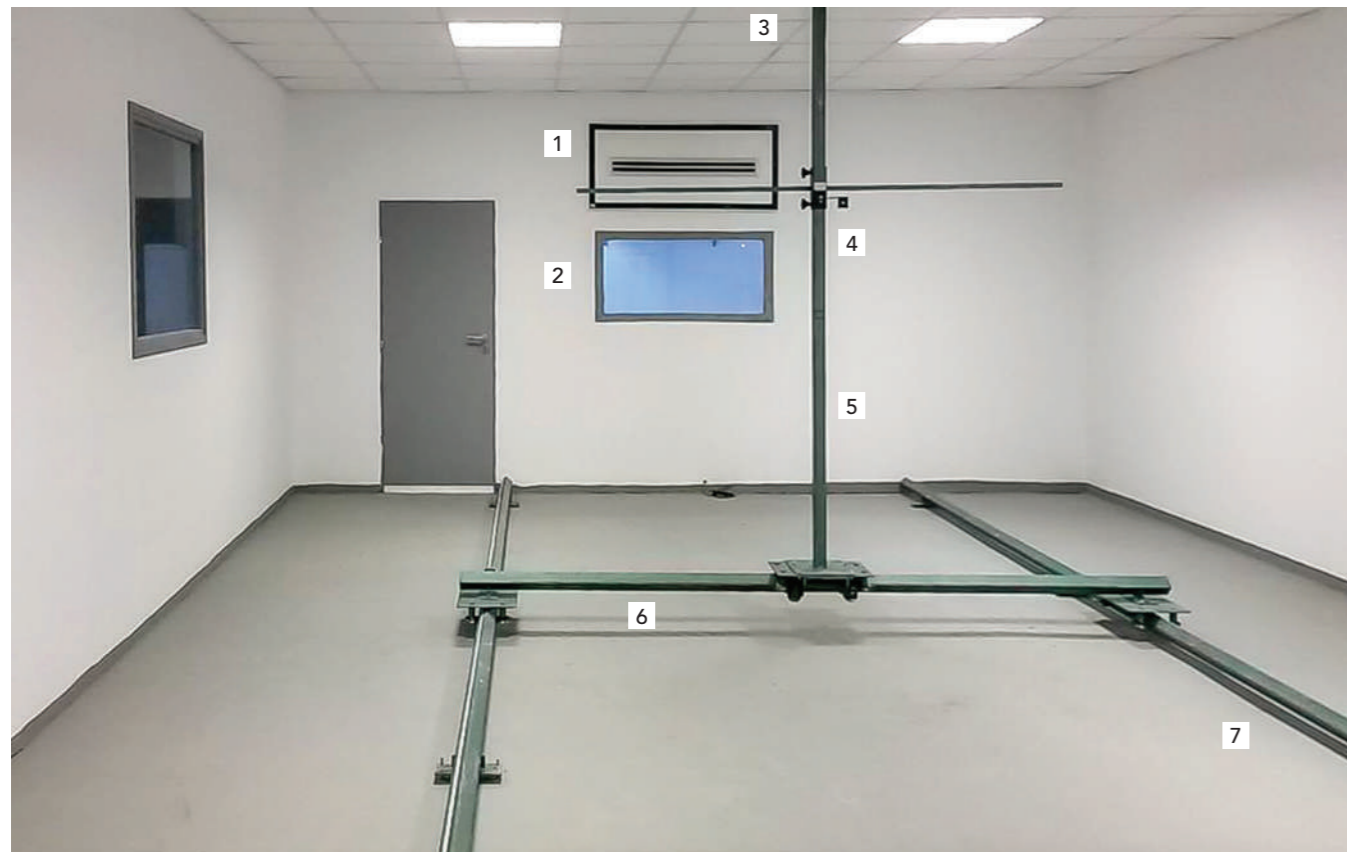
## INTRODUCTION

These measurements were made according to the European Standard CYS EN 12238:2001 in an effort to determine throw, drop and spread for each value of the supply. This research project concerns the certification of air conditioning outlets of grilles, which were experimentally tested and computationally simulated. The certification concerns the control of air supply of each discharge and developing the right spans in order, for the room to be in the desired temperature of comfort, i.e. providing the distance in length that will reach the air but also in finding the width (opening) of the outflow. At the same time, measurements of the noise levels for different air flows were established. Furthermore, for each supply, measurement of the air pressure took place in order to determine the pressure difference  $\Delta p$ , which requires calculations from manometer fans in air conditioning systems or the various sites. Moreover, the technical characteristics of the grille measured for air exit velocity from the grille minimum value of  $V_c = 1$  to 2 m/s up to a maximum value of  $V_c = 10$  m/s.

## MEASURING CHAMBER DESCRIPTION

Measuring chamber (chamber dimensions: 10,0 x 5,5 x 2,75 m = 151,25 m<sup>2</sup>). The measuring chamber is a metallic and sensed support scaffold system with motion in three axes, in order to be able to process an interior full scan of the interior of the test chamber. The measuring chamber is capable to test outlet surfaces of any kind (linear, with aerostats, curved with fins, jet nozzles, etc.), with maximum dimensions 1,20 X 0,55 m. Also, provision is made for ceiling orifices study of any kind with maximum dimensions 1,20 X 1,20 m. Figure below shows the laboratory area. The main elements that characterize the industrial area are:

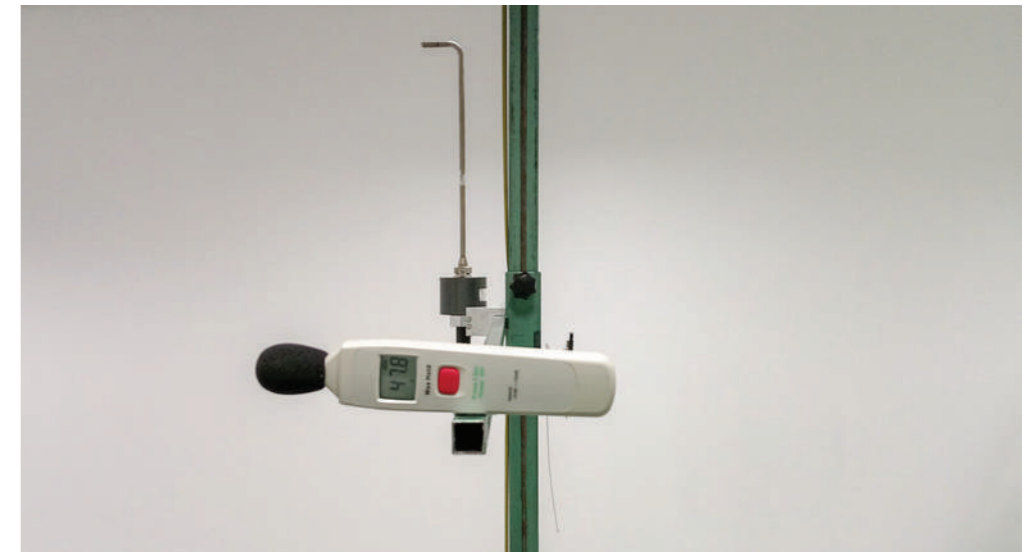
1. Window benefit adjustment hall
2. Grille Wall
3. Orifice room
4. Installation location measuring instrument
5. Z-Axis
6. Y-Axis
7. X-Axis



Measuring Room



Pitot-static tube gauge during measuring



Sound meter



Pitot-static tube and MP210 Digital Pressure Gauge

# DIFFERENT WAYS OF FASTENING METHODS FOR THE AIR CONDITIONING AIR GRILLES

The uniqueness of the idea of Ventus Air Grilles is based in the variety of different ways of mounting, depending on the visual aesthetic requirements and the technical challenges of the project.

## 1<sup>ST</sup> STEP

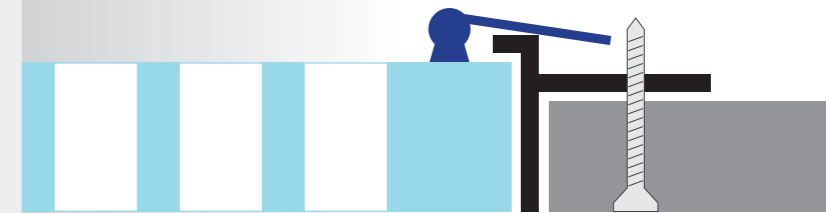
It's important for your order to choose the right mounting method for your project.

Alternative method with perfect finish by having the possibility of access in the ceiling, using an aluminum frame with specific dimension **(B800)**.

*Can be integrated on Plenum Box*

## Level Grille

3



## 1 Reverse Grille



The most common method of Ventus grilles with main features the perfect finish without any frame protrusions.

*Can be integrated on Plenum Box*

Support method seated in false ceiling 60cm x 60cm.

*Can be integrated on Plenum Box*

## False Ceiling Grille

4



## 2 Regular Grille



Common installation method by using stainless steel spring supports, with external perimeter visible frame.

### MEMORANDUM

- Grilles
- Plasterboard

Support method seated in drywall using aluminum frame with specific dimensions **(A100)**.

*Can be integrated on Plenum Box*

## Perforated Access

5

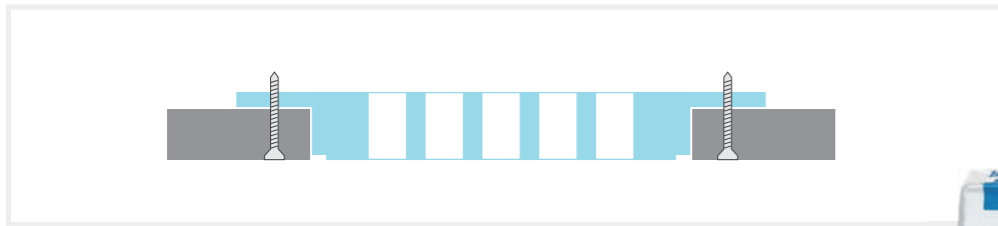


# Reverse Grille



The reverse frame support method is at the top of our clientele preferences, as it creates a minimal aesthetic result without external visible frame.

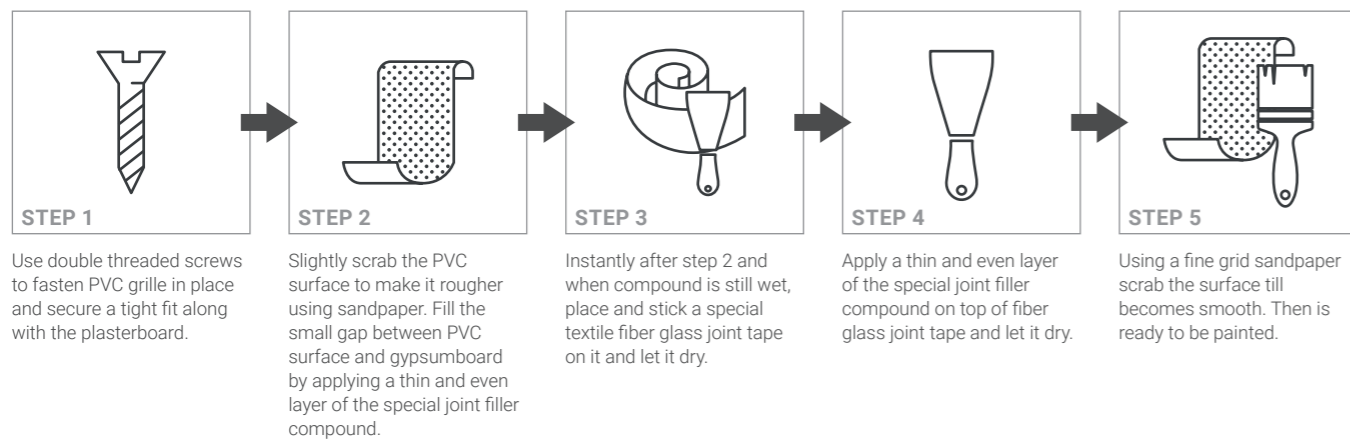
In this method, the outer surface of the grille is leveled with the outer surface of the drywall. Suitable for ceiling or wall.



The installation and finishing process follows.

## PVC TO PLASTERBOARD JOINT PROCEDURE

To prevent cracks and to provide the best finish between PVC foam-board and plasterboard joint, a special procedure described below should be followed.



## ADVANTAGES

- ▶ Elegant Result
- ▶ Easy Installation
- ▶ Special joint filler. Compound can be applied and painted with the ceiling or the wall
- ▶ Economic
- ▶ Minimal Result



Following the specific support method, the air conditioning grilles can be integrated in a plenum box, having the following advantages:

- ▶ Minimal aesthetic finishing
- ▶ Possibility of plenum box integration with zero air flow losses
- ▶ Sound insulation system with zero liquefaction
- ▶ It's possible to paint the grille on the site with the same paint you apply to the finish surface



**THE FOLLOWING AIR GRILLE CAN BE INSTALLED WITH THE SPECIFIC METHOD:**

- |  |   |  |  |
|--|---|--|--|
|  | <b>1.</b><br>Linear Bar Grilles<br>C: 8-5 / C: 12-5 / C: 10-7 V Cut |  | <b>4.</b><br>Look Like Canyon<br>25mm / 35mm / 45mm Slot |
|  | <b>2.</b><br>V Slot Diffuser<br>25mm / 35mm / 45mm                  |  | <b>5.</b><br>Extraction Grilles                          |
|  | <b>3.</b><br>3 Slot Grilles   |  | <b>6.</b><br>Custom Grilles                              |



# Regular Grille



The support method with the external visible frame on the perimeter is the most common at the worldwide market.

At this method, the outer surface of the air grille is extended from the final surface, it's suitable for ceiling and walls.

Support types: (Suggested type: **Stainless Steel Springs**)



**STAINLESS STEEL SPRINGS**



**SCREWS**



**WITH THE USE OF GLUE**

The painting process follows:

1

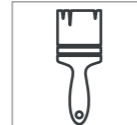


Light rubbing with a fine sandpaper

2



Painting: 2 coats paint with a roller oil paint (sponge)

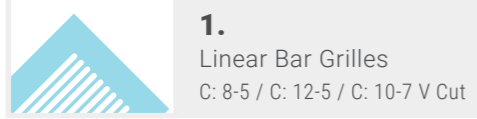


Primer plastic

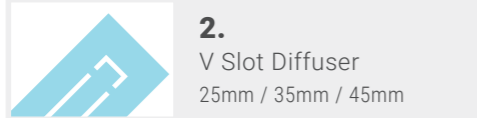


Painting: 2 coats with roller oil paint (sponge)

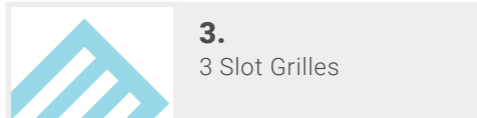
**THE FOLLOWING AIR GRILLE CAN BE INSTALLED WITH THE SPECIFIC METHOD:**



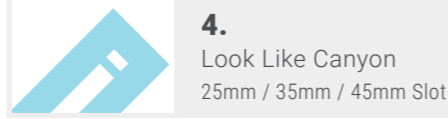
**1.** Linear Bar Grilles  
C: 8-5 / C: 12-5 / C: 10-7 V Cut



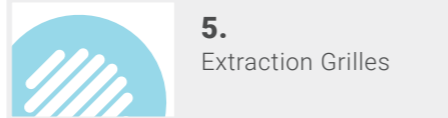
**2.** V Slot Diffuser  
25mm / 35mm / 45mm



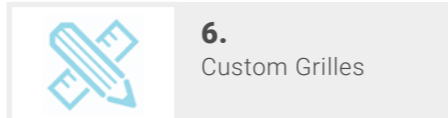
**3.** 3 Slot Grilles



**4.** Look Like Canyon  
25mm / 35mm / 45mm Slot



**5.** Extraction Grilles



**6.** Custom Grilles

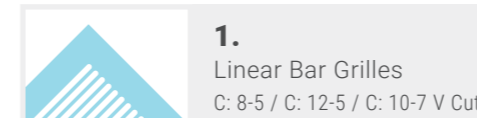
## ADVANTAGES

- ▶ Provide access in the ceiling
- ▶ Cover any imperfections of the opening
- ▶ The frame can be at different dimensions (10mm–30mm)
- ▶ Can be painted at any RAL code color
- ▶ Can be painted on the site with the same paint that will be applied at the finish surface

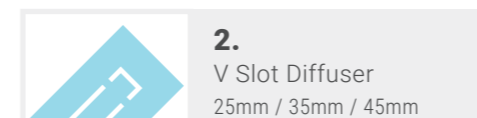
## ADVANTAGES

- ▶ Minimal aesthetic result
- ▶ Provide access in the ceiling
- ▶ Can be integrated with a plenum box having as a result, zero air flow losses)
- ▶ Can be painted on the site with the same paint that will be applied at the finish surface

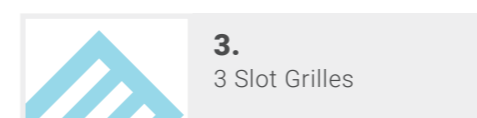
**WITH THIS METHOD SUPPORT AVAILABLE IS THE FOLLOWING GRILLE**



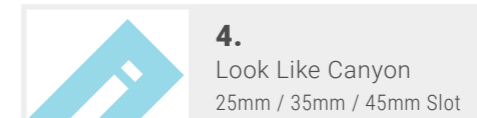
**1.** Linear Bar Grilles  
C: 8-5 / C: 12-5 / C: 10-7 V Cut



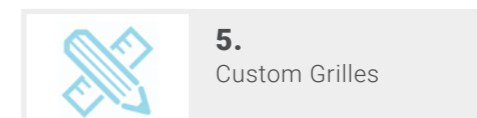
**2.** V Slot Diffuser  
25mm / 35mm / 45mm



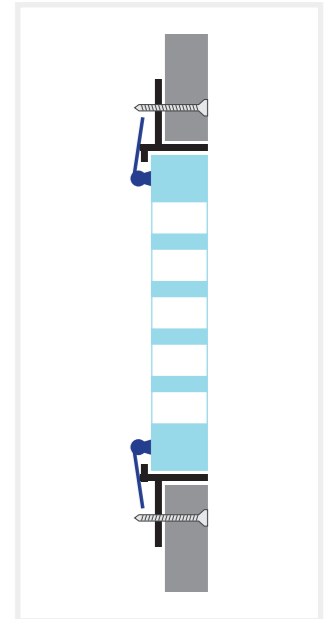
**3.** 3 Slot Grilles



**4.** Look Like Canyon  
25mm / 35mm / 45mm Slot



**5.** Custom Grilles



The Level support method gives a minimal aesthetic result without any visible frame, with the possibility of access.

Framing in aluminum frame (B:800), with attached stainless-steel springs. With this method, the outer surface of the air grille comes at the same level with the outer surface of the drywall. Suitable for wall.

# False Ceiling Grille

## ADVANTAGES

- ▶ Can be integrated with a plenum box having as a result, zero air flow losses)
- ▶ Easy Installation
- ▶ Possibility to order the seated air grille at any custom dimensions

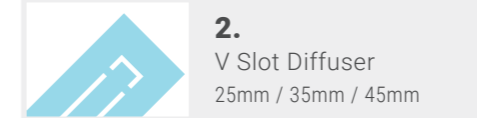
False ceiling mounting method that allows the replacement of a gypsum board piece with seated air grille.



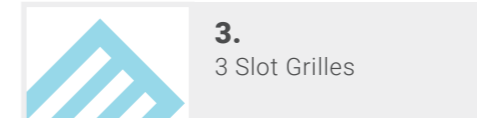
**THE FOLLOWING AIR GRILLE CAN BE INSTALLED WITH THE SPECIFIC METHOD:**



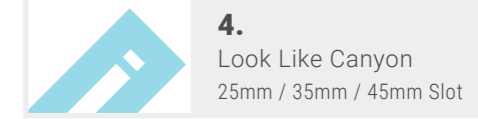
**1.** Linear Bar Grilles  
C: 8-5 / C: 12-5 / C: 10-7 V Cut



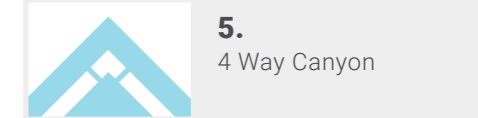
**2.** V Slot Diffuser  
25mm / 35mm / 45mm



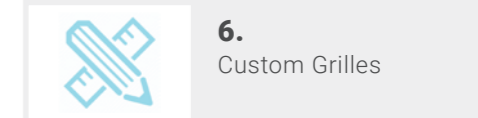
**3.** 3 Slot Grilles



**4.** Look Like Canyon  
25mm / 35mm / 45mm Slot



**5.** 4 Way Canyon



**6.** Custom Grilles

# Perforated Access



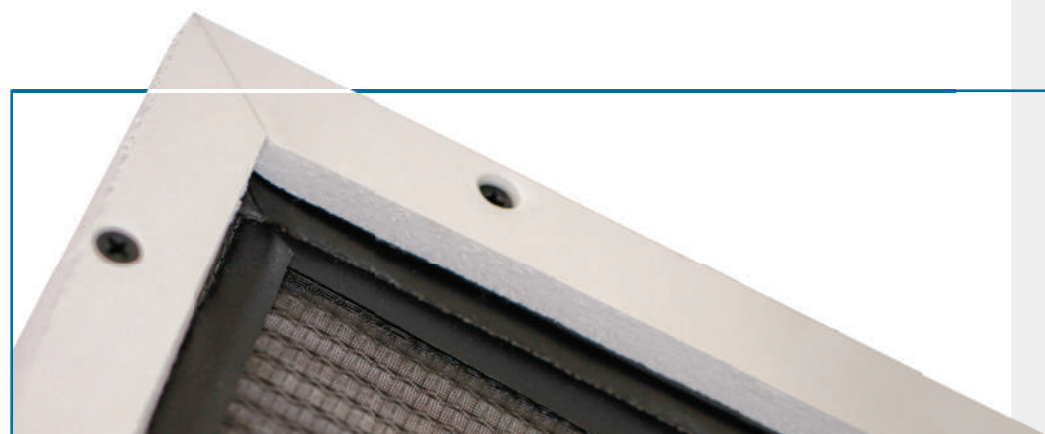
Return Grille & Access Panel

## 2-IN-1 PRODUCT

The Perforated Access Panel is **Unique** in its use. It can function both as a **Return Grille** and an **Access Panel** eliminating the need two openings in the same area.

