aldes

AIR DIFFUSION



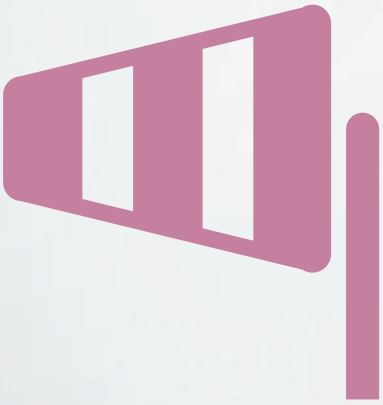


2023 EDITION

COMPULSOR

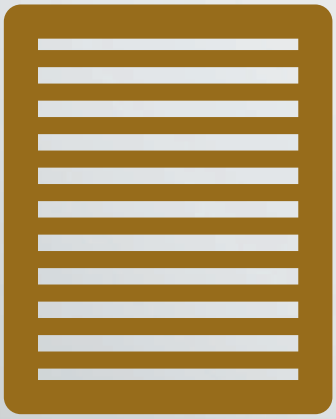
COMPULSOR AIR DIFFUSION

2023 EDITION



0.4 m/s

Maximum **residual airflow** beyond which discomfort is felt.

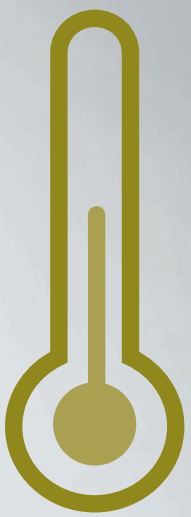


200000

Quantity **of terminals and diffusers made by Aldes** each year.

13°C

Temperature of air supplied by air conditioning systems in offices.



2 m x 2 m

Maximum dimension that **Aldes** can deliver terminals **in a single piece**.

40 dB(A)

Level above which the **whistling noise produced by a terminal becomes audible**.

FULL RANGE DESIGNED TO OPTIMISE THE OVERALL PERFORMANCE OF THE SYSTEM AND OCCUPANT COMFORT

SMALL SHOPS

TWISTED SERIES

- Discreet, unimposing design for seamless integration
- Excellent mixing rate
- Ideal for variable airflow systems

HOTEL ROOMS

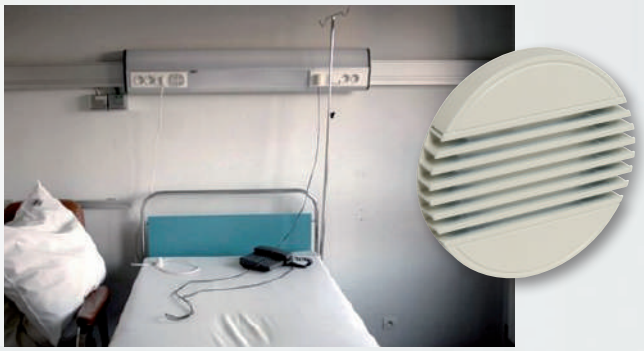
GRIDLINED SERIES

- Wide range of dimensions available (height from 75 to 800 mm / length from 20 cm to 100 m)
- Fixed or controllable airflow
- Separate air supply and exhaust or combined

HOSPITAL ROOMS

BIM 2 SERIES

- Available in white finish
- Wall or ceiling-mounted
- Air supply and exhaust



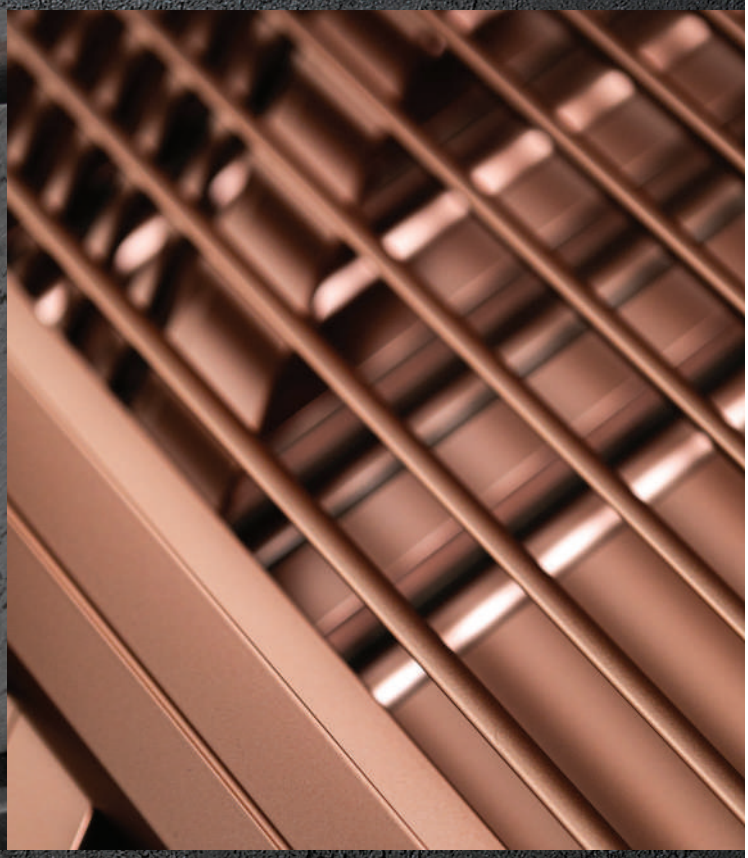
OFFICES

LINED SERIES

- Identical products for air exhaust and supply
- Filtration possible on exhaust
- Separate air supply and exhaust or combined

AldesArchitect®

AIR DIFFUSERS AND SMOKE AND HEAT EXHAUST GRILLES CAN BE ELEGANT AND HIGH-END TOO



The Élégant finish:

a wide choice of high-end finishings that bring the final touch to your projects.

AldesArchitect®, it is also...

The Essentielle finish

We offer you a wide selection of RAL colours of up to a hundred different shades. For a perfect integration into your projects

&

The Exclusive finish

Possibility of colors or patterns specific to your project.

Get more information at **aldes.fr/pro**

aldes

ALDES, THE REFERENCE BRAND IN AIR DIFFUSION, SUPPORTS YOU FROM DESIGN TO COMMISSIONING

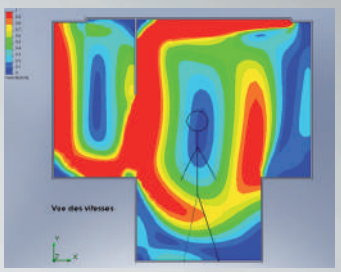
As a specialist in air management for residential and non-residential premises, Aldes offers a full range of air diffusers to suit all configurations. With two major factories in Liège (Belgium) and Dubai, Aldes has over 20,000 m² of dedicated production facilities. These industrial resources guarantee control of our manufacturing processes and product quality. It also means that we can be flexible and react quickly to the changing demands of modern building construction.

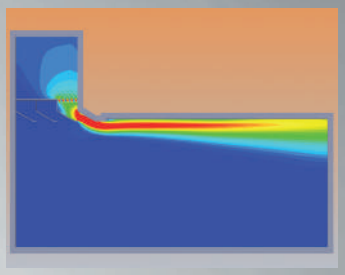
With hundreds of thousands of diffusers manufactured in our factories and installed all over the world, Aldes is establishing itself as a key player in air diffusion. We direct our experience and expertise in air management to the development of innovative solutions for unceasing improvement in occupant comfort.

3D digital simulation centre

Aldes has a digital simulation centre where standard tests are carried out and the performance and comfort of air diffusers are optimised. This system for developing standard ranges offers the potential for designing customised products for specific requirements.

Digital simulation represents the actual behaviour of air jets, both in terms of speed and temperature distribution.





Acoustic laboratory

Aldes also runs a laboratory to perform acoustic tests in real-life situations.

The lab enables acoustic factors to be considered in the produce design phase, during the construction of ventilation or air handling systems. This guarantees occupant comfort whatever their activity.

Test centre

Sector expertise

Aldes incorporates air diffusion as part of its global strategy for non-residential ventilation, thermal comfort and fire safety.

Customised design

Aldes can customise its products to your situation and technical constraints to meet all your air diffusion needs, mainly aesthetically with AldesArchitect™ which allows for limitless personalisation of air diffusers and seamless integration.

A network of local technical sales representatives at your service

The two hundred representatives in the Aldes technical sales network are spread amongst ten agencies around France. Their know-how is available to and supports you at each stage of your projects:

- Diagnostics: analysis of your buildings to identify the most appropriate solution to your needs
- Design: dimensioning of systems and validation of products selected
- Installation: Aldes teams are on hand in branch offices or in the field to support you with the efficient installation of high-quality systems
- Maintenance: managing spare parts, standard maintenance contract for certain products, etc.

Lastly, Aldes operates an integrated, flexible supply chain. Our logistics hub in Mions (69 - Rhône) and an efficient ERP system ensure that Aldes can meet the needs of its customers with short deadlines at competitive prices.

REGIONAL COURT OF PARIS

Project

How to ensure good air diffusion in the largest judicial complex in Europe while meeting demanding specifications?

Customer constraints

- Short installation time for diffusers
- Acoustic management in courtrooms
- Deliver comfortable air diffusion in three different rooms with a single plenum/diffuser combination
- Allow three different airflow settings without dismantling the diffuser

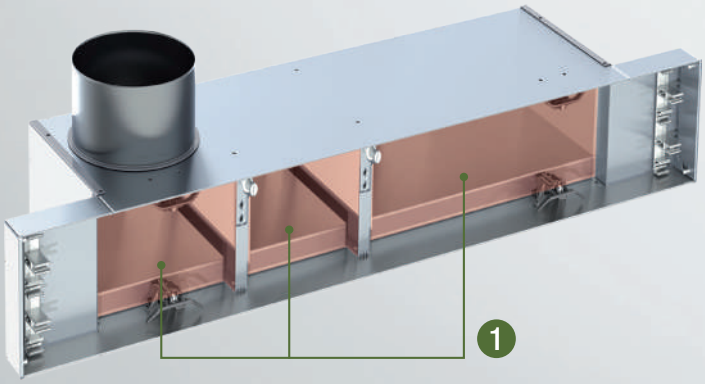
Aldes solutions

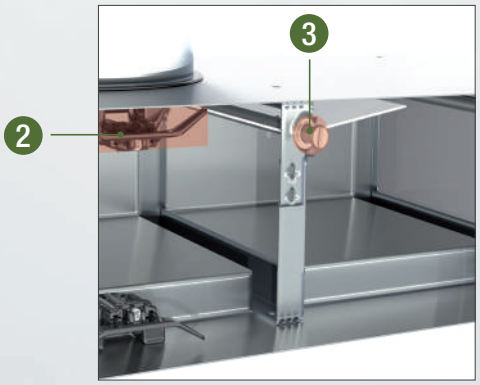
Aldes has specially designed a plenum with three airflows suitable for **Lined** and **Lined Slim slot diffusers:**

1. **Three compartments and two mobile partitions** deliver perfect air diffusion for three different airflows
2. **Airtight partitions can be opened** without dismantling the diffuser using a single accessible screw
3. **Fast installation/dismantling** of the plenum using concealed clips

Execution

Architects	Renzo Piano Building Workshop
City	Paris
Building	Public Service
Type of project	New build
Surface area	110,000 m²
Year of construction	2018
Aldes products	• 4,500 special Lined Slim and Lined S diffusers • 15,000 fire dampers • 300 PLAFONE smoke and heat exhaust dampersv • 600 OPTONE motorised smoke and heat exhaust dampers • 600 special GFA 007 and GFA smoke and heat exhaust grilles • 130 GDF transfer dampers • 3,500 MR Mono modules





Partition in open position

CRÉDIT AGRICOLE BANK HEAD OFFICE IN TOULOUSE

Project

How to deliver good air diffusion and aesthetic product integration?
Create diffusers which adapt to chilled beams supplied by the customer to guarantee the aesthetics required by the architects (continuous linear aspect, with 90° and different customised angles to close properly on each floor).

Customer constraints

- Building undergoing renovation, adapt to existing structure
- Adapt to chilled beams supplied
- Conserve aesthetic finish required by architects
- Short deadlines for provision of samples for rapid validation by architects

Aldes solutions

The floor grilles specially adapted to this project deliver heating and air conditioning by air:

1. **Customised range:** e.g. width 361 mm and lengths from 1200 to 2000 mm

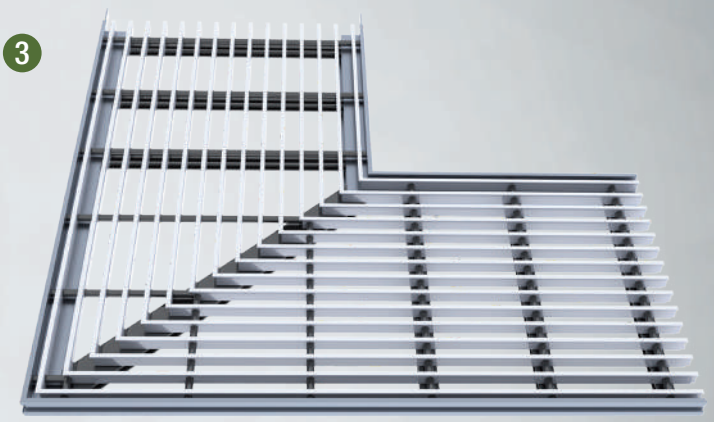
2. **Adapt to existing structure:** the grille frame was adjusted for insertion into the chilled beams in place

3. **Angle pieces** to ensure continuity around the edges of the room

4. **Aesthetic finish:** refined finish on all details of the grille. The vanes and frame are made of natural hue anodised aluminium, while the tubes and stiffeners have a black anodised coating

5. **Express delivery of samples:** the responsiveness of our plant means we can produce and deliver samples within lead times compatible with the demands of the construction business

3



GridLined Floor Angle 90°

4

GridLined Floor

Execution

Building	Crédit Agricole head office, Toulouse 31
Site address	6 place Jeanne d'Arc, 31000 Toulouse
Building type	Offices
Details	10,000 m² of office space on eight storeys and 5,000 m² over three basement levels, 80 parking spaces
Surface area	15,000 m²
Aldes products	• 1,300 metres of GridLined Floor grilles in anodised aluminium with a natural and black colour finish. • 10 ProtectONE® smoke and heat exhaust fans • 5 VELONE smoke and heat exhaust roof fans • 10 EasyVEC® 4000/5000 exhaust fan units
Type of project	Refurbishment
Capacity	450 employees
Type of energy	Electrical
Length of work	Started in August 2017, delivery in October 2019

MSC MERAVIGLIA AND BELLISSIMA CRUISE SHIPS IN ST-NAZAIRE

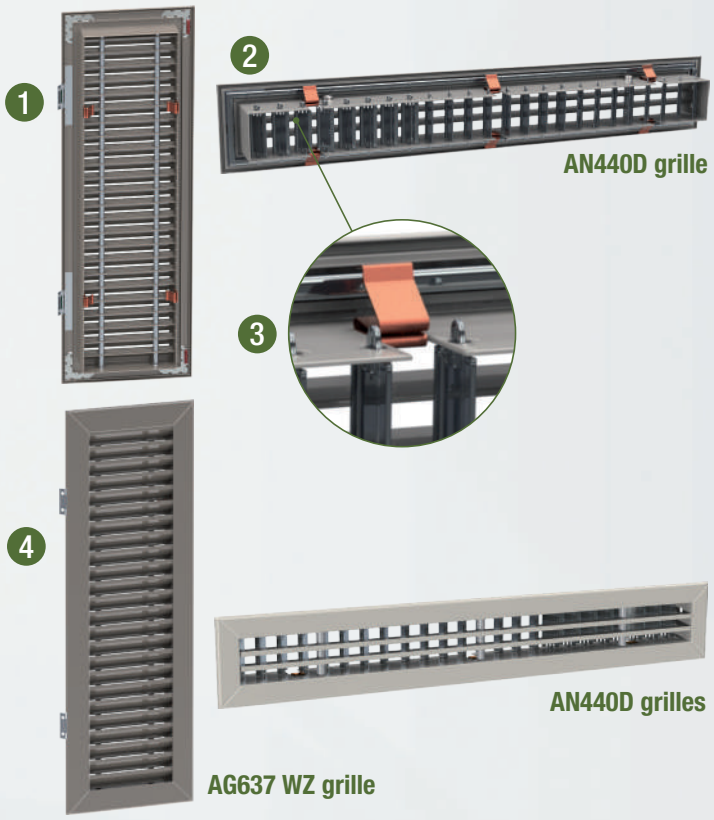

© Chantiers de l'Atlantique

Project

How to ensure comfortable air conditioning for cabins on the largest liners in Europe?

Customer constraints

- Cabins are narrow with low ceilings: CFD 3D digital simulation and testing on model cabins by AXIMA were necessary to validate the proposed solutions
- Easy filter cleaning
- Attachments to metal partition walls with high mechanical strength requirements due to vibrations generated on an ocean liner
- Refined aesthetic finish required by architects
- Specific "Marine" RAL paint colours with reduced tolerances on colour and shine



Aldes solutions

Construction of an exhaust grille in partnership with our customer AXIMA adapted to the needs of the shipbuilder:

1 **Hinged opening grille** with hinges as discreet as possible for easy access to filter
- **Filter holder separate from grille:** designed to hold the filter in place when cleaning with a vacuum cleaner
- **Airtight seal on frame**

Creation of an air supply grille with fixed bars and double deflection:
- **Reduced grille height** (63 mm) for improved aesthetic finish

2 **Rear vanes** orientated in the factory based on results of 3D digital simulations

3 **Concealed attachment** using friction clips

4 **Four special paint systems** using NCS and RAL references

Execution

Name of project	MSC Meraviglia and Bellissima
Customer	AXIMA
Site address	Avenue Antoine Bourdelle, 44600 Saint-Nazaire
Building type	Liners
Details	316 m long, 32,000 m² of public spaces, top speed of 22.7 knots (40 km/h). Shops, themed restaurants, twenty bars and lounges, theatre, Polar Aquapark, five swimming pools and a show space designed to host Cirque du Soleil
Aldes products	✔ AG637 WZ exhaust grilles ✔ AN440D air supply grilles
Capacity	5714 passengers and 1550 crew
Type of energy	-
Length of work	Design work started in 2015, delivery in 2019

KNAUF OFFICES IN BRUSSELS

Project

When Twisted is the best solution for integration in Danoline and Organic Knauf ceiling ranges. On this project, the architect specified Knauf Danoline Contur and Knauf Organic ceilings, with concealed framework.

Customer constraints

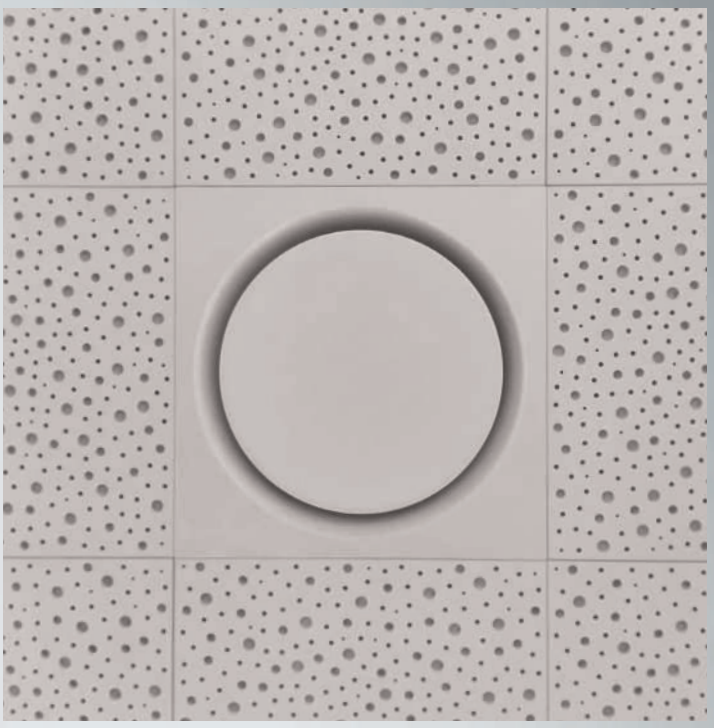
Strict aesthetic requirements:

- Seamless integration in the Knauf Contur D+ ceiling
- Single aesthetic finish for air supply and exhaust diffusers

Aldes solutions

Development of a Twisted 850 Series swirl jet diffuser with concealed framework:

- **Aesthetic diffuser** adapted to architect specifications
- **Customised dimensions** to adapt to this very particular ceiling
- **Innovative attachment system** to simplify installation to this type of ceiling
- **Identical aesthetic finish** for both the air supply and exhaust diffusers
- **Airflow of 150 m³/h to 600 m³/h** possible with same diffuser



Execution

Buildings	Knauf offices in Brussels
Architect	Magali Patureau
Ceiling type 1	Knauf Danoline Contur
Danoline constraint	Removable ceiling with concealed framework
Ceiling type 2	Knauf Organic
Knauf Organic constraints	Colour + height adjustment
City	Brussels

We can design concealed framework diffusers for other ceiling brands. **Contact us!**

Selector Koanda 3D

Controlled air diffusion!

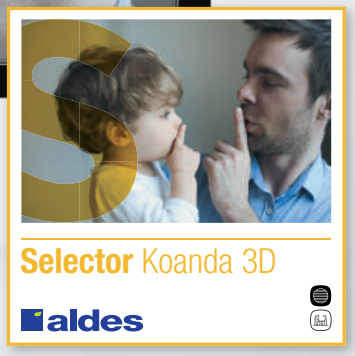
What if the invisible became visible? Air diffusion project management software.
A powerful algorithm, an intuitive interface and high-performance 3D display of air jets in the room.

Quick
Integral project management.

Precise
Aeraulic and acoustic calculation.

Efficient
High-performing 3D display.

ENERGY-SAVING
Detailed report and list of products.

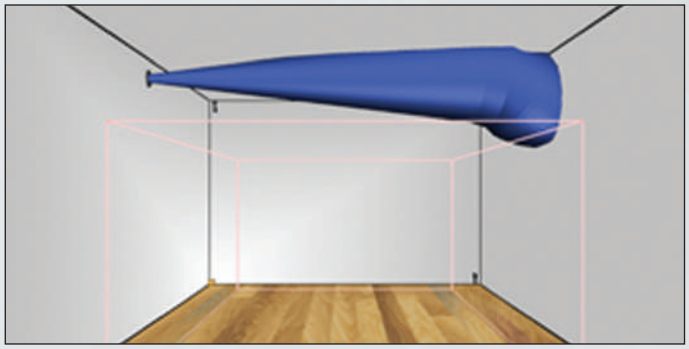


Additional information available online: **https://services.aldes.com/logiciels**

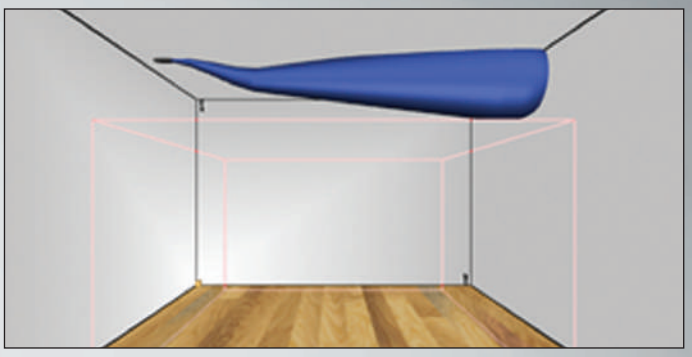
TYPES OF AIR JETS

Small terminals

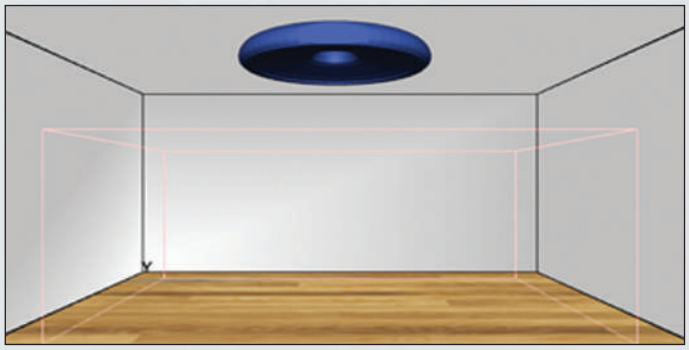
Wall-mounted BIM 300



Ceiling-mounted BIM 320

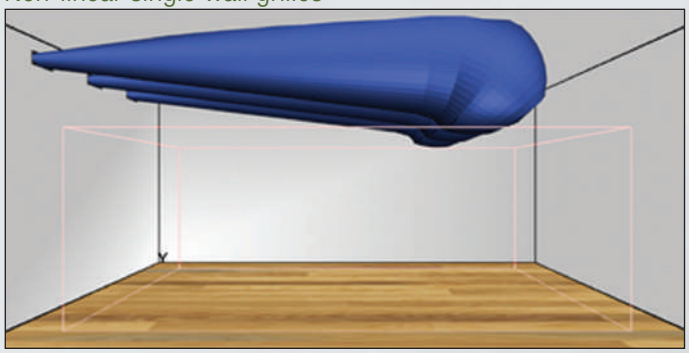


Ceiling-mounted SR 135

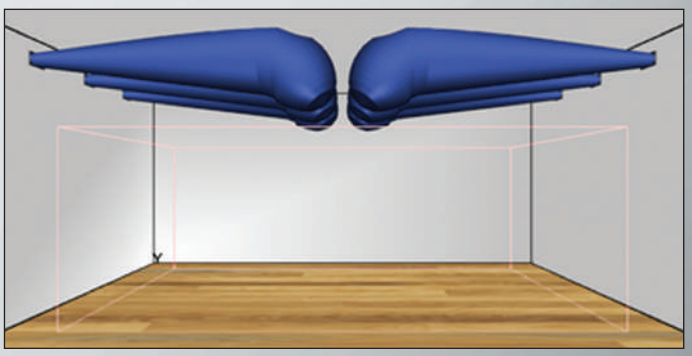


Indoor grilles

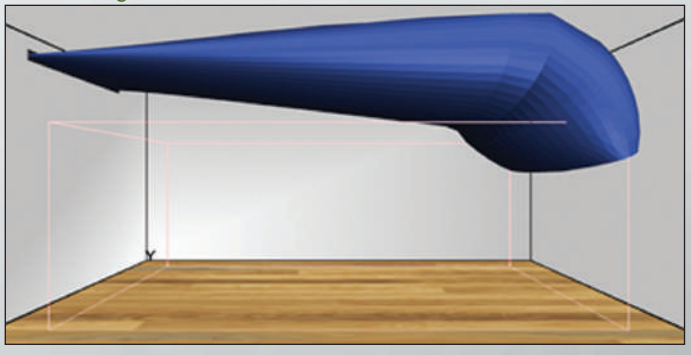
Non-linear single wall grilles



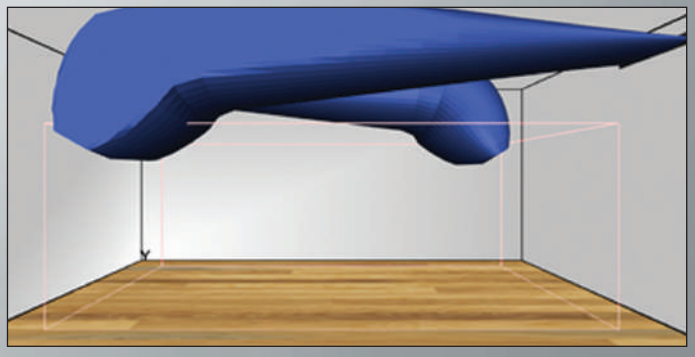
Non-linear double wall terminals



Linear single wall terminals



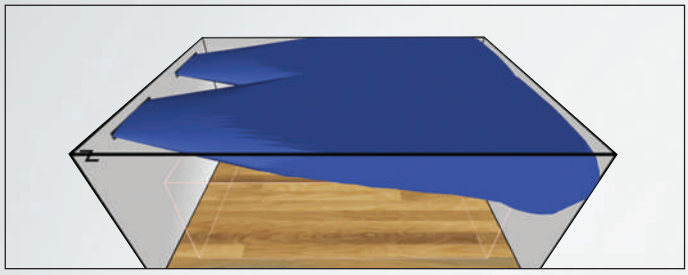
Linear double wall terminals



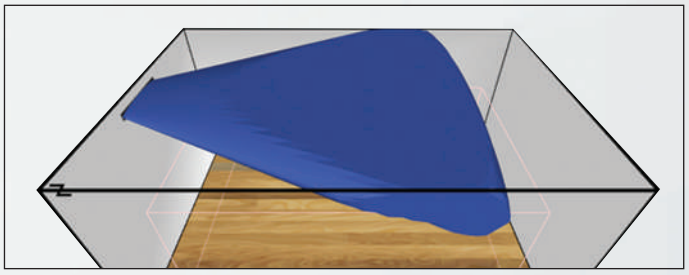
TYPES OF AIR STREAMS

Indoor grilles

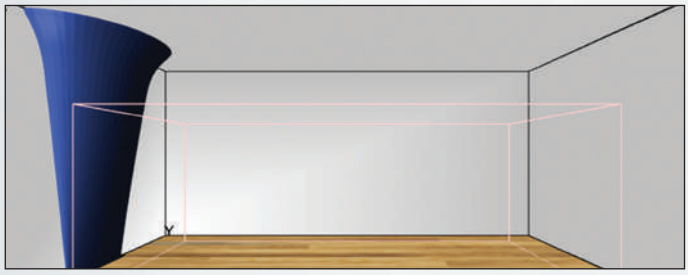
Wall grilles 22° deflection



Wall terminal 45° deflection



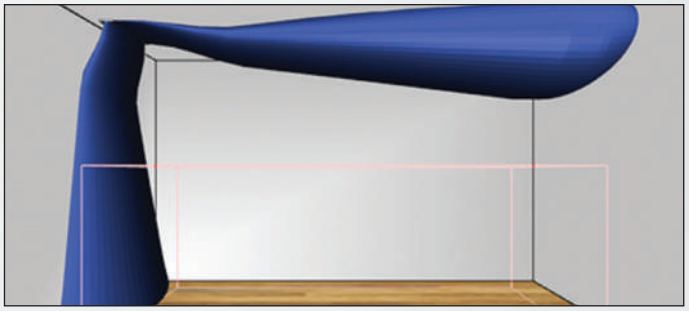
Floor terminals



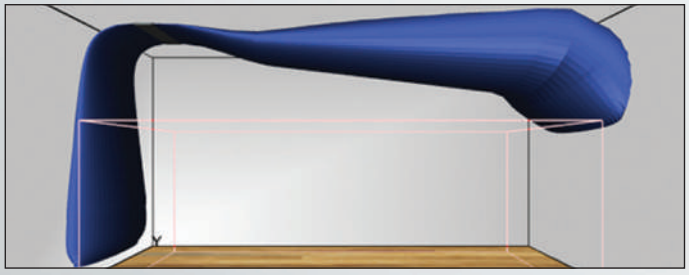
Slot diffusers

Lined - horizontal jet

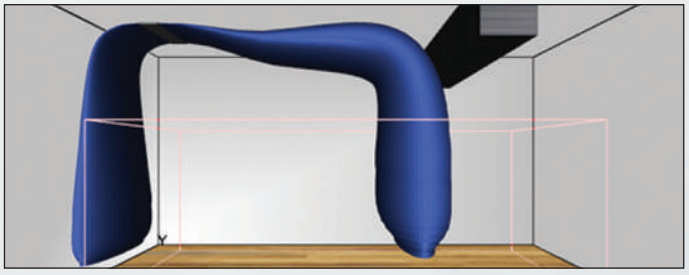
Lined - vertical and horizontal jet



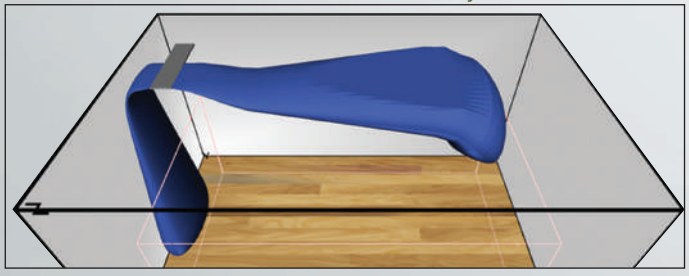
Lined - horizontal jet without obstacle



Lined - horizontal jet with beam



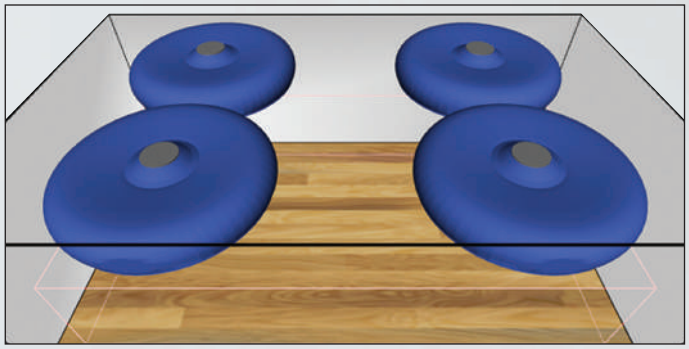
Lined Combined - horizontal and vertical jet



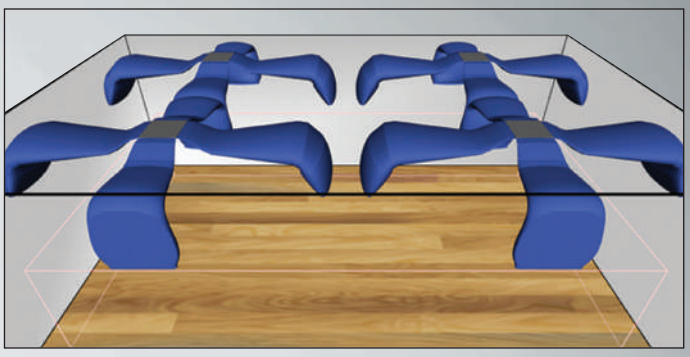
TYPES OF AIR JETS

Ceiling diffusers

Circular diffusers

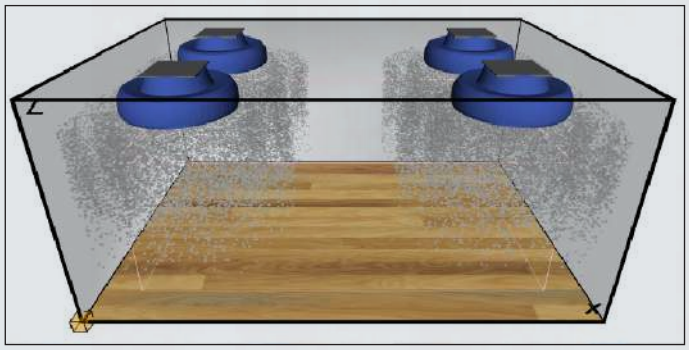


Square diffusers

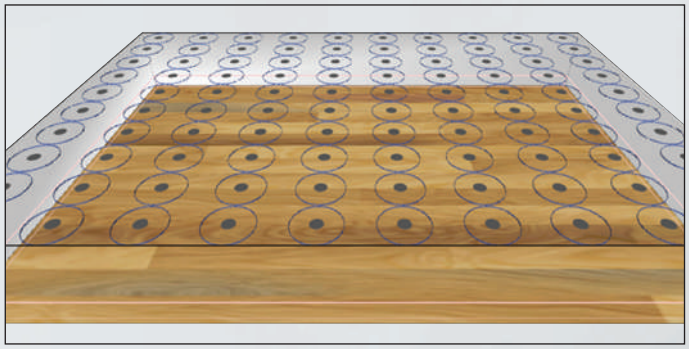


Swirl diffusers

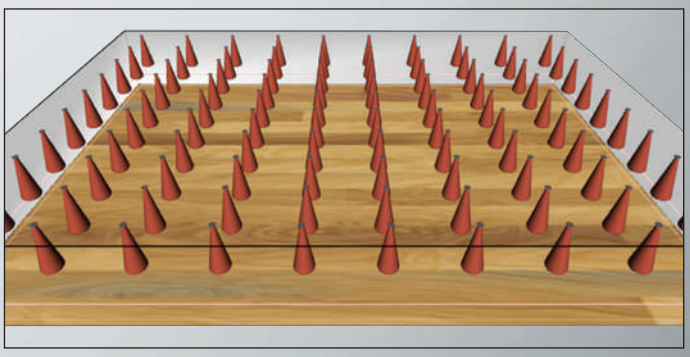
AR 883 - Set at 30°



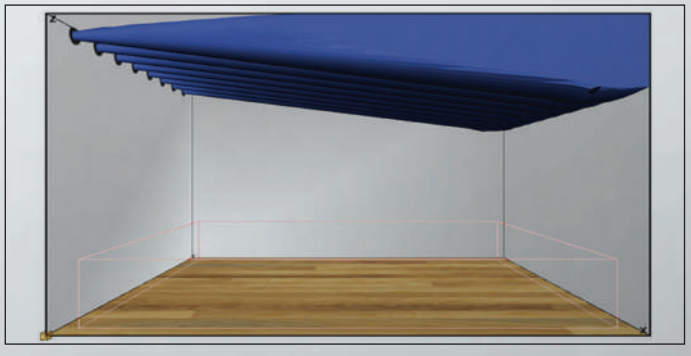
AR 883 - Set at 30°



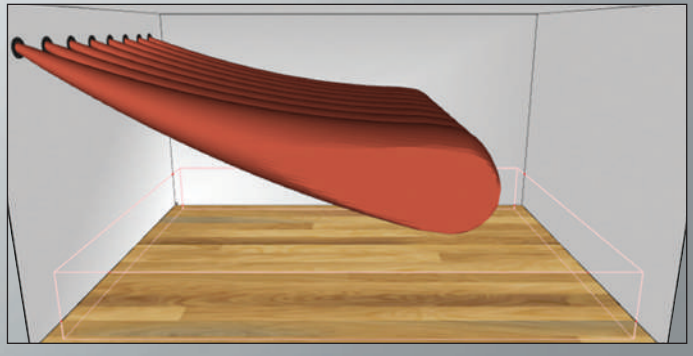
AR 883 - Set at 90° (winter mode)



AR 190 - horizontal stream



AR 190 - 30° downward angle (winter mode)



Conceptor Ventilation

Three-in-one aeraulic design and dimensioning software!

ALDES has also developed the Conceptor Ventilation software to boost the performance of design offices and construction professionals. Henceforth, you can elect to create your ventilation project appropriate to your type of building equally well for individual houses, multi-occupancy housing and non-residential buildings: the three-in-one Aldes software for all your ventilation projects. Freely design and dimension air ductwork systems with guided assistance at each step of your project.

Individual housing module

Collective housing module

Non-residential module

Simplicity
Discover multiple functions with the assistant present at each step of the project.

Saves time
Produce full studies, in next to no time, using an intuitive and user-friendly interface designed for your needs.

Reliability
Software data are constantly updated and tested by our teams.

Optimisation
The tool selects the most appropriate products for your design.

Additional information available online: **https://services.aldes.com/logiciels**

ALDES TRAINING
TRAINING TO REMAIN EFFICIENT

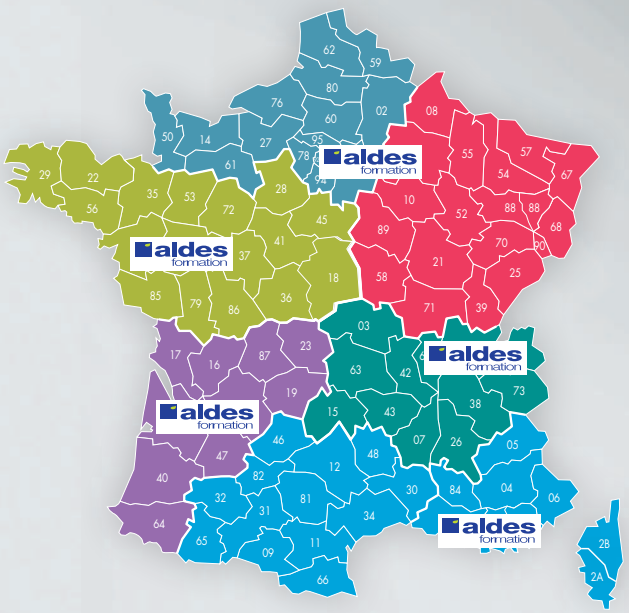
1 team
of specialised instructors

1200 trainees
trained each year

10
Aldes branches

30 training
programs

200 trainees
instructed in virtual classes



1500 m² of space
dedicated to training

1 training
centre

5 training
locations

600 m²
practical workshops

aldes formation Aldes Training Centres and Sites

Virtual class and Webinar

E-learning courses

A format with many benefits!

Distance learning courses - organised as virtual classes - lasting no more than two hours and webinars prevent staff from having to move as the training can be accessed from each work station via the Internet.

Saving time and money: training possible from the workplace to reduce costs.

Focus: especially suitable for a selective, targeted need.

Interactivity: discussion with the attendee is made easier.

Fun: quizzes or surveys during the training.

Qualiopi processus certifié
RÉPUBLIQUE FRANÇAISE

Aldes has been issued with QUALIOPI certification for the following categories: Training actions

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CONTENTS

AIR DIFFUSION AND COMFORT

When designing an air diffusion system, the most important aspect is to select the components correctly, to ensure the right level of comfort.

Comfort depends on three main factors:
- thermal component,
- aeraulic component,
- acoustic component.

THERMAL AND AERAULIC COMPONENTS

The first two factors correspond to the scope of standard EN ISO 7730, which introduces the notions of:
- ambient temperature according to occupant activity and clothing,
- discomfort due to air draughts,
- sensation of cold or hot walls,
- tolerance of vertical temperature gradients.

Knowledge of occupant activity and clothing can be used to determine the optimum ambient temperature to achieve ideal thermal comfort.

The clothing factor is expressed in clo, the unit of clothing insulation provided by clothes.
Physical activity is expressed in met, the metabolic rate.

The sensation of discomfort due to air currents is dependent on airflow speed and temperature.

Each ambient temperature corresponds to a mean residual speed V_r in the occupied areas, which influences the absence of discomfort due to air draughts.

Terminal speed of jet at the end of its throw, Vt, results in Vr. Consequently, respecting the ALDES selection recommendations, expressed in terms of V_t according to the purpose of the premises, is the easiest way of achieving optimum comfort.

Manual worker
Activity: 2 Met
Clothing: 0.8 Clo

Office employee
Activity: 1.2 met
Clothing: 0.5 Clo

EXAMPLES OF COMMERCIAL PREMISES

TYPES OF SPACE	TIME OF YEAR	AMBIENT TEMP (°C)	V_T (M/S)	V_R (M/S)
Hotel rooms, individual offices etc.	Summer	24.5 +/- 1.5	0.25	0.18
	Winter	21 +/- 2	0.25	0.12

Vt FOR OPTIMUM COMFORT DEPENDING ON APPLICATION

TYPES OF SPACE	V_T (M/S)
Individual offices, hospital rooms, hotel rooms etc.	0.25
Open-plan offices, meeting rooms, small shops etc.	0.37
Industrial buildings	0.5
Stations, airports etc.	0.625
Sports halls	0.75

ACOUSTIC COMPONENT

ASHRAE recommendations in terms of sound **pressure** (sensation perceived by the occupant) depending on the purpose of the premises, can be applied to achieve overall comfort.

The sound pressure level in a room depends on the sound power level (noise emitted by audible sources) of:
- diffuser(s),
- equipment upstream of the diffusers (chiller, AHU etc.),
- noise sources within the premises.

Then we integrate the attenuation level in the room to the calculation, to obtain a global sound pressure value.

Note: when several diffusers are in the room, the resulting sound pressure value is obtained by calculating the pressure levels generated by each device at the point of measurement, i.e. the distance r (sound pressure levels are added by quadratic sum).

$$L_{Pt} = 10Log\sum_{1}^{n}10^{L_{pn}/10}$$

$$L_{P1} + L_{P2} = 10Log\left(10^{L_{P1}/10} + 10^{L_{P2}/10}\right)$$

CALCULATION OF SOUND PRESSURE LEVEL (Lp):

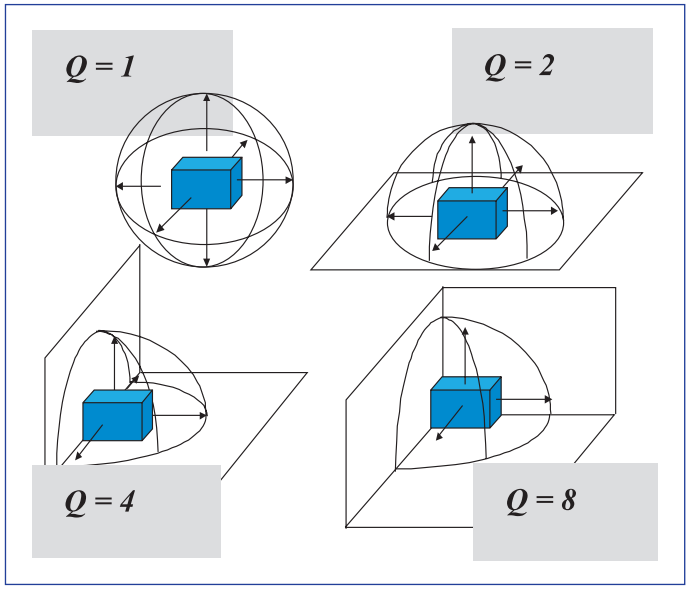
$$Lp = Lw + 10 \cdot \log\left(\frac{Q}{4\pi d^2} + \frac{4}{R}\right)$$

Q: directivity, related to the position of the terminal in the room.
r: distance in metres from the terminal (sound source) to the centre of the room or to the measuring sensor.
R: room absorption coefficient ⇨ $TM = \Delta t_r / \Delta t_s$.
S: total surface area of room walls in m2.
α: Sabine coefficient (see table below).

SOUND PRESSURE LEVEL (DB (A)): RECOMMENDATIONS (EN 16798)

TYPE OF BUILDING	ROOM	COMFORT		
		VERRY GOOD	GOOD	ACCEPTABLE
Place of assembly	Auditorium	≤ 24	≤ 28	≤ 32
	Library	≤ 25	≤ 30	≤ 35
	Cinéma	≤ 24	≤ 28	≤ 32
	Museum	≤ 28	≤ 32	≤ 36
Commercial	Retail Store	≤ 35	≤ 40	≤ 45
	Department store, supermarket	≤ 40	≤ 45	≤ 50
Hospital	Bedroom	≤ 25	≤ 30	≤ 35
	Ward	≤ 32	≤ 36	≤ 40
	Operating theatre	≤ 35	≤ 40	≤ 45
Hôtel	Bedroom	≤ 25	≤ 30	≤ 35
	Reception, lobby	≤ 30	≤ 35	≤ 40
Office	Small	≤ 30	≤ 35	≤ 40
	Landscaped	≤ 35	≤ 40	≤ 45
	Conference room	≤ 30	≤ 35	≤ 40
Restaurant	Cafeteria	≤ 35	≤ 40	≤ 45
	Bar, dining room	≤ 32	≤ 36	≤ 40
	Kitchen	≤ 45	≤ 50	≤ 55
School	Classroom	≤ 30	≤ 34	≤ 38
	Gymnasium	≤ 35	≤ 40	≤ 45
Sport covered	Sport facilities	≤ 35	≤ 40	≤ 45
General	Toilets	≤ 35	≤ 45	≤ 55

The values recommended in B.6 can be exceeded for a short-term period if the occupants can control the operation of the equipment or the windows. Even in this case it is recommended that the rise of the sound pressure level over the values is limited to between 5 and 10 dB(A).



ROOM ABSORPTION FACTOR α

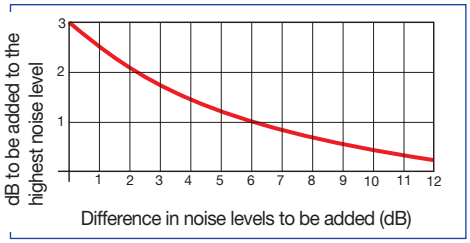
ROOM	ROOM CHARACTERISTICS	VALUE OF α
Radio or TV studio	Highly absorbent room	0.45
Restaurant, conference room	Absorbent room	0.25
Office, library	Average room	0.15
Museum, hospital	Reverberating room	0.10
Church, workshop, sports hall	Highly reverberating room	0.05

RAPID DETERMINATION OF ACOUSTIC CRITERIA

As an initial approximation, we could use the following tools to select terminals.

In ALDES documentation, the acoustic performance of diffusion terminals is expressed in sound power level Lw (dB).

ACCUMULATION OF TWO DIFFERENT SOUND LEVELS

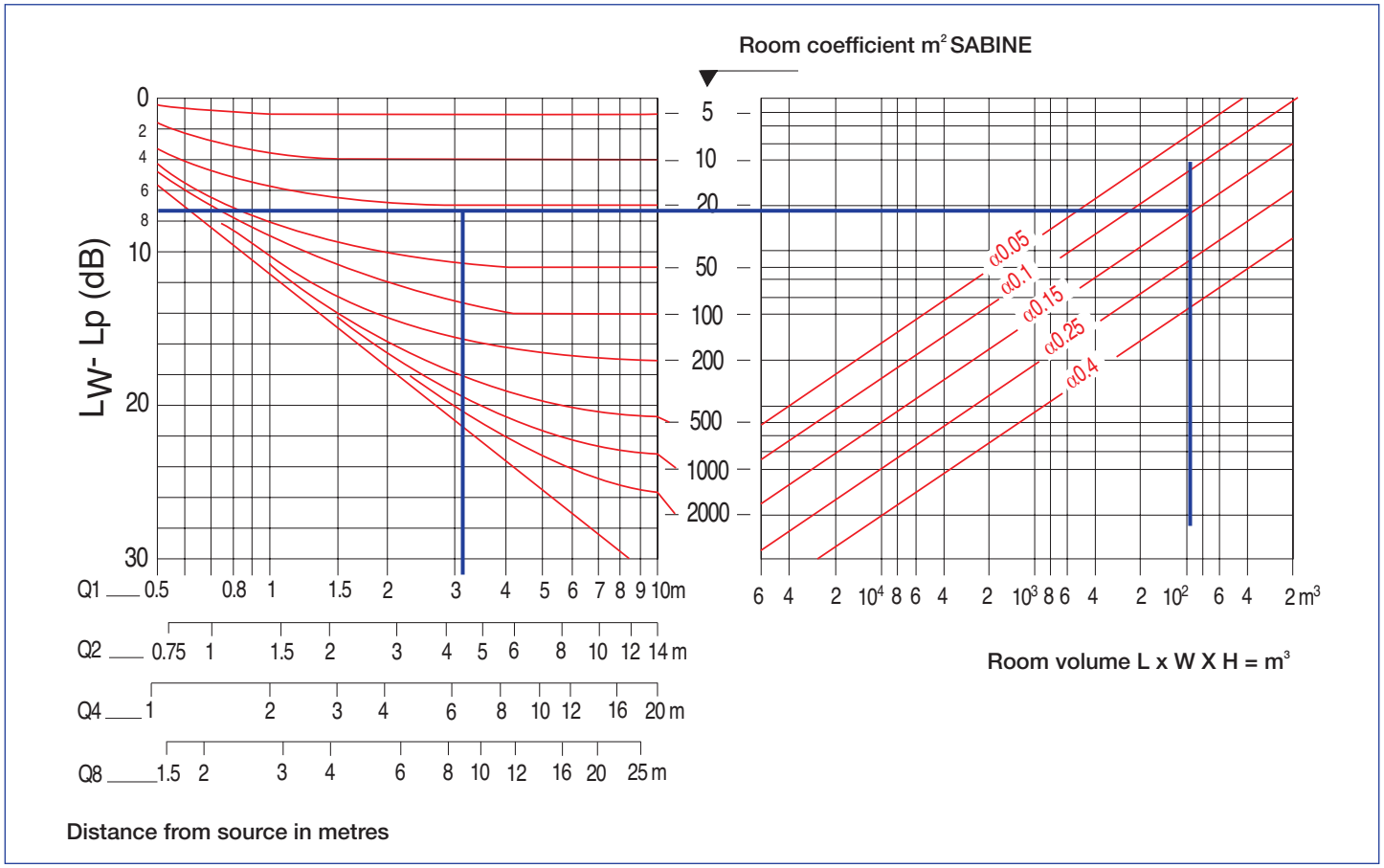


Example
L1 = 60 dB and L2 = 65 dB
Therefore L1 + L2 = L2 + 1.2
L1 + L2 = 66.2 dB

ACCUMULATION OF IDENTICAL SOUND LEVELS

NUMBER OF SOURCES	2	3	4	5	6	8	10
INCREASE IN NOISE LEVEL	3	5	6	7	8	9	10

ROOM ATTENUATION

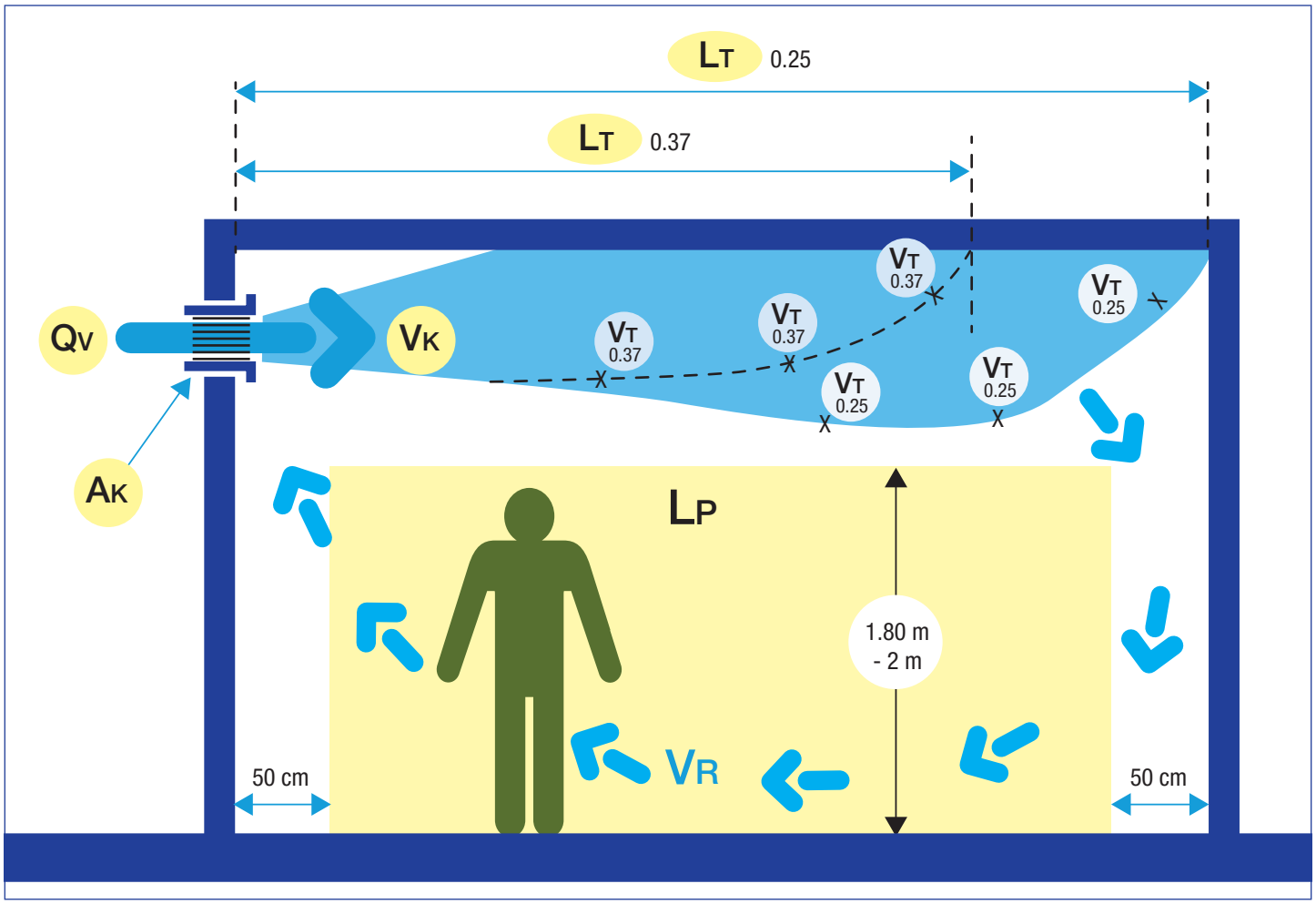


Example:
Room dimensions: L x W x H = 8 x 4 x 3.1 m
Room absorption factor = 0.15

Room volume = 8 x 4 x 3.1 = 100 m³
Room coefficient = 25 m² Sabine (see diagram).
Location of air supply terminal: Q = 1
Distance from noise source = 3 m
Room attenuation = 7.5 dB

OCCUPIED AREA

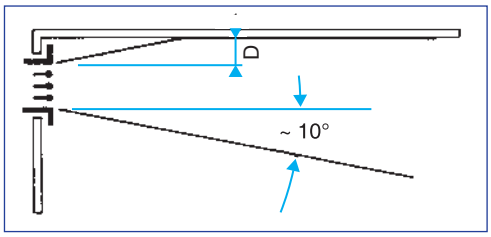
This is the area occupied by users within the room, at 50 cm from the walls and between 1.8 and 2 m in height.
The table of standard dimensions for diffusers can be used to qualify the air diffusion and room pairing concerned.



SYMBOLS	DEFINITIONS
A_k (m^2)	Characteristic surface of terminal, determined by the ratio of airflow Q_v (calibrated and known) to the speed of air movement V_k (m/s), measured as per ISO EN 12238
V_k (m/s)	Speed of air movement on exit from the diffuser terminal
L_t (m)	Throw or axial distance between the diffuser and the envelope (all points of air jet at speed Vt measured as per ISO EN 12238)
V_t (m/s)	Speed defining the air jet envelope and influencing V_r
V_r (m/s)	Mean residual speed in the occupied area, influenced by the choice of speeds V_t at the end of throw L_t
L_p (dB(A))	Sound pressure level, i.e. the noise perceived by the room occupant
L_w (dB(A))	Sound pressure transmitted, or noise generated by airflow through the diffuser terminal, transposed according to the Noise Rating standard EN 16798
Air renewal rate	Flow of new clean air divided by the volume of the room
Mixing rate	Total airflow supplied by hour (fresh airflow and air conditioning airflow) divided by the volume of the room. The higher the mixing rate, the higher the mixing capacity of a diffuser must be to ensure optimum comfort
Mixing capacity	Value of a diffuser's capacity to blend new air with ambient air. Used to compare ALDES diffuser performance

COANDA EFFECT

Also referred to as the ceiling or wall effect, it describes the tendency for an air jet flow to attach itself to a nearby surface and follow the surface.
The Coanda effect appears when Vk speeds are above 2 m/s.
At equivalent dimensions and airflow, the Coanda effect increases the throw by about 30%. This means the surface is easier to cover.



The Coanda effect is optimal where the distance D is less than 30 cm.

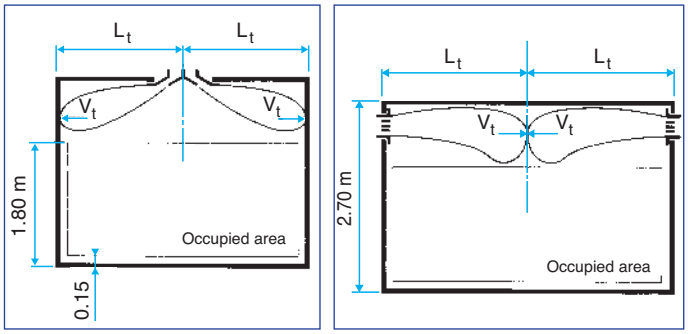
THROW

Throw values are often given for one or two terminal speeds (e.g. 0.25 m/s and 0.5 m/s). The throws for other terminal speeds are obtained using the correction factors indicated for each scale.

ROOMS WITH ECH* UNDER 3 METRES

For most ceiling diffusers and wall-mounted terminals, we consider the adequate length of throw Lt being the distance between the terminal and the opposite wall, or mid-distance between two facing terminals.

ECH < 3 m

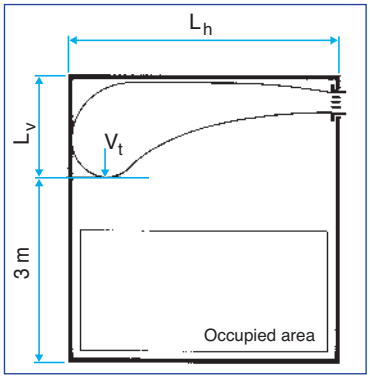


ROOMS WITH ECH* BETWEEN 3 AND 5 METRES

For high ceilings, to the distance between the terminal and the opposite wall we can add the difference between the effective ceiling height and 3 metres.

This vertical throw L_v must be less than half the horizontal part L_h, so:
$\mathbf{L_t=L_h+L_v}$ where $L_v \leq L_h/2$.

3< ECH < 5 m

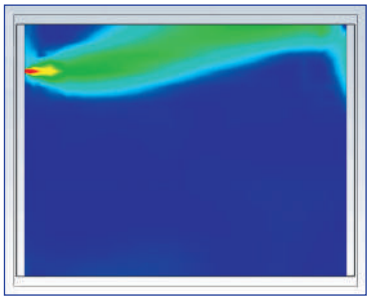


ROOMS WITH ECH* ABOVE 5 METRES

In high-ceilinged spaces where air is supplied generally from high up, the difficulty consists in achieving the right comfort level in all seasons. A controlled throw length will reduce stratification phenomena in winter and the "dumping" sensation in summer.
The selection tables for long throw diffusers and spiral jet diffusers enable you to select a model suited to summer and winter air supply temperatures.

*ECH = Effective Ceiling Height

ECH > 5 m REPRESENTATION OF SPEEDS



Stratification phenomenon in heating mode

ANISOTHERMAL DIFFUSION

If the air diffusion is not homogeneous in temperature, the blown air is subject to Archimedes' law of buoyancy. Consequently, cold air tends to descend, warm air tends to rise and thereby cause a phenomenon of dumping or stratification (vertical temperature gradient).

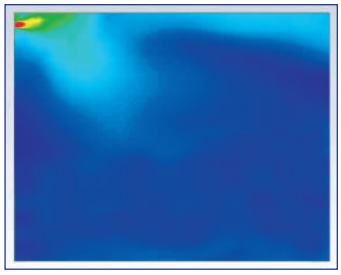
Cooling

We must compensate for premature air jet drop-off by using the Coanda effect.
For ΔT air supply greater than 8°C selected, coupled with the Coanda effect, a throw with Vt at the opposite wall is greater than or equal to 0.37 m/s.
For wall-mounted terminals, we could use a vertical deflection of 15° or 20°.

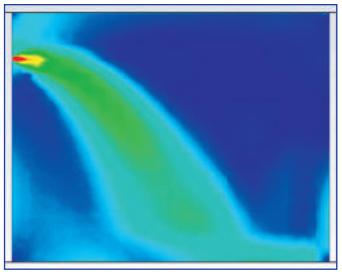
Heating

For ECH greater than 3 metres, we must use an appropriate diffuser: spiral jet with downward-oriented vanes, vertical air supply.
This will avoid the phenomena of stratification, which are particularly disruptive for comfort in rooms with a mezzanine.

COANDA EFFECT AND ANISOTHERME DIFFUSION



Cold air jet with Coanda effect.
No overspeed in the occupied area.



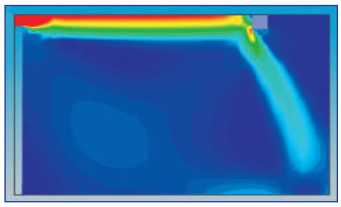
This cold air jet, diffused without a Coanda effect has too short a throw and therefore generates a dumping effect.

Numerical simulations can be used to view different physical phenomena:
- Airflows in red have a speed above 0.5 m/s.
- Zones in navy blue denote where the speed is below 0.2 m/s.

OBSTACLES AND CROSSING JETS

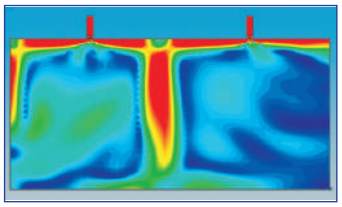
- Avoid all bulky obstacles in an air stream with a speed above 0.5 m/s.
- Avoid crossing jets with speeds above 0.5 m/s.

OBSTACLES



An obstacle becomes a real deflector when it is incorrectly placed in the air stream, particularly for cold air jets.

CROSSING AIR JETS

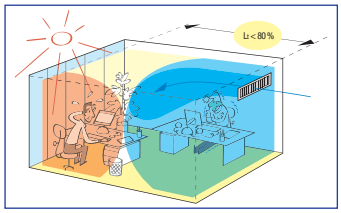


Avoid crossing air jets with speeds above 0.5 m/s.

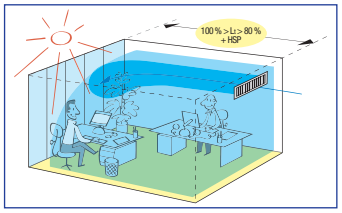
ASYMMETRIC RADIATION AND WINDOWS

An excessive temperature difference between the room and its walls can cause discomfort: a difference of 10°C between the contact surface and the ambient temperature will cause a sensation of cold wall in winter and hot wall in summer.
If the room features large windows, direct the air jets towards them.

ASYMMETRIC RADIATION



Throw too short:
hot zones and dumping.



Adequate throw: optimum comfort.

VARIABLE AIRFLOW SYSTEMS

Modern air handling systems propose at least three airflow settings.
At minimum setting, we should check that the diffusion equipment exhibits:
- a Vk of at least 2 m/s, to ensure a good Coanda effect and the absence of dumping,
- a throw Lt greater than 80% of the length of the ceiling, to avoid hot zones and cold zones.

At maximum setting, we should check that the diffusion equipment exhibits:
- a sound power level compatible with using the room, even in transient mode,
- a maximum throw Lt of the length of the ceiling + ECH, to avoid creating unpleasant air draughts.

In summary, a throw Lt set at 80 to 100% of the ceiling length + ECH guarantees optimum comfort.

POSITION OF EXHAUST TERMINAL

The position of exhaust terminals has little impact on speeds in the occupied areas.

However, an exhaust terminal positioned in an air supply stream with a speed above 0.37 m/s will generate a bypass phenomenon.

This automatically reduces the performance of the air conditioning system.

INAPPROPRIATE POSITIONING

Example of a comfortable installation in terms of air speed in the occupied areas, but uncomfortable in terms of temperature.

This installation is in cooling mode.

Representation of speeds:
- 1: Air supply diffuser,
- 2: Exhaust diffuser,
- 3: No overspeed so no discomfort due to air draughts.

This installation seems to be satisfactory from an aeraulic standpoint.

Representation of temperatures:
- 1: Poor coverage of window areas to the left, hence local discomfort due to asymmetric radiation,
- 2: Exhaust temperature below ambient temperature, hence poor efficiency of the air conditioning system,
- 3: Ambient temperature too high.

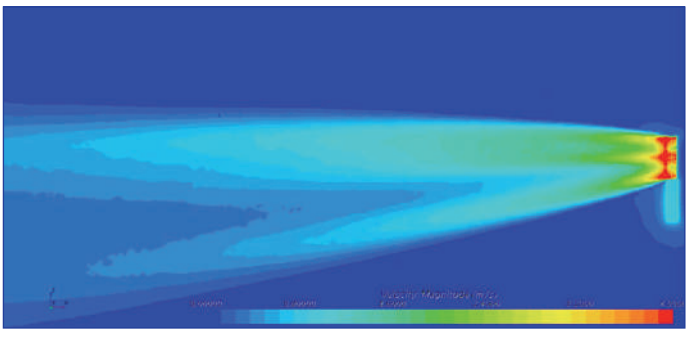
The exhaust terminal is positioned in the air supply stream which has a speed above 0.37 m/s.

This may also cause acoustic discomfort because the air conditioning system will operate at full speed to attempt to reach the temperature setting.
In terms of speed and temperature parameters, this installation is uncomfortable.

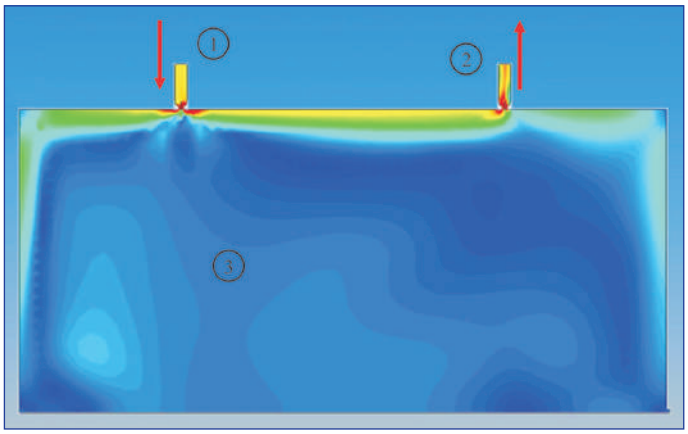
AIR SUPPLY DIFFUSERS WITH BUILT-IN EXHAUST

The use of this type of diffuser eliminates restrictions on the positioning of the exhaust terminal and represents major time savings in the installation process.
The Aldes range features COMBINED diffusers which integrate both air supply and exhaust functions in the same terminal.
On the numerical simulation opposite, we can observe the efficiency of this solution:
- no overspeed so no discomfort due to air draughts,
- no recycling between air supply and exhaust.

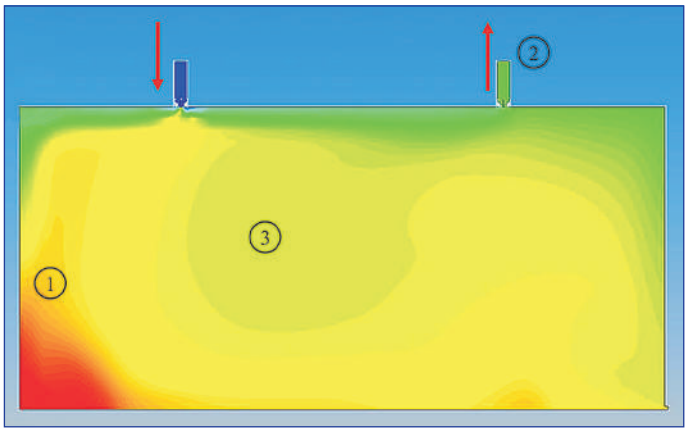
LINED COMBINED simulation showing the Coanda effect and non-recirculation of air



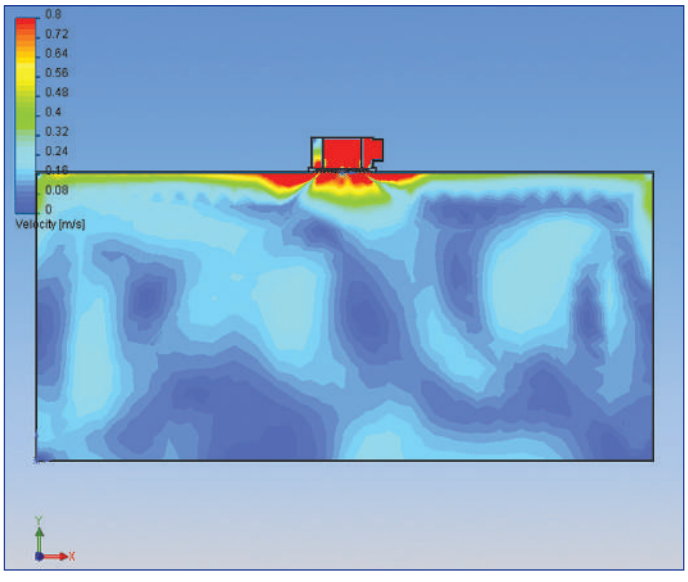
Representation of speeds



Representation of temperatures



Representation of speeds



COMFORT AND MODEL SELECTION

Occupant comfort depends on appropriate technical selection.
This selection is subject to the following constraints:

- Effective ceiling height (ECH) and positioning,
- Mixing rate,
- ΔT on air supply.

Firstly, the important factor is to select the model suited to the application, and then select its dimensions.

SELECTING MODELS: ECH

By selecting a model appropriate for positioning and ECH, we can obtain correct coverage of the zone to manage, without the risk of discomfort due to air draughts.
There is a range of products suited to each ECH.

ECH (M)	TYPE OF SPACE
ECH < 3	Commercial premises, hospitality etc.
3 < ECH < 5	Local stores, restaurants, association rooms etc.
ECH > 5	Hangars, exhibition halls, station halls, sports halls, industrial complexes, etc.

SELECTING MODELS: MIXING RATE

The mixing rate represents the ratio between the total rate of blown air (in m³/h) and the volume of the space (in m³).
In particular, it represents the heating power to supply to the space, as well as the fresh air requirement (ventilation).
The higher the mixing rate, the higher the diffuser's mixing capacity must be to ensure homogeneous and comfortable temperatures throughout the occupied area.

Common non-residential applications	AIR RENEWAL RATE*	MIXING RATE**
Individual offices with windows	1 - 4	4 - 25
Meeting rooms	3 - 6	6 - 18
Restaurant	4 - 6	6 - 20

* Flow of new clean air divided by the volume of the room.
** Total airflow by hour (fresh airflow and air conditioning airflow) divided by the volume of the room.

TEMPERATURE AT END OF THROW AND MIXING CAPACITY

A diffuser's mixing capacity is assessed mainly based on the temperature at the end of throw and the required ambient temperature.
The smaller the difference, the better quality of mixing.
The mixing capacity is the ratio between:

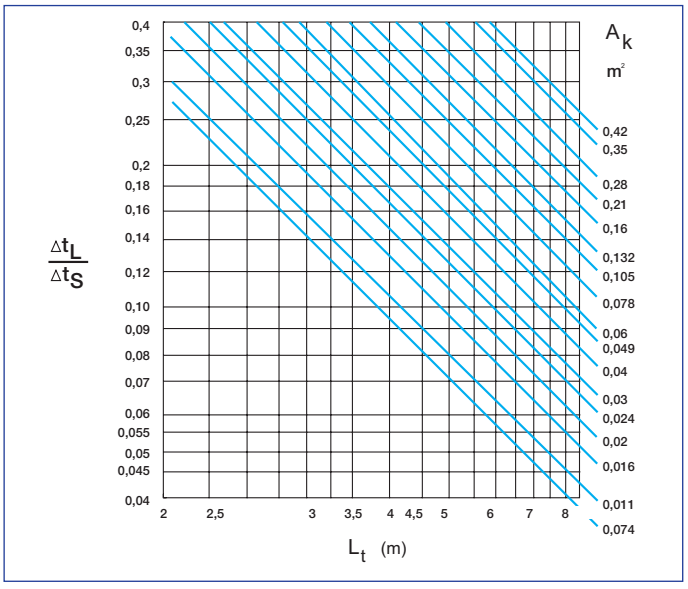
- Difference between temperature at end of throw and ambient temperature (DtL in °C)

and

- Difference between air supply temperature and ambient temperature (DtS in °C).

Which gives: $TM = \Delta t_L / \Delta t_S$

MIXING CAPACITY



Example with a dual deflection wall-mounted terminal, dimensions 400 x 200 mm:

- Ak = 0.049 m².
- air supply temperature 17°C,
- ambient temperature 25°C.

For L_t = 7 m, the value of the MR coefficient is: 0.12 (see graph).
$TM = \Delta t_L / \Delta t_S = 0.12$
So at a distance of 7 m opposite to the terminal,
the temperature in the air stream = 25 - 8 x TM = 25 - 0.96 = 24.04 °C.

MODEL SELECTION: EQUIPMENT UPSTREAM OF THE DIFFUSER

There are several ventilation and air conditioning techniques.
Often, the two needs are combined within the same system.
An air handling unit does not offer the same air supply temperatures as a convector fan, whether it features a water loop or direct regulation.
Due to their design, air diffusion products do not have the same capacity to handle warm or cold airflows.
The tables on the following pages summarise all these limitations and make it easier for you to select the most appropriate diffusion terminal.

EFFECTIVE CEILING HEIGHT (ECH) < 3 METRES

APPLICATION	RANGE	REFERENCE MODEL	SYSTEM UPSTREAM OF DIFFUSER		
			Ventilation	Air handling unit	Convection fan
WALL AIR SUPPLY	Small terminals Mixing capacity 1 - 6	BIM2 300 	++	+	-
	Mobile-vane terminals Mixing capacity 4 - 10	AC102D 	++	++	+
	Terminals with fixed front bars Mixing capacity 4 - 10	Gridlined Wall 	++	++	++
	Terminals with fixed front bars, floor-mounted Mixing capacity 4 - 10	Gridlined Floor 	+	+	+
	Grilles with fixed linear front bars (L/H ≥ 10) Mixing capacity 4 - 15	Gridlined Wall 	+	++	++
	Transfer grilles	AC 181 	++	++	++
CEILING-MOUNTED SUPPLY	Small terminals Mixing capacity 1 - 6	BIM2 320 	++	+	-
	Core terminals Mixing capacity 1 - 4	SR 135 	++	-	-
	Fixed air jet circular diffusers for ceiling tiles Mixing capacity 6 - 10	SC 832 T 	++	+	-
	Adjustable air jet circular diffusers for ceiling tiles Mixing capacity 6 - 25	A 842 	+	++	++
	Square multi-directional diffusers for ceiling tiles Mixing capacity 6 - 20	SF 704 TP 	+	++	++
	Multi-slot diffusers for ceiling panels, air supply + exhaust Mixing capacity 6 - 22	Combined ALD 610K 	+	++	++

++ Optimum comfort and efficient system
+ Adequate comfort and acceptable system
- Should only be used after in-depth diffusion analysis

EFFECTIVE CEILING HEIGHT (ECH) < 3 METRES

APPLICATION	RANGE	REFERENCE MODEL	SYSTEM UPSTREAM OF DIFFUSER Ventilation	Air handling unit	Convection fan
CEILING-MOUNTED SUPPLY	Square perforated sheet diffusers for ceiling tiles Mixing capacity 6 - 20	SC 360 R 	+	+	++
	Swirl air jet diffusers Mixing capacity 6 - 28	SF 785 	+	++	++
	Swirl air jet diffusers for ceiling tiles Mixing capacity 6 - 32	Twisted 850 	+	++	++
	Adjustable linear diffusers Mixing capacity 6 - 20	LINED TP S 	+	++	++
WALL-MOUNTED EXHAUST	Small terminals	BIM2 300 	++	+	-
	Fixed-vane terminals	Gridlined Exhaust 	++	+	+
	Fixed-vane terminals with filter	AC 161 W 	++	+	+
CEILING-MOUNTED EXHAUST	Small terminals	BIM2 300 	++	+	-
	Frameless terminals for ceiling tiles	AU 124 	+	++	++
	Fixed-vane terminals with filter for tiles	AG 637 W 	+	++	++

++ Optimum comfort and efficient system
+ Adequate comfort and acceptable system
- Should only be used after in-depth diffusion analysis

3 < ECH < 5 METRES

APPLICATION	RANGE	REFERENCE MODEL		SYSTEM UPSTREAM OF DIFFUSER		
				Ventilation	Air handling unit	Convection fan
WALL-MOUNTED AIR SUPPLY OR ON DUCT	Mobile-vane terminals on duct Mixing capacity 4 - 10	GD 102 D		++	++	+
	Terminals with fixed front bars Mixing capacity 4 - 10	Gridlined Wall		+	+	-
	Grilles with fixed linear front bars (L/H ≥ 10) Mixing capacity 4 - 15	Gridlined Wall		+	++	++
CEILING-MOUNTED SUPPLY	Adjustable air jet circular diffusers Mixing capacity 6 - 25	A 842		+	++	++
	Square multi-directional diffusers Mixing capacity 6 - 20	SF 704		+	++	+
	Square perforated sheet diffusers Mixing capacity 6 - 20	SC 310 R		+	++	++
	Swirl air jet diffusers Mixing capacity 6 - 28	SF 785		+	+	+
	Swirl air jet diffusers for ceiling tiles Mixing capacity 6 - 32	Twisted 850		+	+	+
	Swirl air jet diffusers low airflow Mixing capacity 6 - 18	SR 861		+	+	+

++ Optimum comfort and efficient system
+ Adequate comfort and acceptable system
- Should only be used after in-depth diffusion analysis

3 < ECH < 5 METRES

APPLICATION	RANGE	REFERENCE MODEL	SYSTEM UPSTREAM OF DIFFUSER Ventilation	Air handling unit	Convection fan
CEILING-MOUNTED SUPPLY	Adjustable linear diffusers Mixing capacity 6 - 20	Lined S 	+	+	++
WALL-MOUNTED EXHAUST OR ON DUCT	Fixed-vane terminals	AC 123 	++	+	+
	Mobile-vane terminals on duct	GD 102 	+	++	+
	Fixed-vane terminals with filter	AC 161 W 	+	++	+
CEILING-MOUNTED EXHAUST	Fixed-vane terminals with filter for tiles	AG 637 W 	+	++	++

++ Optimum comfort and efficient system
+ Adequate comfort and acceptable system
- Should only be used after in-depth diffusion analysis

ECH > 5 MÈTRES

APPLICATION	RANGE	REFERENCE MODEL		SYSTEM UPSTREAM OF DIFFUSER		
				Ventilation	Air handling unit	Convection fan
WALL-MOUNTED AIR SUPPLY OR ON DUCT	Fabric ducts Mixing capacity 10 - 25	CSI		+	+	++
	Grilles with fixed linear front bars (L/H ≥ 10) Mixing capacity 4 - 15	Gridlined Wall		+	+	-
	Mobile-vane terminals on duct Mixing capacity 4 - 10	GD 102 D		++	++	+
	Air displacement diffusers Mixing capacity 4 - 20	SP 390		-	++	-
	Long throw diffusers Mixing capacity 4 - 10	AR 190		-	++	-
CEILING-MOUNTED AIR SUPPLY	Adjustable air jet circular diffusers Mixing capacity 6 - 25	A 842		+	++	+
	Adjustable swirl air jet diffusers Mixing capacity 6 - 28	AR 883		-	+	+
WALL-MOUNTED EXHAUST OR ON DUCT	Fixed-vane terminal	AC 123		+	++	+
	Fixed-vane terminals with filter	AC 161 W		++	+	-
	Mobile-vane terminal on duct	GD 102		+	++	++

++ Optimum comfort and efficient system
+ Adequate comfort and acceptable system
- Should only be used after in-depth diffusion analysis

* Monoblock roof-mounted air conditioning system

CONTENTS


SR 143


BIM2


SCR 125

SR 143 - SR 145 series - Steel

SR 143 terminal

SR 145 terminal

USE

- Air supply or exhaust.
- SR 143: exhaust only.
- SR 145: air supply only.
- Wall or ceiling mounted.

CONSTRUCTION

- Terminal with adjustable central core.
- Locked in position with counter-nut after positioning.
- Outer ring fitted with airtight seal.
- Material: steel.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.

ATTACHMENT

- Slotted into the duct using a sleeve.

ACCESSORIES

- Galvanised steel connection sleeve supplied (length 50 mm).
- Smooth plasterboard penetration sleeve for ceiling mounting. Length 100 mm. Not supplied.

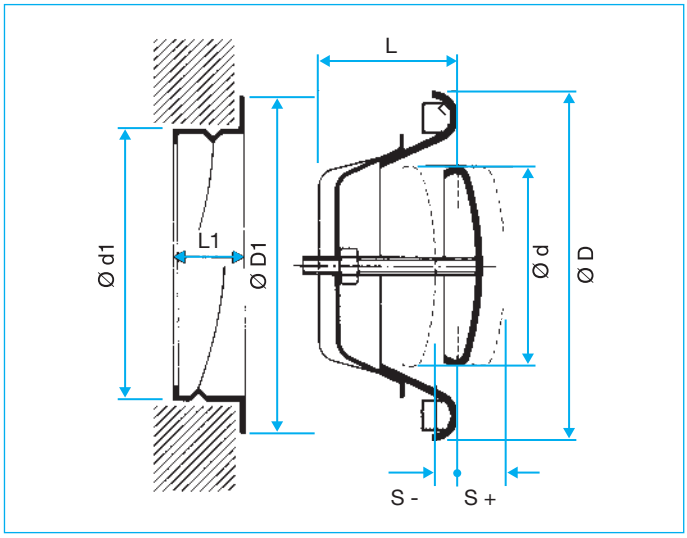
STANDARD DIMENSIONS

- Diameters from 80 mm to 200 mm.

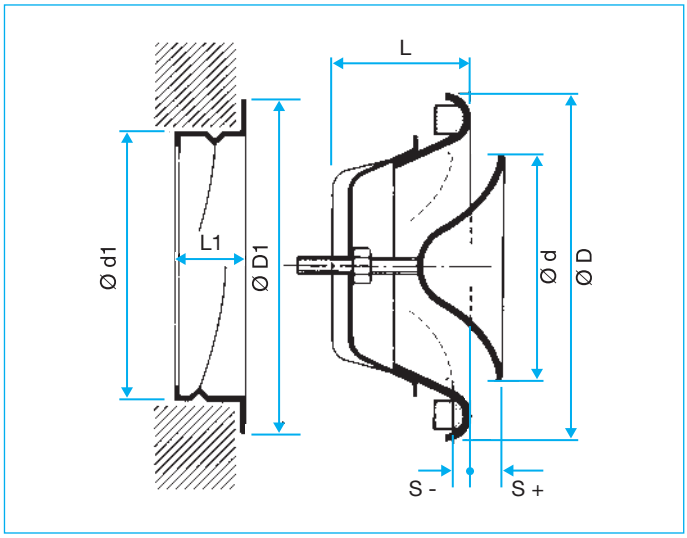
TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



SR 143 terminal with sleeve



SR 145 terminal with sleeve

STANDARD DIMENSIONS

Ø d1 (MM)	Ø D1 (MM)	Ø d (MM)	Ø D (MM)	L1 (MM)	L (MM)	AIRFLOW (M^3/H)*
100	130	75	137	50	47	80
125	155	100	161	50	49	100
160	190	130	218	50	60	150
200	236	157	248	50	75	190

*Comfort airflow levels for Lw < 35 dB(A)

SR 149 series - Plastic

SR 149 terminal

USE

- Air supply or exhaust.
- Wall or ceiling mounted.

