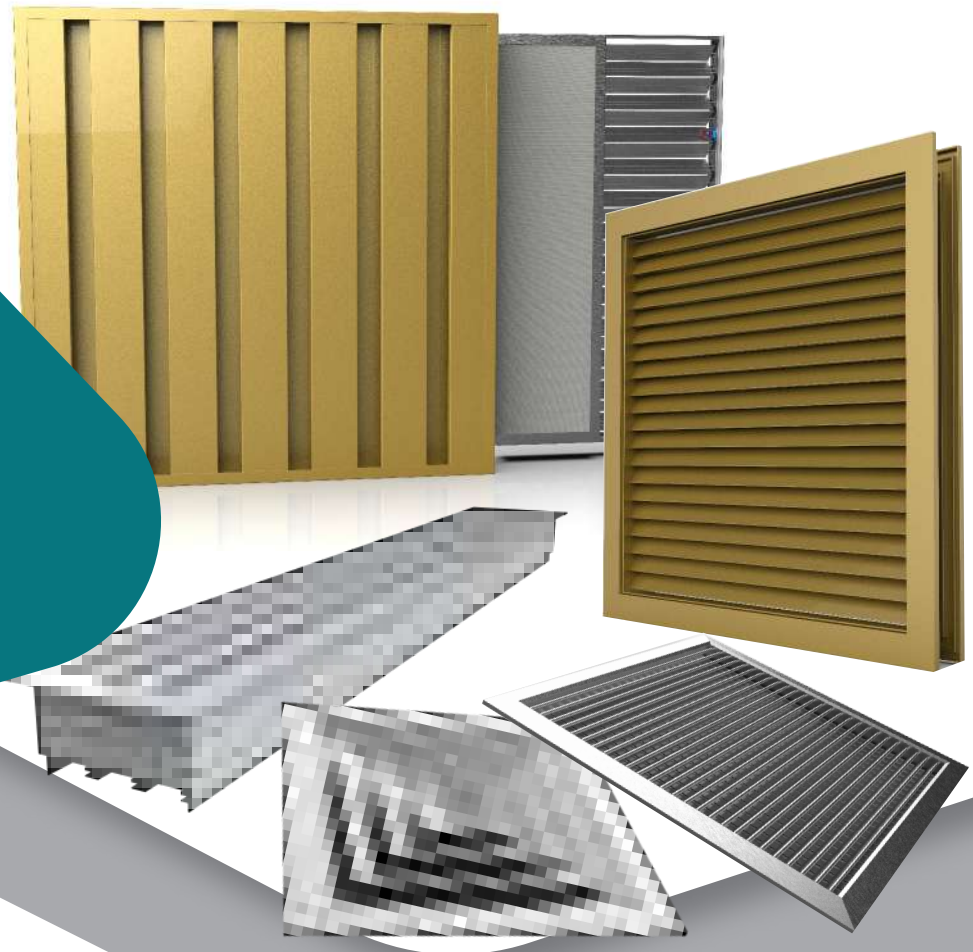




CASTLE
ENGINEERING
INDUSTRIES



AIR OUTLETS

AIR OUTLETS

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Door Grille

Chapter 11

Table Of Content:

- Description
- Features & Characteristics
- MODELS
- Mounting Instructions
- Engineering And Performance Data
- Ordering Data

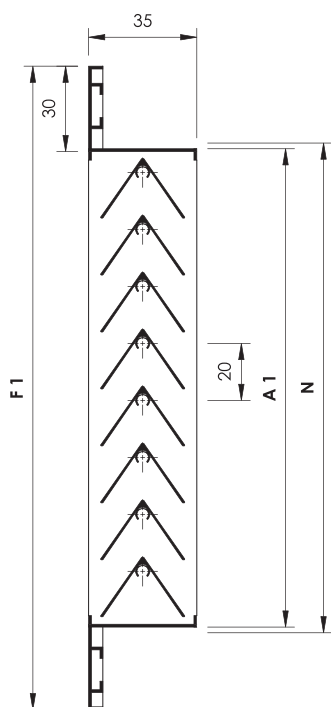
Description

Castle Door Transfer Grilles of the DG Model are particularly designed to allow the passage of air from a conditioned space to another while preventing vision. They are widely used, not only in doors, panels or partitions, but also in places of conventional exhaust and return air grilles where it's required that the interior of the duct be hidden.