With a fixed specific angle deflection and an aesthetically pleasing line, the Perforated Access Panel is an advanced linear grille ideal for ceiling applications for your commercial or residential project. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product.

The Perforated Access Panel is a fully customizable product available in a variety of different sizes, colors, finishes, and fastening methods.



### APPLICATIONS

The Perforated Access Panel series are ideally designed to be used for Hotel Room Corridors. Leveled with the ceiling, painted with the same colour paint.

### FEATURES

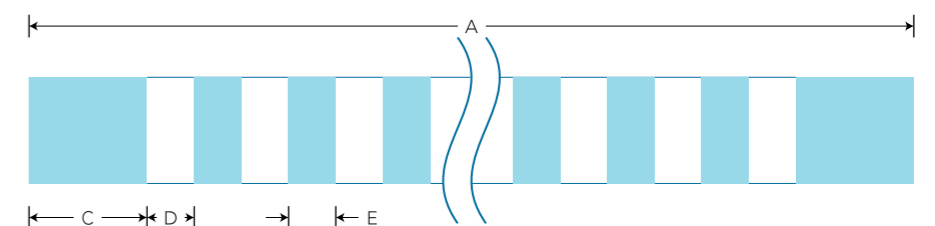
- ▶ Fixed zero deflection
- ▶ Custom spacing available
- ▶ Custom made dimensions
- ▶ Multiple ways of fastening

### A/C FILTER

- ◀ Perforated Access Panels can come with a filter frame or with the filter already attached. The filter can be placed and removed easily for cleaning.

### 8-5 PANEL

#### CROSS-SECTION



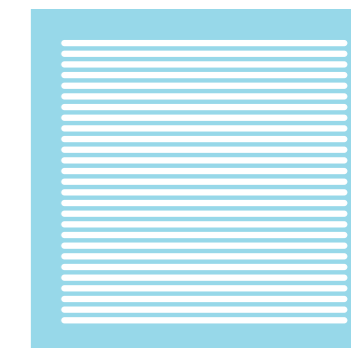
#### DIMENSIONS

A	B	C	D	E
400mm	18mm	20mm	12mm	5mm

#### FREE AREA (A<sub>c</sub>) - [m<sup>2</sup>]

L / H	400	500	600	700	800
400	0.063	0.081	0.110	0.125	0.144
500	0.081	0.111	0.137	0.167	0.193
600	0.110	0.137	0.163	0.200	0.230
700	0.125	0.167	0.200	0.254	0.292
800	0.144	0.193	0.230	0.292	0.331

#### FRONT



### 8-8 PANEL

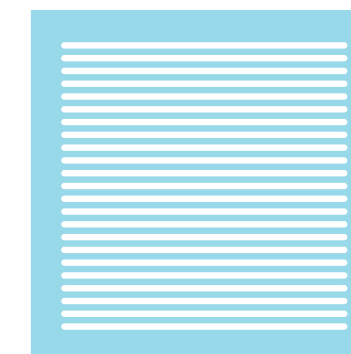
#### DIMENSIONS

A	B	C	D	E
400mm	18mm	20mm	8mm	8mm

#### FREE AREA (A<sub>c</sub>) - [m<sup>2</sup>]

L / H	400	500	600	700	800
400	0.061	0.070	0.086	0.105	0.121
500	0.070	0.096	0.111	0.136	0.156
600	0.086	0.111	0.142	0.165	0.190
700	0.105	0.136	0.165	0.207	0.238
800	0.121	0.156	0.190	0.238	0.262

#### FRONT



### 10-7 PANEL

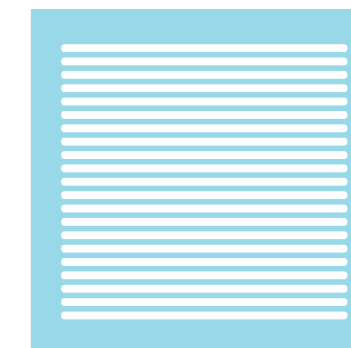
#### DIMENSIONS

A	B	C	D	E
400mm	18mm	20mm	10mm	7mm

#### FREE AREA (A<sub>c</sub>) - [m<sup>2</sup>]

L / H	400	500	600	700	800
400	0.065	0.084	0.104	0.127	0.146
500	0.084	0.100	0.128	0.156	0.180
600	0.104	0.128	0.160	0.194	0.224
700	0.127	0.156	0.194	0.238	0.274
800	0.146	0.180	0.224	0.274	0.320

#### FRONT



### MEMORANDUM

■ 18mm White PVC



# LINEAR BAR GRILLES

The bar grilles that defines the standard for the industry. With high quality and competitive pricing these grilles form the back bone of a standard offering.



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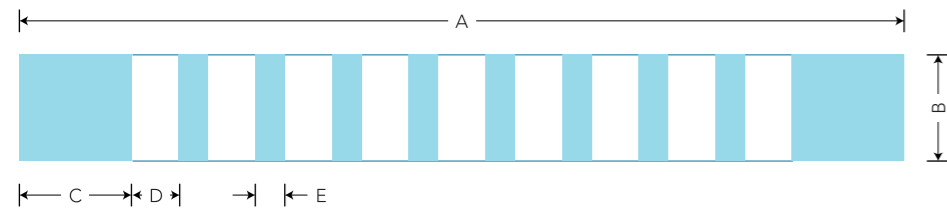
# Linear 8-5 Grilles



With a fixed specific angle deflection and an aesthetically pleasing line, the LR 8-5 Bar Grille is an advanced linear grille ideal for wall and ceiling applications for your commercial or residential project. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product.

The LR 8-5 Bar Grille is a fully customizable product available in a variety of different sizes, colors, finishes, and fastening methods.

## CROSS-SECTION



## DIMENSIONS

A	B	C	D	E
150mm	18mm	15mm	8mm	5mm

## FRONT



## FREE AREA (Ac)

L / H	600	800	1000
100			0.045 m <sup>2</sup>
150	0.039 m <sup>2</sup>	0.053 m <sup>2</sup>	0.067 m <sup>2</sup>
200		0.077 m <sup>2</sup>	0.097 m <sup>2</sup>
300			0.157 m <sup>2</sup>

## APPLICATIONS

The Linear bar grilles series are designed to be used for supply and exhaust of cooled and heated air on a fixed zero deflection. They can be placed in ceilings, walls, separate units, fan coils and on air ducts.

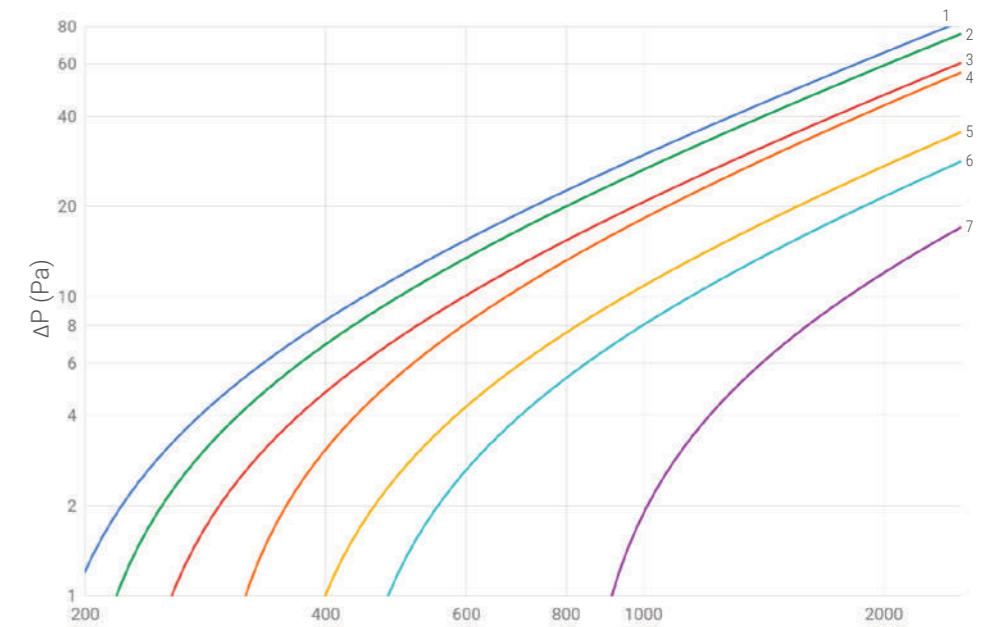
## FEATURES

- ▶ Fixed zero deflection
- ▶ Custom spacing available
- ▶ Custom made dimensions
- ▶ Curved available: Concave, Convex
- ▶ Mitered corners (interior, exterior)
- ▶ Multiple ways of fastening

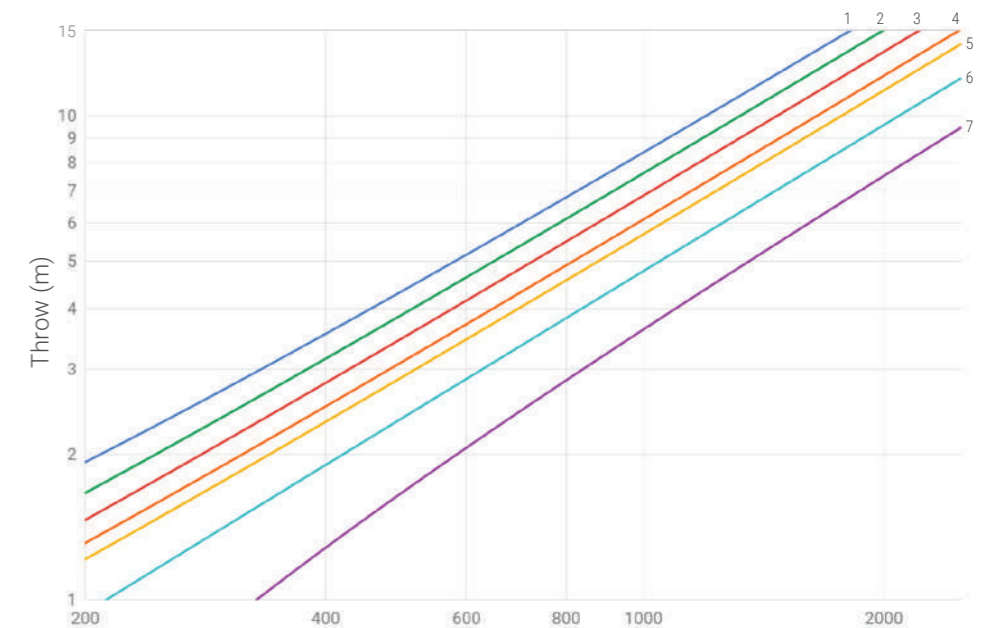
## MEMORANDUM

18mm White PVC

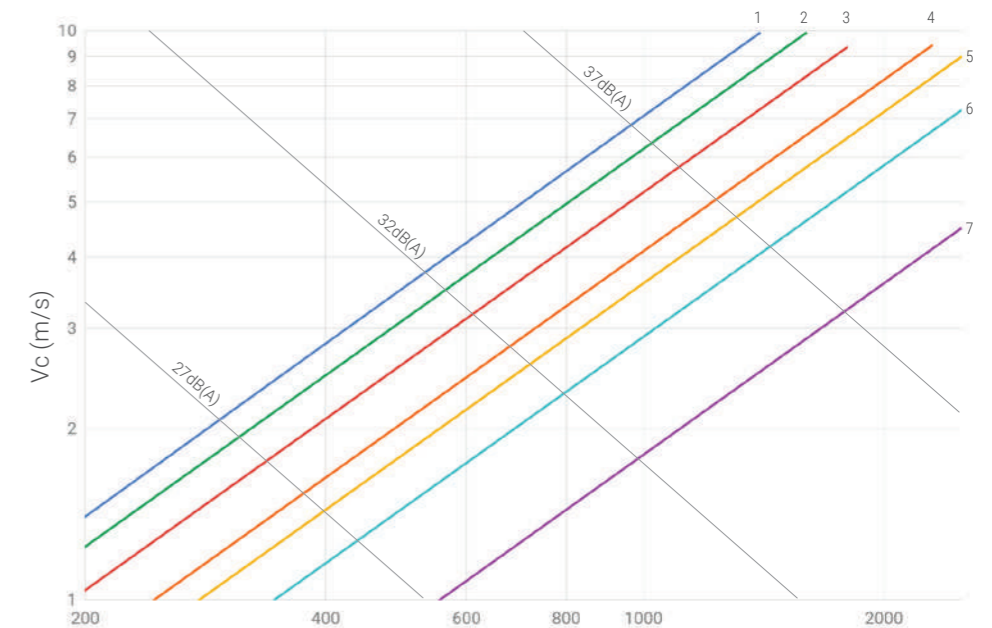
## PRESSURE DROP



## THROW



## VELOCITY



Τα παραπάνω γραφήματα δημιουργήθηκαν για γρίλιες μήκους 1m.

Q (m<sup>3</sup>/h)

## MEMORANDUM

600 x 150	(1)	Blue
800 x 150	(3)	Red
800 x 200	(5)	Yellow
1000 x 100	(2)	Green
1000 x 150	(4)	Orange
1000 x 200	(6)	Cyan
1000 x 300	(7)	Purple

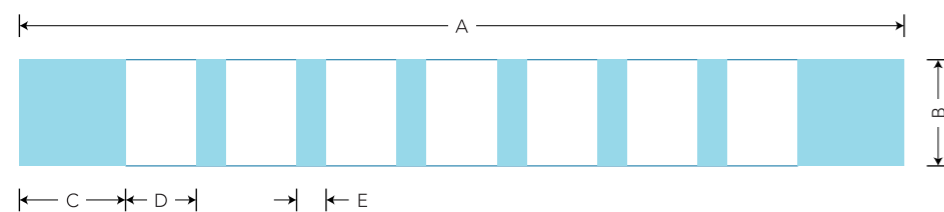
# Linear 12-5 Grilles



With a fixed specific angle deflection and an aesthetically pleasing line, the LR 12-5 Bar Grille is an advanced linear grille ideal for wall and ceiling applications for your commercial or residential project. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product.

The LR 12-5 Bar Grille is a fully customizable product available in a variety of different sizes, colors, finishes, and fastening methods.

## CROSS-SECTION



## DIMENSIONS

A	B	C	D	E
150mm	18mm	15mm	12mm	5mm

## FRONT



## FREE AREA (Ac)

L / H	600	800	1000
100			0.046 m <sup>2</sup>
150	0.047 m <sup>2</sup>	0.063 m <sup>2</sup>	0.079 m <sup>2</sup>
200		0.090 m <sup>2</sup>	0.113 m <sup>2</sup>
300			0.182 m <sup>2</sup>

## APPLICATIONS

The Linear bar grilles series are designed to be used for supply and exhaust of cooled and heated air on a fixed zero deflection. They can be placed in ceilings, walls, separate units, fan coils and on air ducts.

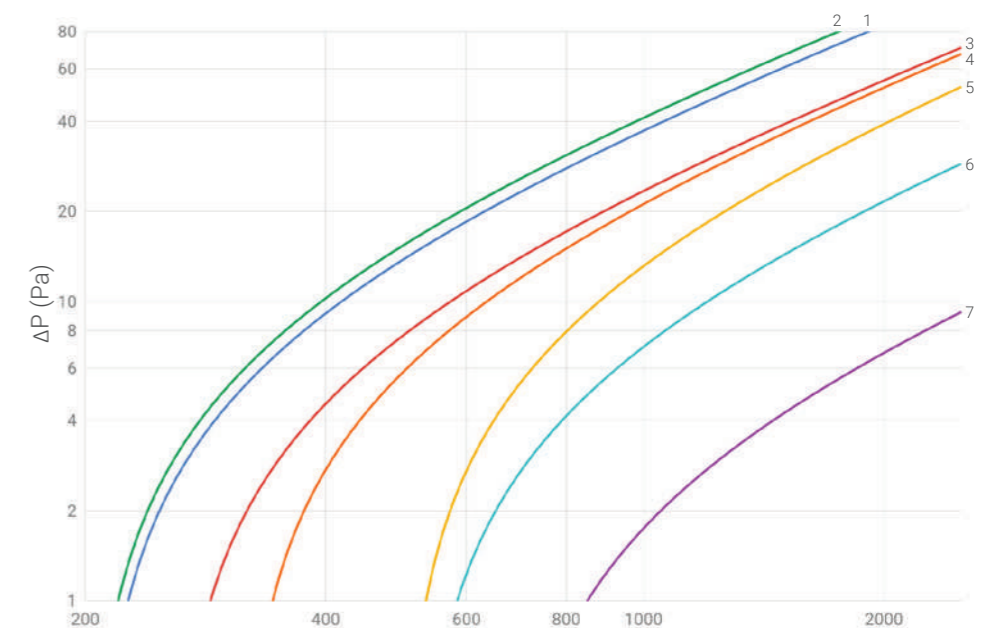
## FEATURES

- ▶ Fixed zero or angled deflection
- ▶ Custom spacing available
- ▶ Custom made dimensions
- ▶ Curved available: Concave, Convex
- ▶ Mitered corners (interior, exterior)
- ▶ Multiple ways of fastening

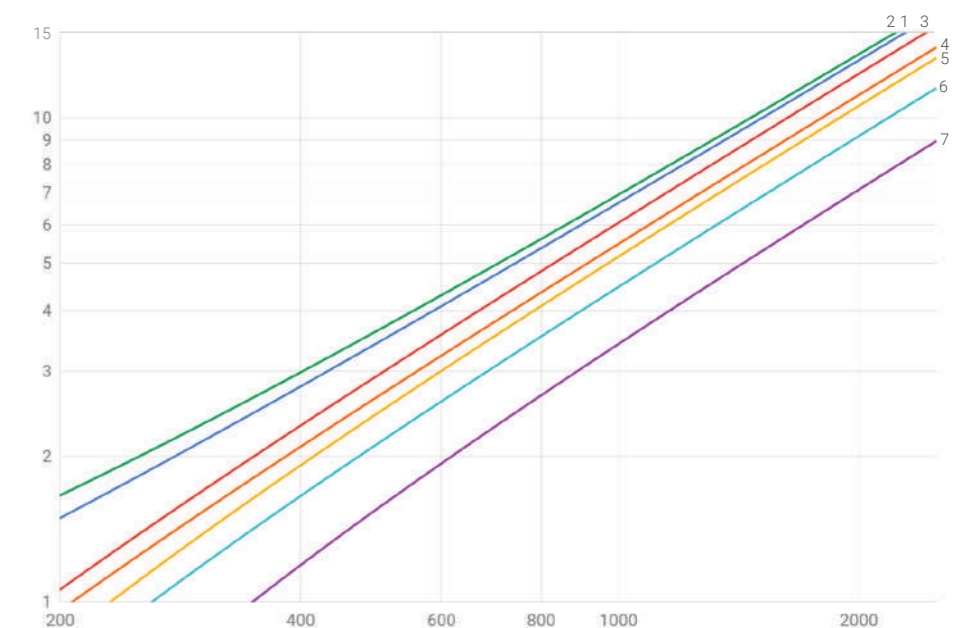
## MEMORANDUM

18mm White PVC

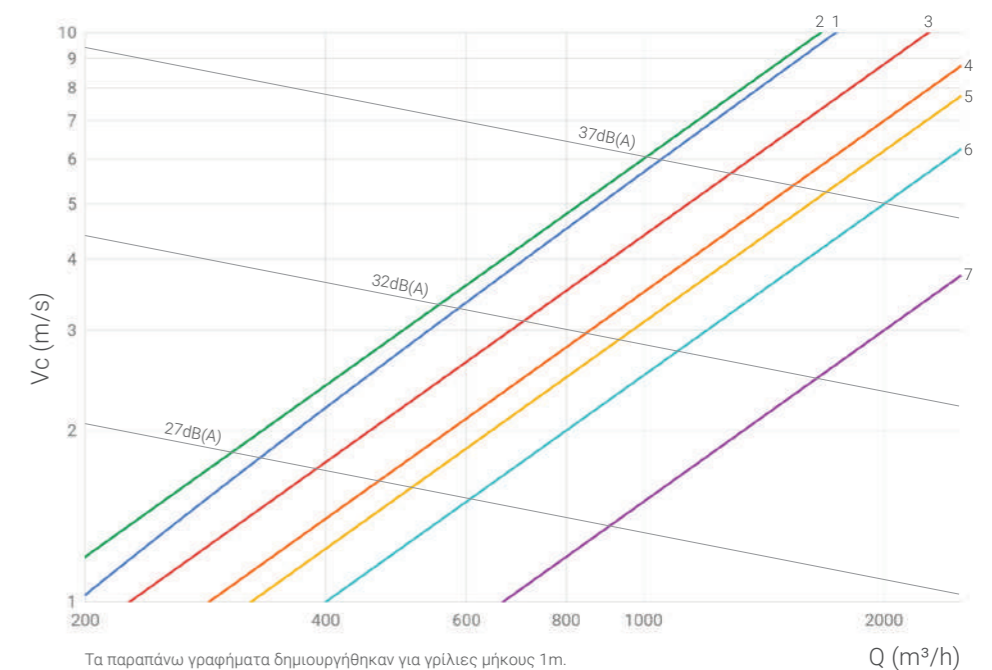
## PRESSURE DROP



## THROW



## VELOCITY



## MEMORANDUM

600 x 150	(1)	Blue
800 x 150	(3)	Red
800 x 200	(5)	Yellow
1000 x 100	(2)	Green
1000 x 150	(4)	Orange
1000 x 200	(6)	Cyan
1000 x 300	(7)	Purple

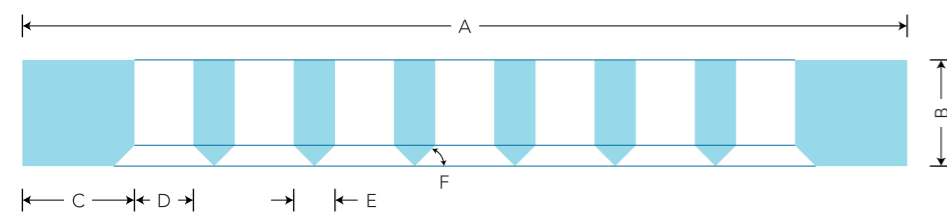
# Linear 10-7 V-Cut Grilles



With a fixed specific angle deflection and an aesthetically pleasing line, the LR 10-7 Bar Grille is an advanced linear grille ideal for wall and ceiling applications for your commercial or residential project. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product.