CONSTRUCTION

- Terminal with adjustable central core.
- Locked in position with counter-nut after positioning.
- Outer ring fitted with airtight seal.
- Material: polypropylene.

FINISH

- Polypropylene RAL 9010 white.

ATTACHMENT

- Slotted into the duct using a sleeve.

ACCESSORIES

- Plastic connection sleeve supplied.
- Smooth plasterboard penetration sleeve for ceiling mounting. Length 100 mm. Not supplied.

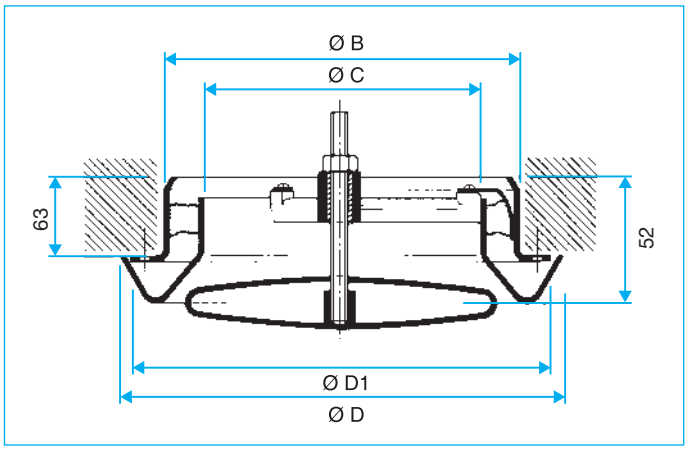
STANDARD DIMENSIONS

- Diameters from 100 mm to 200 mm.

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



SR 149 terminal with sleeve

STANDARD DIMENSIONS

Ø B (MM)	Ø C (MM)	Ø D (MM)	Ø D1 (MM)	AIRFLOW (M^3/H)*
100	80	150	122	80
125	100	170	155	100
150	120	190	168	150
200	170	240	220	190

*Comfort airflow levels for Lw < 35 dB(A)

SR 143 - SR 145 - SR 149 series

STANDARD RANGE

DIAMETER (MM)	SR 143	SR 145 (AIR SUPPLY)	SMOOTH PLASTERBOARD SLEEVE L 100	SR 149
	CODE	CODE	CODE	CODE
Ø 100	11052226	11052204	11053356	11001996
Ø 125	11052227	11052205	11053357	11001997
Ø 150	-	-	-	11001998
Ø 160	11052228	11052206	11053358	-
Ø 200	11052229	11052207	11053359	11001999

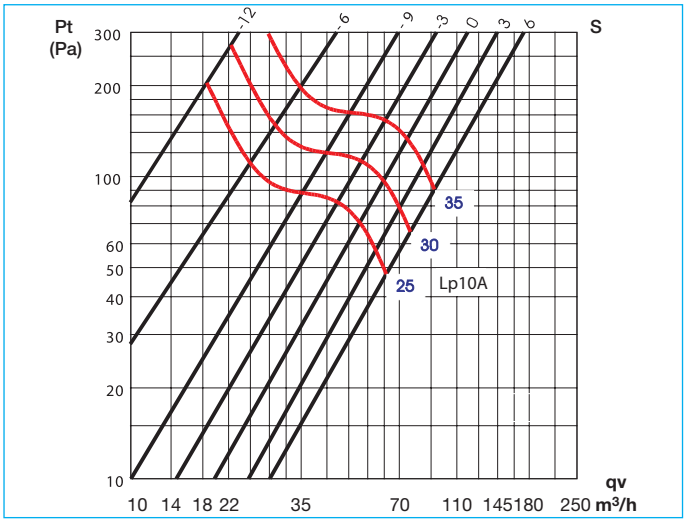
ATTACHMENT	FINISH
• Slots into duct using sleeve.	• Models 143 - 145: steel with epoxy paint coating RAL 9003 white. • Model 149: polypropylene RAL 9010 white.

ACCESSORIES PROPOSED

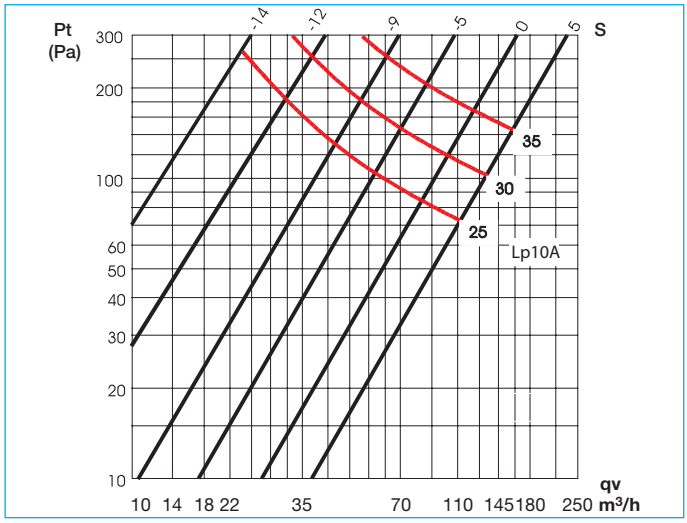
- Galvanised steel or plastic connection sleeve (supplied).
- Smooth plasterboard penetration sleeve for ceiling mounting. Length 100 mm. Not supplied.

SR 143 series - Exhaust

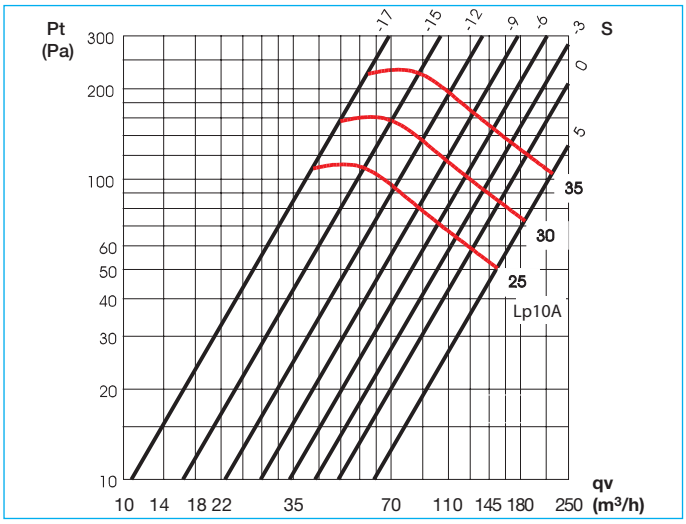
DIAMETER 80



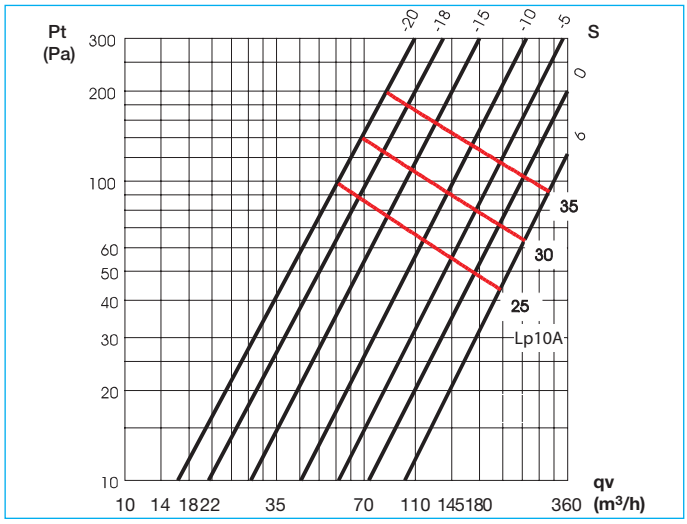
DIAMETER 100



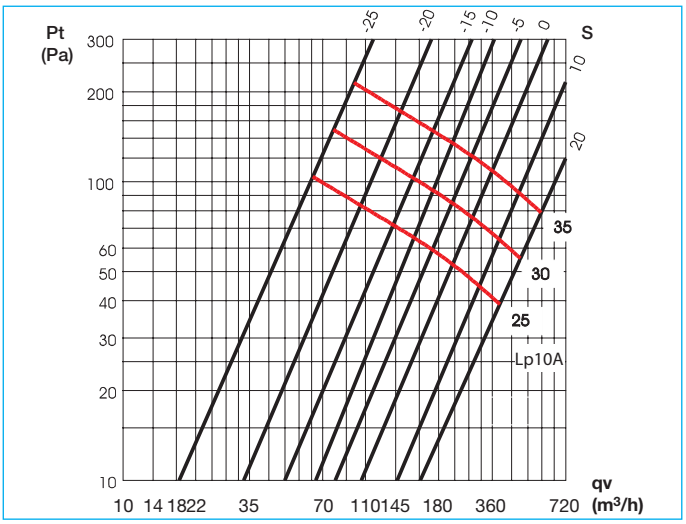
DIAMETER 125

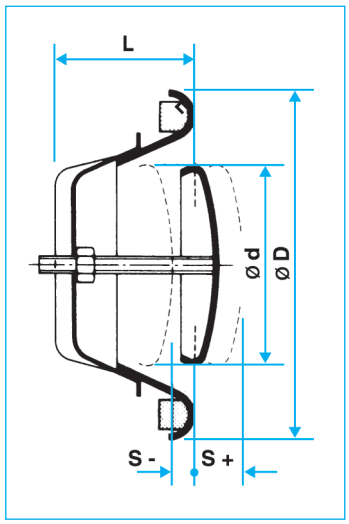


DIAMETER 160



DIAMETER 200



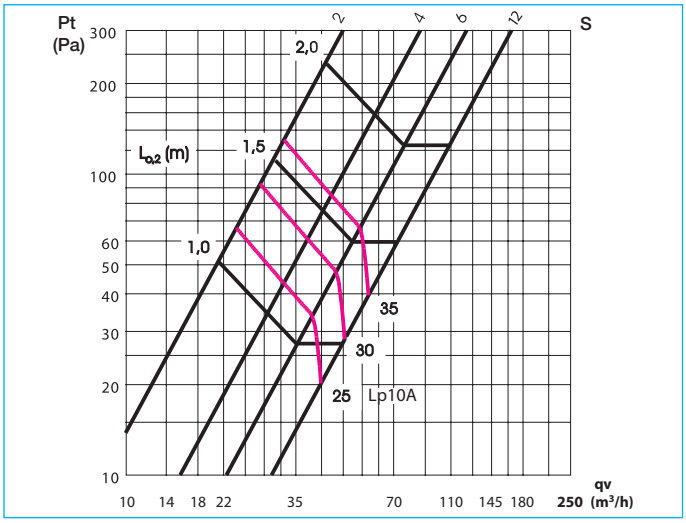


S = opening in mm

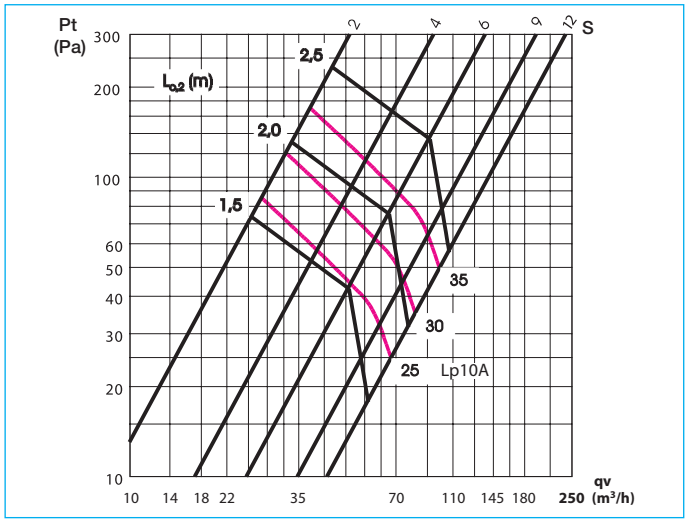
Lp10A: sound pressure level (dB(A)) taking into account 4 dB noise attenuation in room

SR 145 series - Air supply

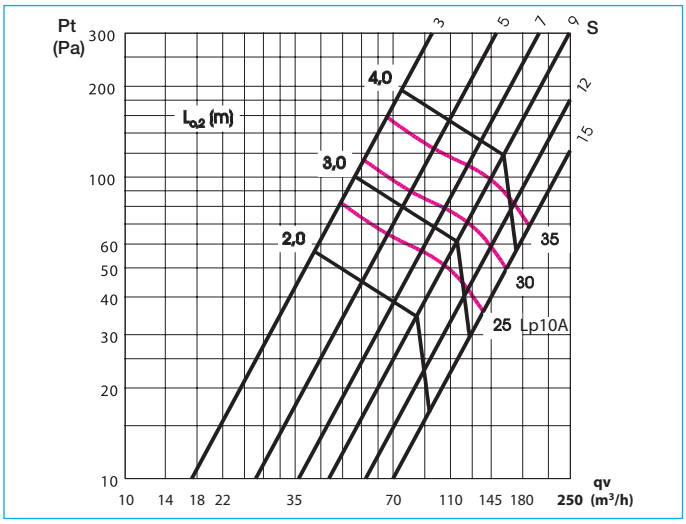
DIAMETER 80



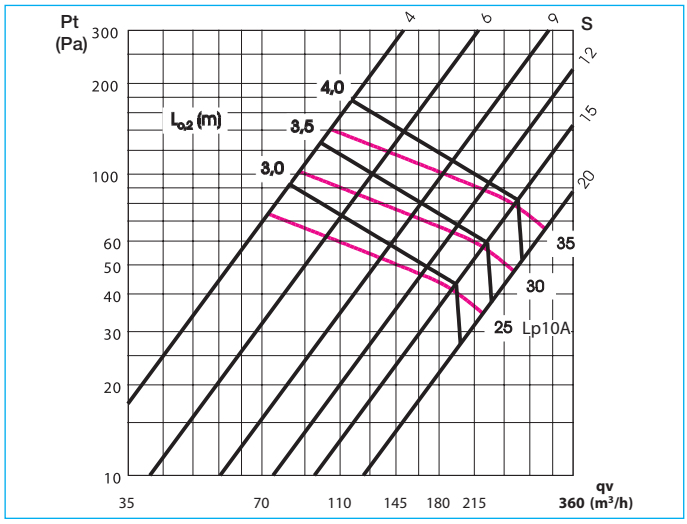
DIAMETER 100



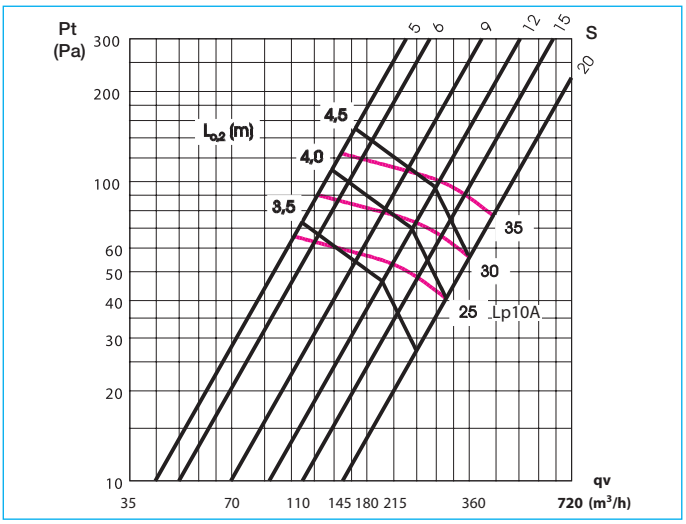
DIAMETER 125

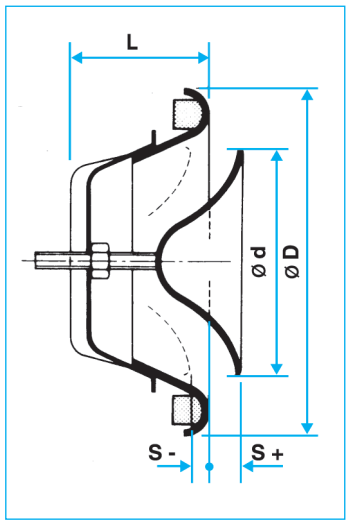


DIAMETER 160



DIAMETER 200





S = opening in mm

Lp10A: sound pressure level (dB(A)) taking into account 4 dB noise attenuation in room

SR 149 series

SELECTION - SUPPLY - EXHAUST

S = opening in mm

Ø 100	QV (M³/H)	AIRFLOW 50	60	80	100	150	200
+ 5	ΔPt (Pa)	105	150	240	350		
	Lw (dB(A))	38	43	52	58		
+ 10	ΔPt (Pa)	45	60	100	140	250	
	Lw (dB(A))	28	34	42	49	60	
+ 15	ΔPt (Pa)		35	55	80	160	300
	Lw (dB(A))		27	35	43	53	51
+ 20	ΔPt (Pa)		22	35	50	105	170
	Lw (dB(A))		5	30	36	50	55

S = opening in mm

Ø 125	QV (M³/H)	AIRFLOW 50	60	80	100	150	200
+ 5	ΔPt (Pa)	80	115	180			
	Lw (dB(A))	39	43	48			
+ 10	ΔPt (Pa)		40	70	100	180	
	Lw (dB(A))		34	39	45	48	
+ 15	ΔPt (Pa)		30	48	68	125	200
	Lw (dB(A))		30	36	40	49	55
+ 20	ΔPt (Pa)			32	45	85	130
	Lw (dB(A))			31	36	43	51

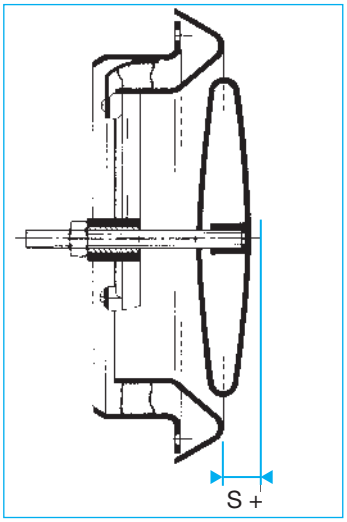
S = opening in mm

Ø 150	QV (M³/H)	AIRFLOW 60	80	100	150	200	300
+ 7	ΔPt (Pa)	36	60	95	215		
	Lw (dB(A))	25	33	40	50		
+ 10.5	ΔPt (Pa)	20	35	52	115	200	
	Lw (dB(A))	5	26	32	42	50	
+ 14	ΔPt (Pa)			29	60	105	250
	Lw (dB(A))			25	32	42	52

S = opening in mm

Ø 200	QV (M³/H)	AIRFLOW 80	100	150	200	300	400
+ 7	ΔPt (Pa)	42	65	140	240		
	Lw (dB(A))	30	37	48	57		
+ 10.5	ΔPt (Pa)		32	70	125	250	
	Lw (dB(A))		27	41	49	61	
+ 14	ΔPt (Pa)			40	70	160	250
	Lw (dB(A))			32	40	52	61

The Lw (dB(A)) values do not take into account any noise attenuation in the room.



S = opening in mm.

SR 135 series - Steel

SR 135 terminal with sleeve

USE

- Air supply or exhaust.
- Ceiling-mounted.

CONSTRUCTION

- Terminal with adjustable central core.
- Horizontal air diffusion.
- Locked in position with counter-nut after positioning.
- The central core is fitted with a sound-proofing material to ensure a low sound power level.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.

ATTACHMENT

- Fixed directly in the duct using friction springs supplied, or using a connection sleeve.

ACCESSORIES

- Metal connection sleeve not supplied.

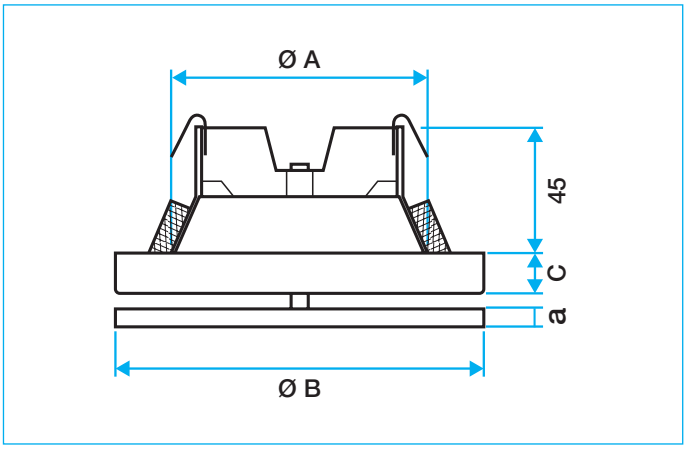
TECHNICAL DETAILS

- See selection table below.

STANDARD DIMENSIONS

DIAM. (MM)	SR 135	PLASTERBOARD PENETRATION SLEEVE L 100
80	11052276	11053970
100	11052277	11053971
125	11052278	11053972
160	11052279	11053973
200	11052280	11053974

DIMENSIONS



SR 135 terminal

STANDARD DIMENSIONS

DIAM. (MM)	Ø A (MM)	Ø B (MM)	C (MM)	AIRFLOW* (M^3/H)
80	80	106	15	40
100	100	135	15	80
125	125	160	15	150
160	160	194	15	250
200	200	238	18	300

Standard dimensions: from 80 mm to 200 mm diameter

*Comfort airflow levels for Lw < 35 dB(A)

SELECTION - AIR SUPPLY WITH CEILING EFFECT

DIAM. (MM)	AIRFLOW (M³/H)	20	50	100	200	300	400	500
80	Lp (dB(A))	< 20	38					
	ΔP (Pa)	7	44					
	Lt (m)	0.2	3.0					
100	Lp (dB(A))		< 20	33				
	ΔP (Pa)		12	48				
	Lt (m)		0.5	3.0				
125	Lp (dB(A))			< 20	35			
	ΔP (Pa)			16	64			
	Lt (m)			2.5	5.2			
160	Lp (dB(A))			< 20	23	33	40	
	ΔP (Pa)			5	20	45	80	
	Lt (m)			1.5	3.1	4.2	4.9	
200	Lp (dB(A))				20	27	34	39
	ΔP (Pa)				15	34	60	94
	Lt (m)				3.6	4.5	5.2	5.5

SELECTION - EXHAUST

DIAM. (MM)	AIRFLOW (M³/H)	20	50	100	200	300	400	500
80	Lp (dB(A))	< 20	40					
	ΔP (Pa)	8	50					
	Lt (m)	-	-					
100	Lp (dB(A))		< 20	36				
	ΔP (Pa)		15	60				
	Lt (m)		-	-				
125	Lp (dB(A))			< 20	38			
	ΔP (Pa)			19	76			
	Lt (m)			-	-			
160	Lp (dB(A))			< 20	25	35	44	
	ΔP (Pa)			6	24	54	96	
	Lt (m)			-	-	-	-	
200	Lp (dB(A))				23	30	36	42
	ΔP (Pa)				18	41	73	114
	Lt (m)				-	-	-	-

Lp values take into account noise attenuation of 4 dB(A) for the room
Max. setting (a) = 30 mm

BIM2 300 - BIM2 320 series - Aluminium

BIM2 300 terminal, white

BIM2 320 terminal, white

FIELD OF APPLICATION

- Air supply and exhaust for all unidirectional or bidirectional applications in small commercial or non-residential buildings.
- BIM2 300: wall-mounted air supply or wall and ceiling-mounted exhaust.
- BIM2 320: ceiling-mounted air supply.

DESCRIPTION

- Attractively finished injected aluminium terminal.
- 0° deflection for 300 model and 90° for 320 model.
- Circular connection.
- Airtight seal.
- Delivered in individual box.

FINISH

- Epoxy paint RAL 9010 white.

ATTACHMENT

- Clipped directly into dedicated metal sleeve. The Aldes sleeve is essential for safe installation in a ceiling position.
- The safety cable supplied must be used if the terminal is installed in a ceiling position.

ACCESSORIES

- Sleeve fitted with brackets for fast "quarter-turn" installation, suited to BA13 or plaster ceilings.

STANDARD DIMENSIONS

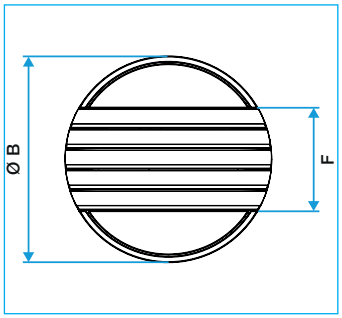
- Ø 125 mm.
- Ø 160 mm.
- Ø 200 mm.

FULL RANGE

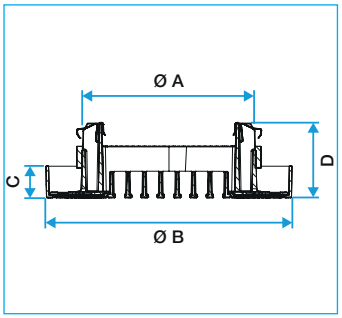
USE	WALL-MOUNTED INSTALLATION	CEILING INSTALLATION	FINISH	ATTACHMENT
Air supply	BIM2 300	BIM2 320	White	Sleeve
Recycled air	BIM2 300	BIM2 300	White	Sleeve

TITLE	REFERENCE
BIM2 300	
Ø 125 mm	11052292
Ø 160 mm	11052293
Ø 200 mm	11052294
BIM2 320	
Ø 125 mm	11052297
Ø 160 mm	11052298
Ø 200 mm	11052299

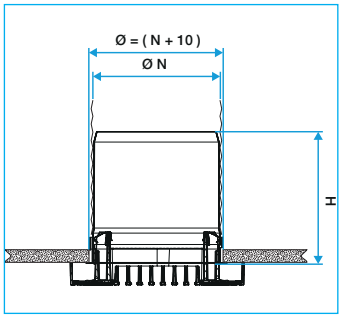
DIMENSIONS



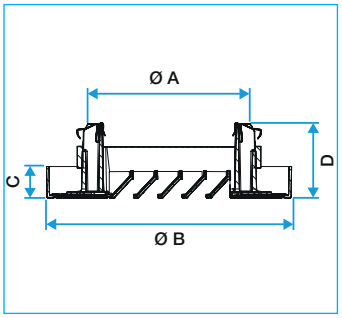
BIM2 300 and 320



BIM2 300



BIM2 300 and 320 with its metal sleeve



BIM2 320

STANDARD DIMENSIONS (MM)

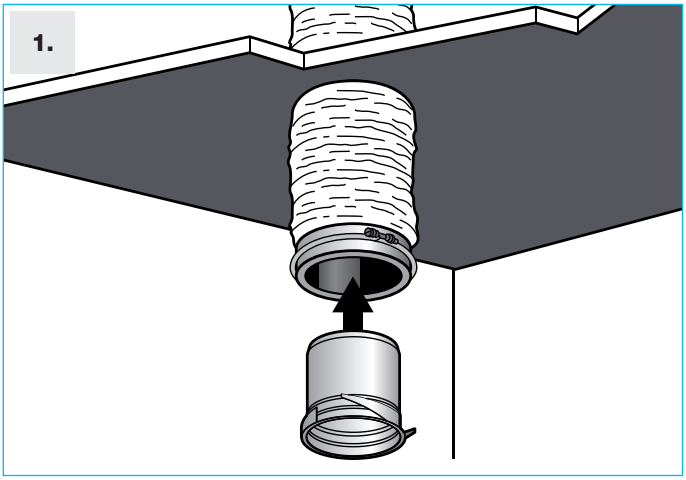
Ø	Ø A	Ø B	C	D	F	H	Q	AIRFLOW* (M³/H)
125	122	172	22	52	86	130	100	100
160	157	213	22	52	120	127	150	150
200	172	253	22	52	136	127	230	230

*Comfort airflow levels for Lp10A < 35 dB(A)

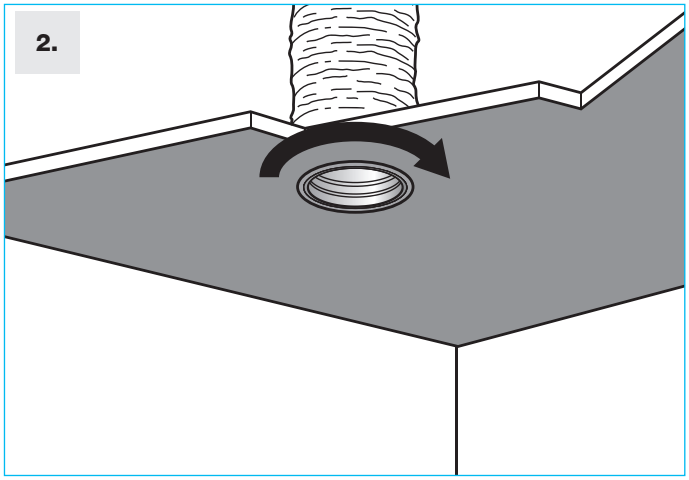
WEIGHT (KG)	
BIM2 300	**BIM2 320**
0.43	0.38
0.61	0.57
0.88	0.77

PRODUCT INSTALLATION

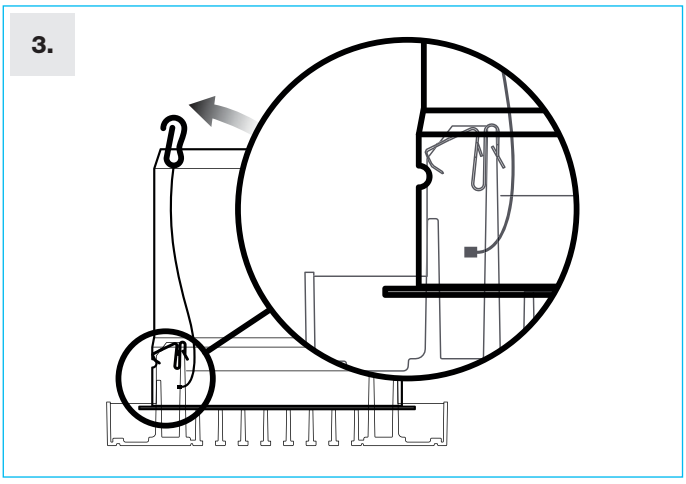
IMPORTANT: Only use sleeves referenced on the following pages (installation accessories).



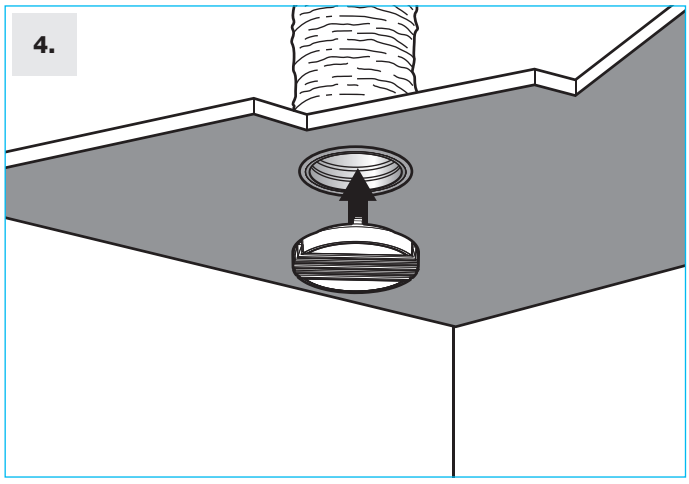
Fix the duct to the sleeve using a clamp collar.



Reposition all elements and turn the sleeve to attach it to the ceiling.



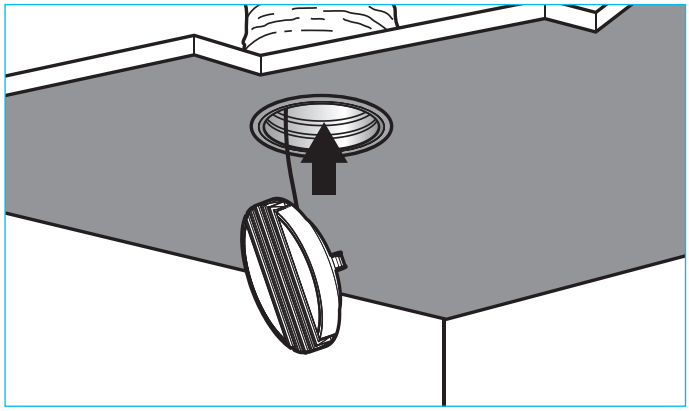
Install the safety cable supplied.



Install the safety cable supplied.

EASY TO CLEAN

- A simple damp cloth is sufficient, as the epoxy paint prevents dust from sticking.
- If necessary, it is simple to pull the terminal out of the sleeve, it unclips easily.
- If the safety cable was correctly installed, the terminal will hang in place, enabling the maintenance provider to use both hands to clean the duct.



BIM2 300 - BIM2 320 series - Aluminium

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	MODEL	DIAMETER (MM)	DATA	AIRFLOW (M³/H)									
				25	50	75	100	125	150	175	200	250	300
0.0058	**BIM2 300**	125	Lp10A [dB(A)]	0	0	10	17	23	28	31	35		
			ΔP (Pa)	1.1	3.7	7.7	12.9	19.4	26.9	35.5	45.2		
			Lt (m)	1.03	2.06	3.1	4.13	5.16	6.19	7.23	8.26		
0.0104	**BIM2 300**	160	Lp10A [dB(A)]	0	0	0	5	11	15	19	23	28	33
			ΔP (Pa)	0.4	1.3	2.7	4.5	6.8	9.4	12.4	15.8	23.6	32.7
			Lt (m)	0.77	1.54	2.31	3.08	3.86	4.63	5.4	6.17	7.71	9.25
0.0161	**BIM2 300**	200	Lp10A [dB(A)]	0	0	0	0	2	6	10	14	19	24
			ΔP (Pa)	0.2	0.6	1.2	2.1	3.1	4.3	5.6	7.2	10.7	14.9
			Lt (m)	0.4	1.24	1.86	2.48	3.1	3.72	4.34	4.96	6.2	7.44
0.0043	**BIM2 320**	125	Lp10A [dB(A)]	6	20	29	35	39					
			ΔP (Pa)	1.4	5.6	12.2	21.3	32.8					
			Lt (m)	1.2	2.4	3.6	4.8	6					
0.0067	**BIM2 320**	160	Lp10A [dB(A)]		11	20	26	31	35	38	41		
			ΔP (Pa)		2.4	5.2	9	13.9	19.7	26.6	34.5		
			Lt (m)		1.9	2.9	3.8	4.8	5.8	6.7	7.7		
0.0104	**BIM2 320**	200	Lp10A [dB(A)]					17	21	24	27	32	36
			ΔP (Pa)					3.3	4.7	6.4	8.3	12.7	18.1
			Lt (m)					3.9	4.6	5.4	6.2	7.7	9.3

Lp10A [dB(A)]: sound pressure in a 10 m² room Sabine (4 dB attenuation). Vt = 0.37 m/s
Vk (m/s) = [airflow (m³/h) / 3600] / Ak (m²)

KOCT CORRECTIONS (dB)

Octave band (Hz)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
BIM2 300	8	2	1	0	-1	1	0	-2	-6	-10	-13	-16	-18	-19	-20	-20	-20	-19	-16	-14	-11
BIM2 320	-8	-13	-11	-10	-8	-4	-5	-6	-8	-14	-19	-23	-26	-27	-28	-28	-29	-30	-27	-26	-23

Add Koct to the table value of Lp10A to obtain the sound power level (Lw) in dB

SELECTION - EXHAUST

AK (M²)	MODEL	DIAMETER (MM)	DATA	AIRFLOW (M³/H)									
				25	50	75	100	125	150	175	200	250	300
0.005	**BIM2 300**	125	Lp10A [dB(A)]	0	0	10	18	23	27				
			ΔP (Pa)	1.5	5.4	11.3	19	28.4	39.5				
0.009	**BIM2 300**	160	Lp10A [dB(A)]				8	14	20	24	28	35	40
			ΔP (Pa)				6.5	9.8	13.6	18	22.9	34.4	47.8
0.014	**BIM2 300**	200	Lp10A [dB(A)]					8	14	19	23	30	36
			ΔP (Pa)					4.4	6.1	8.1	10.3	15.4	21.5
0.0038	**BIM2 320**	125	Lp10A [dB(A)]	0	8	18	26	32					
			ΔP (Pa)	2.2	8.5	18.7	32.7	50.3					
0.006	**BIM2 320**	160	Lp10A [dB(A)]			9	17	23	28	32			
			ΔP (Pa)			7.7	13.5	20.8	29.6	39.9			
0.0093	**BIM2 320**	200	Lp10A [dB(A)]				8	14	19	23	27	33	38
			ΔP (Pa)				5.8	8.9	12.7	17.1	22.1	34.1	48.5

Lp10A [dB(A)]: sound pressure in a 10 m² room Sabine (4 dB attenuation). Vt = 0.37 m/s
Vk (m/s) = [airflow (m³/h) / 3600] / Ak (m²)

KOCT CORRECTIONS (dB)

Octave band (Hz)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
BIM2 300	0	-3	-2	-4	-7	-3	2	-3	-7	-11	-14	-17	-19	-20	-21	-20	-20	-20	-16	-13	-11
BIM2 320	-4	-7	-6	-5	-4	1	1	-2	-5	-7	-8	-11	-13	-16	-17	-18	-20	-21	-20	-19	-17

Add Koct to the table value of Lp10A to obtain the sound power level (Lw) in dB

MOUNTING ACCESSORIES

Connection sleeve

Connection sleeve:
Sleeve fitted with brackets for fast and safe "quarter-turn" installation, suited to BA13 or plaster ceilings.
Made of galvanised steel.

RANGE

DIAMETER (MM)	REFERENCES
Connection sleeve	
Ø 125	11053352
Ø 160	11053353
Ø 200	11053354

BEM 780 series - Aluminium

BEM 780 terminal, white

USE

- Exhaust only.
- Wall or ceiling mounted.

CONSTRUCTION

- Spun aluminium body.
- Core comprising 15 x 15 mm aluminium mesh.

FINISH

- Epoxy paint finish RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Wall-mounted by slotting into duct (screw attachment if necessary).
- Ceiling-mounted with mounting brackets supplied as accessories.

ACCESSORIES

- Mounting brackets for attachment to ceiling.

STANDARD DIMENSIONS

- Standard diameters from 125 to 200 mm.

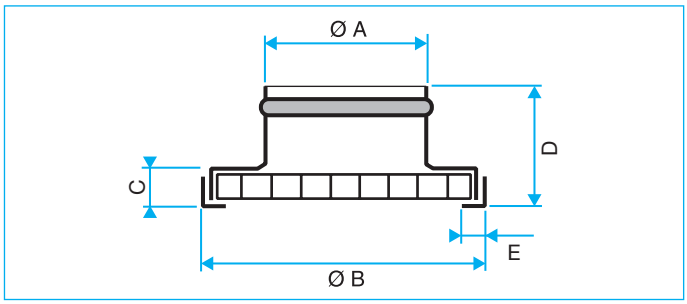
TECHNICAL DETAILS

- See selection table below.

ACCESSORIES PROPOSED

- Mounting brackets for attachment to ceiling.

DIMENSIONS



BEM 780 terminal

STANDARD DIMENSIONS

MODEL	A (MM)	B (MM)	C (MM)	D (MM)	AIRFLOW* (M^3/H)
BEM 780	125	158	14	54	160
	160	198	14	54	250
	200	248	14	54	380

*Comfort airflow levels for Lw < 35 dB(A)

BEM 780 SERIES

RANGE

DIAMETER (MM)	REFERENCE
BEM 780 - RAL 9010	
Ø 125	11052246
Ø 160	11052247
Ø 200	11052248

DIAMETER (MM)	REFERENCE
BEM 780 - RAL 9003 mat 30% (Available end of 2023)	
Ø 125	11052266
Ø 160	11052267
Ø 200	11052268

ACCESSORIES

TITLE	REFERENCE
Mounting brackets	11053493

SELECTION - EXHAUST

AK (M^2)	DIAM. (MM)	QV (M^3/H) 30		60		75		90		130		160		210		250		300	
0.0055	**125**	-	-	-	-	-	-	-	-	25	-	31	-						
		1	1	2.5	1	3	2	4	3	5	5	6	6						
0.0117	**160**									-	-	-	-	28	-	34	-		
										3	2	4	4	5	5	6	7		
0.0132	**200**	Lw	-									-	-	25	-	30	-	34	-
		Vk	Pa									2.6	3	3.4	5	4.1	7	4.9	10

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

SCR 125 series - Steel

SCR 125 terminal F14

USE

- Air supply or exhaust for all ventilation applications in security-sensitive areas.
- The SCR 125 was specially designed for prison or psychiatric hospital environments.
- Wall or ceiling mounted.

CONSTRUCTION

- Rear shaft and front panel made of galvanised steel.
- Front panel made of perforated sheet metal offering 45% free air passage.
- Mounting flange made of galvanised steel (F14 attachment).

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Terminal fixed in place using rear flange (F14 attachment).

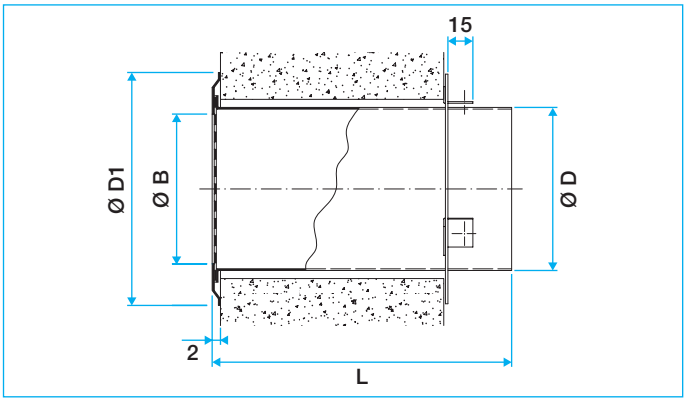
STANDARD DIMENSIONS

- Standard diameters from 125 to 250 mm.

TECHNICAL DETAILS

- See selection table below.

DIMENSIONS



SCR 125 terminal F14

STANDARD DIMENSIONS

Ø D (MM)	Ø D1 (MM)	Ø B (MM)	L (MM)	AIRFLOW* (M³/H)
125	157	105	175	100
160	192	140	175	150
200	232	180	175	250
250	282	230	175	325

*Comfort airflow levels for Lw < 30 dB(A)

SCR 125 series

RANGE WITH CHOICE OF OPTIONS

DIAMETER (MM)	SCR 125 F14
Ø 125	11002992
Ø 160	11002993
Ø 200	11002994
Ø 250	11002995

AVAILABLE OPTIONS

ATTACHMENT	FINISH
• Stainless steel F14 flange. • Pre-drilled F14 flange.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

SELECTION - AIR SUPPLY AND EXHAUST

DIAM. (MM)	AIRFLOW (M³/H)	30 (M³/H)	60 (M³/H)	90 (M³/H)	120 (M³/H)	180 (M³/H)	210 (M³/H)	240 (M³/H)	270 (M³/H)	300 (M³/H)	350 (M³/H)	400 (M³/H)
125	Lw (dB(A))	-	-	-	31	43						
	ΔPt (Pa)	5	20	45	80	180						
160	Lw (dB(A))			-	-	32	40	46				
	ΔPt (Pa)			18	32	72	98	128				
200	Lw (dB(A))				-	-	-	28	32	38	42	
	ΔPt (Pa)				14	31	42	54	69	85	116	
250	Lw (dB(A))					-	-	-	-	28	31	36
	ΔPt (Pa)					13	17	22	28	35	47	62

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

CONTENTS


SC 101


GD 102

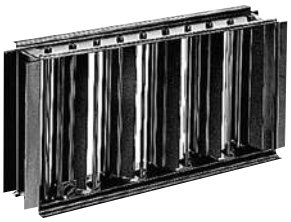

GRIDLINED WALL


SC 121


GRIDLINED EXHAUST


AC 181


SR 377


SGS or AGB


ME plenum

SC 101 - SC 101 D series - Steel

SC 101 terminal

SC 101 D terminal

USE

- Air supply or exhaust.
- Dual deflection air supply terminals.
- Single deflection exhaust terminals.
- Wall-mounted.

CONSTRUCTION

- SC 101: single deflection terminal (exhaust) with horizontal, individually adjustable vanes, pitch 20 mm.
- SC 101 D: dual deflection terminal (air supply) with vertical vanes at rear and horizontal, individually adjustable vanes on front, pitch 20 mm.
- Material: steel.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart or galvanised steel with natural finish. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.
- F3: concealed attachment using friction clips.
- F5: concealed clasp attachment.

For more information, see page 99.

ACCESSORIES

- SGS damper (galvanised steel) and AGB damper (rough aluminium) with counter-rotary action. Fitted to terminal with S clips (supplied).
- Galvanised steel F4 or F6 mounting frame.
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.
- D500: dual deflection overlay: equips a single deflection terminal with the dual deflection function using adjustable vanes.

For more information on accessories, see pages 98 and 101.

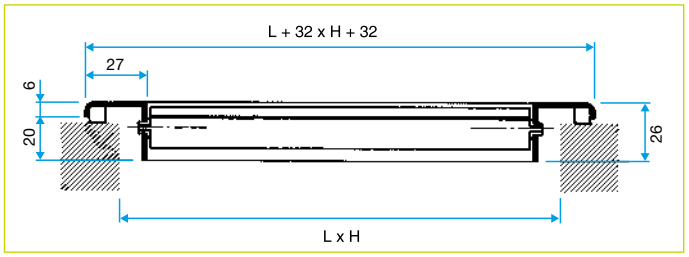
STANDARD DIMENSIONS

- Dimensions from 75 x 75 to 1200 x 600 mm with increments of 25 mm in length & height.

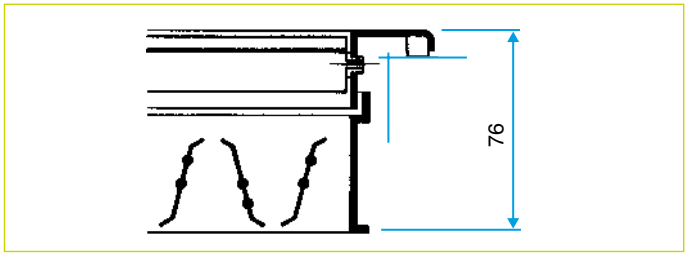
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

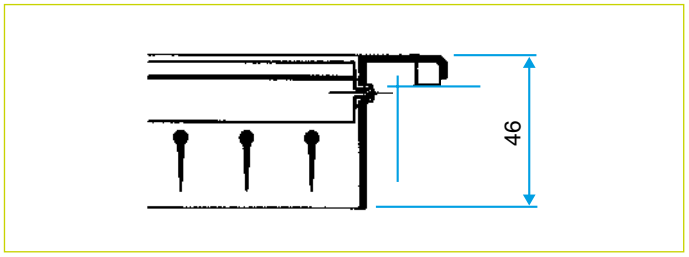
DIMENSIONS



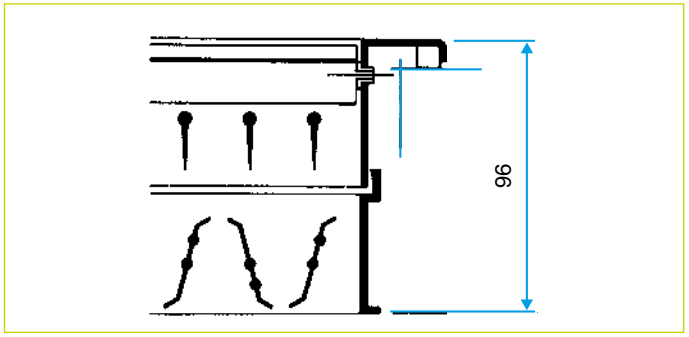
SC 101 - terminal only



SC 101 - terminal with AGB or SGS damper fitted



SC 101 D - terminal only



SC 101 D - terminal with AGB or SGS damper fitted

SC 102 - SC 102 D series - Steel

SC 102 terminal

SC 102 D terminal

USE

- Air supply or exhaust.
- Dual deflection air supply terminals.
- Single deflection exhaust terminals.
- Wall-mounted.

CONSTRUCTION

- SC 102: single deflection terminal (exhaust) with vertical, individually adjustable vanes, pitch 20 mm.
- SC 102 D: dual deflection terminal (air supply) with horizontal vanes at rear and vertical, individually adjustable vanes on front, pitch 20 mm.
- Material: steel.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart or galvanised steel with natural finish. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.
- F3: concealed attachment using friction clips.
- F5: concealed clasp attachment.

For more information, see page 99.

ACCESSORIES

- SGS damper (galvanised steel) and AGB damper (rough aluminium) with counter-rotary action. Fitted to terminal with S clips (supplied).
- Galvanised steel F4 or F6 mounting frame.
- Galvanised steel connection plenum with rear or side branch connection.

For more information on accessories, see pages 98 and 101.

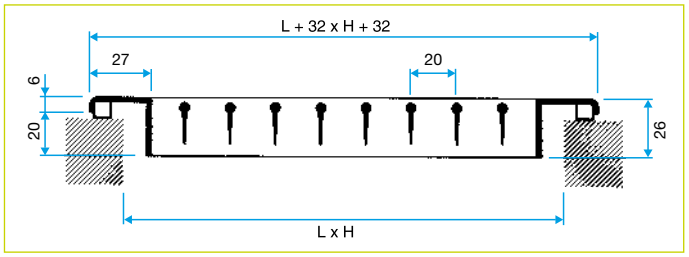
STANDARD DIMENSIONS

- Dimensions from 75 x 75 to 1200 x 600 mm with increments of 25 mm in length & height.

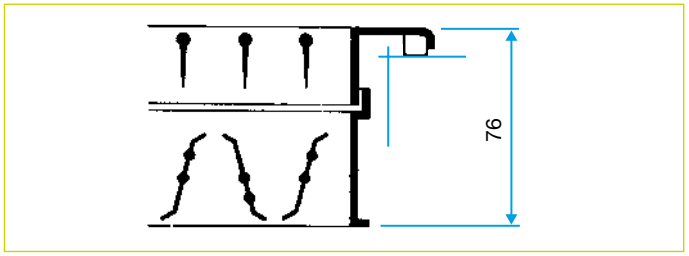
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

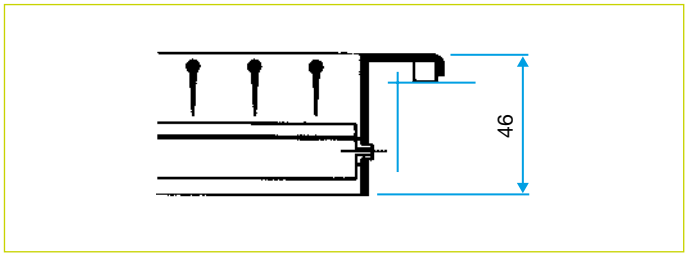
DIMENSIONS



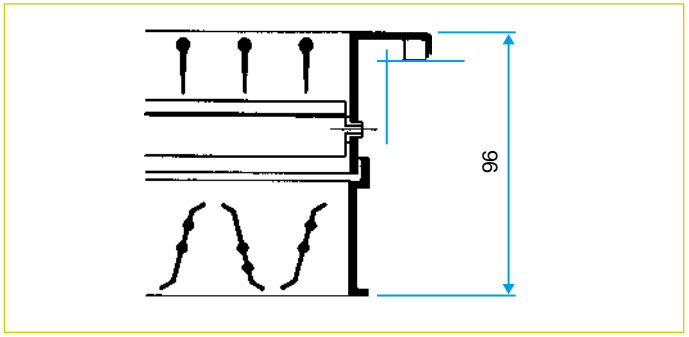
SC 102 - terminal only



SC 102 - terminal with AGB or SGS damper fitted



SC 102 D - terminal only



SC 102 D - terminal with AGB or SGS damper fitted

AC 101 - AC 101 D series - Aluminium

SC 101 terminal

SC 101 D terminal

USE

- Air supply or exhaust.
- Dual deflection air supply terminals.
- Single deflection exhaust terminals.
- Wall-mounted.

CONSTRUCTION

- AC 101: single deflection terminal (exhaust) with horizontal, individually-adjustable vanes, pitch 20 mm.
- AC 101 D: dual deflection terminal (air supply) with vertical vanes at rear and horizontal, individually adjustable vanes on front, pitch 20 mm.
- Material: aluminium.

FINISH

- Anodised aluminium, natural satin hue.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.
- F3: concealed attachment using friction clips.
- F5: concealed clasp attachment.

For more information, see page 99.

ACCESSORIES

- SGS damper (galvanised steel) and AGB damper (rough aluminium) with counter-rotary action. Fitted to terminal with S clips (supplied).
- Galvanised steel F4 or F6 mounting frame.
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.
- D500: dual deflection overlay: equips a single deflection terminal with the dual deflection function using adjustable vanes.

For more information on accessories, see pages 98 and 101.

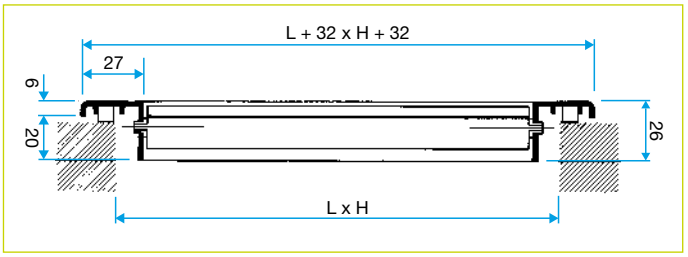
STANDARD DIMENSIONS

- Dimensions from 75 x 75 to 1200 x 600 mm with increments of 25 mm in length & height.

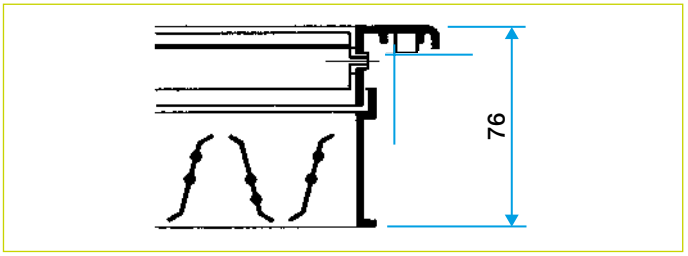
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

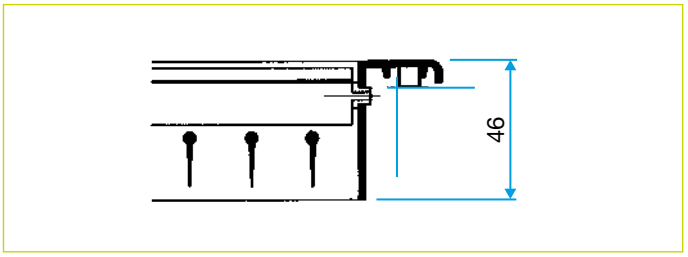
DIMENSIONS



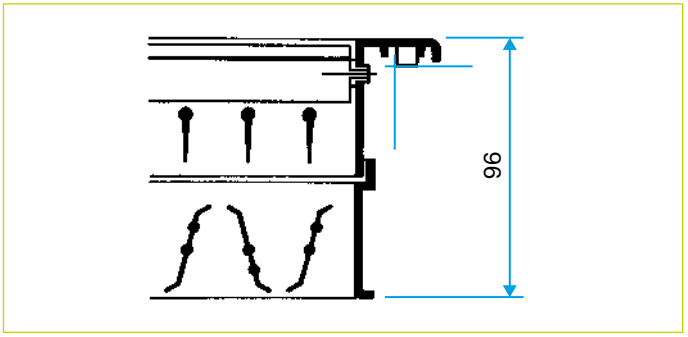
AC 101 - terminal only



AC 101 - terminal with AGB or SGS damper fitted



AC 101 D - terminal only



AC 101 D - terminal with AGB or SGS damper fitted

AC 102 - AC 102 D series - Aluminium

AC 102 terminal

AC 102 D terminal

USE

- Air supply or exhaust.
- Dual deflection air supply terminals.
- Single deflection exhaust terminals.
- Wall-mounted.

CONSTRUCTION

- AC 102: single deflection terminal (exhaust) with vertical, individually adjustable vanes, pitch 20 mm.
- AC 102 D: dual deflection terminal (air supply) with horizontal vanes at rear and vertical, individually adjustable vanes on front, pitch 20 mm.
- Material: aluminium.

FINISH

- Anodised aluminium, natural satin hue.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.
- F3: concealed attachment using friction clips.
- F5: concealed clasp attachment.

For more information, see page 99.

ACCESSORIES

- SGS damper (galvanised steel) and AGB damper (rough aluminium) with counter-rotary action. Fitted to terminal with S clips (supplied).
- Galvanised steel F4 or F6 mounting frame.
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.
- D500: dual deflection overlay: equips a single deflection terminal with the dual deflection function using adjustable vanes.

For more information on accessories, see pages 98 and 101.

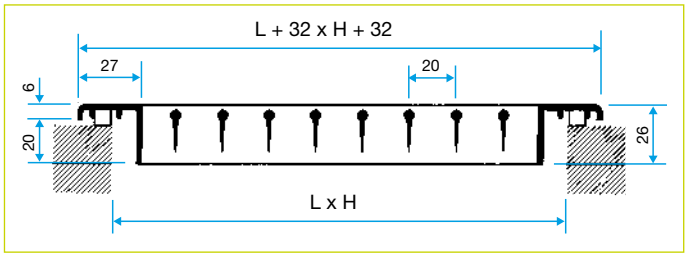
STANDARD DIMENSIONS

- Dimensions from 75 x 75 to 1200 x 600 mm with increments of 25 mm in length & height.

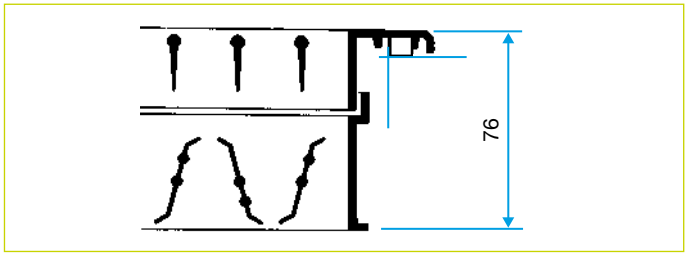
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

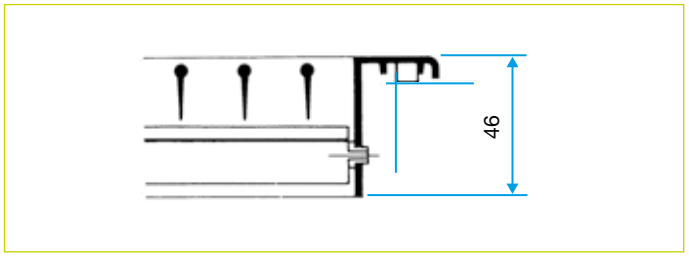
DIMENSIONS



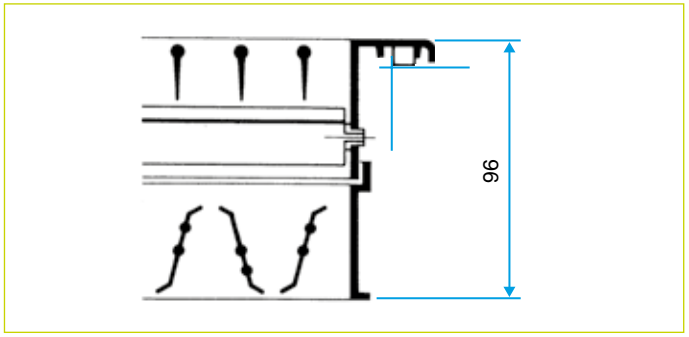
AC 102 - terminal only



AC 102 - terminal with AGB or SGS damper fitted



AC 102 D - terminal only



AC 102 D - terminal with AGB or SGS damper fitted

101 - 102 series

STANDARD RANGE

DIMENSIONS	DD AC 102 D terminal F3	DD AC 102 D terminal F3	SD AC 101 TERMINAL F3	SD SC 101 terminal F3
	CODE	CODE	CODE	CODE
200 x 100	11050577	11050060	11050537	11050020
250 x 100	-	11050061	11050538	-
300 x 100	11050579	11050062	11050539	-
400 x 100	-	11050063	-	-
500 x 100	11050581	-	-	-
250 x 150	11050582	-	-	11050025
300 x 150	11050583	11050066	11050543	11050026
400 x 150	11050584	11050067	-	11050027
600 x 150	11050586	11050069	-	-
400 x 200	11050587	11050070	11050547	11050030
600 x 200	11050589	11050072	-	-
800 x 200	11050590	11050073	-	-
600 x 300	-	-	-	11050034
800 x 300	-	11050075	-	-
1000 x 300	11050593	-	-	-

ATTACHMENT	FINISH
• Concealed attachment using friction clips.	• AC model: anodised aluminium finish with natural satin hue. • SC mode: epoxy paint RAL 9003 matt 30%.

RANGE WITH CHOICE OF OPTIONS

ALUMINIUM MODEL	CODE	STEEL MODEL	CODE
AC 101	11002001	SC 101	11002020
AC 101 D	11002002	SC 101 D	11002021
AC 102	11002003	SC 102	11002022
AC 102 D	11002201	SC 102 D	11003434
ME F3 plenum with side connection	11003435	MT F5 plenum rear connection	11003434
MT F3 plenum rear connection	11003434	F4 mounting frame	11003001
ME F5 plenum with side branch connection	11003435	F6 mounting frame	11002512

OPERATIONAL DIMENSIONS

H / L (MM)	200	250	300	400	450	500	600	700	800	1000	1200
75	x	x	x	x	x	x	x	x	x	x	x
100	•	•	•	•	x	•	x	x	x	x	x
150	x	•	•	•	x	x	•	x	x	x	x
200	x	x	x	•	x	•	•	x	x	x	x
250		x	x	x	x	x	x	x	•	x	x
300			x	x	x	x	•	x	•	•	x
400				x	x	x	x	x	x	x	x
450					x	x	x	x	x	x	x
500						x	x	x	x	x	x

• Dimensions of standard range.

AVAILABLE OPTIONS

ATTACHMENT	FINISH
• F0: none. • F1: visible attachment with screws in frame. • F3: concealed attachment using friction clips. • F5: concealed clasp attachment (use F6 frame).	• Anodised finish, natural satin hue (AC models only). • Galvanised steel, natural hue (SC models only). • Epoxy paint finish from RAL colour chart (all models). View the list of available colours in the appendix.

ACCESSORIES PROPOSED

• SGS and AGB dampers: see p.98.
• F4 and F6 mounting frames: see p.98.
• MT and ME plenums: see p.98.

101 - 102 series

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L X H (MM)		QV (M³/H)																	
			150		200		300		400		500		700		900		1200		1500		3000		5000	
0.0074	200 x 75		27	5.8	32	7.5																	Lw	Lt
			5.9	25	7.5	40																	Vk	Pa
0.0110	300 x 75		-	4.1	24	5.5	33	8.2																
	200 x 100		3.8	10	5.0	18	7.6	40																
0.0160	400 x 75	200 x 150	-	3.4	-	4.5	26	6.8	33	9.1														
	300 x 100		2.6	5	3.5	8	5.2	19	6.9	34														
0.0240	600 x 75	300 x 150			-	3.7	-	5.6	25	7.4	30	9.3												
	400 x 100	200 x 200			2.3	4	34.5	8	4.6	15	5.8	23												
0.0300	800 x 75						-	5.0	21	6.0	26	8.3	34	12										
	500 x 100						2.8	5	3.7	10	4.6	15	6.5	29										
0.0400	1000 x 75	400 x 150							-	5.7	-	7.2	28	10	34	13								
	600 x 100	300 x 200							2.8	5	3.5	8	4.9	17	6.2	27								
0.0490	1200 x 75	500 x 150							-	5.2	-	6.5	24	9.1	29	12	37	16						
	800 x 100	400 x 200							2.3	4	2.8	6	4.0	11	5.1	18	6.8	32						
0.0600	1000 x 100	500 x 200									-	5.9	20	8.2	26	11	27	14	39	18				
	600 x 150	300 x 300									2.3	4	3.2	7	4.2	12	5.5	22	6.9	34				
0.0780	1200 x 100	600 x 200											-	7.2	21	9.2	28	12	34	15				
	800 x 150	400 x 300											2.5	4	3.2	7	4.3	13	5.3	20				
0.1050	1000 x 150	500 x 300													-	8.0	22	11	28	13				
	800 x 200	400 x 400													2.4	4	3.2	7	4.0	11				
0.1320	1200 x 150	600 x 300															-	9.5	23	12	40	27		
	1000 x 200	500 x 400															2.5	4	3.2	7	6.3	30		
0.1600	1200 x 200	600 x 400															-	9.5	20	12.5	36	24		
	800 x 300	500 x 500															2.1	3.0	2.6	5.0	5.1	18		
0.2100	1000 x 300	600 x 500																	-	11	31	15	43	-
	800 x 400																		2.0	2.8	4.0	11	6.9	32
0.2800	1200 x 300	800 x 500																	-	9.0	25	18	38	30
	1000 x 400																		-	-	3.0	6	5.0	17
0.3500	1200 x 400																				20	16.5	32	27
	1000 x 500																				2.4	4.1	1.0	11
0.4200	1200 x 500		Lw	Lt																	-	15	29	25
			Vk	Pa																	2.0	2.8	3.3	7.5

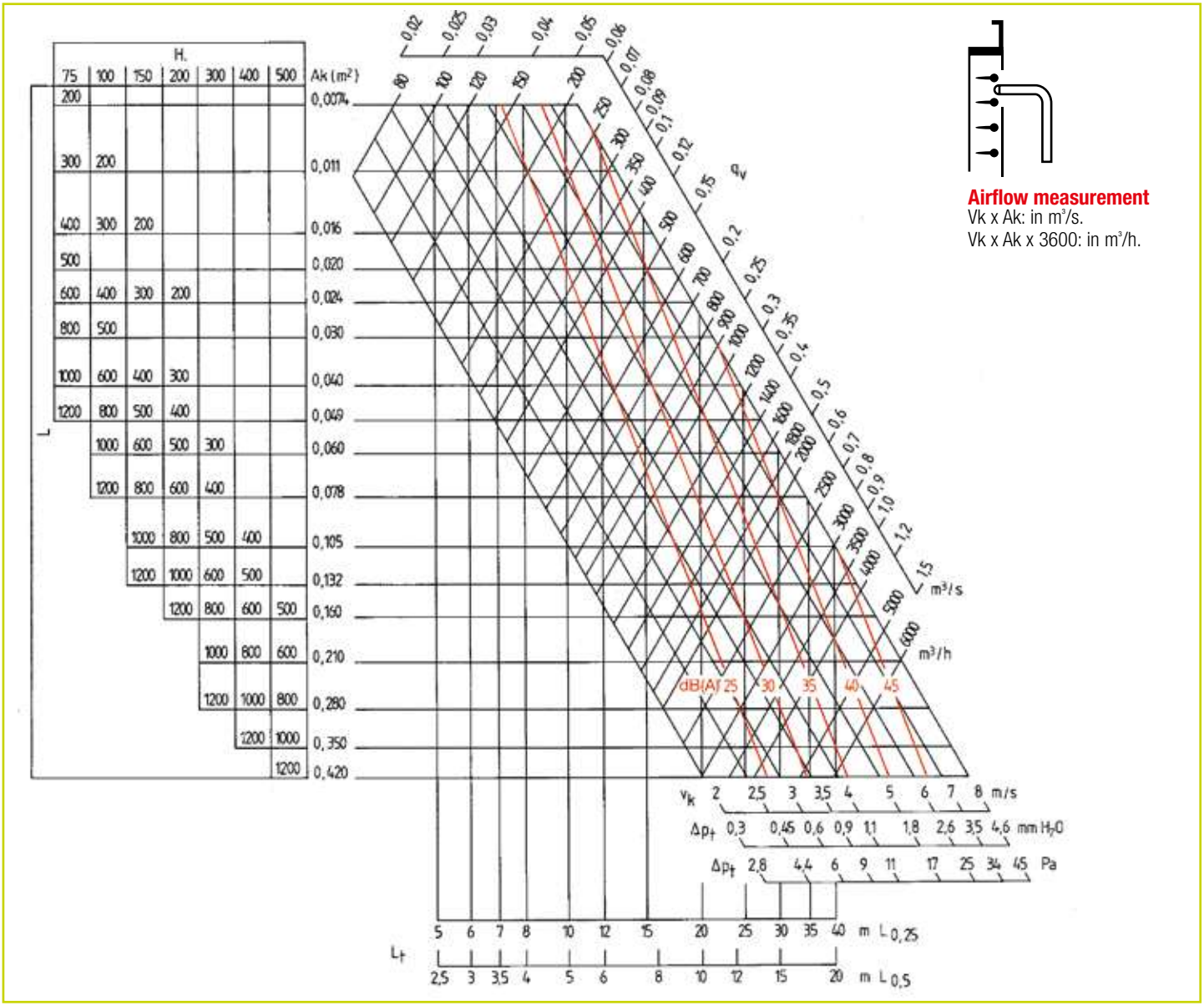
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s.
Tests conducted on dual deflection grilles with a "perfect" plenum in compliance with standard EN 12238.

SELECTION - EXHAUST

AK (M²)	L X H (MM)		QV (M³/H)																	
			200		300		400		500		750		1000		1500		2000		3000		4000		5000	
0.013	200 x 100		22	-																			Lw	Lt
			4.2	12																			Vk	Pa
0.020	300 x 100		13	-	24	-																		
	200 x 150		2.8	5	4.2	12																		
0.030	400 x 100	200 x 200	-	-	16		23	-																
	300 x 150		1.9	2	2.9	6	3.7	10																
0.045	600 x 100	300 x 200			-	-	15	-	20	5														
	400 x 150				1.9	2	2.5	4	3.1	7														
0.060	800 x 100	400 x 200							14	-	24	-												
	500 x 150								2.3	4	3.5	8												
0.075	1000 x 100	500 x 200							-	-	19	-	27	-										
	600 x 150	300 x 300							1.8	2	2.7	5	3.8	10										
0.093	1200 x 100	600 x 200									15	-	23	-	32	-								
	800 x 150	400 x 300									2.2	4	3.0	6	4.5	14								
0.125	1000 x 150	500 x 300									-	-	11	-	26	1	-							
	800 x 200	400 x 400									1.6	2	2.2	4	3.4	8								
0.150	1200 x 150												-	-	22	-	29	4	-					
	600 x 300												1.8	2	2.7	5	3.7	9						
0.175	1000 x 200												-	-	18	-	26	1						
	500 x 400												1.6	2	2.4	4	3.2	7						
0.200	1200 x 200	600 x 400													16	-	23	-	33	-				
	800 x 300	500 x 500													2.1	3	2.8	5	4.1	12				
0.260	1000 x 300														-	-	18	-	28	-	34	-		
	800 x 400	600 x 500													1.6	2	2.2	4	3.2	7	4.1	12		
0.350	1000 x 400																		25	-	32	-		
	800 x 500																		2.8	5	3.7	9		
0.420	1200 x 400																		18	-	25	-	31	-
	1000 x 400																		2.0	3	2.6	5	3.3	8
0.530	1200 x 500		Lw	Lt															12	-	20	-	26	-
			Vk	Pa															1.6	2	2.1	3	3.3	5

The Lw (dB(A)) values do not take into account any noise attenuation in the room. / Tests conducted on single deflection terminals with a "perfect" plenum in compliance with standard EN 12238.

101 - 102 series - air supply with ceiling effect



Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

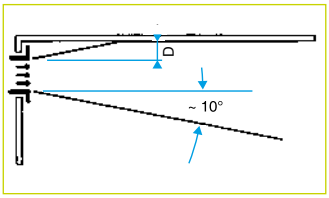
The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted on dual deflection terminals with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR OTHER Vt

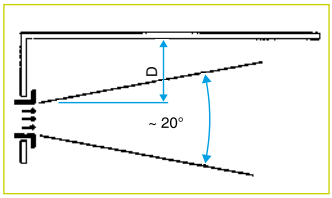
Vt (M/S)	0.25	0.375	0.5	0.625
Lt (A)	x 1.5	x 1	x 0.75	x 0.6
Lt (B)	x 1.05	x 0.7	x 0.53	x 0.42

CORRECTIONS FOR DEFLECTION

VANE ANGLE	Lt	VK	ΔPT	LW
22°	x 0.70	x 1.15	x 1.40	+ 3
45°	x 0.55	x 1.25	x 1.80	+ 6



A) Air supply with ceiling effect where D ≤ 30 cm.

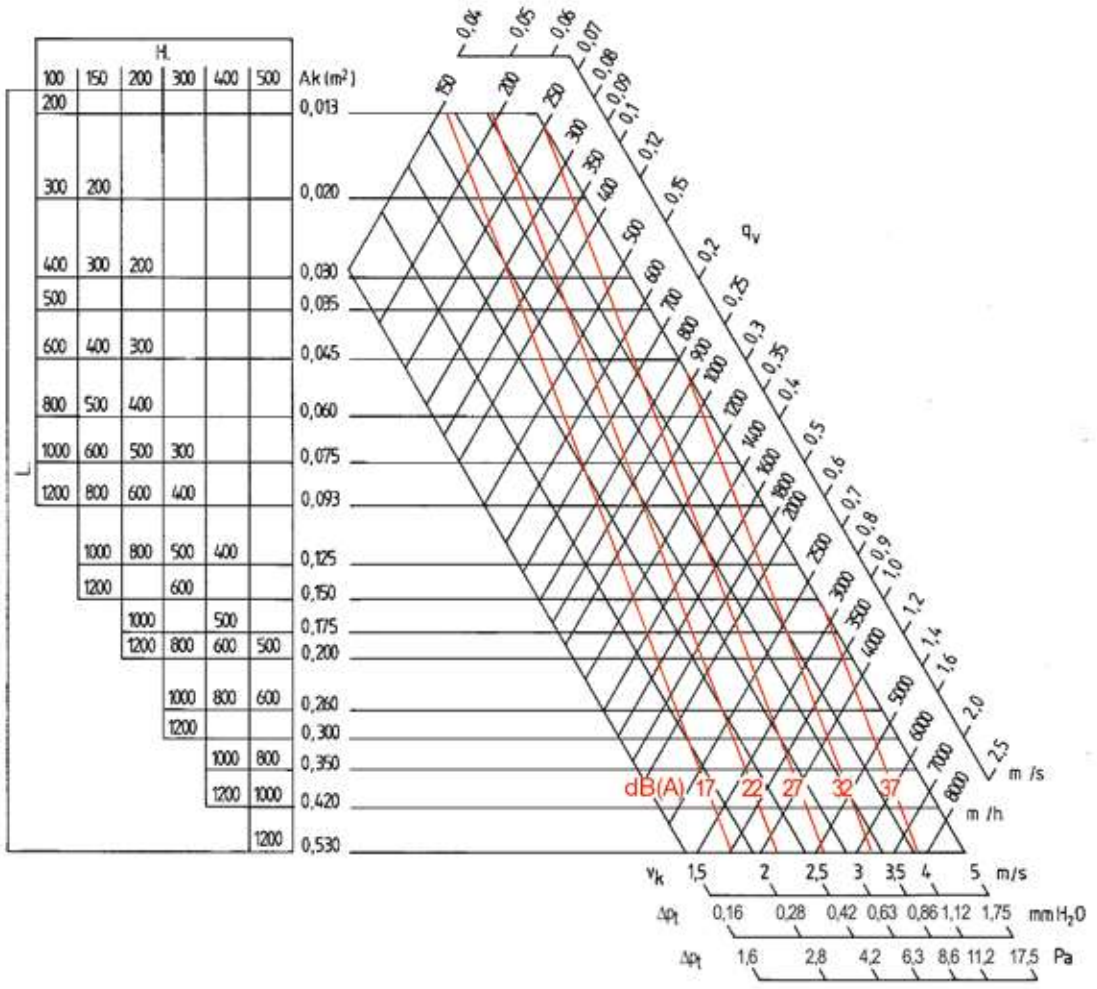


B) Air supply without ceiling effect where D > 30 cm.

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk²	ΔP + 3.28 x Vk²
Lw + 0	Lw + 10	Lw + 20

101 - 102 series - Exhaust



Airflow measurement
Vk x Ak = m³/s.
Vk x Ak x 3600 = m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk²	ΔP + 3.28 x Vk²
Lw + 0	Lw + 10	Lw + 20

GD 102 - GD 102 D - SD 102 - SD 102 D series - Steel

GD 102 D - SD 102 D terminal

N damper

USE

- Air supply or exhaust.
- Dual deflection air supply terminals.
- Single deflection exhaust terminals.
- Installed on cylindrical or oblong ducts.

CONSTRUCTION

- GD 102 and SD 102: single deflection terminal (exhaust) with vertical, individually adjustable vanes, pitch 20 mm.
- GD 102 D and SD 102 D: dual deflection terminal (air supply) with horizontal vanes at rear and vertical, individually adjustable vanes on front, pitch 20 mm.
- Material: steel.

FINISH

- GD 102 and GD 102 D: galvanised steel, natural hue.
- SD 102 and SD 102 D: steel with epoxy paint finish, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F1: visible screw attachment to frame.

For more information, see page 99.

ACCESSORIES

- N damper with inclined slide, made of galvanised steel plate with natural hue.
- Clip-mounted on terminal.
- Used on air supply ducts.
- H damper with straight slide, made of galvanised steel plate with natural hue.
- Clip-mounted on terminal.
- Used on exhaust terminals.

STANDARD DIMENSIONS

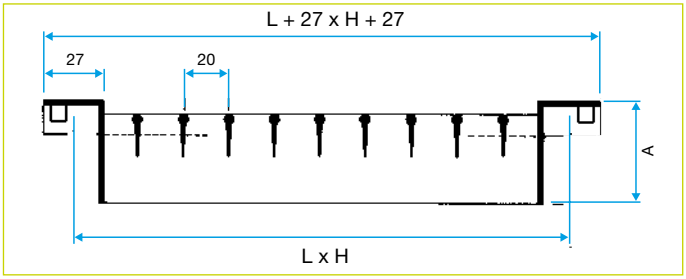
- Dimensions range from 325 x 75 to 1225 x 225 mm. See Range page below.
- No other dimensions available.

Note: 175 mm height not available on N and H dampers.

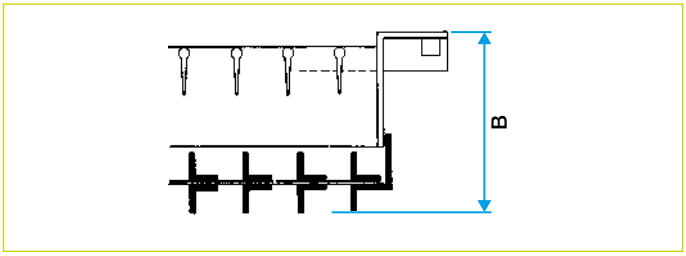
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

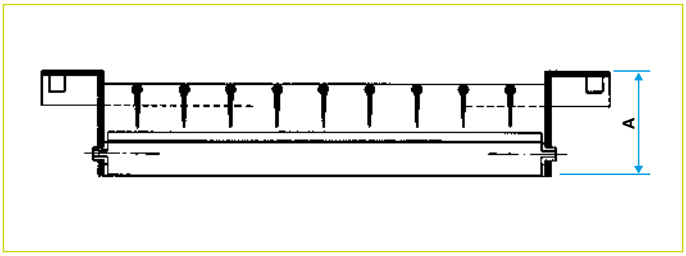
DIMENSIONS



GD102 - SD102 - terminal only



GD102 - SD102 - terminal with H damper fitted

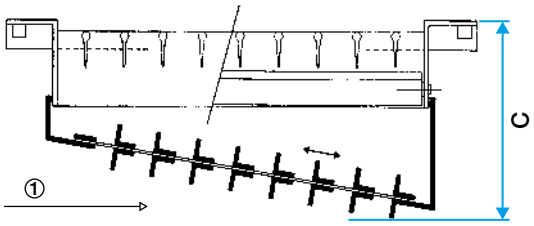


GD102 D - SD102 D - terminal only

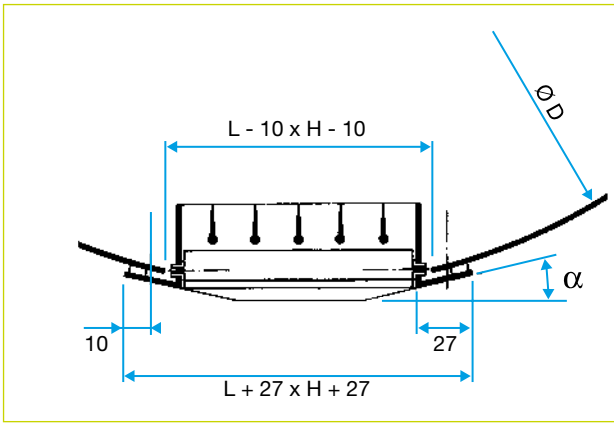
GD 102 - GD 102 D - SD 102 - SD 102 D series - Steel

GD 102 D duct-mounted terminal

DIMENSIONS



GD102 D - SD102 D - terminal with N damper fitted. (1) Airflow direction.



Fitted in circular duct.

DIMENSIONS AVAILABLE

H (MM)	DIAMETER (MM)		α	A (MM)	B (MM)	C (DEPENDS ON L) (MM)						
	MIN.	MAX.				L325	L425	L525	L625	L825	L1025	L1225
75	160	400	20°	42	86	124	137	150	163	190	216	242
125	315	900	12.5°	46	90	128	141	154	167	194	220	247
175	450	1200	12.5°	51	95	133	146	159	172	199	225	252
225	630	1600	12.5°	56	100	138	151	164	177	204	230	257

SD 102 - SD 102 D - GD 102 - GD 102 D series

STANDARD RANGE

DIMENSIONS (MM)	DUAL DEFLECTION TERMINAL GD 102 D F1	SINGLE DEFLECTION TERMINAL GD 102 F1	STRAIGHT SLIDE DAMPER H	INCLINED SLIDE DAMPER N
	CODE	CODE	CODE	CODE
325 x 75	11050148	11050108	11053959	11053969
425 x 75	11050140	11050100	11053950	11053960
525 x 75	11050141	11050101	11053951	11053961
625 x 75	11050142	11050102	11053952	11053962
825 x 75	-	-	11053758	11053975
1025 x 75	-	-	-	11053946
1225 x 75	-	-	-	11053947
425 x 125	11050143	11050103	11053953	11053963
525 x 125	11050144	11050104	11053954	11053964
625 x 125	11050145	11050105	11053955	11053965
825 x 125	-	-	11053759	11053945
1025 x 125	-	-	11053760	-
1225 x 125	-	-	11053756	-
525 x 225	-	11050106	11053956	11053966
625 x 225	-	11050107	11053957	11053967
825 x 225	-	11050114	11053958	11053968

ATTACHMENT	FINISH
• Visible with screws in frame.	• Galvanised steel with natural hue.

RANGE WITH CHOICE OF OPTIONS

PAINTED STEEL MODEL	CODE
SD 102	11002026
SD 102 D	11002027

OPERATIONAL DIMENSIONS

H / L (MM)	325	425	525	625	825	1025	1225
75	•	•	•	•	•	x	x
125	x	•	•	•	x	x	x
175	x	x	x	x	x	x	x
225	x	x	•	•	•	x	x

• Dimensions of standard range.

AVAILABLE OPTIONS

ATTACHMENT	FINISH	DAMPER
• F1: visible screw attachment in frame.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix. • Galvanised steel with natural hue.	

ACCESSORIES PROPOSED

• N and H dampers.