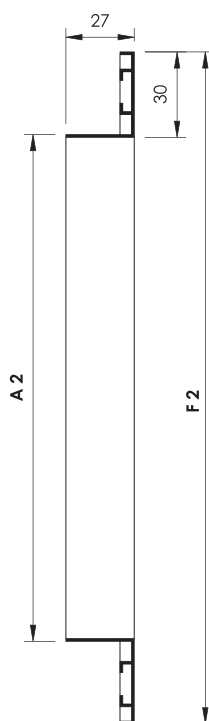
Features & Characteristics :

- Construction : Frame & blades are made of high quality Extruded Aluminium Profiles of 6063 Alloy.
 - Frame Flange width : 30 mm.
 - Blades : Inverted " V " horizontal cross section louvers arranged to overlap each other to be " Sight - Tight " when viewed from any angle.
 - Blades pitch : blades are spaced at a distance of 20 mm.
 - The inverted " V " louver cross section not only blocks vision, but also provides additional strength and rigid construction.
 - Available in wide variety of standard neck sizes ranging from 200 x 100 up to 1200 x 500 mm (other None - available on request).
- 
- Telescopic frame suitable for doors or partitions from 25 - 55 mm thick (Fixed on both sides of the door).
 - The frame of the Door Transfer Grille is composed of two parts, one part is the fixed one, holding the core and can be fixed to one side of the door or partition. While the other part, the sliding one, is fixed to the other side of the door or partition. Thus, the sliding frame gives the facility of installing this grille to different thicknesses of doors or partitions.
 - The large free area (up to 70 %) is capable of transferring high air volumes at minimum pressure loss and noise level.
 - The frame mounting holes are dimpled, allowing for a counter-sunk fastener head appearance.
 - Available with Foam type Rubber Gasket for air sealing (provided as an option).

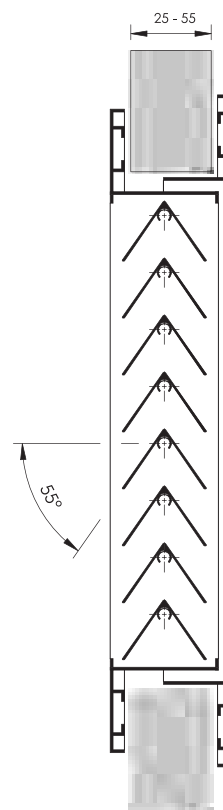
Construction and Dimensional Details



Fixed Frame



Sliding Frame



Door Grille

N: Nominal / Listed Size = Length (L) x Height (H) in mm

Case I: Specified height (H) in cm is even figure:

A 1 = Actual Size = (L-10) x (H-15)

F 1 = Face Size = (L+50) x (H+45)

A 2 = Actual Size = (L-5) x (H-10)

F 2 = Face Size = (L+55) x (H+50)

Case II: Specified height (H) in cm is even figure:

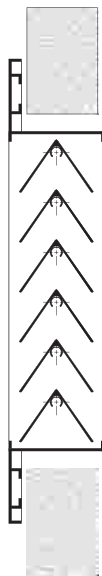
A 1 = Actual Size = (L-10) x (H-5)

F 1 = Face Size = (L+50) x (H+55)

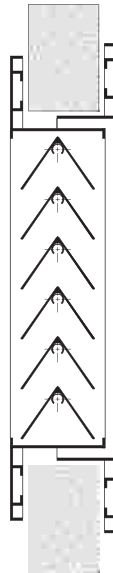
A 2 = Actual Size = (L-5) x (H)

F 2 = Face Size = (L+55) x (H+60)

Mounting Instructions

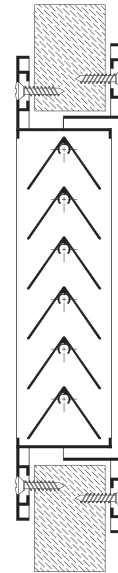


Step 1



Step 2

Face Screw Fixing



- Insert the counter frame in the door portion opening and fix with screws using the holes on the border edge
- On the opposite part, install the grille with frame in a way that allows the telescopic part to open into the counter frame. Fix with screws.
- The Door Grille is fixed to the door or partition by means of visible counter - sunk screws.