The LR 10-7 Bar Grille is a fully customizable product available in a variety of different sizes, colors, finishes, and fastening methods.

## CROSS-SECTION



## DIMENSIONS

A	B	C	D	E	F
150mm	18mm	15mm	10mm	7mm	45°

## FRONT



## FREE AREA (Ac)

L / H	600	800	1000
100			0.045 m <sup>2</sup>
150	0.039 m <sup>2</sup>	0.053 m <sup>2</sup>	0.067 m <sup>2</sup>
200		0.077 m <sup>2</sup>	0.097 m <sup>2</sup>
300			0.157 m <sup>2</sup>

## APPLICATIONS

The Linear bar grilles series are designed to be used for supply and exhaust of cooled and heated air on a fixed zero deflection. They can be placed in ceilings, walls, separate units, fan coils and on air ducts.

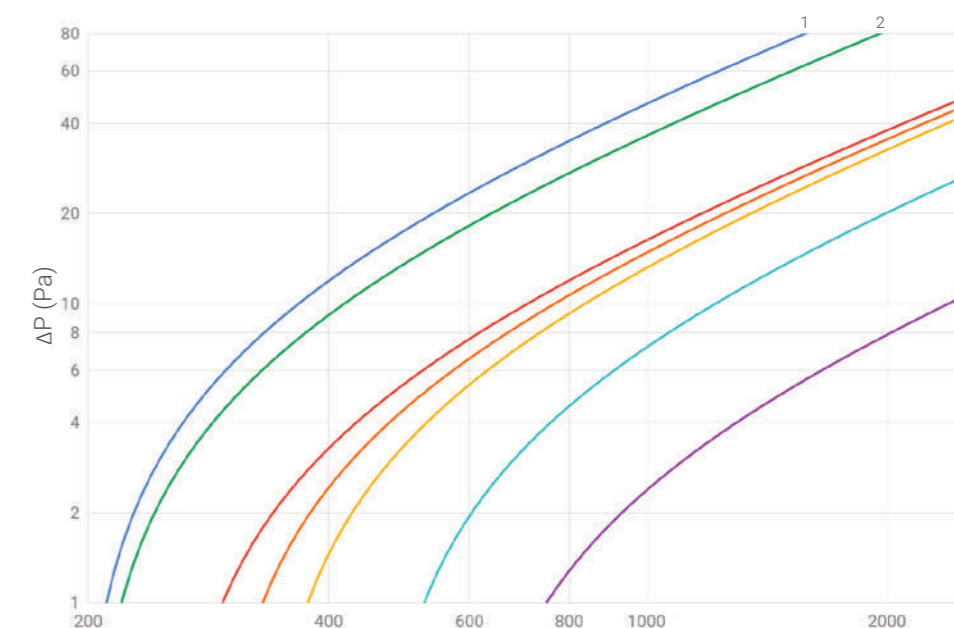
## FEATURES

- ▶ Fixed zero or angled deflection
- ▶ Custom spacing available
- ▶ Custom made dimensions
- ▶ Curved available: Concave, Convex
- ▶ Mitered corners (interior, exterior)
- ▶ Multiple ways of fastening

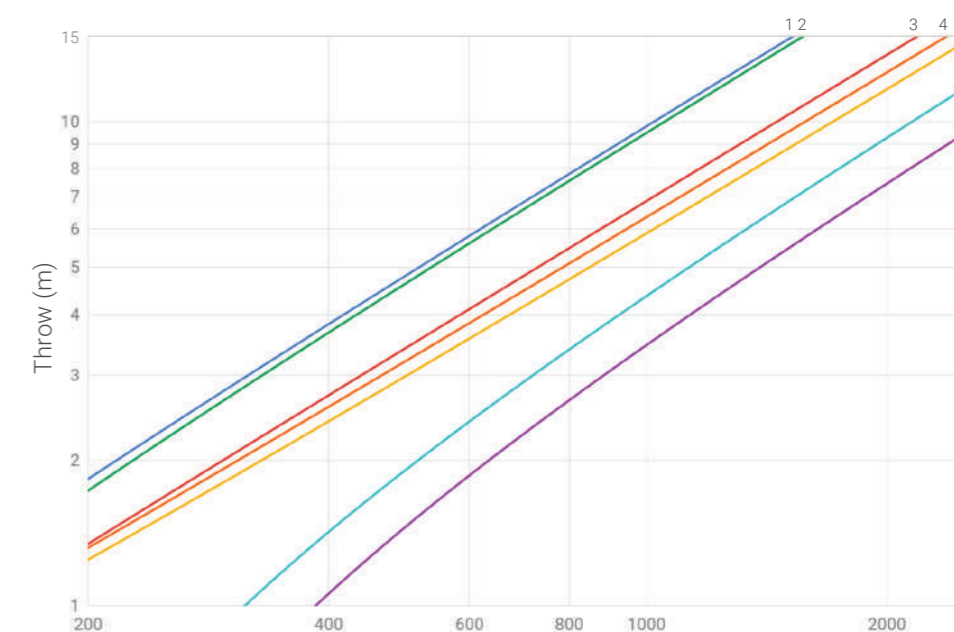
## MEMORANDUM

18mm White PVC

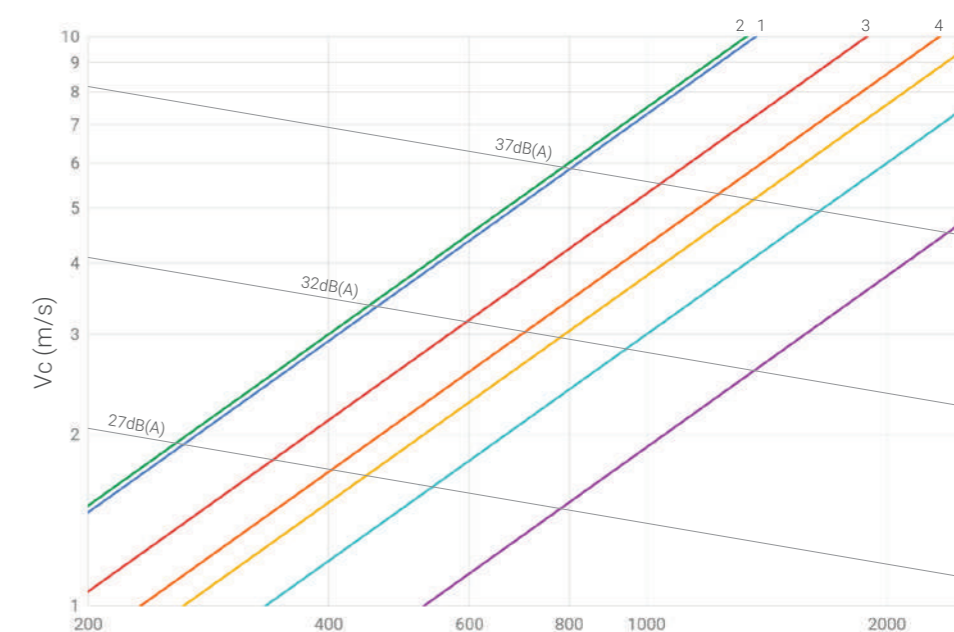
## PRESSURE DROP



## THROW



## VELOCITY



## MEMORANDUM

- 600 x 150 (1)
- 800 x 150 (3)
- 800 x 200 (5)
- 1000 x 100 (2)
- 1000 x 150 (4)
- 1000 x 200 (6)
- 1000 x 300 (7)

Τα παραπάνω γραφήματα δημιουργήθηκαν για γρίλιες μήκους 1m.

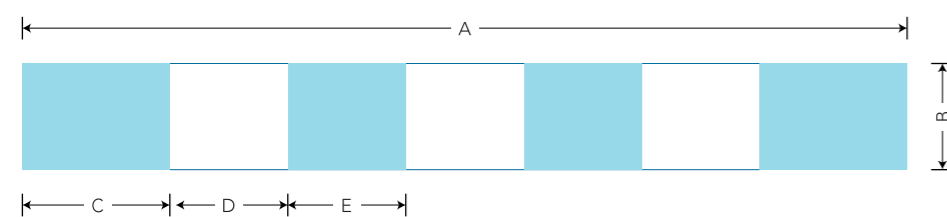
# Linear 3-Slot Grilles



With a specific fixed angle deflection and an aesthetically pleasing line, the 3-Slot Linear Grille is an advanced Linear Grille ideal for both Wall and Ceiling Applications for your commercial or residential project. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product.

The 3-slot Grille is a fully customizable product available in a variety of different sizes, colours, finishes and fastening methods.

## CROSS-SECTION



## DIMENSIONS

A	B	C	D	E
150mm	18mm	25mm	20mm	20mm

## FREE AREA (A<sub>c</sub>)

3-Slot	150mm
A <sub>c</sub>	0,057 m <sup>2</sup>

## FRONT



## APPLICATIONS

The 3-Slot grille is designed to be used for both supply and exhaust of cooled and heated air on a fixed zero deflection. They can be placed in a plethora of applications including ceilings, walls, separate units, fan coils and air ducts.

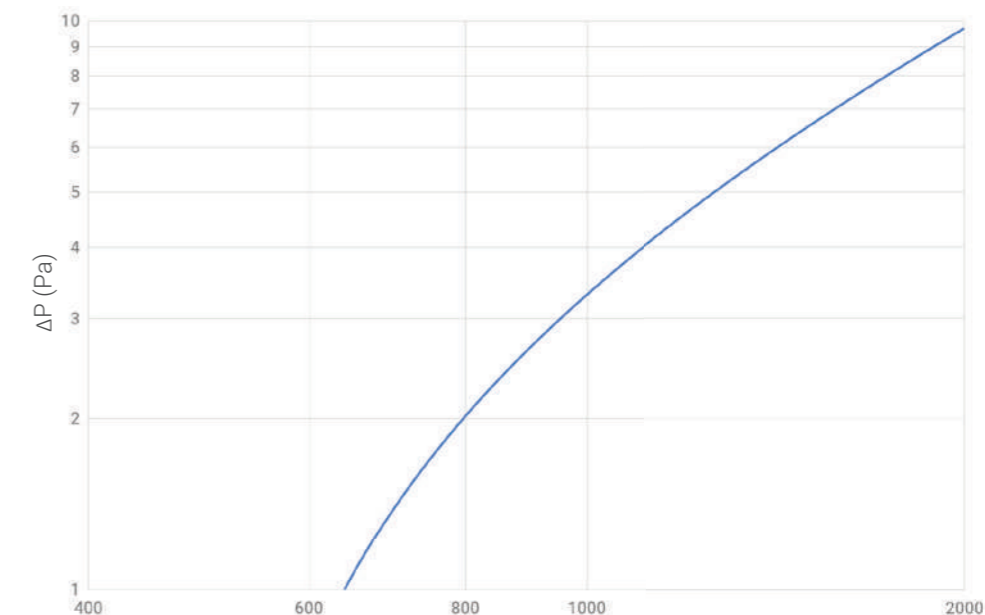
## FEATURES

- ▶ Fixed zero deflection
- ▶ Custom spacing available
- ▶ Custom made dimensions
- ▶ Curved available: Concave, Convex
- ▶ Mitered corners (interior, exterior)
- ▶ Multiple ways of fastening

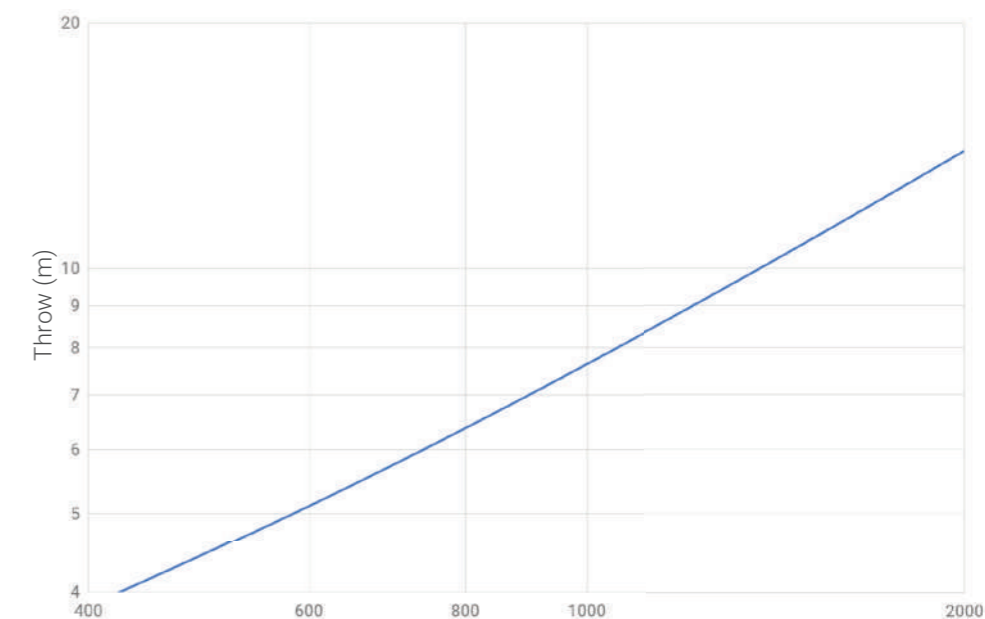
## MEMORANDUM

■ 18mm White PVC

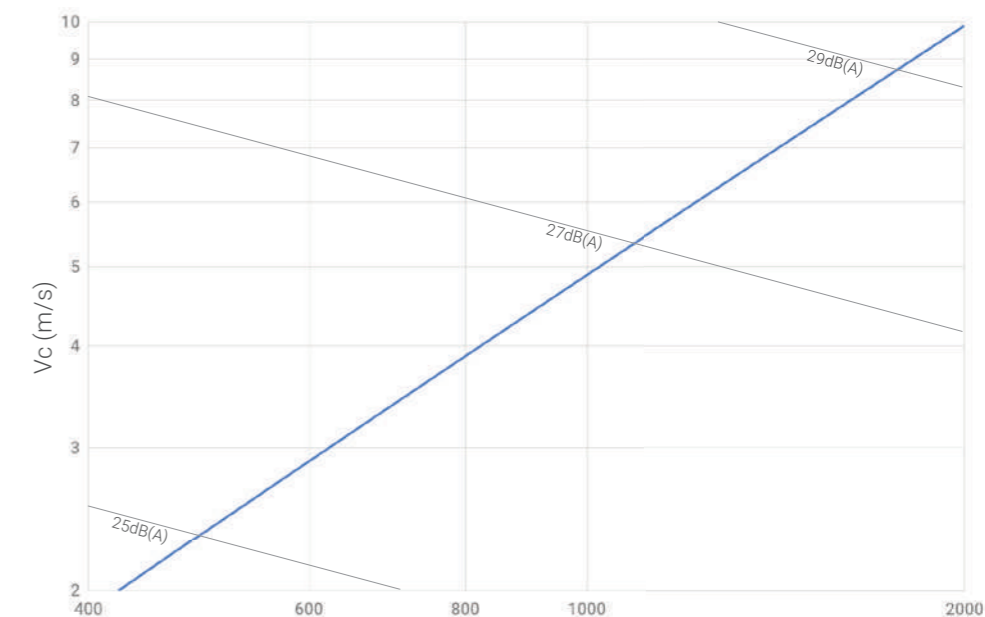
## PRESSURE DROP



## THROW



## VELOCITY



Τα παραπάνω γραφήματα δημιουργήθηκαν για γρίλιες μήκους 1m.

Q (m³/h)

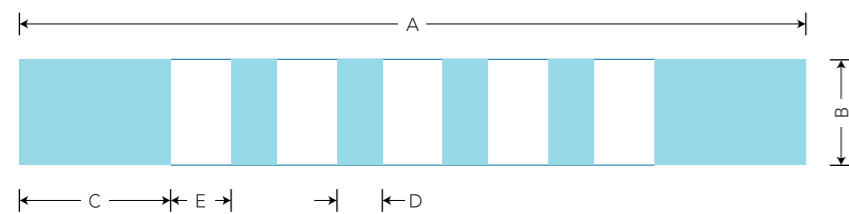
# Extraction Grilles



With a specific fixed angle deflection, the Rounded Grille is used in both Ceiling and Wall applications for Heating or Cooling as well as an outdoors Exhaust grille.

The Circular Grille is a fully customizable product available in a variety of different sizes, colours, finishes and fastening methods.

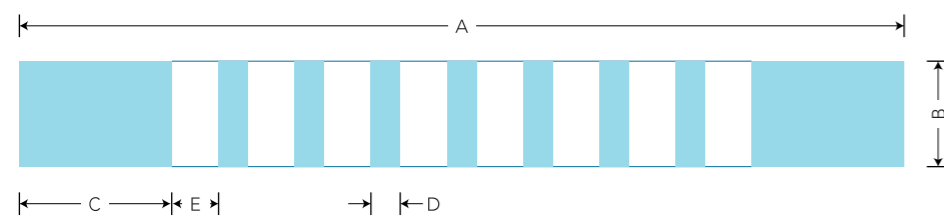
## CROSS-SECTION (8-6 GRILLE)



## DIMENSIONS (8-6 GRILLE)

A	B	C	D	E
100mm	18mm	20mm	6mm	8mm

## CROSS-SECTION (8-5 GRILLE)



## DIMENSIONS (8-5 GRILLE)

A	B	C	D	E
150mm	18mm	26mm	5mm	8mm

## APPLICATIONS

The Rounded grille is designed to be used for both supply and exhaust of cooled and heated air on a fixed zero deflection. They can be placed in a plethora of applications including ceilings, walls, separate units, fan coils, air ducts and as diffusers.

## FEATURES

- ▶ Fixed zero deflection
- ▶ Custom spacing available
- ▶ Custom made dimensions
- ▶ Multiple ways of fastening

## MEMORANDUM

■ 18mm White PVC

Both Rounded and Square Extraction Grilles can be used for ventilation and air extraction applications.

## Rounded Extraction Grille



## Square Extraction Grille



\* Optional: Built-in neck.





# V-SLOT DIFFUSER SYSTEM

The ceiling mounted diffuser that maintains a uniform, horizontal discharge pattern over widely varying flow rates.

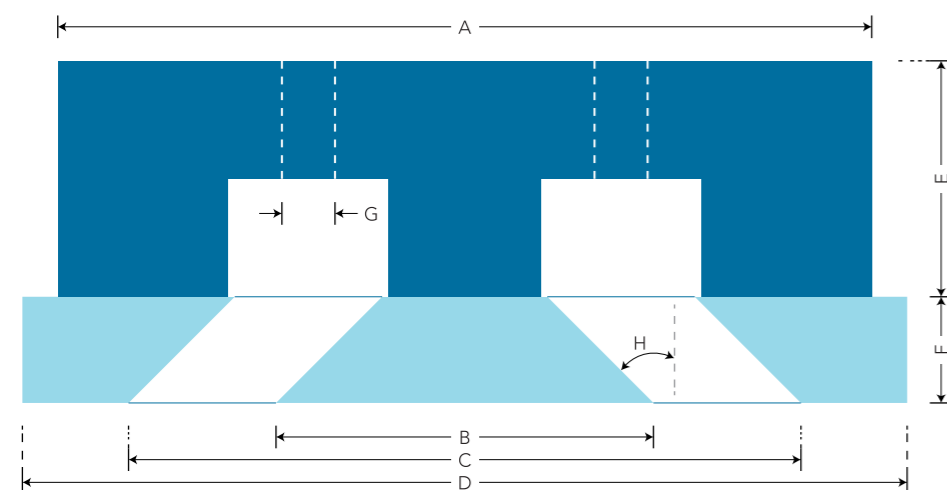


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# V-Slot Diffusers

With a fixed 45 degree 4-way deflection and an aesthetically pleasing line, the V-Slot is an advanced linear diffuser ideal for ceiling applications for your commercial or residential project. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product.

## CROSS-SECTION



## DIMENSIONS

LLC	A	B	C	D	E	F	G	H
25 mm	138	64	114	150	40	18	9	45°
35 mm	158	64	134	172	40	18	9	45°
45 mm	178	64	154	190	40	18	9	45°

## FREE AREA (Ac)

L / H	55	76	98
150	0.055 m <sup>2</sup>	0.076 m <sup>2</sup>	0.098 m <sup>2</sup>

## FRONT



## APPLICATIONS

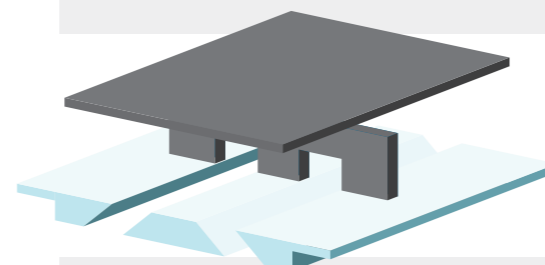
The V-Slot linear diffusers series are designed to be used for supply and exhaust of cooled and heated air on a fixed 45-degree deflection. They can be placed in ceilings or on-air ducts. Air supply with ceiling effect in 4-way.