SD 102 - GD 102 Series

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L X H (MM)		QV (M³/H) 100		150		200		300		400		600		800		1200		1800		2500		3500	
0.011	325 x 75		37	2.8	48	4.1	55	5.5	65	8.3													Lw	Lt
			2.5	16	3.8	35	5.1	62	7.6	140													Vk	Pa
0.015	425 x 75		30	2.4	40	3.6	48	4.7	58	7.1	66	9.5												
			1.9	8.4	2.8	19	3.7	33	5.5	75	7.4	134												
0.019	525 x 75				35	3.2	43	4.2	53	6.3	61	8.4									Corrections for terminal without damper			
					2.2	12	2.9	21	4.4	47	5.8	83									ΔPt	Lw		
0.023	625 x 75	325 x 175					38	3.8	48	5.7	57	7.6									x 0.5	- 4		
							2.4	14	3.6	32	4.8	47												
0.030	825 x 75	425 x 125							43	5.0	51	6.7	61	10										
									2.8	19	3.7	33	5.1	75										
0.037	1025 x 75	525 x 125							39	4.5	46	6.0	57	9.0	64	12								
	325 x 175								2.2	15	3.0	22	4.5	49	6.0	88								
0.045	1225 x 75	625 x 125									42	5.5	51	8.2	59	11	64	14						
	425 x 175	325 x 225									2.5	15	3.7	33	4.9	59	5.5	75						
0.060	825 x 125	525 x 175											46	7.1	54	9.5	59	13						
	425 x 175												2.8	19	3.7	33	4.4	47						
0.075	825 x 125	625 x 175											41	6.4	49	8.5	56	13						
	425 x 225												2.2	12	3.0	22	3.7	35						
0.090	1225 x 125	825 x 175													46	8.6	49	11	66	20				
	625 x 225														2.5	15	2.8	20	5.8	80				
0.120	1025 x 175	825 x 225															45	10	60	17				
																	2.3	12.5	4.2	42				
0.150	1225 x 175	1025 x 225																	55	15	63	21		
																			3.3	28	4.5	50		
0.180	1225 x 225		Lw	Lt															52	14	59	17	67	26
			Vk	Pa															2.8	21	3.8	35	5.5	80

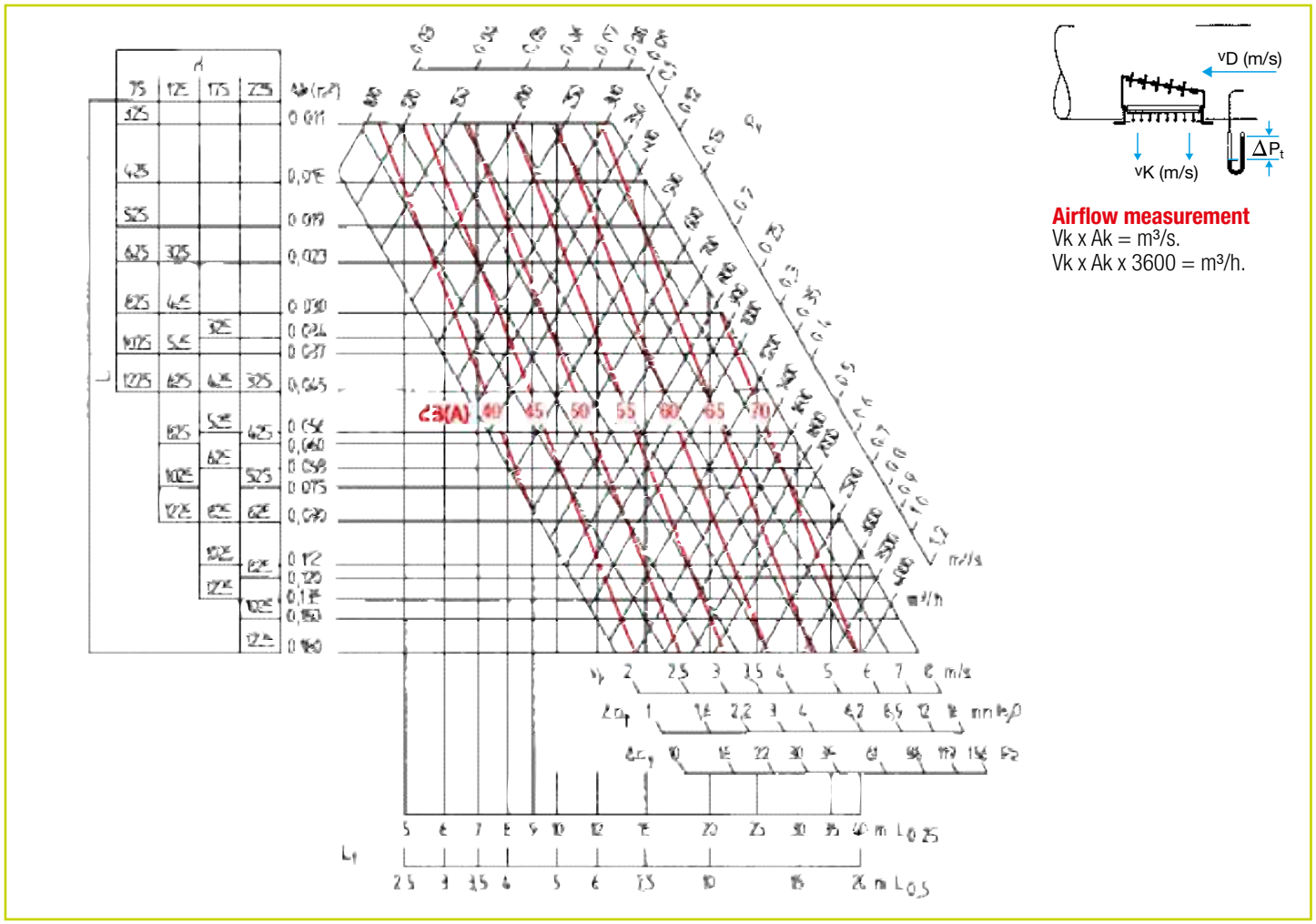
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted on dual deflection grilles with a "perfect" plenum in compliance with standard EN 12238.

SELECTION - EXHAUST

AK (M²)	L X H (MM)		QV (M³/H) 100		150		200		300		400		600		800		1200		1800		2500		3500	
0.014	325 x 75		25	-	35	45	30	-															Lw	Lt
			2	4	3	18	4	31															Vk	Pa
0.019	425 x 75				-	-	-	-	53	-														
					2.3	12	3	18	4.8	40														
0.023	525 x 75						35	-	50	-	56	-									Corrections for terminal without damper			
							2.5	12	3.8	30	5	49									ΔPt	Lw		
0.028	625 x 75	325 x 125					-	-	45	-	52	-									x 0.45	- 6		
							2	8	3	18	4	32												
0.037	825 x 75	425 x 125							35	-	47	3	72											
									2.3	12	3	18	4.9	45										
0.046	1025 x 75	525 x 125							-	-	35	-	51	-	54	-								
	325 x 175								1.8	6	2.5	12	3.6	25	5	49								
0.055	1225 x 75	625 x 125									-	-	28	-	35	-								
	425 x 175	325 x 225									2	8	3	18	4	32								
0.074	825 x 125	525 x 175											35	-	49	-	59	-						
	425 x 225												2.3	10	3	18	4	32						
0.092	1025 x 125	625 x 175											-	-	45	-	54	-						
	525 x 225												1.8	5	2.5	12	3.5	24						
0.110	1225 x 125	825 x 175													-	-	48	-	61	-				
	625 x 225														2	8	3	18	4.2	37				
0.138	1025 x 175	825 x 225															47	-	57	-	65	-		
																	2.4	10	3.7	27	5	49		
0.166	1225 x 175	1025 x 225																	52	-	60	-		
																			3	18	4	31		
0.220	1225 x 225		Lw	Lt															48	-	55	-	62	-
			Vk	Pa															2.3	10	3.2	20	4.2	37

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted on dual deflection grilles with a "perfect" plenum in compliance with standard EN 12238.

AIR SUPPLY WITH CEILING EFFECT

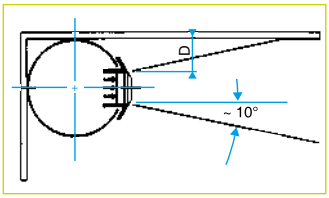


Airflow measurement
Vk x Ak = m³/s.
Vk x Ak x 3600 = m³/h.

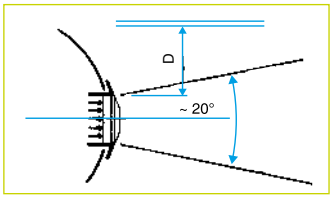
The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted on dual deflection grilles with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt (A)	x 1	x 0.67	x 0.5	x 0.4
Lt (B)	x 0.7	x 0.47	x 0.35	x 0.28



A) Air supply with ceiling effect where D ≤ 30 cm.



B) Air supply without ceiling effect where D > 30 cm.

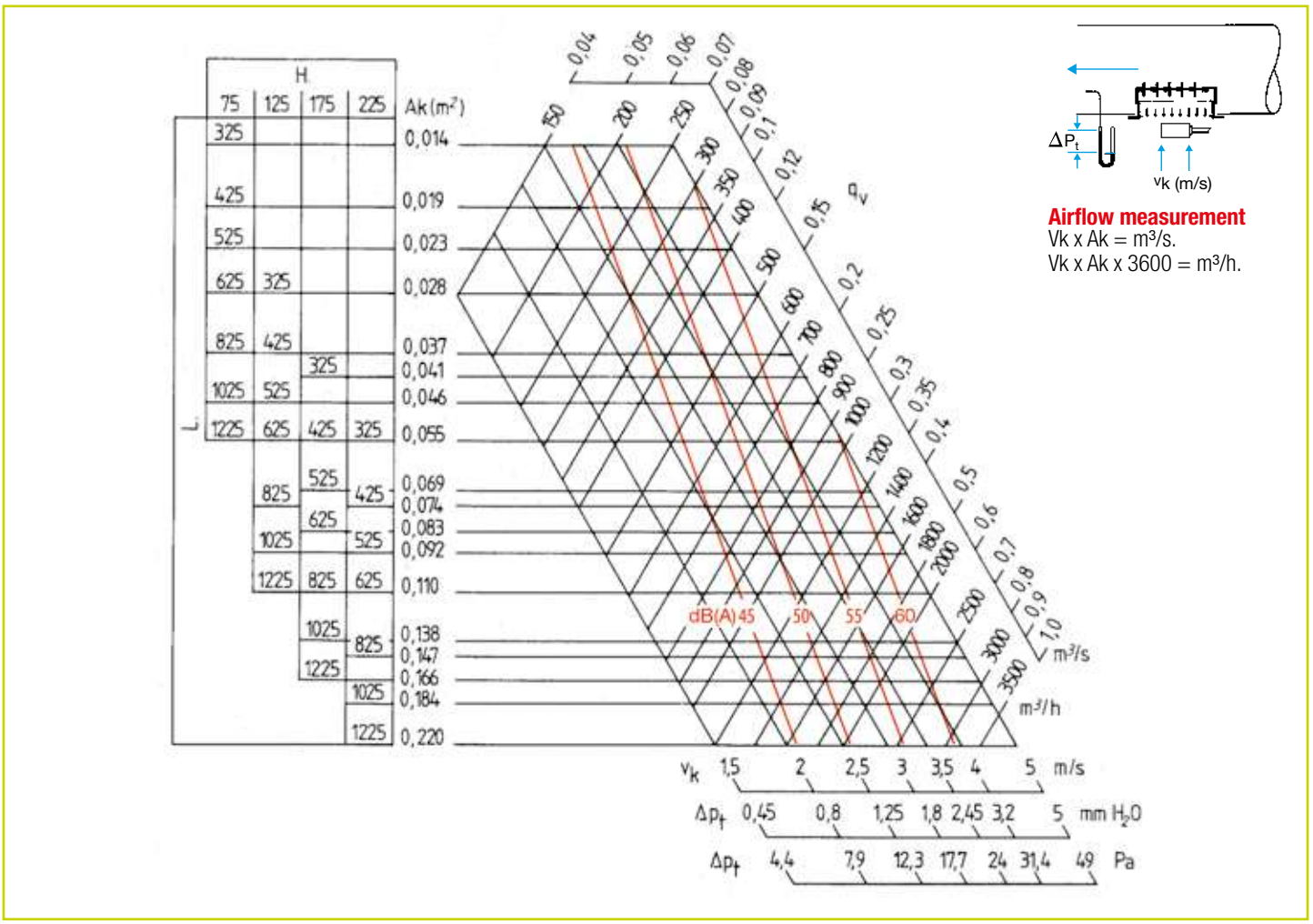
CORRECTIONS FOR DEFLECTION

VANE ANGLE	Lt	VK	ΔPT	LW
22°	x 0.77	x 1.15	x 1.30	+ 3
45°	x 0.55	x 1.25	x 1.60	+ 6

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 0.50	ΔPt x 1.00	ΔP + 0.95 x Vk^2	ΔP + 3.28 x Vk^2
Lw - 4	Lw + 0	Lw + 10	Lw + 20

SD 102 - GD 102 series - Exhaust



Airflow measurement
Vk x Ak = m³/s.
Vk x Ak x 3600 = m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted on single deflection terminals with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 0.45	ΔPt x 1.00	ΔP + 0.95 x Vk²	ΔP + 3.28 x Vk²
Lw - 6	Lw + 0	Lw + 10	Lw + 15

Gridlined Wall

Gridlined Wall

FIELD OF APPLICATION

- Air supply and exhaust for all ventilation & air conditioning applications.
- Grid terminal with rear deflection for air supply (type D) or single for exhaust.
- Wall or perimeter mounted.

DESCRIPTION

- Extruded aluminium profiles.
- Fixed horizontal front bars with 15° deflection angle.
- 23 mm wide frame.
- D type: terminal fitted with row of individually-adjustable rear vanes, perpendicular to front bars.
- Core type: core only, no frame.

ATTACHMENT

- Concealed clip attachment (F3).
- Concealed clasp attachment (F5).
- No attachments (F0).

NB: the Core type is supplied without attachments.

FINISH

- Anodised aluminium, natural satin hue.
- Epoxy paint RAL 9003 white 30% matt,
- Paint finish selected by architect from RAL colour range,
- AldesArchitect® finishing.

ACCESSORIES

- AGB damper (aluminium) with counter-rotary action. Adjusted using a screw. Clip-mounted on terminal.
- F4 or F6 steel mounting frame,
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.

For more information on accessories, see pages 98 to 101.

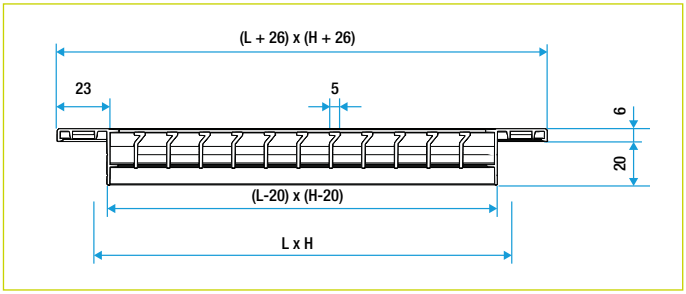
OPTIONS

- Pivoting access gates for use as a convector fan terminal, for example not available on Wall D.
- Swimming pool protection (corrosion resistance).
- Built-in damper with adjustment screw.
- Airtight seal on frame.

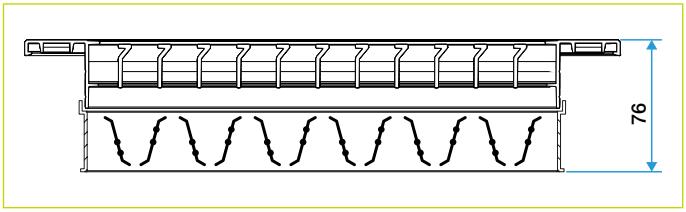
STANDARD DIMENSIONS

- Lengths (L) from 200 mm to 2000 mm in a single piece.
- Possible to assemble 2000 mm long elements on site to create decorative linear strips.
- Heights (H) from 75 mm to 800 mm (except type D, limited to 300 mm).
- 1 mm production pitch for length and 5 mm for height.
- Height of damper H limited to 500 mm.

DIMENSIONS

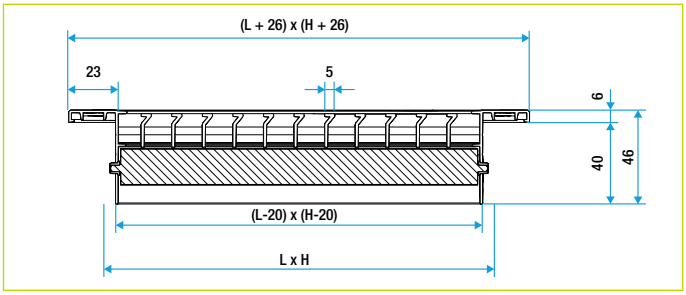


Gridlined Wall

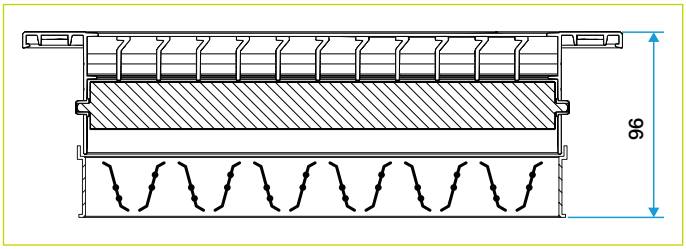


Gridlined Wall with fitted damper

Gridlined wall core



Gridlined wall dual deflection



Gridlined wall dual deflection with fitted damper

Gridlined Floor

Gridlined Floor

FIELD OF APPLICATION

- Air supply and exhaust for all ventilation & air conditioning applications.
- For installation in floor.
- Suitable for chlorinated atmospheres such as swimming pools standard version)

DESCRIPTION

- Extruded aluminium profiles.
- Fixed front bars with 15° deflection angle.
- Robust frame reinforced with U-shaped profiles, 5 mm visible edge.
- Load resistance: max. 150 kg over a surface of 12.5 cm^2 in centre of terminal.
- Removable core as standard.

ATTACHMENT

- Frame supplied with sealing brackets (as standard).

FINISH

- Anodised aluminium, natural satin hue.
- Paint finish selected by architect from RAL colour range.

ACCESSORIES

- AGB damper (aluminium) with counter-rotary action. Adjusted using a screw.
  Supplied mounted on grid terminal, suited to pool environments,
- 90° angle pieces.
- D500 type dual deflection overlay.

For more information on accessories, see pages 98 to 101.

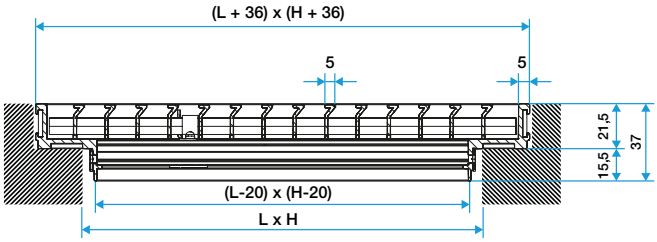
OPTIONS

- Built-in damper with adjustment screw.
- Removable core screw attachment.

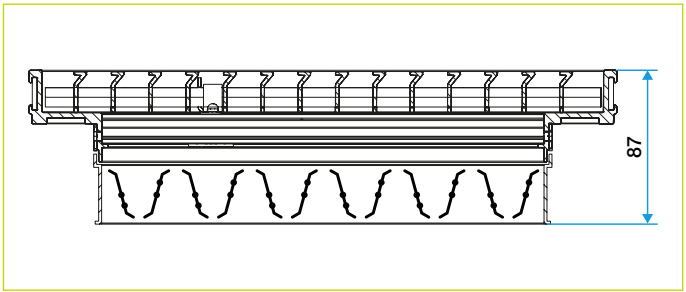
STANDARD DIMENSIONS

- Lengths (L) from 200 mm to 2000 mm in a single piece.
- Possible to assemble 2000 mm long elements on site to create decorative linear strips.
- Heights (H) from 75 mm to 400 mm.
- 1 mm production pitch for length and 5 mm for height.

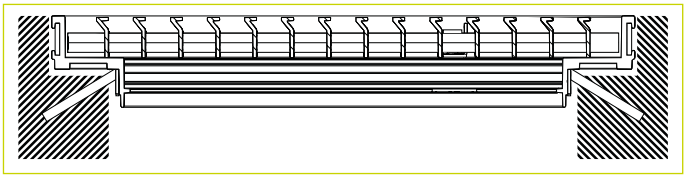
DIMENSIONS



Gridlined floor



Gridlined floor with fitted damper



Gridlined floor with sealing brackets

Assembly

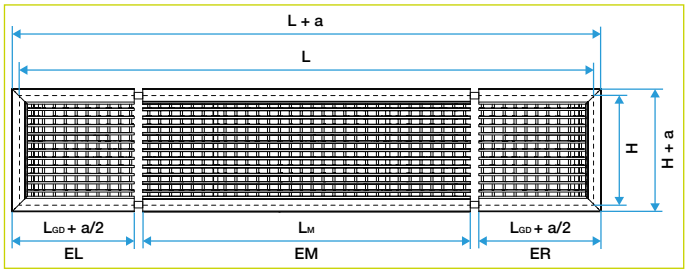
GRIDLINED WALL AND FLOOR LINEAR STRIPS

- Possible to create linear strips (alignment tools supplied) with continuous decorative aspect.
- Beyond 2000 mm, intermediate elements are required (2000 mm) with two end pieces of equal length, always between 1000 and 2000 mm.
- Floor installation: position the left element to the left of the linear strip (facing the wall) to direct the airflow towards the partition.
- Wall-mounted: position the left element to the left of the linear strip (facing the wall) to direct the airflow towards the ceiling.

GRIDLINED FLOOR ANGLE PIECES

- With Floor grid terminals it is possible to add angle pieces to form continuous arrangements.
- Angle pieces connect to EM intermediate elements.
- An angle piece is always 300 x 300 mm based on the diagram opposite: to ensure it precisely matches the dimensions of the room simply choose the right length for an EM intermediate element.
- The angle piece must not be connected to the air ductwork. Its function is purely aesthetic.

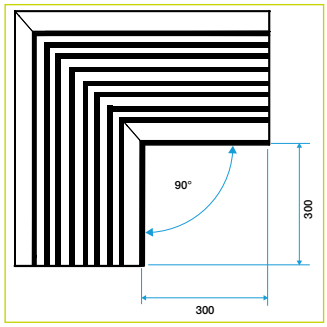
DIMENSIONS



Full linear strip

For Gridlined Wall: a = 26
For Gridlined Floor: a = 36

Lm = Length L entered for an intermediate element
Lgd = Length L entered for a left side element and for a right side element



90° angle piece

Installation instructions

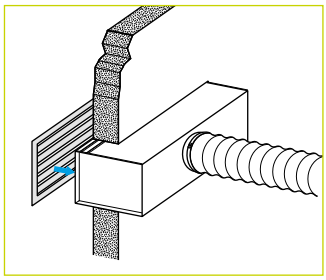
F3 ATTACHMENT METHOD

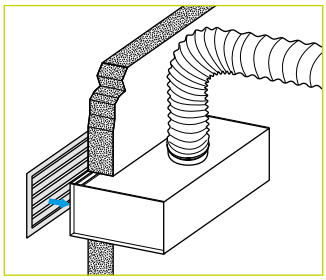
- Clip attachment in a plenum or a sealed mounting frame.
- Aldes plenums and mounting frames are compatible with the use of clips to ensure perfect attachment.
- Only applicable to wall-mounted installation.

F5 ATTACHMENT METHOD

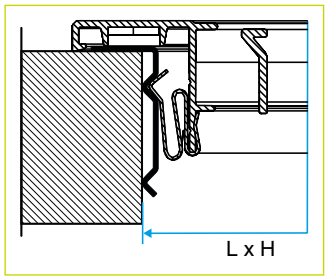
- Concealed clasp attachment.
- Suitable for F6 mounting frame and MT F5 and ME F5 plenums.
- Recommended for ceiling installation and for easy removal.

INSTALLATION

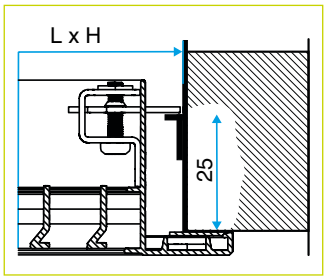




Seal or attach the rear plenum connection (MT) or side connection (ME) or the mounting frame in the opening L x H



F3 attachment method



F5 attachment method

For certain dimensions of the Exhaust version, the vane is drilled to access the screw. You can use the sticker provided to hide the hole after assembly.

Gridlined exhaust

Gridlined Exhaust

FIELD OF APPLICATION

- Exhaust only, for all ventilation & air conditioning applications.
- Wall or ceiling mounted.

DESCRIPTION

- Extruded aluminium profiles.
- 45° fixed vanes, blocking for confidentiality function.
- 23 mm wide frame.
- Core type: core only, no frame.

ATTACHMENT

- Concealed clip attachment (F3).
- Concealed clasp attachment (F5).
- No attachments (F0).

NB: the Core type is supplied without attachments.

FINISH

- Anodised aluminium, natural satin hue.
- Epoxy paint RAL 9003 white 30% matt,
- Paint finish selected by architect from RAL colour range,
- AldesArchitect® finishing.

ACCESSORIES

- AGB damper (aluminium) with counter-rotary action. Direct adjustment or by screw. Clip attachment to terminal,
- F4 or F6 steel mounting frame,
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.

OPTIONS

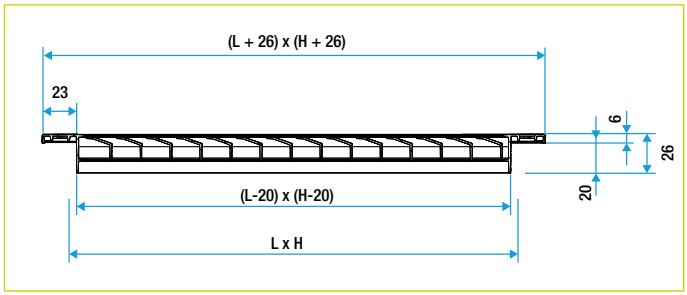
- Swimming pool protection (corrosion resistance).
- Built-in damper with adjustment screw.
- Airtight seal on frame.
- Filter: on request, contact us.

For more information on accessories, see pages 98 to 101.

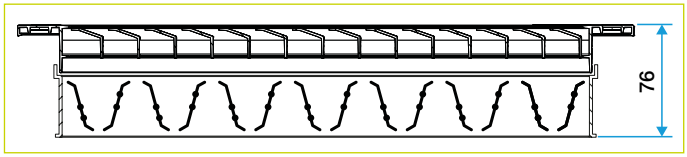
STANDARD DIMENSIONS

- Lengths (L) from 200 mm to 2000 mm.
- Heights (H) from 75 mm to 800 mm.
- 1 mm production pitch for length and 5 mm for height.
- Height of damper H limited to 500 mm.

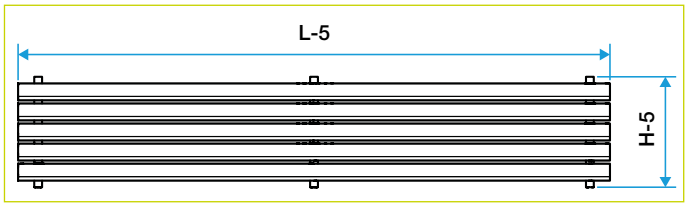
DIMENSIONS



Gridlined exhaust



Gridlined exhaust with fitted damper



Gridlined exhaust core

Range, options and accessories

GRIDLINED® WALL STOCK RANGE

DIMENSIONS (MM)	GRIDLINED WALL WHITE	GRIDLINED WALL ANODISED	DAMPER SGS	MOUNTING FRAME F4	PLENUM WITH REAR CONNECTION MT F3	PLENUM WITH SIDE CONNECTION ME F3
200 x 100	11050562	-	11053241	11053761	11053632	11053611
300 x 100	11050563	-	11053243	11053763	11053634	11053664
400 x 100	11050564	-	11053244	11053764	11053635	11053665
500 x 100	11050565	11050245	11053245	11053765	11053636	-
600 x 100	11050566	11050246	11053271	11053780	11053637	-
1000 x 100	11050568	11050248	-	11053782	11053639	-
300 x 150	11050569	11050249	11053247	11053767	11053641	11053671
600 x 150	11050571	11050251	11053250	11053770	11053644	11053674
800 x 150	11050572	-	11053274	11053783	11053645	-
1000 x 150	11050573	-	11053275	11053784	11053646	-

Wall-mounted range - clip attachment

RANGE OF DIMENSIONS

11003411 GRIDLINED WALL, 11003413 GRIDLINED WALL CORE, 11003421 GRIDLINED EXHAUST, 11003422 GRIDLINED EXHAUST CORE

H / L (MM)	200	250	300	400	500	600	800	1000	1200	1400	1600	1800	2000
75	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•
150	•	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•	•	•	•	•	•
400	•	•	•	•	•	•	•	•	•	•	•	•	•
500	•	•	•	•	•	•	•	•	•	•	•	•	•
600	•	•	•	•	•	•	•	•	•	•	•	•	•
800	•	•	•	•	•	•	•	•	•	•	•	•	•

11003412 GRIDLINED WALL D, 11003402 GRIDLINED FLOOR

H / L (MM)	200	250	300	400	500	600	800	1000	1200	1400	1600	1800	2000
75	•	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•	•
150	•	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•	•	•	•	•	•
400*	•	•	•	•	•	•	•	•	•	•	•	•	•

* Available for GRIDLINED FLOOR only.

Range, options and accessories

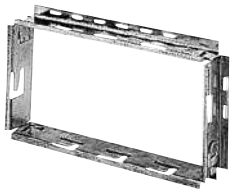
RANGE WITH CHOICE OF OPTIONS

CODE	TITLE	USAGE	IMPLEMENTATION	ATTACHMENT	FINISH	LINEAR STRIPS	DAMPER*	DOORS	SEAL	POOL
11003411	**GRIDLINED WALL**	Air supply or extract	Wall-mounted	Clips or clasps	Anodised aluminium, paint	Yes	Yes	1 door	Yes	Yes
11003412	**GRIDLINED WALL D Dual deflection**	Air supply	Wall-mounted	Clips or clasps	Anodised aluminium, paint	Yes	Yes	No	Yes	Yes
11003413	**GRIDLINED WALL CORE Bare core**	Air supply or extract	Wall or perimeter-mounted	No attachments	Anodised aluminium, paint	No	No	No	No	Yes
11003421	**GRIDLINED EXHAUST**	Exhaust	Wall or ceiling-mounted	Clips or clasps	Anodised aluminium, paint	No	Yes	No	Yes	Yes
11003422	**GRIDLINED EXHAUST CORE Bare core**	Exhaust	Ceiling (panels)	No attachments	Anodised aluminium, paint	No	No	No	No	Yes
11003402	**GRIDLINED FLOOR**	Air supply or extract	Floor	Sealing brackets	Anodised aluminium, paint	Yes	Yes	No	No	Yes
11003403	**GRIDLINED FLOOR 90° ANGLE**	Not active	Floor	Sealing brackets	Range, options and accessories	No	No	No	No	Yes

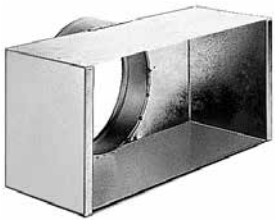
*Supplied mounted on grille.

ACCESSORIES

AGB damper



F4 mounting frame



MT plenum F3

ME plenum F3

ACCESSORIES

CODE	TITLE	USAGE	INSTALLATION	AGB DAMPER	F4 MOUNTING FRAME	F6 MOUNTING FRAME	PLÉNUM MEF3	PLÉNUM MTF3	PLÉNUM MEF5	PLÉNUM MTF5
11003411	**GRIDLINED WALL**	Air supply or extract	Wall-mounted	11003201	11003001	11002512	11003435	11003434	11003435	11003434
11003412	**GRIDLINED WALL D**	Air supply	Wall-mounted	11003201	11003001	11002512	11003435	11003434	11003435	11003434
11003413	**GRIDLINED WALL CORE**	Air supply or extract	Wall or perimeter-mounted	-	-	-	-	-	-	-
11003421	**GRIDLINED EXHAUST**	Exhaust	Wall or ceiling-mounted	11003201	11003001	11002512	11003435	11003434	11003435	11003434
11003422	**GRIDLINED EXHAUST CORE**	Exhaust	Ceiling (panels)	-	-	-	-	-	-	-
11003402	**GRIDLINED FLOOR**	Air supply or extract	Floor	11003201	-	-	-	-	-	-
11003403	**ANGLE GRIDLINED FLOOR**	Not active	Floor	-	-	-	-	-	-	-

Selection tables - Gridlined Wall and Wall D - Floor

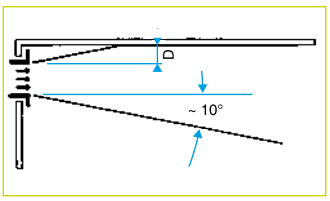
SELECTION - AIR SUPPLY WITH CEILING EFFECT - LENGTH 1 METRE

AK (M^2)	HEIGHT (MM)	AIRFLOW (M^3/H)	300	400	500	600	800	1000	1500	2000	2500	3000	3500	4000
0.036	75	Lw (dB(A))	20	30	37	43								
		ΔP (Pa)	4.6	9.4	16.4	25.9								
		Lt (m)	5	6.7	8.4	10.1								
0.056	100	Lw (dB(A))			23	29	38	45						
		ΔP (Pa)			2.9	4.6	9.4	16.4						
		Lt (m)			6.7	8.1	10.7	13.4						
0.084	150	Lw (dB(A))					24	30	42					
		ΔP (Pa)					3.4	5.9	16.4					
		Lt (m)					8.8	11	16.4					
0.123	200	Lw (dB(A))						17	27	35	40	45		
		ΔP (Pa)						1.6	4.3	8.8	15.4	24.3		
		Lt (m)						9.1	13.6	18.1	22.7	27.2		
0.158	250	Lw (dB(A))							17	24	30	34	38	41
		ΔP (Pa)							2.1	4.2	7.4	11.6	17.1	23.9
		Lt (m)							12	16	20	24	28	32
0.195	300	Lw (dB(A))							9	16	21	25	29	32
		ΔP (Pa)							1.1	2.2	3.9	6.1	9	12.6
		Lt (m)							10.8	14.4	18	21.6	25.2	28.8
0.232	350	Lw (dB(A))								9	14	18	21	24
		ΔP (Pa)								1.3	2.3	3.7	5.4	7.5
		Lt (m)								13.2	16.5	19.8	23.1	26.4
0.27	400	Lw (dB(A))								5	8	11	15	17
		ΔP (Pa)								0.8	1.5	2.3	3.4	4.8
		Lt (m)								12.2	15.3	18.4	21.4	24.5
0.315	500	Lw (dB(A))									5	5	8	11
		ΔP (Pa)									1.3	2.1	3.1	4.3
		Lt (m)									14.2	17	19.8	22.7
0.387	600	Lw (dB(A))										5	5	5
		ΔP (Pa)										1.1	1.7	2.3
		Lt (m)										15.3	17.9	20.4
0.536	800	Lw (dB(A))												5
		ΔP (Pa)												0.9
		Lt (m)												17.4

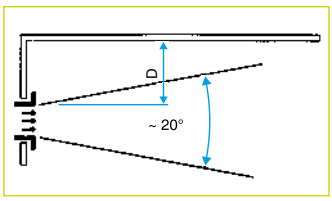
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.
Vk (m/s) = [airflow (m^3/h) / 3600] / Ak (m^2). Heights not available in Gridlined Wall D. Heights not available in Gridlined Floor.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt (A)	x 1.5	x 1	x 0.75	x 0.6
Lt (B)	x 1.05	x 0.7	x 0.53	x 0.42



A) Air supply with ceiling effect where D ≤ 30 cm.



B) Air supply without ceiling effect where D > 30 cm.

CORRECTIONS FOR DEFLECTION (TYPE D)

VANE ANGLE	Lt	VK	ΔPT	LW
22°	x 0.70	x 0.96	x 1.40	+ 3
45°	x 0.55	x 0.8	x 1.80	+ 6

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk^2	ΔP + 3.28 x Vk^2
Lw + 0	Lw + 10	Lw + 20

KOCT CORRECTIONS (DB) BY OCTAVE BAND

FREQUENCY (HZ)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
K oct (dB)	6	5	5	4	5	5	4	2	0	-2	-5	-8	-13	-16	-19	-20	-20	-19	-20	-18	-17

Add K oct to the table value to obtain the sound power level in dB.

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L x H (MM)	L x H (MM)	AIRFLOW (M³/H)	100	200	300	400	500	600	800	1000	1200	1500	2000	2500	3000
0.011	300 x 75		Lw (dB(A))	11	40											
			ΔP (Pa)	6	33.7	93										
			Lt (m)	3.1	6.1	9.2										
			Vk (m/s)	2.5	5.1	7.6										
0.014	400 x 75	300 x 100	Lw (dB(A))	5	32	49										
	200 x 150		ΔP (Pa)	2.9	16.4	45.3										
			Lt (m)	2.6	5.3	7.9										
			Vk (m/s)	2.0	4.0	6.0										
0.022	600 x 75	400 x 100	Lw (dB(A))		22	37	48	56								
	300 x 150	200 x 200	ΔP (Pa)		6	16.4	33.7	58.9								
			Lt (m)		4.3	6.5	8.7	10.8								
			Vk (m/s)		2.5	3.8	5.1	6.3								
0.029	800 x 75	500 x 100	Lw (dB(A))			29	39	47	54							
			ΔP (Pa)			8	16.4	28.7	45.3							
			Lt (m)			5.6	7.5	9.4	11.2							
			Vk (m/s)			2.9	3.8	4.8	5.7							
0.036	1000 x 75	600 x 100	Lw (dB(A))			23	33	40	46	56						
	400 x 150	300 x 200	ΔP (Pa)			4.6	9.4	16.4	25.9	53.2						
			Lt (m)			5	6.7	8.4	10.1	13.4						
			Vk (m/s)			2.3	3.1	3.9	4.6	6.2						
0.043	1200 x 75	800 x 100	Lw (dB(A))				27	34	40	50						
	500 x 150		ΔP (Pa)				6	10.4	16.4	33.7						
			Lt (m)				6.1	7.6	9.2	12.2						
			Vk (m/s)				2.6	3.2	3.9	5.2						
0.056	1000 x 100	600 x 150	Lw (dB(A))				19	26	32	41	48	53				
	500 x 200	300 x 300	ΔP (Pa)				1.7	2.9	4.6	9.4	16.4	25.8				
			Lt (m)				5.4	6.7	8.1	10.7	13.4	16.1				
			Vk (m/s)				2.0	2.5	3.0	4.0	5.0	6.0				
0.067	1200 x 100	800 x 150	Lw (dB(A))					21	26	35	41	47	53			
	600 x 200	400 x 300	ΔP (Pa)					1.8	2.9	5.9	10.4	16.4	28.6			
			Lt (m)					6.1	7.4	9.8	12.3	14.7	18.4			
			Vk (m/s)					2.1	2.5	3.3	4.1	5.0	6.2			
0.084	1000 x 150	800 x 200	Lw (dB(A))							27	33	38	45	53		
	500 x 300		ΔP (Pa)							3.4	5.9	9.4	16.4	33.6		
			Lt (m)							8.8	11	13.2	16.4	21.9		
			Vk (m/s)							2.6	3.3	4.0	5.0	6.6		
0.101	1200 x 150	1000 x 200	Lw (dB(A))							21	27	32	38	46	52	
	600 x 300	500 x 400	ΔP (Pa)							2.2	3.8	5.9	10.4	21.3	37.2	
			Lt (m)							8	10	12	15	20	25	
			Vk (m/s)							2.2	2.8	3.3	4.1	5.5	6.9	
0.148	1200 x 200		Lw (dB(A))									18	23	30	36	40
	600 x 400		ΔP (Pa)									1.6	2.7	5.6	9.8	15.4
			Lt (m)									9.9	12.4	16.5	20.7	24.8
			Vk (m/s)									2.3	2.8	3.8	4.7	5.6
0.195	1000 x 300	800 x 400	Lw (dB(A))										12	19	24	28
			ΔP (Pa)										1.1	2.2	3.9	6.1
			Lt (m)										10.8	14.4	18	21.6
			Vk (m/s)										2.1	2.8	3.6	4.3
0.234	1200 x 300		Lw (dB(A))											12	17	21
	600 x 600		ΔP (Pa)											1.4	2.5	3.9
			Lt (m)											13.1	16.4	19.7
			Vk (m/s)											2.4	3.0	3.6
0.27	1000 x 400		Lw (dB(A))											6	11	14
			ΔP (Pa)											0.8	1.5	2.3
			Lt (m)											12.2	15.3	18.4
			Vk (m/s)											2.1	2.6	3.1
0.324	1200 x 400		Lw (dB(A))												5	7
			ΔP (Pa)												0.9	1.5
			Lt (m)												14	16.8
			Vk (m/s)												2.1	2.6

Selection tables - Gridlined Wall and Wall D - Floor

SELECTION - EXHAUST - LENGTH 1 METRE

AK (M^2)	HEIGHT (MM)	AIRFLOW (M^3/H)	300	400	500	600	800	1000	1500	2000	2500	3000	3500	4000
0.034	75	Lw (dB(A))	32	39	45									
		ΔP (Pa)	5.1	9.9	16.5									
0.052	100	Lw (dB(A))		26	32	37								
		ΔP (Pa)		3.1	5.1	7.8								
0.079	150	Lw (dB(A))		13	20	25	34	40						
		ΔP (Pa)		1.2	1.9	2.9	5.7	9.5						
0.121	200	Lw (dB(A))		5	7	13	22	29	43					
		ΔP (Pa)		0.4	0.6	0.9	1.8	2.9	7.5					
0.157	250	Lw (dB(A))			5	5	15	22	36					
		ΔP (Pa)			0.3	0.5	0.9	1.5	3.9					
0.195	300	Lw (dB(A))				5	9	17	31	41				
		ΔP (Pa)				0.3	0.5	0.9	2.3	4.4				
0.232	350	Lw (dB(A))				5	5	12	27	37	45			
		ΔP (Pa)				0.2	0.3	0.6	1.5	2.9	4.8			
0.27	400	Lw (dB(A))					5	8	23	34	42			
		ΔP (Pa)					0.2	0.4	1	2	3.3			
0.32	500	Lw (dB(A))						5	19	30	39	46		
		ΔP (Pa)						0.3	0.7	1.4	2.4	3.6		
0.396	600	Lw (dB(A))							14	25	34	41	48	
		ΔP (Pa)							0.4	0.8	1.4	2.1	3	
0.553	800	Lw (dB(A))							6	18	27	35	41	47
		ΔP (Pa)							0.2	0.4	0.6	0.9	1.3	1.8

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.
Vk (m/s) = [airflow (m^3/h) / 3600] / Ak (m^2). Heights not available in Gridlined Wall D. Heights not available in Gridlined Floor.

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk^2	ΔP + 3.28 x Vk^2
Lw + 0	Lw + 10	Lw + 20

KOCT CORRECTIONS (DB) BY OCTAVE BAND

FREQUENCY (HZ)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
K oct (dB)	1	-1	0	1	-1	0	3	-2	-2	-3	-7	-8	-12	-14	-16	-18	-19	-20	-22	-23	-22

Add K oct to the table value to obtain the sound power level in dB.

SELECTION - EXHAUST

AK (M²)	L x H (MM)	L x H (MM)	AIRFLOW (M³/H)	100	200	300	400	500	600	800	1000	1200	1500	2000	2500	3000
0.01	300 x 75		Lw (dB(A))	55	68	75										
			ΔP (Pa)	6.5	32	81.4										
			Lt (m)	-1	-1	-1										
			Vk (m/s)	2.8	5.6	8.3										
0.014	400 x 75	300 x 100	Lw (dB(A))	44	58	66										
	200 x 150		ΔP (Pa)	3.4	16.5	42										
			Lt (m)	-1	-1	-1										
			Vk (m/s)	2.0	4.0	6.0										
0.02	600 x 75	400 x 100	Lw (dB(A))	28	43	52	59	64								
	300 x 150	200 x 200	ΔP (Pa)	1.3	6.5	16.5	32	53.5								
			Lt (m)	-1	-1	-1	-1	-1								
			Vk (m/s)	1.4	2.8	4.2	5.6	6.9								
0.027	800 x 75	500 x 100	Lw (dB(A))	16	33	43	50	55	59							
			ΔP (Pa)	0.7	3.4	8.5	16.5	27.6	42							
			Lt (m)	-1	-1	-1	-1	-1	-1							
			Vk (m/s)	1.0	2.1	3.1	4.1	5.1	6.2							
0.034	1000 x 75	600 x 100	Lw (dB(A))		25	35	42	48	53	55						
	400 x 150	300 x 200	ΔP (Pa)		2	5.1	9.9	16.5	25.1	48.7						
			Lt (m)		-1	-1	-1	-1	-1	-1						
			Vk (m/s)		1.6	2.5	3.3	4.1	4.9	6.5						
0.041	1200 x 75	800 x 100	Lw (dB(A))		18	29	37	43	47	55						
	500 x 150		ΔP (Pa)		1.3	3.4	6.5	10.9	16.5	32						
			Lt (m)		-1	-1	-1	-1	-1	-1						
			Vk (m/s)		1.4	2.0	2.7	3.4	4.1	5.4						
0.052	1000 x 100	600 x 150	Lw (dB(A))			21	29	35	40	48	54	60				
	500 x 200	300 x 300	ΔP (Pa)			1.6	3.1	5.1	7.8	15.2	25.3	38.5				
			Lt (m)			-1	-1	-1	-1	-1	-1	-1				
			Vk (m/s)			1.6	2.1	2.7	3.2	4.3	5.3	6.4				
0.062	1200 x 100	800 x 150	Lw (dB(A))			15	23	30	35	43	50	55	61			
	600 x 200	400 x 300	ΔP (Pa)			1	2	3.4	5.1	10	16.7	25.3	42.3			
			Lt (m)			-1	-1	-1	-1	-1	-1	-1	-1			
			Vk (m/s)			1.3	1.8	2.2	2.7	3.6	4.5	5.4	6.7			
0.079	1000 x 150	800 x 200	Lw (dB(A))				16	23	28	37	43	49	56	64		
	500 x 300		ΔP (Pa)				1.2	1.9	2.9	5.7	9.5	14.5	24.2	46.8		
			Lt (m)				-1	-1	-1	-1	-1	-1	-1	-1		
			Vk (m/s)				1.4	1.8	2.1	2.8	3.5	4.2	5.3	7.0		
0.095	1200 x 150	1000 x 200	Lw (dB(A))					17	23	32	39	44	51	60	67	
	600 x 300	500 x 400	ΔP (Pa)					1.3	1.9	3.7	6.3	9.5	15.9	30.8	51.4	
			Lt (m)					-1	-1	-1	-1	-1	-1	-1	-1	
			Vk (m/s)					1.5	1.8	2.3	2.9	3.5	4.4	5.8	7.3	
0.145	1200 x 200		Lw (dB(A))						10	20	27	34	41	51	58	64
	600 x 400		ΔP (Pa)						0.6	1.2	1.9	2.9	4.9	9.5	15.9	24.2
			Lt (m)						-1	-1	-1	-1	-1	-1	-1	-1
			Vk (m/s)						1.1	1.5	1.9	2.3	2.9	3.8	4.8	5.7
0.195	1000 x 300	800 x 400	Lw (dB(A))							12	20	26	34	44	52	59
			ΔP (Pa)							0.5	0.9	1.4	2.3	4.4	7.3	11.1
			Lt (m)							-1	-1	-1	-1	-1	-1	-1
			Vk (m/s)							1.1	1.4	1.7	2.1	2.8	3.6	4.3
0.234	1200 x 300		Lw (dB(A))								15	22	30	40	48	55
	600 x 600		ΔP (Pa)								0.6	0.9	1.5	2.9	4.8	7.3
			Lt (m)								-1	-1	-1	-1	-1	-1
			Vk (m/s)								1.2	1.4	1.8	2.4	3.0	3.6
0.27	1000 x 400		Lw (dB(A))									18	26	37	45	52
			ΔP (Pa)									0.6	1	2	3.3	5
			Lt (m)									-1	-1	-1	-1	-1
			Vk (m/s)									1.2	1.5	2.1	2.6	3.1
0.324	1200 x 400		Lw (dB(A))										22	33	41	48
			ΔP (Pa)										0.7	1.3	2.2	3.3
			Lt (m)										-1	-1	-1	-1
			Vk (m/s)										1.3	1.7	2.1	2.6

Selection tables - Gridlined Exhaust

SELECTION - EXHAUST - LENGTH 1 METRE

Ak (m^2)	L x H (mm)	Airflow (m^3/h)	100	150	200	300	400	500	600	800	1000	1500	2000	2500
0.0360	75	Lw (dB(A))	14	25	33	44	52	58	63	71				
		ΔP (Pa)	2.3	4.9	8.4	18.1	31.1	47.5	67.1	115.7				
0.0443	100	Lw (dB(A))	10	21	29	40	48	54	59	67				
		ΔP (Pa)	1.6	3.5	6	12.9	22.2	33.9	47.9	82.6				
0.0784	150	Lw (dB(A))	0	9	17	27	35	41	46	53	59	70		
		ΔP (Pa)	0.5	1.1	1.9	4.1	7.1	10.9	15.4	26.5	40.4	87.1		
0.1045	200	Lw (dB(A))	0	0	11	21	29	35	39	47	53	63	71	
		ΔP (Pa)	0.3	0.6	1.1	2.4	4.1	6.3	8.9	15.4	23.5	50.6	87.2	
0.1270	250	Lw (dB(A))	0	0	7	17	25	30	35	43	48	59	66	72
		ΔP (Pa)	0.2	0.4	0.8	1.7	2.9	4.4	6.2	10.6	16.2	35	60.3	91.9
0.1567	300	Lw (dB(A))	0	0	0	13	20	26	30	38	44	54	61	67
		ΔP (Pa)	0.1	0.3	0.5	1.1	1.9	2.9	4.1	7.1	10.9	23.5	40.5	61.8
0.1820	350	Lw (dB(A))	0	0	0	9	17	22	27	34	40	51	58	64
		ΔP (Pa)	0.1	0.2	0.4	0.8	1.4	2.2	3.1	5.4	8.2	17.7	30.5	46.5
0.2103	400	Lw (dB(A))		0	0	6	14	19	24	31	37	47	55	60
		ΔP (Pa)		0.2	0.3	0.6	1.1	1.7	2.4	4.1	6.2	13.5	23.2	35.4
0.2380	450	Lw (dB(A))			0	0	11	17	21	28	34	44	52	57
		ΔP (Pa)			0.2	0.5	0.9	1.3	1.9	3.2	4.9	10.6	18.4	28
0.2660	500	Lw (dB(A))				0	9	14	19	26	32	42	49	55
		ΔP (Pa)				0.4	0.7	1.1	1.5	2.6	4	8.6	14.9	22.7
0.3060	570	Lw (dB(A))					6	11	16	23	28	39	46	51
		ΔP (Pa)					0.5	0.8	1.2	2	3.1	6.6	11.4	17.4
0.3230	600	Lw (dB(A))					0	10	14	22	27	37	45	50
		ΔP (Pa)					0.5	0.7	1.1	1.8	2.8	6	10.3	15.7
0.3510	650	Lw (dB(A))					0	8	13	20	25	35	43	48
		ΔP (Pa)					0.4	0.6	0.9	1.6	2.4	5.1	8.8	13.4
0.3800	700	Lw (dB(A))					0	6	11	18	24	34	41	46
		ΔP (Pa)					0.4	0.5	0.8	1.3	2	4.4	7.6	11.5
0.4090	750	Lw (dB(A))					0	5	9	16	22	32	39	45
		ΔP (Pa)					0.3	0.5	0.7	1.2	1.8	3.8	6.6	10
0.4320	800	Lw (dB(A))							8	15	21	31	38	43
		ΔP (Pa)							0.6	1	1.6	3.5	5.9	9.1

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.
Vk (m/s) = [airflow (m^3/h) / 3600] / Ak (m^2)

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk^2	ΔP + 3.28 x Vk^2
Lw + 0	Lw + 10	Lw + 20

KOCT CORRECTIONS (DB) BY OCTAVE BAND

FREQUENCY (HZ)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
K oct (dB)	-5	-6	-6	-3	-2	-2	0	1	2	0	-2	-3	-5	-7	-8	-10	-12	-13	-17	-21	-23

Add K oct to the table value to obtain the sound power level in dB.

SELECTION - EXHAUST

Ak (m²)	L x H (mm)	L x H (mm)	Airflow (m³/h)	100	200	300	400	500	600	800	1000	1200	1500	2000	2500	3000
0.0084	300 x 75	200 x 100	Lw (dB(A))	43	63											
			ΔP (Pa)	35.5	131.8											
			Lt (m)	-1	-1											
			Vk (m/s)	3.5	6.9											
0.0149	400 x 75	300 x 100	Lw (dB(A))	32	51	63										
	200 x 150		ΔP (Pa)	12	44.5	96										
			Lt (m)	-1	-1	-1										
			Vk (m/s)	1.9	3.7	5.6										
0.0224	600 x 75	400 x 100	Lw (dB(A))	24	43	54	62	68								
	300 x 150	200 x 200	ΔP (Pa)	5.5	20.6	44.3	76.5	116.6								
			Lt (m)	-1	-1	-1	-1	-1								
			Vk (m/s)	1.3	2.5	3.8	5.1	6.3								
0.0249	800 x 75	500 x 100	Lw (dB(A))	21	41	52	60	66	71							
			ΔP (Pa)	4.5	16.8	36.3	62.6	95.5	134.8							
			Lt (m)	-1	-1	-1	-1	-1	-1							
			Vk (m/s)	1.1	2.2	3.3	4.4	5.6	6.7							
0.0299	1000 x 75	600 x 100	Lw (dB(A))	18	37	48	56	62	67	75						
	400 x 150	300 x 200	ΔP (Pa)	3.2	11.9	25.7	44.3	67.5	95.3	164.4						
			Lt (m)	-1	-1	-1	-1	-1	-1	-1						
			Vk (m/s)	0.9	1.9	2.8	3.7	4.6	5.6	7.4						
0.0398	1200 x 75	800 x 100	Lw (dB(A))	12	31	42	50	56	61	68						
	500 x 150		ΔP (Pa)	1.9	6.9	14.9	25.8	39.3	55.5	95.6						
			Lt (m)	-1	-1	-1	-1	-1	-1	-1						
			Vk (m/s)	0.7	1.4	2.1	2.8	3.5	4.2	5.6						
0.0443	1000 x 100	600 x 150	Lw (dB(A))	10	29	40	47	53	58	66	72					
	500 x 200	300 x 300	ΔP (Pa)	1.5	5.7	12.2	21	32.1	45.3	78.1	119.1					
			Lt (m)	-1	-1	-1	-1	-1	-1	-1	-1					
			Vk (m/s)	0.6	1.3	1.9	2.5	3.2	3.8	5.1	6.3					
0.0531	1200 x 100	800 x 150	Lw (dB(A))		25	36	43	49	54	62	68	73				
	600 x 200	400 x 300	ΔP (Pa)		4	8.7	14.9	22.8	32.1	55.4	84.5	119.4				
			Lt (m)		-1	-1	-1	-1	-1	-1	-1	-1				
			Vk (m/s)		1.0	1.6	2.1	2.6	3.1	4.2	5.2	6.3				
0.0784	1000 x 150	800 x 200	Lw (dB(A))		17	27	35	41	46	53	59	64	70	78		
	500 x 300		ΔP (Pa)		1.9	4.1	7.1	10.9	15.4	26.5	40.4	57.1	87.1	150.2		
			Lt (m)		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
			Vk (m/s)		0.7	1.1	1.4	1.8	2.1	2.8	3.6	4.3	5.3	7.1		
0.0940	1200 x 150	1000 x 200	Lw (dB(A))			23	31	37	42	49	55	60	66	73		
	600 x 300	500 x 400	ΔP (Pa)			2.9	5.1	7.7	10.9	18.8	28.7	40.5	61.8	106.5		
			Lt (m)			-1	-1	-1	-1	-1	-1	-1	-1	-1		
			Vk (m/s)			0.9	1.2	1.5	1.8	2.4	3.0	3.5	4.4	5.9		
0.1254	1200 x 200		Lw (dB(A))				25	31	35	43	49	53	59	67	72	
	600 x 400		ΔP (Pa)				2.9	4.5	6.3	10.9	16.6	23.5	35.8	61.7	94.2	
			Lt (m)				-1	-1	-1	-1	-1	-1	-1	-1	-1	
			Vk (m/s)				0.9	1.1	1.3	1.8	2.2	2.7	3.3	4.4	5.6	
0.1567	1000 x 300	800 x 400	Lw (dB(A))					26	30	38	44	48	54	61	67	72
			ΔP (Pa)					2.9	4.1	7.1	10.9	15.4	23.5	40.5	61.8	87.2
			Lt (m)					-1	-1	-1	-1	-1	-1	-1	-1	-1
			Vk (m/s)					0.9	1.1	1.4	1.8	2.1	2.7	3.5	4.4	5.3
0.1708	570 x 570		Lw (dB(A))													
			ΔP (Pa)					2.5	3.5	6.1	9.3	13.1	20.0	34.4	52.5	74.1
			Lt (m)					-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
			Vk (m/s)					0.8	1.0	1.3	1.6	1.9	2.4	3.2	4.1	4.9
0.1881	1200 x 300		Lw (dB(A))					22	26	34	39	44	50	57	63	67
	600 x 600		ΔP (Pa)					2.1	2.9	5.1	7.7	10.9	16.6	28.7	43.7	61.7
			Lt (m)					-1	-1	-1	-1	-1	-1	-1	-1	-1
			Vk (m/s)					0.7	0.9	1.2	1.5	1.8	2.2	3.0	3.7	4.4
0.2103	1000 x 400		Lw (dB(A))					19	24	31	37	42	47	55	60	65
			ΔP (Pa)					1.7	2.4	4.1	6.2	8.8	13.5	23.2	35.4	50
			Lt (m)					-1	-1	-1	-1	-1	-1	-1	-1	-1
			Vk (m/s)					0.7	0.8	1.1	1.3	1.6	2.0	2.6	3.3	4.0
0.2507	1200 x 400		Lw (dB(A))							27	33	38	43	50	56	61
			ΔP (Pa)							2.9	4.5	6.3	9.6	16.6	25.4	35.8
			Lt (m)							-1	-1	-1	-1	-1	-1	-1
			Vk (m/s)							0.9	1.1	1.3	1.7	2.2	2.8	3.3

SC 121 - SC 125 series - Steel

SC 121 terminal

SC 125 terminal

USE

- Exhaust.
- Wall-mounted.

CONSTRUCTION

- SC 121: single deflection terminal (exhaust) with fixed vanes at 40° incline, pitch 20 mm.
- SC 125: perforated sheet grid with 45% of free air passage.
- Material: steel.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.
- F3: concealed attachment using friction clips.

For more information, see page 99.

ACCESSORIES

- SGS damper (galvanised steel) and AGB damper (rough aluminium) with counter-rotary action. Fitted to terminal with S clips (supplied).
- Galvanised steel plate F4 mounting frame.
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.

For more information on accessories, see pages 98 and 101.

STANDARD DIMENSIONS

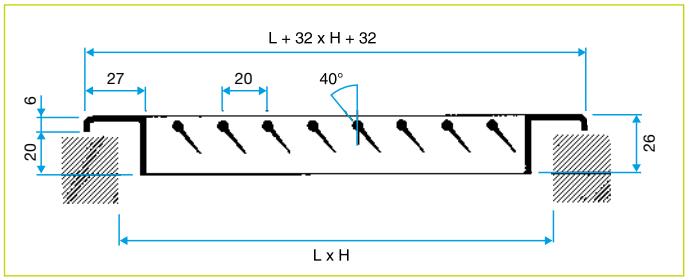
- Dimensions from 75 x 75 to 1200 x 600 mm with increments of 25 mm in length.

For further information refer to the Range pages below.

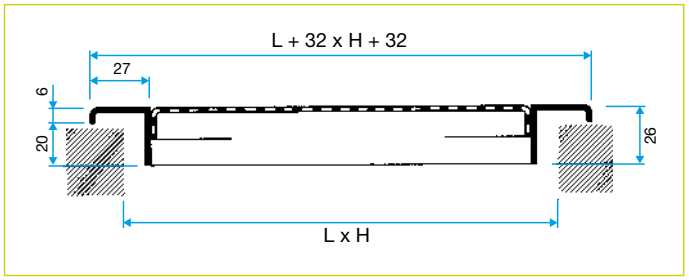
TECHNICAL CHARACTERISTICS

- See selection tables on following pages.

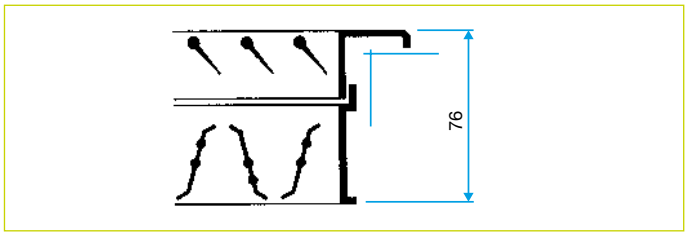
DIMENSIONS



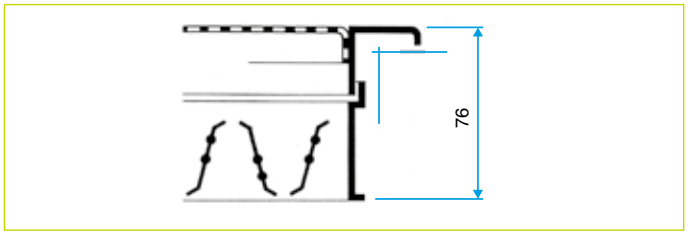
SC 121 - terminal only



SC 125 - terminal only



SC 121 - terminal with AGB or SGS damper fitted



SC 125 - terminal with AGB or SGS damper fitted

AC 121 - AC 123 - AC 124 series - Aluminium

AC 121 terminal

AC 123 terminal

USE

- Exhaust.
- Wall-mounted.

CONSTRUCTION

- AC 121: single deflection terminal with fixed horizontal vanes at 40° incline, pitch 20 mm.
- AC 123: 15 x 15 mm square mesh terminal with free air passage of 90%.
- AC 124: 15 x 15 mm square mesh terminal with 45° incline, free air passage of 90%.
- Material: aluminium.

FINISH

- Anodised aluminium, natural satin hue.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.
- F3: concealed attachment using friction clips.
- F5: concealed clasp attachment (except AC 121).

For more information, see page 99.

ACCESSORIES

- SGS damper with counter-rotary action, made of galvanised steel plate with natural hue. Fitted to terminal with S clips (supplied).
- AGB damper with counter-rotary action, made of rough aluminium. Fitted to terminal with S clips (supplied).
- Galvanised steel F4 or F6 mounting frame.
- Galvanised steel connection plenum with MT rear branch connection or ME side connection.

For more information on accessories, see pages 98 to 101.

STANDARD DIMENSIONS

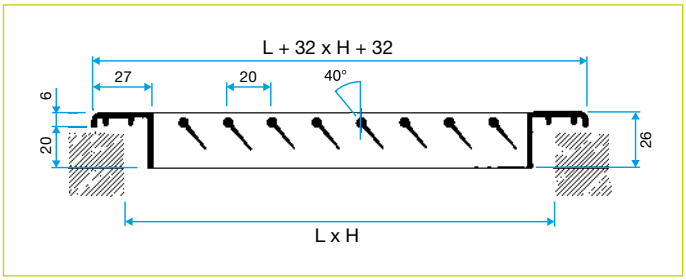
- Dimensions from 75 x 75 to 1200 x 600 mm with increments of 25 mm in length.
- AC 124: dimensions from 150 x 150 to 1200 x 600 mm.

For further information refer to the Range pages below.

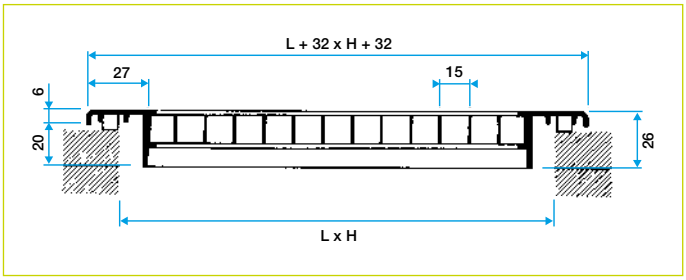
TECHNICAL DETAILS

- See selection tables on following pages.

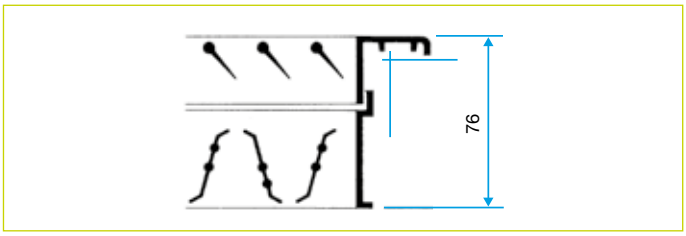
DIMENSIONS



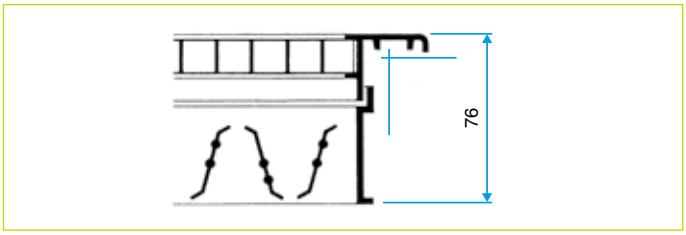
AC 121 - terminal only



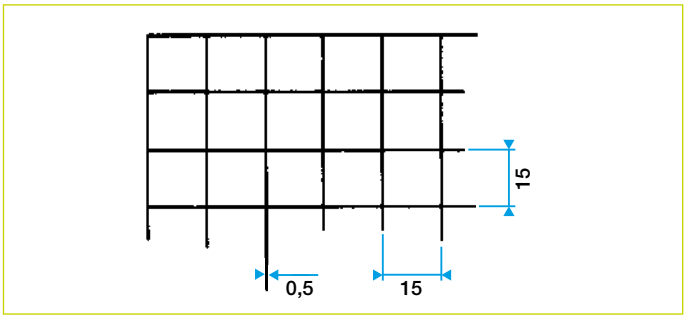
AC 123 or AC 124 - terminal only



AC 121 - terminal with AGB or SGS damper fitted



AC 123 or AC 124 - terminal with AGB or SGS damper fitted



AC 123 or AC 124 inner core

AO 123 - AU 124 - AO 251 - SC 370 series - Aluminium or steel

AU 124 Z terminal

AO 251 terminal

SC 370 terminal

USE

- Special grid terminals for suspended ceiling panels.
- Exhaust.
- Ceiling installation - replacing a 600 x 600 mm suspended ceiling panel.

CONSTRUCTION

- AO 123: square, straight 15 x 15 mm grid without frame.
- AU 123: square, straight 15 x 15 mm grid with 5 mm slim frame.
- AU 124: square, angled 15 x 15 mm grid at 45° angle with 5 mm slim frame.
- AO 251: fixed-vane terminal at 45° without frame.
- SC 370: perforated plate - 45% free air passage without frame.
- AO and AU: aluminium.
- SC: steel.

FINISH

- AO 123 Z: aluminium with epoxy paint finish, RAL 9003 white 30% matt.
- AU 123 Z: aluminium with epoxy paint finish, RAL 9003 white 30% matt.
- AU 124 Z: aluminium with epoxy paint finish, RAL 9003 white 30% matt.
- AO 251: aluminium with epoxy paint finish, RAL 9003 white 30% matt.
- SC 370: steel with epoxy paint finish, RAL 9003 white 30% matt.
- AO 123 and AU 124 extended range : anodised aluminium with natural hue.
- Paint finish from RAL colour chart. View the list of available colours in the appendix (except AO 123).

ATTACHMENT

- Gravity mounting on 'T' pieces in suspended ceiling.

ACCESSORIES

- Galvanised steel connection plenum with rear (RT) or side (RE) branch connection.
- G3 flat filter, W3 type (woven on metal thread) with M1 fire rating for SC370.

STANDARD DIMENSIONS

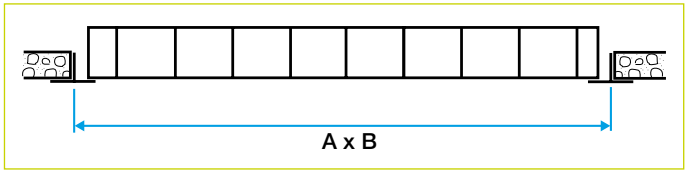
- Range of dimensions suited to standard ceiling panels 600 x 600 mm and 1200 x 600 mm (except AU 124).
- Dimensions range from 100 x 100 to 1200 x 600 mm with increments of 25 mm in length & height for the extended range.

For further information refer to the Range pages below.

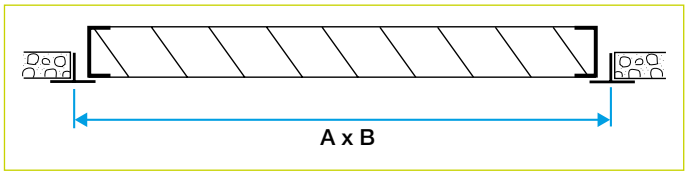
TECHNICAL DETAILS

- See selection tables on following pages.

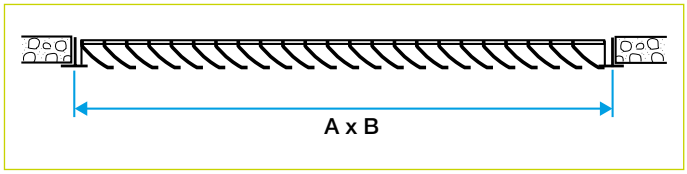
DIMENSIONS



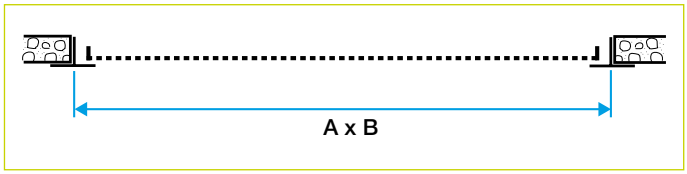
AO 123 terminal



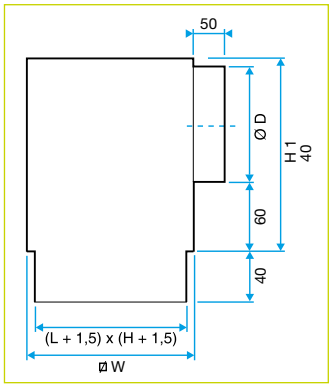
AU 124 terminal



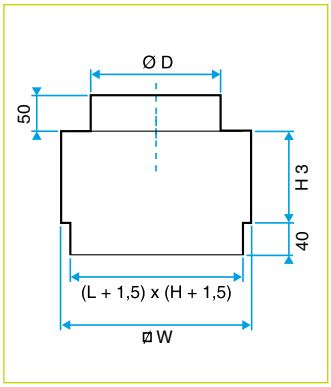
AO 251 terminal



SC 370 terminal



RE plenum



RT plenum

DIMENSIONS

A x B (MM)	W (MM)	H1 (MM)	H3 (MM)	ØD (MM)
600 x 600	598 x 598	300	120	250

Other diameters: please contact us.
Minimum quantities may be required.

AC 161 - AC 163 series - Aluminium

AC 161 terminal

AC 163 terminal

USE

- Opening panel with filter holder.
- Exhaust.
- Wall-mounted.

CONSTRUCTION

- AC 161: single deflection terminal with horizontal fixed vanes, 40° incline, 20 mm pitch. Housing for 15 mm thick filter. Front panel mounted on stainless steel hinges and closes with screw button. 180° opening pitch to enable easy filter replacement.
- AC 163: 15 x 15 mm square grid terminal with 90% free air passage. Housing for 15 mm thick filter. Front panel mounted on stainless steel hinges and closes with screw button. 180° opening pitch to enable easy filter replacement.
- W: G3 filter, M1 fire rating 15 mm thick available as option.

FINISH

- Anodised aluminium, natural satin or epoxy paint finish RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours on the RAL colour index.

ATTACHMENT

- F0: none.
- F1: visible screw attachment to frame.

For more information, see page 99.

ACCESSORIES

- Galvanised steel connection plenum with RT type rear branch connection.
- G3 flat filter, W3 type (woven on metal thread) with M1 fire rating or W2 filter (cut-out filter media).

STANDARD DIMENSIONS

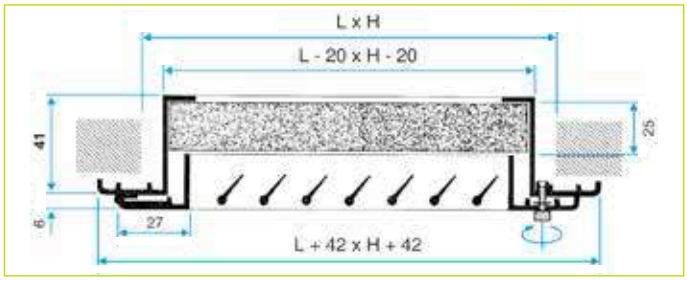
- AC 161: dimensions from 172 x 122 to 1222 x 622 in increments of 25 mm.

For further information refer to the Range pages below.

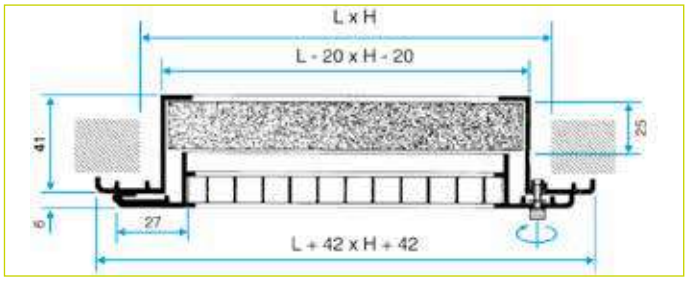
TECHNICAL DETAILS

- See selection tables on following pages.

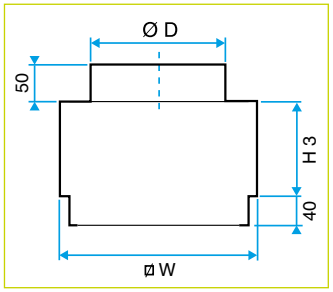
DIMENSIONS



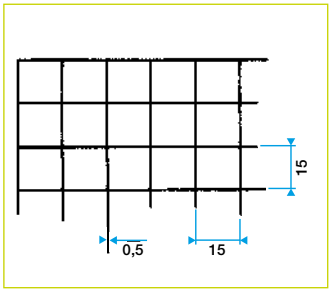
AC 161 W - grid terminal with filter



AC 163 W - grid terminal with filter



RT plenum



AC 163 core

DIMENSIONS OF STANDARD RANGE

L x H (MM)	STANDARD FILTER (MM)	W (MM)	H3 (MM)	ØD (MM)
622 x 322	596 x 296	606 x 306	120	250
522 x 422	496 x 396	506 x 406	120	355
622 x 422	596 x 396	606 x 406	120	355
522 x 522	496 x 496	506 x 506	120	400
622 x 522	596 x 496	606 x 606	120	400

AG 637 - AC 174 series - Opening grid terminals for ceiling panels - Aluminium

AG 637 W grid terminal

AC 174 W grid terminal

USE

- Special grid terminals with filter holder for suspended ceiling panels.
- Exhaust.
- For installation in standard 600 x 600 mm ceiling panels or on walls.
- Compatible with non-removable plaster or BA13 plasterboard ceilings.

CONSTRUCTION

- AG 637: fixed vanes with 45° incline.
- AC 174: 15 x 15 mm square grid with 45° incline.
- Hinged opening for easy access to filter.
- W: G3 filter, M1 fire rating 20 mm thick available as option.
- Made of aluminium.

FINISH

- Epoxy paint RAL 9003 white 30% matt or anodised aluminium, natural finish (AG 637 only).
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: gravity mounting on T frame for suspended ceiling and self-tapping screws in connection plenum.
- F1: visible screw attachment in frame and self-tapping screws in connection plenum (for non-removable ceilings).

For more information, see page 99.

ACCESSORIES

- Galvanised steel connection plenum with RE type side branch connection.
- G3 flat filter, W3 type (woven on metal thread) with M1 fire rating.

STANDARD DIMENSIONS

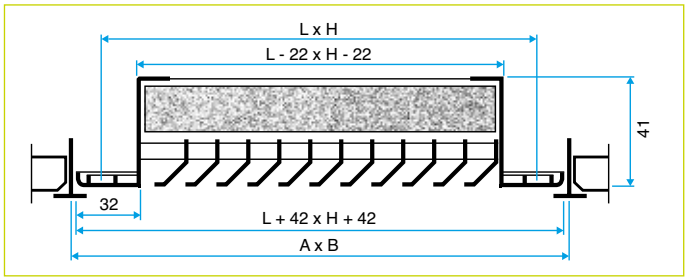
- Standard dimensions suited to suspended ceiling panels or plaster ceilings.
- AG 637: dimensions from 300 x 300 to 1200 x 600 in increments of 25 mm.
- AC 174: dimensions from 200 x 200 to 600 x 600 in increments of 25 mm (638 x 638 suited to standard 675 x 675 ceiling panels).

For further information refer to the Range pages below.

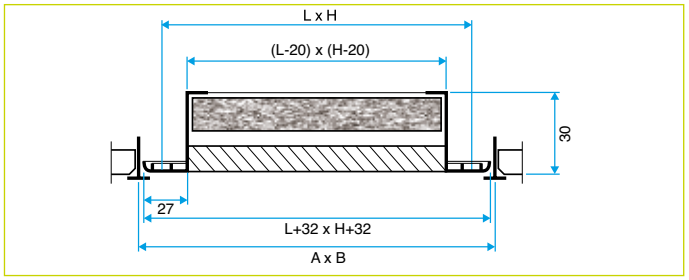
TECHNICAL DETAILS

- See selection tables on following pages.

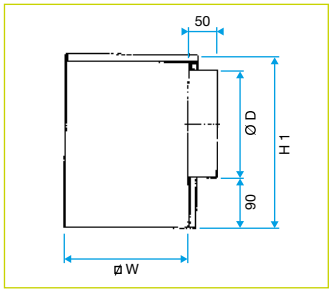
DIMENSIONS



AG 637 W - grid terminal with filter



AC 174 W - grid terminal with filter



RE plenum

DIMENSIONS OF AG 637 STANDARD RANGE

A x B*	L x H (MM)	STANDARD FILTER (MM)	D (MM)	W (MM)	H1 (MM)
600 x 300	554 x 254	531 x 231	250	537 x 237	370
600 x 600	554 x 554	531 x 531	250	537 x 537	370
625 x 625	579 x 579	556 x 556	250	562 x 562	370
675 x 675	629 x 629	606 x 606	250	612 x 612	370

DIMENSIONS OF AC 174 STANDARD RANGE

A x B*	L x H (MM)	STANDARD FILTER (MM)	D (MM)	W (MM)	H1 (MM)
600 x 300	563 x 263	531 x 251	250	550 x 250	370
600 x 600	563 x 563	531 x 551	250	550 x 550	370
-	400 x 200	388 x 188	250	385 x 185	370
-	500 x 500	488 x 488	250	485 x 485	370
625 x 625	588 x 588	556 x 576	250	575 x 575	370
675 x 675	638 x 638	606 x 626	250	625 x 625	370

121 - 123 - 124 - 125 - 251 - 370 series

STANDARD RANGE

DIMENSIONS (MM)	WHITE PERFORATED PLATE SC 370	WHITE PERFORATED PLATE + FILTER SC 370 W	SPARE FILTER W3	WHITE MESH GRID AO 123 Z	WHITE MESH GRID AU 123 Z	WHITE MESH GRID AU 124 Z	WHITE VANE GRID AO 251 Z	PLENUM WITH SIDE CONNECTION RE 123
200 x 100								
300 x 150								
400 x 200								
300 x 300								
600 x 600	11050669	11050670	11053499	11050661	11050725	11050727	11050668	11053360
1200 x 600				11050662				

ATTACHMENT	FINISH
• SC models: concealed friction clip attachment. • AO and AU: gravity mounted on T frames in ceiling.	• SC model: epoxy paint RAL 9003. • AO and AU models: epoxy paint RAL 9003 matt 30%.

RANGE WITH CHOICE OF OPTIONS

TYPE	TITLE	CODE	TYPE	TITLE	CODE
Steel fixed vanes RAL 9003	SC 121	11002024	**Anodised aluminium square inclined grid**	AU 124	11002606
Perforated steel plate RAL 9003	SC 125	11002025	**Perforated plate**	SC370	21081039
Anodised aluminium square grid core	AO 123	11002008	**Plenum with side connection**	ME	11003435
Anodised aluminium fixed vanes	AC 121	11002401	**Plenum with rear connection**	MT	11003434
Anodised aluminium square grid	AC 123	11002601	**F4 mounting frame**	F4	11003435
Anodised aluminium square inclined grid	AC 124	11002602	**F6 mounting frame**	F6	11002512

RANGE WITH CHOICE OF OPTIONS - SIDE CONNECTION PLENUMS FOR 600X600 CEILING PANELS

DIMENSIONS (MM)	TITLE	CODE	DIMENSIONS (MM)	TITLE	CODE
600 x 600	Plenum with side connection RE	11003436	600x600	Plenum with rear connection RT	11003437

DIMENSIONS AVAILABLE

H / L (MM)	200	250	300	400	450	500	600	700	800	1000	1200
100	•	x	x	x	x	x	x	x	x	x	x
150	x	x	•	x	x	x	x	x	x	x	x
200	x	x	x	•	x	x	•	x	x	x	x
250		x	x	x	x	x	x	x	x	x	x
300			•	x	x	•	•	x	•	x	x
400				x	x	x	•	x	x	x	x
450					x	x	x	x	x	x	x
500						x	x	x	x	x	x
600							•	x	x	•	•

• Dimensions of standard range.

AVAILABLE OPTIONS

ATTACHMENT	FINISH
• F0: none • F1: visible screw attachment in frame (except for AO and AU models). • F3: concealed friction clip attachment (except for AO and AU models). • F5: concealed clasp attachment (only SC 125 and AC 123-124).	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix. • Galvanised steel with natural finish.

ACCESSORIES PROPOSED

- SGS and AGB dampers: see p.101.
- F4 and F6 mounting frames: see p.101.
- MT and ME plenums: see p.101.
- W3 replacement filter.

161 - 163 series

FILTER

DIMENSIONS (MM)	SPARE FILTER W3 CODE
622 x 322	11053501
522 x 422	11053502
622 x 422	11053504
522 x 522	11053503
622 x 522	11053505

RANGE WITH CHOICE OF OPTIONS

TYPE	TITLE	CODE	TYPE	TITLE	CODE
Anodised aluminium fixed vanes with filter	AC 161 W	11002011	**Anodised aluminium square mesh with filter**	AC 163 W	11002013
Spare filter	W 2	11002031	**RT plenum top connection**	RT	11003437

Note: As a replacement filter you could also use the W3 (woven on metal thread) code 11002030 with dimensions (L-7) x (H+8).

OPERATIONAL DIMENSIONS

H / L (MM)	322	372	422	472	522	572	622	722	822	1022	1222
322	x	x	x	x	x	x	x	x	x	x	x
372		x	x	x	x	x	•	x	x	x	x
422			x	x	•	x	•	x	x	x	x
472				x	x	x	x	x	x	x	x
522					•	x	•	x	x	x	x
572						x	x	x	x	x	x
622							x	x	x	x	x

• Dimensions of standard range.

AVAILABLE OPTIONS

ATTACHMENT	FINISH
• F0: none. • F1: concealed screw attachment in filter housing.	• Anodised with natural satin hue. • Epoxy paint finish from RAL colour chart (all models). View the list of available colours in the appendix.

ACCESSORIES PROPOSED

- RT plenums.
- W3 or W2 spare filter.

174 - 637 series

STANDARD RANGE FOR SUSPENDED CEILINGS

DIMENSIONS (MM)		WHITE VANE GRID AG 637 WZ F0	PLENUM WITH SIDE CONNECTION RE 637	TERMINAL WITH 45° GRID AC 174 WZ F0	PLENUM WITH SIDE CONNECTION RE 174	SPARE FILTER FOR AG 637 W3
L x H	A x B	CODE	CODE	CODE	CODE	CODE
554 x 254	600 x 300	11050682	11053138	-	11053380	11053515
563 x 263	600 x 300	-	-	11050742	-	11002269
554 x 554	600 x 600	11050681	11053139	-	-	11053514
563 x 563	600 x 600	-	-	11050743	11053378	11002269

ATTACHMENT	FINISH	FILTER
• F0: concealed gravity mounting on ceiling framework.	• Epoxy paint RAL 9003 30% matt.	• G3 filter included.

STANDARD RANGE FOR NON-REMOVABLE CEILINGS OR WALLS

DIMENSIONS (MM)	TERMINAL WITH 45° GRID AC 174 WZ F1	SPARE FILTER W3	PLENUM WITH REAR CONNECTION RT F3	PLENUM WITH SIDE CONNECTION RE F3
	CODE	CODE	CODE	CODE
500 x 500	11050741	11053518	11003437	11003436
400 x 200	11050740	11053517	11053465	11053713

ATTACHMENT	FINISH	FILTER
• F1: visible screw attachment in frame.	• Epoxy paint RAL 9003 30% matt.	• G3 filter included.

RANGE WITH CHOICE OF OPTIONS

TYPE	TITLE	CODE	TYPE	TITLE	CODE
Anodised aluminium square grid	AC 174	11002037	Anodised aluminium fixed vanes	AG 637	11002035
Spare filter for AC 174	W3	11002269	Spare filter for AG 637	W3	11002030
RE plenum - side connection*	RE	11003436	RT plenum top connection	RT	11003437

OPERATIONAL DIMENSIONS

H / L (MM)	300	350	400	450	500	550	554* OR 563*	700	800	1000	1200
300	x	x	x	x	x	x	x	x	x	x	x
350		x	x	x	x	x	•	x	x	x	x
400			x	x	x	x	x	x	x	x	x
450				x	x	x	x	x	x	x	x
500					•	x	x	x	x	x	x
550						x	x	x	x	x	x
554* or 563*							•	x	x	x	x

- Dimensions of standard range.
- Dimensions suited to 600 x 600 mm ceiling panels.