Effective Area Values for Door Transfer Grilles in (m²)

L ▼	H ▶	100	150	200	250	300	400	500
150		0.005	0.008					
200		0.010	0.018	0.027				
250		0.014	0.025	0.040	0.045			
300		0.016	0.029	0.043	0.057	0.070		
400		0.021	0.039	0.056	0.073	0.090	0.120	
500		0.027	0.050	0.070	0.095	0.120	0.150	0.190
600		0.033	0.060	0.090	0.120	0.150	0.190	0.260
800		0.043	0.080	0.120	0.155	0.190	0.260	0.320
1000		0.056	0.100	0.150	0.190	0.230	0.320	0.400
1200		0.070	0.120	0.190	0.225	0.260	0.400	0.520

L & H Dimensions are in mm.

Engineering And Performance Data

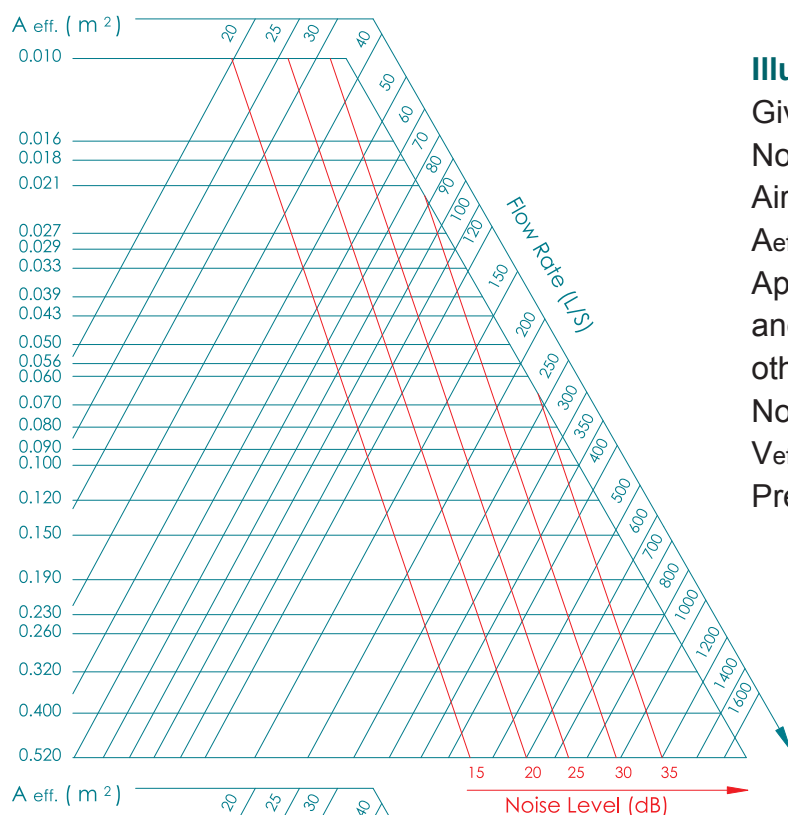


Illustration Example:

Given Data:

Normal Size: 400 x200 mm

Air Flow Rate = 225 CFM = 120 (L/S)