## FEATURES

- ▶ 4-way air deflection
- ▶ Custom made dimensions
- ▶ 25-35-45mm spacing available
- ▶ Curved available: Concave, Convex, Flat face
- ▶ Mitered corners (interior, exterior)
- ▶ Multiple ways of fastening

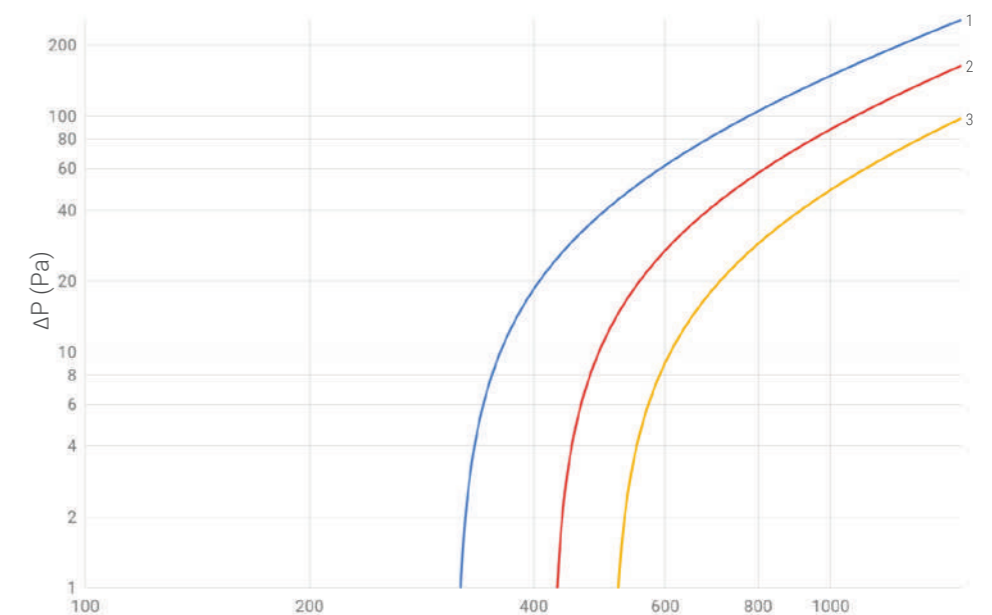
## MEMORANDUM

- 18mm White PVC
- 18mm Black PVC

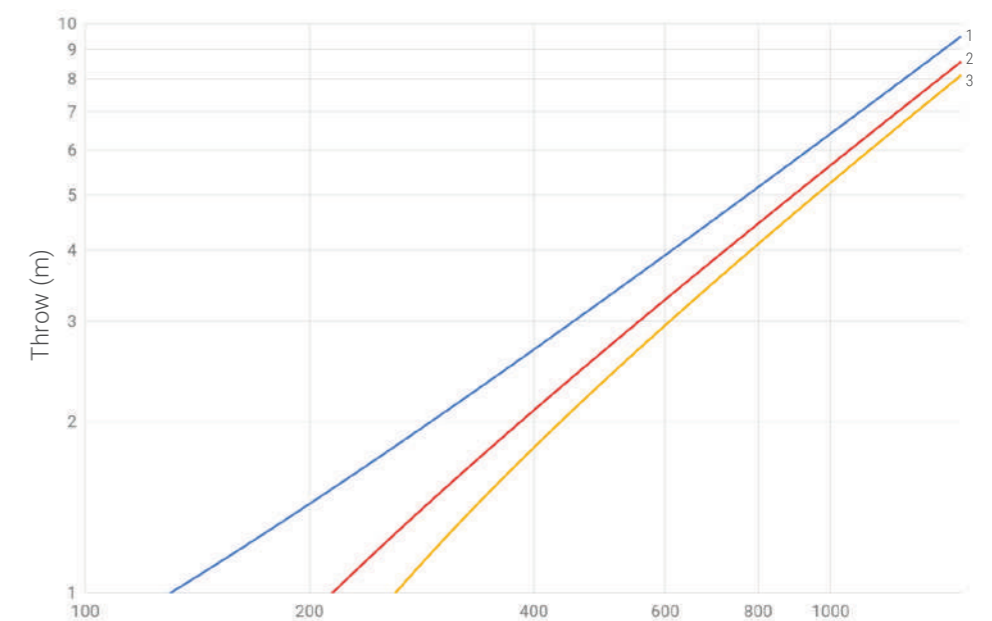


\* optional black back

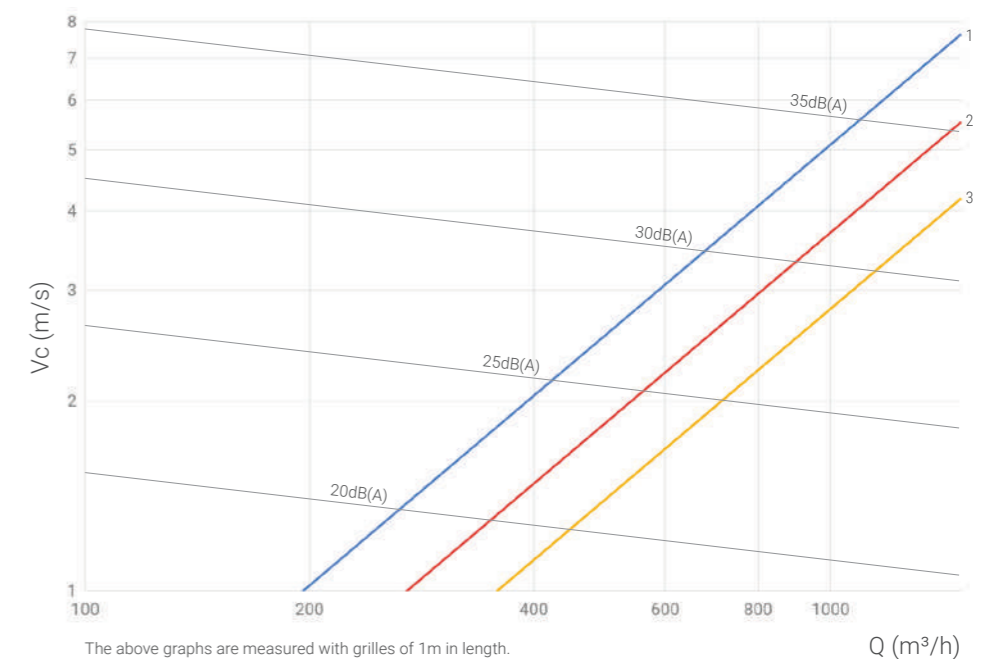
## PRESSURE DROP



## THROW



## VELOCITY



The above graphs are measured with grilles of 1m in length.



# LOOK LIKE CANYON GRILLES

The linear single slot diffuser that delivers higher airflow with lower noise levels.

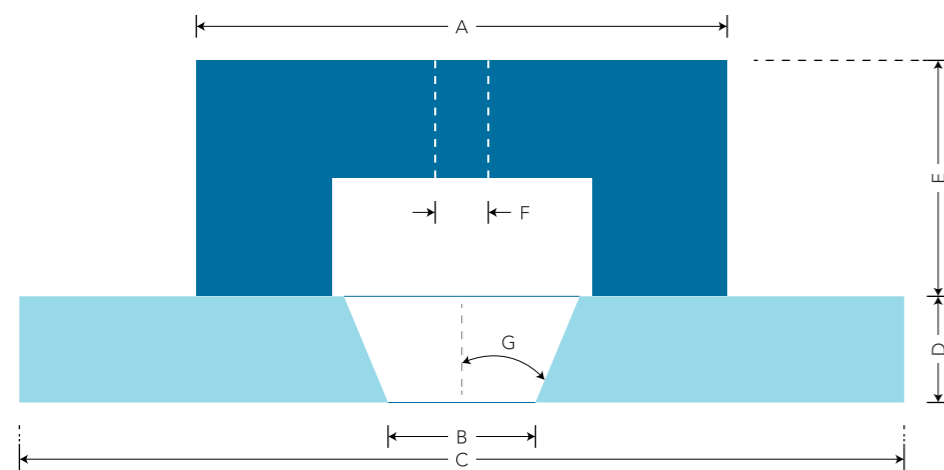


[WWW.VENTUSAIR.EU](http://WWW.VENTUSAIR.EU)

# Look Like Canyon Grilles

With a fixed specific angle deflection and an aesthetically pleasing line, the LLC linear Grille is an advanced single slot linear grille ideal for wall and ceiling applications for your commercial or residential projects. Surpassing architectural and engineering applications that require both design and high engineering performance, this is a premium quality product. The LLC linear Grille is a fully customizable product available in a variety of different sizes, colors, finishes, and fastening methods.

## CROSS-SECTIONS



## DIMENSIONS

LLC	A	B	C	D	E	F	G
25 mm	90	25	150	18	-	9	22,5°
35 mm	100	35	150	18	-	9	22,5°
45 mm	110	45	150	18	-	9	22,5°

## FREE AREA (A<sub>c</sub>)

L / H	25 mm	35 mm	45 mm
150	0.022 m <sup>2</sup>	0.031 m <sup>2</sup>	0.041 m <sup>2</sup>

## FRONT



## APPLICATIONS

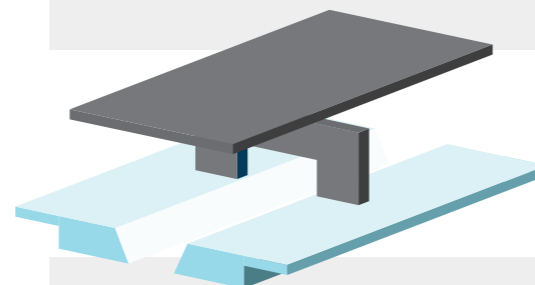
The Look Like Canyon grilles series are designed to be used for supply and exhaust of cooled and heated air on a fixed zero deflection. They can be placed in ceilings, walls, separate units, fan coils and on air ducts.

## FEATURES

- ▶ Zero fixed deflection
- ▶ Custom made dimensions
- ▶ 25 - 35 - 45 mm spacing available
- ▶ Curved available: Concave, Convex
- ▶ Mitered corners (interior, exterior)
- ▶ Multiple ways of fastening

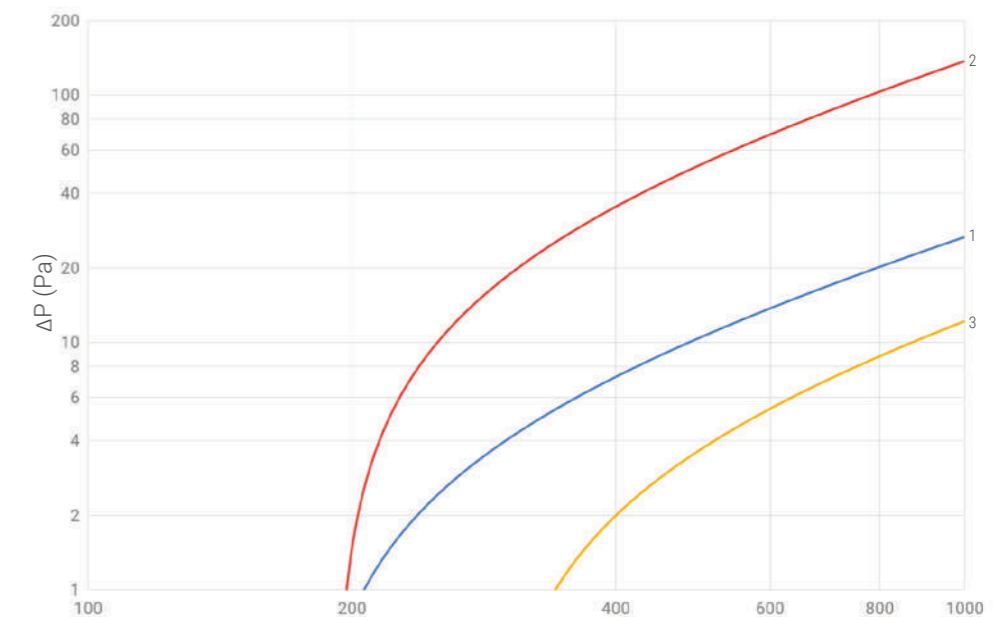
## MEMORANDUM

- 18mm White PVC
- 12mm Black PVC

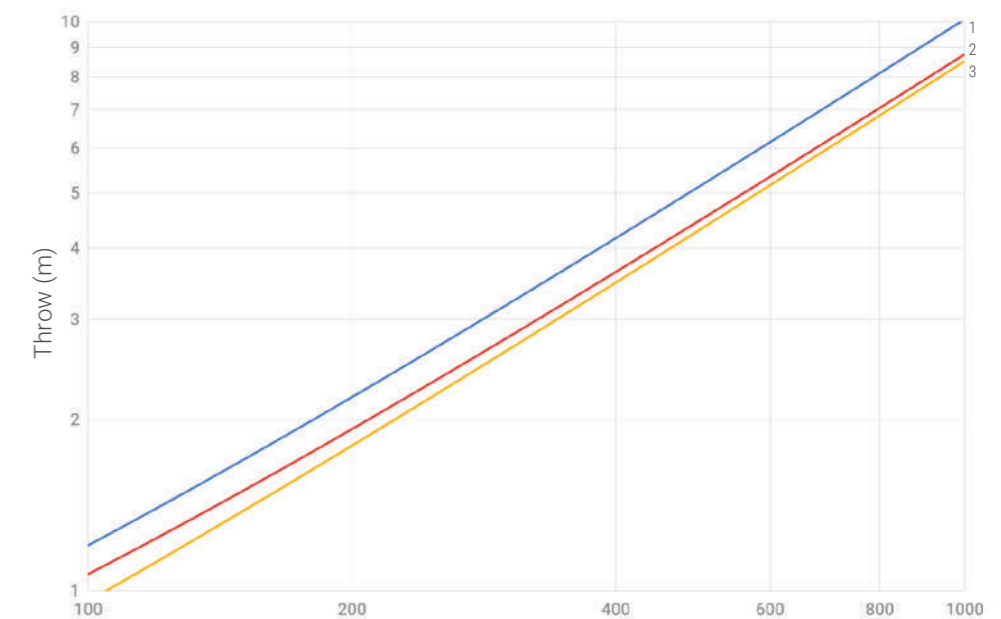


\*optional black back

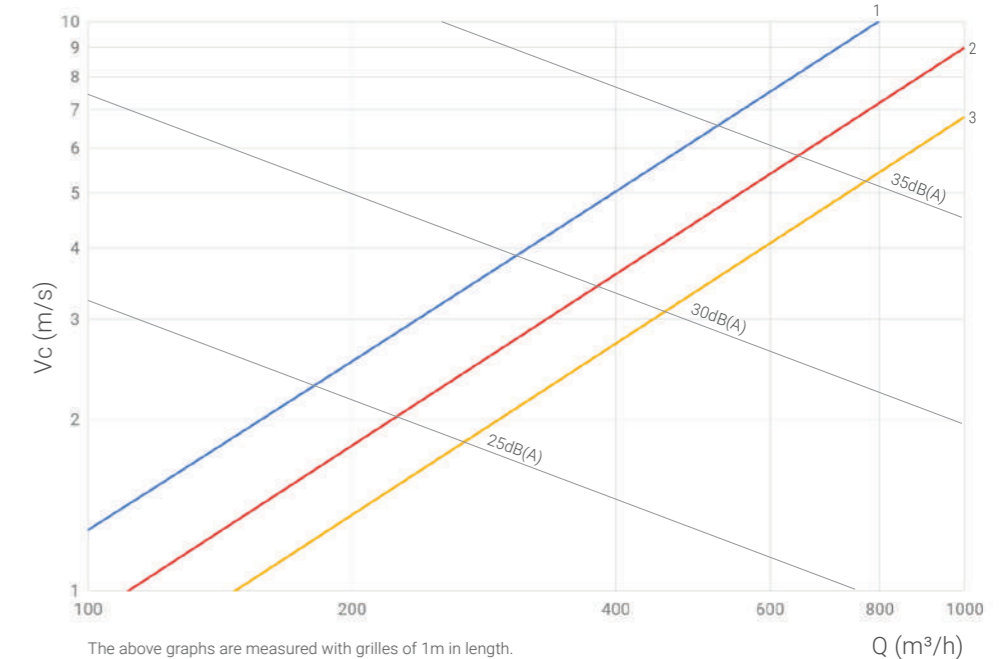
## PRESSURE DROP



## THROW



## VELOCITY



The above graphs are measured with grilles of 1m in length.

## MEMORANDUM

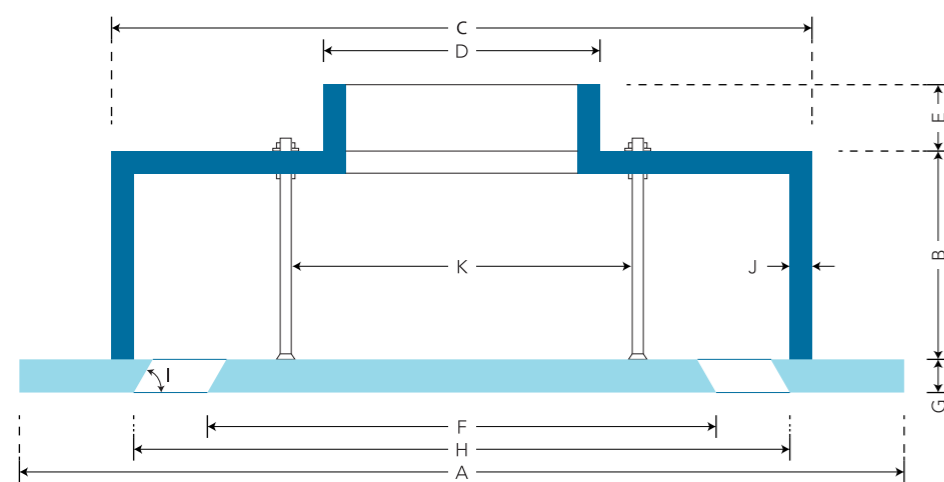
- 25 x 1000 mm (1) ■
- 35 x 1000 mm (2) ■
- 45 x 1000 mm (3) ■

# Canyon 4-way Slot Diffuser



Designed for both heating and cooling supply applications and can be used for ceiling and side wall installations. This system maximizes engineering performance without sacrificing aesthetic considerations. Flowbar's outstanding performance allows more volumetric flow per linear meter while minimizing noise and pressure loss. Canyon Flowbars are available in a variety of different sizes and fastening methods and can also be customized to your needs and project standards.

## CROSS-SECTIONS



## DIMENSIONS

A	B	C	D	E	F	G	H	I	J	K
480	113	380	-	36	276	18	356	30°	12	185

## RECOMMENDED VELOCITY

CANYON	Vmin (m/s)	Vmax (m/s)
40 mm	2	4

## FREE AREA (A<sub>c</sub>)

CANYON	4-WAY
4-WAY	0,052m <sup>2</sup>

## ADVANTAGES

- ▶ Fully customized dimensions
- ▶ Moisture formation is eliminated
- ▶ Integrated Plenum Box
- ▶ Multiple ways of fastening (it can be fastened as an access panel)
- ▶ Horizontal 360 distribution

## FEATURES

- ▶ 4 way air deflection
- ▶ 40 mm spacing available
- ▶ Custom made dimensions
- ▶ Multiple ways of fastening

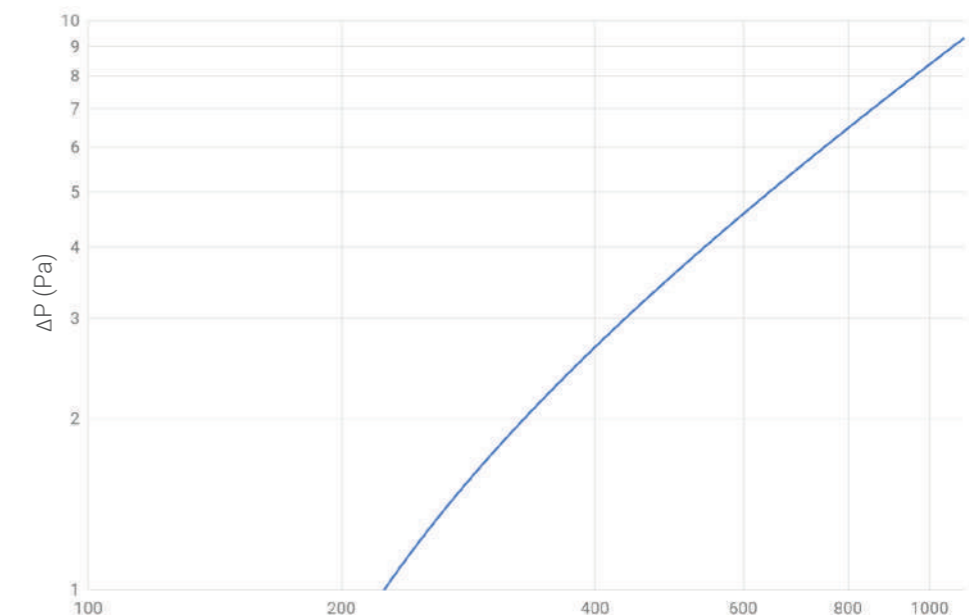
## APPLICATIONS

The 4-way Canyon ceiling diffuser series are designed to be used for supply and exhaust of cooled and heated air on a fixed 45 degree deflection. They can be placed in ceilings. Air supply with ceiling effect in 4-way.