AVAILABLE OPTIONS

ATTACHMENT	FINISH	FILTER
• F0: none. • F1: visible attachment with screws in frame.	• Anodised natural satin finish (AG 637 only). • Epoxy paint finish from RAL colour chart (all models). View the list of available colours in the appendix.	• G3 filter with M1 fire rating.

ACCESSORIES PROPOSED

- RE 637 and RE 174 plenums.
- W3 replacement filter.

121 - 123 - 124 - 161 - 163 - 174 series

SELECTION - EXHAUST FOR 121 - 161 SERIES

AK (M²)	L X H (MM)		QV (M³/H)															
			150		200		300		400		500		700		900		1200		1500		3000		5000	
0.009	200 x 100		30	90																	Lw	Lt
			4.2	35																	Vk	Pa
0.014	300 x 100		21	41	32	90																
	200 x 150		2.8	15	4.2	35																
0.018	400 x 100	200 x 200	-	16	24	41	31	70														
	300 x 150		1.9	7	2.9	16	3.7	27														
0.027	600 x 100	300 x 200			-	16	23	32	28	50												
	400 x 150				1.9	7	2.5	12	3.1	20												
0.036	800 x 100	400 x 200							22	28	32	63										
	500 x 150								2.3	10	3.5	24										
0.045	1000 x 100	500 x 200							-	14	27	37	35	74								
	600 x 150	300 x 300							1.8	6.5	2.7	15	3.8	28								
0.054	1200 x 100	600 x 200									23	25	30	47	40	104						
	800 x 150	400 x 300									2.2	10	3.0	18	4.5	40						
0.068	1000 x 150	500 x 300									-	13	24	25	34	59						
	800 x 200	400 x 400									1.6	5	2.2	10	3.4	22						
0.081	1200 x 150												-	14	30	37	37	70				
	600 x 300												1.8	7	2.7	15	3.7	26				
0.090	1000 x 200	622 x 322											-	13	26	29	34	53				
	500 x 400	522 x 422											1.6	5	2.4	11	3.2	20				
0.108	1200 x 200	622 x 422													24	22	31	40	41	86		
	800 x 300	522 x 522													2.1	9	2.8	15	4.1	33		
0.135	1000 x 300	600 x 600													-	13	26	25	36	53	42	86
	800 x 400	622 x 522													1.6	5	2.2	10	3.2	20	4.1	33
0.180	1000 x 400																		33	40	40	70
	800 x 500																		2.8	14	3.7	26
0.216	1200 x 400																		26	21	33	35	39	57
																			2.0	8	2.6	13	3.3	22
0.270	1200 x 500	1000 x 600	Lw	Lt															20	13	28	22	34	32
			Vk	Pa															1.6	5	2.1	9	2.5	13

SELECTION - EXHAUST FOR 123 - 163 - 124 - 174 SERIES

AK (M²)	L X H (MM)		QV (M³/H)																			
			200		300		400		500		750		1000		1500		2000		3000		4000		5000	
0.013	200 x 100		21	67																			Lw	Lt
			4.2	11																			Vk	Pa
0.020	300 x 100		12	30	23	67																		
	200 x 150		2.8	5	4.2	11																		
0.030	400 x 100	200 x 200	-	16	15	32	22	52																
	300 x 150		1.9	2	2.9	5	3.7	8																
0.045	600 x 100	300 x 200			-	16	14	24	19	37														
	400 x 150				1.9	2	2.5	4	3.1	6														
0.060	800 x 100	400 x 200							13	20	23	46												
	500 x 150								2.3	3	3.5	7												
0.075	1000 x 100	500 x 200							-	12	18	28	26	54										
	600 x 150	300 x 300							1.8	2	2.7	5	3.8	8										
0.093	1200 x 100	600 x 200									-	18	22	34	31	76								
	800 x 150	400 x 300									2.2	3	3.0	5	4.5	12								
0.125	1000 x 150	500 x 300									-	10	15	18	25	44								
	800 x 200	400 x 400									1.6	1.5	2.2	3	3.4	7								
0.150	1200 x 150												-	12	21	28	28	52						
	600 x 300												1.8	2	2.7	5	3.7	8						
0.175	1000 x 200	622 x 322											-	10	17	21	25	39						
	500 x 400	522 x 422											1.6	1.5	2.4	3	3.2	6						
0.200	1200 x 200	600 x 400													15	16	22	30	32	64				
	800 x 300	522 x 522													2.1	2	2.8	5	4.1	10				
0.260	1000 x 300	622 x 422													-	10	17	18	27	39	33	64		
	800 x 400	522 x 522													1.6	1.5	2.2	3	3.2	6	4.1	10		
0.350	1000 x 400	622 x 522																	24	30	31	52		
	800 x 500	600 x 600																	2.8	5	3.7	8		
0.420	1200 x 400																		17	15	24	25	29	42
																			2.0	2	2.6	4	3.3	7
0.530	1200 x 500	1000 x 600	Lw	Lt															11	10	19	17	25	24
			Vk	Pa															1.6	1.5	2.1	3	2.5	4

Corrections for 124 - 174 series	
Pa x3 (excluding filter)	Lw + 1

The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted on terminals with a "perfect" plenum in compliance with standard EN 12238.
Pa = pressure drop on terminal without filter. Pa2 = pressure drop with G3 filter included.

125 - 370 - 637 series

SELECTION - EXHAUST FOR 125 - 370 SERIES

AK (M²)	L X H (MM)		QV (M³/H)																	
			200		300		400		500		750		1000		1500		2000		3000		4000		5000	
0.009	200 x 100		31	-																		Lw	Lt
			4.2	42																		Vk	Pa
0.014	300 x 100		21	-	33	-																	
	200 x 150		2.8	18	4.2	42																	
0.018	400 x 100	200 x 200	-	-	24	-	32	-															
	300 x 150		1.9	8	2.9	19	3.7	32															
0.027	600 x 100	300 x 200			-	-	24	-	29	-													
	400 x 150				1.9	8	2.5	14	3.1	24													
0.036	800 x 100	400 x 200							23	-	33	-											
	500 x 150								2.3	12	3.5	29											
0.045	1000 x 100	500 x 200							-	-	28	-	36	-									
	600 x 150	300 x 300							1.8	8	2.7	18	3.8	34									
0.054	1200 x 100	600 x 200									24	-	31	-	41	-							
	800 x 150	400 x 300									2.2	12	3.0	22	4.5	48							
0.068	1000 x 150	500 x 300									-	-	24	-	35	-							
	800 x 200	400 x 400									1.6	6	2.2	12	3.4	27							
0.081	1200 x 150												-	-	31	-	38	-					
	600 x 300												1.8	8	2.7	18	3.7	31					
0.090	1000 x 200												-	-	27	-	35	-					
	500 x 400												1.6	6	2.4	13	3.2	24					
0.108	1200 x 200	600 x 400													25	-	32	-	42	-			
	800 x 300	500 x 500													2.1	11	2.8	18	4.1	40			
0.135	1000 x 300														-	-	27	-	47	-	43	-	
	800 x 400														1.6	6	2.2	12	3.2	24	4.1	40	
0.180	1000 x 400	600 x 600																	34	-	41	-	
	800 x 500	(SC 370)																	2.8	17	3.7	31	
0.216	1200 x 400																		27	-	33	-	40	-
	1000 x 400																		2.0	10	2.6	16	3.3	26
0.270	1200 x 500		Lw	Lt															21	-	28	-	35	-
			Vk	Pa															1.6	6	2.1	11	3.3	22

The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted on terminals with a "perfect" plenum in compliance with standard EN 12238.

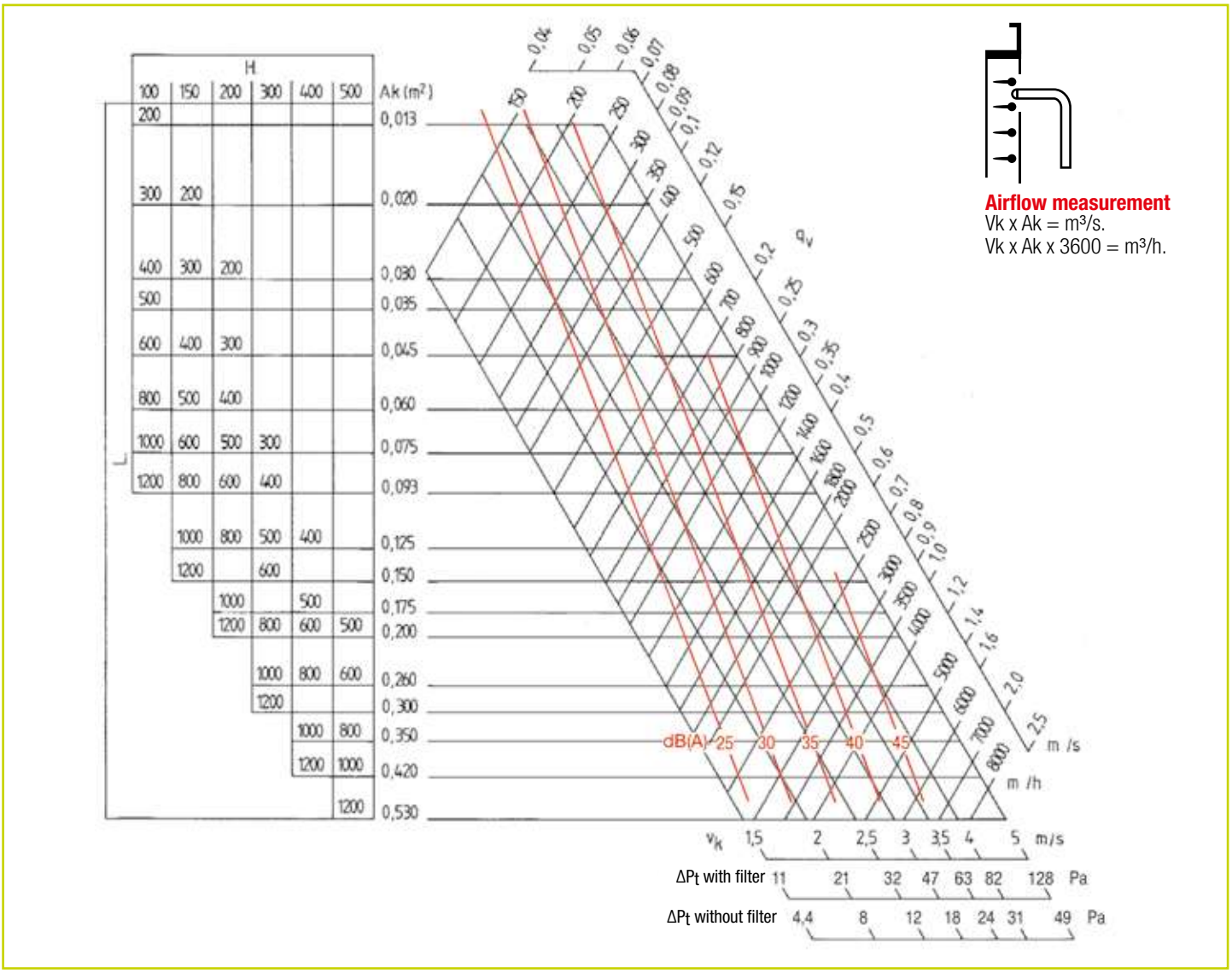
SELECTION - EXHAUST FOR 637 SERIES

AK (M²)	L X H (MM)	QV (M³/H)													
		800		1200		1600		2000		2500		3000		4000	
0.15	554 x 254	31	35	41	80									Lw	Lt
		1.5	13	2.5	30									Vk	Pa
0.30	554 x 554	-	9	30	20	38	39	43	61	48	95				
		0.8	3	1.3	7	1.5	17	1.8	23	2.3	30				
0.38	628 x 628	Lw	Pa2	35	13	39	24	42	30	47	64	51	92		
		Vk	Pa	1	6	1.2	11	1.5	18	2	32	2.5	50		

The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted on terminals with a "perfect" plenum in compliance with standard EN 12238.
Pa = pressure drop on terminal without filter. Pa2 = pressure drop with G3 filter included.

121 - 161 series - Exhaust

AIR SUPPLY WITH CEILING EFFECT



Airflow measurement
Vk x Ak = m³/s.
Vk x Ak x 3600 = m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR 125 SERIES

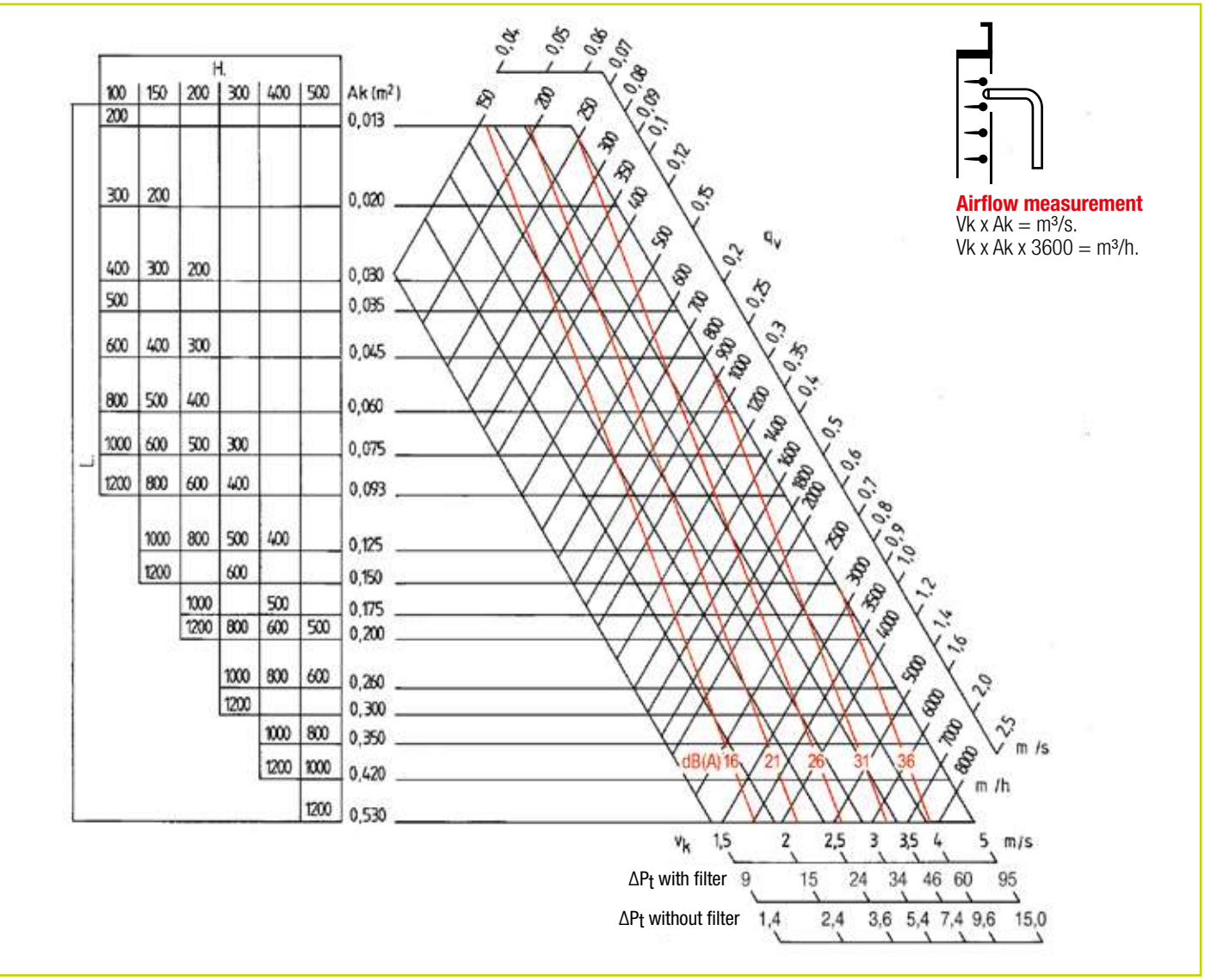
ΔPt	Lw
ΔPt x 1.20	Lw + 1

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk^2	ΔP + 3.28 x Vk^2
Lw + 0	Lw + 10	Lw + 20

123 - 163 series - Exhaust

AIR SUPPLY WITH CEILING EFFECT



Airflow measurement
Vk x Ak = m³/s.
Vk x Ak x 3600 = m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR SERIES 124 - 174

ΔPt	Lw
ΔPt x 3	Lw + 1

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk^2	ΔP + 3.28 x Vk^2
Lw + 0	Lw + 10	Lw + 20

AC 181 series - Aluminium

AC 181 terminal

USE

- Air transfer from one room to another.
- Confidentiality function.
- Positioned on partition, mainly as door vent.

CONSTRUCTION

- Horizontal v-shape vanes overlapping frame. Installation on thin partitions, max. 55 mm (doors or partition walls).

FINISH

- Anodised aluminium, natural satin hue.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible screw attachment in frame.

For more information, see page 99.

ACCESSORIES

- No accessories available.

STANDARD DIMENSIONS

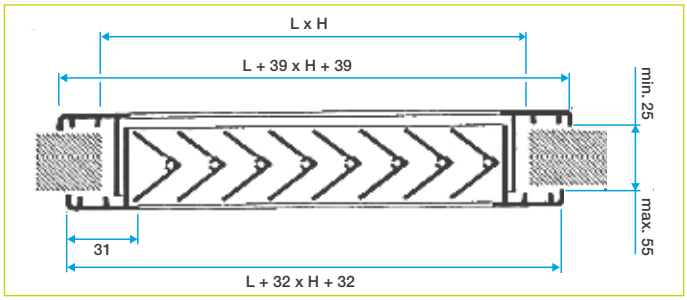
- Dimensions range from 200 x 65 to 1200 x 600 mm with increments of 25 mm in length & 20 mm in height.

For further information refer to the Range pages below.

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



AC 181

181 series

STANDARD RANGE

DIMENSIONS (MM)	AC 181 TRANSFER TERMINAL
200 x 100	11050687
300 x 150	11050688
400 x 200	11050689
600 x 200	11050690
500 x 300	11050691
600 x 300	11050692
600 x 400	11050693

ATTACHMENT	FINISH
• Visible with screws in frame.	• Anodised aluminium, natural satin hue.

RANGE WITH CHOICE OF OPTIONS

TRANSFER TERMINAL	CODE
AC 181	11002016

DIMENSIONS AVAILABLE

H / L (MM)	322	372	422	472	522	572	622	722	822	1022	1222
105	x	x	x	x	x	x	x	x	x	x	x
165	x	x	x	x	x	x	x	x	x	x	•
205	x	x	x	x	x	x	x	x	x	x	x
265		x	x	x	x	x	x	x	x	x	x
305			x	x	x	x	x	x	x	x	x
405				x	x	x	x	x	x	x	x
465					x	x	x	x	x	x	x
505						x	x	x	x	x	x
565							x	x	x	x	x

AVAILABLE OPTIONS

ATTACHMENT	FINISH
• F0: none. • F1: concealed screw attachment in filter housing.	• Anodised with natural satin hue. • Epoxy paint finish from RAL colour chart (all models). View the list of available colours in the appendix.

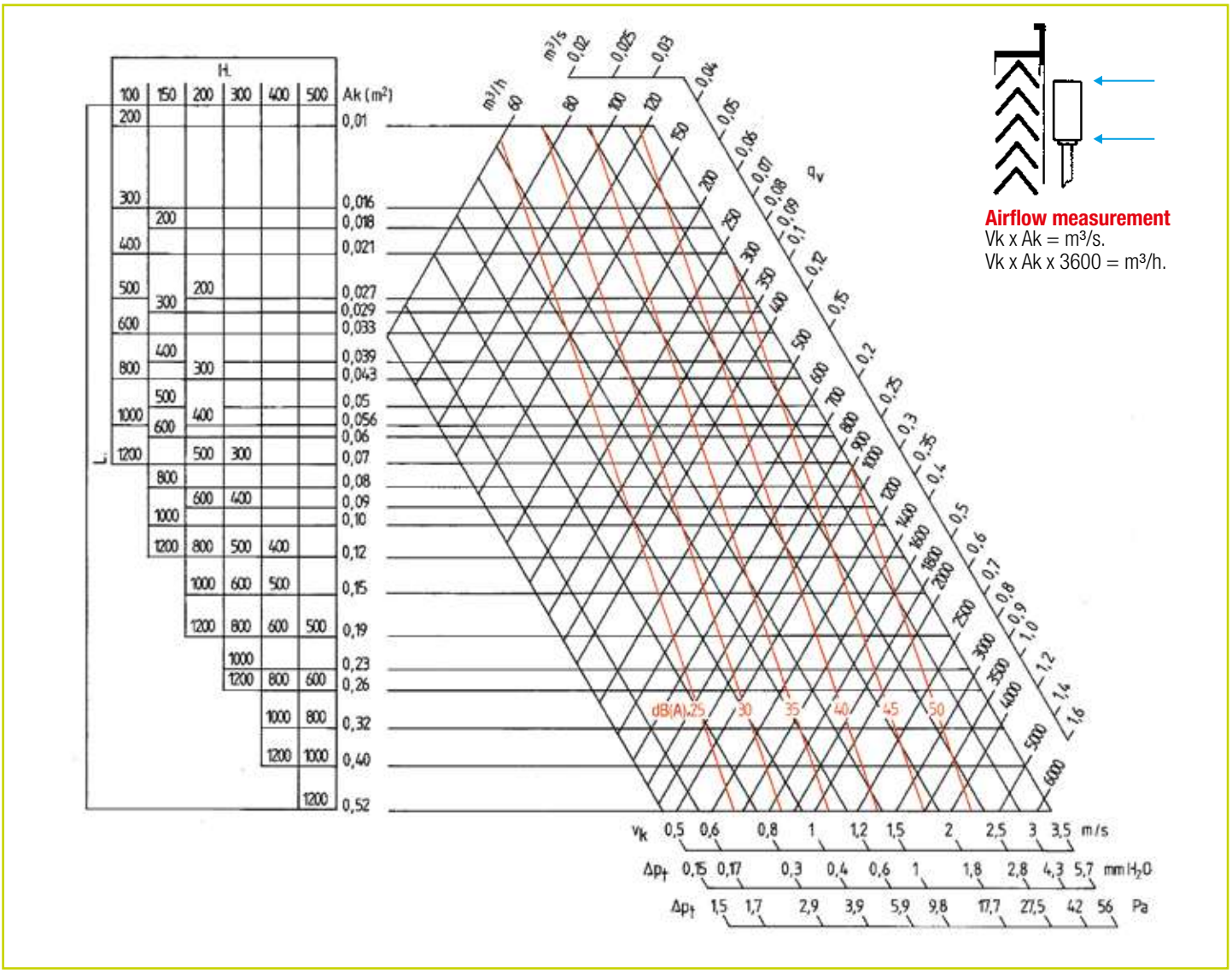
SELECTION - TRANSFER

Ak (M²)	L X H (MM)		QV (M³/H)																					
			50		100		150		200		300		400		600		800		1000		1500		2000	
0.016	300 x 100	200 x 150	-	-	28	-																	Lw	Lt
			0.9	3.5	1.7	14																	Vk	Pa
0.027	500 x 100	300 x 150	-	-	19	-	28	-																
	200 x 200		0.6	1.6	1.0	4.0	1.5	9.9																
0.040	800 x 100	400 x 150			-	-	21	-	28	-														
	300 x 200				0.7	2.3	1.0	4.0	1.3	8.0														
0.056	1000 x 100	500 x 150			-	-	-	-	23	-	30		36											
	400 x 200				0.5	1.1	0.7	2.5	1.0	4.5	1.5	10	2.0	18										
0.070	1200 x 100	800 x 150			-	-	-	-	-	-	27		32											
	500 x 200	300 x 300			0.3	1.0	0.6	1.6	0.8	3	1.2	6.5	1.6	11										
0.081	800 x 150	600 x 200					-	-	-	-	25	-	31	-	40	-								
	400 x 300						0.5	1.6	0.7	2	0.9	4	1.4	9	1.9	15								
0.120	1200 x 150	800 x 200							-	-	-		25		35	-	40	-						
	500 x 300	400 x 400							0.5	1.4	0.7	2	0.9	4	1.4	9	1.9	15						
0.150	1000 x 200	600 x 300									-	-	-	-	29	-	35	-	40	-				
	500 x 400										0.57	1.6	0.6	2.0	1.1	5.0	1.5	9.8	1.9	15				
0.190	1200 x 200	800 x 300											-		25		30		35					
	600 x 400	500 x 500											0.6	1.5	0.9	3.5	1.1	6.0	1.5	10				
0.260	1200 x 300	800 x 400													18	-	26	-	31	-	39	-		
	600 x 500														0.63	1.8	0.8	3.1	1.0	4.1	1.6	11		
0.320	1000 x 400	800 x 500	Lw	-													23	-	27	-	35	3	41	-
	600 x 600		Vk	Pa													0.7	2.3	0.8	3.1	1.2	5.9	1.7	13

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

180 - 181 series - Transfer

AIR SUPPLY WITH CEILING EFFECT



Airflow measurement
Vk x Ak = m³/s.
Vk x Ak x 3600 = m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

SC 182 series - Steel

SC 182 terminal

USE

- Rectangular transfer terminals with sound-proofed front panels.
- Confidentiality function.

CONSTRUCTION

- Terminal comprising two mounting frames and two front panels that can be installed on any thickness of wall.
- The two front panels are soundproofed and make this air transfer product suited to locations where low sound levels are required.

FINISH

- White steel RAL 9010 - 80%.

ATTACHMENT

- Screw attachment of mounting frames in partition wall.
- Panels clip-mounted onto mounting frame. Concealed attachment.

ACCESSORIES

- No accessories available.

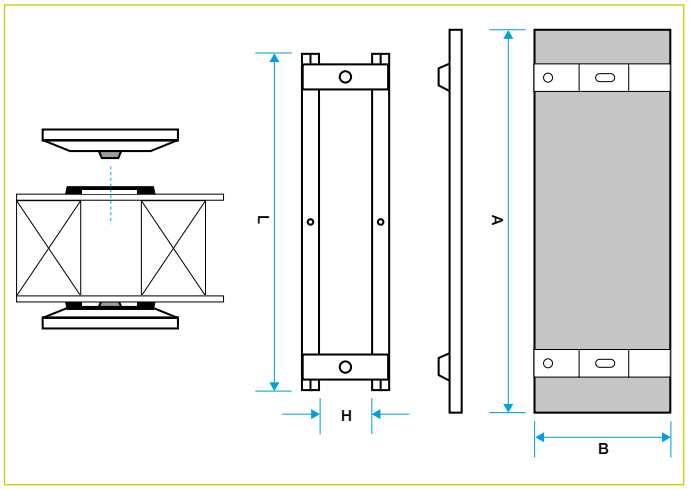
STANDARD DIMENSIONS

- Available lengths: 300, 500, 700 and 850 mm.

TECHNICAL CHARACTERISTICS

- See selection tables on following pages.

DIMENSIONS



SC 182

STANDARD DIMENSIONS

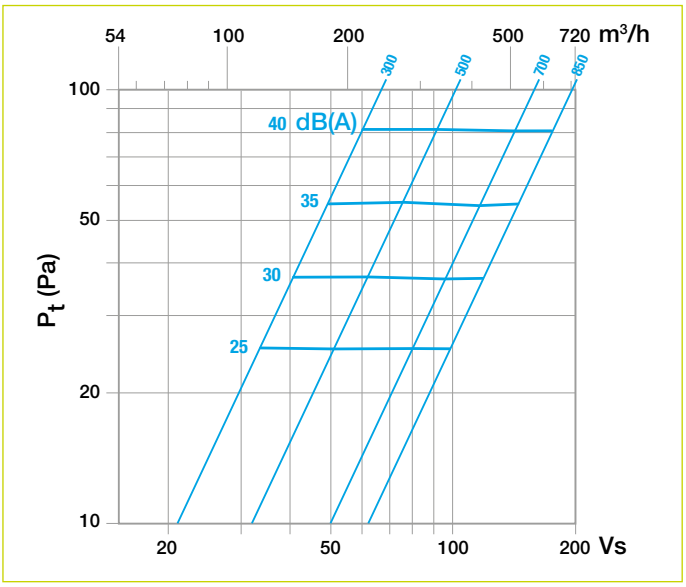
MODEL	A (MM)	B (MM)	L (MM)	H (MM)	Q (M^3/H)	DP (Pa)
300	370	130	300	50	120	26
500	570	130	500	50	180	23
700	770	130	700	50	290	25
850	920	130	850	50	465	47

SC 182 series - Steel

STANDARD RANGE

MODEL	SC 182 TRANSFER TERMINAL
300	Please contact us
500	Please contact us
700	Please contact us
850	Please contact us

SC 182 SERIES - AIR TRANSFER SELECTION



MODEL	MID-FREQUENCY BAND (Hz)							
	63	125	250	500	1k	2k	4k	Rw
300	39	24	23	32	32	52	71	52
500	39	23	22	32	32	50	71	50
700	36	19	20	19	31	42	68	41
850	36	21	19	22	29	48	69	47
Tolerance	± 6	± 3	± 2	± 2	± 2	± 2	± 2	± 3

SR 377 series - GAT - Steel

SR 377 terminal

Grille GAT

USE

- Exhaust.
- Wall-mounted.

CONSTRUCTION

- SR 377: single deflection terminal with fixed horizontal vanes at 20° incline, pitch 8.5 mm.
- GAT : single deflection terminal with fixed horizontal vanes at 20° incline, pitch 12 mm.
- Pressed steel.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F1: visible screw attachment in frame.

For more information, see page 99.

ACCESSORIES

- No accessories available.

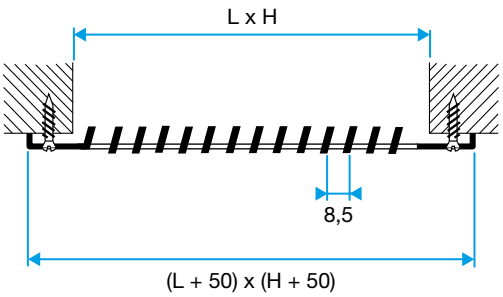
STANDARD DIMENSIONS

- Range of dimensions on Range pages below.
- No other dimensions available.

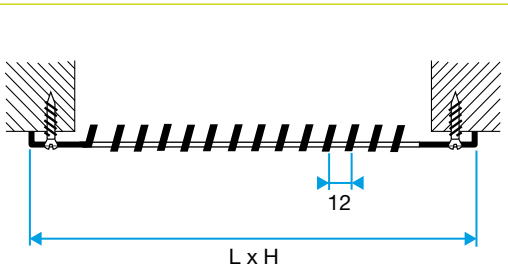
TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



SR 377 terminal



GAT terminal

SR 356 series - Steel

SR 356 terminal

USE

- Air supply.
- Wall-mounted.

CONSTRUCTION

- Single deflection terminal with vertical vanes, 20° incline to left and right, 8.5 mm pitch.
- Pressed steel.

FINISH

- Steel RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Visible attachment with screws in frame.

Accessories

- Multiple-vane damper with parallel action. Built into terminal.

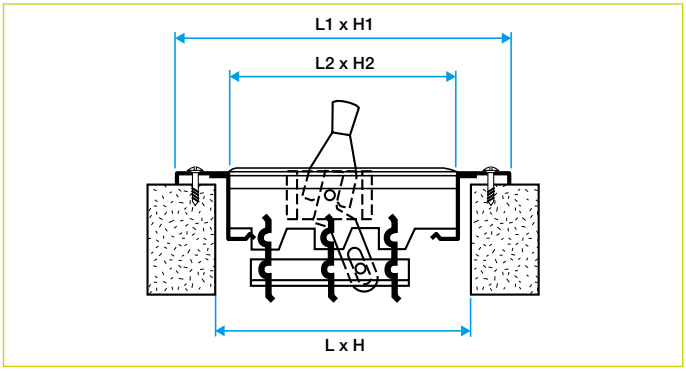
STANDARD DIMENSIONS

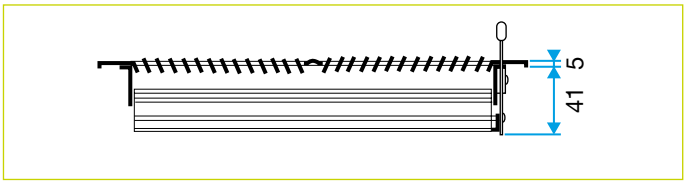
- Range of dimensions on Range pages below.
- No other dimensions available.

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS





SR 356 TERMINAL

L (mm)	H (mm)	L1 (mm)	H1 (mm)	L2 (mm)	H2 (mm)
203	102	241	144	200	100
305	102	343	144	300	100
254	152	291	192	250	150
305	152	343	192	300	150
406	203	445	241	400	200

377 - GAT - 356 series

STANDARD RANGE

DIMENSIONS (MM)	TERMINAL SR 377	TERMINAL GAT	TERMINAL SR 356
	CODE	CODE	CODE
200 x 100	11050260	-	-
250 x 100	11050261	-	-
300 x 100	11050262	-	-
150 x 150	-	11001000	-
250 x 250	-	11001006	-
350 x 150	11050263	-	-
400 x 150	11050264	-	-
200 x 200	-	11001005	-
300 x 300	11050265	-	-
600 x 300	11050266	-	-
400 x 400	11050267	-	-
500 x 500	11050268	-	-
600 x 600	11050269	-	-
750 x 750	11050270	-	-
213 x 102	-	-	11050180
315 x 102	-	-	11050181
264 x 152	-	-	11050182
315 x 152	-	-	11050183
406 x 203	-	-	11050184

ATTACHMENT	FINISH
• Visible screw attachment in frame for SR 377/ 378 and SR 356.	• Steel RAL 9003 white.

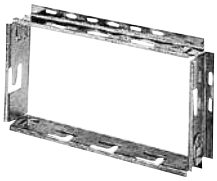
SELECTION - EXHAUST

L X H (MM)	SURFACE AF (M^2)	AIRFLOW FOR LW <35 DB(A) (M^3/H)
	SR 377 - GAT	
100 x 100	0.007	60
200 x 100	0.014	120
250 x 100	0.017	150
300 x 100	0.022	180
100 x 150	0.011	90
150 x 150	0.017	100
250 x 150	0.027	150
350 x 150	0.039	300
400 x 150	0.046	350
100 x 200	0.014	120
200 x 200	0.027	240
300 x 300	0.071	600
600 x 300	0.138	1200
400 x 400	0.135	1000
500 x 500	0.204	1800
600 x 600	0.293	2500
750 x 750	0.459	3000
900 x 900	0.661	3500
	SR 356	
263 x 102	0.012	150
305 x 102	0.019	200
254 x 152	0.026	300
305 x 152	0.030	400
406 x 203	0.053	750

The dB(A) values do not take into account any noise attenuation in the room.

SGS - AGB - D500 - F4 series - Aluminium or steel

SGS or AGB damper



F4 mounting frame

USE

- SGS and AGB: airflow control damper.
- D500: dual deflection overlay. Suited to wall (or floor) mounted single-deflection grid terminals, this accessory delivers the "dual deflection" function with its adjustable vanes.
- F4: mounting frame to enable easy installation of steel or aluminium grid terminals using friction clips (F3 attachment method).

CONSTRUCTION

- SGS: steel damper with counter-rotary action. The adjustable vanes are held in place with a comb to prevent vibration. Adjustment is possible using a screwdriver through the front of the terminal to move the vanes. An adjustment screw is available as an optional extra.
- AGB: aluminium damper with counter-rotary action. The adjustable vanes are held in place with a comb to prevent vibration. Adjustment is possible using a screwdriver through the front of the terminal to turn the adjustment screw.
- D500: dual deflection. Adjustable aluminium frame and vanes.
- F4: mounting frame. Profiled section excluding galvanised steel strips. The mounting frame is delivered in 4 elements to assemble on-site using the connection tabs and slots.

FINISH

- SGS and PR Smart: galvanised steel with natural finish.
- AGB: rough aluminium.
- F4: galvanised steel with natural hue.

ATTACHMENT

- SGS and AGB: "S" clip attachment to terminal.
- D500: "S" clip attachment to terminal.
- F4: screw attachment or mortar seal in masonry.

ACCESSORIES

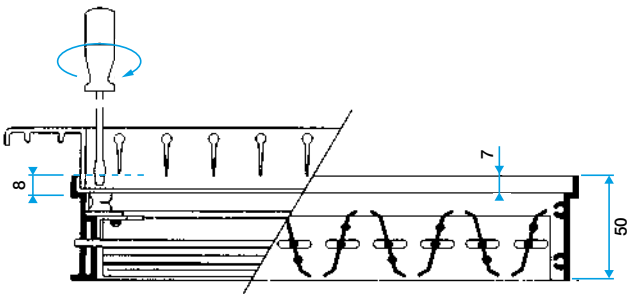
- Adjustment screw for SGS damper.

STANDARD DIMENSIONS

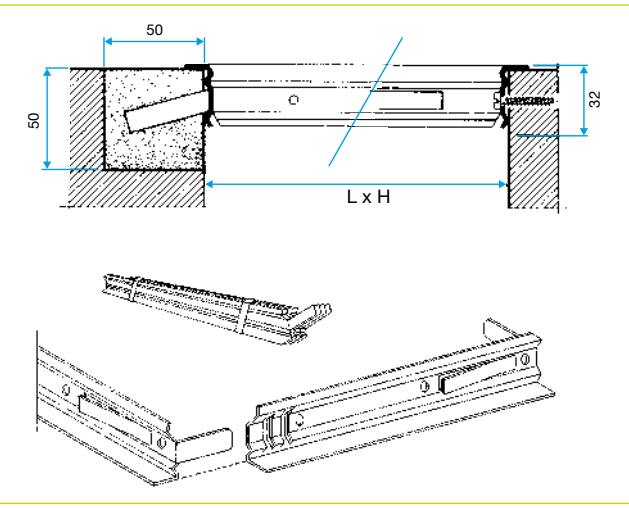
- Dimensions from 200 x 75 to 1200 x 500 in increments of 25 mm.

For further information refer to the Range pages below.

DIMENSIONS



AGB or SGS - Damper



F4 - mounting frame

PR SMART

Ø (mm)	CODE
Ø 125	11003170
Ø 160	11003171
Ø 200	11003172
Ø 250	11003173
Ø 315	11003174

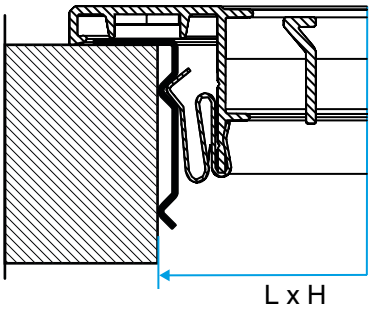
F1 - F3 - F5 series - Possible attachment methods

USE

- F1: visible screw attachment in frame. Screws are not supplied.
- F3: concealed friction clip attachment.
- F5: concealed clasp attachment.

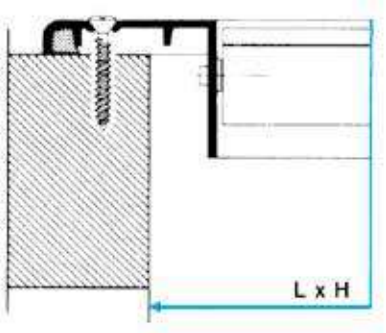
TYPE F3 ATTACHMENT

Friction clips and F4 mounting frame.
Not for ceiling installation.



TYPE F1 ATTACHMENT

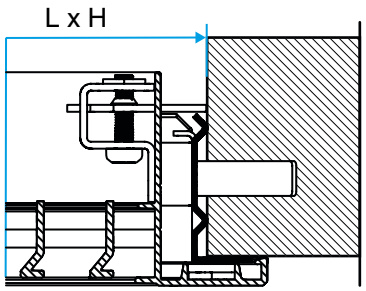
Visible screw in frame. (Screws not supplied)



F1 attachment for AC 161 and AC 163 terminals.

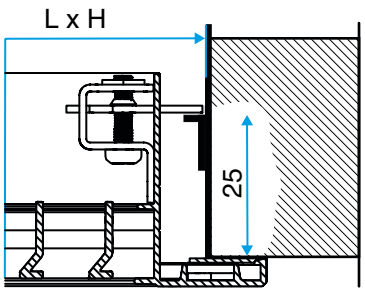
TYPE F6 ATTACHMENT

Clasps with hidden screws.
Assembly with F6 mounting frame.

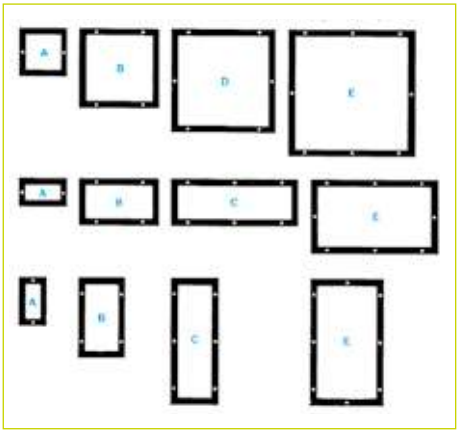


TYPE F5 ATTACHMENT

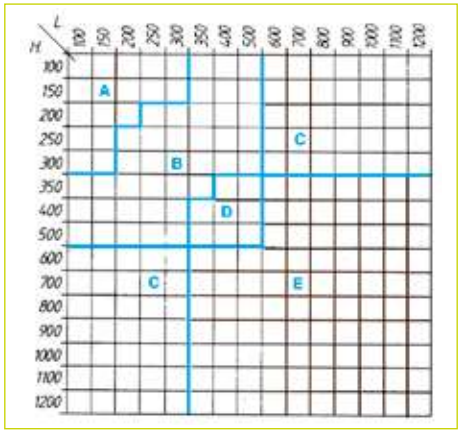
Clasps with hidden screws.
Fitted to ME F5 or MT F5 plenum.



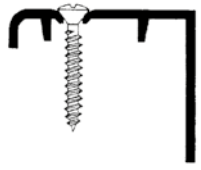
POSITION OF ATTACHMENTS

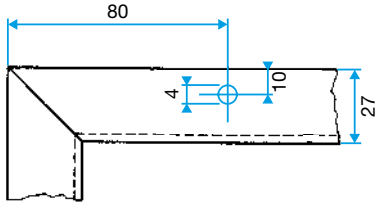


Number of attachment points



Mushroom head tapping screw, cross-head DIN 7983
Ø 3.5 x 38 mm





Position of F1 attachment holes

ME F3 - ME F5 - MT F3 - MT F5 series - Steel

MT F3 plenum with rear connection

ME F3 plenum with side connection

USE

- Connection plenums with circular rear or side connection.
- Suited to indoor terminal range.
- MT F3 and ME F3 plenums are suitable for F3 (clip) attachment of standard terminals and do not require the use of an F4 mounting frame.
- MT F5 and ME F5 plenums are suitable for F5 (clasp) attachment of standard terminals and do not require the use of an F6 mounting frame.

CONSTRUCTION

- MT F3 and MT F5: connection plenum with rear branch connection. Made of galvanised steel plate. Two models are available according to the connection diameter.

- 90° model if connection diameter < nominal height of terminal.
- 80° model if connection diameter ≥ nominal height of terminal.

Note: 90° models are indicated by a * in the table.

- ME F3 and ME F5: connection plenum with side branch connection. Made of galvanised steel plate.

FINISH

- Galvanised steel.

ATTACHMENT

- Ceiling-mounted with threaded rods or suspension cables (not supplied) (see p.136).

STANDARD DIMENSIONS

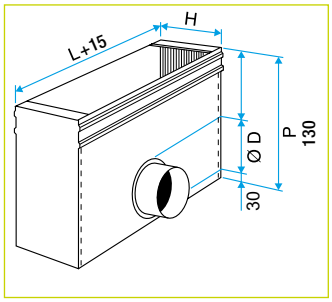
- Dimensions from 200 x 75 to 1500 x 600 mm with increments of 25 mm.

For further information refer to the Range pages below.

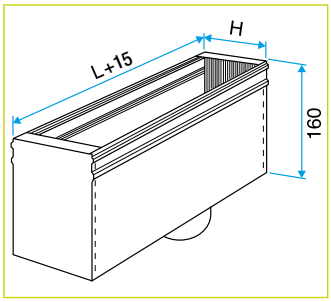
OPTIONS

- Class C airtight performance
- VDI
- Number of connections
- Fresh air connection (125 mm)
- Insulation
- G3 filter

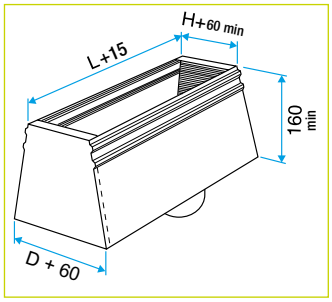
DIMENSIONS



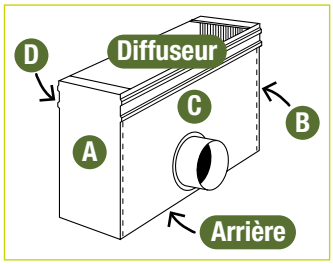
ME: plenum with side connection



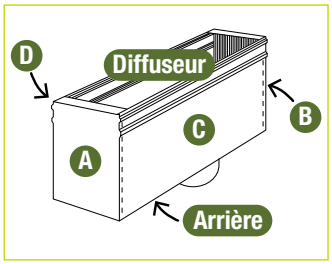
MT: plenum with 90° rear connection



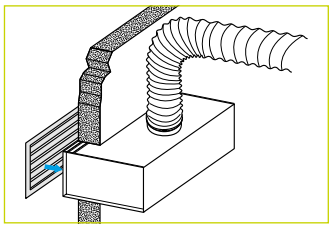
MT F3: plenum with angled rear connection



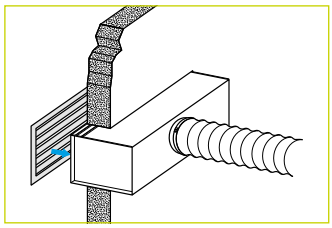
ME plenum: Support diagram for configuration.



MT plenum: Support diagram for configuration.



Installation of ME plenum



Installation of MT plenum

DIMENSIONS OF STANDARD RANGE

L (MM)	H = 100		H = 150		H = 200		H = 300
	ME / MT F3	ME F3 AIRCON	ME / MT F3	ME F3 AIRCON	ME / MT F3	ME F3 AIRCON	ME / MT F3
200	Ø 80*	Ø 125	-	-	-	-	-
250	Ø 100	-	Ø 125*	-	-	-	-
300	Ø 125	Ø 160	Ø 160	Ø 200	-	-	-
400	Ø 125	-	Ø 160	-	Ø 200	Ø 200	-
500	Ø 125	-	Ø 160	-	Ø 200	-	-
600	-	-	Ø 160		Ø 200	-	Ø 250*
800	-	-	-	-	2 x Ø 200	-	2 x Ø 250*
1000	-	-	-	-	-	-	2 x Ø 250*

All MT plenums are 80° models except for those marked (*)

SGS - AGB - F4 - ME F3 - MT F3 - ME F5 - MT F5 series

STANDARD RANGE

DIMENSIONS (MM)	DAMPER SGS	MOUNTING FRAME F4	PLENUM WITH REAR CONNECTION MT F3	PLENUM WITH SIDE CONNECTION ME F3	PLENUM SIDE CONNECTION AIRCON INSULATED ON 5 SIDES MEIF (5) F3
1000 x 75	11053259	11053779	-	11053547	-
200 x 100	11053241	11053761	11053640	11053611	-
250 x 100	11053242	11053640	11053436	11053612	-
300 x 100	11053243	11053763	11053437	11053602	11053097
400 x 100	11053244	11053764	11053438	11053582	-
500 x 100	11053245	11053765	11053439	-	-
600 x 100	11053271	11053780	11053445	-	-
800 x 100	-	11053781	-	-	-
1000 x 100	-	11053782	11053446	-	-
250 x 150	11053246	11053766	11053447	11053603	-
300 x 150	11053247	11053767	11053448	11053604	11053098
400 x 150	11053248	11053768	11053449	11053605	-
500 x 150	11053249	11053769	11053451	11053606	-
600 x 150	11053250	11053770	11053453	11053607	-
800 x 150	11053274	11053783	11053456	-	-
1000 x 150	11053275	11053784	11053546	-	-
1500 x 150	-	11053785	-	-	-
400 x 200	11053251	11053771	11053465	11053713	11053099
500 x 200	11053252	11053772	11053479	11053714	-
600 x 200	11053253	11053773	11053480	11053715	-
800 x 200	11053254	11053774	11053494	11053568	-
1500 x 200	-	11053787	-	-	-
300 x 300	11053268	11053788	11053513	11053599	-
500 x 300	11053269	11053789	11053529	-	-
600 x 300	11053255	11053775	11053500	11053569	-
800 x 300	-	-	11053509	-	-
1000 x 300	11053257	11053777	11053510	-	-
600 x 600	11053270	11053790	11053530	11053600	-
1000 x 600	11053267	-	-	-	-

RANGE WITH CHOICE OF OPTIONS

DAMPER	CODE	MOUNTING FRAME	CODE	STEEL PLENUM	CODE
SGS - steel	11003211	**F4 clip attachment**	11003001	**ME with side connection**	11003435
AGB - aluminium	11003201	**F6 clasp attachment**	11002512	**MT with rear connection**	11003434
D500	Please contact us	**Bag of 100 F3 clips**	21080260		

OPERATIONAL DIMENSIONS

H / L (MM)	200	250	300	400	450	500	600	700	800	1000	1200
75	x	x	x	x	x	x	x	x	•	•	x
100	•	•	•	•	x	•	•	x	•	x	x
150	x	•	•	•	x	•	•	x	•	•	x
200	x	x	x	•	x	•	•	x	•	•	x
250		x	x	x	x	x	x	x	x	x	x
300			•	x	x	•	•	x	•	•	x
400				x	x	x	x	x	x	x	x
450					x	x	x	x	x	x	x
500						x	x	x	x	x	x

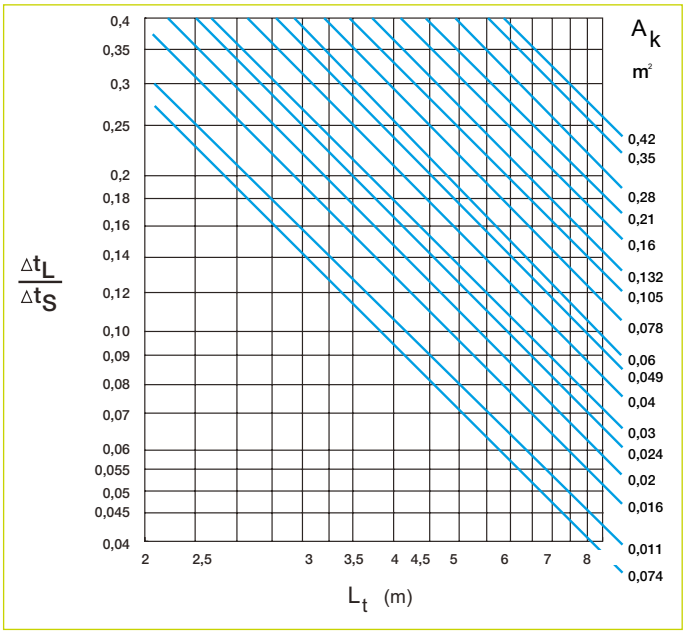
• Dimensions of standard range.

AVAILABLE OPTIONS

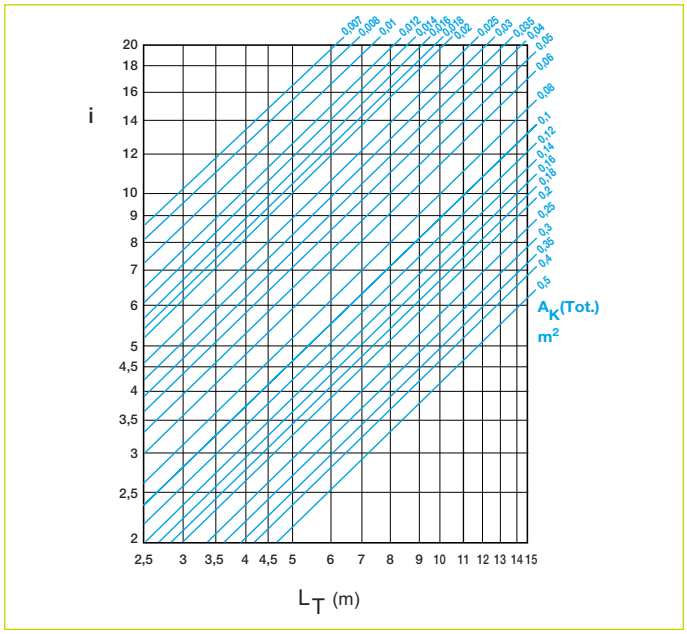
SGS STEEL DAMPER	AGB ALUMINIUM DAMPER	DOUBLE DEFLECTION D500	PLENUM
• Supplied fitted • Control screw	• Supplied fitted • Stainless steel fasteners	• Supplied fitted	• Connection diameters from Ø 125 to Ø 400 mm • Number of connections • Position of connections • Non-standard depths. • Insulation on 2 sides • Insulation on 5 sides • Sealed connections • Class C airtight performance • Black paint coating on plenum (on request)

Mixing capacity and corrections for deflection

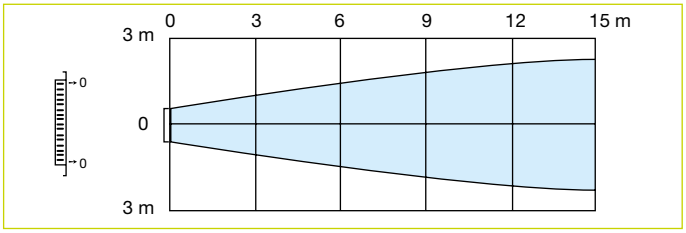
CAPACITY FOR 100 SERIES TERMINAL



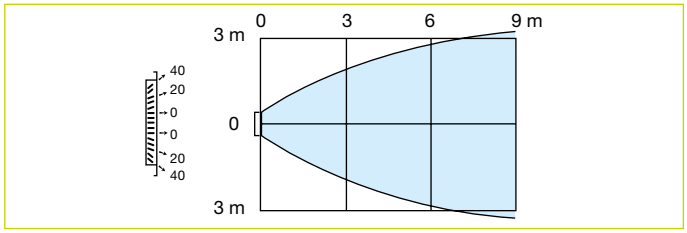
INDUCTION RATE FOR 100 SERIES TERMINAL



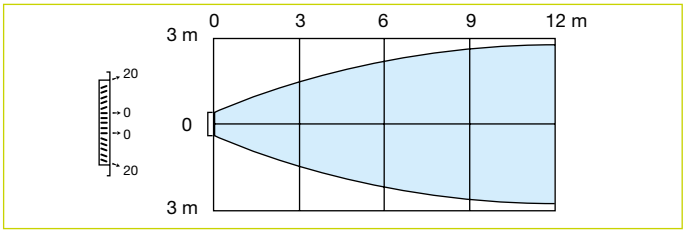
DEFLECTION 0°



DEFLECTION 45°



DEFLECTION 22°



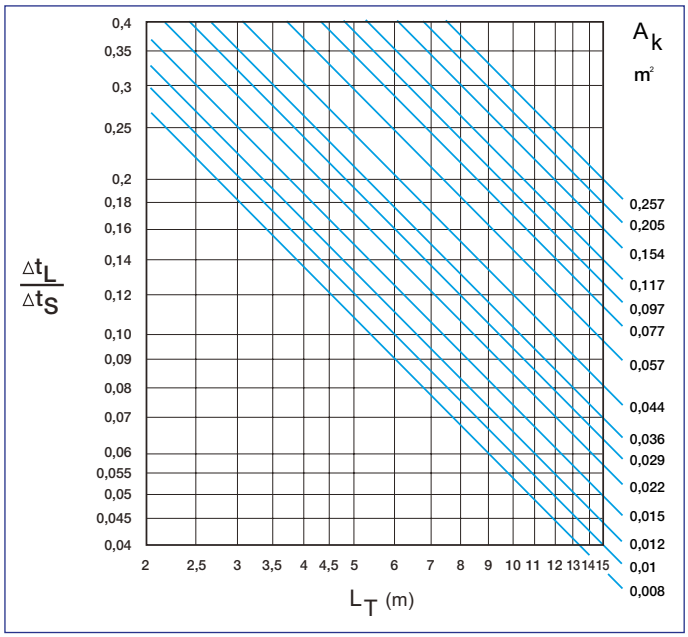
CORRECTIONS FOR DEFLECTION

VANES	22°	45°
AIR JET ANGLE	35°	60°
Lt	x 0.70	x 0.55
VK	x 1.15	x 1.25
ΔPT	x 1.40	x 1.80
LW	+ 3	+ 6

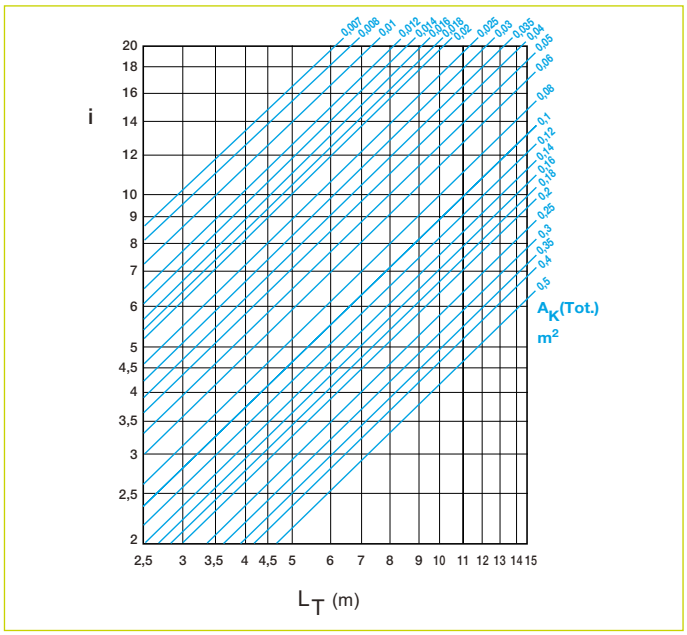
SYMBOLS

Lt 0.5 (M)	Air jet throw at Vt = 0.5 m/s
ΔTL (°C)	Difference between temperature at end of throw and ambient temperature (in °C)
ΔTS (°C)	Difference between air supply temperature and ambient temperature (in °C)
TM = ΔTL / ΔTS	Ratio between temperature differences. This value defines the terminal's capacity to quickly mix new air with the ambient air.
EXAMPLE WITH AIR SUPPLY AT 15°C AND AMBIENT AIR TEMPERATURE OF 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x capacity (°C)
Q1 (M³/H)	Primary airflow
Q2 (M³/H)	Airflow induced in room
QL (M³/H) = Q1 + Q2	Total airflow in movement at end of throw
I = QL / Q1	Induction rate

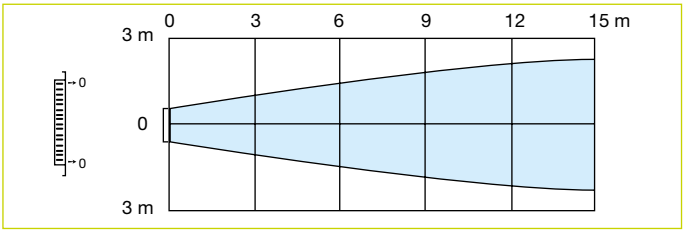
CAPACITY FOR 400 SERIES TERMINAL



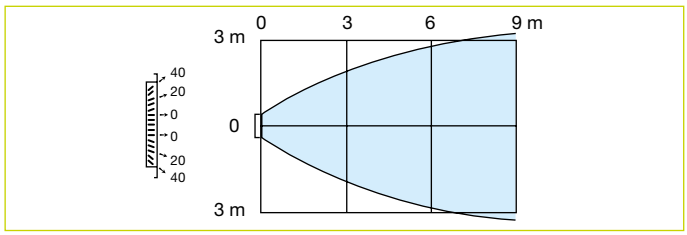
INDUCTION RATE FOR 400 SERIES TERMINAL



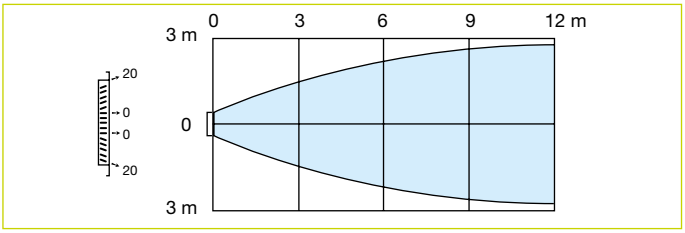
DEFLECTION 0°



DEFLECTION 45°



DEFLECTION 22°



CORRECTIONS FOR DEFLECTION

VANES	22°	45°
AIR JET ANGLE	35°	60°
Lt	x 0.70	x 0.55
VK	x 1.15	x 1.25
ΔPT	x 1.40	x 1.80
LW	+ 3	+ 6

SYMBOLS

Lt 0.5 (M)	Air jet throw at Vt = 0.5 m/s
ΔTL (°C)	Difference between temperature at end of throw and ambient temperature (in °C)
ΔTS (°C)	Difference between air supply temperature and ambient temperature (in °C)
TM = ΔTL / ΔTS	Ratio between temperature differences. This value defines the terminal's capacity to quickly mix new air with the ambient air.
EXAMPLE WITH AIR SUPPLY AT 15°C AND AMBIENT AIR TEMPERATURE OF 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x capacity (°C)
Q1 (M³/H)	Primary airflow
Q2 (M³/H)	Airflow induced in room
QL (M³/H) = Q1 + Q2	Total airflow in movement at end of throw
I = QL / Q1	Induction rate

CONTENTS

SC 832 TP

A 842

SF 704

SR 310 R

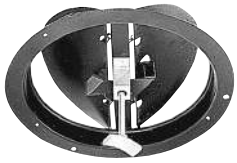
ALD 610K

SF 704 TP

SC 831 - SC 832 TP series - Steel

SC 831 diffuser

SC 832 TP diffuser



BY damper

USE

- Fixed horizontal air supply and diffusion.
- Positioned in ceilings or on exposed duct.
- Version designed to replace a standard ceiling panel 600 x 600 mm (SC 832 TP model).

CONSTRUCTION

- Circular concentric pressed steel cones.
- Square steel compensation plate for SC 832 TP version.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.

ATTACHMENT

- Visible screw attachment to ceiling via external cone.
- Connection to circular ducting using the FR mounting ring or the BY damper (SC 831 model) or directly to the neck (SC 832 TP model).

ACCESSORIES

For SC 831 model:

- Steel FR mounting ring.
- Steel BY damper also used as a mounting ring. Adjustment through the centre of the diffuser. Adjustment key supplied with damper.
- LRE galvanised steel connection plenum (side connection).

For SC 832 TP model:

- BR butterfly damper with 2 V-shaped flaps. Steel construction. Precise control through diffuser using screw.
- LRE galvanised steel connection plenum (side connection).

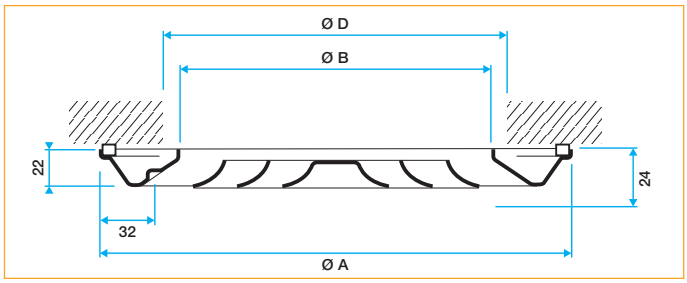
STANDARD DIMENSIONS

- Diameters from 160 mm to 355 mm.
- SC 832 TP model: overall dimensions suited to standard T-bar ceiling systems 600 x 600 mm.

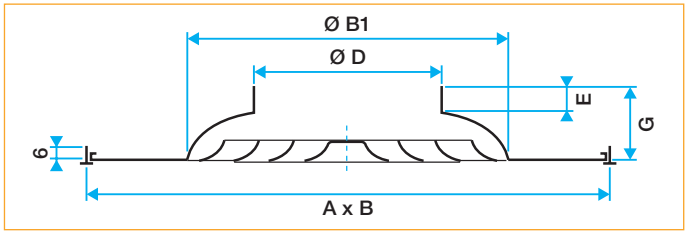
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

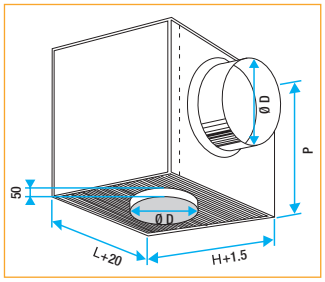
DIMENSIONS



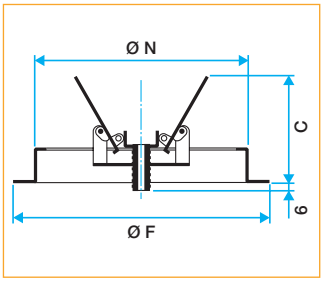
SC 831 diffuser



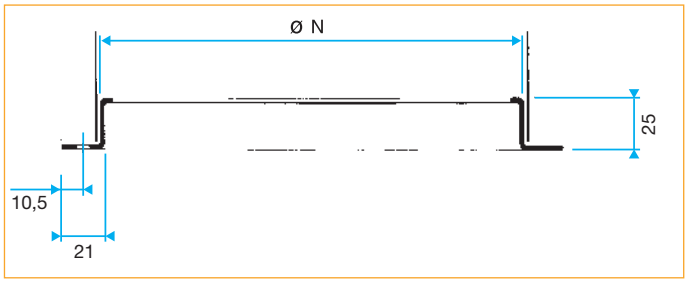
SC 832 TP diffuser



LRE plenum



BY damper



FR mounting ring

STANDARD DIMENSIONS (MM)

Ø D	A x B*	Ø A	Ø B	Ø B1	E	G	Ø F	C	P	L x H
160	600 x 600	230	134	188	35	65	190	110	220	223 x 223
200	600 x 600	282	186	235	35	65	240	110	260	263 x 263
250	600 x 600	334	238	294	35	65	290	140	310	313 x 313
315	600 x 600	386	290	370	35	65	340	165	375	378 x 378
355	Not available	440	340	-	-	-	390	180	415	418 x 418

* Nominal ceiling panel dimensions

SC 831 - SC 832 TP series

RANGE

DIMENSIONS (MM)	DIFFUSER SC 831	MOUNTING RING FR	DAMPER BY	DIFFUSER SC 832 TP	LRE PLENUM STANDARD SIDE CONNECTION	LRE PLENUM INSULATED SIDE CONNECTION 5 SIDES	LRE PLENUM SIDE CONNECTION WITH CHOICE OF OPTIONS	DAMPER BR
	CODE	CODE	CODE	CODE	CODE	CODE	CODE	CODE
Ø 160	11051020	11053440	11053180	11051015	11053346	-	11003433	11053220
Ø 200	11051021	11053441	11053181	11051016	11053347	11053367	11003433	11053221
Ø 250	11051022	11053442	11053182	11051017	11053348	11053368	11003433	11053222
Ø 315	11051023	11053443	11053183	11051018	11053349	11053369	11003433	11053223
Ø 355	11051024	11053444	11053184	-	11053350	-	11003433	-

ATTACHMENT	FINISH
• Visible screws (SC 831) and concealed (SC 832 TP).	• Steel with epoxy paint RAL 9003 white 30% matt.

PLENUM OPTIONS

- Connection diameters from Ø 125 to Ø 400 mm.
- Number of connections.
- Position of connections.
- Non-standard depths.
- Insulation on 2 sides.
- Insulation on 5 sides.
- Sealed connections.
- Class C airtight performance

ACCESSORIES PROPOSED

- BY and BR dampers.
- FR mounting ring.
- LRE plenum.

831 - 832 SERIES

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	DIAM. (MM)	QV (M³/H) 150		200		300		400		500		600		800		1000		1200		1400	
0.011	160	-	1.1	33	1.5	47	2.2													Lw	Lt
		3.8	8	5	15	7.5	35													Vk	Pa
0.020	200	-	0.8	-	1.1	30	1.7	39	2.2	47	2.8										
		2.2	4	2.8	5	4.1	12	5.5	20	7	30										
0.031	250					-	1.3	25	3.7	33	2.1	39	2.5	50	3.5						
						2.6	5	3.5	2	4.5	13	5.5	26	7.5	50						
0.046	300							-	1.4	-	1.7	27	2.1	37	2.7	45	3.5	51	4.1		
								2.5	4	3	6	3.7	14	5.0	22	6.2	35	7.5	50		
0.066	355	Lw	Lt							-	1.5	25	1.6	35	2.4	42	3	45	3.8	55	4.8
		Vk	Pa							2.2	4	3.5	7	4.8	12	6	20	7	28	10.2	39.2

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP + 0	ΔP + 0.95 x Vk²	ΔP + 3.28 x Vk²
Lw + 0	Lw + 10	Lw + 20

A 842 - A 842 TP series - Aluminium

A 842 diffuser

A 842 TP diffuser

USE

- Horizontal or vertical air supply. Adjustable diffusion.
- Positioned in ceilings or on exposed duct.
- Version designed to replace a standard ceiling panel 600 x 600 mm (A 842 TP model).

CONSTRUCTION

- Outer aluminium cone and ABS/steel centre (up to Ø315). Adjustable diffusion using worm screw.

FINISH

- Epoxy paint finish RAL 9003 white 30% matt.

ATTACHMENT

- F0: concealed screw attachment on the side of the neck.
- Connection to circular duct.
- Attachment clips for installation in plaster or BA13 plasterboard ceilings.

ACCESSORIES

- BR: butterfly damper with 2 or 4 V-shape vanes (according to diameter). Steel construction.
  Precise control through diffuser using screw.
  Not available in diameters 500 and 630 mm.
- LRE: galvanised steel connection plenum (side branch connection).
- Set of attachment clips for plaster/BA13 ceilings.

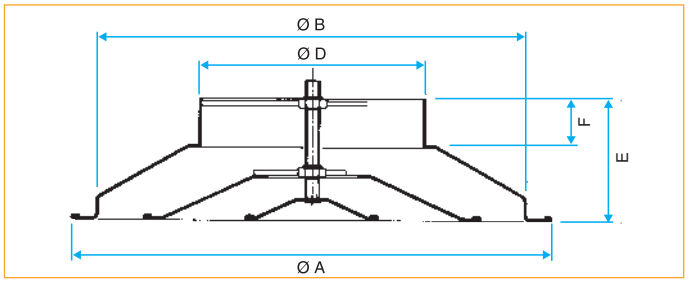
STANDARD DIMENSIONS

- Diameters from 160 mm to 630 mm.
- A 842 TP model designed for installation in place of a 600 x 600 mm ceiling panel.

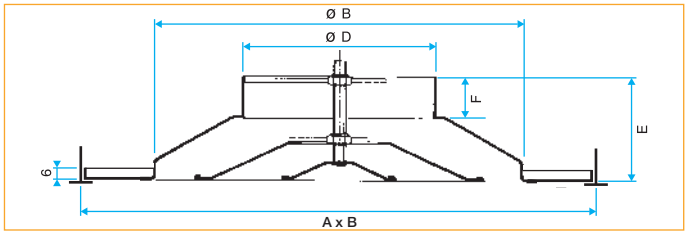
TECHNICAL DETAILS

- See selection tables on following pages.
- See mixing capacity at end of chapter.

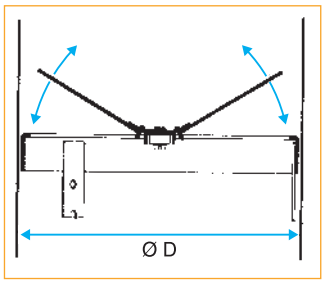
DIMENSIONS



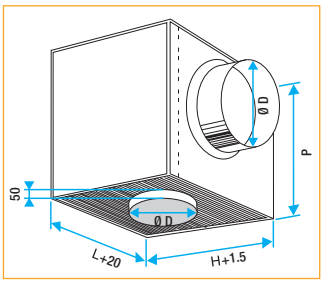
A 842 diffuser



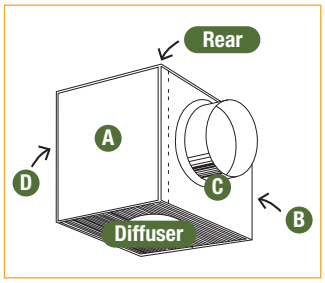
A 842 TP diffuser



BR damper



LRE connection plenum



LRE plenum: Support diagram for configuration.

STANDARD DIMENSIONS (MM)

Ø D	A x B*	Ø A	Ø B	E	F	P	L x H
160	600 x 600	335	280	110	45	220	223 x 223
200	600 x 600	423	360	120	48	260	263 x 263
250	600 x 600	517	445	135	48	310	313 x 313
315	600 x 600	640	560	145	48	375	378 x 378
355	-	440	340	185	65	415	418 x 418
400	-	776	680	185	65	460	463 x 463
500	-	917	805	185	65	-	-
630	-	1045	940	185	65	-	-

* Nominal ceiling panel dimensions

A 842 - A 842 TP series

CLIP ATTACHMENT

- Attachment kit suited to plaster or BA13 plasterboard ceilings
- For A 842 diffusers only, from Ø 160 to Ø 355 mm.
- Comprises 3 attachment clips and a safety cable.

Note: for diffusers Ø 355 six clips are provided.

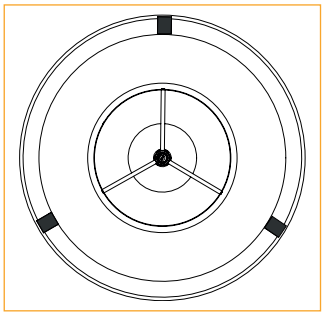
INSTALLATION OPENINGS

DIMENSIONS (MM)	OPENING (MM)
Ø 160	Ø 310
Ø 200	Ø 390
Ø 250	Ø 475
Ø 315	Ø 590
Ø 355	Ø 670

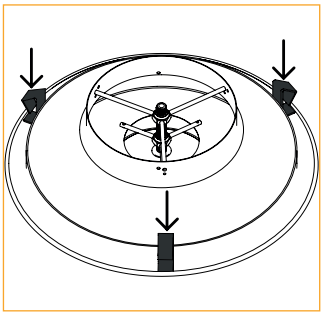
OPTIONS

- Special depth.
- Special branch connections.
- Insulation on 2 or 5 sides.
- Number and diameter of connections.
- Sealed connection.
- Class C airtight performance and sealed connection.

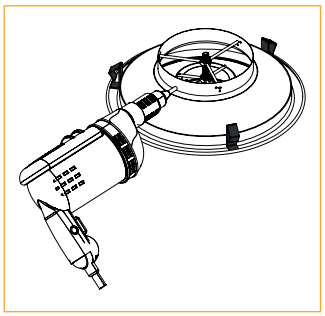
INSTALLATION ON BA13 CEILING



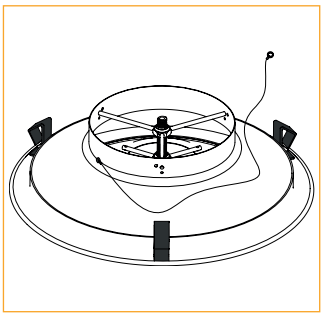
Position the clips opposite the diffuser tubes



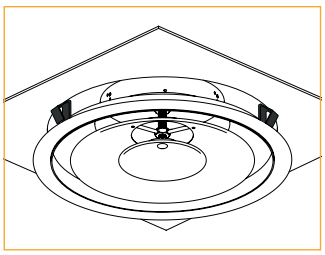
Exert slight pressure on the clips



Drill the diffuser neck with a Ø 5.5 mm bit to install the safety cable



Attach the cable to the diffuser and to the concrete slab



Install the diffuser inside the ceiling by pressing the clips

RANGE

DIMENSIONS (MM)	A 842 DIFFUSER RAL 9003 matt 30%	A 842 TP DIFFUSER RAL 9003 matt 30%	STANDARD LRE PLENUM	LRE PLENUM INSULATED SIDE CONNECTION 5 SIDES	LRE PLENUM WITH CHOICE OF OPTIONS	BR DAMPER	ATTACHMENT CLIPS PLASTER/BA13 FOR A 842 (NON-TP)
	CODE	CODE	CODE	CODE	CODE	CODE	CODE
Ø 160	11051360	11051371	11053346	-	11003433	11053220	11053422
Ø 200	11051361	11051372	11053347	11053367	11003433	11053221	11053423
Ø 250	11051362	11051373	11053348	11053368	11003433	11053222	11053424
Ø 315	11051363	11051374	11053349	11053369	11003433	11053223	11053425
Ø 355	11051364	-	11053350	-	11003433	11053224	11053426
Ø 400	11051365	-	-	-	11003433	11053225	-
Ø 500	11051367	-	-	-	On request	-	-
Ø 630	11051368	-	-	-	On request	-	-

842 series

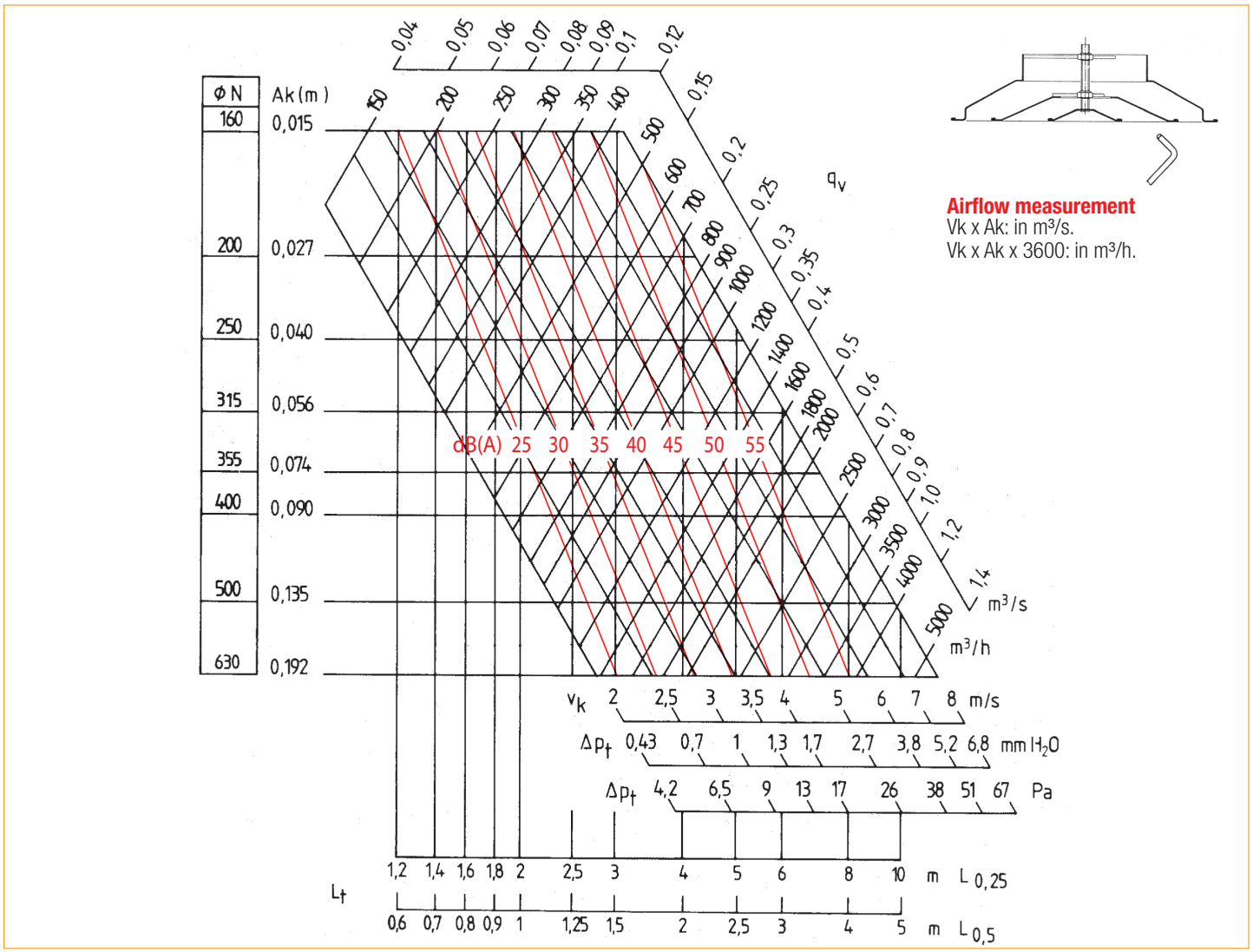
SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M^2)	DIAM. (MM)	QV (M^3/H)																							
		200		250		300		400		500		600		800		1000		1250		1500		1750		2000		2600	
0.015	160	30	1.4	35	1.7	41	2.1	50	2.8																	Lw	Lt
		3.7	14	4.4	20	5.6	33	7.2	54																	Vk	Pa
0.027	200			23	1.3	28	1.5	35	2.1	41	2.6	47	3.2														
				2.5	6.6	3	1	4	17	5	26	6	38														
0.040	250					20	1.3	27	1.7	32	2.1	38	2.6	46	3.5	55	4.5										
						2	4.2	2.7	7.7	3.4	12	4	18	5.6	33	7	52										
0.056	315							20	1.5	25	1.8	30	2.2	39	3	45	3.7	52	4.6								
								2	4.2	2.4	6	3	10	4	17	5	26	6.2	40								
0.074	355											25	1.9	30	2.6	39	3.3	47	4.1	52	5						
												2.3	5	3	9	3.8	16	4.8	23	5.5	32						
0.090	400													25	2.3	33	3.0	40	3.8	46	4.5						
														2.5	6.5	3	9	3.8	16	4.6	22						
0.013	500																	29	3.0	34	3.6	39	4.3	43	4.9	50	6
																		2.6	6.9	3.1	10	3.6	14	4.1	19	5	29
0.019	630	Lw	Lt																			30	3.5	35	4.1	42	5.1
		Vk	Pa																			2.6	6.9	2.9	8	3.6	14

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

842 series

AIR SUPPLY WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1.5	x 1	x 0.75	x 0.6

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 1.00	ΔPt x 1.00	ΔPt x 0.95 x Vk^2	ΔPt x 3.28 x Vk^2
Lw + 0	Lw + 0	Lw + 10	Lw + 20

CORRECTIONS FOR VERTICAL AIR SUPPLY

TEMPERATURE DIFFERENCE	-10°C	0°C	+10°C	+20°C
Lt	x 2	x 1.15	x 0.8	x 0.5
Vd*	x 1.15	x 1.15	x 1.15	x 1.15
DPt	x 1.3	x 1.3	x 1.3	x 1.3
Lw	4	4	4	4

* Speed at diffuser neck.

CORRECTIONS FOR EXHAUST APPLICATION

Ø 160	Ø 200	Ø 250	Ø 315	Ø 355	Ø 400	Ø 450	Ø 500	Ø 630
DPt x 1.2	DPt x 1.2	DPt x 1.4	DPt x 1.8	DPt x 1.8	DPt x 1.9	DPt x 2.1	DPt x 2.3	DPt x 2.5
Lw + 5	Lw + 5	Lw + 5	Lw + 8	Lw + 8	Lw + 8	Lw + 8	Lw + 10	Lw + 10

SF 704 series - Steel

SF 704 diffuser

B 700 damper

USE

- Horizontal multi-directional air supply.
- Four airflow directions.
- Positioned on ceiling. Installed flush with ceiling.
- Fixed diffusion.

CONSTRUCTION

- Profiled steel outer frame and core.
- Removable and interchangeable core.
- 32 mm wide frame.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: Concealed screw attachment in the neck of the diffuser.
- F1: Visible screw attachment in frame, only for F frame.
- F7: Concealed screw attachment and suspension bridge, preferred method for installation in non-removable ceilings.

For more information, see page 99.

ACCESSORIES

- B 700: damper with counter-rotary action. Adjustment possible from front of diffuser using lever concealed between frame and core.

Clip-mounted on diffuser.

- W4 pleated filter (height 50 mm) G3 M1 fire rating for use on exhaust. Access to filter by removing central core from front.

Note: the W4 filter is incompatible with the B 700 damper.

- Galvanised steel connection plenum with RT top connection or RE side connection. Available in basic or insulated versions.

For more information, see page 116.

STANDARD DIMENSIONS

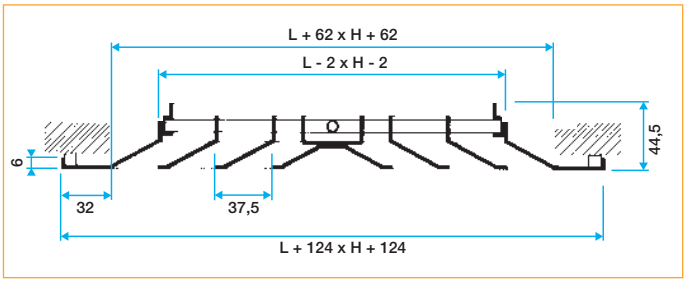
- Dimensions from 150 x 150 to 600 x 600 mm with increments of 75 mm (square dimensions).
- Dimension 472 x 472 suited to standard 600 x 600 mm ceiling panels.

For further information refer to the Range pages below.