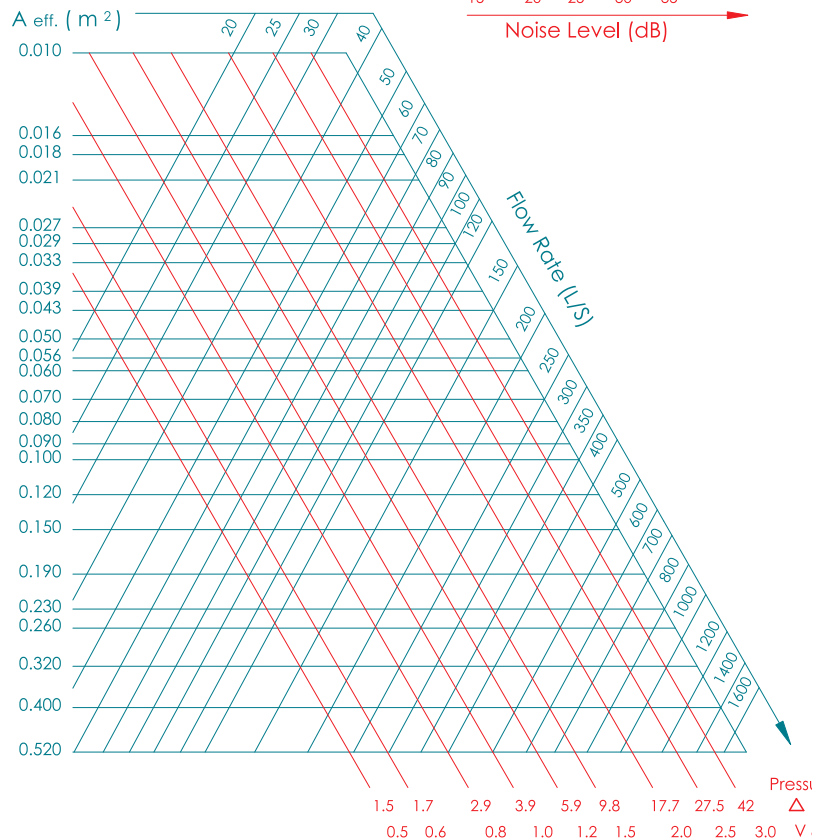
$A_{eff.} = 0.056 m^2$ (refer to the previous table)

Apply the readings of flow rate and $A_{eff.}$ on the chart and read other data as below:

Noise Level = 24 dB.

$V_{eff.} = 2.2 m/s.$

Pressure Drop = 21 pa.



Ordering Data

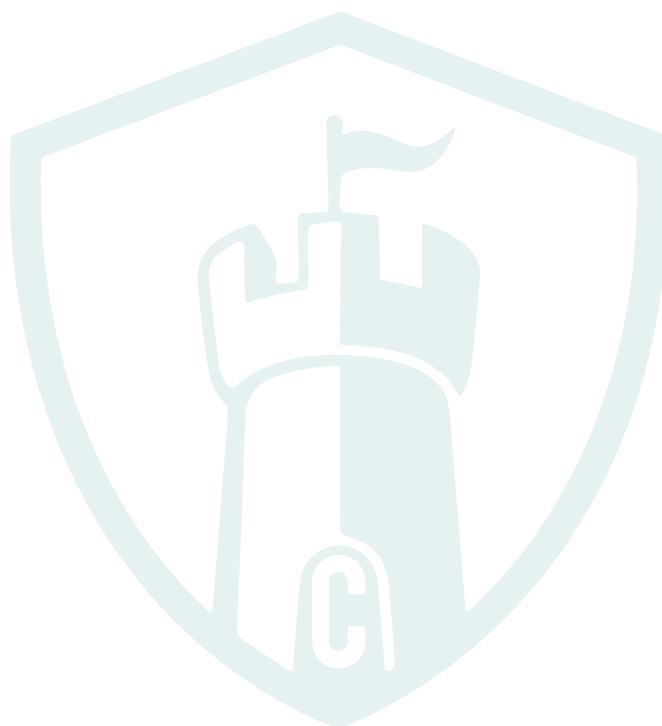
Available Surface Finishes for Door Transfer Grilles:

- Natural / Matt Silver Anodized.
- Powder Coating (Standard Colours are white RAL 9010/9016, other optional colours if required to be provided in RAL - No. only and charged extra).
- Aluminium in Mill Finish.
- Other Special Finishes (on request if available).

• Ordering Specifications:

Specify:

1. Door Grille Description / Model (DG).
2. Nominal / Neck size.
3. Quantity.
4. Door Grille Surface Finish.
5. RAL - No. (only mention if powder coating surface finish is required).
6. Rubber Gasket (only mention if required)





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