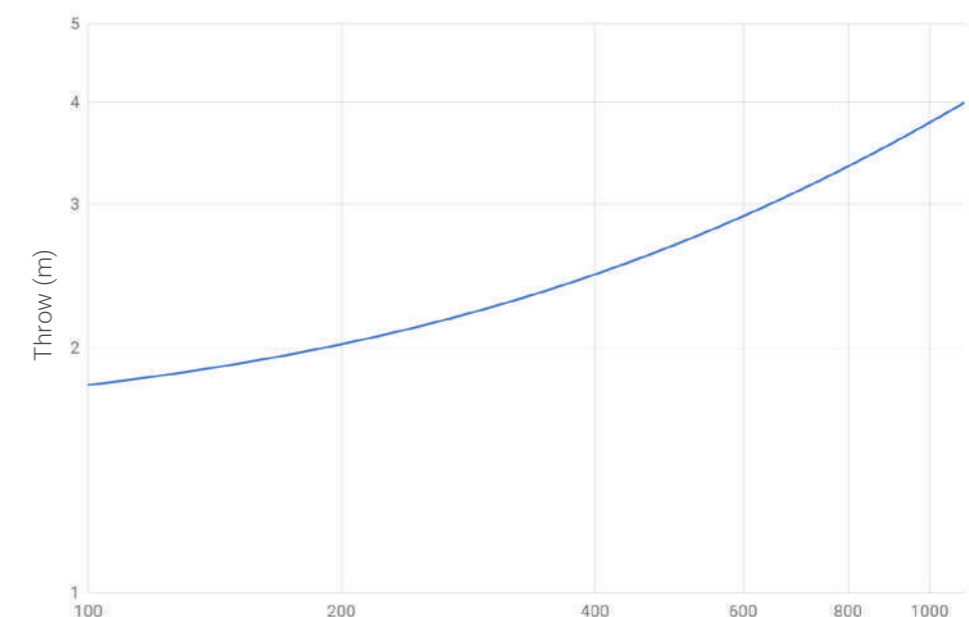
## MEMORANDUM

- 18mm White PVC
- 12mm Black PVC

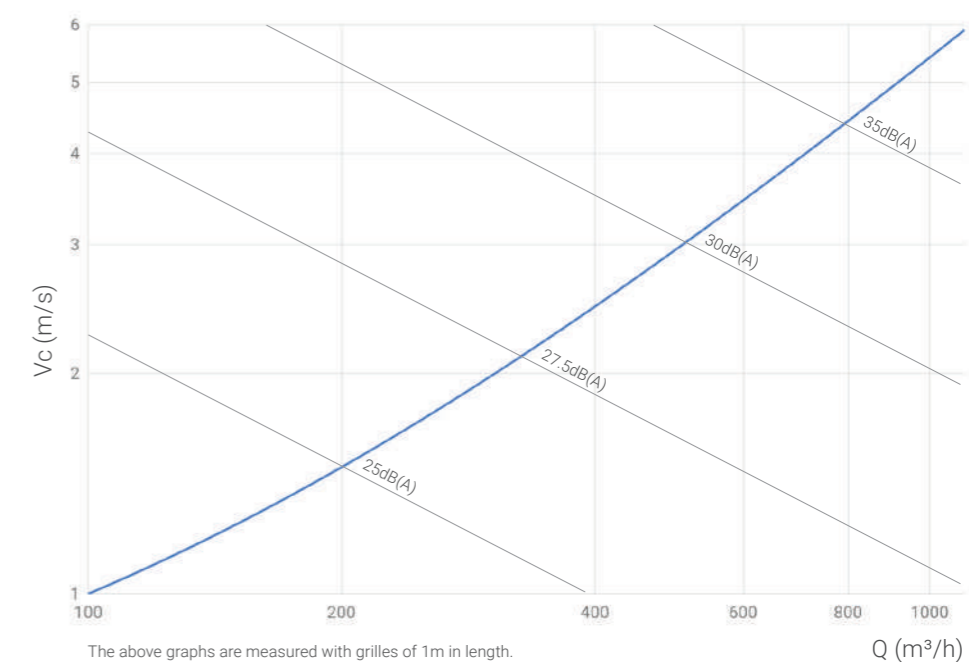
## PRESSURE DROP

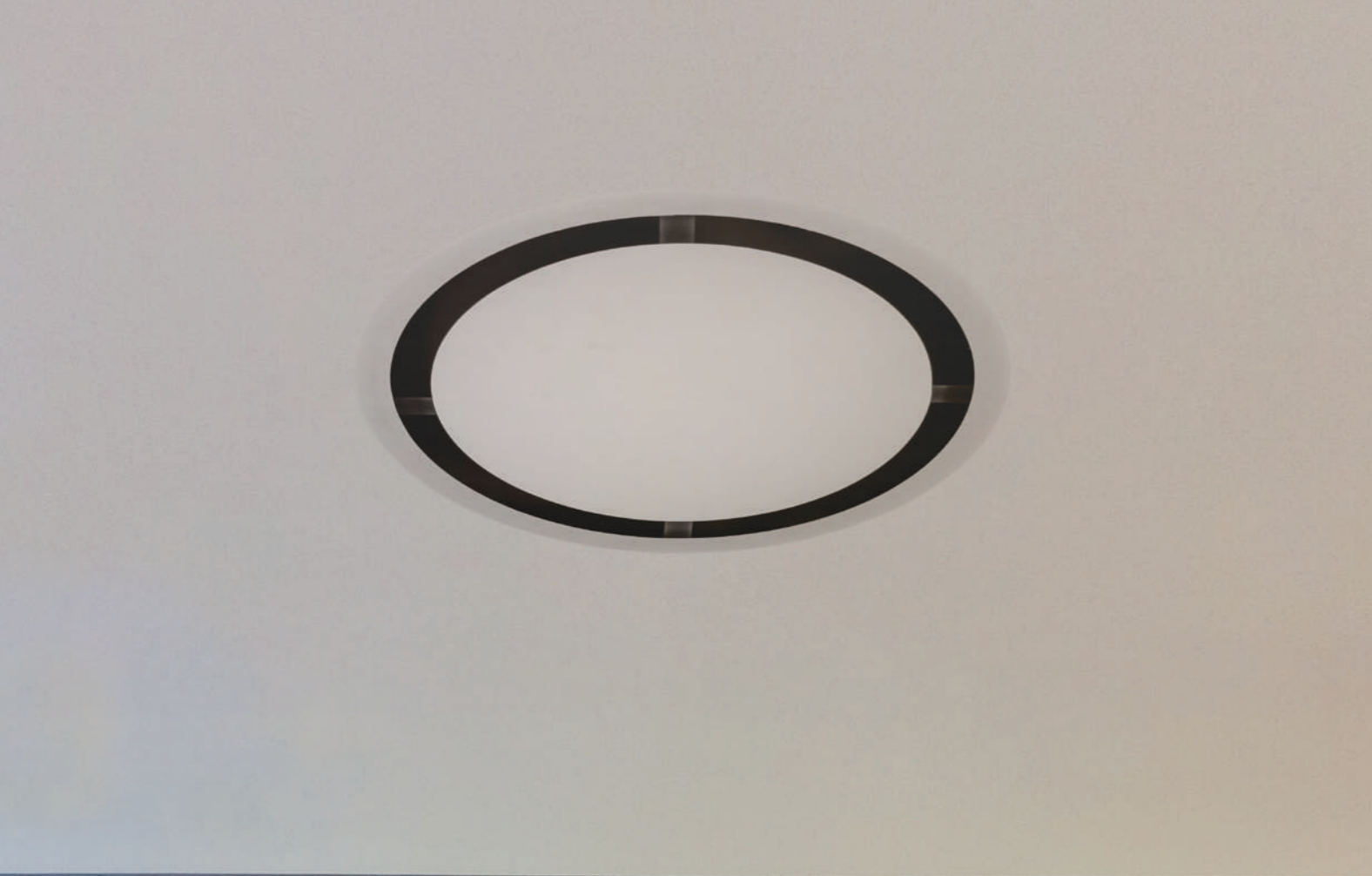


## THROW



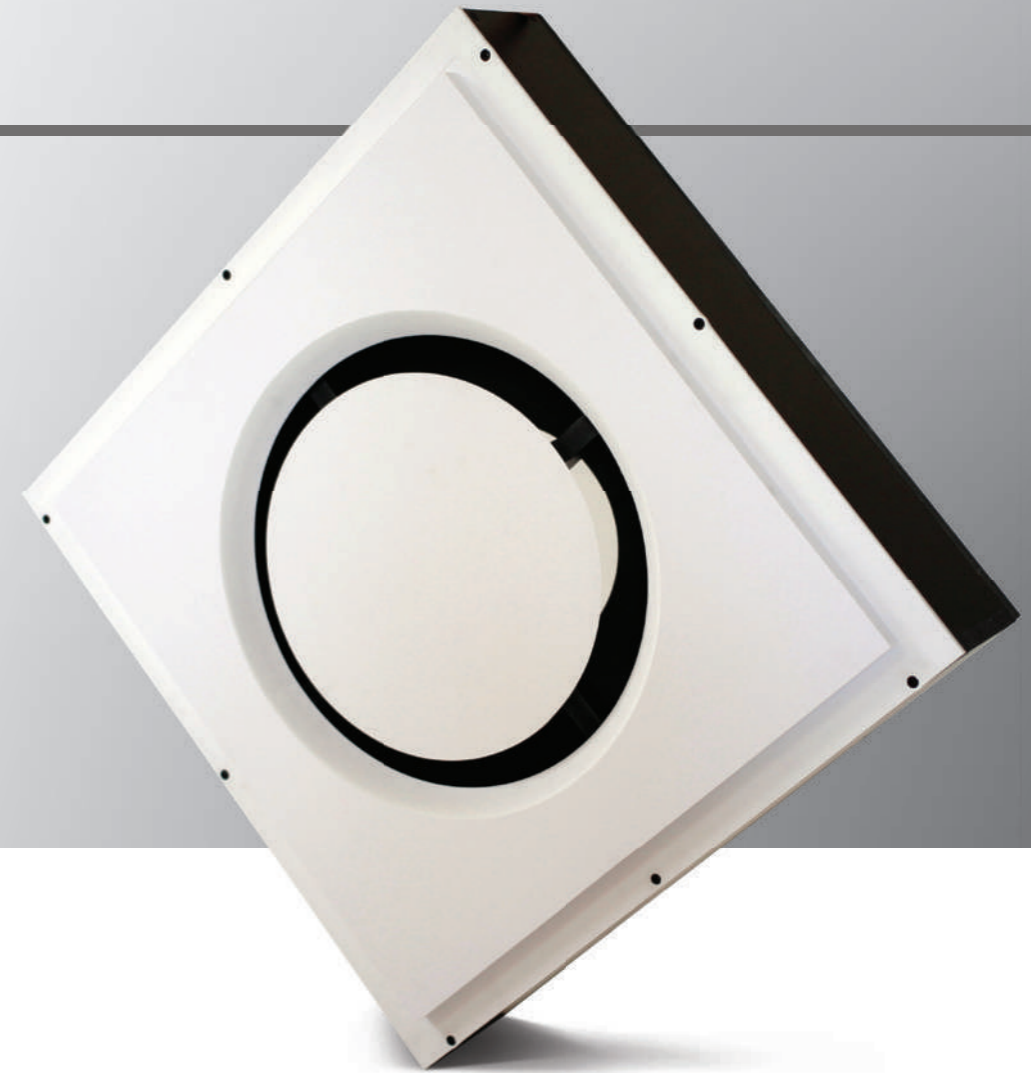
## VELOCITY





# THINK BEYOND THE NORM

THE DESIGN OF AIR GRILLES IS NOT NECESSARY  
A SEQUENCE OF STRAIGHT LINES. GIVE YOUR  
OWN PERSPECTIVE TO YOUR OWN SPACE.  
BE INSPIRED.





# CANYON FLOWBAR SYSTEMS

The flowbar diffuser that delivers higher airflow with lower noise levels.



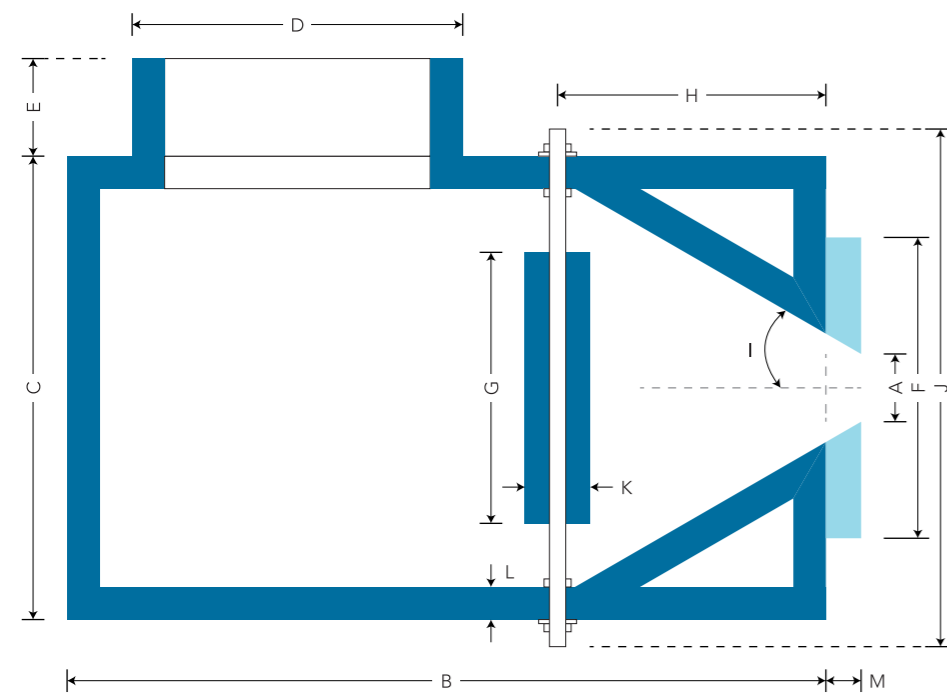
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# Canyon Flowbar Systems

## 25 / 50 mm



### CROSS-SECTIONS



### DIMENSIONS

CANYON	A	B	C	D	E	F	G	H	I	J	K	L	M
25mm	25	250 320	171	-	36	121	100	99	30°	191	24	12	13
50mm	50	250 400	196	-	36	146	120	99	30°	216	24	12	13

### RECOMMENDED VELOCITY

CANYON	Vmin (m/s)	Vmax (m/s)
25 mm	2.5	5
50 mm	2.5	5

### FREE AREA (A<sub>c</sub>)

CANYON	25mm	50mm
A <sub>c</sub>	0,025 m <sup>2</sup>	0,05 m <sup>2</sup>

Designed for both heating and cooling supply applications can be used for ceiling and side wall installations. This system maximizes engineering performance without sacrificing aesthetic considerations. Flowbar's outstanding performance allows more volumetric flow per linear meter while minimizing noise and pressure loss. Canyon Flowbars are available in a variety of different sizes and fastening methods and can also be customized to your needs and project standards.

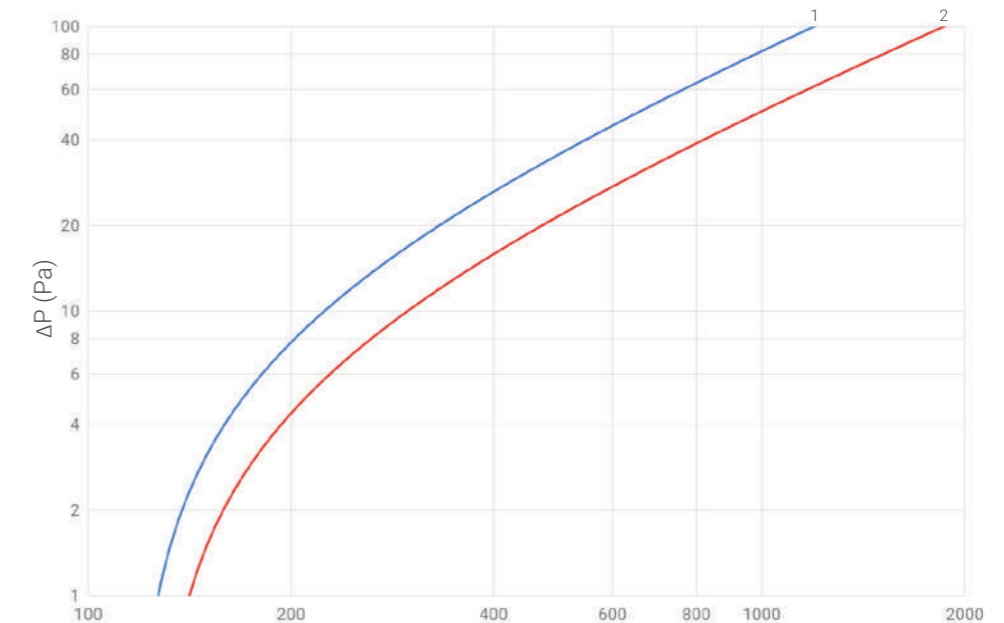
### FEATURES

- ▶ Adjustable deflection
- ▶ 25-50 mm spacing available
- ▶ Custom made dimensions
- ▶ Curved: Concave, Convex
- ▶ Mitered corners
- ▶ Multiple ways of fastening

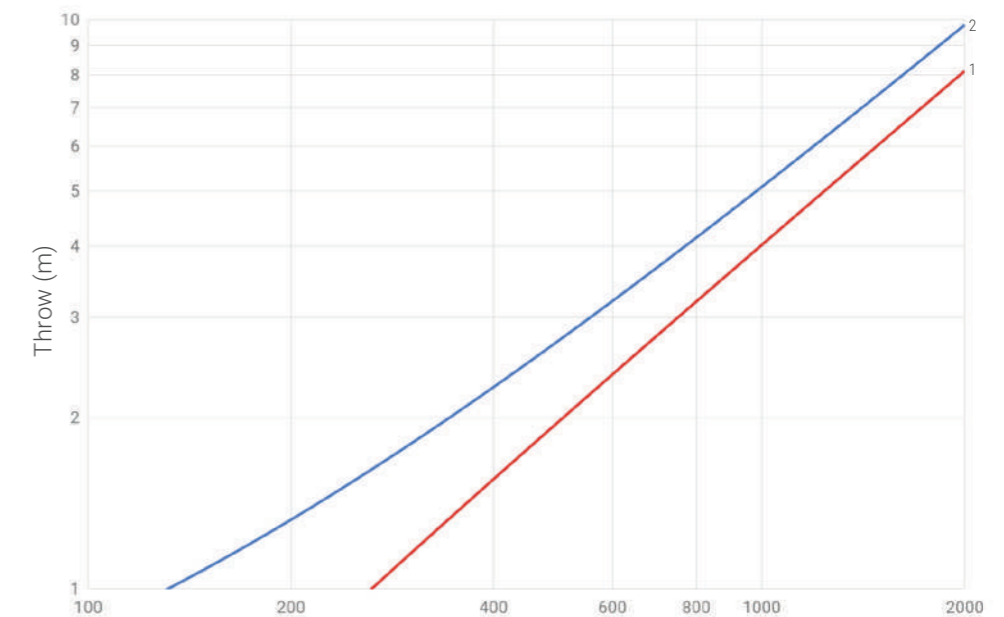
### APPLICATIONS

Canyon Flowbar Systems are designed to be used for supply and exhaust of cooled and heated air on an adjustable deflection. They can be placed in ceilings and walls.

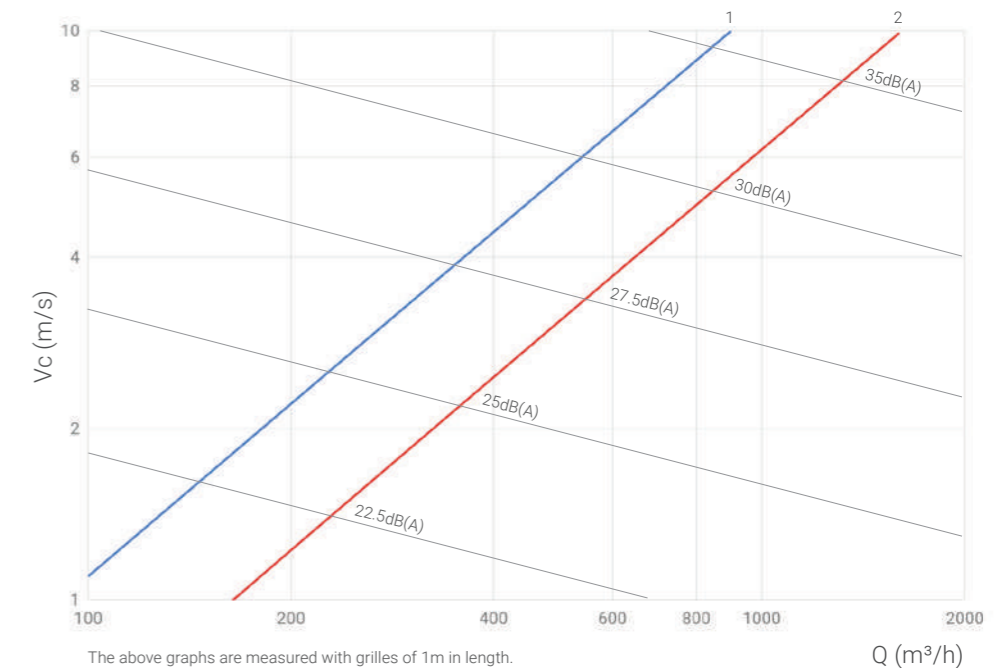
### PRESSURE DROP



### THROW



### VELOCITY



The above graphs are measured with grilles of 1m in length.

### MEMORANDUM

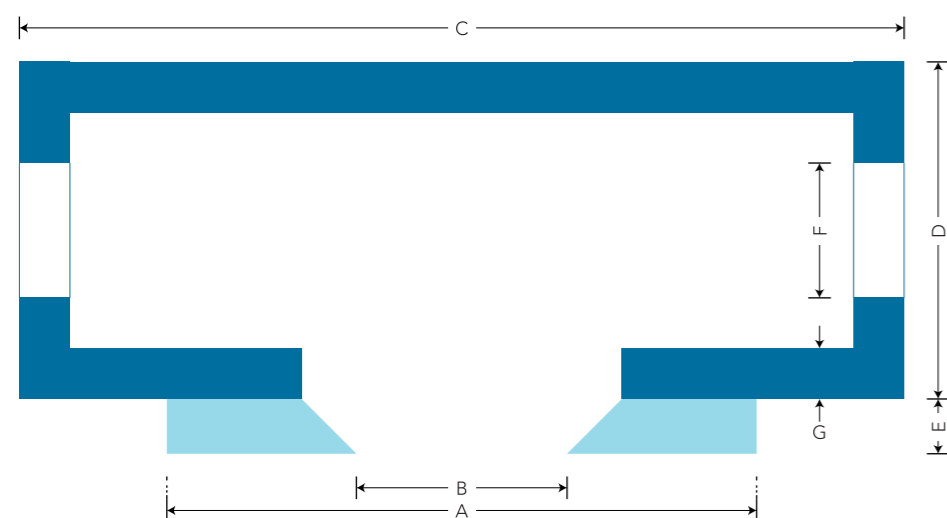
- 25 x 1000 mm (1) — blue line
- 50 x 1000 mm (2) — red line



# Canyon Free Return Flowbar Systems



## CROSS-SECTIONS



## DIMENSIONS

CANYON	A	B	C	D	E	F	G
25mm	115	25	171	80	13	30	12
50mm	140	50	196	80	13	30	12

## FREE AREA (A<sub>c</sub>)

CANYON	25mm	50mm
A <sub>c</sub>	0,025 m <sup>2</sup>	0,05 m <sup>2</sup>

## SIDE VIEW



CANYON RETURN FLOWBAR SYSTEMS has been designed to provide excellent looks without sacrificing efficiency and economy especially when canalized air flow is not necessary.