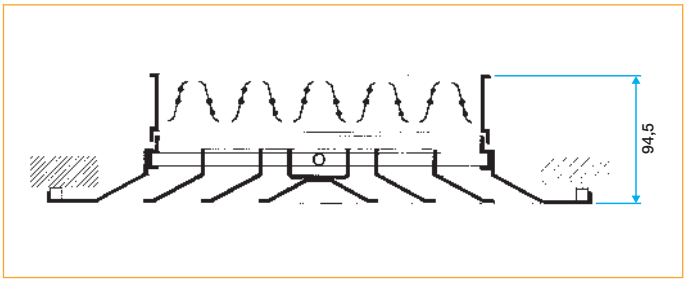
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



SF 704
Diffuser only



SF 704
Diffuser with damper fitted

AF 704 series - Aluminium

AF 704 diffuser

B 700 damper

USE

- Horizontal multi-directional air supply.
- Four airflow directions.
- Positioned on ceiling. Installed flush with ceiling.
- Fixed diffusion.

CONSTRUCTION

- Extruded aluminium outer frame and core.
- Removable and interchangeable core.
- 32 mm wide frame.

FINISH

- Anodised aluminium, natural satin finish.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: Concealed screw attachment in the neck of the diffuser.
- F1: Visible screw attachment in frame, only for F frame.
- F7: Concealed screw attachment and suspension bridge, preferred method for installation in non-removable ceilings.

For more information, see page 99.

ACCESSORIES

- B 700: steel damper with counter-rotary action. Adjustment possible from front of diffuser using lever concealed between frame and core.

Clip-mounted on diffuser.

- W4 pleated filter (height 50 mm) G3 M1 fire rating for use on exhaust. Access to filter by removing central core from front.

Note: the W4 filter is incompatible with the B 700 damper.

- Galvanised steel connection plenum with top or side connection. Available in basic or insulated versions.

For more information, see page 116.

STANDARD DIMENSIONS

- Dimensions from 150 x 150 to 600 x 600 mm with increments of 75 mm (square dimensions).
- Dimension 472 x 472 suited to standard 600 x 600 mm ceiling panels.

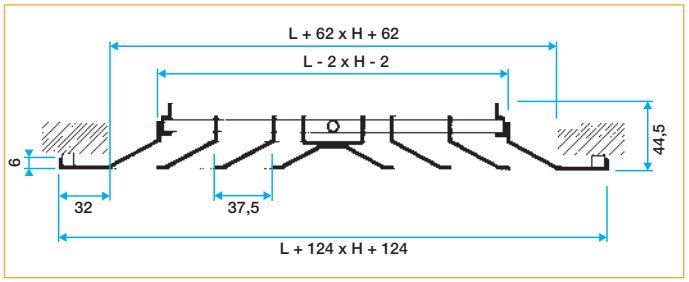
For further information refer to the Range pages below.

TECHNICAL DETAILS

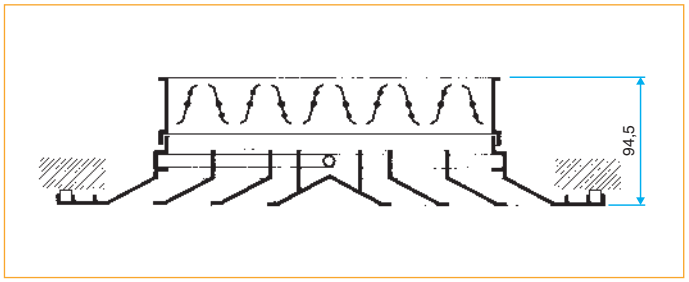
- See selection tables on following pages.
- See induction rates at end of chapter.
- Possible to have air supply combinations in 3, 2 or 1 directions.

Please contact us.
Minimum quantities may be required.

DIMENSIONS



AF 704
Diffuser only



AF 704
Diffuser with B 700 damper fitted

704 series - Steel or aluminium

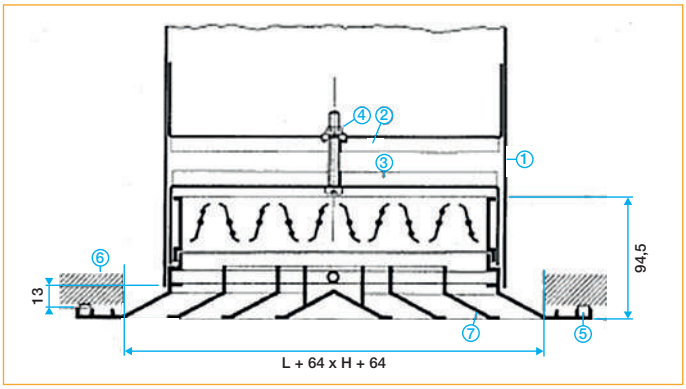
SF 704 diffuser

B 700 damper

ATTACHMENT

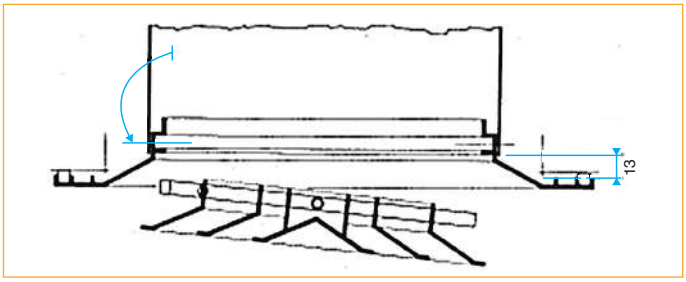
- F0: concealed screw attachment on the neck of the diffuser.
- F1: visible screw attachment in frame.
- F7: concealed screw attachment and suspension bridge, preferred method for installation in plaster or BA13 non-removable ceilings.

ATTACHMENT

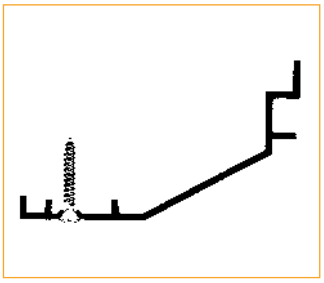


F7: screw and nut attachment on bridges

REFERENCE	TITLE
1	Connection plenum.
2	Bridge with clip nut
3	Bridge with screw in diffuser neck.
4	Nut
5	Ceiling
6	Removable core



F0: concealed tapping screw attachment in the neck of the diffuser



F1: screw attachment in frame

SF 704 TP series - Steel

SF 704 TP diffuser

B 700 damper

USE

- Diffusers designed to replace a standard ceiling panel.
- Horizontal air diffusion in 4 directions.
- Fixed diffusion.
- Positioned on ceiling. Installed in place of a standard 600 x 600 mm or 675 x 675 mm ceiling panel.
- Suited to “T-bar” or “Fine Line” suspended ceiling systems.
- Also exists in 600 x 600 mm with LRE plenum featuring side connection fitted in factory.

CONSTRUCTION

- SF 704 TP: designed based on an SF 704 equipped with a steel compensation plate.
- The compensation plate is designed to seamlessly fit in the type of ceiling system used (T-bar or Fine Line).
- AN 704 TP aluminium model only available for T-bar 600 x 600 mm systems (See RANGE page below).

FINISH

- Epoxy paint RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment to plenum on the neck of the diffuser.

Assembly fixed to concrete ceiling slab using brackets on the plenum (the weight of the diffuser must not be borne by the ceiling suspension system).

ACCESSORIES

- B 700: damper with counter-rotary action. Adjustment possible from front of diffuser using lever concealed between frame and core.

Clip-mounted on diffuser.

- W4 pleated filter (height 50 mm) G3 M1 fire rating for use on exhaust. Access to filter by removing central core from front.

Note: the W4 filter is incompatible with the B 700 damper.

- Galvanised steel connection plenum with RT top connection or RE side connection. Available in basic or insulated versions.

For more information, see page 116.

STANDARD DIMENSIONS

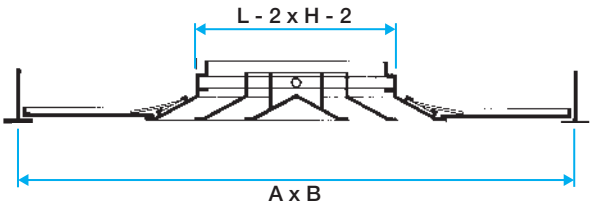
- Dimensions range from 150 x 150 mm to 525 x 525 mm (square only).

For further information refer to the Range pages below.

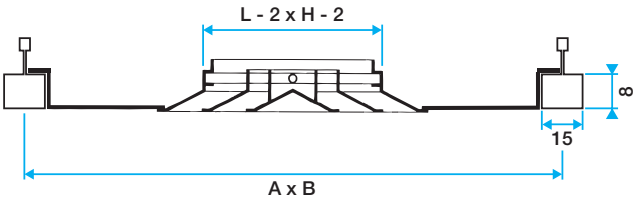
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



SF 704 TP
For T-bar type ceiling systems



SF 704 TP
For Fine Line type ceiling systems (not available on aluminium model)

STANDARD DIMENSIONS

A x B* (MM)	L x H (MM)	A x B* (MM)	L x H (MM)
600 x 600	150 x 150	675 x 675	150 x 150
	225 x 225		225 x 225
	300 x 300		300 x 300
	375 x 375		375 x 375
			450 x 450
			472 x 472
			525 x 525

* Nominal ceiling panel dimensions.

SC 704 R TP series - Steel

SF 704 R TP diffuser

BR damper

USE

- Diffusers designed to replace a standard ceiling panel.
- Circular connection built into diffuser.
- Air supply for all ventilation & air conditioning applications.
- Horizontal air diffusion in 4 directions.
- Fixed diffusion.
- Positioned on ceiling. Installed in place of a standard 600 x 600 mm ceiling panel.
- Suited to “T-bar” suspended ceiling systems.

CONSTRUCTION

- Pressed steel outer frame and connection plenum.
- Profiled steel core.
- Fixed core.
- 27 mm wide frame.

FINISH

- Epoxy paint RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the neck of the diffuser (attachment to concrete slab).
- F16: concealed screw attachment via brackets on the diffuser shell (attachment to concrete slab).

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- BR: butterfly damper with 2 or 4 V-shape vanes (according to diameter). Steel construction.

Precise control through diffuser using screw.
For more information, refer to the adjustable circular diffusers page.

- Thermal insulation for diffuser (outer insulation of shell).

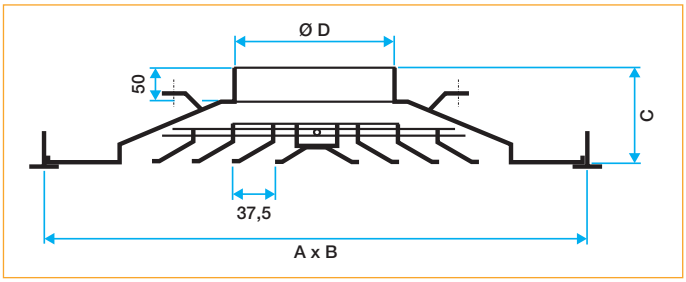
STANDARD DIMENSIONS

- Dimensions suited to 600 x 600 mm ceiling panels:
  - Ø 160.
  - Ø 200.
  - Ø 250.
  - Ø 315.

TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



SF 704 R TP

STANDARD DIMENSIONS

A x B* (MM)	C (MM)	Ø D (MM)
600 x 600	98	160
600 x 600	102	200
600 x 600	122	250
600 x 600	135	315

* Nominal ceiling panel dimensions.

700 series accessories - Steel

RE plenum

B 700 damper

USE

- B 700: steel damper with counter-rotary action. Adjustment possible from front of diffuser using lever concealed between frame and core. Clip-mounted on diffuser. The special design of the blades enables optimal closure by overlapping.
- RT: connection plenum with circular top connection.
- RE: connection plenum with circular side connection.
- Possible to have perforated plate inside RE and RT plenums for better distribution of supply airflow.
- Insulation possible inside RE and RT plenums. Thermal insulation on 5 sides or acoustic on 2 sides.
- W4 pleated filter (height 50 mm) G3 M1 fire rating for use on exhaust. Access to filter by removing central core from front.
- Class C airtight performance and VDI possible.

Note: the W4 filter is incompatible with the B 700 damper.

CONSTRUCTION

- B 700: frame and blades.
- RT: Galvanised steel plate connection plenum.
- RE: Galvanised steel plate connection plenum.
- Polyurethane foam insulation 5 mm M1 fire rating.

FINISH

- Rough galvanised steel.
- Black paint finish on request (B 700 damper only).

ATTACHMENT

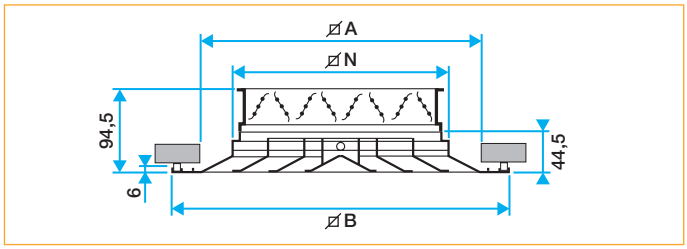
- The plenums are equipped with brackets for attachment to a concrete ceiling.

STANDARD DIMENSIONS

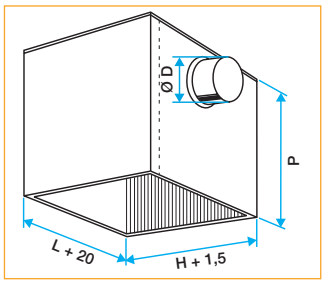
- Dimensions from 150 x 150 to 600 x 600 mm with increments of 75 mm in length & height.

For further information refer to the Range pages below.

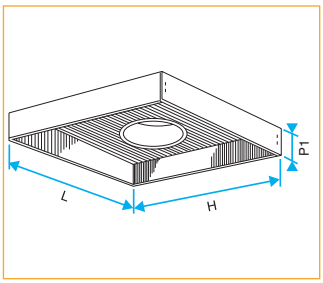
DIMENSIONS



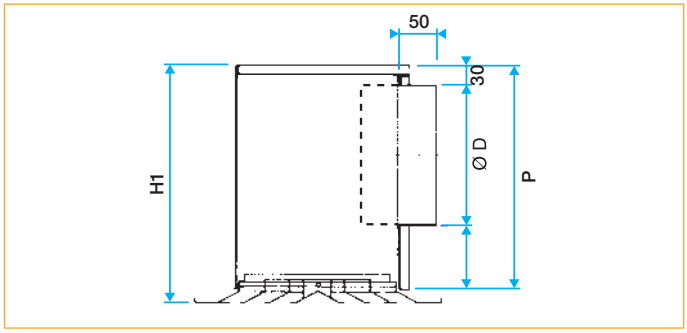
B 700 damper



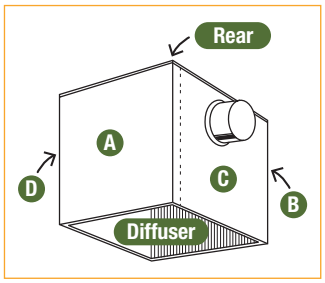
RE plenum



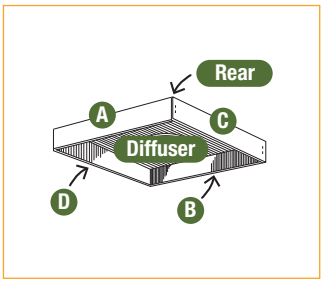
RT plenum



RE plenum with perforated distribution plate



RE plenum: Support diagram for configuration.



RT plenum: Support diagram for configuration.

STANDARD DIMENSIONS OF PLENUMS

L x H (MM)	Ø D (MM)	D (MM)	H (MM)	P1 (MM)
150 x 150	125	215	230	160
225 x 225	160	250	265	160
300 x 300	250	340	355	160
375 x 375	315	405	420	160
450 x 450	355	315	460	160
472 x 472	355	400	460	160
525 x 525	355	400	460	160
600 x 600	400	490	505	160

SF 704 - SF 704 TP - SF 704 R TP - AF 704 - AN 704 TP series

STANDARD RANGE

DIMENSIONS (MM)	4-CHANNEL DIFFUSER WHITE STEEL SF 704	4-CHANNEL DIFFUSER WHITE STEEL SF 704 TP
	CODE	CODE
150 x 150	11051548	11051076
225 x 225	11051549	11051077
300 x 300	11051550	11051078
375 x 375		11051079
472 x 472	11051555	
525 x 525		
600 x 600	11051554	

DIMENSIONS (MM)	INSULATED STEEL DIFFUSER SF 704 RI TP (5) F16	STEEL DIFFUSER SF 704 R TP F16	DAMPER BR
	CODE	CODE	CODE
Ø 160		11051086	11053220
Ø 200	11051090	11051087	11053221
Ø 250	11051091	11051088	11053222
Ø 315	11051092	11051089	11053223

ATTACHMENT	FINISH
• Concealed screw attachment on the side of the neck or suspension brackets.	• Steel with epoxy paint RAL 9003 30% matt.

RANGE WITH CHOICE OF OPTIONS: SQUARE DIFFUSERS

DIMENSIONS L x H (MM)	SF 704	SF 704 TP A x B 600 x 600	SF 704 TP A x B 600 x 600 and RE PLENUM	SF 704 TP A x B 675 x 675	AF 704	AN 704 TP
	CODE	CODE	CODE	CODE	CODE	CODE
150 x 150	11002671	11002691	11003438	Please contact us*	11002761	11002811
225 x 225	11002672	11002692	11003439	Please contact us*	11002762	11002812
300 x 300	11002673	11002693	11003440	Please contact us*	11002763	11002813
375 x 375	11002674	11002694	11003441	Please contact us*	11002764	11002814
450 x 450	11002675	11002695	11003442	Please contact us*	11002765	
472 x 472	11002676			Please contact us*	11002766	
525 x 525	11002677			Please contact us*	11002767	
600 x 600	11002678				11002768	

* Minimum quantities may be required.

RANGE WITH CHOICE OF OPTIONS: SQUARE DIFFUSERS WITH CIRCULAR CONNECTION

Ø D (MM)	SF 704 R TP AXB 600X600
	CODE
Ø 160	11003231
Ø 200	11003232
Ø 250	11003233
Ø 315	11003234

AVAILABLE OPTIONS

ATTACHMENT	SUITED TO SUSPENDED CEILING SYSTEMS	THERMAL INSULATION	FINISH
• Concealed screw attachment on neck. • F1: visible screw attachment in frame (SF frame only). • F7: concealed bridge attachment in plenum. • F16: attachment brackets supplied (SF 704 R TP only).	• T-bar ceiling system. • Fine-Line ceiling system (704 TP models only).	• External insulation of shell (SF 704 R TP only).	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

ACCESSORIES PROPOSED

- B 700 and BR dampers.
- RE and RT plenums.
- CW4 filter casing
- W4 filter

RE - RT - B 700 - CW4 - W4 series

STANDARD RANGE

DIMENSIONS (MM)	DAMPER B 700	FILTER CASING (G3 FILTER INCLUDED) CW4	G3 FILTER ONLY (REPLACEMENT) W4	PLENUM WITH REAR CONNECTION RT	INSULATED PLENUM WITH SIDE CONNECTION REIF (5)	PLENUM WITH SIDE CONNECTION RE
	CODE	CODE	CODE	CODE	CODE	CODE
150 x 150	11051321	11053431	-	11053522	11053395	11053384
225 x 225	11051322	11053432	-	11053523	11053396	11053385
300 x 300	11051323	11053433	-	11053524 (Ø 160) 11053525 (Ø 200) 11053526 (Ø 250)	11053397 (Ø 160) 11053398 (Ø 200) 11053399 (Ø 250)	11053386 (Ø 160) 11053387 (Ø 200) 11053388 (Ø 250)
375 x 375	11051324	11053434	11053374	11053527	11053400	11053389
472 x 472	11051328	11053435	-	11053528	11053406	11053390
525 x 525	-	-	-	-	-	-
600 x 600	11051327	-	-	-	-	-

RANGE WITH CHOICE OF OPTIONS: FOR SQUARE DIFFUSERS

DIMENSIONS L x H (MM)	RE	RT
	CODE	CODE
150 x 150	11003436	11003437
225 x 225	11003436	11003437
300 x 300	11003436	11003437
375 x 375	11003436	11003437
450 x 450	11003436	11003437
472 x 472	11003436	11003437
525 x 525	11003436	11003437
600 x 600	11003436	-

* Minimum quantities may be required.

RANGE WITH CHOICE OF OPTIONS: ALL MODELS

ACCESSORIES	CODE	PLENUMS	CODE
B 700 damper	11003203	RE with side connection	11003436
CW4 filter casing	11003250	RT top connection	11003437
W4 replacement filter	11053370		

AVAILABLE OPTIONS

DAMPER	ATTACHMENT (PLENUM)	PLENUM
• Black colour shutters.	• F7: bridge. Only available with RE models code 11003436 and RT models code 11003437. • F0: screw in neck.	• Special depth. • Connection diameters. • Perforated distribution plate. • Insulation on 2 or 5 sides. • Number of connections. • Sealed connections. • Class C airtight performance • Black paint coating: contact us.

704 series

SELECTION - AIR SUPPLY WITH CEILING EFFECT FOR 704 SERIES

AK (M²)	L x H (MM)	QV (M³/H)																					
		100		150		200		250		300		400		500		600		800		1000		1200		1500	
0.011	**150 x 150**	25	0.7	34	1.0	39	1.4																	Lw	Lt
		2.8	4.6	4.2	10	5.6	19																	Vk	Pa
0.023	**225 x 225**			22	0.8	28	1.0	33	1.2	37	1.5	42	2.0												
				2.1	2.6	2.8	4.6	3.5	7.2	4.2	10	5.6	19												
0.038	**300 x 300**							23	0.9	32	1.1	28	1.5	37	1.8	41	2.3								
								1.9	2.2	2.3	3.2	3.1	5.7	3.9	9.0	4.6	13								
0.057	**375 x 375**											21	1.2	30	1.5	34	1.8	40	2.4	45	3.0				
												1.9	2.4	2.5	3.7	2.9	5.3	3.9	9.4	5.0	15				
0.087	**472 x 472**															28	1.5	34	2.0	38	2.4	42	3.0	47	3.7
																2.1	2.5	2.8	4.5	3.4	5.9	4.2	10	5.1	15
0.106	**525 x 525**																	29	1.7	33	2.1	37	2.5	42	3.2
																		2.0	2.4	2.5	3.8	3.1	5.5	3.8	8.6
0.137	**600 x 600**	Lw	Lt															25	1.5	29	1.8	33	2.2	37	2.7
		Vk	Pa															1.5	1	2	2.4	2.5	3.8	3	5.4

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

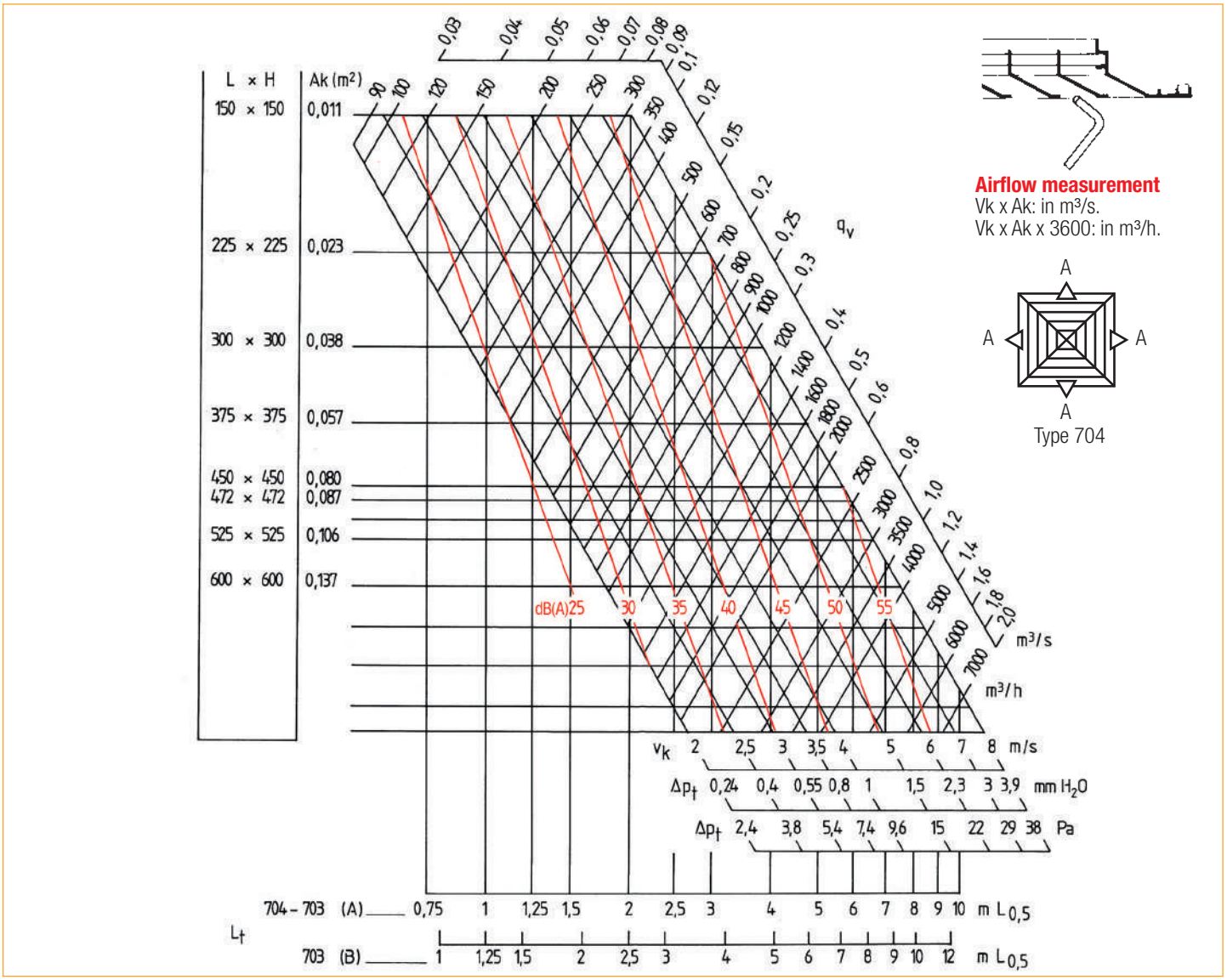
SELECTION - AIR SUPPLY WITH CEILING EFFECT FOR 704 R TP SERIES

AK (M²)	Ø N (MM)	QV (M³/H)																					
		150		200		250		300		400		500		600		800		1000		1200		1500	
0.022	**Ø 160**	23	1	29	1.2	34	1.4	40	1.8	44	2.2											Lw	Lt
		2.1	4	2.9	7	3.7	13.2	4.2	16	5.6	22											Vk	Pa
0.034	**Ø 200**					24	1.2	29	1.5	34	1.8	39	2.1	46	3								
						2.1	5	2.5	5.4	3.4	6.8	4.2	15	5	19								
0.054	**Ø 250**									27	1.5	33	1.8	35	2.2	43	2.8	51	3.4				
										2.3	5	2.8	7	3.5	12	4.5	18	5.6	22				
0.085	**Ø 315**	Lw	Lt											30	1.7	33	2.2	40	2.6	44	3.3	49	4.1
		Vk	Pa											2.1	4.5	2.8	6.1	3.4	12	4.2	15	5.1	20

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

704 series

AIR SUPPLY WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

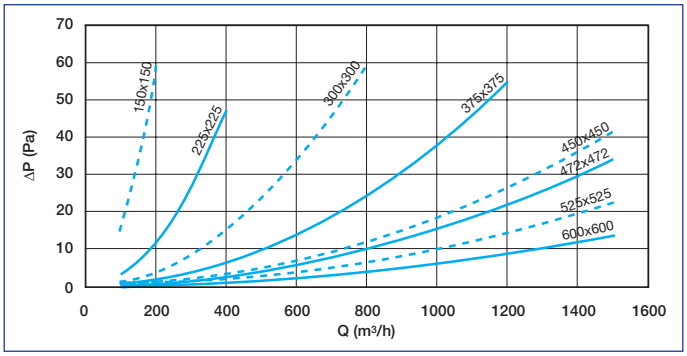
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 1.00	ΔPt x 1.00	ΔPt x 0.95 x Vk²	ΔPt x 3.28 x Vk²
Lw - 0	Lw + 0	Lw + 10	Lw + 20

PRESSURE DROP ON W4 FILTER ONLY



CORRECTIONS FOR EXHAUST APPLICATION

SIZES 150 AND 225	SIZES 300 AND 375	SIZES 450 AND 472	SIZES 525 AND 600
DPt x 1.20	DPt x 1.30	DPt x 1.40	DPt x 1.45
Lw + 2	Lw + 3	Lw + 4	Lw + 5

SC 310 R - SC 319 R series - Steel

SC 310 R diffuser

BR damper

USE

- Air supply or exhaust.
- 1, 2, 3 or 4 airflow directions.
- Positioned on ceiling. Installed flush with ceiling.
- Adjustable diffusion.
- Exhaust version with filtration possible.

CONSTRUCTION

- Square galvanised steel diffuser with perforated front panel.
- Opening perforated plate.
- Circular connection.
- SC 310 R: 1 to 4 channel multi-directional air supply using individually-adjusted deflectors.
- SC 319 R: perforated plate for exhaust.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the side of the neck.
- F16: concealed attachment with 3 attachment brackets riveted to the shell.
- Connection to circular duct.

ACCESSORIES

- BR: butterfly damper with 2 or 4 V-shape vanes (according to diameter). Steel construction.

Precise control through diffuser using screw.

- Thermal insulation on outside of shell (polyurethane foam M1).
- W: flat G3 filter (M1 fire rating).
- RE: galvanised steel connection plenum with side connection. The RE plenum can be fitted with an interior perforated plate for better distribution of the supply airflow. For more information, see page 116.

STANDARD DIMENSIONS

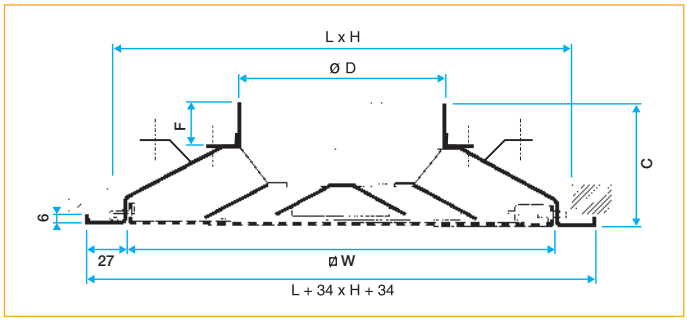
- Dimensions available L x H (mm):
  - 300 x 300
  - 400 x 400
  - 500 x 500
  - 562 x 562 (dimension suited to standard 600 x 600 mm ceiling panels).

For further information refer to the Range pages below.

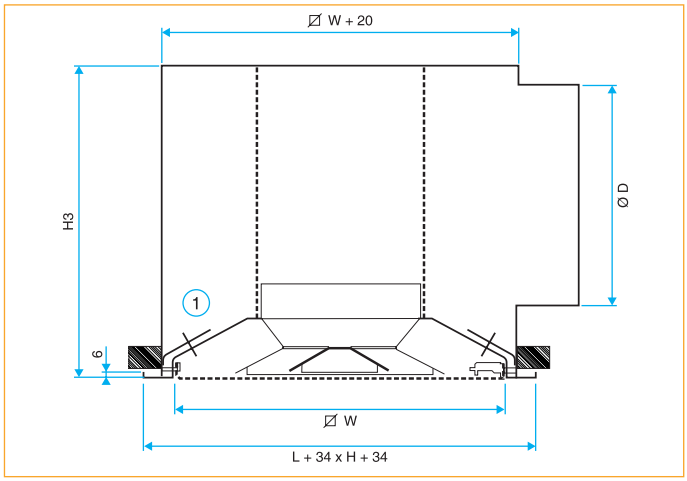
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

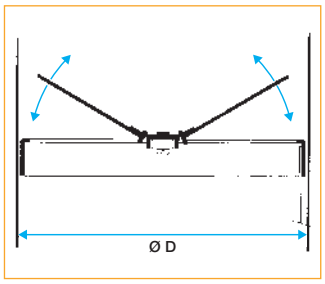
DIMENSIONS



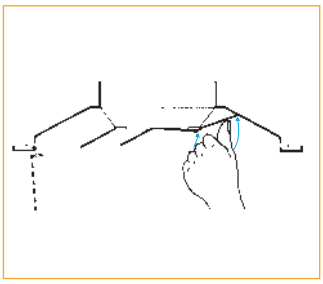
SC 310 R diffuser



SC 310 R diffuser with RE plenum and perforated distribution plate



BR damper



The deflectors are positioned after the perforated plate is opened.

STANDARD DIMENSIONS

L x H (MM)	W (MM)	C (MM)	Ø D (MM)	H3 (MM)
300 x 300	280	98	160	260
400 x 400	380	108	200	310
500 x 500	480	122	250	380
562 x 562	545	135	315	430

SC 360 R - SC 369 R series

SC 360 R diffuser

SC 360 R diffuser - rear view

USE

- Air supply or exhaust.
- 1, 2, 3 or 4 airflow directions.
- Positioned on ceiling. Installed in place of a standard 600 x 600 mm or 675 x 675 mm ceiling panel.
- Suited to “T-bar” or “Fine Line” suspended ceiling systems.
- Adjustable diffusion.
- Exhaust version with filtration possible.

CONSTRUCTION

- Square galvanised steel diffuser with perforated front panel.
- Dimensions adjusted to ceiling modules using a solid compensation plate.
- Circular connection.
- SC 360 R: 1 to 4 channel multi-directional air supply using individually-adjusted deflectors.
- SC 369 R: perforated plate for exhaust.
- Central perforated plate opens for easy access to deflectors or filter.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the side of the neck.
- F16: concealed attachment with 3 attachment brackets riveted to the shell.
- Connection to circular duct.

ACCESSORIES

- BR: butterfly damper with 2 or 4 V-shape vanes (according to diameter). Steel construction.

Precise control through diffuser using screw.

- Thermal insulation on outside of shell (polyurethane foam M1).
- W: flat G3 filter (M1 fire rating).
- RE: galvanised steel connection plenum with side connection. The RE plenum can be fitted with an interior perforated plate for better distribution of the supply airflow. For more information, see page 116.

STANDARD DIMENSIONS

- Available ceiling dimensions A x B: 600 x 600 and 675 x 675 mm.

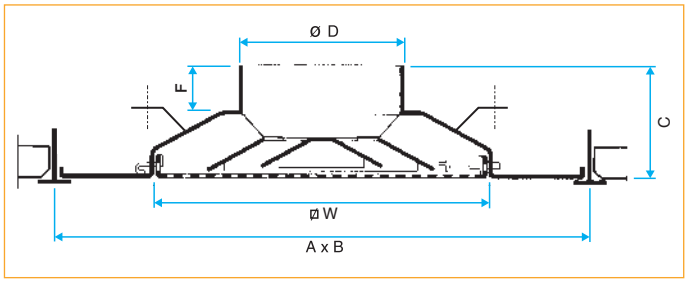
Connection diameters Ø D from 160 to 315 mm

For more information, see page 116.

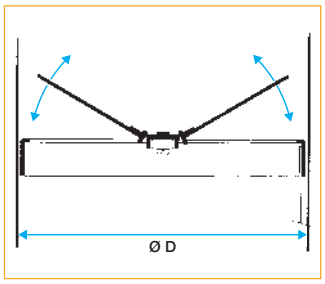
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



SC 360 R diffuser



BR damper

DIMENSIONS AVAILABLE

A x B* (MM)	W (MM)	C (MM)	Ø D (MM)	H3 (MM)
600 x 600	280	98	160	260
600 x 600	380	108	200	310
600 x 600	480	122	250	380
600 x 600	545	135	315	430
675 x 675	280	98	160	260
675 x 675	380	108	200	310
675 x 675	480	122	250	380
675 x 675	545	135	315	430

* Nominal ceiling panel dimensions.

310 - 319 - 360 - 369 series

STANDARD RANGE

DIMENSIONS (MM)	INSULATED AIR SUPPLY DIFFUSER SC310 RIF (5) F16	INSULATED AIR SUPPLY DIFFUSER SC360 RIF (5) F16	AIR SUPPLY DIFFUSER SC 310 R F16	EXHAUST DIFFUSER SC 319 R F16	AIR SUPPLY DIFFUSER SC 360 R F16	EXHAUST DIFFUSER SC 369 R F16	SPARE FILTER W	DAMPER BR
	CODE	CODE	CODE	CODE	CODE	CODE	CODE	CODE
Ø 160			11051140	11051170	11051145	11051135		11053220
Ø 200		11051159	11051141	11051171	11051146	11051136	11053519	11053221
Ø 250		11051160	11051142	11051172	11051147	11051137	11053520	11053222
Ø 315	11051144		11051143	11051173			11053521	11053223

ATTACHMENT	FINISH
• F16: concealed attachment with 3 attachment brackets riveted to the shell.	• Steel with epoxy paint RAL 9003 30% matt.

RANGE WITH CHOICE OF OPTIONS: SQUARE DIFFUSERS

DIMENSIONS L x H / Ø D (MM)	SC 310 R	SC 319 R	RE plenum
	CODE	CODE	CODE
300 x 300 / Ø 160	11002141	11002146	11003436
400 x 400 / Ø 200	11002142	11002147	11003436
500 x 500 / Ø 250	11002143	11002148	11003436
562 x 562 / Ø 315	11002144	11002149	11003436

RANGE WITH CHOICE OF OPTIONS: SQUARE DIFFUSERS FOR PANELS

DIMENSIONS L x H / Ø D (MM)	SC 360 R	SC 369 R	RE PLENUM
	CODE	CODE	CODE
600 x 600 / Ø 160	11002585	11002635	11003436
600 x 600 / Ø 200	11002587	11002637	11003436
600 x 600 / Ø 250	11002589	11002639	11003436
600 x 600 / Ø 315	11002591	11002641	11003436
675 x 675 / Ø 160	11002594	11002644	11003436
675 x 675 / Ø 200	11002596	11002646	11003436
675 x 675 / Ø 250	11002598	Please contact us*	11003436
675 x 675 / Ø 315	Please contact us*	11002650	11003436

* Minimum quantities may be required.

AVAILABLE OPTIONS

ATTACHMENT	THERMAL INSULATION	FINISH
• F0: concealed screw attachment on the side of the neck. • F16: concealed attachment with 3 attachment brackets riveted to the shell.	• External insulation of shell.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

ACCESSORIES PROPOSED

- BR damper.
- Flat W filter.
- RE plenum.

310 - 360 series

SELECTION - 4-DIRECTION AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L x H (MM)	Ø D (MM)	QV (M³/H) 125		150		200		250		300		400		600		800		1000	
0.018	300 x 300	160	-	0.8	-	1.0	26	1.3	33	1.7	39	2.0							Lw	Lt
			1.9	3.2	2.3	4.5	3.1	8.1	3.9	13	4.6	18							Vk	Pa
0.034	400 x 400	200					-	1.0	-	1.2	24	1.5	32	2.0						
							1.6	2.7	2.0	4.3	2.5	6.2	3.3	11						
0.056	500 x 500	250									-	1.2	-	1.5	32	2.3	42	3.8		
											1.5	2.3	2.0	4.0	3.0	9.1	4.0	16		
0.080	562 x 562	315	Lw	Lt									-	1.3	21	1.9	30	2.5	37	3.2
			Vk	Pa									1.4	1.7	2.1	3.9	2.8	6.9	3.5	11

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

SELECTION - 3-DIRECTION AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L x H (MM)	Ø D (MM)	QV (M³/H) 125		150		200		250		300		400		600		800		1000	
0.015	300 x 300	160	-	0.9	-	1.1	32	1.4	40	1.8	46	2.1							Lw	Lt
			2.3	6	2.8	9	3.7	15	4.6	24	5.6	35							Vk	Pa
0.028	400 x 400	200					-	1.0	-	1.3	28	1.5	37	2.1						
							2.0	4.4	2.5	7	3.0	0	4.0	18						
0.046	500 x 500	250									-	1.2	-	1.6	36	2.4	46	3.2		
											1.8	4	2.4	7	3.6	15	4.8	26		
0.067	562 x 562	315	Lw	Lt											-	2.0	35	2.7	42	3.3
			Vk	Pa											2.5	7	3.3	12	4.1	19

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

SELECTION - 2-DIRECTION AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L x H (MM)	Ø D (MM)	QV (M³/H) 125		150		200		250		300		400		600		800	
0.012	300 x 300	160	-	1.2	30	1.4	39	1.9	47	2.4							Lw	Lt
			2.9	10	3.5	15	4.6	26	5.8	41							Vk	Pa
0.023	400 x 400	200					-	1.4	28	1.7	34	2.1	43	2.7				
							2.4	7	3.0	11	3.6	16	4.8	28				
0.037	500 x 500	250									-	1.6	30	2.2	43	3.2		
											2.3	6	3.0	11	4.5	25		
0.054	562 x 562	315	Lw	Lt									-	1.8	32	2.7	42	3.6
			Vk	Pa									2.1	5	3.1	11	4.1	20

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

SELECTION - 1-DIRECTION AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L x H (MM)	Ø D (MM)	QV (M³/H) 125		150		200		250		300		400		600	
0.012	300 x 300	160	32	2.0	38	2.4	47	3.2							Lw	Lt
			3.9	18	4.6	27	6.2	44							Vk	Pa
0.023	400 x 400	200	25	1.5	25	1.7	39	2.3	36	2.9	42	3.5				
			2.0	5	2.5	3	3.3	13	4.1	21	4.9	30				
0.037	500 x 500	250					25	1.8	25	2.3	29	2.8	39	3.7		
							2.1	5	2.6	8	3.1	12	4.1	21		
0.054	562 x 562	315	Lw	Lt							25	2.3	28	3.0	41	4.5
			Vk	Pa							2.1	5	2.8	10	4.2	22

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

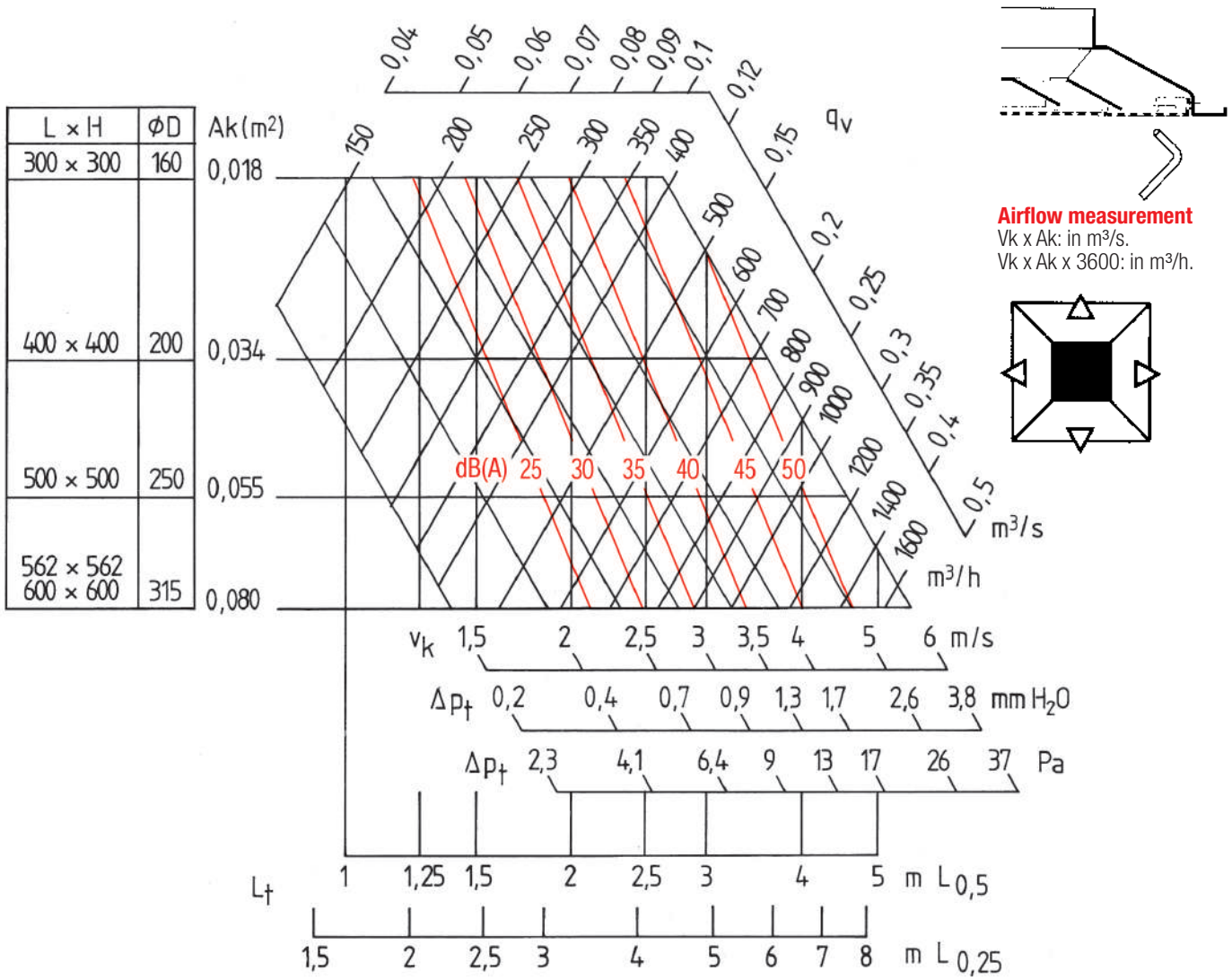
SELECTION - EXHAUST

AK (M^2)	DIAM. (MM)	Ø D (MM)	QV (M^3/H)															
			150		300		400		600		800		1000		1200		1400		1600	
0.0200	**300 x 300**	160	-	-	-	-													Lw	Lt
			2.1	12	4.2	48													Vk	Pa
0.0350	**400 x 400**	200			-	-	29	-	39	-										
					2.5	15	3.3	28	5	60										
0.0600	**500 x 500**	250					-	-	28	-	36	-	41	-						
							1.9	9	2.8	19	3.8	35	4.8	55						
0.0930	**562 x 562**	315	Lw	Lt					-	-	26	-	31	-	36	-	39	-	43	-
			Vk	Pa					1.7	8	2.5	15	3	22	3.6	33	4.1	42	4.9	57

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

310 - 360 series

4-DIRECTION DIFFUSION WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

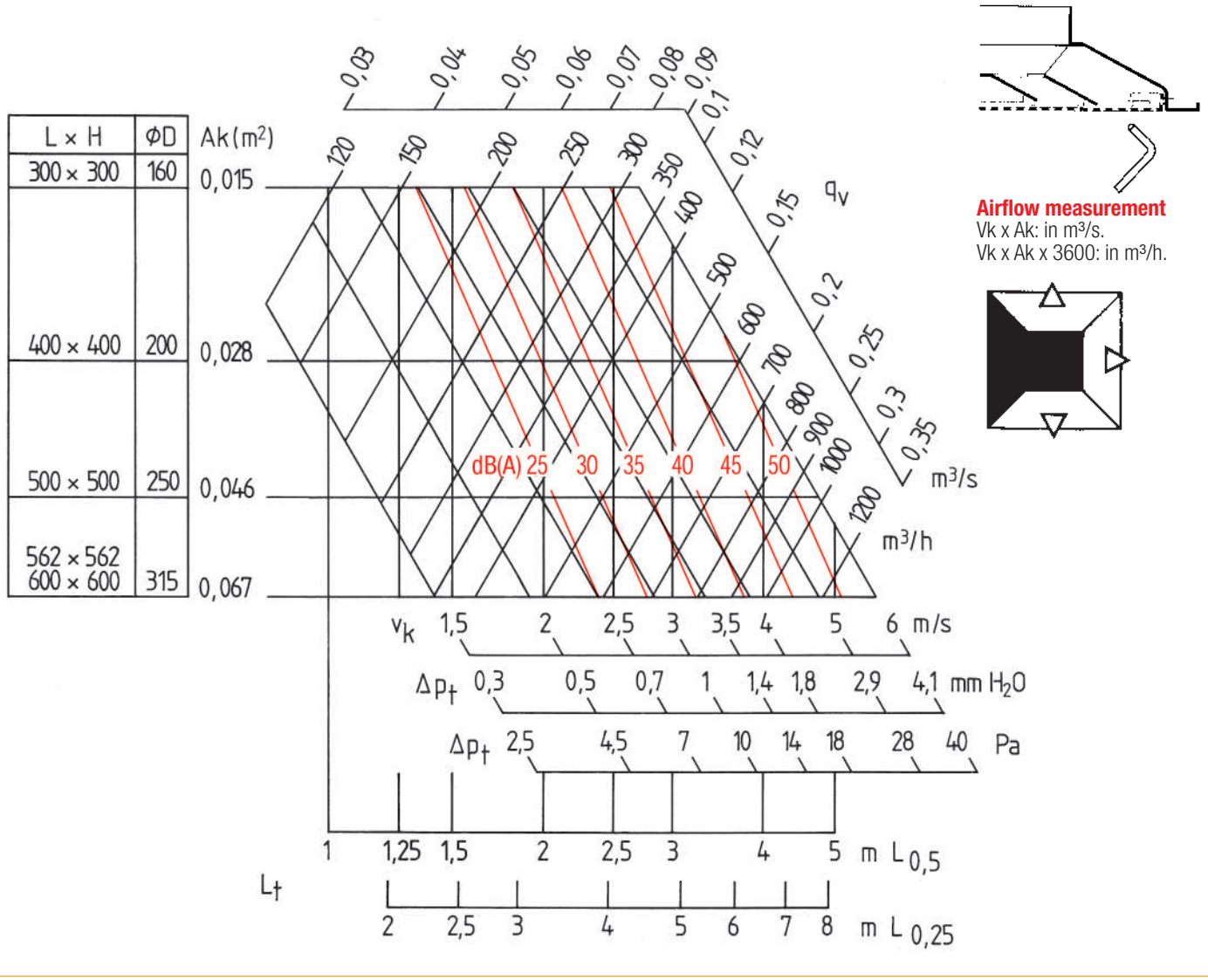
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP x 1.00	ΔP x 1.94	ΔP x 4.37	ΔP x 11.45
Lw + 0	Lw + 7	Lw + 17	Lw + 27

3-DIRECTION DIFFUSION WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR OTHER Vt

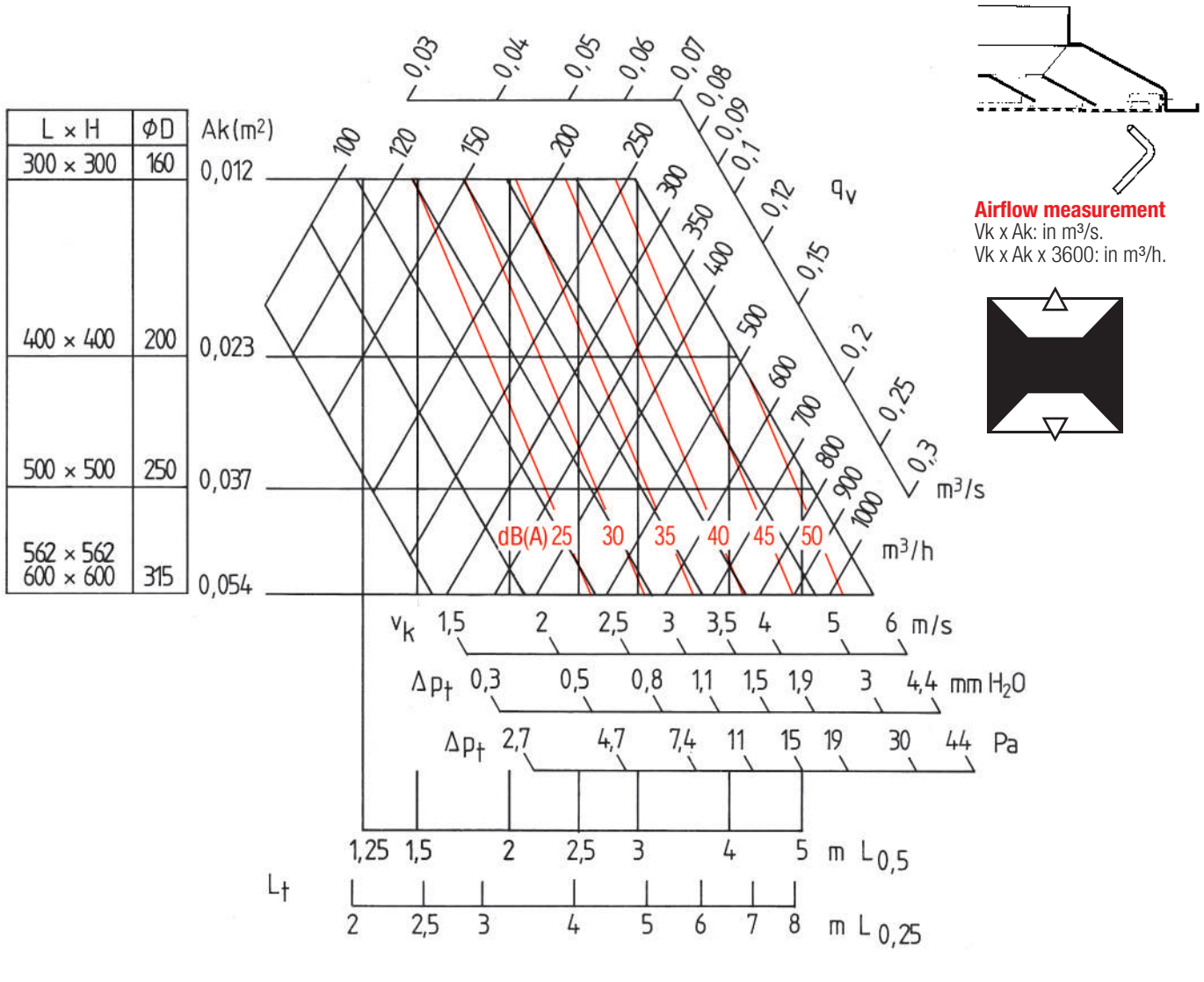
Vt (M/S)	0.25	0.375	0.5	0.625	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP x 1.00	ΔP x 1.37	ΔP x 3.08	ΔP x 8.08
Lw + 0	Lw + 3	Lw + 13	Lw + 23

310 - 360 series

2-DIRECTION DIFFUSION WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

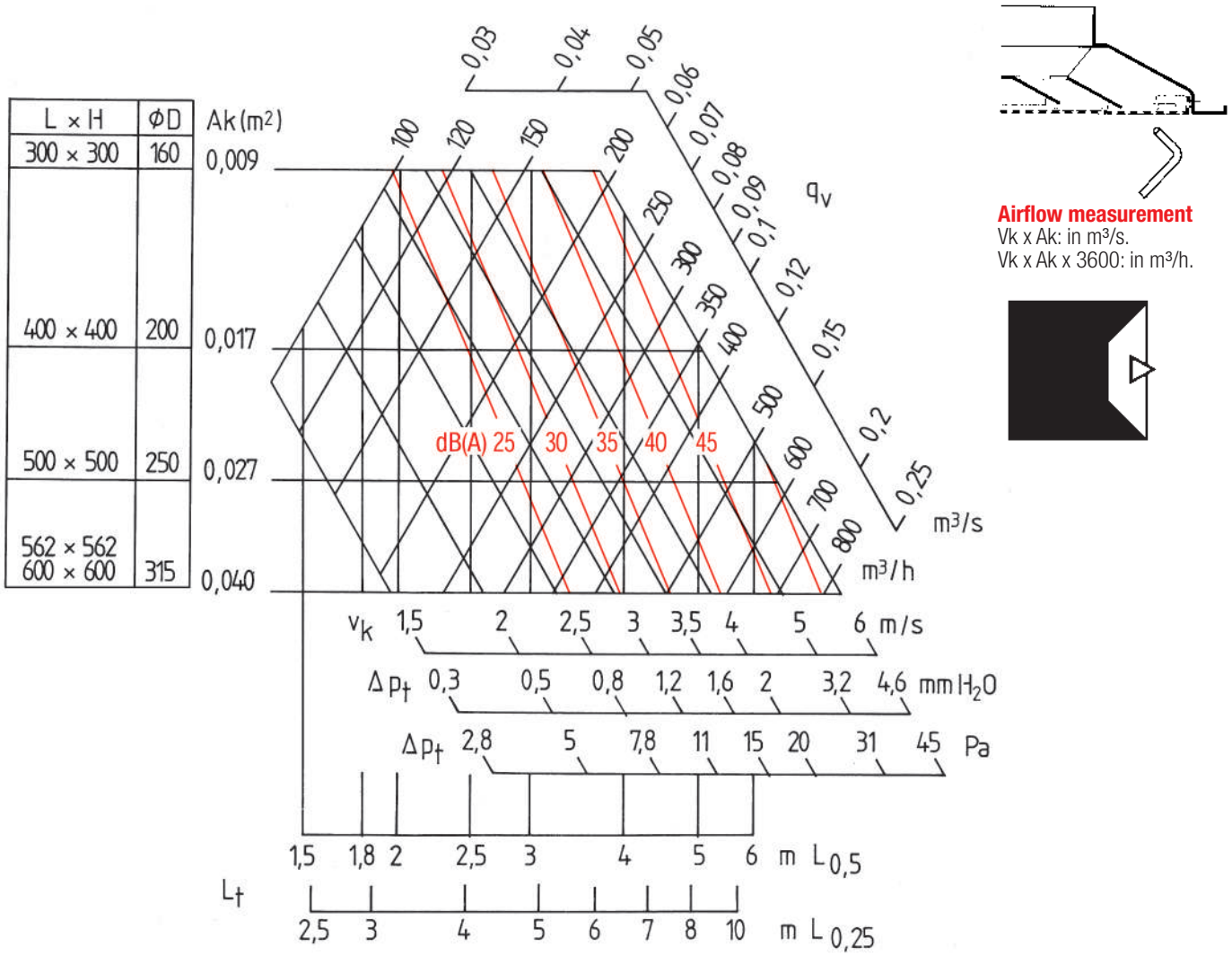
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP x 1.00	ΔP x 1.37	ΔP x 3.08	ΔP x 8.08
Lw + 0	Lw + 3	Lw + 13	Lw + 23

1-DIRECTION DIFFUSION WITH CEILING EFFECT



Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" plenum in compliance with standard EN 12238.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

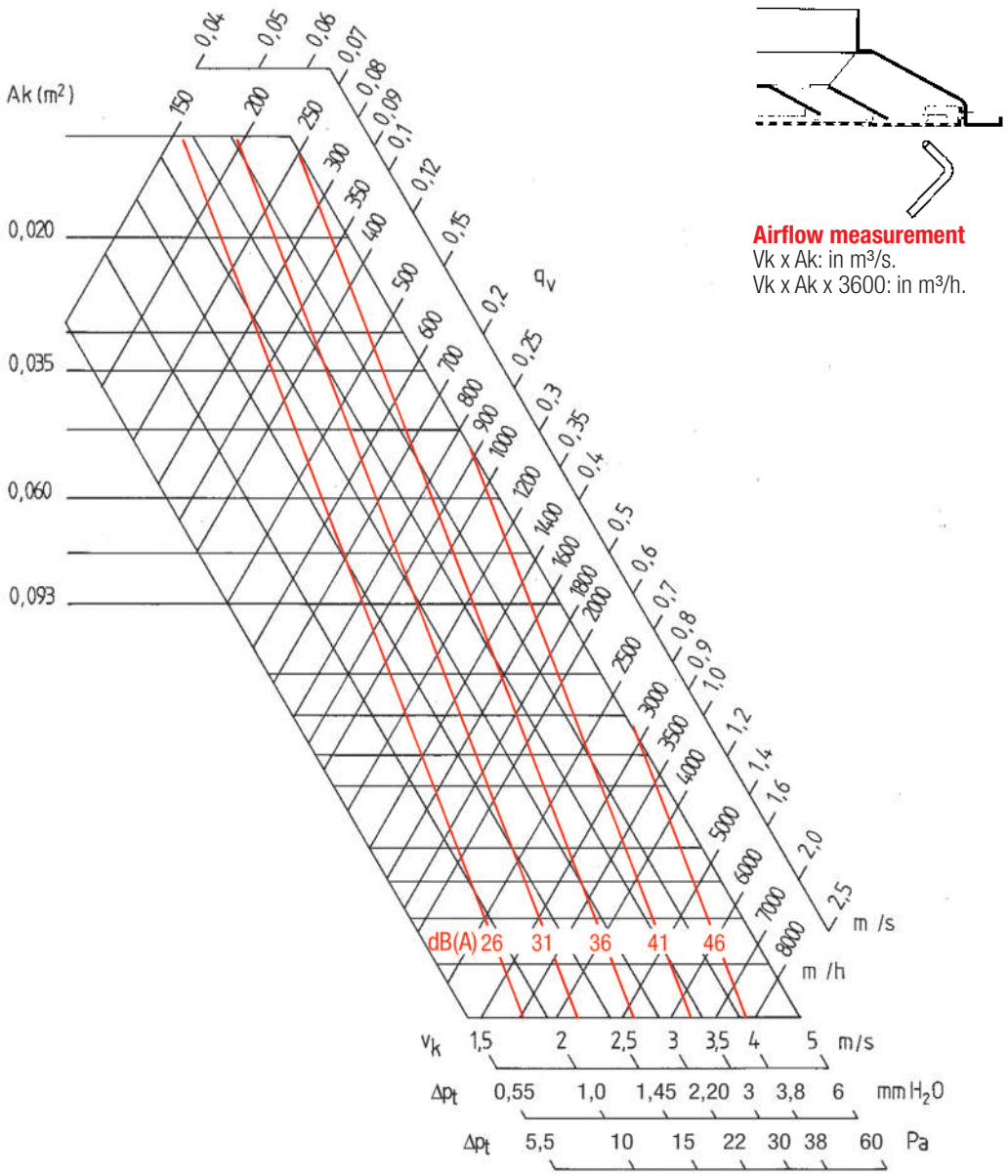
CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP x 1.00	ΔP x 1.19	ΔP x 2.68	ΔP x 7.02
Lw + 0	Lw + 3	Lw + 13	Lw + 23

319 - 369 series

EXHAUST

L x H	Ø D
300 x 300	160
400 x 400	200
500 x 500	250
562 x 562 600 x 600	315



Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

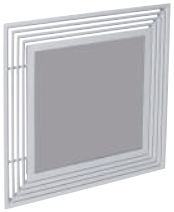
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with a "perfect" "plenum in compliance with standard EN 12238.

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔP x 1.00	ΔP x 1.19	ΔP x 2.68	ΔP x 7.02
Lw + 0	Lw + 3	Lw + 13	Lw + 21

ALD 610 K series - Aluminium

ALD 610 K
with central plate



ALD 610 K
with suspended ceiling panel

USE

- Air supply or exhaust.
- Fixed horizontal diffusion in four directions with 1, 2, 3 or 4 slots.
- Ceiling diffuser designed to replace a standard suspended ceiling panel 600 x 600 or 675 x 675 mm (T-bar or Fine Line ceiling systems).
- Possible to add a filter on the exhaust diffuser to replace that of the ducted convector fan for example.

CONSTRUCTION

- Extruded aluminium body and deflectors.
- Steel central plate.

Note: the central plate can be replaced by a ceiling panel cut to the same format as it for enhanced aesthetic integration.

- Exhaust model with built-in filter accessible from front panel of diffuser.
- Galvanised steel connection plenum with side connection (type RE) or top connection (type RT), standard or insulated.

FINISH

- Aluminium with epoxy paint RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Concealed attachment of diffuser to plenum using non-removable clips.
- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- G2 or G3 flat filter for exhaust (M1 fire rating).
- Adjustment damper fitted to plenum with access through diffuser.
- Plenum insulation on 2 or 5 sides (polyurethane foam M1).
- Extra connection on plenum.

STANDARD DIMENSIONS

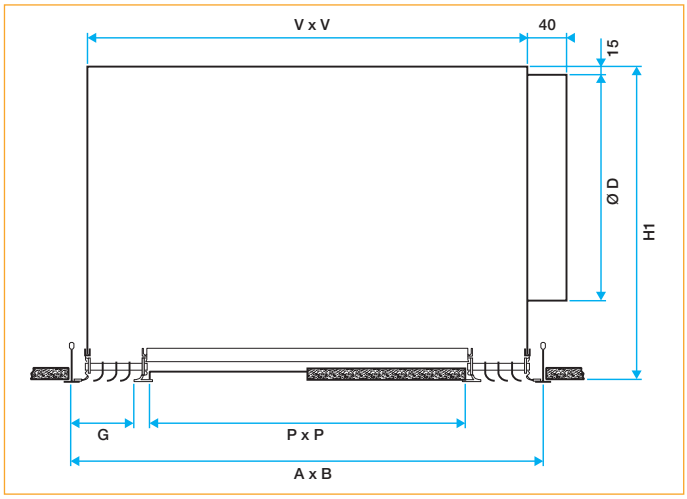
- Dimensions from 1 to 4 slots for 600 x 600 mm or 675 x 675 mm ceiling panels.

For further information refer to the Range pages below.

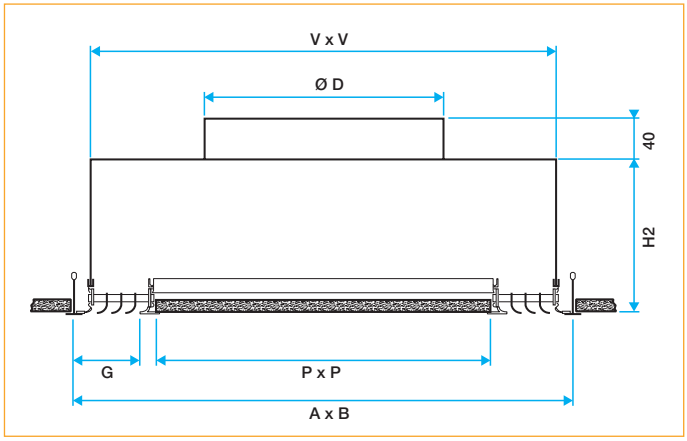
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



ALD 610 K diffuser with side connection plenum



ALD 610 K diffuser with top connection plenum

STANDARD DIMENSIONS

A x B* (MM)	NBR OF SLOTS	P x P (MM)	V x V (MM)	H1 (MM)	H2 (MM)	G (MM)	Ø D (MM)	H1** (MM)
600 x 600	1	508 x 508	560 x 560	265	125	25	200	325
600 x 600	2	474 x 474	560 x 560	325	125	42	250	325
600 x 600	3	440 x 440	560 x 560	325	125	59	250	325
600 x 600	4	406 x 406	560 x 560	325	125	76	250	325
675 x 675	1	583 x 583	635 x 635	265	125	25	200	325
675 x 675	2	549 x 549	635 x 635	325	125	42	250	325
675 x 675	3	515 x 515	635 x 635	325	125	59	250	325
675 x 675	4	481 x 481	635 x 635	325	125	76	250	325

* Nominal ceiling panel dimensions.
** Opening diffuser version with filter only.

ALD 610 K Combined series - Aluminium

ALD 610 K Combined diffuser

USE

- Air supply (around edge) and exhaust (in centre) for all ventilation & air conditioning applications.
- Fixed horizontal diffusion in four directions with 1, 2, 3 or 4 slots.
- Ceiling diffuser designed to replace a standard suspended ceiling panel 600 x 600 or 675 x 675 mm (T-bar or Fine Line ceiling systems).
- Possible to add a filter on the exhaust part to replace that of the ducted convector fan for example.

CONSTRUCTION

- Diffuser fitted with double plenum performing air supply and exhaust functions simultaneously.
- Aluminium body and supply deflectors.
- Central perforated steel plate (for exhaust). • This plate can be fitted with a filter which can be accessed via the front panel of the diffuser.
- Galvanised steel double plenum with two opposing connections.

FINISH

- Aluminium with epoxy paint RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Concealed attachment of diffuser to plenum using non-removable clips. The system is pre-assembled in factory.
- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- G2 or G3 flat filter for exhaust part (M1 fire rating).
- Insulation on 5 sides of double plenum (polyurethane foam M1).
- Supply and exhaust connections at 90° to each other.

STANDARD DIMENSIONS

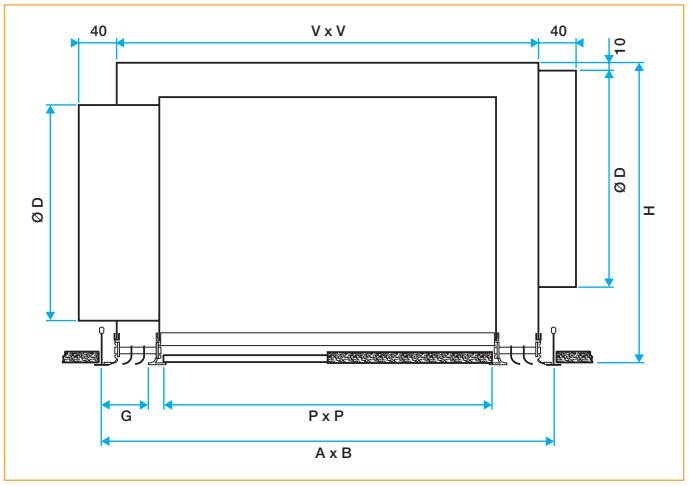
- Dimensions from 1 to 4 slots for 600 x 600 mm or 675 x 675 mm ceiling panels.

For further information refer to the Range pages below.

TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



ALD 610 K Combined diffuser with plenum

STANDARD DIMENSIONS

A x B* (MM)	NUMBER OF SLOTS	P x P (MM)	V x V (MM)	H (MM)	G (MM)	Ø D (MM)
600 x 600	1	508 x 508	560 x 560	365	25	250
600 x 600	2	474 x 474	560 x 560	365	42	250
600 x 600	3	440 x 440	560 x 560	365	59	250
600 x 600	4	406 x 406	560 x 560	365	76	250
675 x 675	1	583 x 583	635 x 635	365	25	250
675 x 675	2	549 x 549	635 x 635	365	42	250
675 x 675	3	515 x 515	635 x 635	365	59	250
675 x 675	4	481 x 481	635 x 635	365	76	250

* Nominal ceiling panel dimensions.

Note:
Plenums are always fitted to diffusers in factory.
They must be ordered at the same time.

ALD 610 K - ALD 610 K Combined series

RANGE WITH CHOICE OF OPTIONS ALD 610 K

DIMENSIONS (MM)	NUMBER OF SLOTS	DIFFUSER ALD 610K	PLENUM WITH SIDE CONNECTION RE610	PLENUM TOP CONNECTION RT610
		CODE	CODE	CODE
600 x 600	1	11002861	11003321	11003331
600 x 600	2	11002862	11003324	11003334
600 x 600	3	11002863	11003324	11003334
600 x 600	4	11002864	11003324	11003334
675 x 675	1	11002866	11003326	-
675 x 675	2	Please contact us*	11003329	11003339
675 x 675	3	11002868	11003329	11003339
675 x 675	4	11002869	11003329	11003339

* Minimum quantities may be required.

AVAILABLE OPTIONS

DIFFUSER	FINISH	PLENUM
• With or without solid central plate. • Opening core with filter.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.	• Additional connection. • Insulation on 2 or 5 sides. • Filter holder • Damper on connection (not compatible with filter holder option).

RANGE WITH CHOICE OF OPTIONS ALD 610 K COMBINED

DIMENSIONS (MM)	NUMBER OF SLOTS	COMBINED DIFFUSER ALD 610K	DOUBLE PLENUM* R-RE
		CODE	CODE
600 x 600	1	11002881	11003341
600 x 600	2	11002882	11003342
600 x 600	3	11002883	11003343
600 x 600	4	11002884	11003344
675 x 675	1	11002886	11003346
675 x 675	2	11002887	11003347
675 x 675	3	11002888	11003348
675 x 675	4	11002889	11003349

*Supplied mounted on diffuser.

AVAILABLE OPTIONS

DIFFUSER	FINISH	PLENUM
• Opening core with filter.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.	• Connection at 90°. • Insulation on 5 sides. • Filter holder.

ALD 610 K series

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	DIMENSIONS	QV (M³/H) 150		200		250		300		400		500		600		800		1000		1200		1400	
0.016	600 - 1 slot	23	2.3	30	2.7	35	3	38	3.4	43	4											Lw	Lt
		2.4	5	3.3	9	4	13	4.9	20	6.5	35											Vk	Pa
0.018	675 - 1 slot	21	2	28	2.6	33	2.9	37	3.3	43	3.9	48	4.6										
		2.3	4	2.9	7	3.8	12	4.5	17	6	30	7.5	46										
0.030	600 - 2 slots					25	2.5	29	2.9	34	3.4	40	3.9	43	4.5	49	5.4						
						2.3	4	2.7	6	3.6	11	4.5	17	5.5	25	7.1	42						
0.034	675 - 2 slots					23	2.6	27	2.8	32	3.3	38	3.8	41	4.2	47	5.2						
						2	3	2.4	5	3.2	8	4	13	4.9	19	6.5	35						
0.045	600 - 3 slots									27	2.9	32	3.4	35	3.8	41	4.6	46	5.4	40	6.3		
										2.3	4	2.9	7	3.4	9	4.6	17	5.9	29	6.9	39		
0.051	675 - 3 slots									25	2.8	30	3.3	33	3.7	40	4.4	44	5.2	48	6		
										2	3	2.6	5	3	7	4	13	5.1	22	6.2	33		
0.060	600 - 4 slots											27	3.1	31	3.5	37	4.2	42	5	46	5.7	49	6.6
												2.2	4	2.6	5	3.5	10	4.5	16	5.2	22	6.2	31
0.068	675 - 4 slots	Lw	Lt											28	3.4	34	4	40	4.7	43	5.4	47	6.2
		Vk	Pa											2.4	4	3	7	3.9	12	4.6	17	5.5	25

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with standard plenum.

SELECTION - EXHAUST WITHOUT FILTER

AK (M²)	DIMENSIONS	QV (M³/H) 150		200		250		300		400		500		600		800		1000		1200		1400	
0.012	600 - 1 slot	18	-	25	-	30	-	33	-	39	-											Lw	Lt
		3.1	8	4.3	15	5.2	22	6.4	50	8.5	59											Vk	Pa
0.014	675 - 1 slot	16	-	23	-	28	-	32	-	38	-												
		3.0	7	33.8	12	4.9	20	5.9	29	7.8	47												
0.023	600 - 2 slots					20	-	24	-	29	-	35	-	38	-								
						3.0	7	3.5	10	4.7	17	5.9	29	7.2	43								
0.026	675 - 2 slots					18	-	22	-	27	-	33	-	36	-	42	-						
						2.6	5	3.1	8	4.2	14	5.2	22	6.4	32	8.4	59						
0.035	600 - 3 slots									22	-	27	-	30	-	36	-	41	-				
										3.0	7	3.8	12	4.4	15	6.0	29	7.7	49				
0.039	675 - 3 slots									20	-	25	-	28	-	35	-	39	-	43	-		
										2.6	5	3.4	8	3.9	12	5.2	22	6.6	37	8.1	56		
0.046	600 - 4 slots											22	-	26	-	32	-	37	-	41	-	44	-
												2.9	7	3.4	8	4.6	17	5.9	27	6.8	37	8.1	53
0.052	675 - 4 slots	Lw	Lt											23	-	29	-	35	-	38	-	32	-
		Vk	Pa											3.1	7	3.9	12	5.1	20	6.0	29	7.2	43

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum.

SELECTION - EXHAUST WITH G2 FILTER

AK (M²)	DIMENSIONS	QV (M³/H) 150		200		250		300		400		500		600		800		1000		1200		1400	
0.012	600 - 1 slot	18	-	25	-	30	-	33	-	39	-											Lw	Lt
		3.1	8	4.3	15	5.2	23	6.4	52	8.5	63											Vk	Pa
0.014	675 - 1 slot	16	-	23	-	28	-	32	-	38	-												
		3.0	7	3.8	12	4.9	21	5.9	31	7.8	55												
0.023	600 - 2 slots					20	-	24	-	29	-	35	-	38	-								
						3.0	8	3.5	12	4.7	23	5.9	34	7.2	50								
0.026	675 - 2 slots					18	-	22	-	27	-	33	-	36	-	42	-						
						2.6	6	3.1	10	4.2	18	5.2	27	6.4	39	8.4							
0.035	600 - 3 slots									22	-	27	-	30	-	36	-	41	-				
										3.0	11	3.8	17	4.4	22	6.0	40	7.7	68				
0.039	675 - 3 slots									20	-	25	-	28	-	35	-	39	-	43	-		
										2.6	9	3.4	13	3.9	19	5.2	33	6.6	56	8.1			
0.046	600 - 4 slots											22	-	26	-	32	-	37	-	41	-	44	-
												2.9	12	3.4	15	4.6	28	5.9	46	6.8	62	8.1	
0.052	675 - 4 slots	Lw	Lt											23	-	29	-	35	-	38	-	32	-
		Vk	Pa											3.1	14	3.9	23	5.1	39	6.0	54	7.2	68

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum.

ΔP > 70 Pa

ALD 610 K Combined series

SELECTION - AIR SUPPLY WITH CEILING EFFECT

AK (M²)	DIMENSIONS	QV (M³/H)																			
		150		200		250		300		400		500		600		800		1000		1200		1400	
0.016	600 - 1 slot	25	2.3	32	2.7	37	3	39	3.4	46	4											Lw	Lt
		24	5	3.3	9	4	13	4.9	20	6.5	35											Vk	Pa
0.018	675 - 1 slot	22	2	29	2.6	34	2.9	38	3.3	44	3.9	48	4.6										
		2.3	4	2.9	7	3.8	12	4.5	17	6	30	7.5	46										
0.030	600 - 2 slots					26	2.5	29	2.9	35	3.4	40	3.9	43	4.5	50	5.4						
						2.3	4	2.7	6	3.6	11	4.5	17	5.5	25	7.1	42						
0.034	675 - 2 slots					24	2.6	27	2.7	33	3.3	39	3.8	42	4.2	48	5.2						
						2	3	2.4	5	3.2	8	4	13	4.9	19	6.5	35						
0.045	600 - 3 slots									28	2.9	33	3.4	37	3.8	42	4.6	47	5.4	51	6.3		
										2.3	4	2.9	7	3.4	9	4.6	17	5.9	29	6.9	39		
0.051	675 - 3 slots									26	2.8	31	3.3	34	3.7	41	4.4	46	5.2	49	6		
										2	3	2.6	5	3	7	4	13	5.1	22	6.2	33		
0.060	600 - 4 slots											28	3.1	32	3.5	39	4.2	43	5	47	5.7	49	6.6
												2.2	4	2.6	5	3.5	10	4.5	16	5.2	22	6.5	31
0.068	675 - 4 slots	Lw	Lt											29	3.4	36	4	41	4.7	44	5.4	48	6.2
		Vk	Pa											2.4	4	3	7	3.9	12	4.6	17	5.5	25

The Lw values (dB(A)) do not take into account any noise attenuation in the room and cover the Combined system for air supply and exhaust. Vt = 0.37 m/s. Tests conducted with standard plenum.
* Pressure drops for Combined assembly in air supply mode.

SELECTION - EXHAUST WITHOUT FILTER

DIMENSIONS	QV (M³/H)										
	150	200	250	300	400	500	600	800	1000	1200	1400
600 - 1 slot	1	1	2	3	5						Pa*
675 - 1 slot	1	1	1	1	3						
600 - 2 slots			3	4	6	10	14				
675 - 2 slots			2	2	4	6	9	15			
600 - 3 slots					9	14	20	36	56		
675 - 3 slots					4	7	10	18	28	40	
600 - 4 slots						19	27	49			
675 - 4 slots	Pa*						13	23	36	52	

Tests conducted with standard plenum. * Pressure drops for Combined assembly in exhaust mode.

ΔP > 70 Pa

SELECTION - EXHAUST WITH G2 FILTER

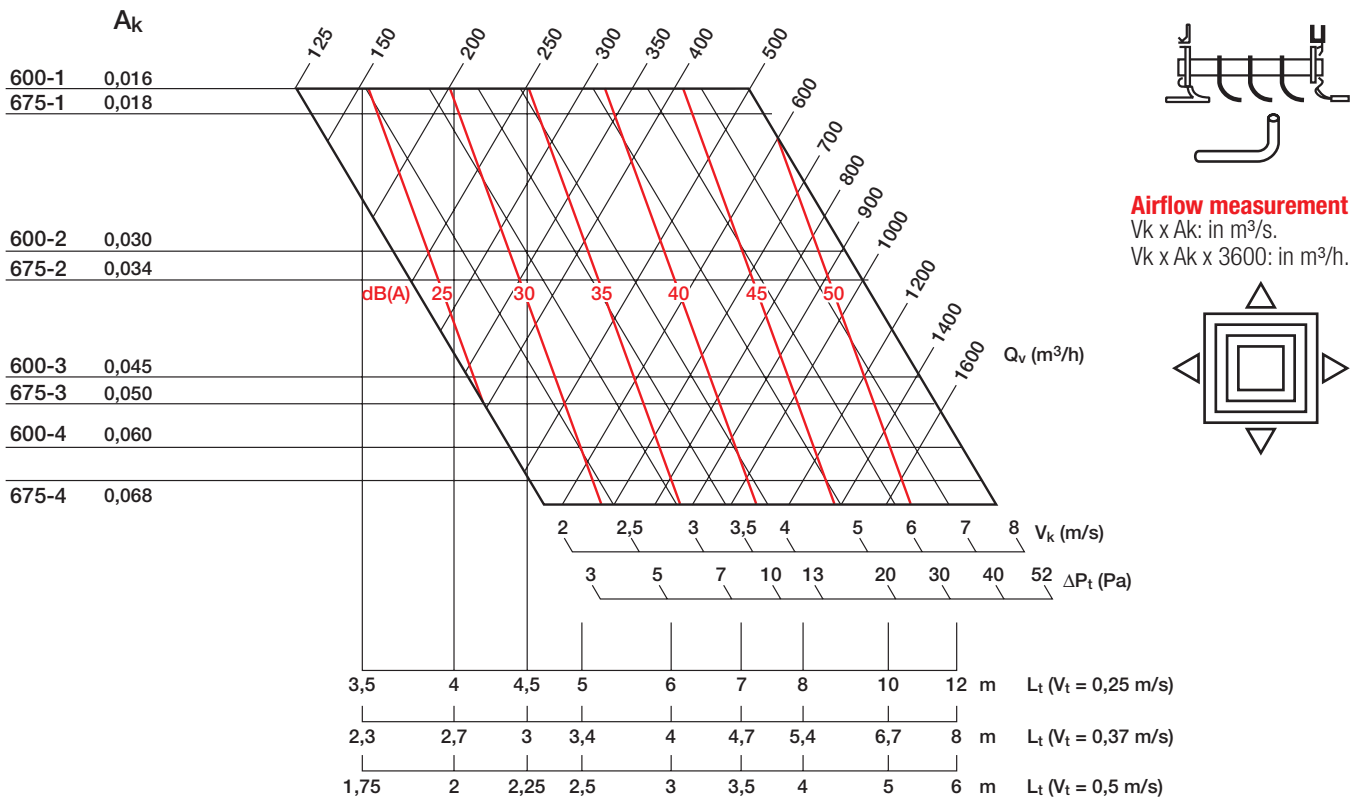
DIMENSIONS	QV (M³/H)										
	150	200	250	300	400	500	600	800	1000	1200	1400
600 - 1 slot	2	2	3	5	8						Pa*
675 - 1 slot	1	1	2	3	5						
600 - 2 slots			4	6	10	10	16	23			
675 - 2 slots			2	3	6	9	14	24			
600 - 3 slots					15	23	33	58			
675 - 3 slots					7	11	17	30	46	66	
600 - 4 slots						31	45				
675 - 4 slots	Pa*						20	46	60		

Tests conducted with standard plenum. * Pressure drops for Combined assembly in exhaust mode.

ΔP > 70 Pa

ALD 610 K series

AIR SUPPLY WITH CEILING EFFECT



Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum.

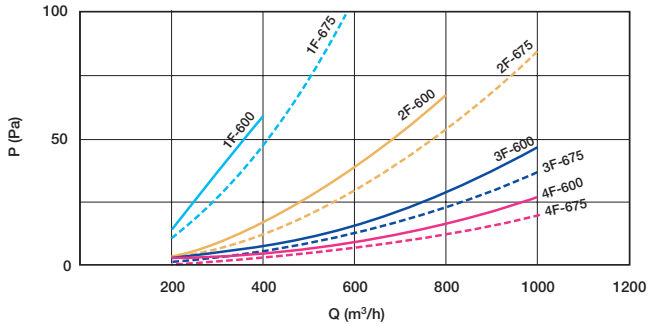
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

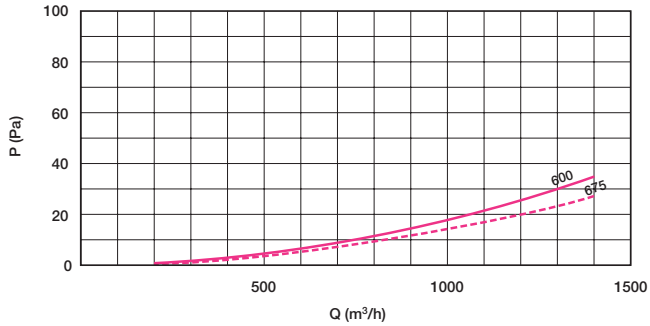
CORRECTIONS FOR EXHAUST

Lw (dB(A))	- 5

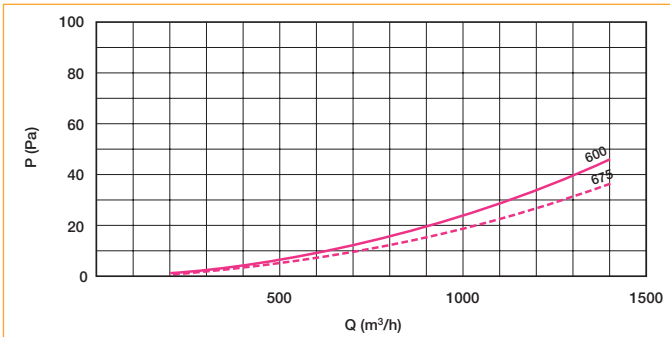
PRESSURE DROPS ON EXHAUST - WITHOUT FILTER



PRESSURE DROP FILTER ONLY- G2

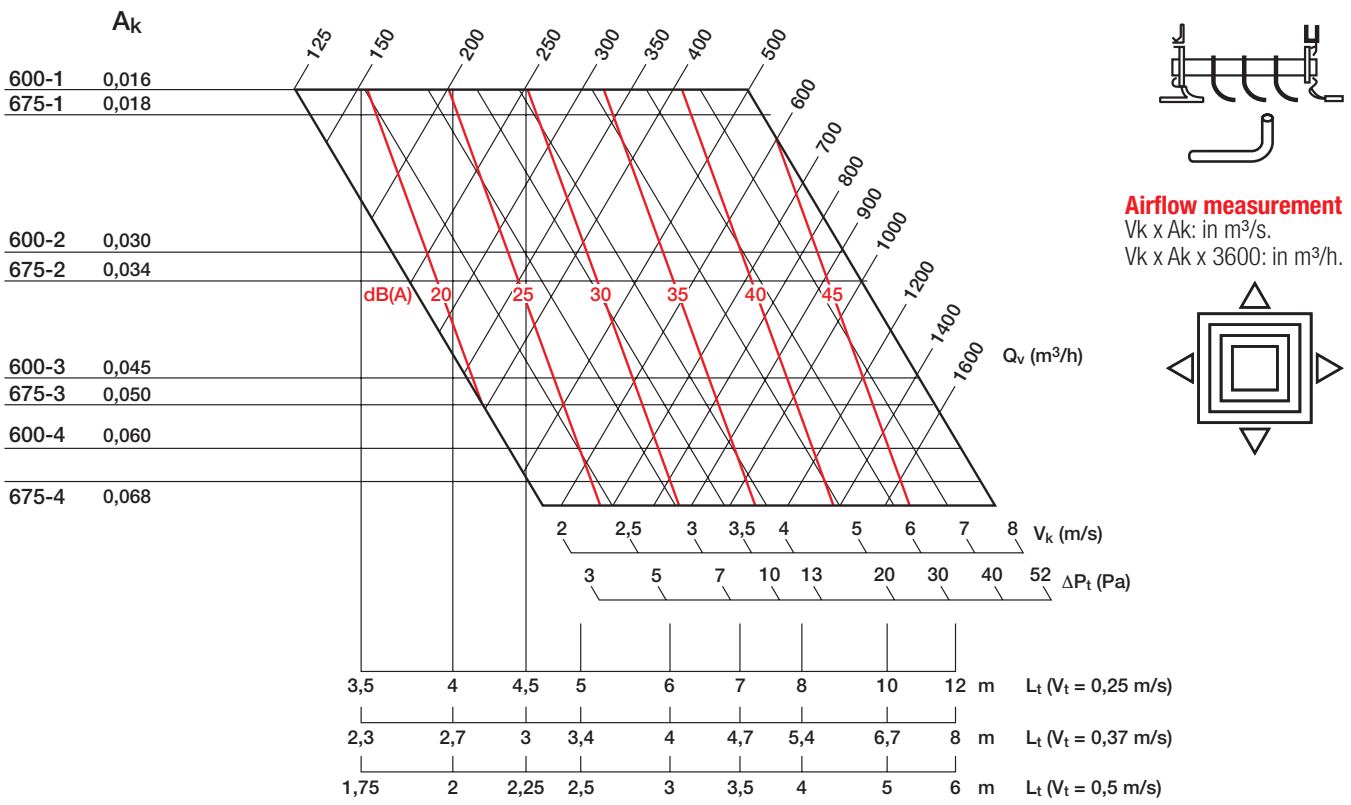


PRESSURE DROP FILTER ONLY- G3



ALD 610 K Combined series

AIR SUPPLY WITH CEILING EFFECT



Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum.

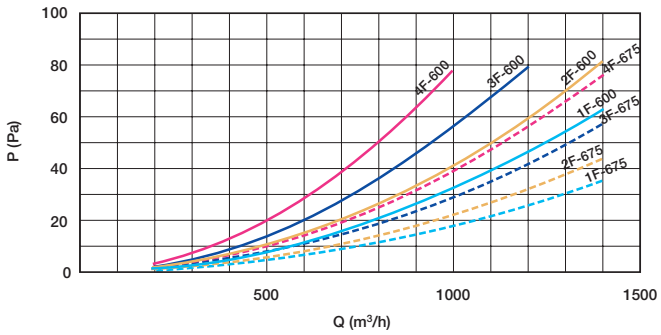
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1.5	x 1	x 0.75	x 0.6

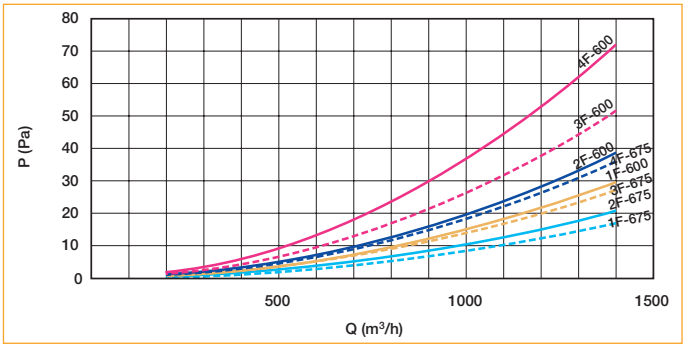
CORRECTIONS FOR EXHAUST

Lw (dB(A))	- 5

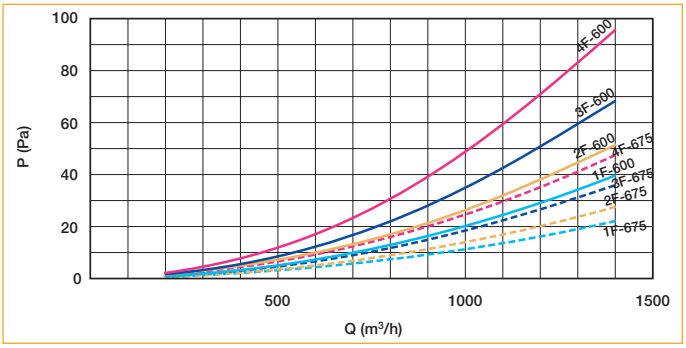
PRESSURE DROPS ON EXHAUST - WITHOUT FILTER



PRESSURE DROP FILTER ONLY- G2



PRESSURE DROP FILTER ONLY- G3



Ceiling installation

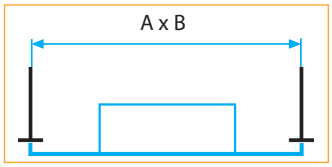
INSTALLATION OPTIONS

Ceiling diffusers can be integrated into suspended ceiling systems in multiple ways.

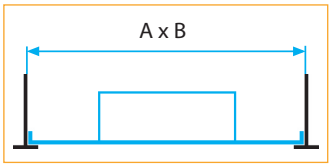
- Installation on underside.
- Installation on T-bar system.
- Installation on Fine-Line system.

In all cases the diffuser + plenum assembly must be correctly fixed to the building structure. Note: the weight of the assembly must not be borne by the ceiling framework. Quick suspension cables indicated below could be used.

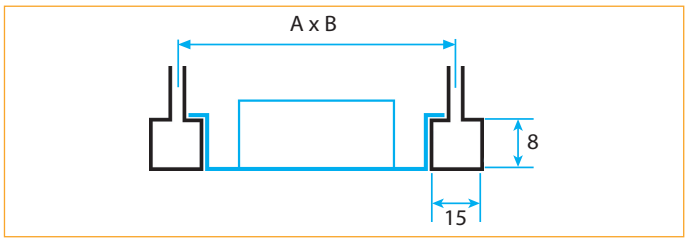
CEILING INSTALLATION



Installation on underside



Installation on T-bar system



Installation on Fine-Line or MicroLook system.

Installation on suspension system

Quick suspension cables

FIELD OF APPLICATION

- Suspension and safety of plenums + diffusers.

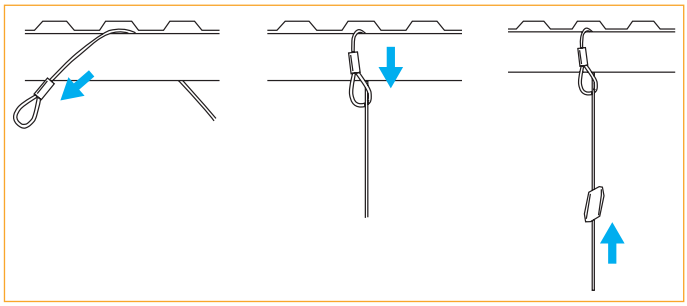
DESCRIPTION

- Flexible galvanised steel cables fitted with loop at one end. The other end slides in the locking system which enables the supported object to be positioned during and after its installation.
- HK hook:
  - plug-less attachment hook for solid or aerated concrete slab, screed, etc.
  - stainless steel hook inserted in M8 hole,
  - working load: 78 kg.

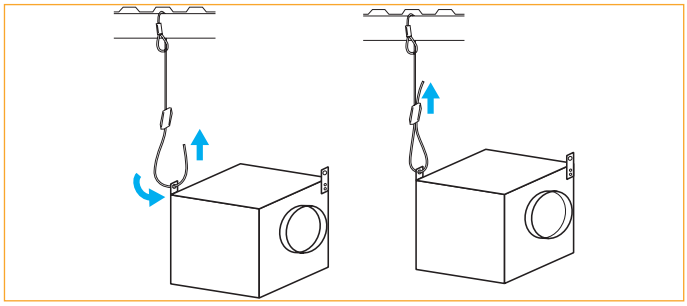
RANGE

TITLE	CODE
Quick susp. 2 m 0-10 kg	11091063
Quick susp. 2 m 0-45 kg	11091064
Quick susp. 3 m 0-45 kg	11091065
Quick susp. 5 m 0-45 kg	11091093
SUPPLIED IN PACK OF 10 PARTS	
Pack of 100 plug-less concrete attachment hooks	11091095

QUICK SUSPENSION CABLE



Attachment to structure



Attachment of plenum

CABLE	DIAMETER	ADMISSIBLE LOAD
No.1	1 mm	0 - 10 kg
No. 2	2 mm	10 - 45 kg

IMPLEMENTATION

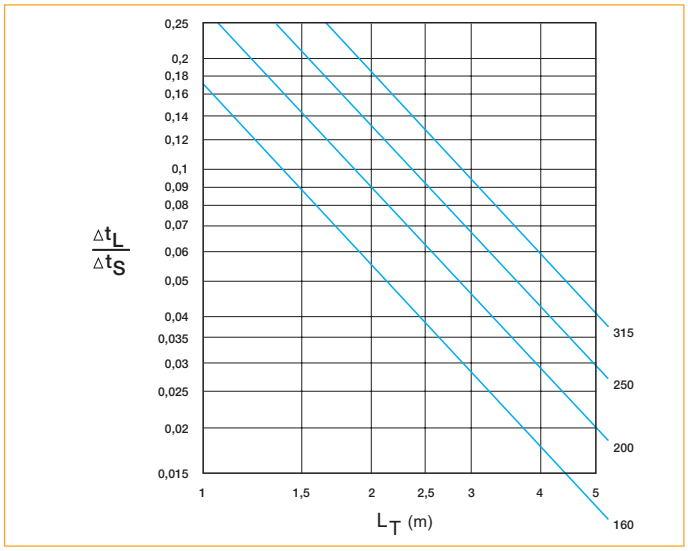
- Installation

1) First pass the cable round a building structure component then through the loop.
2) Pass the cable into the groove of the locking system.
3) Pass the cable round the duct then into the other groove of the locking system.

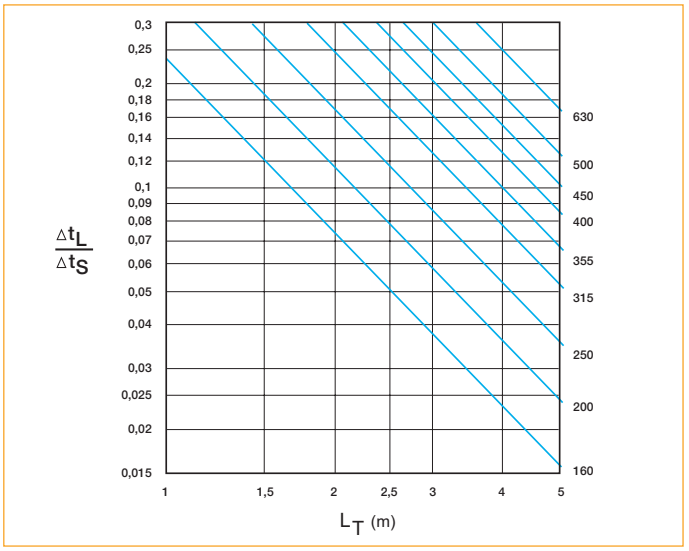
- Tool supplied for unlocking and height adjustment.

Mixing capacity (TM)

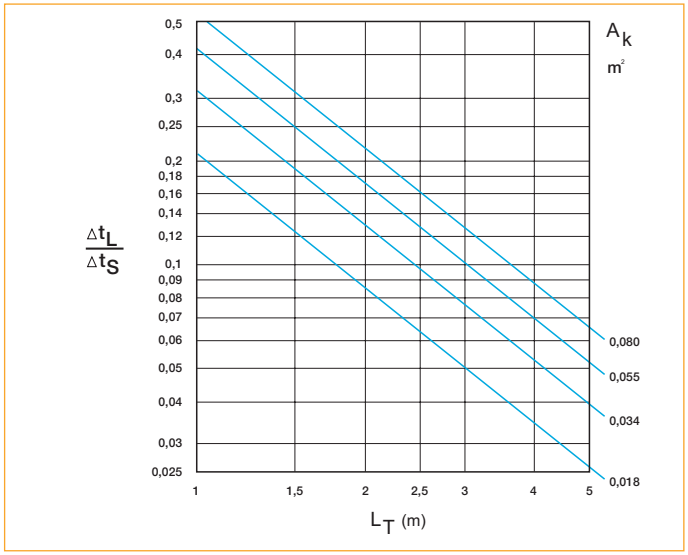
CAPACITY FOR 831 SERIES DIFFUSER



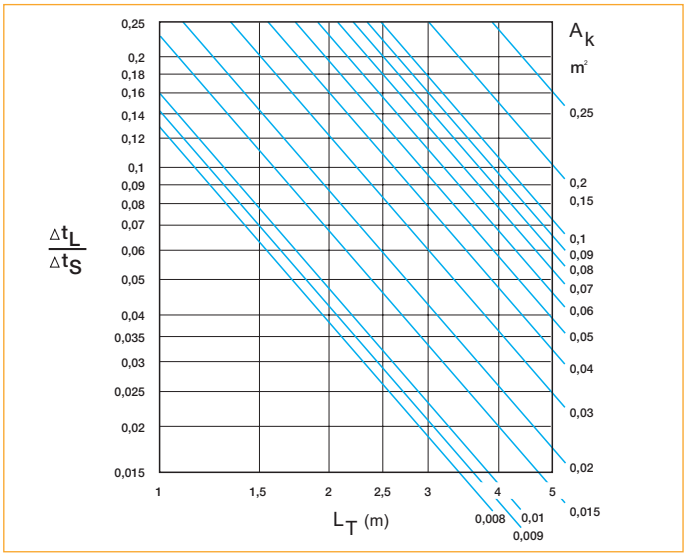
CAPACITY FOR 842 SERIES DIFFUSER



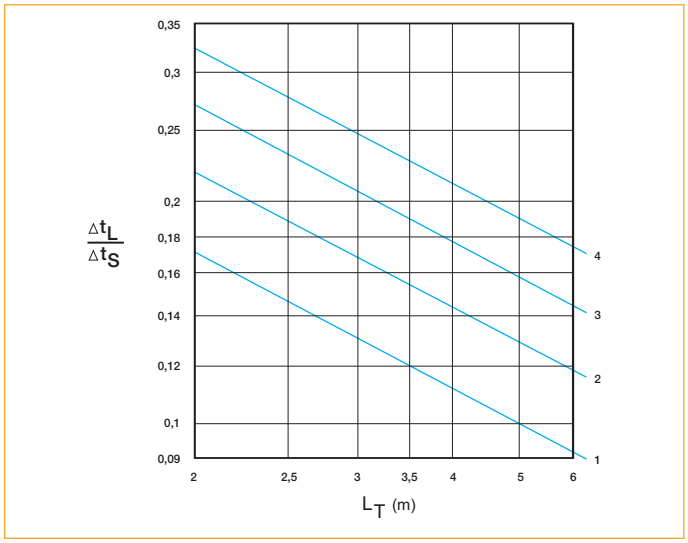
CAPACITY FOR 300 SERIES DIFFUSER



CAPACITY FOR 700 SERIES DIFFUSER



CAPACITY FOR ALD 610 K SERIES DIFFUSER

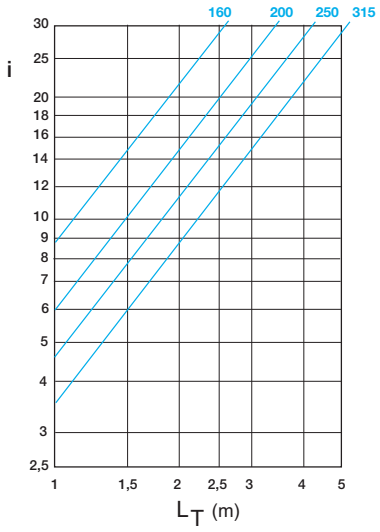


SYMBOLS

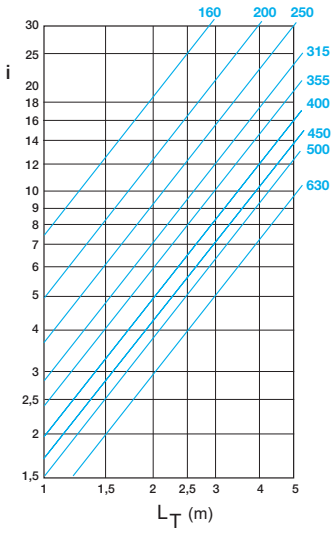
Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
ΔTL (°C)	Difference between temperature at end of throw and ambient temperature (in °C)
ΔTS (°C)	Difference between air supply temperature and ambient temperature (in °C)
TM = ΔTL / ΔTS	Ratio between temperature differences. This value defines the terminal's capacity to quickly mix new air with the ambient air.
EXAMPLE WITH AIR SUPPLY AT 15°C AND AMBIENT AIR TEMPERATURE OF 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x capacity (°C)

Induction rate (i)

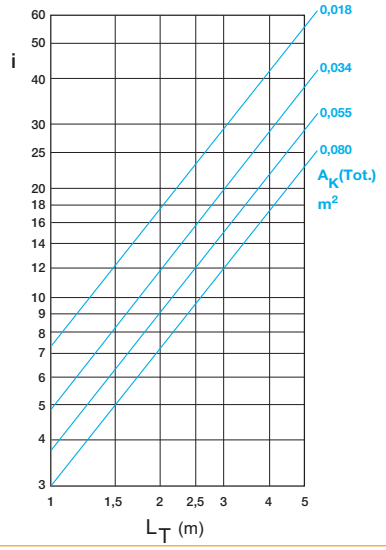
INDUCTION RATE FOR SC 831 SERIES DIFFUSERS



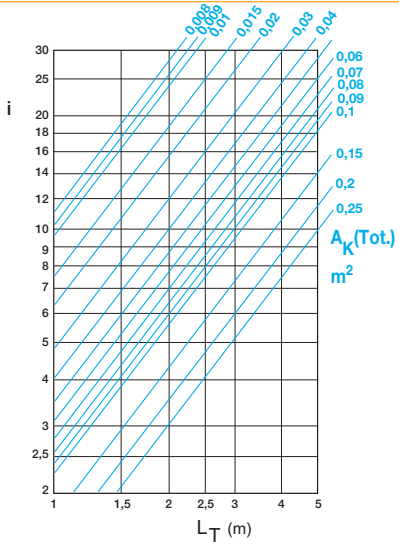
INDUCTION RATE FOR 842 SERIES DIFFUSERS



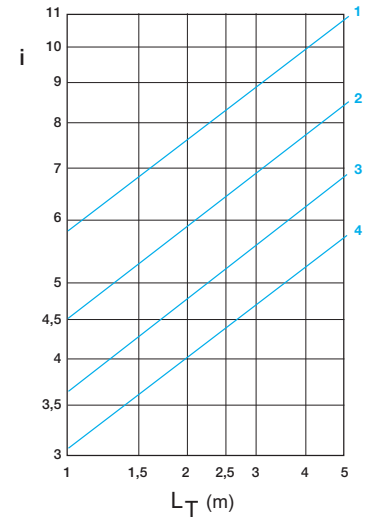
INDUCTION RATE FOR 310 - 360 SERIES DIFFUSERS



INDUCTION RATE FOR 704 SERIES DIFFUSERS



INDUCTION RATE FOR ALD 610 - ALD 610 K SERIES DIFFUSERS



SYMBOLS

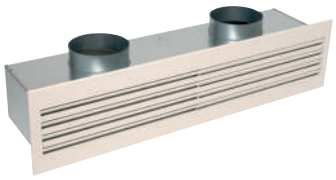
Lt 0.5 (M)	Air jet throw at Vt = 0.5 m/s
Q1 (M^3/H)	Primary airflow
Q2 (M^3/H)	Airflow induced in room
QL (M^3/H) = Q1 + Q2	Total airflow in movement at end of throw
I = QL / Q1	Induction rate

CONTENTS

LINED S

LINED TP S

ALD610



LINED COMBINED

LINED linear series - Aluminium

LINED S

LINED S with plenum

USE

- Air supply or exhaust depending on model.
- Adjustable diffusion using dirigible deflector in the centre of each slot. Vertical airflow possible.
- Opening exhaust models with filter to replace that of ducted convector fan.
- Ceiling-mounted.
- Possibility of decorative linear strips (except opening versions).

CONSTRUCTION

- Body and deflectors made of extruded aluminium.
- Frame width 25 mm. Slot width 25 mm.
- LINED S: air supply model with adjustable deflectors.
- LINED E: exhaust model with fixed deflectors.
- LINED EO: exhaust model with fixed deflectors and central core which opens for access to filter located in connection plenum. Core mounted on hinges and push clip closing method (minimum 3 slots).

FINISH

- Anodised aluminium body, natural finish or paint coating RAL 9003 white 30% matt.
- Aluminium deflectors paint coating RAL 7024 anthracite grey or RAL 9003 white.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.
- AldesArchitect™ finish.

ATTACHMENT

- Concealed attachment to plenum, either adjustable and accessible below the diffuser (type S3), or directly using self-tapping screws on the sides of the plenum (type S2).

Note: the S2 attachment method is recommended for suspended ceilings and incompatible with non-removable ceilings (plaster or BA13 plasterboard).

ACCESSORIES

- Galvanised steel connection plenum with side branch connection. Simple or insulated version (sound proofing or thermal-acoustic insulation).
  Equipped with brackets for attachment to concrete slab.
- G3 M1 filter included in plenum for opening exhaust diffusers.
- Spade damper fitted in plenum branch connection. Adjustable from front of diffuser with or without airflow measurement tubes.

For more information, refer to the connection plenum page.

STANDARD DIMENSIONS

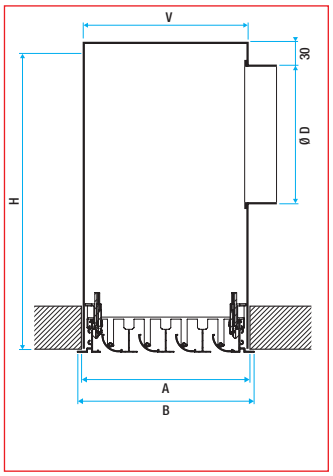
- Available from 1 to 8 slots (3 to 8 slots for opening filter holder models).
- Length from 300 to 2000 mm in increments of 5 mm (opening versions limited to 1500 mm). For larger dimensions the diffuser features intermediate elements.

For further information refer to the Range and Assembly pages below.

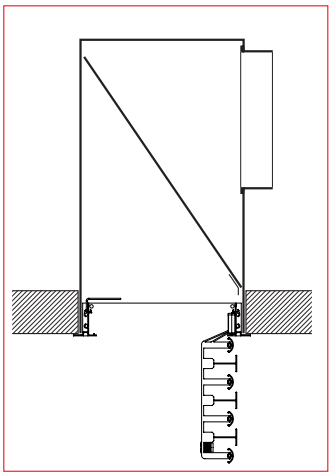
TECHNICAL DETAILS

- See selection tables and scales on following pages.

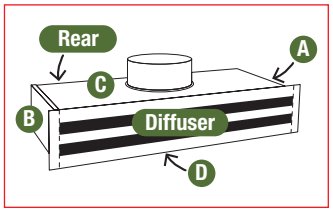
DIMENSIONS



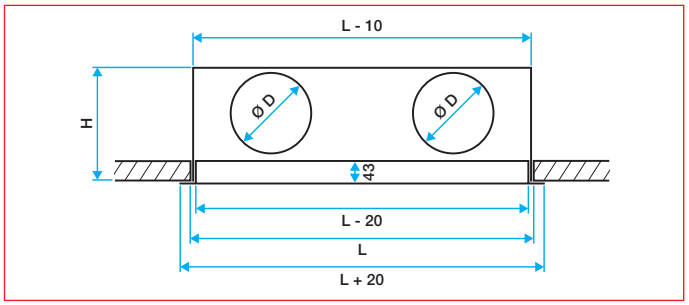
Lined S with plenum S3 attachment method (for non-removable ceilings)



Lined EO with plenum Open position with filter S2 attachment method



Plenum Lined: Support diagram for configuration.



Diffuser with S2 or S3 attachment

STANDARD DIMENSIONS

NUMBER OF SLOTS	OPENING A (MM)	B (MM)	V (MM)	H (MM)	D* (MM)
1	67	81	65	265	160
2	112	126	110	305	200**
3	157	171	155	305	200**
4	202	216	200	355	250**
5	247	261	245	355	250**
6	292	306	290	420	315
7	337	351	335	420	315
8	382	396	380	420	315

Opening in the ceiling = L x A.
(*) Based on 1 connection per metre. Other configurations: please contact us.
See selection tables.
(**) Available with oblong connection to reduce height H.
See connection plenum page.147.

Note: Opening models are available with 3 to 8 slots.

LINED linear series - Assembly

LINED S

LINEAR STRIPS

- Possibility of making linear strips (alignment sections supplied) or continuous arrangements with decorative angle pieces (non-diffusive).
- Between 2000 mm and 4000 mm the diffuser comprises two parts.
- Beyond 4000 mm, the diffuser contains intermediate elements 2000 mm long with two end pieces of equal length, always between 1000 and 2000 mm.

For a full order of linear strips:

- $L = L_m + 2 \times Lgd$.
- Overall $= L_m + 2 \times L_{gd} + a$.

For an order of separate elements:

- Overall length intermediate elements = Lm,
- Overall length left or right side elements $= L_{gd} + a/2$.

Note:

LINED section: a = 20.

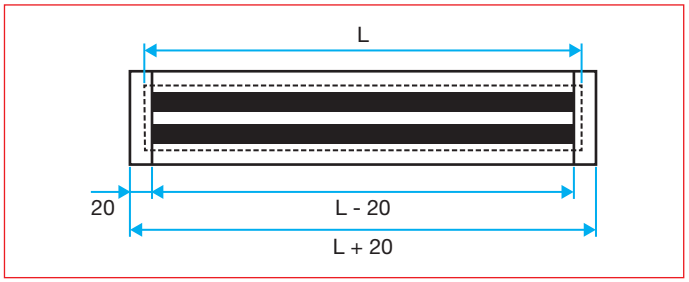
$L_m > 2000$ mm.

$1000 > L_{gd} > 2000$.

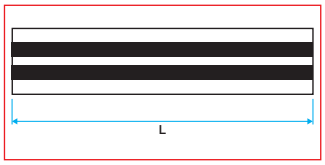
AIR SUPPLY DIRECTIONS

- Each slot features a deflector used to adjust the direction of the airflow.

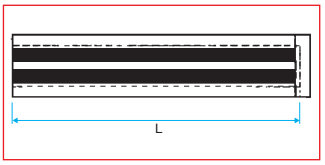
DIMENSIONS



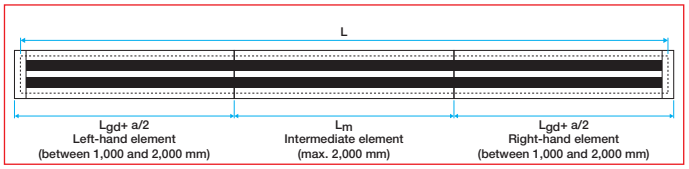
Whole element



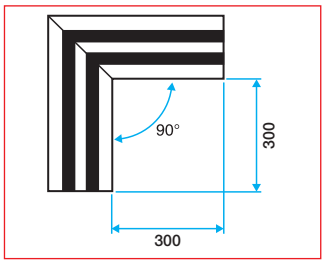
Intermediate element without end pieces. L nominal dimension



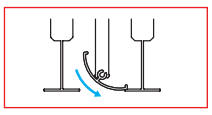
Element with end piece (right or left) L nominal dimension



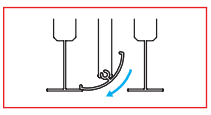
Full linear strip



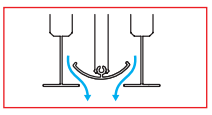
90° angle piece
Available with 1 to 4 slots



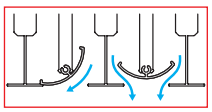
Horizontal right



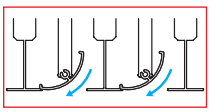
Horizontal left



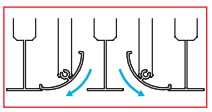
Vertical



Vertical and horizontal left



Two horizontal left slots



Horizontal left and right

LINED TP series - Aluminium

Lined TP S diffuser

USE

- Air supply or exhaust depending on model.
- Adjustable diffusion using dirigible deflector in the centre of each slot. Vertical airflow possible.
- Opening exhaust models with filter to replace that of ducted convector fan.
- Diffusers designed to replace a standard suspended ceiling panel, T bar or FineLine.

CONSTRUCTION

- Body and deflectors made of extruded aluminium.
- Ceiling compensation plate, galvanised steel.
- 25 mm slot width.
- LINED TP S: air supply model with adjustable deflectors.
- LINED TP E: exhaust model with fixed deflectors.
- LINED TP EO: exhaust model with fixed deflectors and opening central core for access to filter located in connection plenum. Core mounted on hinges and push clip closing method (minimum 3 slots).

FINISH

- Epoxy paint RAL 9003 white 30% matt.
- Aluminium deflectors paint coating RAL 7024 anthracite grey or RAL 9003 white.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.
- Protective film on request.
- AldesArchitect™ finish.

ATTACHMENT

- S2: concealed screw attachment accessible on the sides of the diffuser.

For more information, refer to the Attachments page.

ACCESSORIES

- Galvanised steel connection plenum with side branch connection. Simple or insulated version (sound proofing or thermal-acoustic insulation). Equipped with brackets for attachment to concrete slab.

Note: the weight of the diffuser must not be borne by the suspended ceiling framework.

- G3 M1 filter included in plenum for opening exhaust diffusers.
- Spade damper fitted in plenum branch connection. Adjustable from front of diffuser with or without airflow measurement tubes.

For more information, refer to the Connection Plenum page.

STANDARD DIMENSIONS

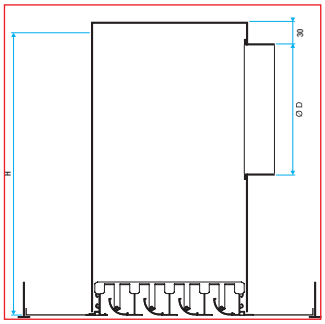
- Width from 1 to 8 slots (3 to 8 slots for opening filter holder models).
- Suited to ceiling panels from 600 x 300 to 1500 x 675 mm.

For more information, refer to the Range page.

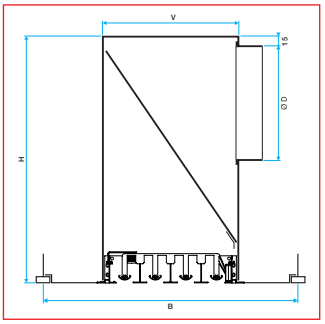
TECHNICAL DETAILS

- See selection tables and scales on following pages.

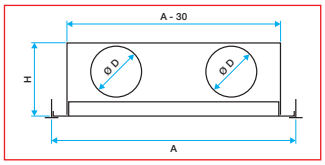
DIMENSIONS



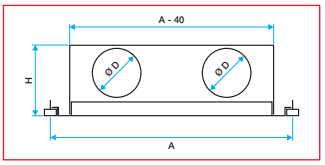
Ceiling-mounted with T-bar framework (air supply model)



Ceiling-mounted with Fine Line framework (exhaust model with filter)



Ceiling-mounted with T-bar framework



Ceiling-mounted with Fine Line framework

DIMENSIONS

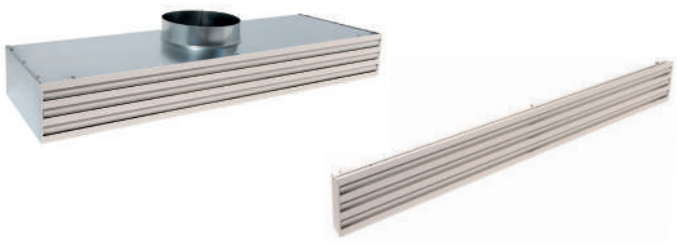
NUMBER OF SLOTS	V (MM)	H (MM)	D (MM)
1	65	267	160
2	110	307	200
3	155	307	200
4	200	357	250
5	245	357	250
6	290	422	315
7	335	422	315
8	380	422	315

AVAILABLE CEILING DIMENSIONS

A x B*		FIXED MODELS		OPENING MODELS	
		MAXIMUM NUMBER OF SLOTS	MINIMUM NUMBER OF SLOTS	MAXIMUM NUMBER OF SLOTS	MINIMUM NUMBER OF SLOTS
600	150	2	1	Not available	Not available
1200					
1350					
1500					
600	300	5	1	5	3
1200					
1350					
1500					
600	600	8	1	8	3
1200					
1350					
1500					

* Nominal ceiling panel dimensions. Other dimensions available on request.

LINED slim series - Aluminium



LINED Slim with plenum

LINED Slim

USE

- Air supply or exhaust.
- Adjustable diffusion using deflector in the centre of each slot. Vertical airflow possible.
- Opening exhaust models with filter to replace that of ducted convector fan.
- Ceiling-mounted.
- Possibility of decorative linear strips (except opening versions).
- Diffuser designed without frame for seamless integration in metal frame ceilings.

CONSTRUCTION

- Body and deflectors made of extruded aluminium.
- 25 mm slot width.
- LINED Slim S: air supply model with adjustable deflectors,
- LINED Slim E: exhaust model with fixed deflectors.
- LINED Slim EO: exhaust model with fixed deflectors and opening central core for access to filter located in connection plenum. Core mounted on hinges and push clip closing method (minimum 3 slots).

FINISH

- Aluminium body with paint coating RAL 9003 white.
- Aluminium deflectors paint coating RAL 7024 anthracite grey or RAL 9003 white.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.
- AldesArchitect™ finish.

ATTACHMENT

- Concealed attachment to plenum, either adjustable and accessible below the diffuser (type S3), or directly using self-tapping screws on the sides of the plenum (type S2).

Note: the S2 attachment method is recommended for suspended ceilings and not compatible with non-removable plaster or BA13 plasterboard ceilings.

ACCESSORIES

- Galvanised steel connection plenum with side branch connection. Simple or insulated version (sound proofing or thermal-acoustic insulation). Equipped with brackets for attachment to concrete slab.
- G3 M1 or G4 filter included in plenum for opening exhaust diffusers,
- Spade damper fitted in plenum connection with or without airflow measurement tubes.

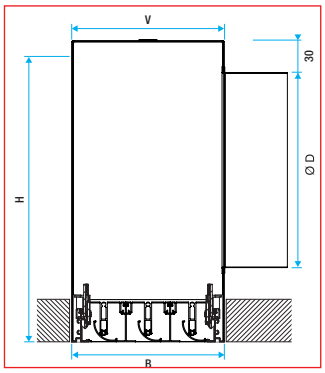
Adjustable from front of diffuser.
For more information, refer to the connection plenum page.

STANDARD DIMENSIONS

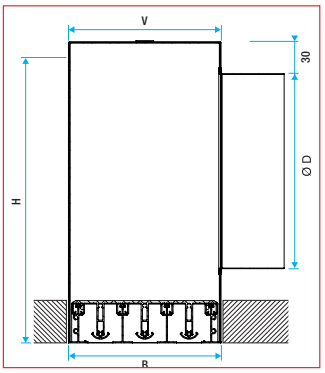
- Available from 1 to 8 slots (3 to 8 slots for opening filter holder models).
- Length from 300 to 2000 mm in increments of 5 mm (opening model limited to 1500 mm). For larger dimensions the diffuser features intermediate elements.

For further information refer to the Range and Assembly pages.

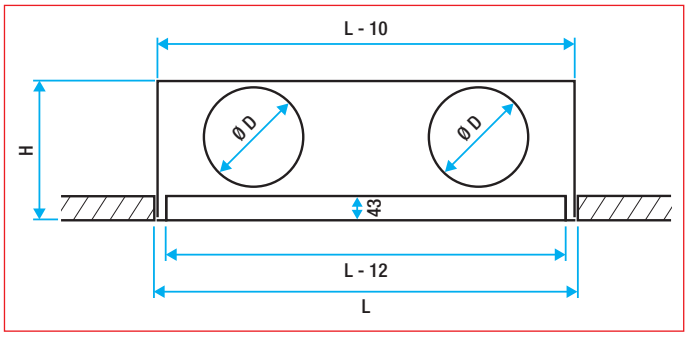
DIMENSIONS



Lined S Slim with plenum
S3 attachment method (for non-removable ceilings)



Lined E Slim with plenum
S2 attachment method



Diffuser with S2 or S3 attachment

STANDARD DIMENSIONS

NUMBER OF SLOTS	OPENING A (MM)	B (MM)	V (MM)	H (MM)	D* (MM)
1	67	65	65	265	160
2	112	110	110	305	200**
3	157	155	155	305	200**
4	202	200	200	355	250**
5	247	245	245	355	250**
6	292	290	290	420	315
7	337	335	335	420	315
8	382	380	380	420	315

Opening in the ceiling = L x A.
(*) Based on 1 connection per metre. Other configurations: please contact us. See selection tables.
(**) Available with oblong connection to reduce height H.
See connection plenum page.147.

Note: Opening models are available with 3 to 5 slots.

TECHNICAL DETAILS

- See selection tables and scales on following pages.

LINED - LINED TP - LINED Slim series - Connection plenum - Steel

Plenum

USE

- Plenums for LINED, LINED TP and LINED Slim series slot diffusers.
- Air supply or exhaust.
- Ceiling-mounted.
- Possibility of linear strips.

CONSTRUCTION

- Made of galvanised steel plate.
- A base with an inlet connection from 300 mm to 1500 mm in length and two inlet connections from 1605 to 2000 mm in length.
- Possibility of adding connections on request.

ATTACHMENT

- S2: concealed screw attachment for diffuser on plenum, accessible on the sides of the diffuser. Option to deliver plenums with S2 attachment fitted to diffuser.

Caution: this attachment method is not compatible with plaster or BA13 plasterboard ceilings.

- S3: concealed screw and clip attachment of diffuser to plenum, accessible underneath the diffuser (not available on LINED TP).
- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

OPTIONS

- Spade damper fitted in plenum connection with or without airflow measurement tubes.

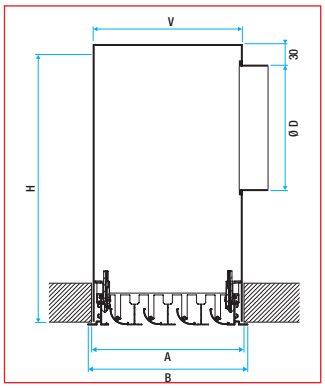
Note: Not available on 1 slot. Not available on models with filter.

- Special height H.
- Special connection diameter (circular or oblong equivalent to Ø 200 mm or Ø 250 mm).
- Supplementary connections (1 or 2 in addition to standard for each section).
- G3 or G4 flat filter for exhaust (M1 fire rating). Positioned diagonally in the plenum to ensure the maximum possible filtration surface. Fixed in place using cleats.
- Supplementary connection for fresh air management. Available in 80, 100 and 125. (Positioned opposite standard connection).
- A diffuser longer than the plenum can be fitted in order to create linear strips with inactive diffusion sections (for decorative reasons). In this case and for the Lined TP plenum model, it is possible to order shutters allowing you not to see through inactive areas (with plenum on the right, left or centered).
- Internal acoustic or thermal-acoustic insulation on request.
  - Acoustic: 1 x 20 mm melamine panel facing the connection.
  - Thermal-acoustic: choice of 1 side 20 mm melamine + 4 sides 5 mm foam or 5 sides with 5 mm foam.
- M1 fire protection rating.
- Sealed connections.
- Class C airtight performance and sealed connections.
- Black paint coating (on request).

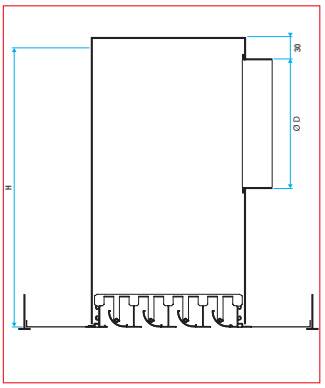
STANDARD DIMENSIONS

- Available from 1 to 8 slots (3 to 5 slots for opening filter holder models).
- LINED linear, LINED SLIM: length from 300 to 2000 mm in increments of 5 mm. Beyond that the plenum contains intermediate 2000 mm elements with two ends of equal length, always between 1000 and 2000 mm.
- LINED TP: length from 600 to 1600 mm compatible with panel dimensions.
- Quantity of standard connections: 2 per intermediate element and 1 per end piece (2 if longer than 1609 mm).

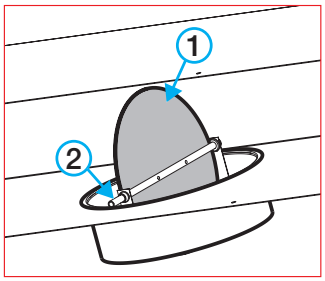
DIMENSIONS



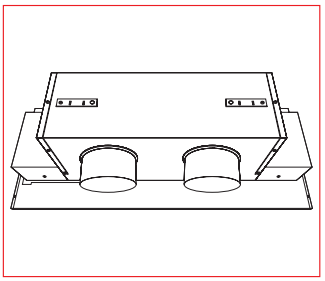
Plenum for S3 attachment method



Plenum for S2 attachment method



1. Damper
2. Adjustment shaft



Plenum TP shorter than diffuser with shutters

DIMENSIONS WITH CIRCULAR CONNECTION

NUMBER OF SLOTS	H (MM)	Ø STANDARD (MM)
1*	250	160
2	290	200
3	290	200
4	340	250
5	340	250
6	405	315
7	405	315
8	405	315

* Damper not available

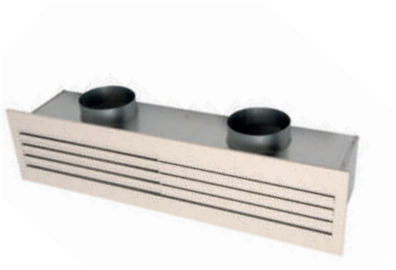
DIMENSIONS WITH OBLONG CONNECTION

NUMBER OF SLOTS	H (MM)	STANDARD OBLONG D (MM)
2	231	230 x 130 equivalent Ø 200
3	231	230 x 130 equivalent Ø 200

NUMBER OF CONNECTIONS

NOMINAL LENGTH L SELECTED (MM)	STANDARD NUMBER OF CONNECTIONS	NUMBER OF CONNECTIONS WITH 1 EXTRA OPTION	NUMBER OF CONNECTIONS WITH 2 EXTRA OPTION
Length L selected between 200 and 1609	1	2	3
Lengths L selected between 1610 and 2000	2	3	4
Length L above 2000	2 per intermediate 1 per end	3 per intermediate 2 per end	4 per intermediate 3 per end

LINED Combined series - Aluminium



Lined Combined TP

USE

- Diffuser and dedicated plenum for combined and simultaneous air supply and exhaust, for all ventilation applications, especially air conditioning.
- Extremely low internal and external recirculation / bypass rate (<5%**) delivering excellent air diffusion efficiency and ensuring thermal and acoustic comfort of occupants.
- Adjustable diffusion using dirigible deflector in the centre of each slot. Vertical airflow possible.
- Possible to add a filter on the exhaust part to replace that of the ducted convector fan for example.
- Optional possibility to add fresh air connection on exhaust to ensure new air inlet for a convection fan.
- Ceiling-mounted.

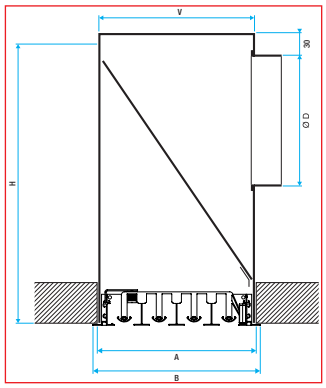
CONSTRUCTION

- The combined air supply and exhaust components are aesthetically combined on the same diffuser, with the same 25 mm-wide slots.
- The air supply and exhaust deflectors are separated by a discreet partition in the diffuser to deliver one of the lowest recycling rates on the market.
- Air supply side: adjustable deflectors enabling horizontal diffusion in one or two directions or vertical diffusion depending on the slots. The deflectors are located in the centre of each slot to ensure excellent air diffusion by the Coanda effect and a seamless aesthetic finish.
- Exhaust side: on the opening version a filter can be installed to ensure filtration of fresh air before it reaches the ventilation unit installed. Opening core mounted on hinges and push clip closing method (minimum 3 slots).
- Available in Standard, TP or Slim linear versions to adapt to different ceiling types and integration styles.
  O: air supply + exhaust (opening for access to filter using push clip system,
  F: fixed air supply + exhaust (non-opening, no filter),

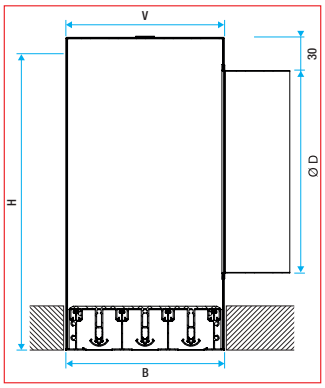
FINISH

- Aluminium deflectors, paint coating RAL 7024 anthracite grey or RAL 9003 white 30% matt.
- Anodised aluminium body, natural satin finish (STANDARD models only) or paint coating RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the Compulsor air diffusion appendix.
- AldesArchitect™ finish.

DIMENSIONS



Lined Combined Standard Opening Exhaust side



Lined Combined Slim Fixed Exhaust side

ATTACHMENT

- Concealed attachment to plenum, either adjustable and accessible below the diffuser (type S3), or directly using self-tapping screws on the sides of the plenum (type S2).

ACCESSORIES

- Galvanised steel plate connection plenum fitted with dividing partition between the air supply and exhaust airflows. Simple or insulated version (sound proofing or thermal-acoustic insulation). Fitted with brackets for attachment to concrete slab, with or without airflow measurement tubes.
- Optional fresh air connection on exhaust side.
- Optional damper included in plenum, accessible from front of diffuser on non-TP versions and without filters.
- G3 M1 or G4 filter included in exhaust part of plenum for opening diffusers.

For more information, refer to the Combined plenum page below.

STANDARD DIMENSIONS

- 3 to 8 slots on LINED COMBINED O versions, Length 500-1500 mm (600 to 1500 on TP model).
- 1 to 8 slots on LINED COMBINED F versions, Length 500-2000 mm (600 to 1600 on TP models).

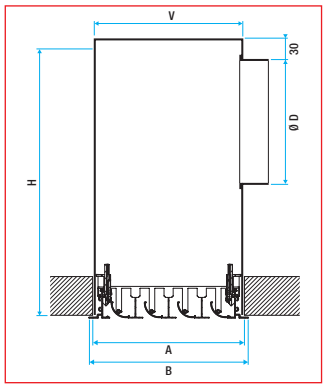
For more information, refer to the Range page.

TECHNICAL DETAILS

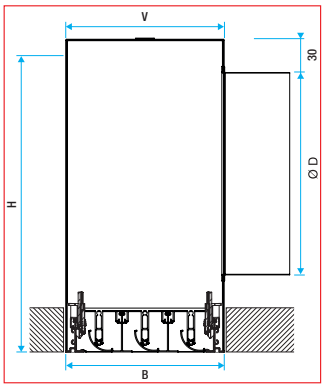
- See selection tables and scales on following pages.

* Internal and external recycling rate. Tests carried out on 1000-1400 mm models, 3-5 slots, using in-house lab, compared to market leaders in linear combined solutions (air supply + exhaust in same diffuser and plenum).

DIMENSIONS



Lined Combined Standard Fixed
Air supply side



Lined Combined Slim Fixed
Air supply side

LINED COMBINED STANDARD AND COMBINED SLIM - FIXED AND OPENING

NUMBER OF SLOTS	COMFORT AIRFLOW < 35 DB(A)	L (MM)	SLOT LENGTH		PLENUM LENGTH		OPENING A (MM)		B (MM)		V (MM)	H (MM)	Ø PLENUM CONNECTION (MM)
			STD	SLIM	STD	SLIM	STD	SLIM	STD	SLIM			
1	100 m³/h	500-2000	L-20	L-12	L-10	L-2	75	70	81	65	65	250	125
2	150 m³/h	550-2000	L-20	L-12	L-10	L-2	120	115	126	110	110	290	125
3	200 m³/h	550-2000 (1500 for opening)	L-20	L-12	L-10	L-2	165	160	171	155	155	290	160
4	250 m³/h	650-2000 (1500 for opening)	L-20	L-12	L-10	L-2	210	205	216	200	200	340	160
5	350 m³/h	650-2000 (1500 for opening)	L-20	L-12	L-10	L-2	255	250	261	245	245	340	200
6	350 m³/h	750-2000 (1500 for opening)	L-20	L-12	L-10	L-2	300	295	306	290	290	405	200
7	400 m³/h	750-2000 (1500 for opening)	L-20	L-12	L-10	L-2	345	340	351	335	335	405	250
8	450 m³/h	750-2000 (1500 for opening)	L-20	L-12	L-10	L-2	390	385	396	380	380	405	250

LINED Combined series - steel connection plenum

Plenum

USE

- Plenums for LINED COMBINED series slot diffusers.
- Combined air supply and exhaust: minimum recirculation / bypass rate (<5%**).
- Ceiling-mounted.

CONSTRUCTION

- Plenum specific to LINED COMBINED performing air supply and exhaust functions simultaneously.
- The plenum is divided into 2 equal parts for air supply and exhaust intake.
- The exhaust part is fitted with a filter which can be accessed via the front panel of the diffuser.
- Made of galvanised steel plate.
- Air supply and exhaust connections of the same diameter.
- Optional possibility to add fresh air connection on exhaust to ensure new air inlet for a convection fan.

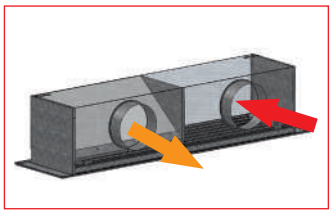
ATTACHMENT

- S2: concealed screw attachment for diffuser on plenum, accessible on the sides of the diffuser. CAUTION: this attachment method is not compatible with plaster or BA13 plasterboard ceilings.
- S3: concealed screw and clip attachment of diffuser to plenum, accessible underneath the diffuser.
- Attachment to concrete ceiling using brackets on the plenum. CAUTION: the weight of the diffuser must not be borne by the ceiling framework.

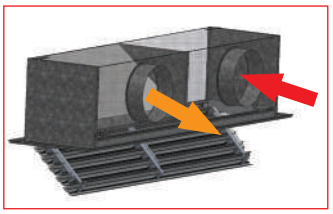
ACCESSORIES

- G3 or G4 M1 filter included in exhaust part of plenum for "O" opening diffusers.

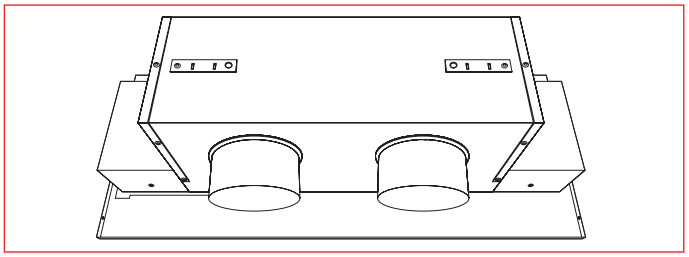
DIMENSIONS



Standard configuration
LINED COMBINED TP
Opening LEFT version with plenum. Closed position



Standard configuration
LINED COMBINED
Opening LEFT version with plenum. Open position



Plenum Combined TP shorter than diffuser with shutters

OPTIONS

- Special height H.
- Special connection diameter (circular or oblong equivalent to Ø 200 mm or Ø 250 mm).
- G3 or G4 flat filter for exhaust (M1 fire rating). Positioned diagonally in plenum for maximum possible filtration surface. Fixed in place using cleats.
- Supplementary connection for fresh air management. Available in 80, 100 and 125. (Positioned opposite to exhaust connection).
- A diffuser longer than the plenum can be fitted in order to create installation with inactive diffusion sections (for decorative reasons). In this case and for the Lined TP plenum model, it is possible to order shutters allowing you not to see through inactive areas (if the plenum is centred).
- Internal acoustic or thermal-acoustic insulation on request.
  - Acoustic: 20 mm melamine panel facing the connection (recommended on exhaust part only).
  - Thermal-acoustic: choice of 1 side 20 mm melamine + 4 sides 5 mm foam or 5 sides with 5 mm foam.
- Sealed connections.
- Class C airtight performance and sealed connections.

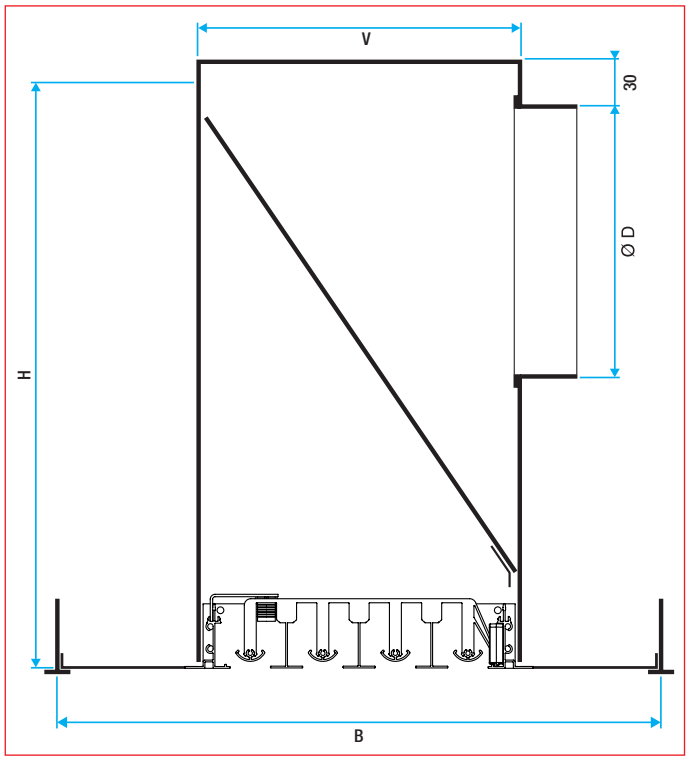
STANDARD DIMENSIONS

- 3 to 8 slots on LINED COMBINED O versions, Length 500-1500 mm (600 to 1500 on TP model).
- 1 to 8 slots on LINED COMBINED F versions, Length 500-2000 mm (600 to 1600 on TP models).

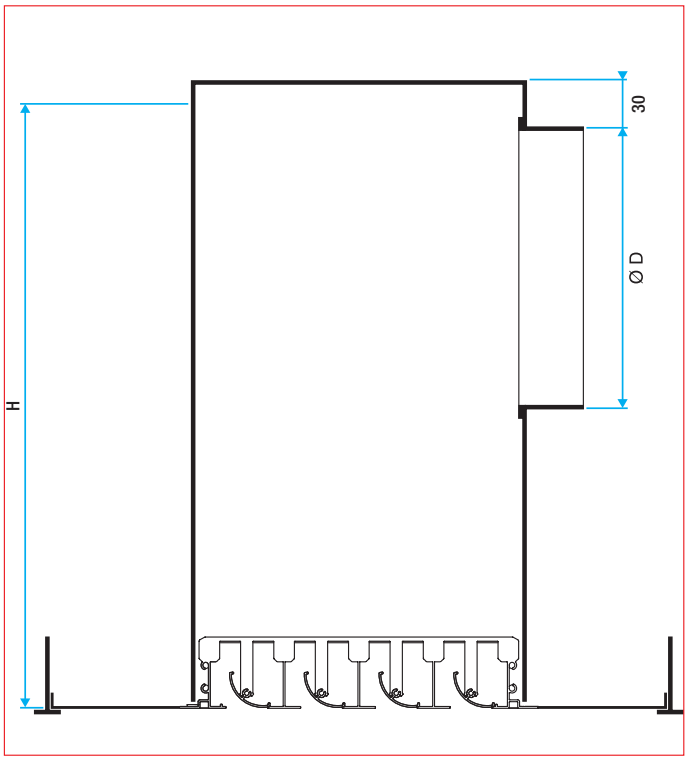
For more information, refer to the Range page.

* Internal and external recycling rate. Tests carried out on 1000-1400 mm models, 3-5 slots, using in-house lab, compared to market leaders in linear combined solutions (air supply + exhaust in same diffuser and plenum).

DIMENSIONS



Lined Combined TP Opening - Exhaust side



Lined Combined TP Fixed - Air supply side

LINED COMBINED TP - FIXED AND OPENING

NUMBER OF SLOTS	COMFORT AIRFLOW < 35 DB(A)	A (MM) - LENGTH OF CEILING SLAB	LENGTH OF TBAR SLOT (MM)	LENGTH OF F-LINE SLOT (MM)	LENGTH OF PLENUM (MM)	B (MM) - WIDTH OF CEILING SLAB	V (MM)	H (MM)	Ø PLENUM CONNECTION (MM)
1	100 m³/h	600-1600	A-70	A-82	Length of slot + 10	200-700	65	250	125
2	150 m³/h	600-1600	A-70	A-82	Length of slot + 10	200-700	110	290	125
3	200 m³/h	600-1600	A-70	A-82	Length of slot + 10	200-700	155	290	160
4	250 m³/h	650-1600	A-70	A-82	Length of slot + 10	250-700	200	340	160
5	350 m³/h	650-1600	A-70	A-82	Length of slot + 10	300-700	245	340	200
6	400 m³/h	750-1600	A-70	A-82	Length of slot + 10	350-700	290	405	200
7	450 m³/h	750-1600	A-70	A-82	Length of slot + 10	400-700	335	405	250
8	500 m³/h	750-1600	A-70	A-82	Length of slot + 10	450-700	380	405	250

LINED - LINED TP - LINED Slim - LINED Combined series
Attachment and filter replacement

Lined diffuser

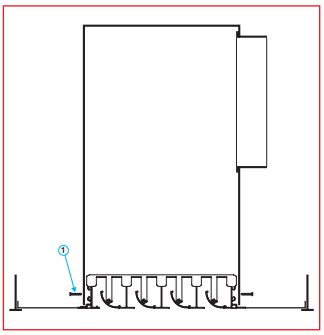
S2 ATTACHMENT METHOD

• Attachment using self-tapping screws on side of plenum.
Note: this attachment method is recommended for suspended ceilings and is not compatible with plaster or BA13 plasterboard ceilings.

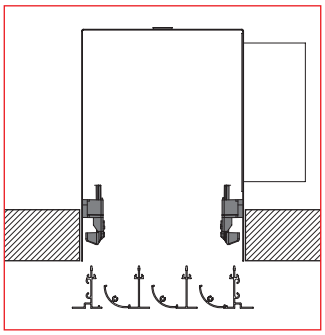
S3 ATTACHMENT METHOD

• Concealed, adjustable attachment to plenum under the diffuser.
Note: this attachment method is simple and quick to use, with the possibility of adjusting the diffuser position in order to position it flush with the ceiling. Recommended for plaster or BA13 plasterboard ceilings.

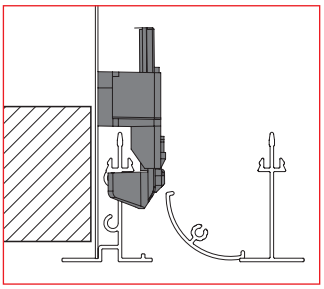
INSTALLATION



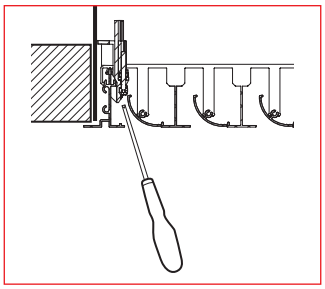
S2 attachment method
Air supply diffuser with S2 attachment ① Self-tapping screw



S3 attachment - step 1
Insert the diffuser under the plenum

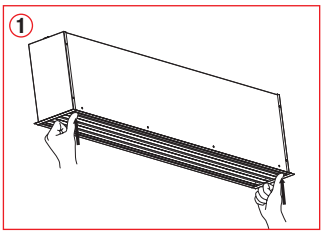


S3 attachment - step 2
Push and clip the 4 attachments

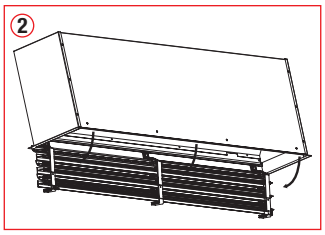


S3 attachment - step 3
Screw to position the diffuser flush against the plaster ceiling

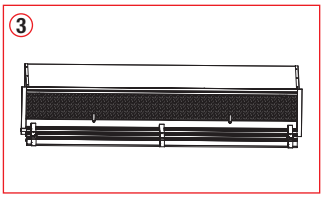
PROCEDURE



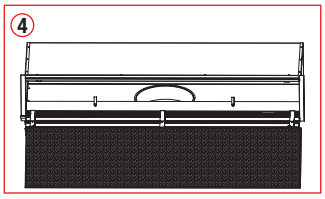
Push the two clips at the ends of the core to open it **Take care** to mount the diffuser in the plenum with the hinges of the opening core on the cleat side



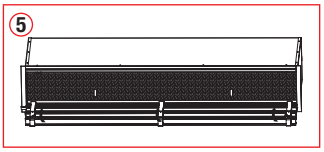
Open the diffuser core



Lift the cleats to remove the old filter



Insert the new filter by pressing on the corners of each side of the plenum and lower the cleats



Close the core with the push clips

LINED - LINED TP - LINED Slim - LINED Combined series

RANGE WITH CHOICE OF OPTIONS

LINEAR MODEL	CODE	TP MODEL	CODE	SLIM MODEL	CODE
LINED S	11002297	LINED TP S	11002307	LINED Slim S	11002294
LINED E	11002298	LINED TP E	11002308	LINED Slim E	11002295
LINED EO	11002299	LINED TP EO	11002309	LINED Slim EO	11002296
Plenum for LINED Linear	11002135	Plenum for LINED TP Linear	11002135	Plenum for LINED Slim Linear	11002135
Plenum for Lined (whole element ≤ 2 m)	11002904	Plenum for Lined TP (whole element ≤ 2 m)	11002904	Plenum for Lined Slim (whole element ≤ 2 m)	11002904
Shutter for plenum	11002137				

COMBINED OPENING MODEL	CODE	COMBINED PLENUM	CODE	MODEL	CODE
LINED Combined O	11002377	LINED Combined plenum	11002197	LINED KS Angle 90°	11002289
LINED Combined Slim O	11002378	LINED Combined Slim plenum	11002197	LINED KE Angle 90°	11002290
LINED Combined TP O	11002379	LINED Combined TP plenum	11002197		

COMBINED FIXED MODEL	CODE	COMBINED PLENUM	CODE	MODEL	CODE
LINED Combined F	11002387	LINED Combined plenum	11002907	Filter for LINED EO	11003256
LINED Combined Slim F	11002388	LINED Combined Slim plenum	11002907	Filter for LINED TP EO	11003257
LINED Combined TP F	11002389	LINED Combined TP plenum	11002907	Filter for LINED Slim EO	11003258
				Filter for LINED Combined O	110002404
				Filter for LINED Combined TP O	11002405
				Filter for LINED Combined Slim O	11002406
				Pack of 20 S3 Lined attachments	21109237
				Shutters for Lined TP & Combined TP plenums	11002137

OPERATIONAL DIMENSIONS LINED LINEAR SERIES - SLIM

H / L (MM)	600	800	1000	1200	1400	1600	1800	2000
1	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x
3	•	•	•	•	•	x	x	x
4	•	•	•	•	•	x	x	x
5	•	•	•	•	•	x	x	x
6	•	•	•	•	•	x	x	x
7	•	•	•	•	•	x	x	x
8	•	•	•	•	•	x	x	x

• Dimensions available on EO models: exhaust filter holder

AVAILABLE OPTIONS

ATTACHMENT	FINISH	DIFFUSER	PLENUM
• S2: attachment using self-tapping screws on side of plenum. • S3: concealed, adjustable attachment to plenum accessible under the diffuser.	• Anodised natural satin finish or RAL 9003 white 30%. • Anthracite grey or white deflectors. • Epoxy paint from RAL colour chart. • AldesArchitect™.	• Whole element*. • Left or right end piece*. • Intermediate element*.	• Special depth. • Special diameter on branch connection. • Supplementary connection.* • Fresh air connection Ø 80, 100 or 125 mm. • Soundproofing or thermal-acoustic insulation. • Plenum shorter plenum than diffuser (for inactive sections) with or without measurement tube. • Damper fitted in plenum connection.** • G3 or G4 filter incorporated. • Sealed connections. • Class C airtight performance and sealed connections. • Black paint coating (on request).

* Not available for LINED Combined ** Not available on models with filter and not available on single-slot models

OPERATIONAL DIMENSIONS LINED TP SERIES

H / A x B (MM)	600 x 300	1200 x 300	1350 x 300	1500 x 300	600 x 600	1200 x 600	1350 x 600	1500 x 600
1	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x
3	•	•	•	•	•	•	•	•
4	•	•	•	•	•	•	•	•
5	•	•	•	•	•	•	•	•
6	-	-	-	-	•	•	•	•
7	-	-	-	-	•	•	•	•
8	-	-	-	-	•	•	•	•

• Dimensions available on EO models: exhaust filter holder

AVAILABLE OPTIONS

ATTACHMENT	FINISH	DIFFUSER	PLENUM
• S2: attachment using self-tapping screws on side of plenum.	• Paint coating RAL 9003 white 30%. • Anthracite grey or white deflectors. • Epoxy paint from RAL colour chart. • AldesArchitect™.	• For Tbar or Fine-line suspended ceilings. • Protective film.	• Special depth. • Special diameter on branch connection. • Supplementary connection. • Fresh air connection Ø 80, 100 or 125 mm. • Plenum shorter plenum than diffuser (for inactive sections) with or without shutters. • Soundproofing or thermal-acoustic insulation. • Damper fitted in plenum branch connection.** • G3 or G4 filter incorporated. • Class C airtight performance and sealed connections.

** Not available on models with filter and not available on single-slot models.

LINED - LINED TP - LINED Slim series

SELECTION - AIR SUPPLY FOR 1 M LENGTH WITH CEILING EFFECT

AK (M²)	NUMBER OF SLOTS	AIRFLOW (M³/H)	QV (M³/H) 100	150	200	250	300	400	500	600	800	1000	1200
	1	Lw (dB (A))	25	32	40	45							
0.0096		ΔP (Pa)	9	19	34	52							
		Lt (m)	3	4	5	7							
	2	Lw (dB (A))		25	25	30	35	42	48				
0.0192		ΔP (Pa)		5	9	14	19	34	52				
		Lt (m)		3	4	5	6	7	9				
	3	Lw (dB (A))				25	26	33	39	44			
0.0288		ΔP (Pa)				6	9	15	24	34			
		Lt (m)				4	5	6	8	9			
	4	Lw (dB (A))					25	27	33	38	45		
0.0384		ΔP (Pa)					5	9	14	19	34		
		Lt (m)					4	5	7	8	10		
	5	Lw (dB (A))						25	28	33	39	46	
0.0480		ΔP (Pa)						6	9	12	22	34	
		Lt (m)						5	6	7	9	12	
	6	Lw (dB (A))							25	29	36	42	47
0.0576		ΔP (Pa)							6	9	15	24	34
		Lt (m)							5	6	9	11	13
	7	Lw (dB (A))							25	25	33	39	43
0.0672		ΔP (Pa)							5	7	11	18	25
		Lt (m)							5	6	8	10	12
	8	Lw (dB (A))								25	30	36	40
0.0768		ΔP (Pa)								5	9	14	19
		Lt (m)								6	7	9	11

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with standard plenum.

SELECTION - EXHAUST FOR 1 M LENGTH

AK (M²)	NUMBER OF SLOTS	AIRFLOW (M³/H)	QV (M³/H) 100	150	200	250	300	400	500	600	800	1000	1200
	1	Lw (dB (A))	25	29	37	43	47						
0.0131		ΔP (Pa)	7	15	27	42	60						
		Lt (m)	-	-	-	-	-						
	2	Lw (dB (A))		25	25	27	32	40	45	50			
0.0262		ΔP (Pa)		4	7	11	15	27	42	60			
		Lt (m)		-	-	-	-	-	-	-			
	3	Lw (dB (A))				25	25	31	36	41	49		
0.0393		ΔP (Pa)				5	7	12	19	27	47		
		Lt (m)				10	14	24	38	54	95		
	4	Lw (dB (A))					25	25	30	35	42	48	
0.0524		ΔP (Pa)					4	7	11	15	27	42	
		Lt (m)					8	14	21	31	54	84	
	5	Lw (dB (A))						25	25	30	37	43	48
0.0655		ΔP (Pa)						5	7	10	18	27	39
		Lt (m)						9	14	20	35	54	77
	6	Lw (dB (A))							25	26	33	39	44
0.0786		ΔP (Pa)							5	7	12	19	27
		Lt (m)							10	14	24	38	54
	7	Lw (dB (A))							25	25	30	36	40
0.0917		ΔP (Pa)							4	5	9	14	20
		Lt (m)							7	10	18	28	40
	8	Lw (dB (A))								25	27	33	37
0.1048		ΔP (Pa)								4	7	11	15
		Lt (m)								8	14	21	31

The Lw (dB(A)) values do not take into account any noise attenuation in the room. ΔP2 = with G3 filter included. Tests conducted with standard plenum.

LINED Combined series

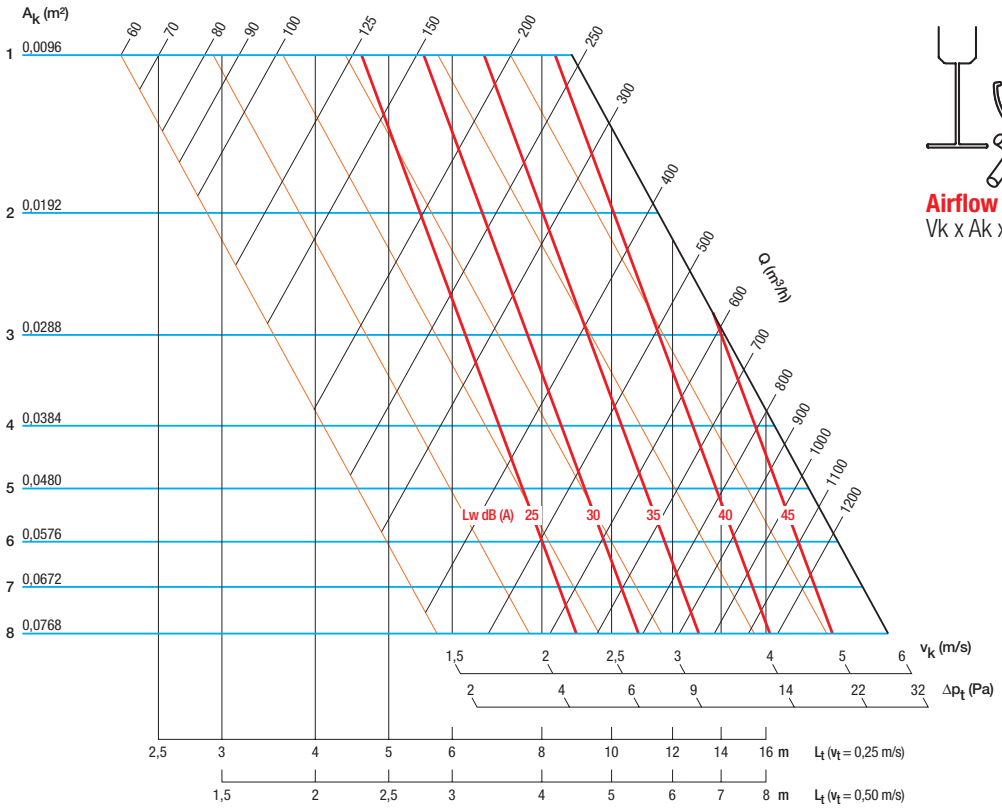
SELECTION - AIR SUPPLY + EXHAUST FOR 1 M LENGTH WITH CEILING EFFECT

CONNECTION DIAMETER	NUMBER OF SLOTS	AIRFLOW (M^3/H)	100	150	200	250	300	400	500	600	800
125	1	Lw (dB(A))	38	49							
		ΔP1 (Pa)	34	74							
		ΔP2 (Pa)	27	60							
		ΔP3 (Pa)	54	121							
		Lt (m)	5.2	7.8							
125	2	Lw (dB(A))	23	34	41	47					
		ΔP1 (Pa)	9	19	34	52					
		ΔP2 (Pa)	7	15	27	42					
		ΔP3 (Pa)	13	30	54	84					
		Lt (m)	3.7	5.5	7.3	9.2					
160	3	Lw (dB(A))		25	32	38	43	50			
		ΔP1 (Pa)		9	15	24	34	59			
		ΔP2 (Pa)		7	12	19	27	47			
		ΔP3 (Pa)		13	24	37	54	96			
		Lt (m)		4.5	6.0	7.5	9.0	12.0			
160	4	Lw (dB(A))		18	25	31	36	43	49		
		ΔP1 (Pa)		5	9	13	19	34	52		
		ΔP2 (Pa)		4	7	11	15	27	42		
		ΔP3 (Pa)		8	13	21	30	54	84		
		Lt (m)		3.9	5.2	6.5	7.8	10.4	13.0		
200	5	Lw (dB(A))			21	26	31	39	44	49	
		ΔP1 (Pa)			6	9	12	22	34	48	
		ΔP2 (Pa)			5	7	10	17	27	39	
		ΔP3 (Pa)			9	13	19	35	54	78	
		Lt (m)			4.6	5.8	7.0	9.3	11.6	13.9	
200	6	Lw (dB(A))				23	26	35	41	46	
		ΔP1 (Pa)				6	9	15	24	34	
		ΔP2 (Pa)				5	7	12	19	27	
		ΔP3 (Pa)				9	13	24	38	54	
		Lt (m)				5.3	6.4	8.5	10.6	12.7	
250	7	Lw (dB(A))				20	25	32	38	43	50
		ΔP1 (Pa)				5	6	11	17	25	44
		ΔP2 (Pa)				4	5	9	14	20	35
		ΔP3 (Pa)				7	10	18	28	40	70
		Lt (m)				4.9	5.9	7.8	9.8	11.8	15.7
250	8	Lw (dB(A))						30	36	41	48
		ΔP1 (Pa)						9	13	19	34
		ΔP2 (Pa)						7	11	15	27
		ΔP3 (Pa)						13	21	30	54
		Lt (m)						7.3	9.2	11.0	14.7

Data valid for a standard diffuser (with central partition, so air supply length = exhaust intake length).
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with standard plenum.
ΔP1 = air supply only
ΔP2 = exhaust air only
ΔP3 = exhaust with filter

LINED - LINED TP - LINED Slim series

AIR SUPPLY WITH CEILING EFFECT - LENGTH 1 M



The Lw (dB(A)) values do not take into account any noise attenuation in the room Tests conducted with standard plenum.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.37	0.5	0.63
Lt (m)	x 1	x 0.67	x 0.5	x 0.4

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 1.00	ΔPt x 1.00	ΔPt x 2.25	ΔPt x 5.90
Lw + 0	Lw + 0	Lw + 10	Lw + 20

CORRECTIONS FOR OTHER LENGTHS

L (M)	1	1.5	2	2.5	3	4	5	6	8	10
Lt (m)	x1	x1.05	x1.10	x1.10	x1.10	x1.10	x1.10	x1.10	x1.15	x1.15
Lw (dB (A))	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+8	+ 9	+ 10

CORRECTIONS FOR VERTICAL AIR SUPPLY

ΔT (°C)	- 20	-15	-10	-5	0	+5	+10	+15	+20
Lt	x2.3	x1.84	x1.56	x1.2	x0.92	x0.64	x0.46	x0.37	x0.30

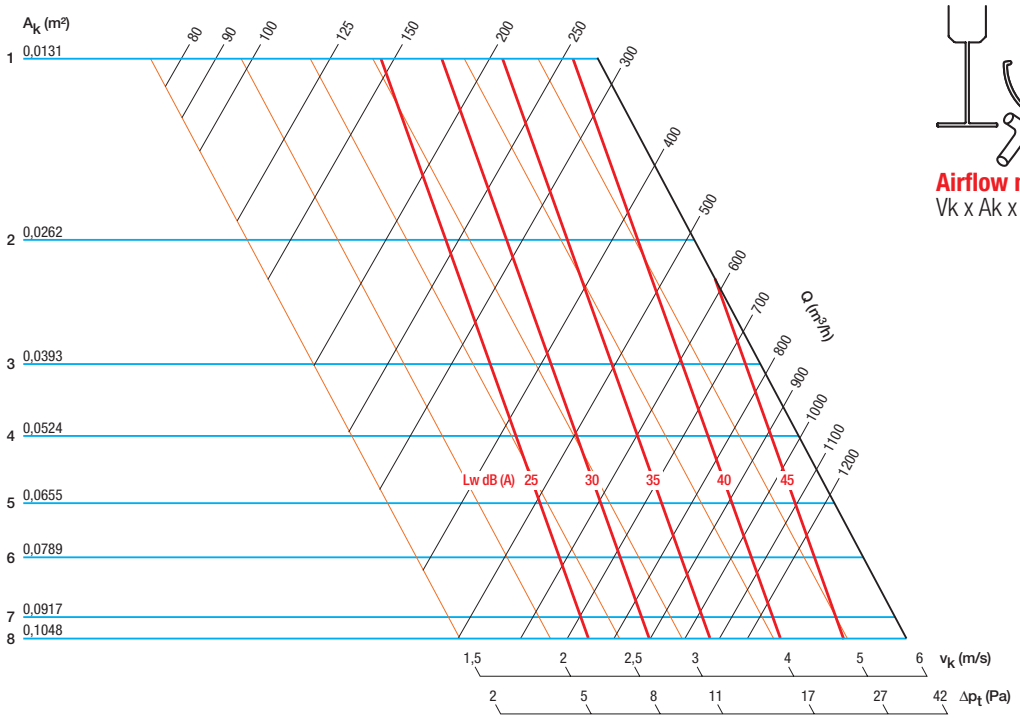
KOCT CORRECTIONS (DB) AND ATTENUATION ΔL (DB) BY OCTAVE BAND

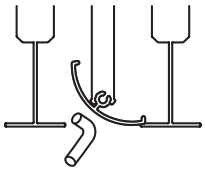
Slots \ Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
1	-9	-10	-11	-12	-7	-1.4	-1	-3	-8	-13	-15	-14	-18	-19	-20	-16	-24	-28	-32	-33	-35
2	-5	-7	-4	-6	-6	-5	-5	-4	-7	-9	-14	-10	-16	-20	-22	-24	-25	-29	-30	-32	-34
3	-3	-5	-5	-2	0	-2	-5	-6	-10	-7	-9	-11	-13	-14.5	-17	-19	-20.5	-25	-26	-33	-33.5
4	-2	-3	-2	2	-2	-6	-7	-12	-9	-11	-14	-14	-15	-18.5	-20	-26	-30	-31	-32	-32	-34
5	-1	-1	-1	5	-2	-7	-8	-11	-10	-13	-15	-16	-15	-21	-23	-31	-30	-33	-35	-37	-38
6	-1	-2	-1	7	-3	-8	-8	-12	-12	-14	-16	-17	-16	-23	-24	-33	-38	-34	-36	-36	-38
7	-1	-2	-1	8	-4	-9	-10	-13	-13	-15	-17	-18	-17	-24	-25	-34	-40	-36	-38	-40	-42
8	-1	-2	-1	10	-5	-10	-12	-14	-15	-17	-18	-19	-18	-25	-26	-36	-40	-38	-40	-41	-43
Tolerance +/-	1	1	2	0.5	0.5	0	1	1	1	1	1	2	2	3	4	3	4	4	3	1	1
Attenuation*	0	1	0	1	2	3	4	5	6	5	6	4	6	7	7	9	8	8	8	8	9

Lwoct = Lw (dB(A)) + Koct (dB)
Lwoct attenuated = Lwoct - ΔL

* With soundproofing or thermal-acoustic insulation of plenum.

EXHAUST - LENGTH 1 M





Airflow measurement
Vk x Ak x 3600: in m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room Tests conducted with standard plenum.

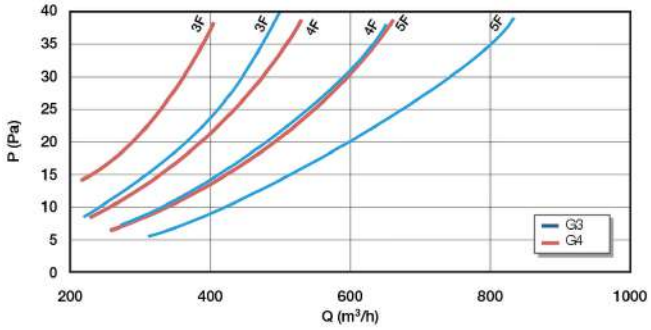
CORRECTIONS FOR OTHER LENGTHS

L (M)	1	1.5	2	2.5	3	4	5	6	8	10
Lw (dB (A))	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+8	+ 9	+ 10

CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 1.00	ΔPt x 1.00	ΔPt x 2.25	ΔPt x 5.90
Lw + 0	Lw + 0	Lw + 10	Lw + 20

PRESSURE LOSS WITH G3 OR G4 FILTER INCLUDED



KOCT CORRECTIONS (DB) AND ATTENUATION ΔL (DB) BY OCTAVE BAND

Slots \ Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
1	-5	-3	-4	-4	-3	-2	-1	-5	-7	-9	-14	-15	-19	-20	-22	-23	-24	-22	-23	-23	-24
2	-3	-5	-5	-2	0	-2	-5	-6	-10	-7	-9	-11	-13	-14.5	-17	-19	-20.5	-25	-26	-27	-27
3	-2	-3	-2.5	-2	3	-3	-7	-9	-10	-15	-15	-12	-15	-15	-19	-21	-24	-26	-25	-26	-25
4	3	0	1	1	1	-3	-6	-8	-10	-12	-12	-13	-16	-20	-22	-24	-25	-20	-20	-17	-15
5	-1	-2	-1	7	-3	-8	-8	-12	-12	-14	-16	-17	-16	-23	-24	-33	-38	-34	-35	-35	-36
6	0	-1	0	8	-2	-7	-7	-12	-11	-12	-15	-16	-15	-22	-23	-33	-37	-33	-34	-37	-40
7	0	-1	0	8	-2	-7	-7	-11	-11	-13	-15	-16	-15	-22	-23	-32	-37	-33	-35	-34	-36
8	1	0	1	9	-1	-6	-6	-10	-10	-12	-14	-15	-14	-21	-22	-31	-36	-32	-35	-37	-38
Tolerance +/-	-0.4	1	1	0.4	0.3	4.3	0.4	0.5	1.3	1.2	1.2	2.4	2.2	2.1	2.8	3.4	1.6	1.2	0.3	0.3	0.2
Attenuation*	0	1	1	0	0	4	0	1	1	1	1	2	2	2	3	3	2	1	0	0	0

Lwoct = Lw (dB(A)) + Koct (dB)
Lwoct attenuated = Lwoct - ΔL

* With soundproofing or thermal-acoustic insulation of plenum.