## FEATURES

- ▶ Zero deflection (return)
- ▶ 25-50 mm spacing available
- ▶ Custom made dimensions
- ▶ Curved: Concave, Convex
- ▶ Mitered corners
- ▶ Multiple ways of fastening

## MEMORANDUM

- 18mm White PVC
- 12mm Black PVC

# ACCESSORIES

## DUMMY CFS ACCESSORIES

DUMMY CFS provides a great solution for the areas where the grill is not applicable, creating a high aesthetic result of continuous lines, with active and inactive areas, without breaking the uniformity of the whole.

## CROSS-SECTION



## DCF01 ▶



## DCF02 ▼



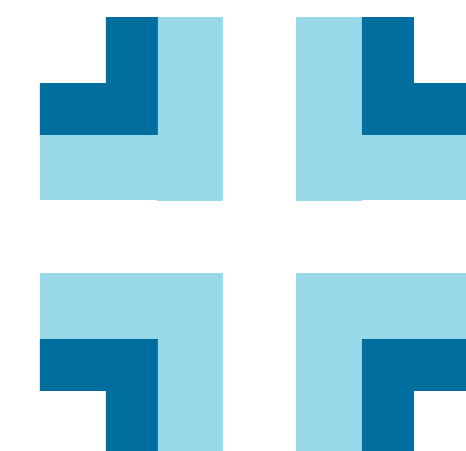
## DCF03 ▶



## DCF04 ▼



## DCF05 ▼



DCF01  
Mitered Straight

DCF02  
Mitered Corner

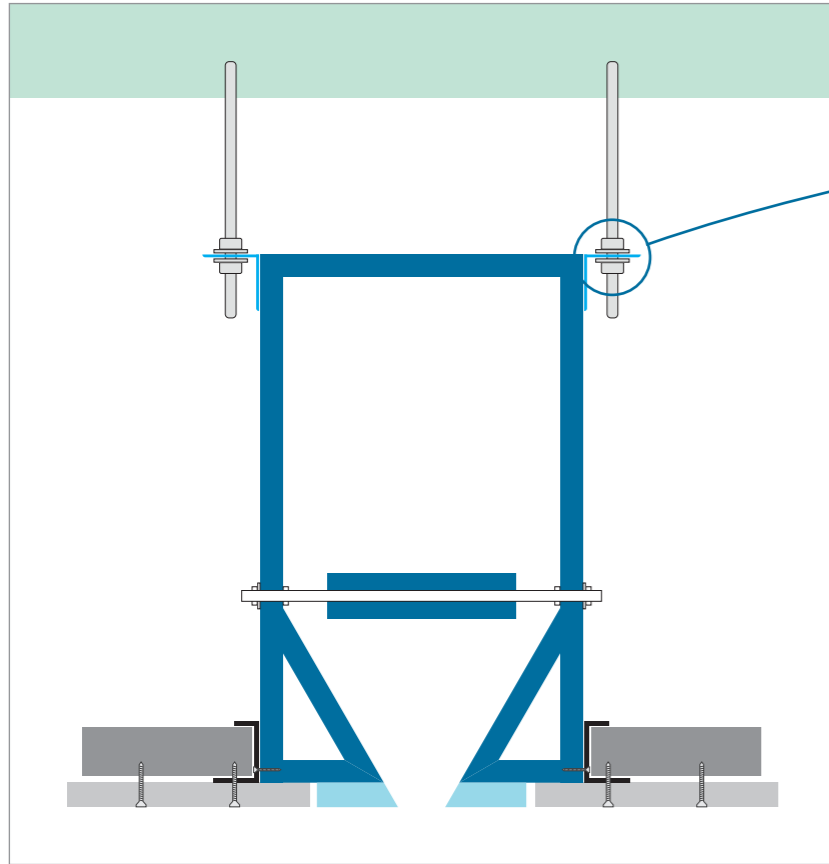
DCF03  
Mitered Rounded Corner

DCF04  
Mitered Tee

DCF05  
Mitered Cross

# WAYS OF SUPPORT

## CANYON FLOWBAR SYSTEMS ROOF SUPPORT



In case where support Method A does not apply, use support Method B, as described below:

Attach 6mm threaded rods to the roof. Then place the Canyon System between all the threaded rods by adjusting the finishing level with a laser level instrument.

Apply steps 3 and 4 according to the previous support method.

STEP 1



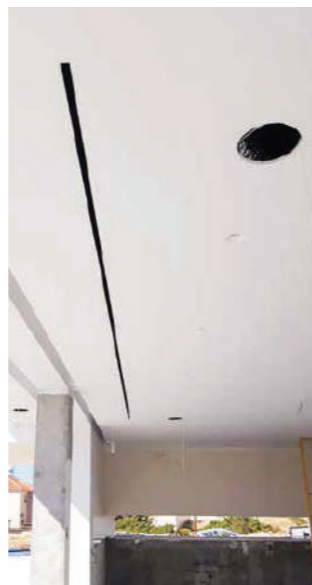
STEP 2



STEP 3



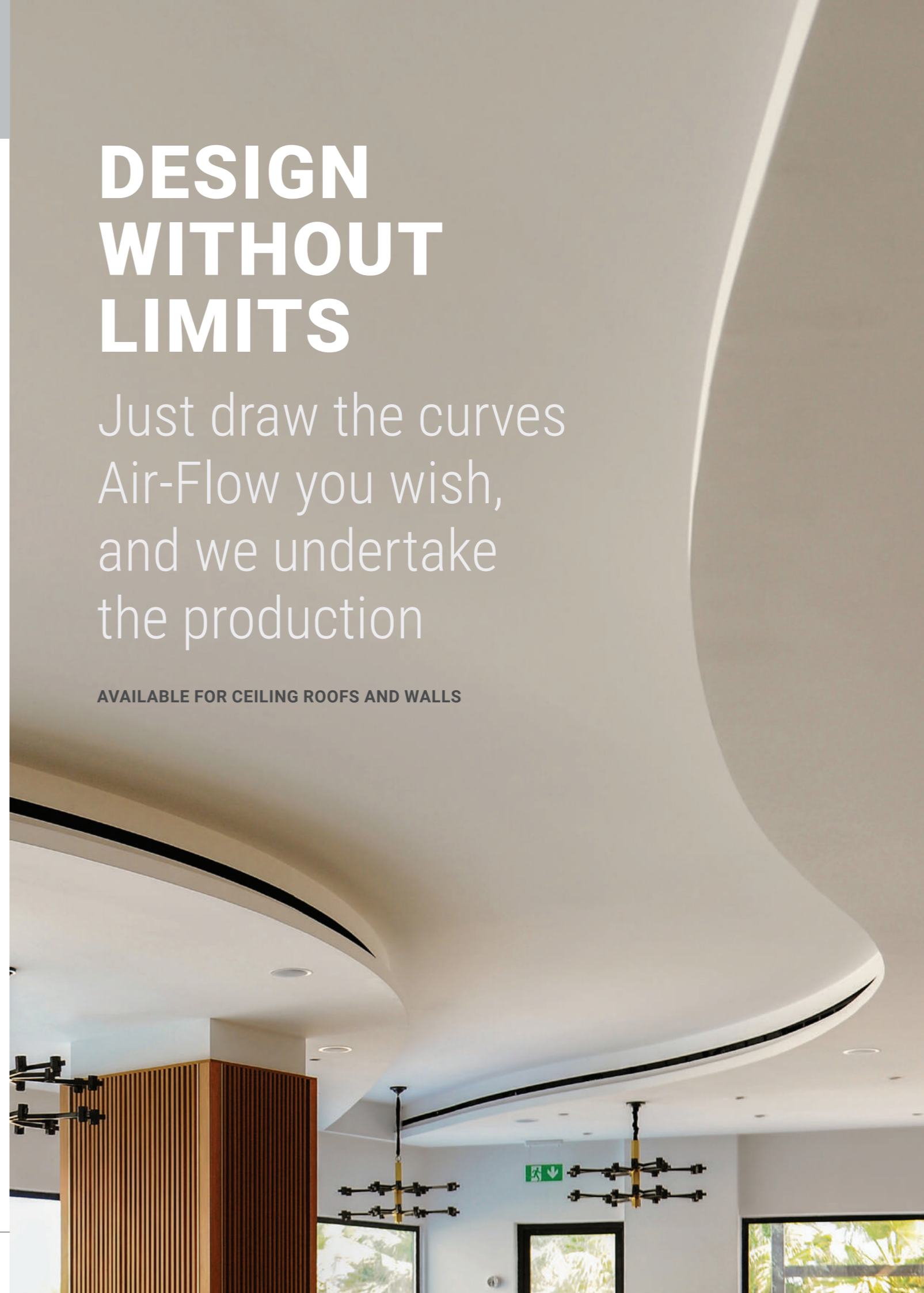
STEP 4



# DESIGN WITHOUT LIMITS

Just draw the curves  
Air-Flow you wish,  
and we undertake  
the production

AVAILABLE FOR CEILING ROOFS AND WALLS





# GRILLES C2020

Low-cost standard  
sizes air diffusion  
linear system.



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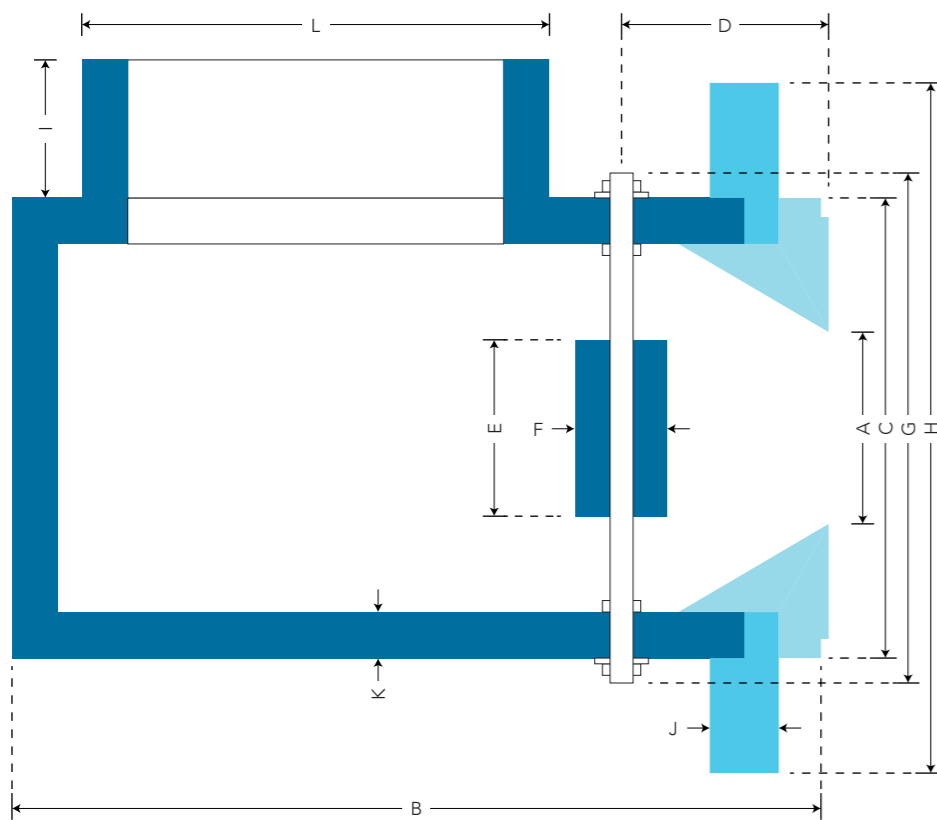
# C2020

## 30/50/65mm

### STANDARD LENGTH

- 500mm   1000mm   1500mm
- 2000mm   2500mm
- 3000mm

### CROSS-SECTIONS



### DIMENSIONS

C2020	A	B	C	D	E	F	G	H	I	J	K	L
30mm	30	211	100	54	46	24	113	160	36	18	12	100 - 250
50mm	50	211	120	54	46	24	133	180	36	18	12	100 - 250
65mm	65	200	135	54	46	24	148	195	36	18	12	100 - 250

The new C2020 is designed for both heating and cooling applications and can be used in ceiling and side wall installations. This system maximises engineering performance without sacrificing aesthetic considerations. Flowbar's outstanding performance allows more volumetric flow per linear meter while minimizing noise and pressure loss. Canyon C2020 Flowbars are available in fixed lengths of 500mm, 1000mm, 2000mm, 3000mm along with any combination of the above up to any length desired according to the project's needs. They are available in a variety of fastening methods.

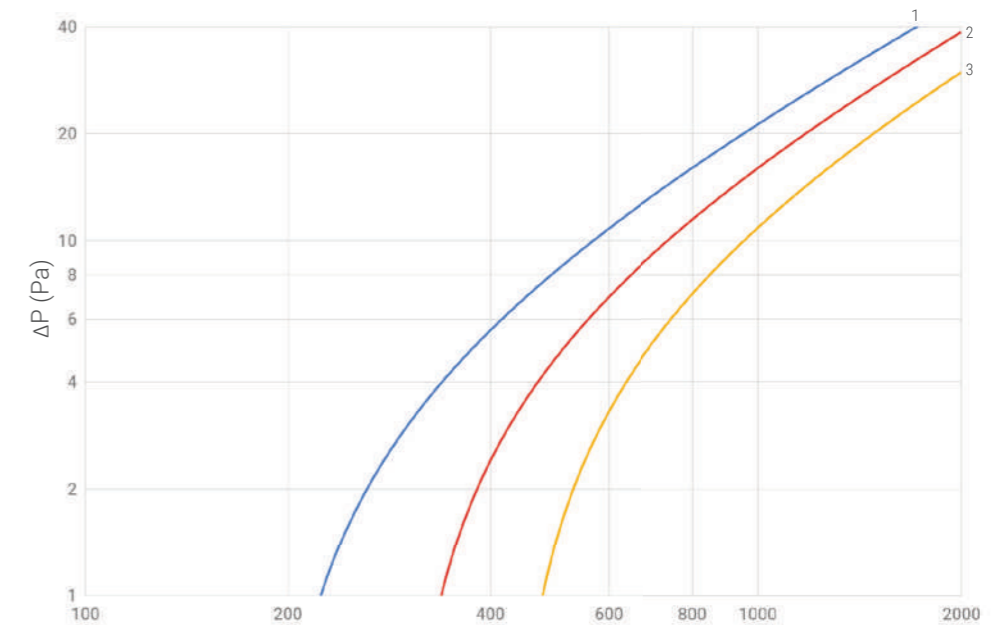
### FEATURES

- ▶ Adjustable deflection
- ▶ 30mm, 50mm and 65mm spacing available
- ▶ Fixed dimensions on intervals of 500mm.
- ▶ Multiple ways of fastening

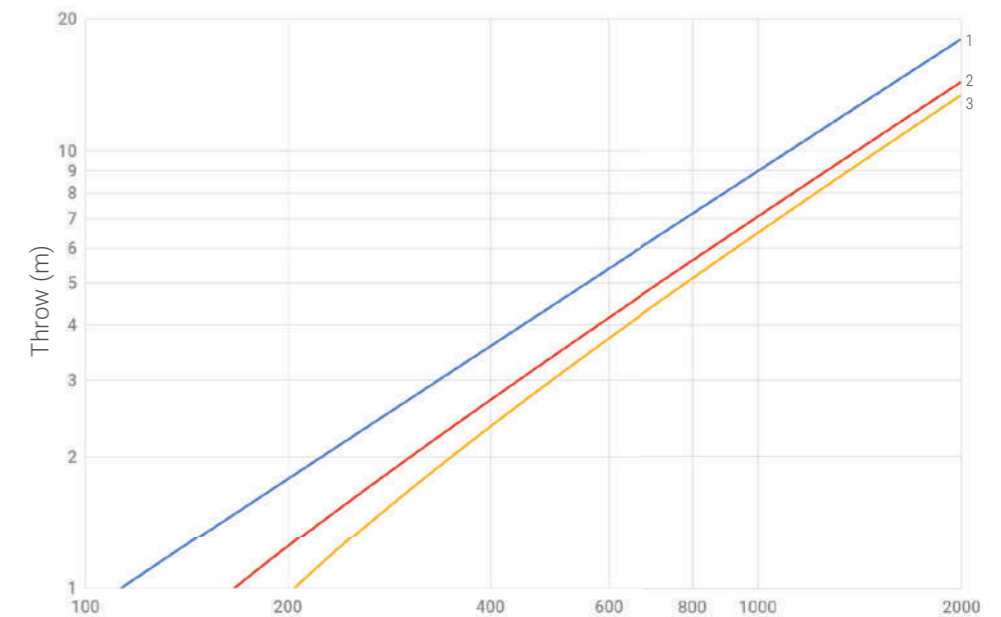
### MEMORANDUM

- 18mm White PVC
- 12mm Black PVC

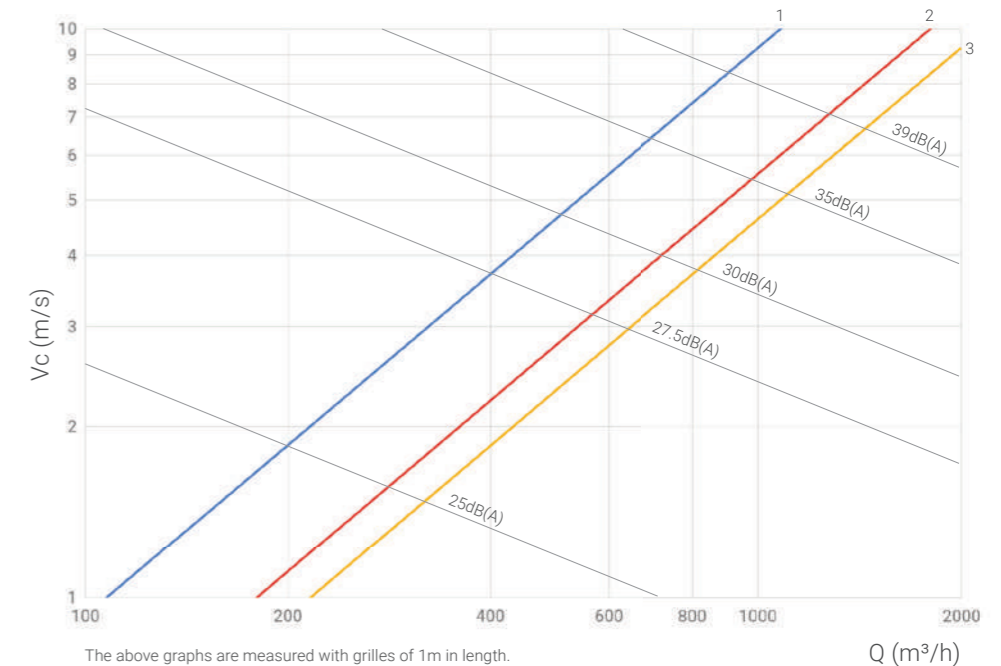
### PRESSURE DROP



### THROW (RIGHT GRAPH)



### VELOCITY (BOTTOM GRAPH)



### MEMORANDUM

- 30 mm (1) —
- 50 mm (2) —
- 65 mm (3) —

### FREE AREA (Ac)

C2020	Ac / m
30 mm	0,03 m <sup>2</sup>
50 mm	0,05 m <sup>2</sup>
65 mm	0,065 m <sup>2</sup>

### RECOMMENDED VELOCITY

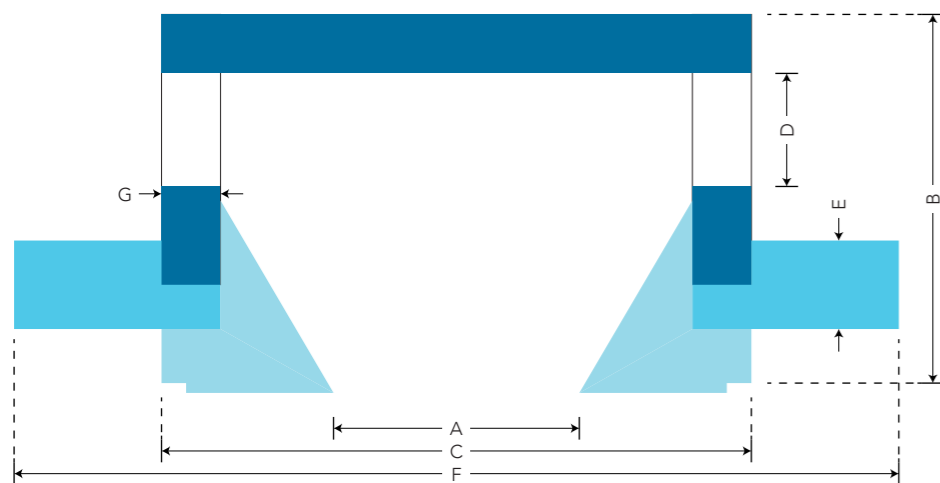
C2020	Vmin (m/s)	Vmax (m/s)
30 mm	2	4
50 mm	2	4
65 mm	2	4

The above graphs are measured with grilles of 1m in length.

# C2020 Free Return



## CROSS-SECTIONS



## DIMENSIONS

C2020	A	B	C	D	E	F	G
30mm	30	75	100	23	18	160	12
50mm	50	75	120	23	18	180	12
65mm	65	87	135	35	18	195	12

## FREE AREA (A<sub>c</sub>)

C2020	A <sub>c</sub>
30 mm	0,03 m <sup>2</sup>
50 mm	0,05 m <sup>2</sup>
65 mm	0,065 m <sup>2</sup>

## SIDE VIEW



C2020 RETURN SYSTEMS have been designed to provide excellent looks without sacrificing efficiency and economy especially when canalized air flow is not necessary.

## FEATURES

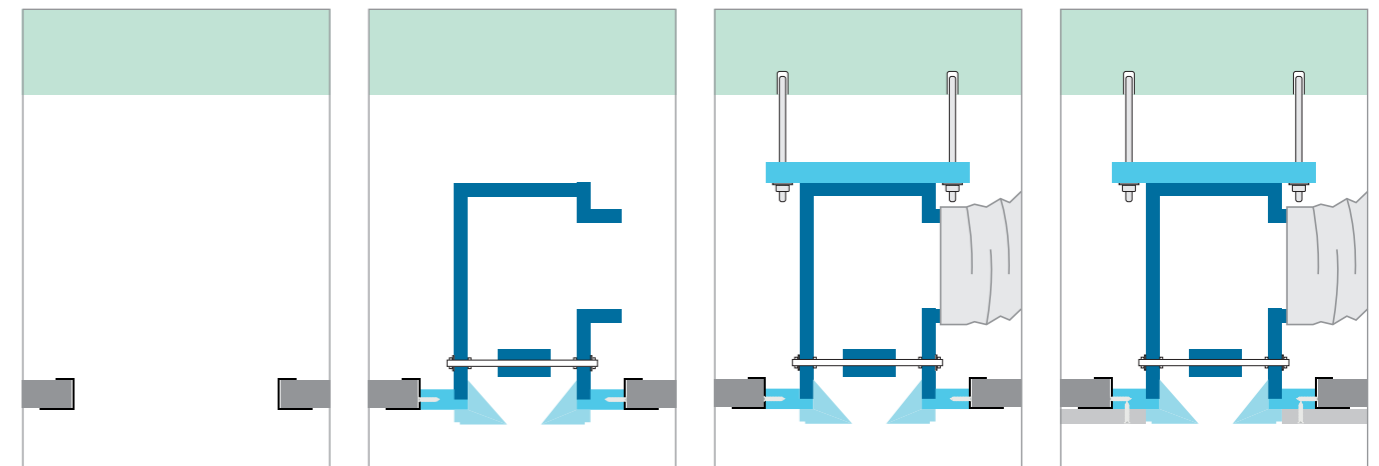
- ▶ Zero deflection (return)
- ▶ 30-50-65 mm spacing available
- ▶ Curved: Concave, Convex
- ▶ Mitered corners
- ▶ Multiple ways of fastening

## MEMORANDUM

- 12mm White PVC
- 18mm Black PVC
- 12mm Black PVC

# FASTENING METHODS

## FASTENING PROCEDURE FOR CEILING



### STEP 1

Installation of ceiling frame at the right height and creating of the channels (river) in the corresponding dimensions.

### STEP 2

Install the system within the channel (river) and fasten it temporarily with double threaded rod screws.

### STEP 3

Install the PVC bracket over the system and fasten with cables. Then join the system with flexible ducts with the a/c plenum.

### STEP 4

Finally, install the drywall and the system is ready for the plastering process.

## MEMORANDUM

- 12mm White PVC
- 12mm Black PVC
- C Channel
- U Channel
- Gypsumboard 12,5mm
- Ceiling



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## CERTIFIED TECHNICIAN TRAINING

D.ELLINAS LTD, a pioneer company at the sector of ventilation and air conditioning systems is planning to proceed with two (2) different types of seminars. One for architects and one for technicians/installers. The seminar include training and examining of our products and appliances to obtain a certificate which lies under the requirements of TUV Cyprus. These seminars will take place at the facilities of D. Ellinas in Limassol.

Our specially designed facilities will provide you with all the technical information needed for an easy, fast and economical solutions of Ventus system products. The trainees will receive a "Certificate of Competence" for our products.

The "Certificate of Adequacy" is issued based on the internationally recognized standard **ISO/IEC17024** and is a competitive qualification in the construction industry.

In order to continuously improve and properly perform the installation of the system, our company can provide you with seminars (Cyprus Market), by specialized technician teams. After a site meeting, we schedule with you the installation date of the Ventus products and Systems. Our purpose is to provide you with our best services.

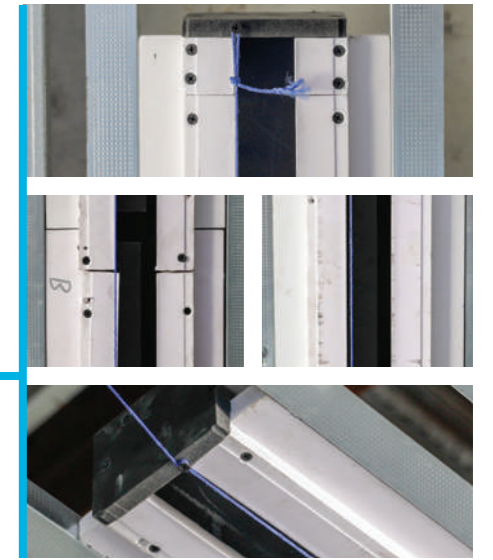
### START OF SEMINARS 1<sup>ST</sup> SEMESTER 21'

For more information send us an email to:  
[info@ventusair.eu](mailto:info@ventusair.eu)



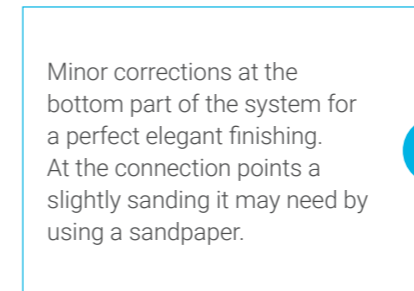
1

The installation take place between the spaces of the metal gypsum board by using threaded rods, according specification (pg. 55).



2

The whole system is aligned with a suture or Laser.



3

Minor corrections at the bottom part of the system for a perfect elegant finishing. At the connection points a slightly sanding it may need by using a sandpaper.

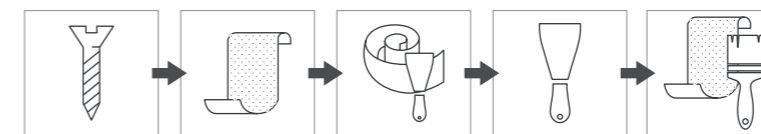


The finishing process follows.

4

### PVC TO PLASTERBOARD JOINT PROCEDURE

To prevent cracks and to provide the best finish between PVC foam-board and plasterboard joint, a special procedure described below should be followed:



#### STEP 1

Use double threaded screws to fasten PVC grille in place and secure a tight fit along with the plasterboard.

#### STEP 2

Slightly scrub the PVC surface to make it rougher using sandpaper. Fill the small gap between PVC surface and gypsumboard by applying a thin and even layer of the special joint filler compound.

#### STEP 3

Instantly after step 2 and when compound is still wet, place and stick a special textile fiber glass joint tape on it and let it dry.

#### STEP 4

Apply a thin and even layer of the special joint filler compound on top of fiber glass joint tape and let it dry.

#### STEP 5

Using a fine grid sandpaper scrub the surface till becomes smooth. Then is ready to be painted.



# WHICH GRILLE TO CHOOSE?

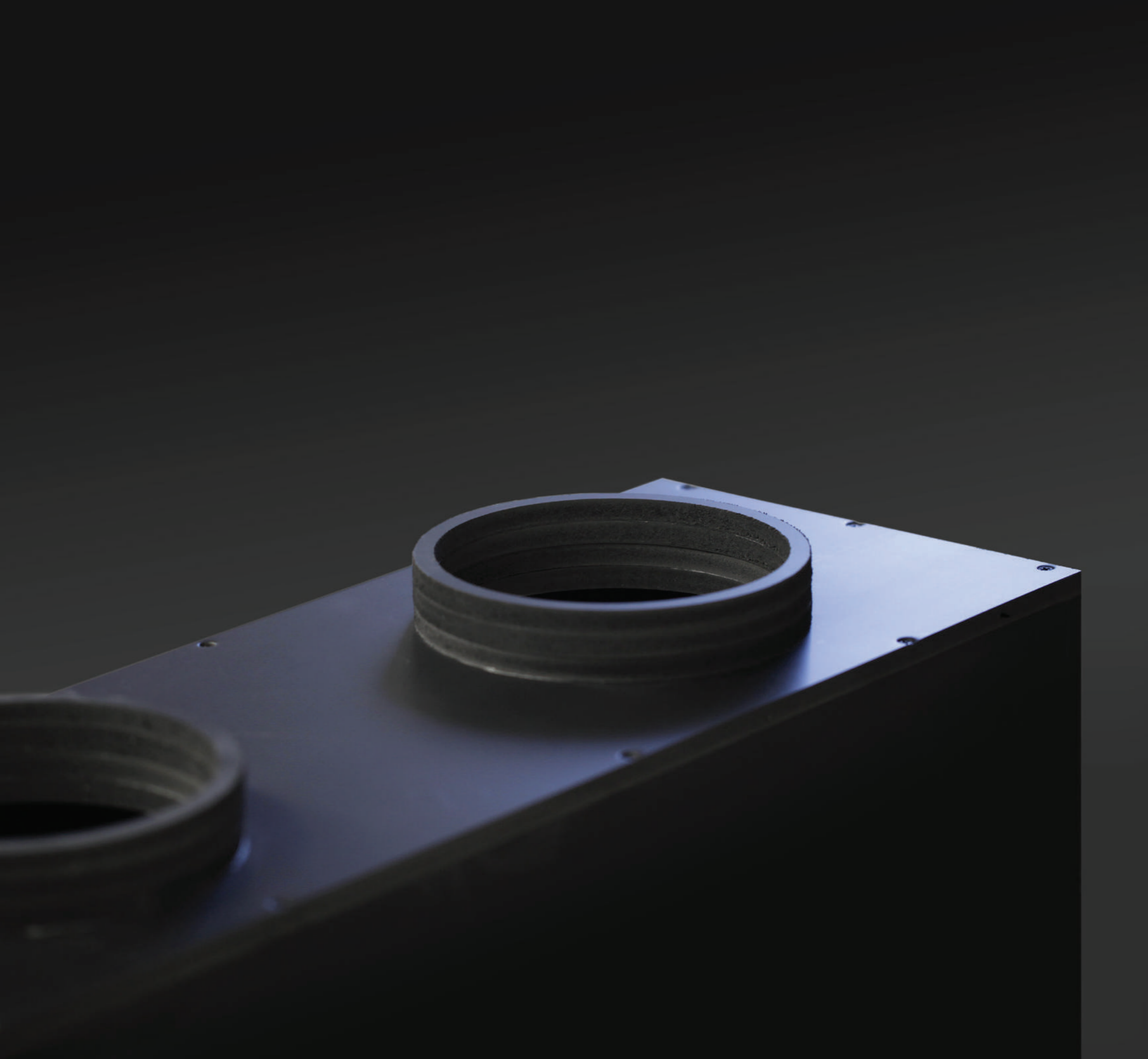
Applications	Linear Grilles				Canyon Flowbar		C2020			Look-like Canyon			V-Slot		
Cross-sections															
Wall use	●				●		●			●					
Ceiling use	●				●		●			●			●		
Cubic meter / hour [m <sup>3</sup> /hr]	8-5 850 (650)	10-7 (V-Cut) 800 (500)	12-5 1000 (550)	3-Slot 720	25mm 300	50mm 550	30mm 380	50mm 620	65mm 750	25mm 300	35mm 380	45mm 450	25mm 650	35mm 900	45mm 1300 (1100)
Noise Level [dB(A)]	33 (29)	33 (29)	33 (29)	26	26	27	26	27	29	30	27	25	29	30	33 (29)
Throw [m]	5.5 (4)	5 (3.5)	5.5 (3)	5.8	1.5	3	3.5	4.5	4.5	3	2.8	2.7	4.5	5	6 (5.5)
Pressure Drop [ΔPa]	18 (9)	11 (5)	20 (7)	5	15	20	5	8	6	4	12	2	80	120	60 (45)

Notes:

1. The readings for linear grilles are based on grille lengths of 1000mm, height 150mm and maximum air velocity of Vmax = 3.5 m/s.

2. The above readings are based on grille lengths of 1000mm and maximum air velocity of Vmax = 3.5 m/s.

(\*) The above readings in parenthesis are based on grille lengths of 1000mm and noise level of 30dB.



# PLENUM BOXES

Because the right  
distribution of air is our  
expertise.



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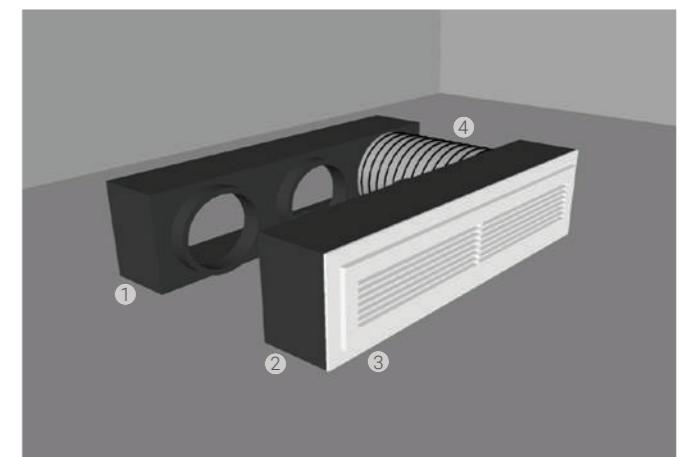
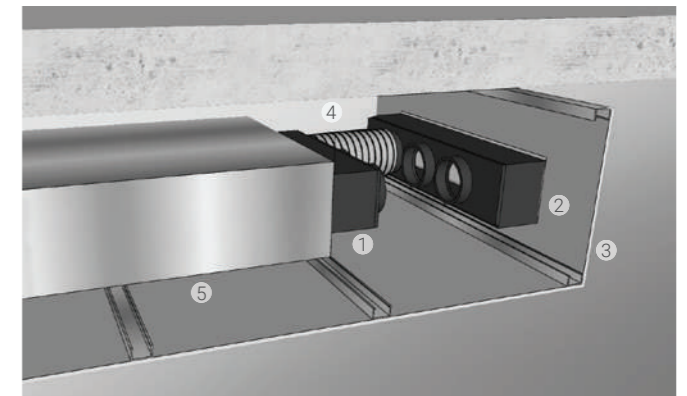
# INTRODUCTION

Ventus plenum boxes are designed to guarantee a good distribution of air, prior to diffusion through the terminals through a tight horizontal or vertical air pattern even at low volumes. Their use consist of the supply and exhaust of conditioned air and they apply to any grille type and size.

Manufactured with 12mm black PVC foam board they are not prone to moisture, are lightweight, fire retardant and have excellent thermal and sound insulation properties.

Our company has the facilities and experience to accommodate plenum boxes with a high differentiation and customization degree.

The client has the choice of entry connection of the duct (back, side, top) and diameter. The shape of the duct can be rounded or oval as requested.

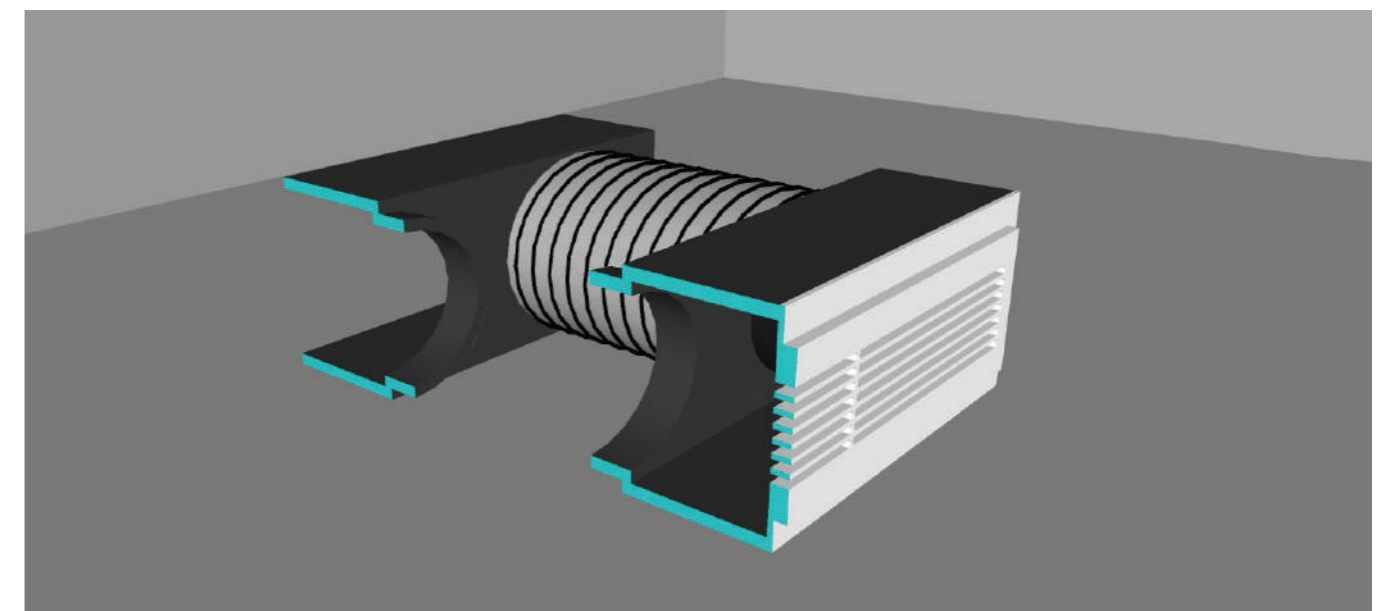


#### MEMORANDUM

- |                      |                    |
|----------------------|--------------------|
| 1. Plenum Box A/C    | 4. Flexible        |
| 2. Plenum Box Grille | 5. Indoor Unit A/C |
| 3. Reverse Grille    |                    |

Ventus vision is the immediate and direct customer service and the instant supply of quality products.

In Ventus we are passionate about our products. This reflects in hard work, consistently and innovative ideas, making the name Ventus synonymous with quality and attention to detail.



With a growing environmental consciousness in the marketplace towards using "green" and sustainable materials, we can actively source PVC leftovers trough out production line and recycle them back to foam-board PVC panel for your eco-friendly project.



# SUGGESTED DIMENSIONS

For the below-mentioned brands we suggest the following Plenum Box dimensions for your ease of use.

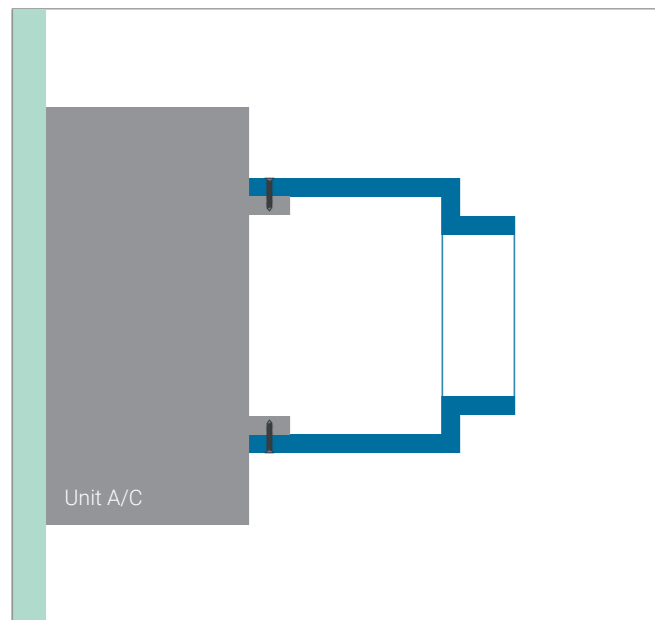
BRAND	MODEL	Kw	(m3/h)	BTU/h	SUPPLY (mm)			RETURN (mm)		
	FBA35A	3.4	900	11601	497	183	100	659	215	100
	FBA50A	5	900	17061	497	183	100	659	215	150
	FBA60A	6.8	1080	23202	797	183	100	959	215	100
	FBA71A	7.1	1080	24226	797	183	100	959	215	100
	FXSQ15	1.7	522	5801	345	183	100	509	215	100
	FXSQ20	2.2	540	7507	345	183	100	509	215	100
	FXSQ25	2.8	540	9554	345	183	100	509	215	100
	FXSQ32	3.6	570	12284	345	183	100	509	215	150
	FXSQ40	4.5	900	15355	497	183	100	659	215	150
	FXSQ50	5.6	912	19108	497	183	100	659	215	200
	FXSQ63	7.1	1260	24226	797	183	100	959	215	200
	MMD-AP0076BH-E	2.2	540	7507	645	185	100	665	240.5	100
	MMD-AP0096BH-E	2.8	570	9554	645	185	100	665	240.5	100
	MMD-AP0126BH-E	3.6	570	12284	645	185	150	665	240.5	150
	MMD-AP0156BH-E	4.5	800	15355	645	185	150	665	240.5	150
	MMD-AP0186BH-E	5.6	800	19108	645	185	200	665	240.5	200
	MMD-AP0246BH-E	7.1	1200	24226	945	185	200	965	240.5	200
	RAV-RM561BTP-E	5	800	17061	645	185	200	665	240.5	200
RAV-RM801BTP-E	7.1	1200	24226	945	185	200	965	240.5	200	
	GUD-035-PS	3.5	650	11942	590	127	100	705	205	100
	GUD-050-PS	5	950	17061	890	127	100	1005	205	100
	GUD-071-PS	7	1200	23885	1190	147	100	1305	225	100
					745	220	100	905	265	100
GUD-085-PS	8.5	1400	29003	1190	147	100	1305	225	100	
				745	220	100	905	265	100	
	AD25S2SM2FA	2.5	530	8530	597	171	100	765	157	100
	AD35S2SM3FA	3.5	840	11942	597	171	100	583	243	150
	AD50S2SM3FA	5	1020	17061	997	171	100	983	243	200
	AD71S2SM3FA	7.1	1440	24226	997	171	100	983	243	200
	V5MDI32-24WiFiR	5.28	880	18016	930	180	200	1005	235	200
	V6MDI32-18WiFiR	5.28	880	18016	715	145	200	790	195	200
	V7MDI32-12WiFiR	5.28	880	12000	542	157	200	604	191	200
	V7MDI32-18WiFiR	5.28	880	18000	711	141	200	787	195	200
	V7MDI32-24WiFiR	7.03	1248	24000	931	180	100	1006	233	200
	V7MDI32-36WiFiR	10.55	1400	36000	931	180	250	1006	233	250
	V7MDI32-42WiFiR	10.55	1400	42000	1049	232	250	1106	285	250
	V7MDI32-50WiFiR	14.07	2400	50000	1049	232	300	1106	285	100
	V7MDI32-60WiFiR	15.4	2600	60000	1049	232	350	1106	285	100
	MTIU-12FNXD0	3.5	600	11942	542	120.2	100	604	191	100
	MTIU-18FNXD0	5.28	1006	18016	711	145	200	787	195	100
	MTIU-24FNXD0	7.03	1248	23987	931	180	200	1006	233	100
	MTI-30FNXD0	8.7	1400	29685	1191	180	250	1266	233	100
	MTI-36FNXD0	10.55	1400	35998	1191	180	250	1266	233	100
	MTI-42FNXD0	12.3	1871	41969	1049	232	300	1106	285	100
	MTI-48FNXD0	14	2400	47770	1049	232	300	1106	285	100
	MTI-55FNXD0	16	2600	54594	1049	232	350	1106	285	100
	DCT-A35IUIINV	3.5	750	11942	590	127	100	705	205	100
	DCT-A53IUIINV	5	1000	17061	890	127	101	1005	205	101
	DCT-A71IUIINV	7	1400	23885	1190	147	102	1305	225	102
	DCT-A90IUIINV	8.3	1400	28321	1190	147	100	1305	225	100
	DCT-A110IUIINV	10	2100	34121	751	200	101	965	269	101
	DCT-A125IUIINV	11.5	2100	39239	1155	200	102	1365	269	102
	S-36PF1E5B	3.6	840	12284	597	191	100	805	260	100
	S-45PF1E5B	4.5	900	15355	597	191	100	805	260	100
	S-50PF1E5B	5	960	17061	597	191	100	805	260	100
	S-60PF1E5B	6	1260	20473	797	191	100	1005	260	100
	S-71PF1E5B	7.1	1260	24226	797	191	100	1005	260	100
	S-100PF1E5B	10	1920	34121	1197	191	100	1405	260	100
	S-125PF1E5B	12.5	2040	42651	1197	191	100	1405	260	100
	S-140PF1E5B	14	2160	47770	1197	191	100	1405	260	100