ALD 610 - ALD 620 series - Aluminium

ALD 613 diffuser

USE

- Air supply or exhaust.
- Air supply on right or left possible depending on model.
- Ceiling-mounted.

CONSTRUCTION

- Extruded aluminium body.
- Extruded aluminium deflectors.
- Slide-operated damper built into diffuser.
- 25 mm wide frame.

FINISH

- Anodised aluminium body and deflectors with natural satin finish or epoxy paint RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Concealed screw + bridge attachment accessible from underside of diffuser.

Note: this attachment method is compatible with all ceiling types.

- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- Galvanised steel connection plenum with side branch connection. Basic or insulated version.

STANDARD DIMENSIONS

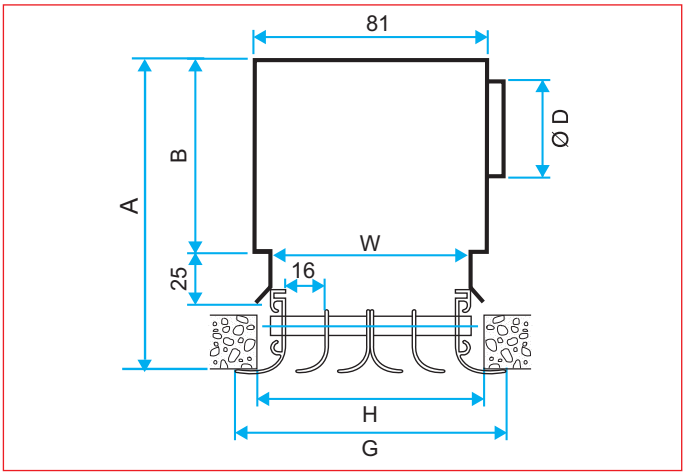
- Available with 1 to 4 slots.
- Available lengths are 550 mm, 900 mm, 1150 mm and 1500 mm.

For further information refer to the Range pages below.

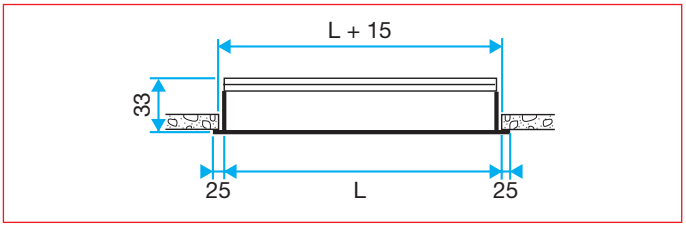
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



ALD 620 diffuser



ALD 610 or ALD 620 diffuser

STANDARD DIMENSIONS

TITLE	A (MM)	B (MM)	Ø D (MM)	G (MM)	H (MM)	W (MM)
ALD 611	200	155	125	50	35	28
ALD 612	200	155	125	67	50	46
ALD 622	200	155	125	74	55	46
ALD 613	235	190	160	84	70	63
ALD 623	235	190	160	91	70	63
ALD 614	235	190	160	101	85	80
ALD 624	235	190	160	108	85	80

AIR SUPPLY DIRECTIONS

MODEL	ALD 611	ALD 612	ALD 622	ALD 613	ALD 623	ALD 614	ALD 624
Diffusion direction							

ALD 600 Series

ALD 600 STANDARD RANGE

TITLE	NBR SLOTS	550**	900	1150**	1500
		CODE	CODE	CODE	CODE
ALD 611 aluminium finish	1	11051750	11051751	11051752	11051753
ALD 611 white finish	1	11051850	11051851	11051852	Please contact us*
ALD 612 aluminium finish	2	11051754	11051755	11051756	Please contact us*
ALD 612 white finish	2	11051854	11051855	11051856	11051857
ALD 613 aluminium finish	3	11051762	11051763	11051764	11051765
ALD 613 white finish	3	11051862	11051863	11051864	11051865
ALD 614 aluminium finish	4	Please contact us*	11051771	11051772	11051773
ALD 614 white finish	4	11051870	11051871	11051872	11051873
ALD 622 aluminium finish	2	Please contact us*	11051759	Please contact us*	Please contact us*
ALD 622 white finish	2	11051858	11051859	11051860	Please contact us*
ALD 623 aluminium finish	3	Please contact us*	11051767	Please contact us*	Please contact us*
ALD 623 white finish	3	11051866	11051867	11051868	Please contact us*
ALD 624 aluminium finish	4	Please contact us*	11051775	Please contact us*	Please contact us*
ALD 624 white finish	4	11051874	11051875	11051876	11051877
ALP 111	1	11053100	11053101	11053102	11053103
ALP 112	2	11053104	11053105	11053106	11053107
ALP 113	3	11053112	11053113	11053114	11053115
ALP 114	4	11053120	11053121	11053122	11053123

* Minimum quantities may be required.
** Dimensions for standard 600 mm or 1200 mm panels.

ATTACHMENT	FINISH
• Concealed screw and bridge attachment.	• Anodised aluminium, natural satin hue or epoxy paint finish RAL 9010 white.

610 - 620 - 260 series

SELECTION - TYPE 610 - 620 AIR SUPPLY WITH CEILING EFFECT

AK (M²)	NUMBER OF SLOTS	AIRFLOW (M³/H)	Qv (M³/H)																	
			60		100		200		300		350		400		450		500		600		800		1000	
0.0096	1	550	28	2.8	43	4.2																	Lw	Lt
			3.5	10	5.8	25																	Vk	Pa
0.0192	1	900	5	1.5	28	2.8	48	5.2																
			2	3	3.5	10	7	40																
0.0288	1	1150			5	2.2	43	4.4																
					2.9	7	5.9	28																
0.0384	1	1500					35	3.4	44	4.5														
							4.4	17	6.3	36														
0.0480	2	550			27	3.1	47	6.2																
					3	7	6	30																
0.0576	2	900					32	3.8	42	7.5	49	6.9	53	7.9										
							3.5	10	5.1	20	6.5	35	7.4	45										
0.0672	2	1150					27	3.1	37	4.5	41	5.1	45	5.9	48	6.5	52	7.8						
							3	7	4.1	13	5	20	5.5	25	6.2	33	7	40						
0.0768	2	1500					5	2.4	30	3.5	32	3.9	37	4.5	39	5	43	5.5	50	9.5				
							2.2	5	3.5	9	3.5	10	4.1	15	4.7	18	5.1	20	6.8	40				
0.0096	3	550					37	5	49	7.6														
							4	13	6	30														
0.0192	3	900					5	3	33	4.6	40	5.3	47	6.2	50	7								
							2.3	5	3.6	10	4.5	22	5.7	28	6.5	35								
0.0288	3	1150							28	3.6	32	4.2	37	4.9	40	5.6	43	6.2	47	7.4				
									2.7	7	3.3	10	3.9	13	4.2	15	4.9	20	5.5	25				
0.0384	3	1500													31	5.8	35	6.2	40	6.9	49	7.6		
															3.4	13	3.9	15	4.4	17	6	30		
0.0480	4	550					28	4.2	40	6.2	47	7.3												
							2.8	7	4	13	3.1	20												
0.0576	4	900							25	3.9	28	4.5	32	5.1	38	6								
									2.5	5	3.1	7	3.5	10	3.8	12								
0.0672	4	1150													31	4.6	34	5.4	39	6.1	47	8.1		
															3	7	3.5	10	4	13	5.1	22		
0.0768	4	1500	Lw	Lt															32	4.9	40	6.4	47	8
			Vk	Pa															3.1	7	4	12	5	20

The Lw dB(A) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with standard plenum.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1.5	x 1	x 0.75	x 0.6

CORRECTIONS FOR DIFFUSERS WITHOUT PLENUM

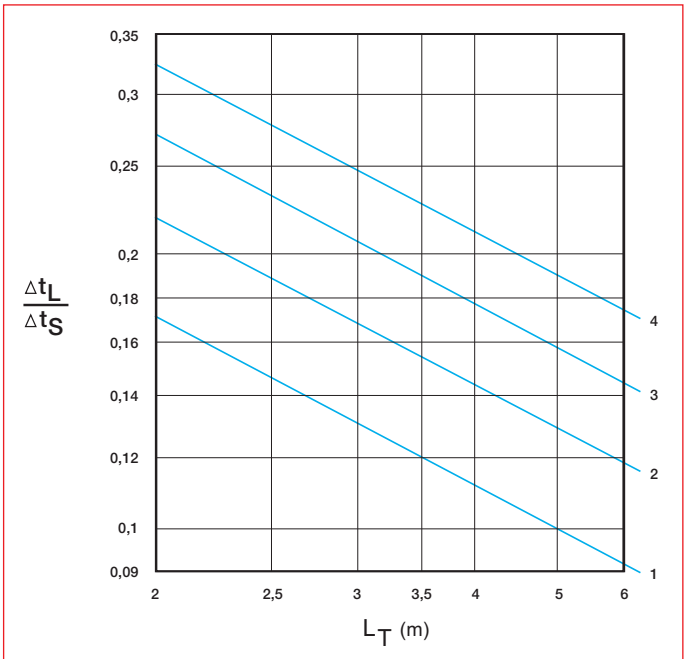
ΔPt	x 0.6
Lw	- 5

CORRECTIONS FOR DAMPER

DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 1.00	ΔPt x 0.95 x Vk²	ΔPt x 3.28 x Vk²
Lw + 0	Lw + 10	Lw + 20

Mixing capacity (TM)

CAPACITY FOR LINED SERIES AND 610 - 620 SERIES DIFFUSER

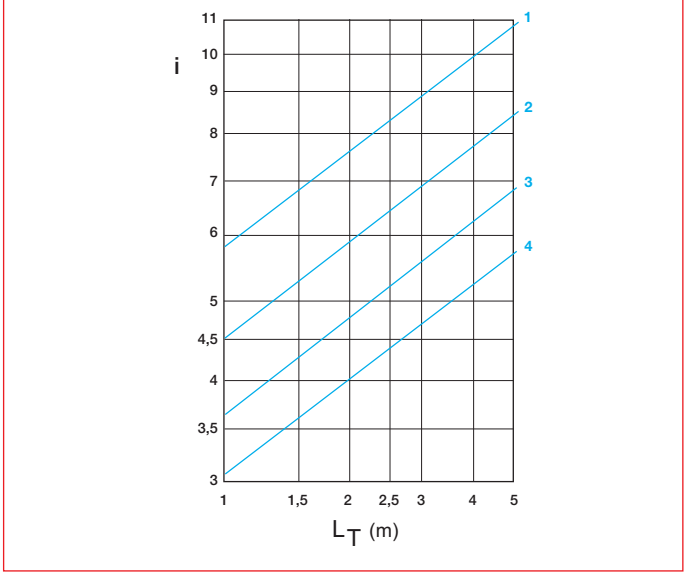


SYMBOLS

Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
ΔTl (°C)	Difference between temperature at end of range and ambient temperature (in °C)
ΔTs (°C)	Difference between air supply temperature and ambient temperature (in °C)
TM = ΔTl / ΔTs	Ratio between temperature differences. This value defines the terminal's capacity to quickly mix new air with the ambient air
EXAMPLE WITH AIR SUPPLY AT 15°C AND AMBIENT AIR TEMPERATURE OF 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x capacity (°C)

Induction rate (i)

INDUCTION RATE FOR LINED SERIES AND 610 - 620 SERIES DIFFUSERS



SYMBOLS

Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
Q1 (m³/h)	Primary airflow rate
Q2 (m³/h)	Airflow induced in room
QL (m³/h)= Q1 + Q2	Total airflow in movement at end of throw
i = QL / Q1	Induction rate

CONTENTS

TWISTED 850 series - Steel

Twisted 850 Air supply diffuser

Twisted 850 circular for plaster ceilings

USE

- Air supply or return, high-induction fixed diffusion with swirl air jet.
- Wide airflow range from a single size of diffuser.
- Systems offer high mixing rate.
- Ideal for cold and hot air supply (air conditioning) with high T° differences under low ceiling heights.
- Ideal for variable-airflow systems (ducted convector fans).
- Ceiling diffuser designed to replace 600 x 600 mm, 625 x 625 mm or 675 x 675 mm suspended ceiling panels.
- Suited to Tbar and Fine-Line frames as well as Visible ducting networks not concealed in ceilings.
- Circular version compatible with non-removable plaster or BA13 plasterboard ceilings.

CONSTRUCTION

- Painted steel diffusion cone and central plate.
- Steel compensation plate suited to 600 x 600 mm, 625 x 625 mm or 675 x 675 mm ceiling panels, with Tbar or Fine-Line frames (removable disc on circular model).
- Air supply model equipped with a fixed central plate serving as a deflector.
- Return model equipped with removable central plate and elliptical filter. Access to filter by quick and easy opening of the central plate.
- Galvanised steel cylindrical plenum for direct connection to a Ø 200 and Ø 250 mm circular duct (return version only). Optional fresh air connections (Ø 100 and Ø 125).
- Version without plenum available for direct exhaust or direct connection to D200 or D250 circular connection (opening on circular model). Non-opening diffuser only.
  NB: use for exhaust / return only.

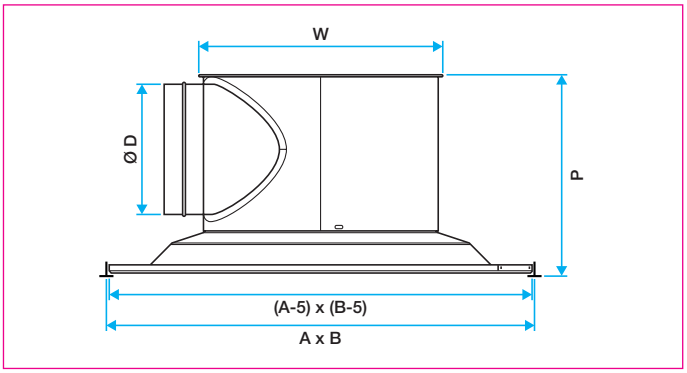
DESIGN

- High-induction air diffusion using air jet rotation inside plenum.

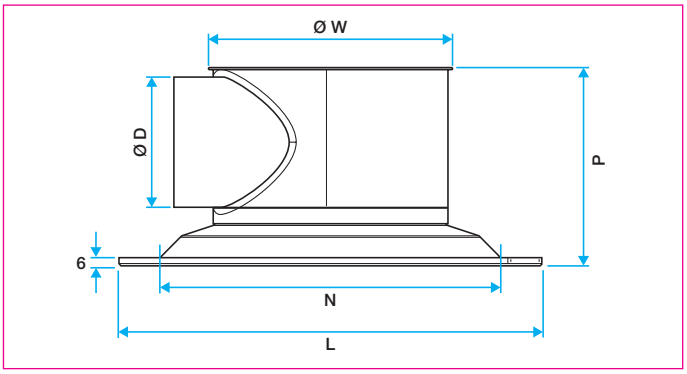
By maintaining a sufficient discharge speed, the diffusion cone ensures a perfect Coanda effect (ceiling effect) and a swirl air jet. This swirl air jet will cause the ambient air to move, thereby mixing it with the air supply to ensure homogeneous temperatures in occupied areas.

- Aldes patent.

DIMENSIONS



Twisted 850 diffuser for square panels



Twisted 850 diffuser for plaster or BA13 plasterboard ceiling

STANDARD DIMENSIONS

COMFORT AIRFLOW LEVELS FOR LW < NR 40 DB(A) AND DIMENSIONS					
INSTALLATION	A x B* (MM)	Ø W (mm)	Ø D (MM)	D (MM)	AIRFLOW (M^3/H)
Suspended ceilings	600 x 600	366	200	298	150 to 600
	625 x 625	366	200	298	150 to 600
	675 x 675	366	200	298	150 to 600

* Nominal ceiling panel dimensions.

COMFORT AIRFLOW LEVELS FOR LW < NR 40 DB(A) AND DIMENSIONS						
INSTALLATION	Ø L (MM)	OPENING Ø N (MM)	Ø W (MM)	Ø D (MM)	D (MM)	AIRFLOW (M^3/H)
Plaster/BA13	555	545	366	200	298	150 to 600
Plaster/BA13	555	545	366	250	348	150 to 600

TWISTED 850 series - Steel

Twisted 850 circular for plaster ceilings

Twisted 850 opening with exhaust filter

FINISH

- Epoxy paint finish RAL 9003 matt 30 % brightness.
- RAL chart paint finish on diffuser and/or plenum. View the list of available colours in the appendix.
- Black paint coating on plenum on request.
- AldesArchitect® finish.

ATTACHMENT

- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the suspended ceiling frame.

- Concealed screw attachment to plenum or F7 bridge on circular / plaster version (optional).

OPTIONS

- G2 or G4 elliptical flat filter supplied with the exhaust diffuser. M1 fire protection rating.
- Acoustic insulation (15 mm-thick M1 melamine foam inside the plenum).
- Thermal insulation (5 mm-thick M1 polyurethane foam outside the plenum).
- Bridge system to facilitate installation in non-removable ceilings (F7 attachment).
- Sealed connections.

Class C airtight performance and sealed connections (return only).

- Connection diameters: Ø 200 and Ø 250.
- Fresh air connection.
- Two branch connections at 90° or opposite unit connection.

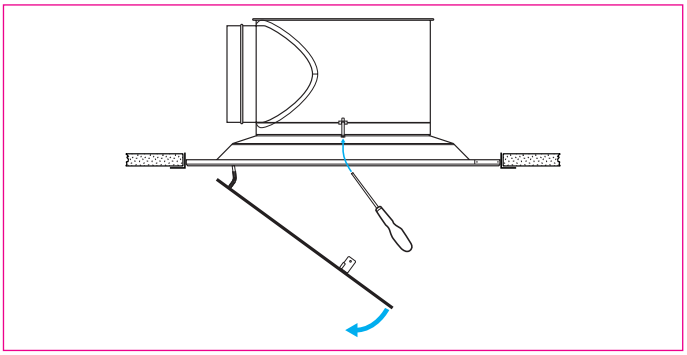
STANDARD DIMENSIONS

- Dimensions suited to standard suspended ceiling panels 600 x 600 mm, 625 x 625 mm or 675 x 675 mm (T-bar or Fine-Line systems).
- Circular connection diameter 200 mm and 250 mm on exhaust.
- For further information refer to the Range pages below.

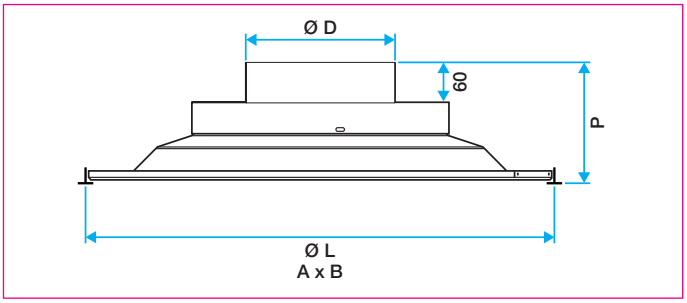
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



Installation of Twisted plaster ceiling version with F7 bridge



Twisted 850 direct exhaust

STANDARD DIMENSIONS

DIMENSIONS A x B* (MM)	Ø D (MM)	P (MM)
600 x 600	200 or 250	170
625 x 625	200 or 250	170
675 x 675	200 or 250	170

* Nominal ceiling panel dimensions.

DIMENSIONS Ø L (MM)	Ø D (MM)	P (MM)
555	200 or 250	170
555	200 or 250	170
555	200 or 250	170

TWISTED 850 series

STANDARD RANGE

DIMENSIONS (MM)	AIR SUPPLY DIFFUSER TWISTED 850 600 x 600	TWISTED 850 THERMAL AND ACOUSTIC-INSULATED AIR SUPPLY DIFFUSER 600 X 600	TWISTED 850 W OPENING EXHAUST DIFFUSER WITH FILTER 600 x 600	SPARE FILTER W 850	CIRCULAR DIFFUSER (PLASTER/BA13) SUPPLY OR EXHAUST NO FILTER
	CODE	CODE	CODE	CODE	CODE
200	11051163	11051165	11051164	11053949 (G2) 11053948 (G4)	11051166
250	-	-	-	11053981 (G2) 11053980 (G4)	-

ATTACHMENT	FINISH
• Concealed using brackets sealed into concrete slab.	• Steel with epoxy paint coating RAL 9003 white matt 30 % brightness.

RANGE WITH CHOICE OF OPTIONS

DIMENSIONS (MM)	AIR SUPPLY DIFFUSER TWISTED 850	EXHAUST DIFFUSER TWISTED 850 W	DIRECT EXHAUST AIR DIFFUSER TWISTED 850 DIRECT
	CODE	CODE	CODE
600 x 600 panels	11003361	11003362	11003366
625 x 625 panels	11003365*	11003365	11003367
675 x 675 panels	11003363	11003364	11003368
Circular plaster	11003374*	11003374	11003376

* Opening.

OPTIONS

OPTIONS	OPTIONS
For T-bar or Fine Line ceiling systems (suspended ceiling models only)	Acoustic insulation
F7 mounting bridge (plaster models only)	Thermal and acoustic insulation
Epoxy paint according to RAL colour chart for diffuser and/or plenum	Connection Ø 200 or Ø 250 on direct type and opening exhaust
G2 or G4 filters	Fresh air connection Ø 125
AldesArchitect® finish	Protective film

ACCESSORIES PROPOSED

• Spare G2 or G4 filter (M1 fire rating).

SELECTION - AIR SUPPLY WITH CEILING EFFECT OR G4

AK (M^2)	DIMENSIONS	QV (M^3/H) 150		200		250		300		350		400		450		500		550		600		650	
0.022	**Ø 200**	24	0.30	25	0.39	26	3.52	28	2.59	29	0.65	30	0.71	35	0.85	37	0.91	39	0.96	40	1.02	43	1.10
		2.0	2	2.6	3	3.3	4	3.9	6	4.6	8	5.2	11	5.9	13	6.5	17	7.2	20	7.8	24	8.5	28
		Lw	Lt																				
		Vk	Pa																				

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.37 m/s. Tests conducted with standard plenum.

SELECTION - EXHAUST WITHOUT FILTER

AK (M^2)	DIMENSIONS	QV (M^3/H) 150		200		250		300		350		400		450		500		550		600		650	
0.029	**Ø 250**	24	-	24	-	25	-	26	-	27	-	30	-	33	-	36	-	38	-	41	-	42	-
		1.4	2	1.9	3	2.4	5	2.9	7	4.6	10	3.8	13	4.3	16	4.8	20	5.3	24	5.7	29	6.2	34
	Ø 200 (Pa2)	-	4	-	7	-	11	-	16	-	21	-	28	-	35	-	44	-	53	-	63	-	74
		Lw	Lt																			Lw	-
		Vk	Pa																			Vk	Pa

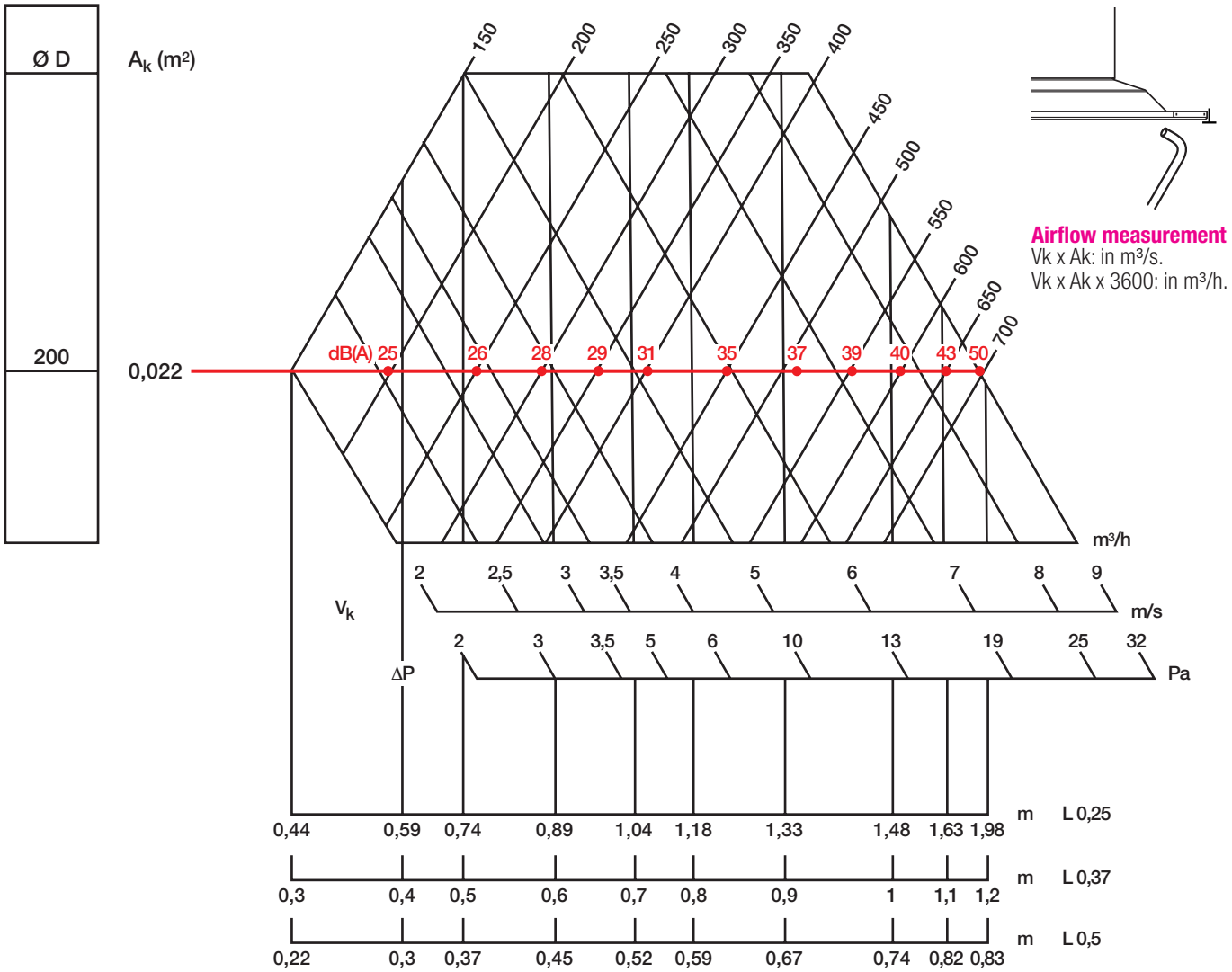
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted without plenum (direct model ø 250) and using standard plenum (Pa2).

SELECTION - EXHAUST - G2 FILTER ONLY

AK (M^2)	DIMENSIONS	QV (M^3/H) 150		200		250		300		350		400		450		500		550		600		650	
	Ø 200	-	1	-	2	-	3	-	4	-	6	-	8	-	10	-	12	-	14	-	17	-	20
			Pa																				Pa

TWISTED 850 series

AIR SUPPLY WITH CEILING EFFECT - LENGTH 1 M



Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

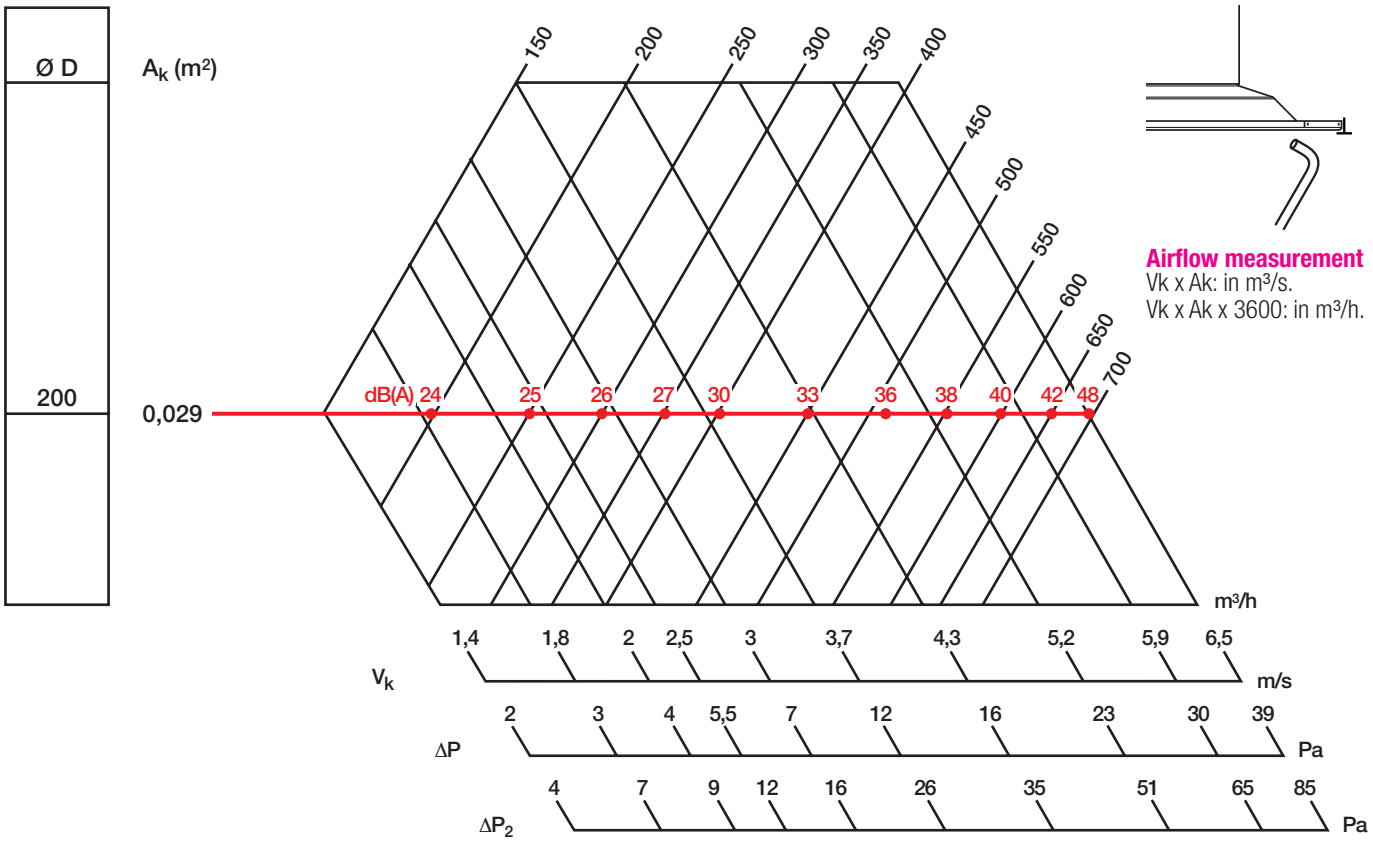
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt (m)	x 1.5	x 1	x 0.75	x 0.6

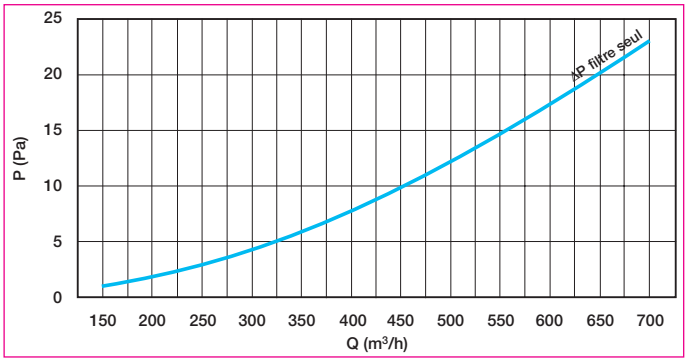
TWISTED 850 series - Exhaust

AIR SUPPLY WITH CEILING EFFECT - LENGTH 1 M



The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted without plenum (direct model ø 250) and using standard plenum (Pa2).

PRESSURE DROP ON FILTER ONLY



SF 785 series - Steel

SF 785 diffuser

USE

- Air supply.
- Adjustable diffusion enabling swirl air jet.
- Rapid temperature balancing.
- Designed for locations requiring high mixing rate under a low ceiling height.
- Ceiling-mounted.
- 600 x 600 dimensions suited to standard suspended ceilings.

CONSTRUCTION

- Punched steel plate body.
- Adjustable polypropylene deflectors.

FINISH

- Front panel epoxy paint RAL 9003 white - 30%.
- Deflectors RAL 9005 black.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the neck of the diffuser.

Note: this attachment method is recommended for suspended ceilings and incompatible with plaster or BA13 plasterboard ceilings.

- F7: visible attachment with central screw and bridge.

Note: this attachment method is recommended for plaster or BA13 plasterboard ceilings.

- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- RE connection plenum with side branch connection.
- RT connection plenum with top branch connection.
- Built-in flow splitter.
- Available in basic version or insulated on 2 or 5 sides.

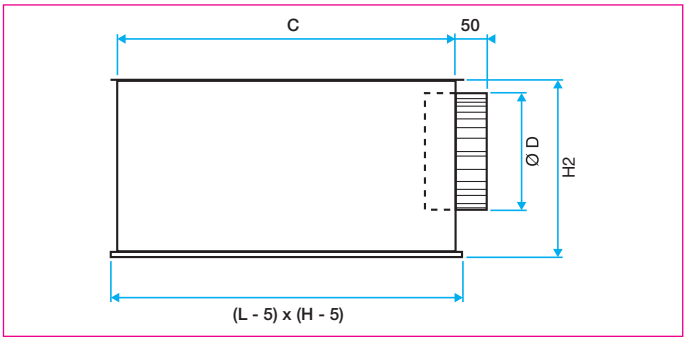
STANDARD DIMENSIONS

- Dimensions range from 400 x 400 to 825 x 825 mm.
- 600 x 600 mm dimensions ideal for suspended ceiling panels.
- For further information refer to the Range pages below.

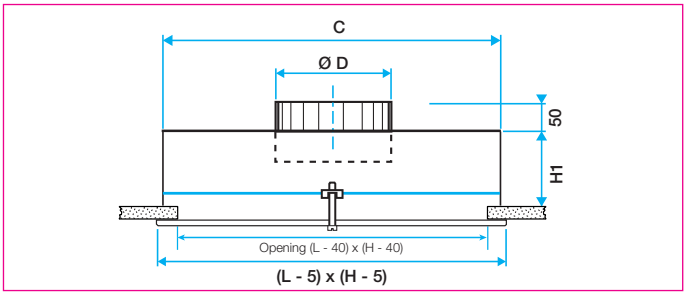
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

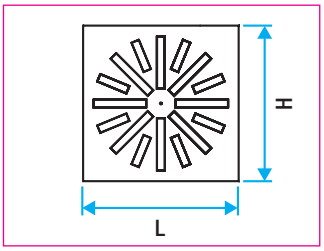
DIMENSIONS



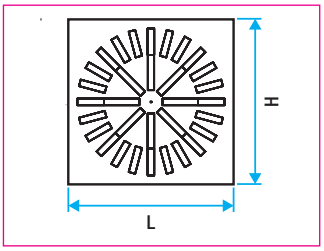
SF 785 diffuser with RE plenum - F0 attachment - installation on suspended ceiling panels



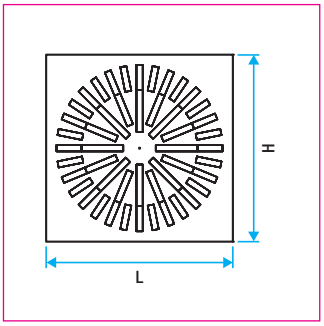
SF 785 diffuser with RT plenum - F7 attachment - installation on BA13 plasterboard ceilings



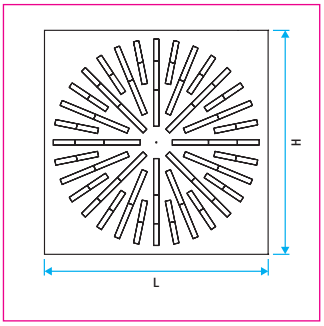
Dimensions 400 x 400



Dimensions 500 x 500



Dimensions 600 x 600



Dimensions 825 x 825

STANDARD DIMENSIONS

DIMENSIONS L x H (MM)	NUMBER OF SLOTS	C (MM)	Ø D (MM)	H1 (MM)	H2 (MM)
400 x 400	16	390	200	160	290
500 x 500	32	490	200	160	290
600 x 600*	48	590	250	160	340
825 x 825	72	805	315	160	405

* Special dimensions for suspended ceiling panels

SF 775 series - Steel

SF 775 diffuser

USE

- Air supply.
- Adjustable diffusion enabling swirl air jet.
- Rapid temperature balancing.
- Designed for locations requiring high mixing rate under a low ceiling height.
- Ceiling-mounted.
- 600 x 600 dimensions suited to standard suspended ceilings.

CONSTRUCTION

- Punched steel plate body.
- Adjustable polypropylene deflectors.

FINISH

- Front panel epoxy paint RAL 9003 white - 30%.
- Deflectors RAL 9005 black.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the neck of the diffuser.

Note: this attachment method is recommended for suspended ceilings and incompatible with plaster or BA13 plasterboard ceilings.

- F7: visible attachment with central screw and bridge.

Note: this attachment method is recommended for plaster or BA13 plasterboard ceilings.

- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- RE connection plenum with side branch connection.
- RT connection plenum with top branch connection.
- Built-in flow splitter.
- Available in basic version or insulated on 2 or 5 sides.

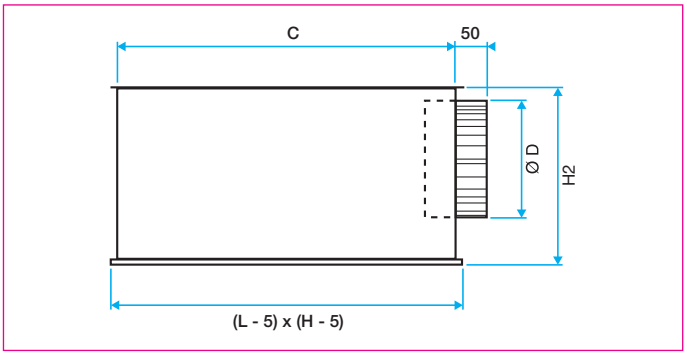
STANDARD DIMENSIONS

- Dimensions range from 400 x 400 to 825 x 825 mm.
- 600 x 600 mm dimensions ideal for suspended ceiling panels.
- For further information refer to the Range pages below.

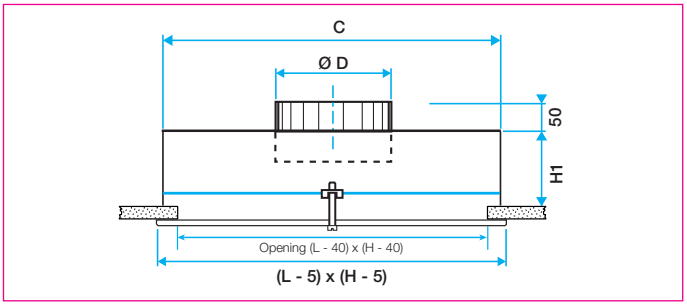
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

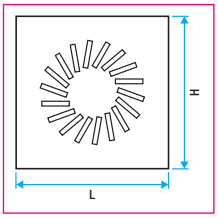
DIMENSIONS



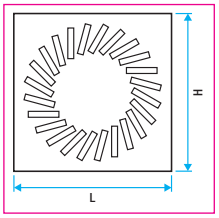
SF 775 diffuser with RE plenum - F0 attachment - installation on suspended ceiling panels



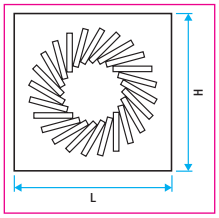
SF 775 diffuser with RT plenum - F7 attachment - installation on BA13 plasterboard ceilings



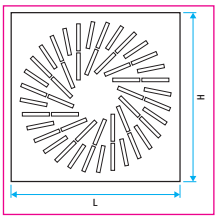
Dimensions 400 / 500 / 600 x 16



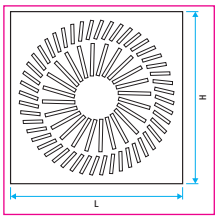
Dimensions 500 x 24



Dimensions 600 x 24



Dimensions 600 x 48



Dimensions 825 x 72

STANDARD DIMENSIONS

DIMENSIONS L x H (MM)	NUMBER OF SLOTS	C (MM)	Ø D (MM)	H1 (MM)	H2 (MM)
400 x 400	16	390	200	160	290
500 x 500	16	490	200	160	290
600 x 600*	24	590	200	160	290
600 x 600*	36	590	200	160	290
600 x 600*	48	590	250	160	340
825 x 825	72	805	315	160	405

* Special dimensions for suspended ceiling panels

SF 786 series - Steel

SF 786 diffuser

USE

- Air supply.
- Fixed swirl jet diffusion.
- Rapid temperature balancing.
- Designed for locations requiring high mixing rate under a low ceiling height.
- Ceiling-mounted.
- Dimensions suited to standard 600 x 600 suspended ceilings.

CONSTRUCTION

- Punched steel plate front panel.

FINISH

- Epoxy paint RAL 9003 white, 30%.

ATTACHMENT

- F7: visible attachment with central screw and bridge.

Note: this attachment method is compatible with plaster or BA13 plasterboard ceilings.

- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- RE connection plenum with side branch connection.
- RT connection plenum with top branch connection.
- Built-in flow splitter.
- Available in basic version or insulated on 2 or 5 sides.

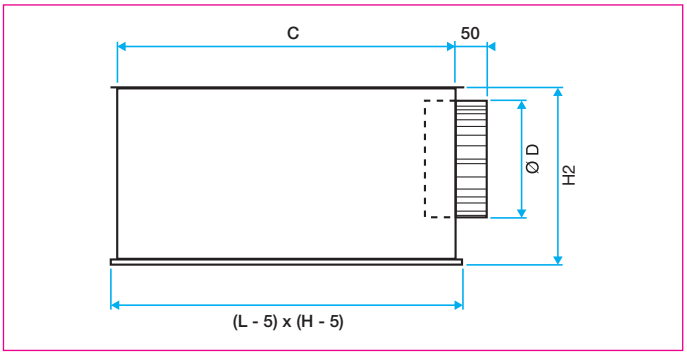
STANDARD DIMENSIONS

- Single size available: 600 x 600 mm (suited to standard ceiling panels).
- Other dimensions available on request.
- For further information refer to the Range pages below.

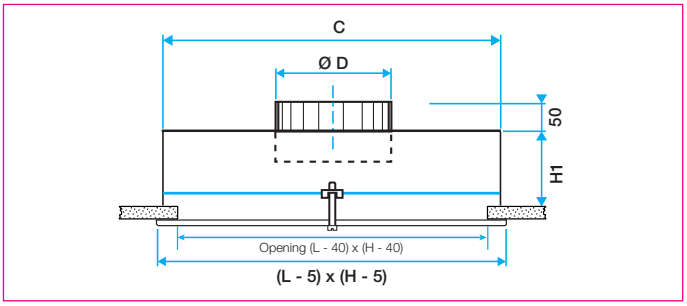
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



SF 786 diffuser with RE plenum - F0 attachment - installation on suspended ceiling panels



SF 786 diffuser with RT plenum

STANDARD DIMENSIONS

DIMENSIONS L x H (MM)	C (MM)	Ø D (MM)	H1 (MM)	H2 (MM)
600 x 600	590	250	160	340

785 - 775 - 786 series

STANDARD RANGE

DIMENSIONS (MM)	DIFFUSER SF 785 F7	DIFFUSER SF 786 F7
	CODE	CODE
400 x 400	11051130	
500 x 500	11051131	
600 x 600	11051132	11051133

ATTACHMENT	FINISH
• Central screw and bridge.	• Steel with epoxy paint coating RAL 9003 30%.

RANGE WITH CHOICE OF OPTIONS

L x H / SLOTS (MM)	SF 785 DIFFUSER	SF 775 DIFFUSER	RE PLENUM	RT PLENUM
	CODE	CODE	CODE	CODE
400 x 400 / 16 slots	11002941	Please contact us*	11003436	11003437
500 x 500 / 16 slots	-	Please contact us*	11003436	11003437
500 x 500 / 32 slots	11002943		11003436	11003437
600 x 600 / 24 slots	-	Please contact us*	11003436	11003437
600 x 600 / 36 slots	-	Please contact us*	11003436	11003437
600 x 600 / 48 slots	11002946	Please contact us*	11003436	11003437
825 x 825 / 72 slots	Please contact us*	Please contact us*	11003436	11003437

* Minimum quantities may be required.

AVAILABLE OPTIONS

ATTACHMENT	FINISH	PLENUM
• F0: concealed screw attachment on the sides. • F7: visible attachment with central screw and bridge.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.	• F0 or F7 attachment method. • Special depth. • Special branch connections. • Insulation on 2 or 5 sides. • Number of connections. • Sealed or unsealed connections. • Class C airtight performance and sealed connection.

ACCESSORIES PROPOSED

• RE and RT plenums.

785 - 775 - 786 series

SELECTION - TYPE 785 AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L X H (MM)	(M³/H) 150		200		300		400		500		600		800		1000	
0.0189	400 x 400	5	0.82	12	1.09	22	1.64	29	2.18							Lw	Lt
		2.2	10	2.9	16	4.4	33	5.9	55							Vk	Pa
0.0337	500 x 500					11	1.23	18	1.63	23	2.04	28	2.45				
						2.5	12	3.3	22	4.1	30	4.9	41				
0.0595	600 x 600									13	1.54	17	1.84	24	2.46	29	3.07
										2.3	11	2.8	15	3.7	25	4.7	37
0.1053	825 x 825	Lw	Lt											13	1.85	19	2.31
		Vk	Pa											2.1	9	2.6	14

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.25 m/s. Tests conducted with standard plenum.

SELECTION - TYPE 775 AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L X H X SLOTS (MM)	(M³/H) 150		200		300		400		500		600		800		1000	
0.0195	400 x 400 x 16	9	0.66	16	0.99	25	1.33									Lw	Lt
		2.1	8	2.8	13	4.3	26									Vk	Pa
0.0243	500 x 500 x 16			12	0.79	21	1.19	28	1.59	34	1.98						
				2.3	9	3.4	18	4.6	29	5.7	43						
0.0361	600 x 600 x 24					14	0.98	21	1.3	26	1.83	31	1.95	37	2.6		
						2.3	9	3.1	15	3.8	22	4.6	30	6.2	49		
0.0465	600 x 600 x 36							16	1.15	21	1.43	26	1.72	33	2.29	38	2.87
								2.4	9	3	14	3.6	19	4.8	32	6	47
0.0499	600 x 600 x 48							15	1.11	20	1.38	25	1.66	31	2.21	37	2.77
								2.2	8	2.8	12	3.3	17	4.5	28	5.6	41
0.0913	825 x 825 x 72	Lw	Lt											20	1.64	26	2.05
		Vk	Pa											2.4	10	3	14

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.25 m/s. Tests conducted with standard plenum.

SELECTION - TYPE 786 AIR SUPPLY WITH CEILING EFFECT

AK (M²)	L X H (MM)	(M³/H) 150		200	300	400		500		600		800
0.0478	600 x 600	Lw	Lt			39	2.27	44	2.83	48	3.4	
		Vk	Pa			2.3	18	2.9	27	3.5	39	

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.25 m/s. Tests conducted with standard plenum.

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

AR 883 series - Aluminium

AR 883 series - aluminium

USE

- Air supply: adjustable swirl jet diffusion.
- High mixing capacity for rapid temperature balancing.
- Ideal for air conditioning systems with high temperature difference in high-ceiling buildings.
- Adjustable diffusion with motorised option for optimised operation in both winter and summer.
- Ceiling-mounted.

CONSTRUCTION

- Aluminium body and diffusion blades.
- Blades mounted on gear enabling 90° rotation.

FINISH

- Steel with epoxy paint finish, RAL 9003 white, 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the side of the neck.
- Connection to circular duct.

ACCESSORIES

- LRE: galvanised steel connection plenum (side branch connection).
- On/Off or proportional motors (24 V or 230 V) to orient blades.

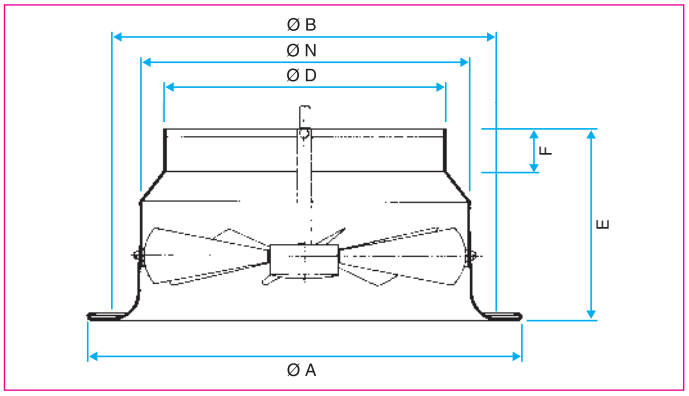
STANDARD DIMENSIONS

- Diameters from 250 to 630 mm.

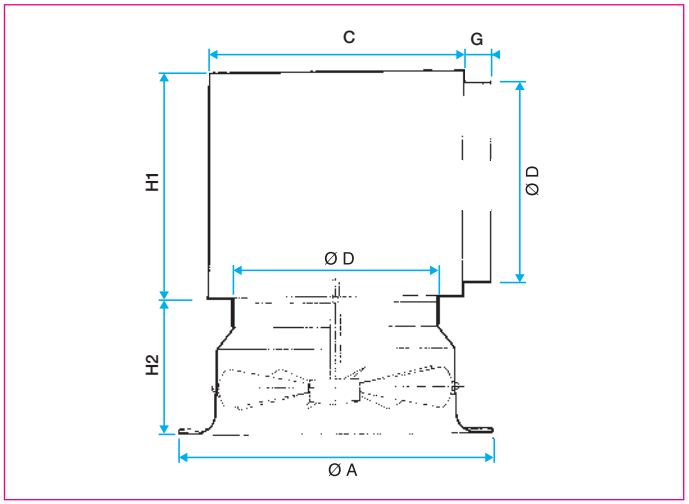
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

DIMENSIONS



AR 883



AR 883 with LRE plenum

STANDARD DIMENSIONS

Ø D (MM)	Ø N (MM)	Ø A (MM)	Ø B (MM)	C (MM)	F (MM)	G (MM)	H1 (MM)	H2 (MM)
250	315	425	385	310	50	50	340	225
315	400	500	460	375	50	50	405	240
400	470	615	575	460	60	60	490	280
500	630	850	810	560	60	70	550	320
630	800	1070	1030	690	80	70	680	410

AR 883 series

RANGE

DIMENSIONS (MM)	AR 883 DIFFUSER	LRE PLENUM	LRE PLENUM INSULATED 5 SIDES	LRE PLENUM WITH OPTIONS
	CODE	CODE	CODE	CODE
Ø 250	11002361	11053348	11053368	11003433
Ø 315	11002362	11053349	11053369	11003433
Ø 400	11002363			11003433
Ø 500	11002364			On request
Ø 630	11002365			On request

AVAILABLE OPTIONS

ATTACHMENT	FINISH	PLENUM	MOTOR
• Concealed screw attachment on the side of the neck.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.	• Special depth. • Special branch connections. • Insulation on 2 or 5 sides. • Number and diameter of connections. • Sealed connection. • Class C airtight performance and sealed connection.	• M1: On/Off 230 V motor. • M3: Proportional 24 V motor.

883 series

SELECTION - COOLING MODE AIR SUPPLY WITH CEILING EFFECT - ΔT - 10 °C AND ANGLE 30°

AK (M²)	Ø D (MM)	QV (M³/H)																			
		200		300		400		500		600		800		1000		1400		1800		2000		2500	
0.01705	250	25	0.62	35	0.9	42	1.25	47	1.5													Lw	Lt
		3.4	8.1	5.0	16.5	70	30	8.7	44													Vk	Pa
0.03090	315			23	0.7	30	0.87	35	1.15	40	1.35	47	1.8	52	2.3								
				2.7	5.3	8.5	3.5	4.6	15	5.8	21	7.2	33	9.5	53								
0.03810	400							31	1.0	36	1.25	43	1.65	48	2	57	2.8						
								3.6	8.7	4.5	14	6	23	7.5	35	10.5	65						
0.06700	500											31	1.2	37	1.5	43	2.1	51	2.8	53	3.1		
												3.2	7.4	4.0	11	5.7	20	7.5	35	8.1	40		
0.07720	630	Lw	Lt											33	1.4	42	1.9	48	2.5	50	2.7	56	3.5
		Vk	Pa											3.4	8.0	4.8	16	6.3	25	7.0	35	9.0	48

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.25 m/s. Tests conducted with standard plenum.

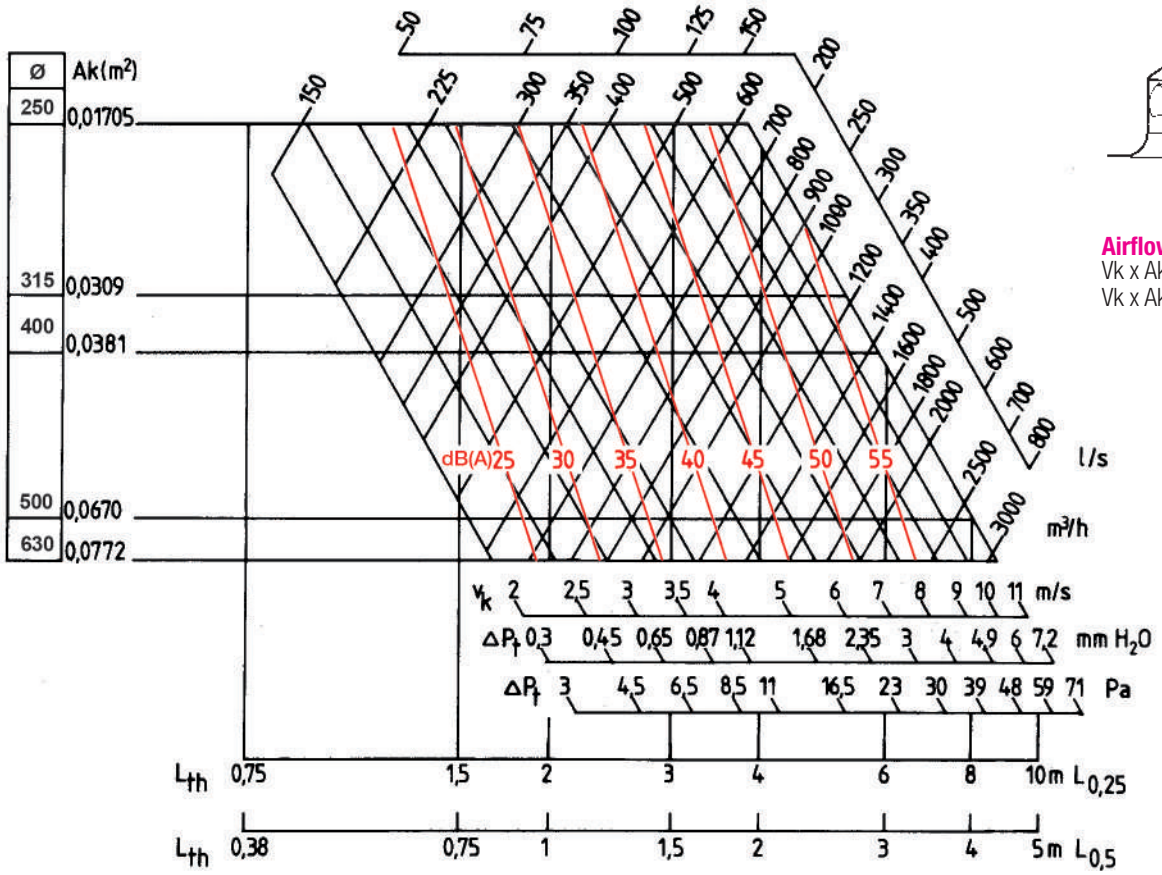
SELECTION - HEATING MODE AIR SUPPLY WITH CEILING EFFECT - ΔT + 10 °C AND ANGLE 90°

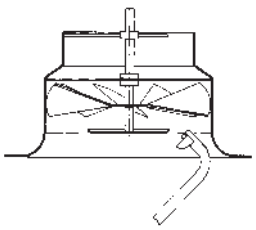
AK (M²)	Ø D (MM)	QV (M³/H)																			
		500		750		1000		1200		1600		2000		3000		4000		5000		6500		8000	
0.03665	250	43	5.9	53	9.0																	Lw	Lt
		3.8	27	5.8	63																	Vk	Pa
0.07355	315			32	4.5	42	6.5	46	7.6	54	10.3												
				2.7	14	3.8	27	4.4	35	6.4	76												
0.10970	400							34	5.2	42	7.3	48	9.0										
								2.9	15.8	4.0	29	5.2	47										
0.16293	500									30	5.1	36	6.3	47	10	55	14						
										2.5	11.4	3.3	19.5	5	45	6.9	86						
0.30157	630	Lw	Lt											30	5.8	42	7.8	42	10	49	12.7	57	16
		Vk	Pa											2.5	11.4	3.5	23	4.6	37	5.8	64	7.3	99

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.25 m/s. Tests conducted with standard plenum.

883 series

COOLING MODE AIR SUPPLY WITH CEILING EFFECT



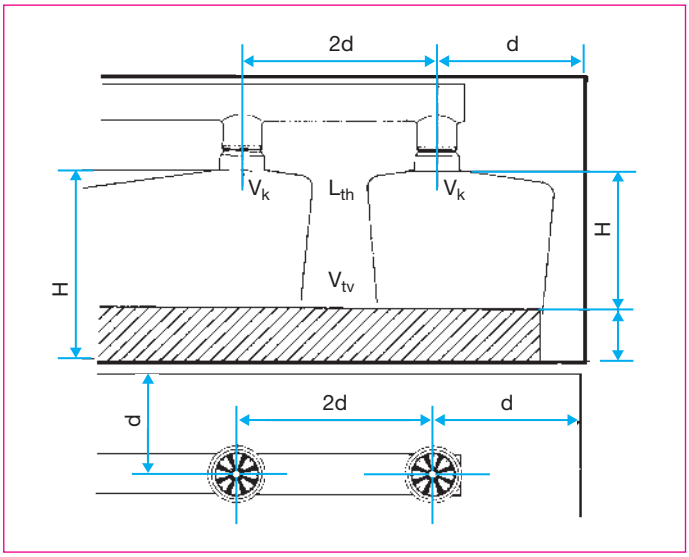


Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum. Valid for temperature difference of -10 °C and blade angle of 30°.

CORRECTIONS FOR OTHER Vt

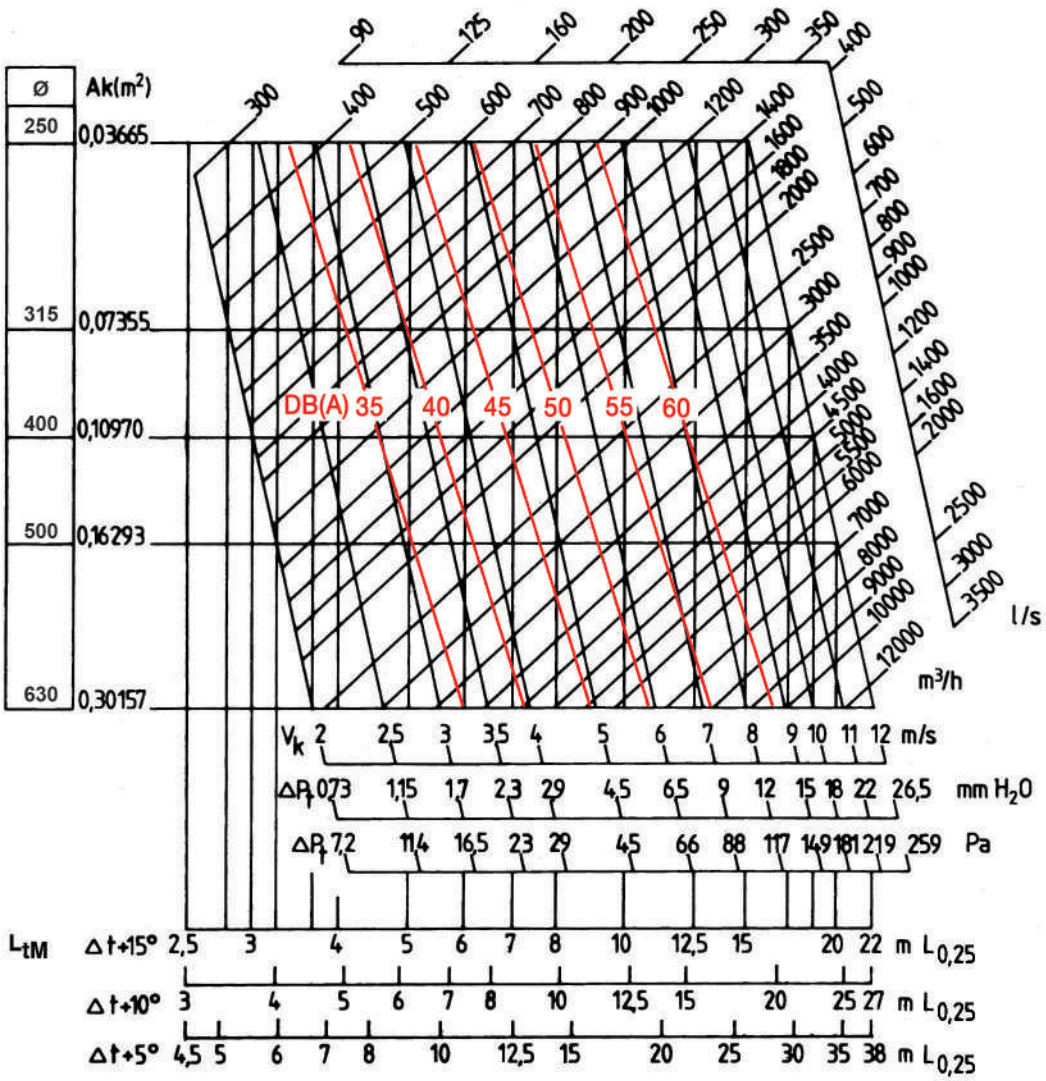
Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

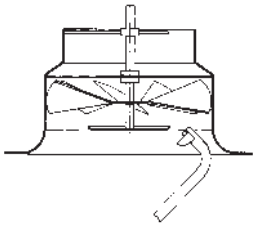


SYMBOLS

2.d	Distance between diffusers	(m)
d	Distance between diffusers and room vertical wall	(m)
H	Height under diffuser	(m)
Ho	Distance between diffuser and occupied area	(m)
Vk	Airflow speed at exit from diffuser	(m/s)
Vtv	Terminal speed between diffusers at entrance to occupied area	(m/s)
Lth	Horizontal throw for given speed	(m)
Lth	Vertical throw for given temperature	(m)

HEATING MODE AIR SUPPLY WITHOUT WALL EFFECT





Airflow measurement
Vk x Ak: in m³/s.
Vk x Ak x 3600: in m³/h.

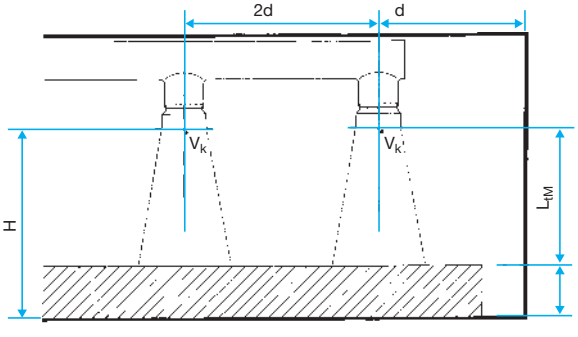
The Lw dB(A) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum. Valid for blade angle of 90° (vertical air supply).

CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

CORRECTIONS FOR OTHER DIFFUSION ANGLES

BLADE ANGLE	LtM	Vk	ΔPt	Lw	Ak
45°	x 0.35	x 1.59	x 1.42	+ 10	x 0.63
60°	x 0.66	x 1.13	x 1.12	+ 3	x 0.88



SYMBOLS

2.d	Distance between diffusers	(m)
d	Distance between diffusers and room vertical wall	(m)
H	Height under diffuser	(m)
Ho	Distance between diffuser and occupied area	(m)
Vk	Airflow speed at exit from diffuser	(m/s)
Vtv	Terminal speed between diffusers at entrance to occupied area	(m/s)
Lth	Horizontal throw for given speed	(m)
Lth	Vertical throw for given temperature	(m)

AR 883 Thermo series - Aluminium

AR 883 Thermo diffuser

USE

- Air supply: adjustable swirl jet diffusion.
- High mixing capacity for rapid temperature balancing.
- Ideal for air conditioning systems with high temperature difference and high ceilings.
- Automatic blade angle according to air supply temperature for optimised operation in winter and summer.
- No electrical connections required.
- Very high mixing rate.
- Ceiling-mounted.

CONSTRUCTION

- Aluminium body and diffusion blades.
- Heat-sensitive spring made of nickel-titanium alloy enabling automatic adjustment of blade angles according to air supply temperature:

- winter (heating) position for delamination of warm air.
- summer (cooling) position to ensure perfect control of air speeds in occupied areas.

- Winter and summer diffusion angles adjustable on site using screws to ensure ideal installation.

FINISH

- Aluminium finish, epoxy paint RAL 9003 white 30%.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Concealed screw attachment in neck of LRE plenum.
- The plenum is equipped with brackets for attachment to a concrete ceiling.

ACCESSORIES

- LRE: connection plenum (side connection) made of galvanised steel.

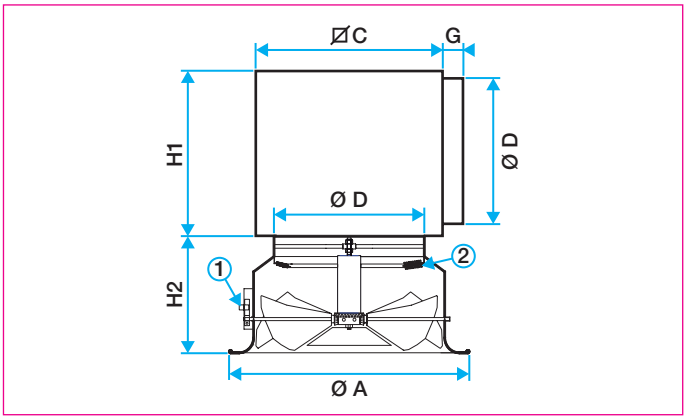
STANDARD DIMENSIONS

- Diameters from 250 to 630 mm.

TECHNICAL DETAILS

- See selection tables and scales on following pages.

DIMENSIONS



AR 883 Thermo diffuser with LRE plenum
① Manual adjustment of winter and summer angles.
② Heat-sensitive spring.

STANDARD DIMENSIONS

Ø D (MM)	C (MM)	Ø A (MM)	G (MM)	H1 (MM)	H2 (MM)
250	310	425	50	340	225
315	375	500	50	405	240
400	460	615	60	490	280
500	560	850	70	550	320
630	690	1070	70	680	410

AR 883 Thermo series

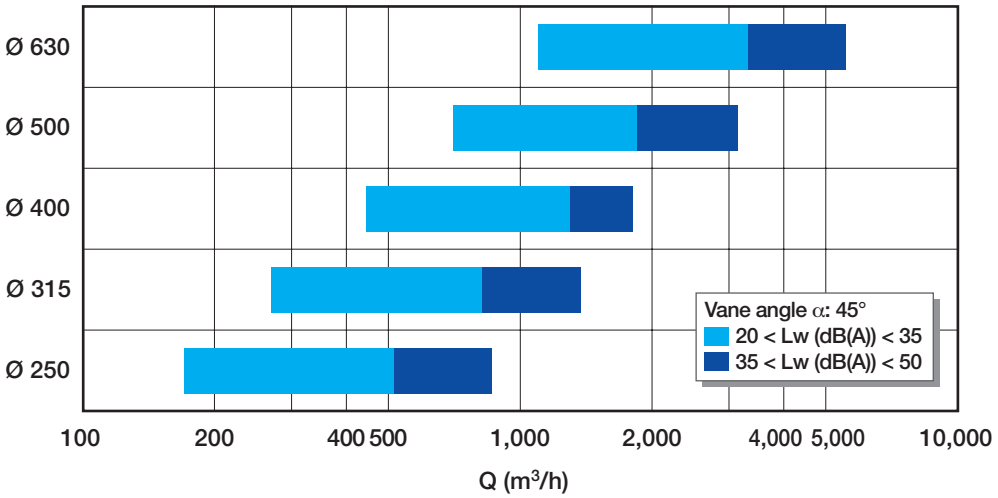
RANGE

DIMENSIONS Ø (MM)	AR 883 THERMO	LRE PLENUM NON-INSULATED SIDE CONNECTION	LRE PLENUM SIDE CONNECTION INSULATED 5 SIDES	LRE PLENUM SIDE CONNECTION WITH OPTIONS
	CODE	CODE	CODE	
250	11051031	11053348	11053367	11053355
315	11051032	11053349	11053369	11053355
400	11051033			11053355
500	11051034			On request
630	11051035			On request

ATTACHMENT	FINISH	PLENUM WITH OPTIONS
• Concealed screw attachment on the side of the neck.	• Aluminium with epoxy paint coating RAL 9003 white.	• Special depth. • Special connections. • Insulation on 2 or 5 sides. • Number and diameter of connections. • Sealed connections. • Class C airtight performance and sealed connections.

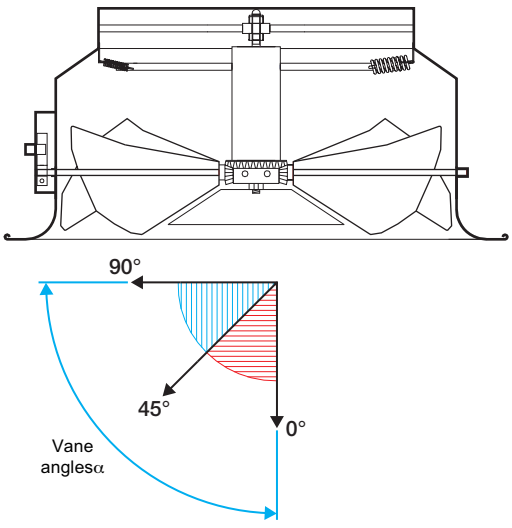
883 Thermo series

QUICK SELECTION - 45° ANGLE



The Lw (dB(A)) values do not take into account any noise attenuation in the room Tests conducted with standard plenum.

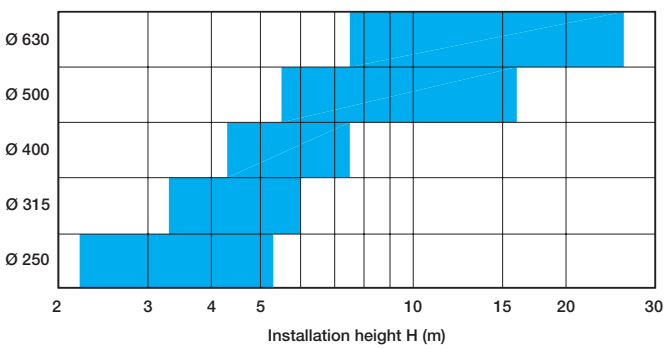
Manual adjustment of blade angles in summer/winter position.

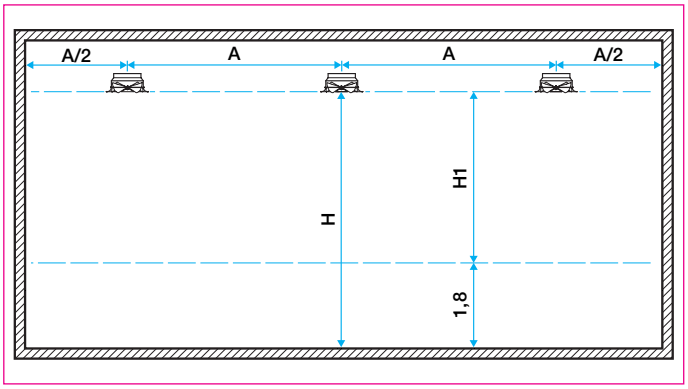


AR 883 Thermo diffuser.

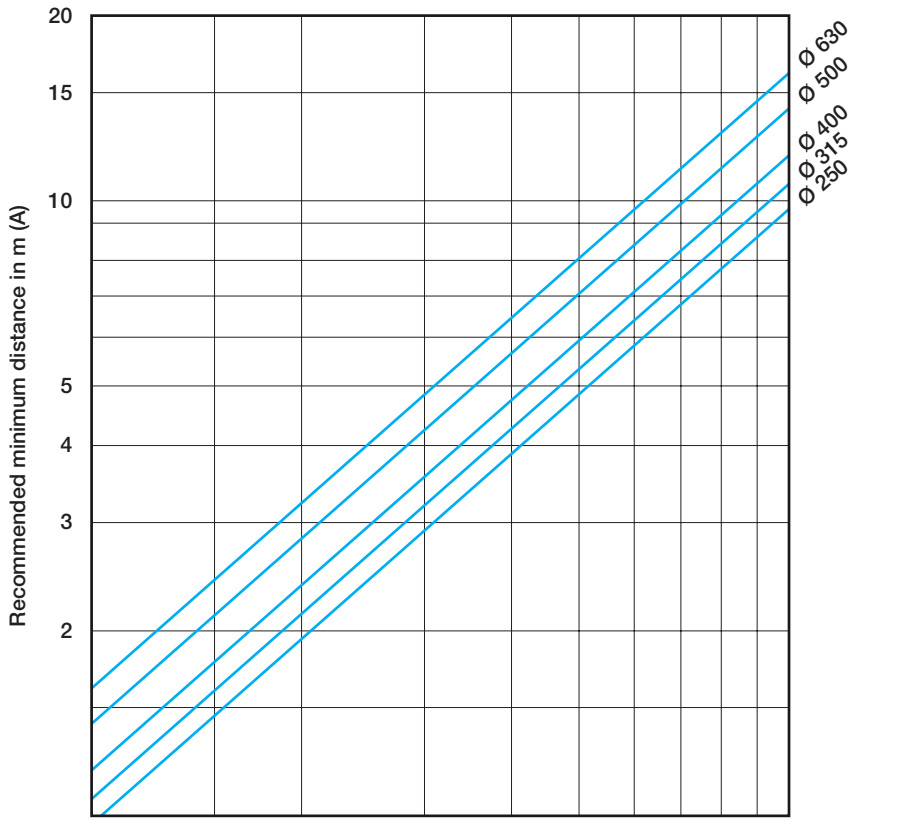
AR 883 Thermo series

RECOMMENDED ASSEMBLY HEIGHT





MINIMUM DISTANCE A



	1	2	3	4	5	10	m/s Vk
Ø 250	175	350	525	700	875	1,750	m³/h Q
Ø 315	275	550	825	1,100	1,375	2,750	
Ø 400	445	890	1,335	1,780	2,225	4,450	
Ø 500	700	1,400	2,100	2,800	3,500	7,000	
Ø 630	1,115	2,230	3,345	4,460	5575	11,115	

SR 861 series - Steel

SR 861 diffuser

USE

- Ceiling-mounted air diffuser.
- Fixed swirl jet diffusion.
- High mixing capacity for rapid temperature balancing.
- Ideal for air conditioning systems with high temperature difference in low-ceiling buildings.
- Ceiling-mounted.

CONSTRUCTION

- Circular diffuser with circular connection.
- Steel body and diffusion blades.

FINISH

- Steel finish, epoxy paint RAL 9003 30%.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the neck of the diffuser.

Note: this attachment method is recommended for suspended ceilings and incompatible with plaster or BA13 plasterboard ceilings.
Note: this attachment method is recommended for plaster or BA13 plasterboard ceilings.

- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- BR: butterfly damper with 2 V-shaped flaps. Steel construction.

Precise control through diffuser using screw.
NB: the BR damper is not compatible with the F7 attachment method.

- LRE connection plenum with side branch connection.
- Optional airflow splitter.
- Available in basic version or insulated on 2 or 5 sides.

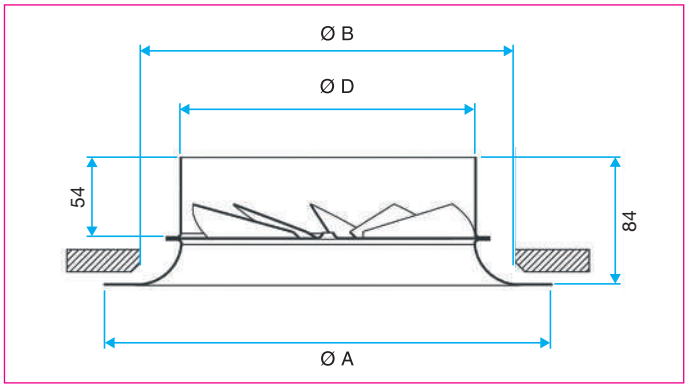
STANDARD DIMENSIONS

- Diameters from 125 mm to 315 mm.

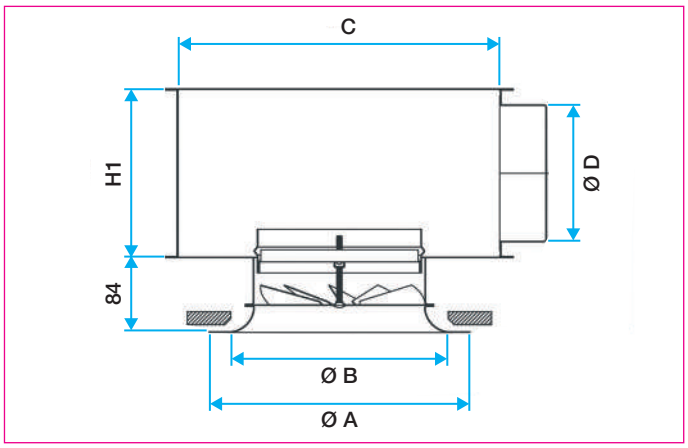
TECHNICAL DETAILS

- See selection tables on following pages.
- See induction rates at end of chapter.

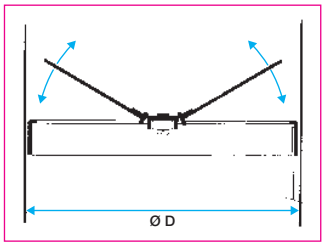
DIMENSIONS



SR 861 diffuser



SR 861 with LRE plenum



BR damper

STANDARD DIMENSIONS

Ø D (MM)	Ø A (MM)	Ø B (MM)	C (MM)	H1 (MM)
125	225	175	185	185
160	250	210	220	220
200	300	250	260	260
250	350	300	310	310
315	415	360	375	375

SF 861 T series - Steel

SF 861 T diffuser

SF 861 T diffuser rear view

USE

- Ceiling-mounted air diffuser.
- Fixed swirl jet diffusion.
- High mixing capacity for rapid temperature balancing.
- Ideal for air conditioning systems with high temperature difference in low-ceiling buildings.
- Positioned in place of a standard 600 x 600 mm ceiling panel.

CONSTRUCTION

- Circular connection.
- Steel body and blades.
- Steel ceiling compensation plate.

FINISH

- Steel finish, epoxy paint RAL 9003 30%.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: concealed screw attachment on the neck of the diffuser.
- Attachment to concrete ceiling using brackets on the plenum.

Note: the weight of the diffuser must not be borne by the ceiling framework.

ACCESSORIES

- BR: butterfly damper with 2 V-shaped flaps. Steel construction. Precise control through diffuser using screw.
- LRE connection plenum with side branch connection.
- Optional airflow splitter.
- Available in basic version or insulated on 2 or 5 sides.

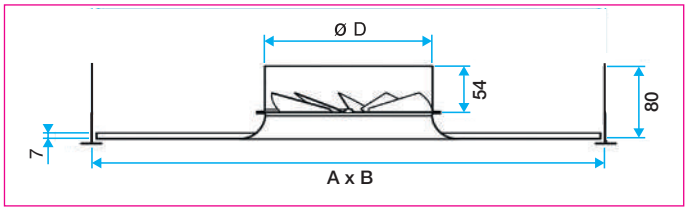
STANDARD DIMENSIONS

- Diameters from 125 mm to 315 mm.

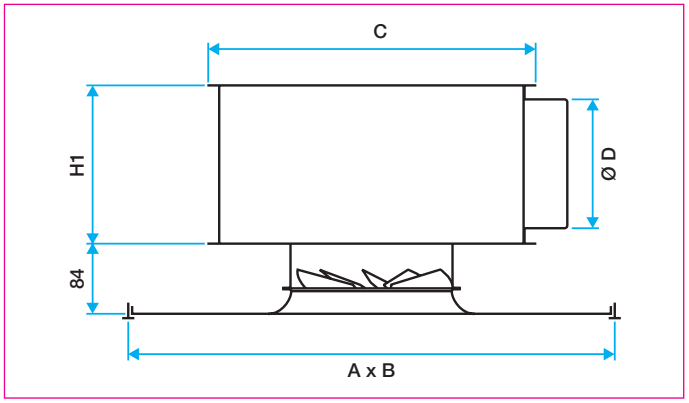
TECHNICAL DETAILS

- See selection tables and scales on following pages.
- See mixing capacity at end of chapter.

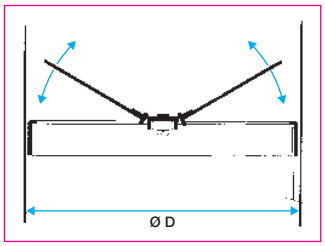
DIMENSIONS



SF 861 T diffuser



SR 861 T with LRE plenum



BR damper

STANDARD DIMENSIONS

Ø D (MM)	A x B* (MM)	C (MM)	H1 (MM)
125	600 x 600	185	185
160	600 x 600	220	220
200	600 x 600	260	260
250	600 x 600	310	310
315	600 x 600	375	375

* Nominal ceiling panel dimensions.

SR 861 - SF 861 T series

STANDARD RANGE

DIMENSIONS (MM)	DIFFUSER SR 861	DIFFUSER SF 861 T	LRE PLENUM SIDE CONNECTION	LRE PLENUM SIDE CONNECTION INSULATED 5 SIDES	DAMPER BR
	CODE	CODE	CODE	CODE	CODE
Ø 125	11051105				
Ø 160	11051106	11051081	11053346		11053220
Ø 200	11051107	11051082	11053347	11053367	11053221
Ø 250	11051108	11051083	11053347	11053368	11053222
Ø 315	11051109	11051084	11053348	11053369	11053223

ATTACHMENT	FINISH
• Concealed screw attachment on the neck of the diffuser.	• Steel with epoxy paint coating RAL 9003 white.

RANGE WITH CHOICE OF OPTIONS

DIMENSIONS (MM)	CODE LRE PLENUM
Ø 125	11003433
Ø 160	11003433
Ø 200	11003433
Ø 250	11003433
Ø 315	11003433

AVAILABLE OPTIONS

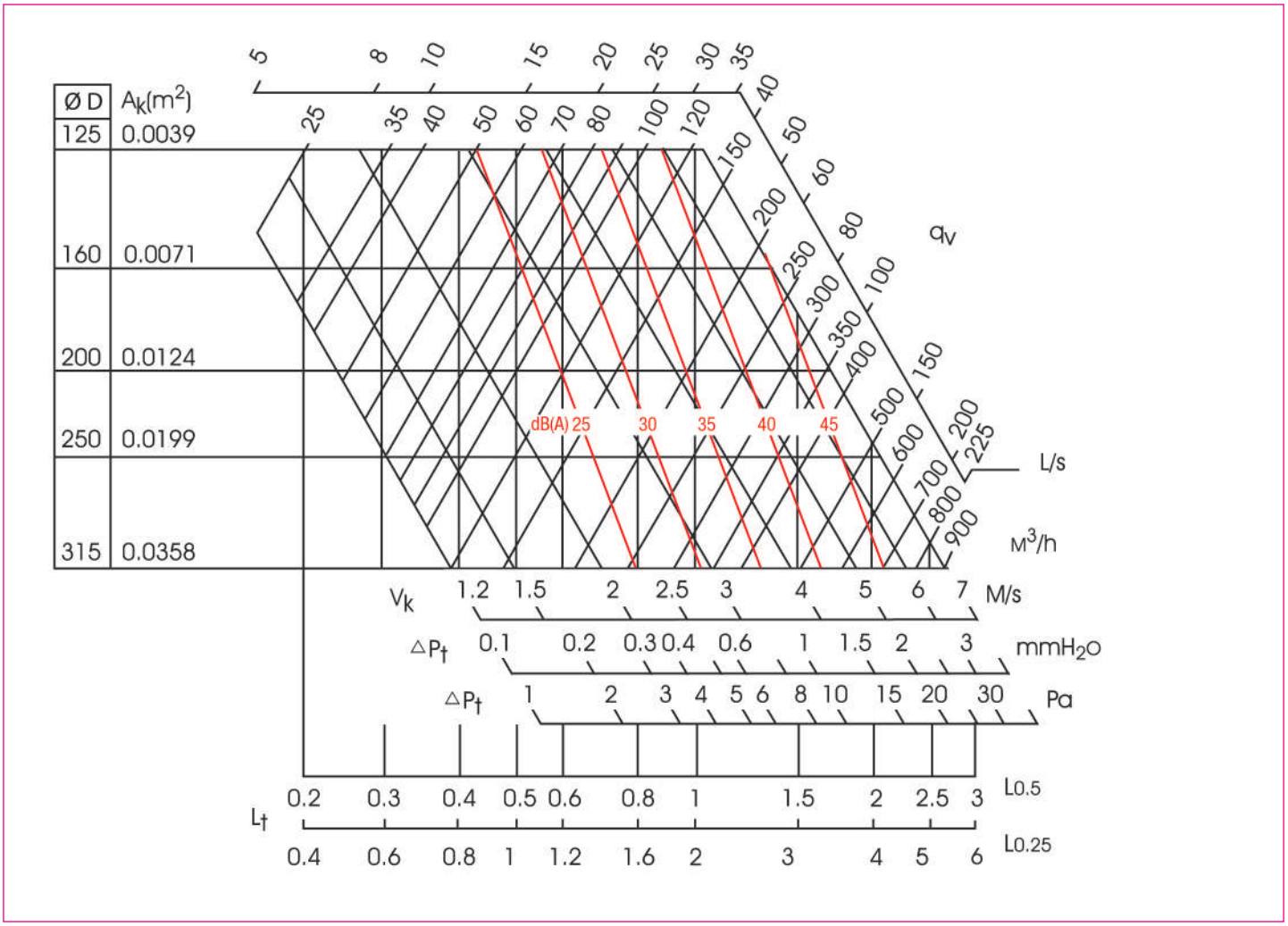
PLENUM	
• F0 and F7 attachment methods.	• Airflow splitter.
• Special depth.	• Number and diameter of connections.
• Special branch connections.	• Sealed connection.
• Insulation on 2 or 5 sides.	• Class C airtight performance and sealed connection.