	ARNU07GM1A4	2.2	540	7507	862	205	100	854	236	100
	ARNU09GM1A4	2.8	570	9554	862	205	100	854	236	100
	ARNU12GM1A4	3.6	660	12284	862	205	100	854	236	100
	ARNU15GM1A4	4.5	960	15355	862	205	100	854	236	100
	ARNU18GM1A4	5.6	1020	19108	862	205	100	854	236	100
	ARNU24GM1A4	7.1	1140	24226	862	205	200	854	236	100
	ARNU28GM2A4	8.2	1680	27979	1211	202	100	1210	235	100
	ARNU36M2A4	10.6	1920	36168	1211	202	100	1210	235	100
	ARNU42GM2A4	12.3	2280	41969	1211	202	100	1210	235	100
	CL09F N50	3.2	690	10919	865	154	100	905	160	100
	CL12F N50	4.7	690	16037	865	154	100	905	160	100
	CL18F N60	5.8	900	19790	1065	154	100	1105	160	100
	CL24F N33	7.8	1200	26614	1065	154	100	1105	160	100
	CM18FN10	5.6	990	19108	862	275	100	855	236	100
CM24FN10	7.5	1080	25591	862	275	100	855	236	100	
UM30FN10	8.3	1320	28321	862	275	100	855	236	100	
UM36FN10	10.5	1920	35827	1211	205	100	1210	235	100	
	AMSD-H07/4R3A	2.2	600	7507	575	116	100	689	173	100
	AMSD-H09/4R3A	2.6	600	8871	575	116	100	689	173	100
	AMSD-H12/4R3A	3.6	680	12284	575	116	100	689	173	100
	AMSD-H18/4R3A	5.1	860	17402	835	115	100	982	173	100
	ALMD-H18/NDR3HA	5	1150	17061	816	180	100	1044	209	100
	ALMD-H24/NDR3HA	7	1400	23885	816	180	100	1044	209	100
	ALMD-H36/NDR3HA	10.55	1900	35998	1218	183	150	1280	183	150
	ALMD-H48/NDR3HA	14	2300	47770	1218	183	200	1280	183	200
	ALMD-H60/NDR3HA	16	2300	54594	1218	183	250	1280	183	250
	ADT-09UX4RRBL4	2.9	520	9895	754	136	100	791	170	100
	ADT-12UX4RSBL4	3.52	600	12011	754	136	100	791	170	100
	ADT-18UX4RSCL4	5.3	900	18084	1024	136	100	1061	170	100
	AUD-24UX4RFCL4	7.2	1100	24567	1024	136	100	1061	170	100
	AUD-30UX4RFDH4	8.8	1450	30027	991	180	100	1011	233	100
AUD-36UX4RADH4	10.5	1800	35827	991	180	100	1011	233	100	
AUD-42UX6RTHH4	12.5	1750	42651	1210	227	100	1240	313	100	
AUD-48UX6RPHH4	14.4	2400	49134	1210	227	100	1240	313	100	
AUD-60UX6RPHH4	17.5	2400	59712	1210	227	100	1240	313	100	
	PEFY-P15VMS1-E	1.7	420	5801	665	155	100	705	162.5	100
	PEFY-P20VMS1-E	2.2	480	7507	665	155	100	705	162.5	100
	PEFY-P25VMS1-E	2.8	540	9554	665	155	100	705	162.5	100
	PEFY-P32VMS1-E	3.6	600	12284	665	155	100	705	162.5	100
	PEFY-P40VMS1-E	4.5	660	15355	865	155	150	905	162.5	100
	PEFY-P50VMS1-E	5.6	780	19108	865	155	150	905	162.5	100
	PEFY-P63VMS1-E	7.1	990	24226	1065	155	200	1105	162.5	100
	PEFY-P20VMA(L)-E	2.2	510	7507	665	183	100	705	229	100
	PEFY-P25VMA(L)-E	2.8	510	9554	665	183	100	705	229	100
	PEFY-P32VMA(L)-E	3.6	630	12284	665	183	100	705	229	100
	PEFY-P40VMA(L)-E	4.5	840	15355	865	183	100	905	229	100
	PEFY-P50VMA(L)-E	5.6	1020	19108	865	183	100	905	229	100
	PEFY-P63VMA(L)-E	7.1	1140	24226	1065	183	100	1105	229	100
	PEFY-P71VMA(L)-E	8	1260	27297	1065	183	100	1105	229	100
PEFY-P80VMA(L)-E	9	1260	30709	1065	183	100	1105	229	100	
PEFY-P100VMA(L)-E	11.2	1980	38216	1365	183	100	1405	229	100	
PEFY-P125VMA(L)-E	14	2400	47770	1365	183	100	1405	229	100	
PEFY-P140VMA(L)-E	16	2520	54594	1565	183	100	1605	229	100	
	FDUM-40VF	4	600	13648	685	175	150	665	205	100
	FDUM-50VF	5	600	17061	685	175	150	665	205	100
	FDUM-60VF	5.6	900	19108	885	175	200	865	205	100
	FDUM-71VF1	7.1	1140	24226	885	175	200	865	205	100
	FDUM-100VF2	10	1680	34121	1205	175	250	1205	240	100
	FDUM-125VF2	12.5	1920	42651	1205	175	300	1205	240	100
	FDUM-140VF2	14	2100	47770	1205	175	350	1205	240	100
	SRR25ZM-S	2.5	570	8530	665	104	100	665	165	100
	SRR35ZM-S	3.5	600	11942	665	104	150	665	165	100
	SRR50ZM-S	5	810	17061	865	104	200	865	165	100
SRR60ZM-S	6	870	20473	865	104	200	865	165	100	

# PLENUM BOX A/C

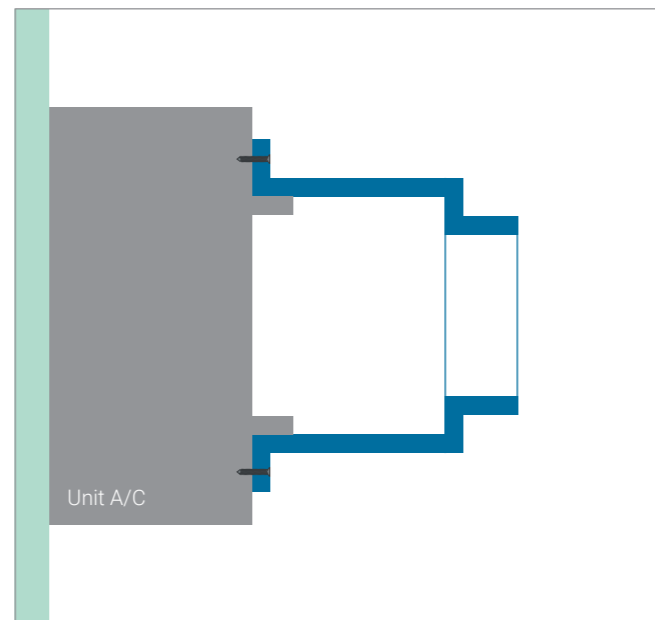
## FASTENING METHODS

Any A/C concealed ducted unit available can become part of an A/C unit – plenum box configuration according to the needs and standards of your project. Some of the recommended A/C unit plenum box fastening methods are presented in the illustration that follow:



### METHOD 1

Plenum box fixed on a/c unit using screws on the side panel of the supply air opening.



### METHOD 2

Plenum box fixed on a/c unit using screws on a 20mm frame around the plenum box.

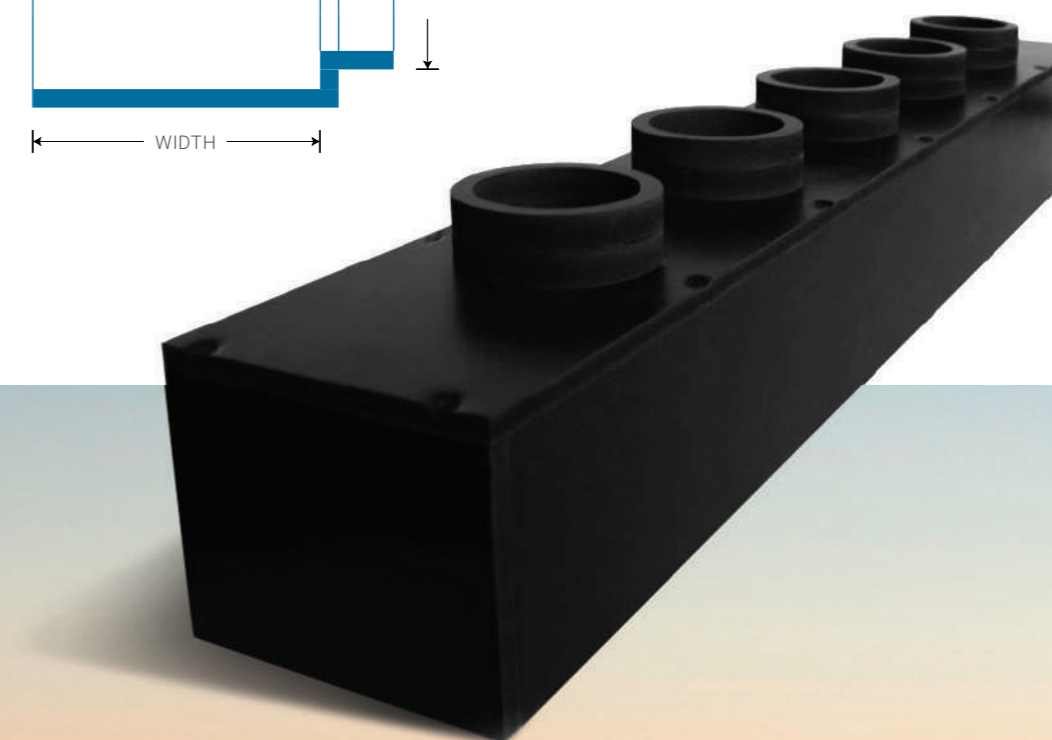
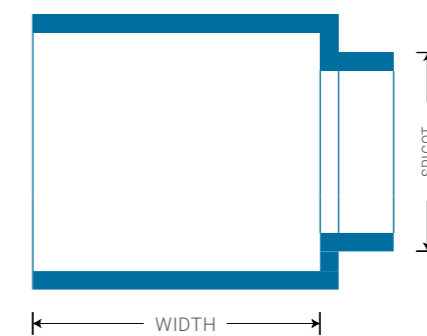
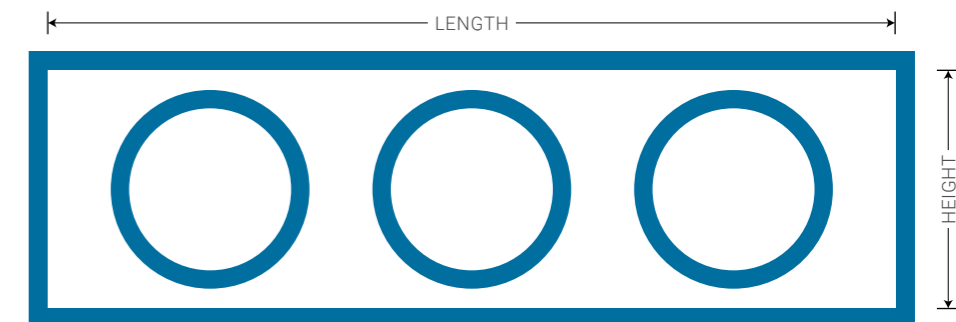
# PLENUM BOX A/C

## HOW TO ORDER

For a successful order please follow these steps:

1. By requesting an A/C Plenum Box please provide also the A/C unit **model number**
2. Let us know about the quantity, dimensions and spigots position
3. **Confirm** our Plenum Box dimension on our quotation.

### INTERNAL DIMENSIONS



- ▶ **Flammability, EN13501-1 Class B**
- ▶ **Smoke Production, EN13501-1 Class s1**
- ▶ **Flaming Droplets, EN13823 Class d0**
- ▶ Fire Retardant material (5 seconds self-extinguishing ability)
- ▶ **Very Low Thermal conductivity factor of 0.05W/m.K as a material:** which is comparable with the insulation that used for convectional Plenum Boxes (Thermal Conductivity of 0.036W/m.K), which make the use of insulation unnecessary
- ▶ **Insulated spigots made from the same material rounded or oval with no sharp edges**
- ▶ Low ratio of weight to size, making them lightweight and easy to install
- ▶ **No liquefaction inside the Plenum Box**
- ▶ Very Low Water Absorbing Capacity (less than 1.5%)
- ▶ Very good noise cancellation factor
- ▶ Natural black color that doesn't reflect light

## WHY VENTUS?



Euro Airs textile materials (HDC and DFC-line) are certified and approved according to:

**B-s1, d0**

# PLENUM BOX GRILLE

## FASTENING METHODS

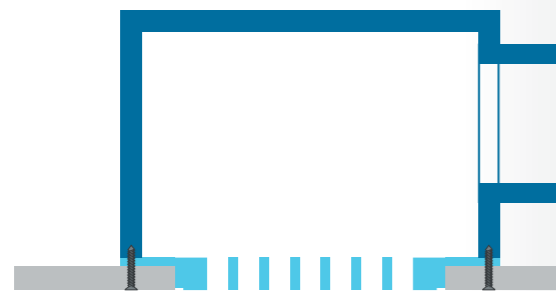
The philosophy of Ventus Grille Plenum is that four (4) out of five (5) air grille categories are manufactured with a builtin Plenum Box. This feature offers us the following SIGNIFICANT ADVANTAGES:

- ▶ Zero air losses
- ▶ Installation time reduced by 50%
- ▶ Perfect and elegant finish
- ▶ Natural black color, Plenum Box
- ▶ Zero liquefaction



1

### PLENUM BOX ON A Reverse Grille

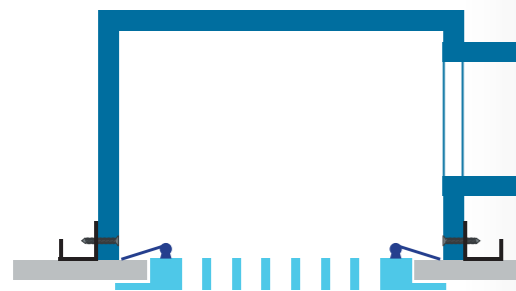


The most common system with build-in plenum on the grille with main feature the flawless finish without any extractions.

System which is consisted of a plenum box with build-in air grille that can be seated on the metal frame of the ceiling 60cm x 60cm.

2

### PLENUM BOX ON A Regular Grille



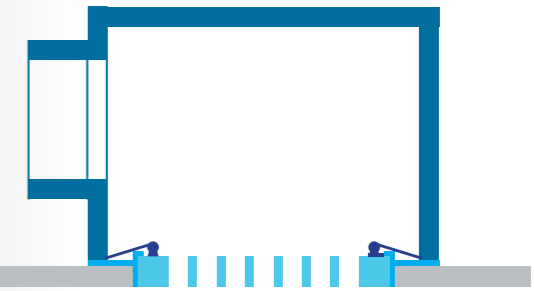
The classic method in the market with separated plenum box and air grille.

**IMPORTANT NOTE:** The plenum box must be 3cm bigger perimetrical from the opening on the ceiling, to allow the full opening of the springs.

System which consist of a plenum box with a build-in air grille on an aluminum frame (A100) and can be used as an access point in the ceiling. \*Air filter net can be installed.

3

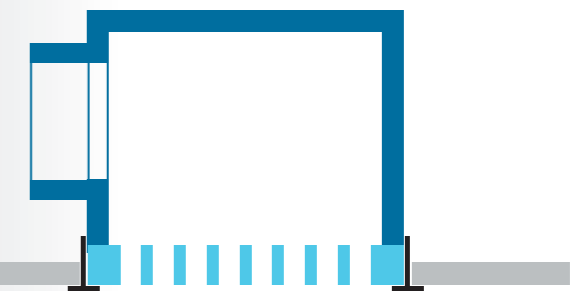
### PLENUM BOX ON A Level Grille



Alternative method with build-in plenum on aluminum frame (B800) and springs to support the grille. Flawless finish with the possibility of access.

4

### PLENUM BOX ON A False Ceiling Grille



5

### PLENUM BOX ON A Perforated Access



CUSTOM MADE

YOU  
DESIGN IT  
WE  
BUILD IT



At Ventus we take pride in our ability to offer fully customized products to our clients according to their specifications.

#### HOW TO ORDER

For any Custom-Made order, please attach drawings specifying all necessary information (the various dimensions needed, depth of the plenum box, location and dimensions of spigots etc.)



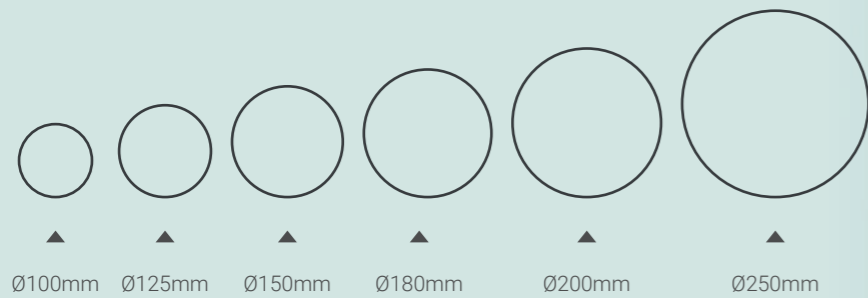
# INSULATED FLEXIBLES

## SPECIFICATIONS

- ▶ Insulation thickness 5mm
- ▶ Thread 45mm
- ▶ Reflexivity Category: B1
- ▶ Operating Temperature: -30 °C to + 120 °C
- ▶ Sound: absorption: (DIN-4109 - 300-2500mhz): by M.O. 60%
- ▶ Toxicity during combustion: no Packing: 10 meters
- ▶ Sizes from 100mm to 250mm
- ▶ Thermal conductivity coefficient 0.033 w/mk at 10°C and 0.038 w/mk at 40°C



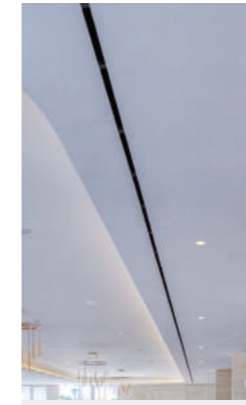
## AVAILABLE SIZES



OUR GOAL IS TO BECOME **ONE POINT STOP** (ONE-STOP SHOP) AT THE FIELD OF THE AIR CONDITIONING SYSTEMS WITH PLENUM BOXES AND AIR GRILLES COVERING ALL YOUR NEEDS.

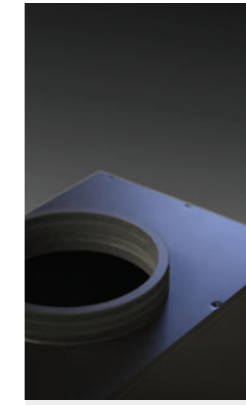
# VENTUS PACKAGE

TO PROVIDE A BETTER SERVICE TO OUR CUSTOMERS, WE CREATED THE VENTUS PACKAGE.



1.

Select your Grille.



2.

Let us know about the size of the plenum box that you need.



3.

Buy the measures of flexible air duct that you need for the connection of the grille with the plenum.



4.

Schedule with us the date and place for the installation of the grilles.



5.

Take advantage of our special Ventus discounts.

\*The facilities are valid only for purchases within Cyprus.