861 series

SELECTION - TYPE 861 AIR SUPPLY WITH CEILING EFFECT

AK (M^2)	Ø D (MM)	QV (M^3/H) 50		70		100		150		250		350		500		600	
0.0039	125	-	1	31	1.8	38										Lw	Lt
		2.5	4.5	5	17	8.5	45									Vk	Pa
0.0071	160			-	1.4	29	2.3	38	3.2	47	4.0						
				2.6	5	4.5	13	6.5	26	8.5	45						
0.0124	200					-	19	29	2.9	40	3.6	47	5.0				
						3.6	9	5.1	17	6.8	28	9.0	48				
0.0199	250							-	2	32	2.7	40	3.6	47	5.0	51	6.0
								2.7	5	3.5	9	4.9	16	6.5	26	8.5	45
0.0358	315	Lw	Lt							-	2.5	31	3.2	38	4.5	42	5.5
		Vk	Pa							3.0	7.0	4.0	11	5.5	20	7.0	30

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.25 m/s. Tests conducted with standard plenum.



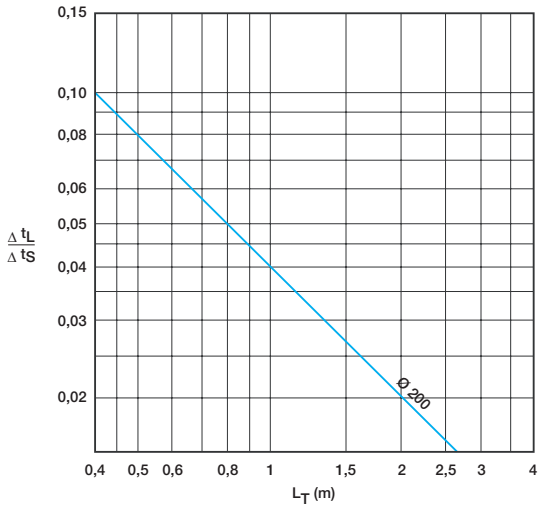
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Tests conducted with standard plenum.

CORRECTIONS FOR OTHER Vt

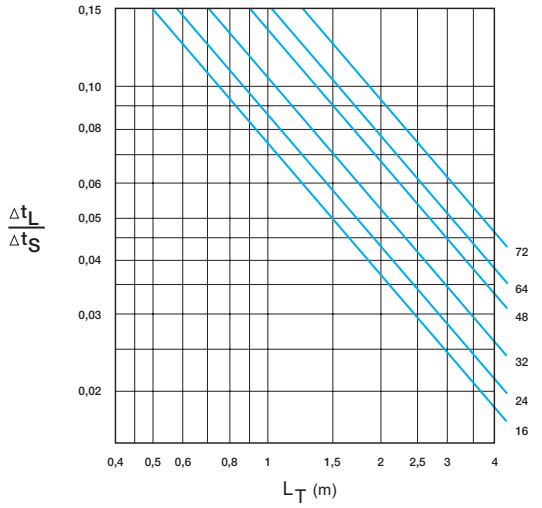
Vt (M/S)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

Mixing capacity (TM)

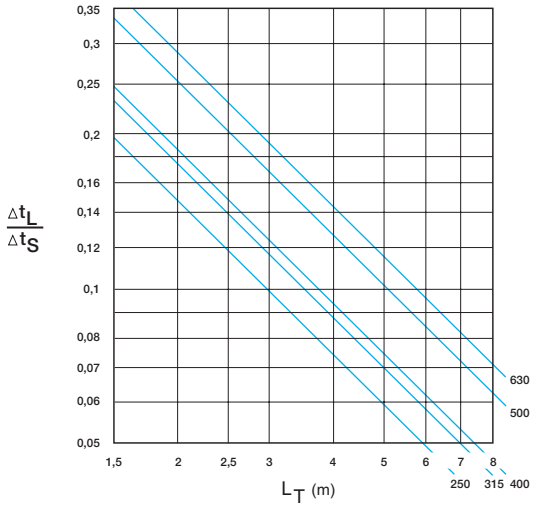
CAPACITY FOR TWISTED 850 SERIES DIFFUSER



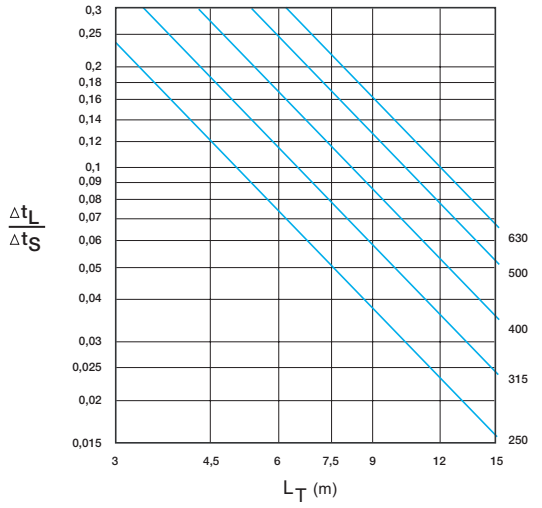
CAPACITY FOR 785 - 775 - 786 SERIES DIFFUSER



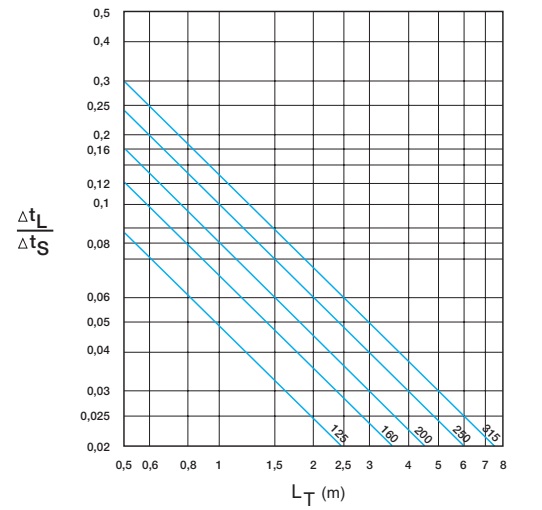
CAPACITY FOR 883 SERIES DIFFUSER (HORIZONTAL)



CAPACITY FOR 883 SERIES DIFFUSER (VERTICAL)



CAPACITY FOR 861 SERIES DIFFUSER

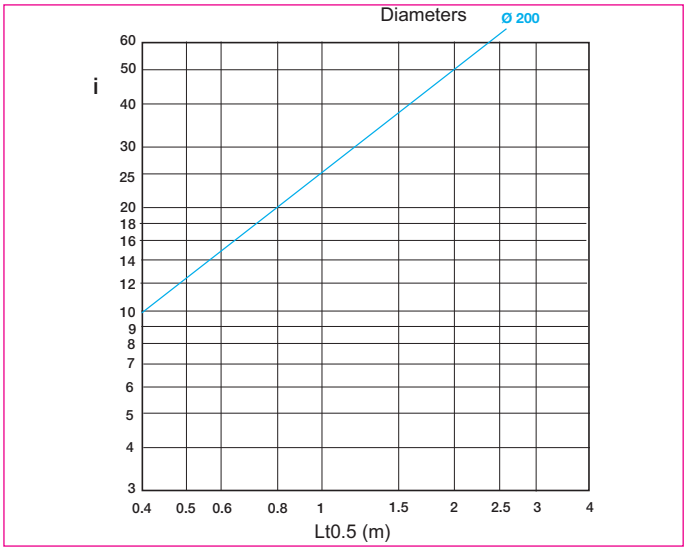


SYMBOLS

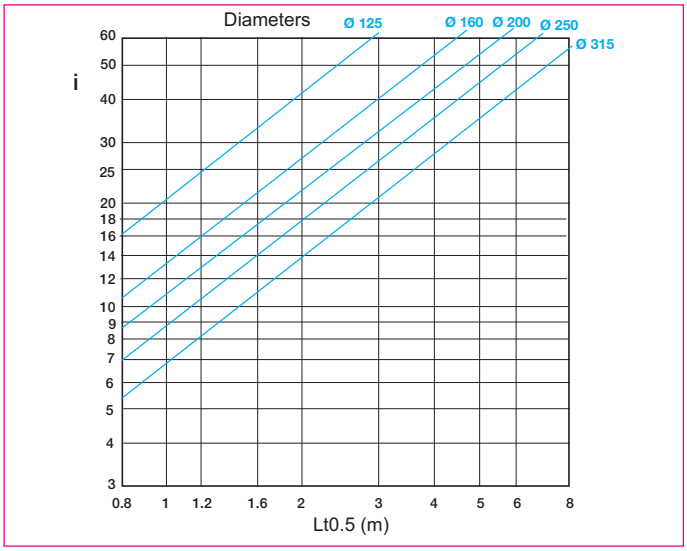
Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
ΔTL (°C)	Difference between temperature at end of throw and ambient temperature (in °C)
ΔTS (°C)	Difference between air supply temperature and ambient temperature (in °C)
TM = ΔTL / ΔTS	Ratio between temperature differences. This value defines the diffuser's capacity to quickly mix new air with the ambient air.
EXAMPLE WITH AIR SUPPLY AT 15°C AND AMBIENT AIR TEMPERATURE OF 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x capacity (°C)

Induction rate (i)

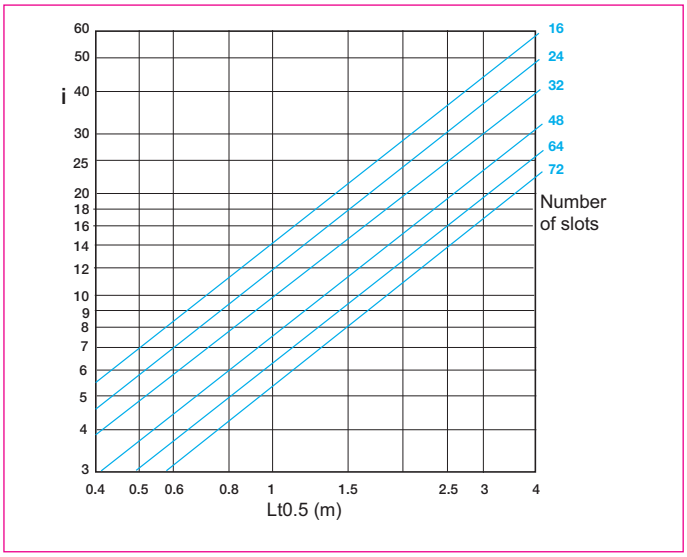
INDUCTION RATE FOR TWISTED 850 SERIES DIFFUSERS



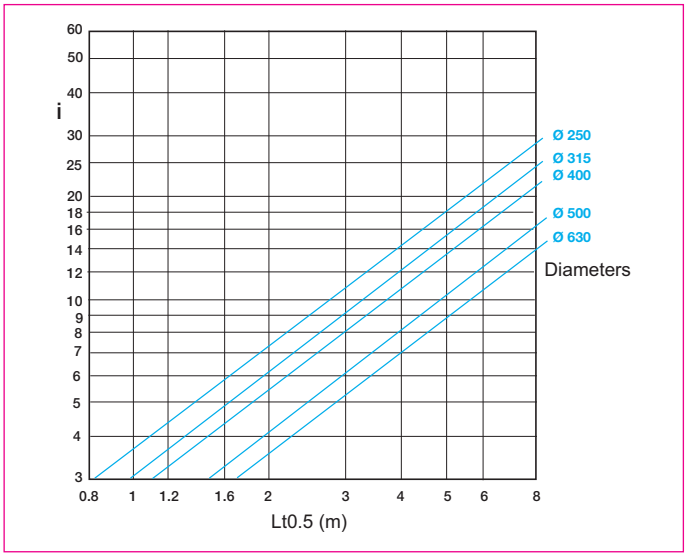
INDUCTION RATE FOR 860 SERIES DIFFUSERS



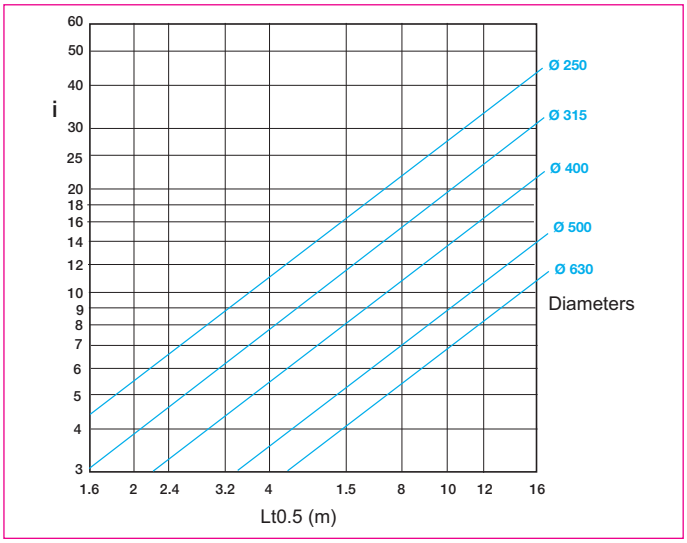
INDUCTION RATE FOR 785 - 775 - 786 SERIES DIFFUSERS



INDUCTION RATE FOR 883 SERIES HORIZONTAL DIFFUSERS



INDUCTION RATE FOR 883 SERIES VERTICAL DIFFUSERS



SYMBOLS

Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
Q1 (m³/h)	Primary airflow
Q2 (m³/h)	Airflow induced in room
QL (m³/h) = Q1 + Q2	Total airflow in movement at end of throw
i = QL / Q1	Induction rate

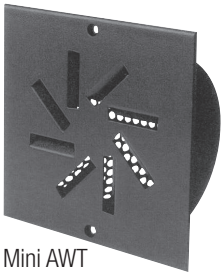
CONTENTS


SP 391 R


SC 984


AR 190


CSI


Mini AWT

SP 391 series - Steel

SP 391 R diffuser

USE

- Low speed air supply over 180°.
- Cooling and air conditioning in commercial and industrial buildings, generally with high ceilings.
- Wall-mounted in occupied area.

CONSTRUCTION

- Galvanised steel plate frame.
- Circular branch connection on top or underneath (only with F base).
- Diffusion surface made of perforated galvanised steel plate.
- Air distribution delivered by internal deflectors.
- R type models have a rounded design.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- For use on floor.

ACCESSORIES

- A: silencer.
- B: airflow controller and measurement inlet.
- C: duct trim.
- F: floor base.

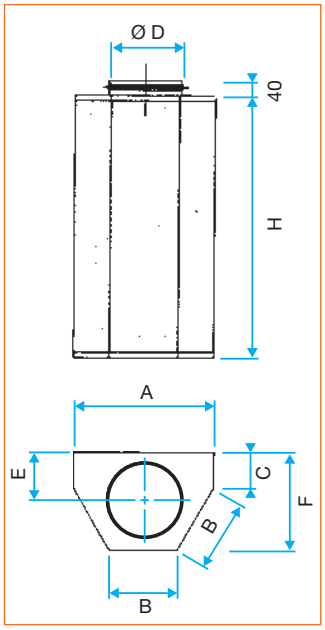
STANDARD DIMENSIONS

- Available in 9 different sizes, Ø 100 mm to Ø 630 mm.
- From 200 to 950 mm in width.
- From 400 to 1800 mm in height.

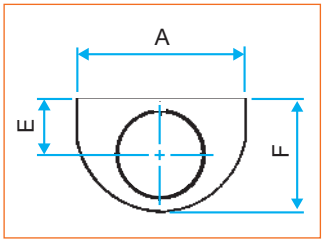
TECHNICAL DETAILS

- See selection tables on following pages.

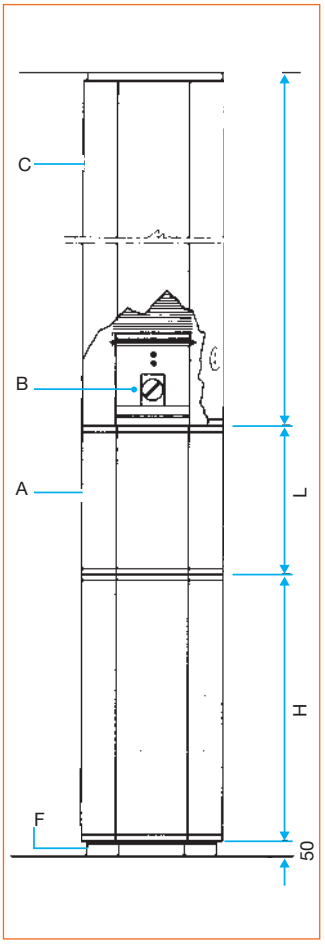
DIMENSIONS



SP 391 diffuser



SP 391 R diffuser



SP 391 and accessories

STANDARD DIMENSIONS

MODEL	A (MM)	B (MM)	C (MM)	Ø D (MM)	E (MM)	F (MM)	H (MM)	L* (MM)
100	200	100	70	100	80	155	400	300
125	250	125	75	125	93	185	500	300
160	300	150	80	160	110	250	700	400
200	380	190	90	200	130	260	800	400
250	480	240	102	250	155	315	900	500
315	600	300	125	315	198	390	1000	600
400	760	380	151	400	230	480	1250	700
500	950	475	179	500	280	600	1500	800
630	950	475	309	630	345	730	1800	900

* L: height of acoustic casing

SP 392 series - Steel

SP 392 diffuser

USE

- Low speed air supply over 90°.
- Cooling and air conditioning in commercial and industrial buildings, generally with high ceilings.
- Wall-mounted in occupied area.

CONSTRUCTION

- Galvanised steel plate frame.
- Branch connection on top or underneath (only with F base).
- Diffusion surface made of perforated galvanised steel plate.
- Air distribution delivered by internal deflectors.
- R type models have a rounded design.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- For use on floor.

ACCESSORIES

- A: silencer.
- B: airflow controller and measurement inlet.
- C: duct trim.
- F: floor base.

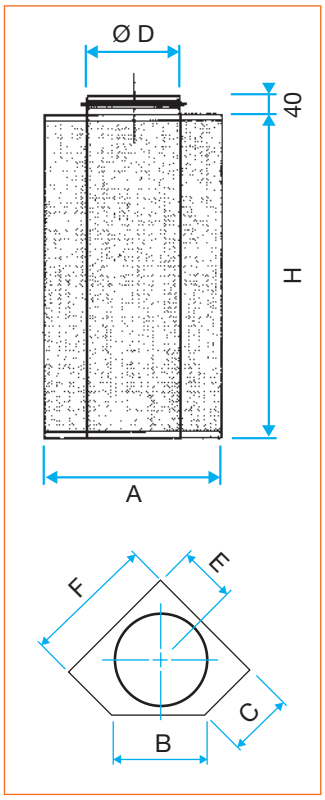
STANDARD DIMENSIONS

- Available in 8 different sizes, Ø 100 mm to Ø 500 mm.
- From 240 to 902 mm in width.
- From 400 to 1500 mm in height.

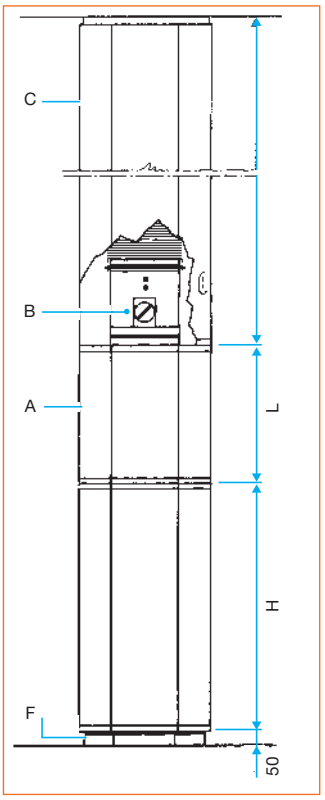
TECHNICAL DETAILS

- See selection tables on following pages.

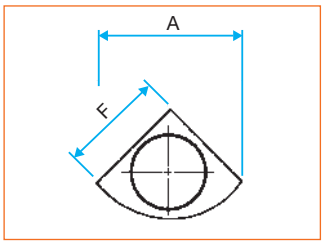
DIMENSIONS



SP 392 diffuser



SP 392 and accessories



SP 392 R diffuser

STANDARD DIMENSIONS

MODEL	A (MM)	B (MM)	C (MM)	Ø D (MM)	E (MM)	F (MM)	H (MM)	L* (MM)
100	240	126	81	98	70	170	400	300
125	286	151	96	123	85	203	500	300
160	341	181	114	158	100	242	700	400
200	406	216	135	198	120	288	800	400
250	480	252	162	248	145	340	900	500
315	609	320	206	313	185	432	1000	600
400	740	389	250	398	230	525	1250	700
500	902	474	305	498	280	640	1500	800

* L: height of acoustic casing

SP 393 series - Steel

SP 393 diffuser

USE

- Flat, low-speed air supply with possible flush-mounted installation.
- Cooling and air conditioning in commercial and industrial buildings.
- Wall-mounted in occupied area.

CONSTRUCTION

- Galvanised steel plate frame.
- Branch connection on top or underneath (only with F base).
- Diffusion surface made of perforated galvanised steel plate.
- Air distribution delivered by internal deflectors.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- For use on floor.

ACCESSORIES

- A: silencer.
- B: airflow controller and measurement inlet.
- C: duct trim.
- F: floor base.

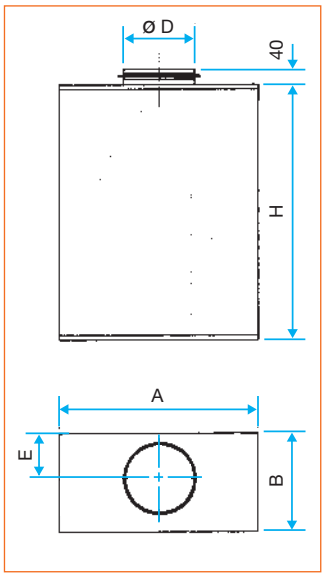
STANDARD DIMENSIONS

- Diameters from 160 mm to 630 mm.
- From 350 to 1200 mm in width.
- From 400 to 1500 mm in height.

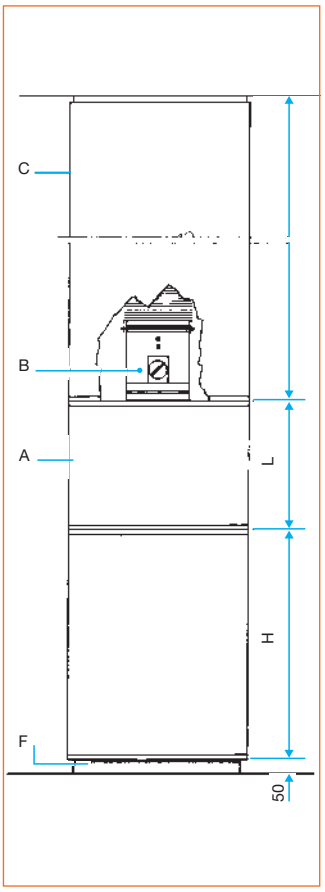
TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



SP 393 diffuser



SP 393 and accessories

STANDARD DIMENSIONS

MODEL	A (MM)	B (MM)	H (MM)	E (MM)	Ø D (MM)	L* (MM)
100	350	155	400	80	100	300
125	400	180	500	93	125	300
160	500	250	700	110	160	400
200	600	300	800	130	200	400
250	700	350	900	155	250	500
315	850	425	1000	188	315	600
400	1000	500	1250	230	400	700
500	1200	600	1500	280	500	800

* L: height of acoustic casing

SP 394 series - Steel

SP 394 diffuser

USE

- Low speed air supply over 360°.
- Cooling and air conditioning in commercial and industrial buildings, generally with high ceilings.
- Installation in occupied area.

CONSTRUCTION

- Galvanised steel plate frame.
- Branch connection on top or underneath (only with F base).
- Diffusion surface made of perforated galvanised steel plate.
- Air distribution delivered by internal deflectors.
- R type models have a rounded design.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- For use on floor.

ACCESSORIES

- A: silencer.
- B: airflow controller and measurement inlet.
- C: duct trim.
- F: floor base.

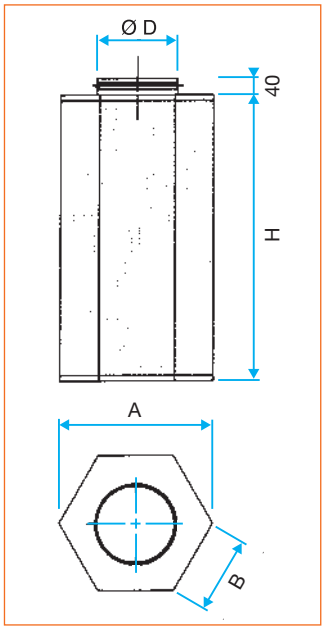
STANDARD DIMENSIONS

- Available in 4 different sizes, Ø 315 mm to Ø 630 mm.
- From 600 to 950 mm in width.
- From 1000 to 1800 mm in height.

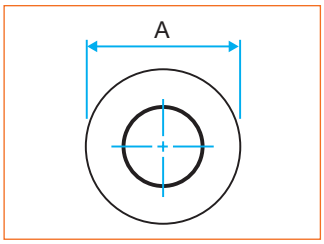
TECHNICAL DETAILS

- See selection tables on following pages.

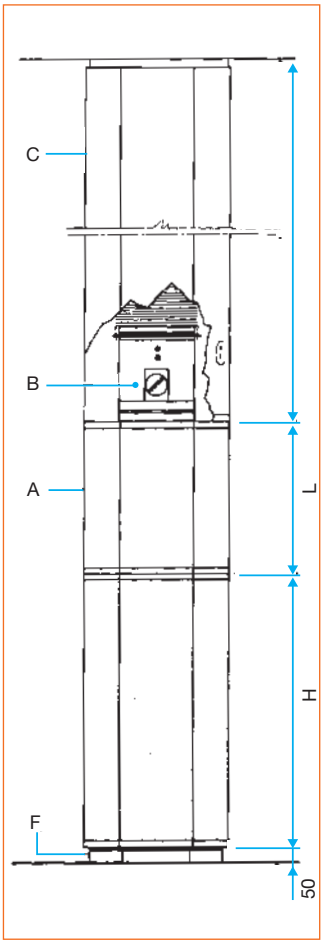
DIMENSIONS



SP 394 diffuser



SP 394 R diffuser



SP 394 and accessories

STANDARD DIMENSIONS

MODEL	A (MM)	B (MM)	Ø D (MM)	H (MM)	L* (MM)
315	600	300	315	1000	600
400	760	380	400	1250	700
500	950	475	500	1500	800
630	950	475	630	1800	900

* L: height of acoustic casing

SP 395 series - Steel

SP 395 diffuser

USE

- Flat low speed air supply.
- Rectangular diffuser and duct (on request) designed for flush-mounted installation in light partition walls with wooden or metal framework.
- Cooling and air conditioning in commercial and industrial buildings, generally with high ceilings.
- Installation in occupied area.

CONSTRUCTION

- Galvanised steel plate frame.
- Diffusion surface made of perforated galvanised steel plate.
- Air distribution delivered by internal deflectors.
- Mounting frame.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- For use on floor.
- Front screen attached to mounting frame and friction clips.

ACCESSORIES

- WD: Wall duct maximum length 2000 mm.

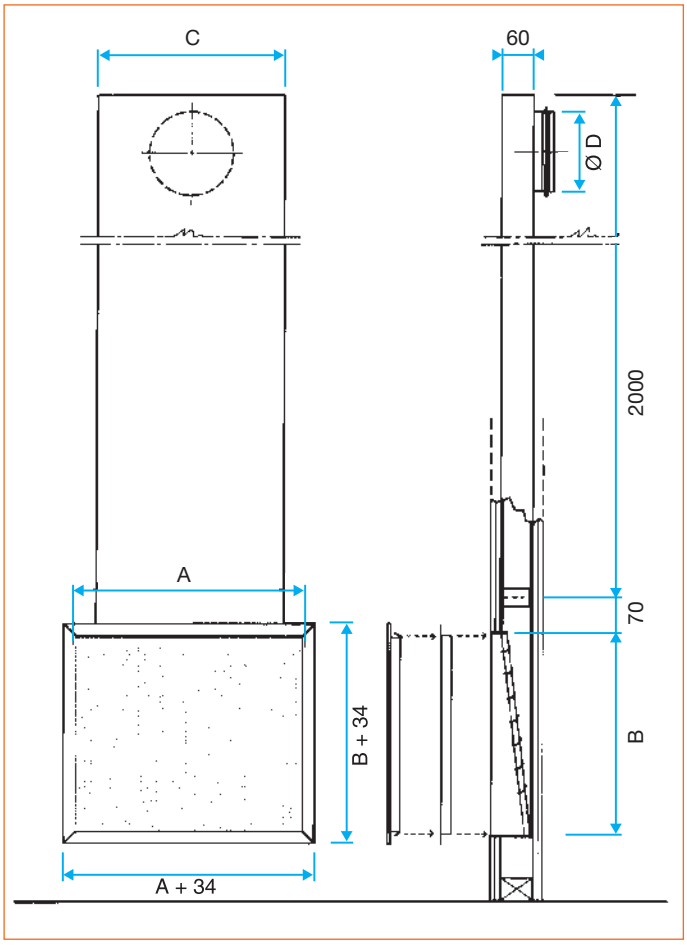
STANDARD DIMENSIONS

- Available in 6 different sizes, Ø 100 mm to Ø 250 mm.
- 500 or 550 mm in width.
- From 300 to 900 mm in height.

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



SP 395 and accessories

STANDARD DIMENSIONS

NOMINAL DIMENSIONS		C (MM)	Ø D (MM)
A (MM)	B (MM)		
500	**300**	300	125
500	**400**	400	160
500	**500**	400	160
550	**600**	450	200
550	**800**	500	250
550	**900**	500	250

SP 396 series - Steel

SP 396 diffuser

USE

- Flat low speed air supply.
- Cooling and air conditioning in commercial and industrial buildings, generally with high ceilings.
- Installation in occupied area.

CONSTRUCTION

- Duct and air supply outlet of same cross-section.
- Galvanised steel plate frame.
- Diffusion surface made of perforated galvanised steel plate.
- Air distribution delivered by internal deflectors.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Wall attachment.

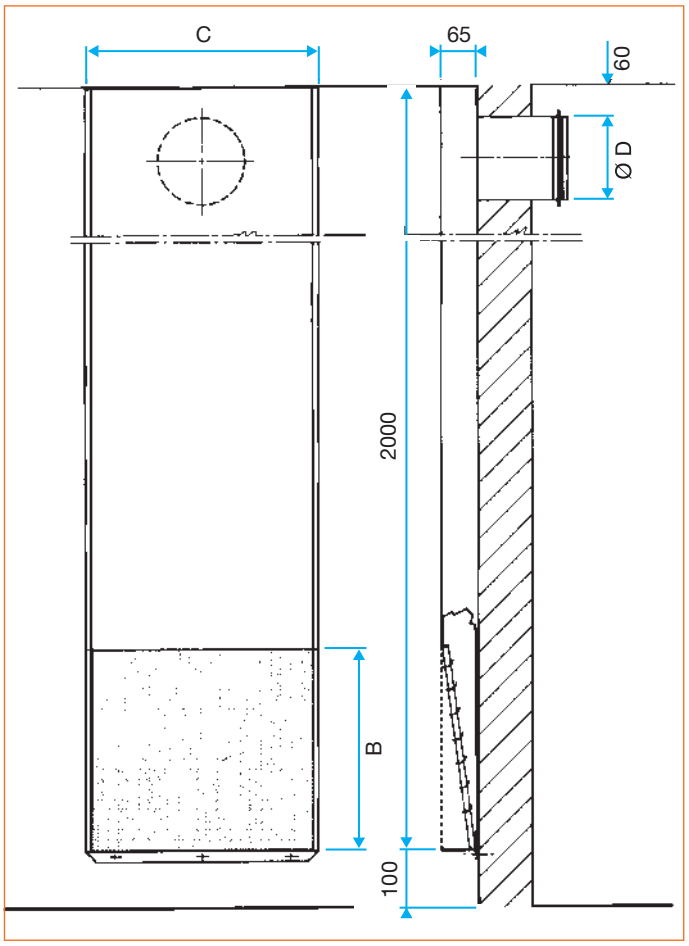
STANDARD DIMENSIONS

- Available in 4 different sizes, from Ø 125 mm to Ø 200 mm.
- 500 or 550 mm in width.
- From 300 to 600 mm in height.

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



SP 396

NOMINAL DIMENSIONS

A (MM)	B (MM)	Ø D (MM)
500	**300**	125
500	**400**	160
500	**500**	160
550	**600**	200

SP 390 series

RANGE WITH CHOICE OF OPTIONS

Please contact us: minimum quantities may be required.

AVAILABLE OPTIONS

SUPPLY	FINISH
• Air supply from above (standard). • Air supply from the floor.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

ACCESSORIES PROPOSED

- A: silencer.
- B: regulator.
- C and WD: duct trim.
- F: floor base.

390 series

SELECTION - SUPPLY - TYPE 391

AK (M²)	Ø D (MM)	QV (M³/H)																			
		150		200		300		500		800		1000		2000		4000		6000		8000		10000	
-	100	27	0.8	33	0.95	41	1.5															Lw	Lt
		-	20	-	35	-	60															Vk	Pa
-	125			25	0.8	33	1.0																
				-	15	-	30																
-	160					25	0.85	35	1.3	42	0.9												
						-	15	-	35	-	60												
-	200							26	0.9	33	1	38	1.6										
								-	12	-	30	-	40										
-	250									25	0.95	30	1.2										
										-	10	-	18										
-	315													36	1.7								
														-	25								
-	400													27	1.2	40	2.5						
														-	8	-	30						
-	500															32	1.7	40	2.5				
																-	12	-	25				
-	600	Lw	Lt													-	1.1	32	1.7	35	2.05	40	2.5
		Vk	Pa													-	4	-	10	-	13	-	20

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.2 m/s.

SELECTION - SUPPLY - TYPE 392

AK (M²)	Ø D (MM)	QV (M³/H)																			
		80		100		150		200		300		600		1000		1500		2000		4000	
-	100	-	0.6	30	0.9	38	1.4													Lw	Lt
		-	10	-	6	-	30													Vk	Pa
-	125			-	0.65	27	0.9	35	1.3												
				-	5	-	12	-	20												
-	160					-	0.7	25	0.85	34	1.4										
						-	5	-	8	-	20										
-	200							-	0.7	25	0.95	40	1.9								
								-	3	-	7	-	30								
-	250									-	0.7	29	1.3	38	1.8						
										-	3	-	10	-	20						
-	315													28	1.4	39	2.1				
														-	8	-	20				
-	400													-	0.95	28	1.5	34	2.0		
														-	2	-	6	-	11		
-	500	Lw	Lt													-	1.0	-	1.4	36	2.2
		Vk	Pa													-	1	-	4	-	10

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.2 m/s.

390 series

SELECTION - SUPPLY - TYPE 393

AK (M²)	Ø D (MM)	QV (M³/H) 80		100		150		200		300		600		1000		1500		2000		4000	
-	100	25	0.7	30	0.9	40	1.4													Lw	Lt
		-	10	-	5	-	11													Vk	Pa
-	125			-	0.7	28	0.9	35	1.2												
				-	5	-	12	-	20												
-	160					-	0.7	27	0.9	35	1.3										
						-	5	-	8	-	18										
-	200							-	0.6	26	0.95	41	1.7								
								-	3	-	7	-	30								
-	250									-	0.6	31	1.3	40	1.8						
										-	3	-	10	-	20						
-	315											-	0.9	29	1.4	41	2.2				
												-	3	-	7	-	18				
-	400													-	0.95	30	1.5	36	1.9		
														-	2	-	3	-	10		
-	500	Lw	Lt													-	1.1	26	1.4	39	2.4
		Vk	Pa													-	2	-	4	-	12

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.2 m/s.

SELECTION - SUPPLY - TYPE 394

AK (M²)	Ø D (MM)	QV (M³/H) 1000		1500		2000		3000		4000		6000		8000	
-	315	-	0.7	32	0.9	38	1.3							Lw	Lt
		-	5	-	10	-	18							Vk	Pa
-	400			-	0.7	28	0.9	36	1.3	42	1.7				
				-	4	-	7	-	18	-	28				
-	500					-	0.6	25	0.9	31	1.2	40	1.7		
						-	2	-	5	-	8	-	19		
-	630	Lw	Lt					-	0.7	-	0.9	30	1.3	36	1.5
		Vk	Pa					-	2	-	3	-	6	-	12

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.2 m/s.

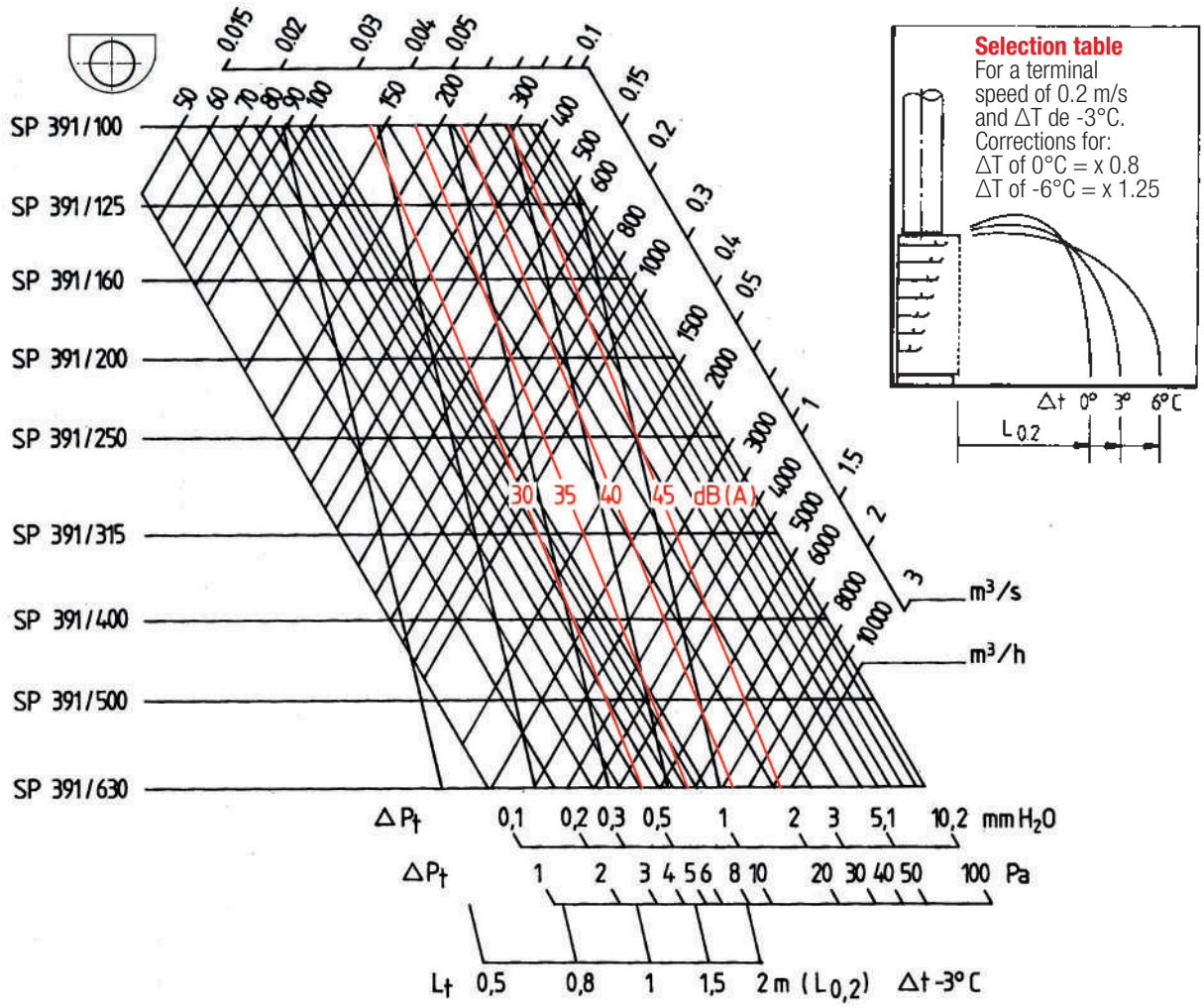
SELECTION - SUPPLY - TYPE 395 - 396

AK (M²)	L X H (MM)	QV (M³/H) 1000		1500		2000		3000		4000		6000		8000	
-	500 x 300	-	0.3	-	0.35	-	0.6	25	0.85					Lw	Lt
		-	5	-	8	-	19	-	30					Vk	Pa
-	500 x 400			-	0.3	-	0.4	-	0.7	31	0.95	33	1.4		
				-	4	-	9	-	18	-	35	-	60		
-	500 x 500					-	0.4	28	0.6	29	0.85	36	1.3		
						-	7	-	11	-	28	-	45		
-	550 x 600	Lw	Lt							25	0.8	31	1.1	40	1.6
		Vk	Pa							-	20	-	32	-	60

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.2 m/s.

391 series - Air supply

AIR SUPPLY WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room.

SOUND POWER LEVEL

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 100	1	2	1	1	-2	-15
Ø 125	1	2	2	1	-2	-15
Ø 160	1	2	2	1	-3	-14
Ø 200	2	2	3	2	-3	-12
Ø 250	2	3	3	2	-4	-13
Ø 315	3	3	4	3	-5	-15
Ø 400	5	4	4	4	-5	-14
Ø 500	6	5	5	4	-6	-15
Ø 630	6	6	7	5	-6	-16

Correction factors (dB) per octave band (Hz)

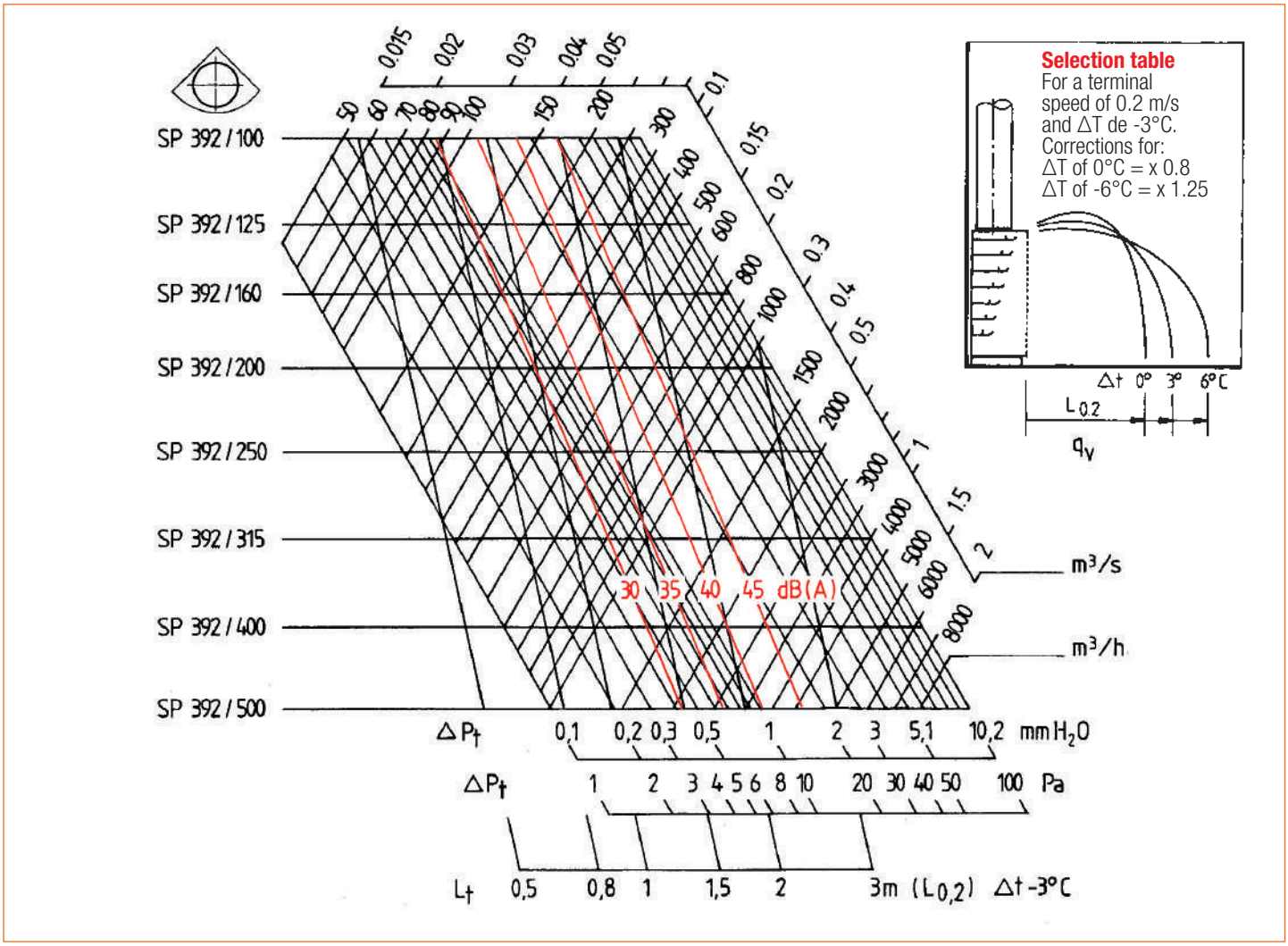
NOISE ATTENUATION BY ADDING THE SILENCER (A)

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 100	9	14	26	36	42	30
Ø 125	9	13	24	34	38	27
Ø 160	8	12	22	31	36	25
Ø 200	7	11	19	28	30	20
Ø 250	7	11	18	25	26	18
Ø 315	5	8	15	21	19	13
Ø 400	4	7	14	18	16	12
Ø 500	3	6	12	15	14	11
Ø 630	3	5	12	14	13	10

Correction factors (dB) per octave band (Hz)

392 series - Air supply

AIR SUPPLY WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room.

SOUND POWER LEVEL

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 100	1	2	1	1	-3	-16
Ø 125	1	2	2	1	-3	-16
Ø 160	1	2	2	1	-4	-16
Ø 200	1	2	2	1	-4	-15
Ø 250	2	3	3	2	-5	-16
Ø 315	3	3	4	2	-6	-17
Ø 400	4	4	4	2	-5	-19
Ø 500	6	5	4	3	-5	-20

Correction factors (dB) per octave band (Hz)

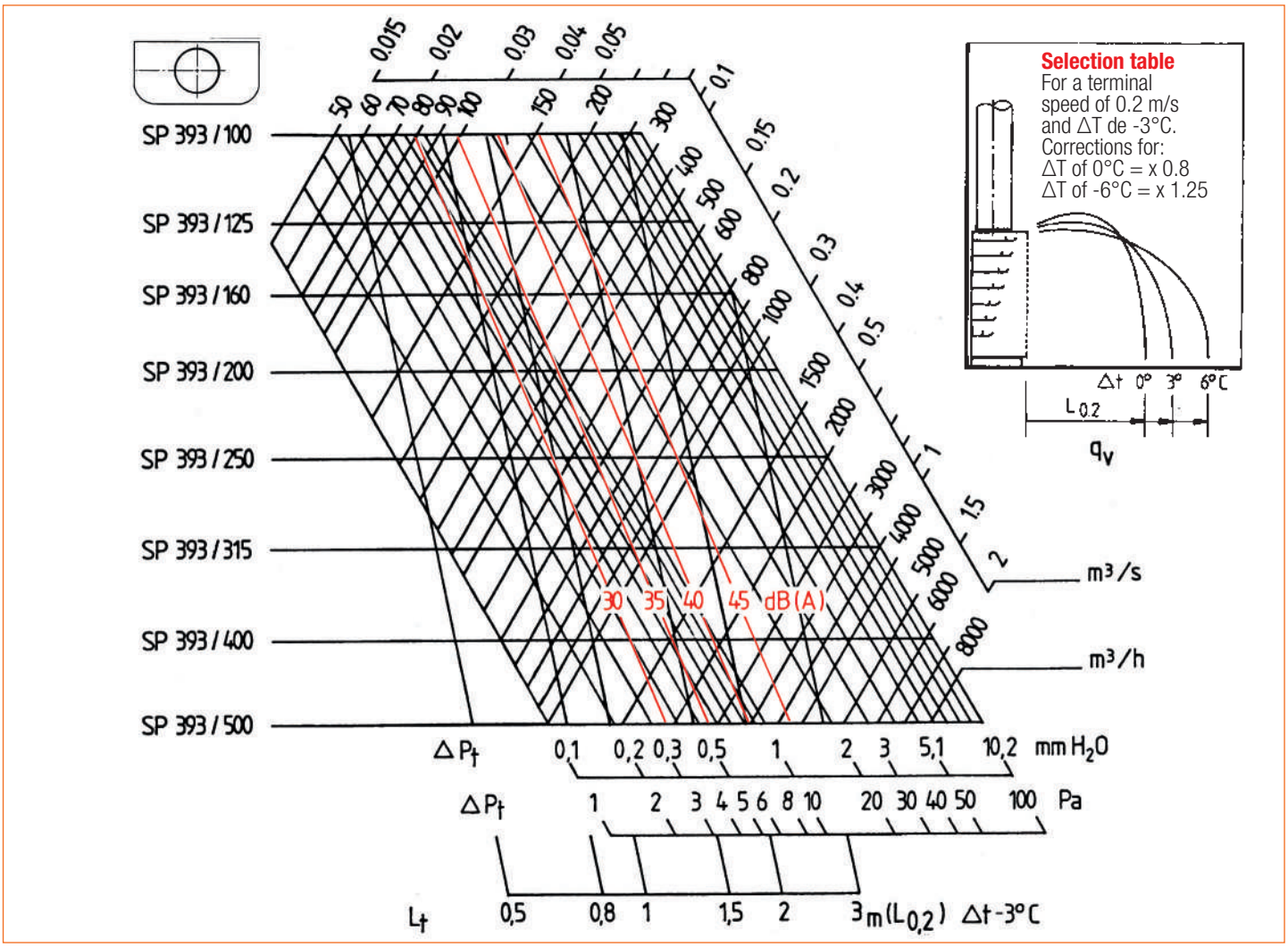
NOISE ATTENUATION BY ADDING THE SILENCER (A)

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 100	9	14	26	36	42	30
Ø 125	9	13	24	34	38	27
Ø 160	8	12	22	31	36	25
Ø 200	7	11	19	28	30	20
Ø 250	7	11	18	25	26	18
Ø 315	5	8	15	21	19	13
Ø 400	4	7	14	18	16	12
Ø 500	3	6	12	15	14	11

Correction factors (dB) per octave band (Hz)

393 series - Air supply

AIR SUPPLY WITH CEILING EFFECT



The Lw (dB(A)) values do not take into account any noise attenuation in the room.

SOUND POWER LEVEL

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 100	1	2	1	1	-2	-15
Ø 125	1	2	2	1	-2	-15
Ø 160	1	2	2	1	-3	-15
Ø 200	2	2	3	2	-3	-15
Ø 250	2	3	3	2	-4	-15
Ø 315	3	3	4	2	-5	-16
Ø 400	5	4	4	4	-5	-18
Ø 500	6	5	5	4	-6	-19

Correction factors (dB) per octave band (Hz)

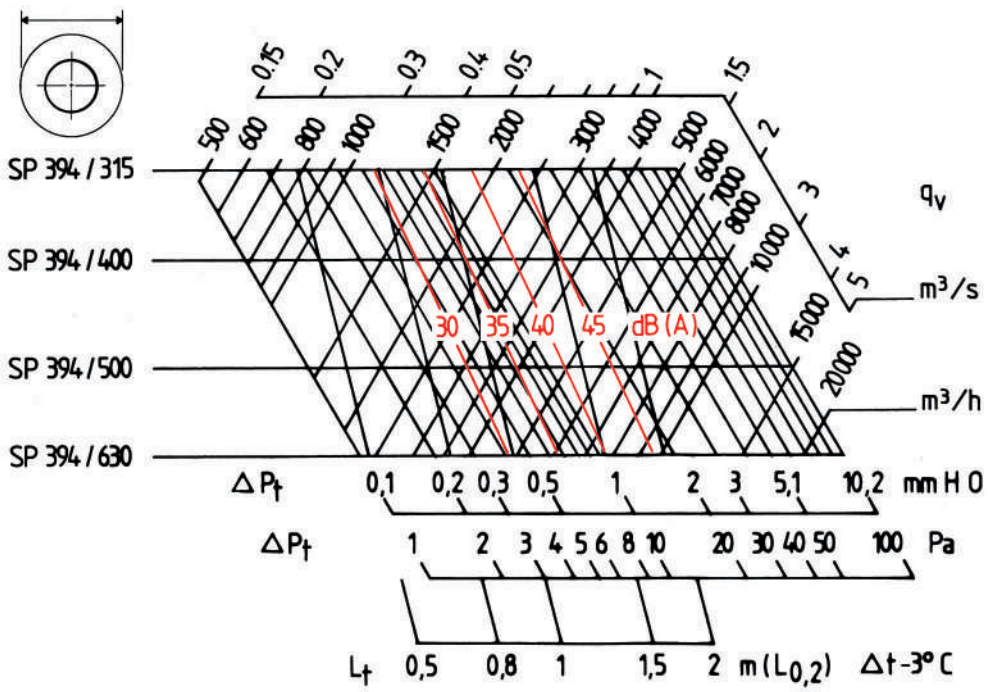
NOISE ATTENUATION BY ADDING THE SILENCER (A)

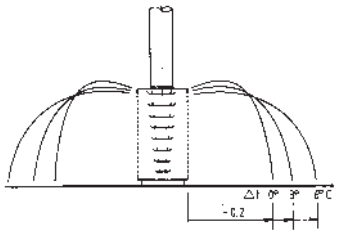
DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 100	10	15	28	36	44	36
Ø 125	10	14	26	35	44	35
Ø 160	9	13	24	33	42	28
Ø 200	8	13	23	32	38	24
Ø 250	7	12	21	30	36	23
Ø 315	7	11	19	26	28	20
Ø 400	6	10	18	24	24	18
Ø 500	5	9	16	20	18	16

Correction factors (dB) per octave band (Hz)

394 series - Air supply

AIR SUPPLY WITH CEILING EFFECT





Selection table
For a terminal speed of 0.2 m/s and ΔT de -3°C.
Corrections for:
ΔT of 0°C = x 0.8
ΔT of -6°C = x 1.25

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

SOUND POWER LEVEL

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 315	2	2	3	3	-4	-15
Ø 400	4	3	4	4	-5	-16
Ø 500	5	4	4	3	-5	-17
Ø 630	6	5	5	4	-6	-17

Correction factors (dB) per octave band (Hz)

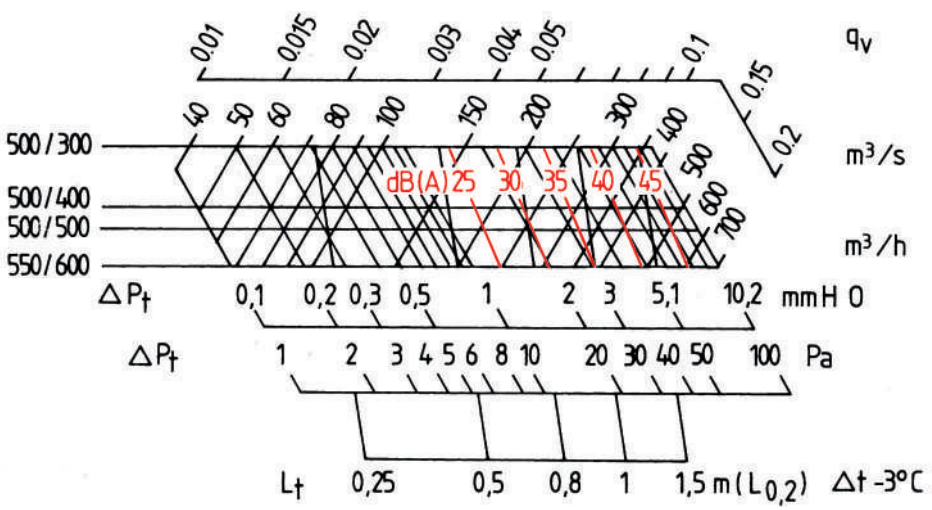
NOISE ATTENUATION BY ADDING THE SILENCER (A)

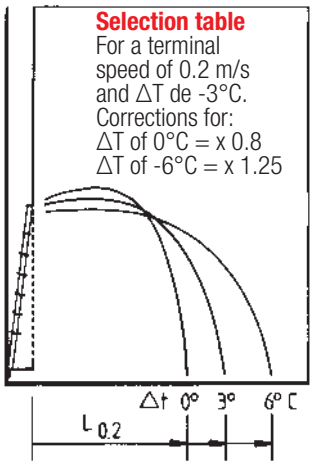
DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
Ø 315	8	14	18	24	26	20
Ø 400	6	12	15	22	24	18
Ø 500	4	10	14	20	23	17
Ø 630	4	8	13	16	17	12

Correction factors (dB) per octave band (Hz)

395 - 396 series - Air supply

AIR SUPPLY WITH CEILING EFFECT





The Lw (dB(A)) values do not take into account any noise attenuation in the room.

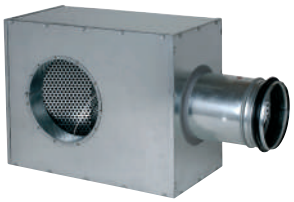
SOUND POWER LEVEL

DIMENSIONS (MM)	OCTAVE BAND (HZ)					
	125	250	500	1000	2000	4000
500 x 300	4	3	4	1	-6	-14
500 x 400	4	3	3	0	-8	-16
500 x 500	5	2	3	0	-9	-20
550 x 600	6	3	2	0	-11	-22
550 x 800	6	4	2	0	-10	-24
550 x 900	7	4	2	0	-10	-24

Correction factors (dB) per octave band (Hz)

SC 984 series - Steel

SC 984 diffuser



LREI plenum (5)

USE

- Adjustable air supply delivering spiral or multi-directional jet (1, 2, 3 or 4 channels).
- Excellent mixing rate and fast temperature balancing.
- Ideal for locations with low ceilings.
- Ceiling-mounted.
- Version suited to suspended ceiling tiles 600 x 600 mm (SC 984 T).

CONSTRUCTION

- Punched steel plate front panel.
- Plastic rotating nozzles.

FINISH

- Steel with epoxy paint, RAL 9003 white 30% matt.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Concealed screw attachment on the neck of the diffuser.

ACCESSORIES

- LREI plenum (5) insulated on 5 sides (supplied).
- Damper with control dial fitted on plenum branch connection (supplied).

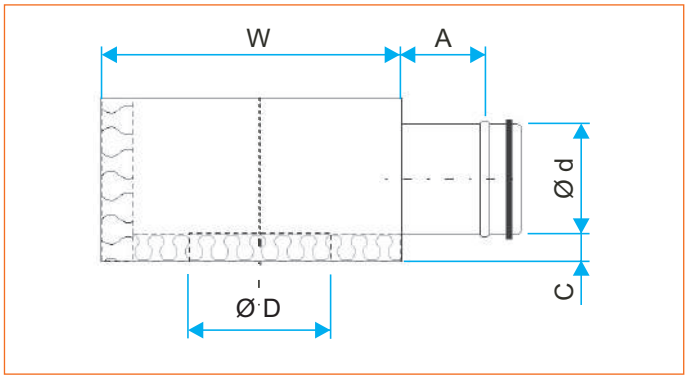
STANDARD DIMENSIONS

- Available in 5 different sizes, from Ø 125 mm to Ø 315 mm.
- 600 x 600 mm dimensions to replace a standard suspended ceiling tile (SC 984 T).

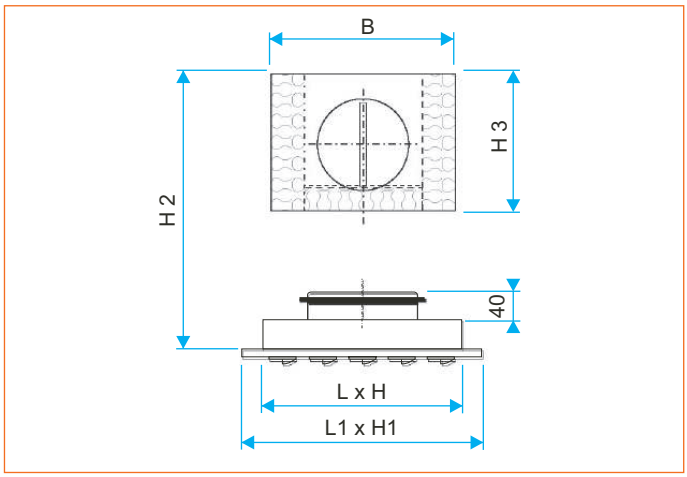
TECHNICAL DETAILS

- See selection tables on following pages.
- See mixing capacity at end of chapter.

DIMENSIONS



LREI plenum (5)



SC 984 diffuser

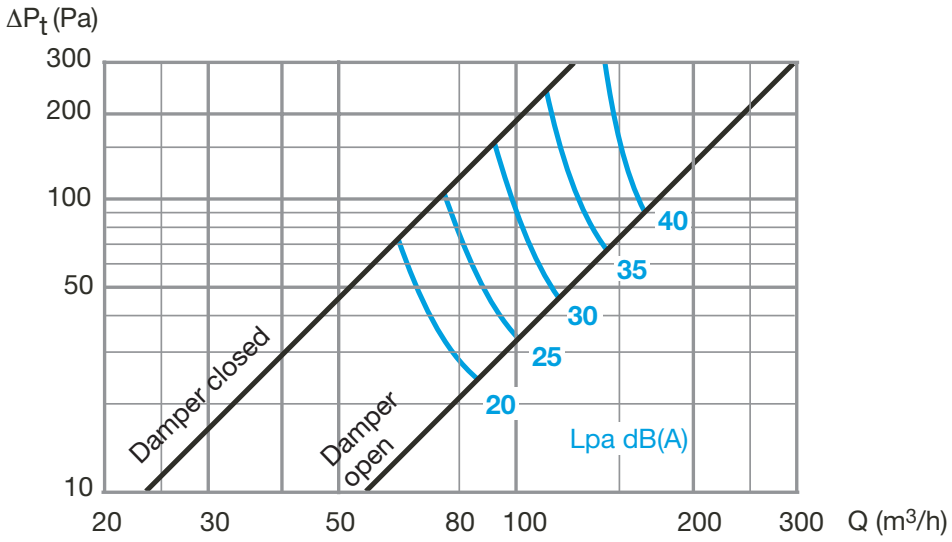
STANDARD DIMENSIONS

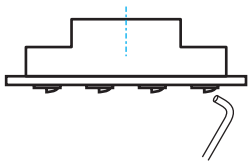
MOD.	L x H (MM)	L1 x H1 (MM)	Ø D (MM)	Ø D (MM)	H2 (MM)	H3 (MM)	B (MM)	W (MM)	R (MM)	A (MM)	C (MM)
125	333	389 or 594*	100	125	185	155	250	320	296	81	30
160	333	389 or 594*	125	160	210	180	300	380	346	91	40
200	415	472 or 594*	160	200	260	215	370	440	398	103	35
250	554	594*	200	250	315	255	465	520	473	123	30
315	554	594*	250	315	360	300	550	580	519	144	25

* SC 984 T model

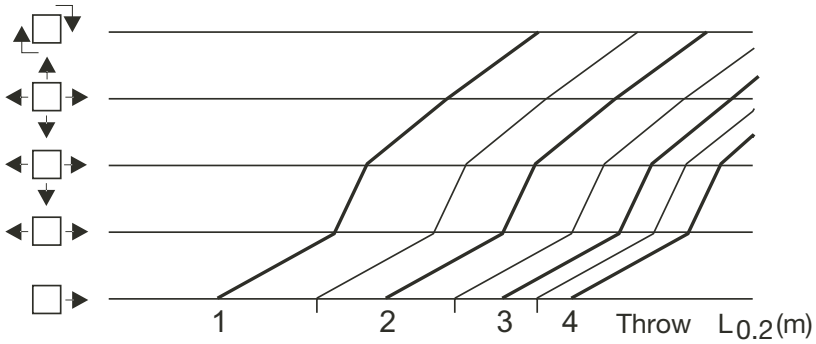
984 series - model 125

AIR SUPPLY WITH CEILING EFFECT





Airflow measurement
Vk x Ak = m³/s
Vk x Ak x 3600 = m³/h



Lp dB(A): sound pressure level taking into account 4 dB noise attenuation in room. Tests conducted with standard plenum.

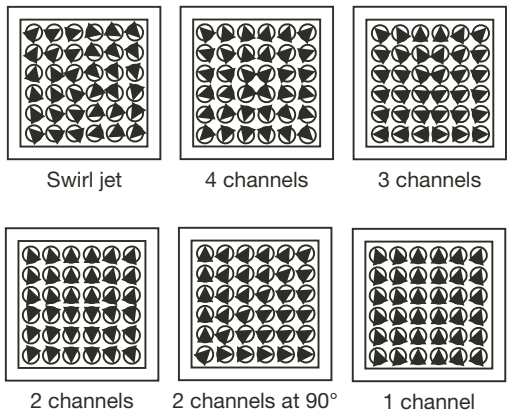
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.2	0.25	0.375	0.5	0.625
Lt	x 1	x 0.8	x 0.53	x 0.4	x 0.32

SOUND POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 9	+ 7	+ 3	- 2	- 12	- 24

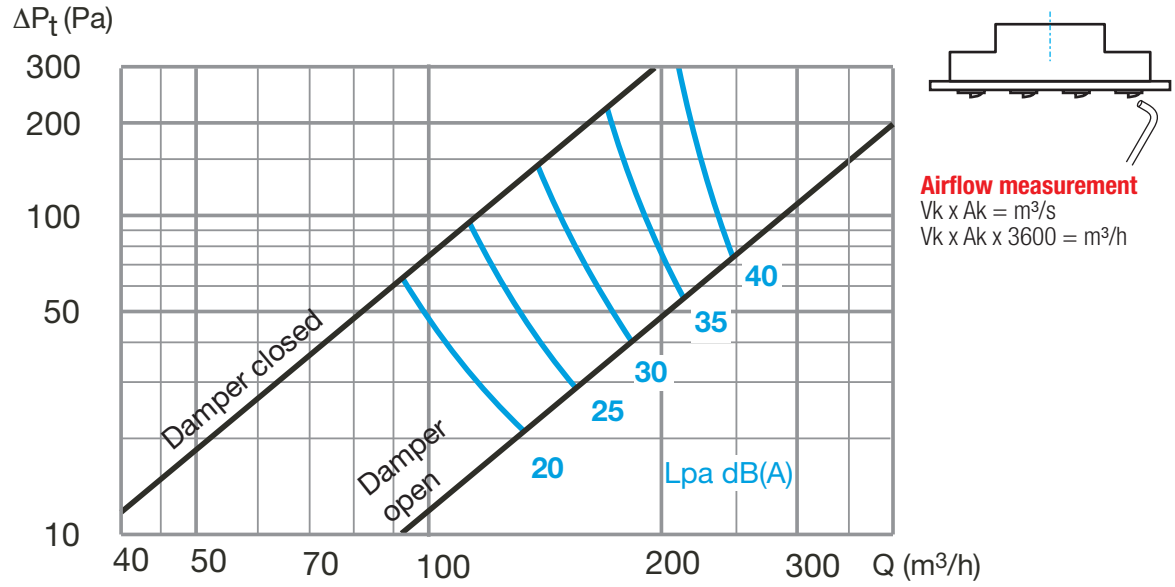
Correction factors (dB) per octave band (Hz) to obtain the sound power level (Lw) in dB.

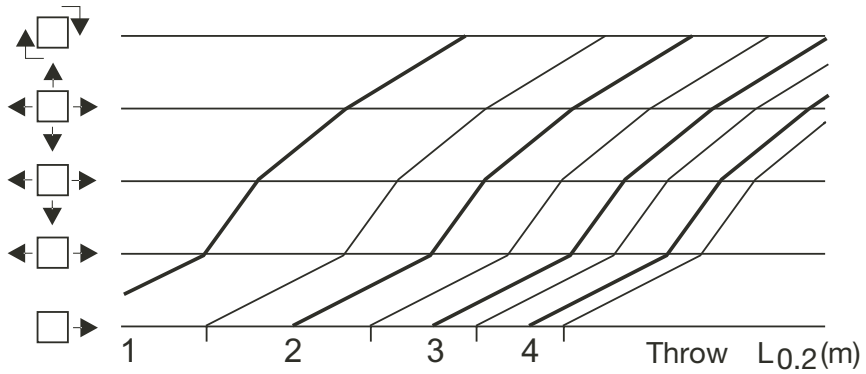


The throw $L^{0.2}$ is given for the nozzle configurations above

984 series - model 160

AIR SUPPLY WITH CEILING EFFECT





Lp dB(A): sound pressure level taking into account 4 dB noise attenuation in room. Tests conducted with standard plenum.

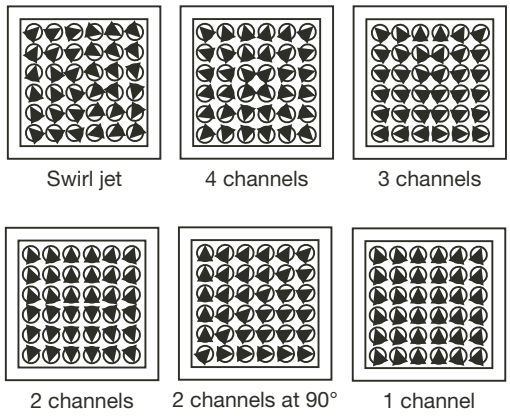
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.2	0.25	0.375	0.5	0.625
Lt	x 1	x 0.8	x 0.53	x 0.4	x 0.32

SOUND POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 8	+ 5	+ 1	0	- 10	- 24

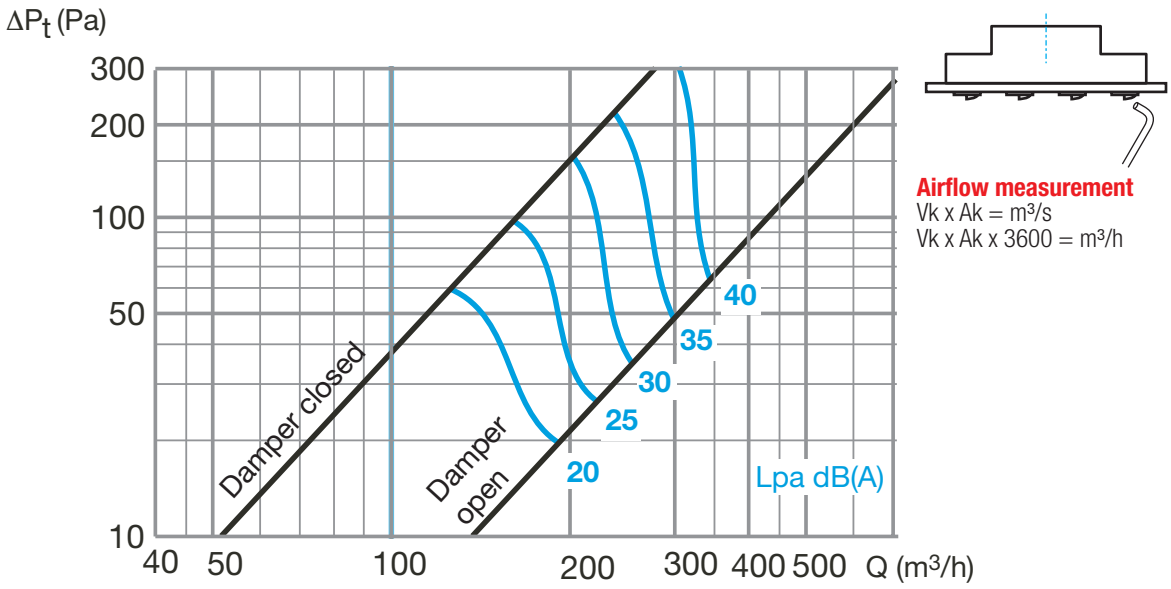
Correction factors (dB) per octave band (Hz) to obtain the sound power level (Lw) in dB.

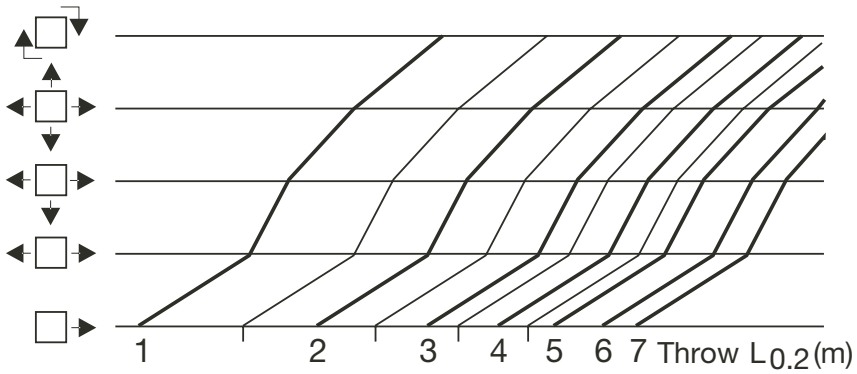


The throw $L^{0.2}$ is given for the nozzle configurations above.

984 series - model 200

AIR SUPPLY WITH CEILING EFFECT





Lp dB(A): sound pressure level taking into account 4 dB noise attenuation in room. Tests conducted with standard plenum.

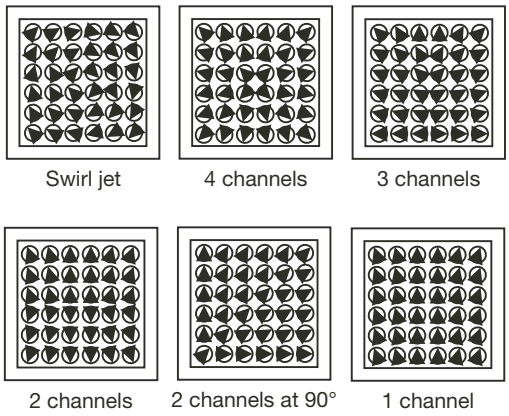
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.2	0.25	0.375	0.5	0.625
Lt	x 1	x 0.8	x 0.53	x 0.4	x 0.32

SOUND POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 8	+ 4	+ 2	- 1	- 9	- 20

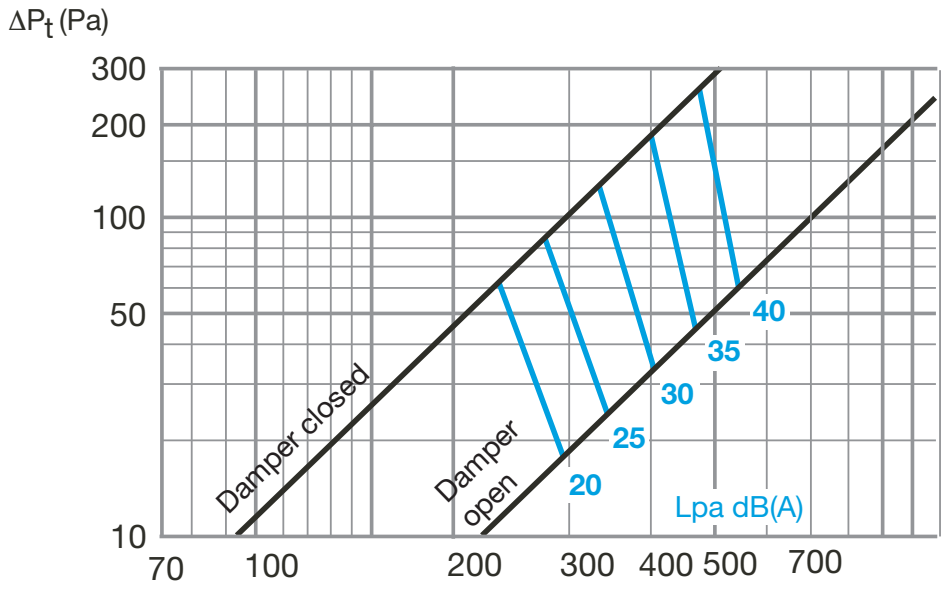
Correction factors (dB) per octave band (Hz) to obtain the sound power level (Lw) in dB.

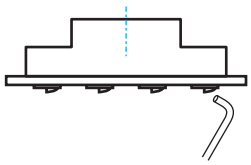


The throw $L^{0.2}$ is given for the nozzle configurations above.

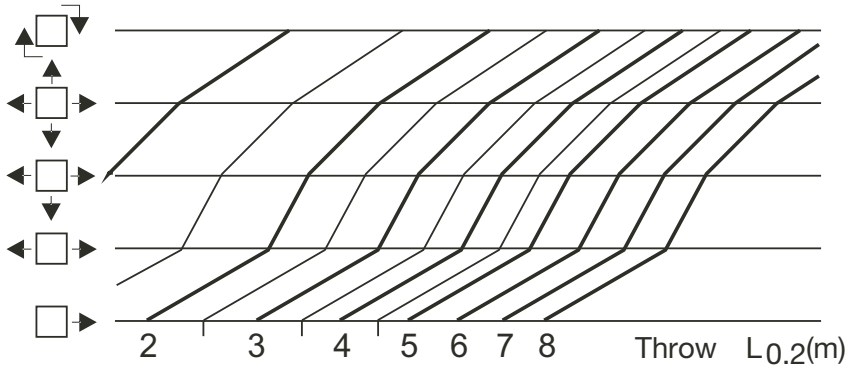
984 series - model 250

AIR SUPPLY WITH CEILING EFFECT





Airflow measurement
Vk x Ak = m³/s
Vk x Ak x 3600 = m³/h



Lp dB(A): sound pressure level taking into account 4 dB noise attenuation in room. Tests conducted with standard plenum.

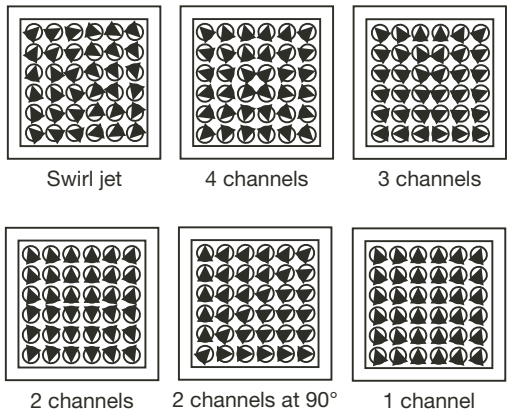
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.2	0.25	0.375	0.5	0.625
Lt	x 1	x 0.8	x 0.53	x 0.4	x 0.32

SOUND POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 9	+ 5	+ 3	- 1	- 10	- 21

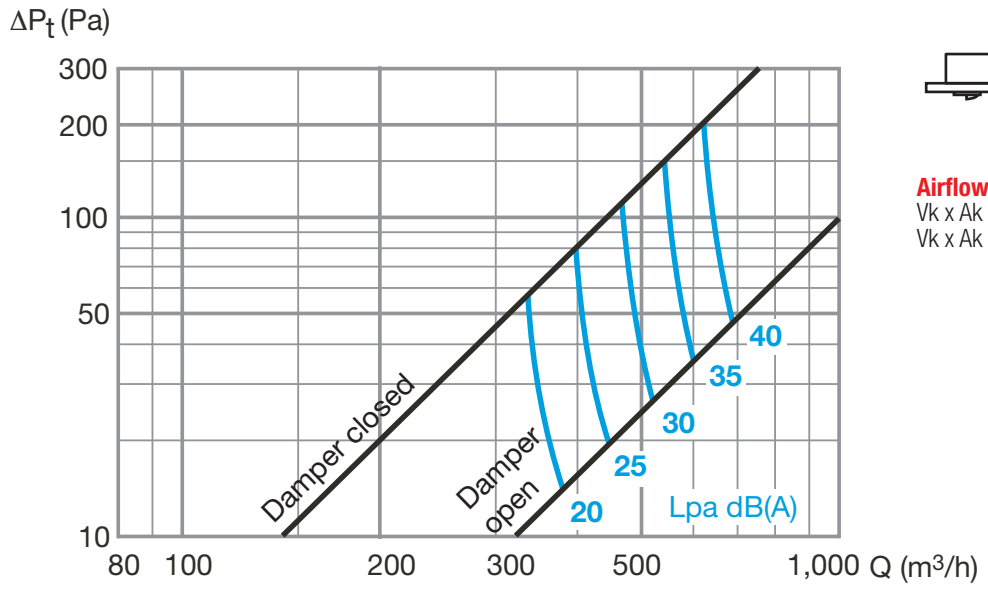
Correction factors (dB) per octave band (Hz) to obtain the sound power level (Lw) in dB.

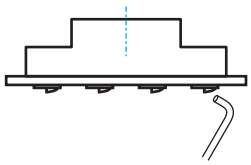


The throw $L^{0.2}$ is given for the nozzle configurations above.

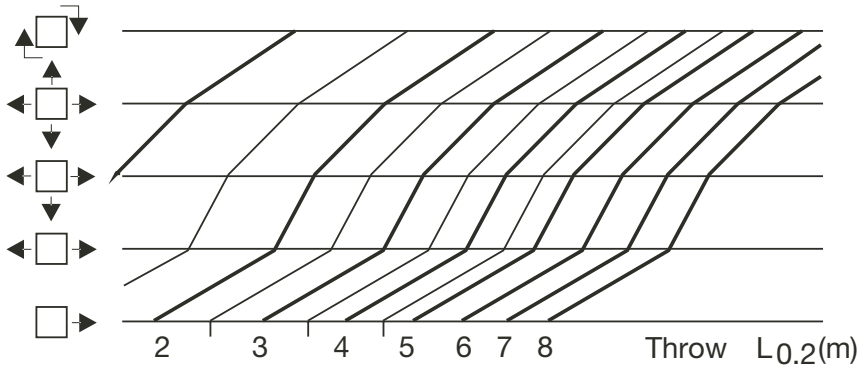
984 series - model 315

AIR SUPPLY WITH CEILING EFFECT





Airflow measurement
Vk x Ak = m³/s
Vk x Ak x 3600 = m³/h



Lp dB(A): sound pressure level taking into account 4 dB noise attenuation in room. Tests conducted with standard plenum.

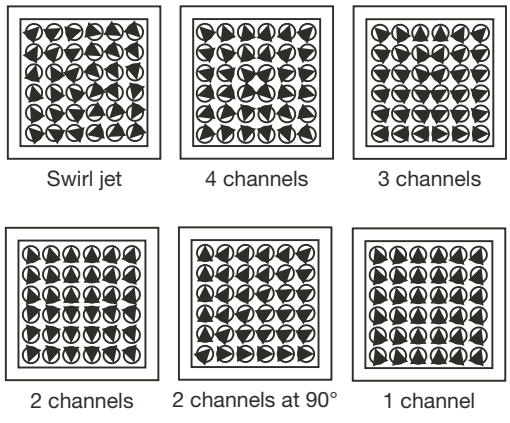
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.2	0.25	0.375	0.5	0.625
Lt	x 1	x 0.8	x 0.53	x 0.4	x 0.32

SOUND POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 7	+ 3	+ 3	0	- 11	- 23

Correction factors (dB) per octave band (Hz) to obtain the sound power level (Lw) in dB.



The throw $L^{0.2}$ is given for the nozzle configurations above.

AR 190 series - Aluminium

AR 190 diffuser

USE

- Air supply for high-ceiling buildings such as airports and exhibition centres.
- Long-throw diffusion to provide airflow to occupied areas, ideal for avoiding stratification of air in heating applications.
- Adjustable diffusion, can be inclined to 30°.
- Wall-mounted or on floor around perimeter.

CONSTRUCTION

- Spun aluminium diffuser.

FINISH

- Epoxy paint finish, RAL 9003 white 30%.

ATTACHMENT

- AR190: visible screw attachment on rectangular duct or on plenum.
- AR190C: direct attachment to circular air supply duct.
- Screw cover for concealed attachment (supplied as standard).

ACCESSORIES

- AR190C: supplied with circular connection sleeve.

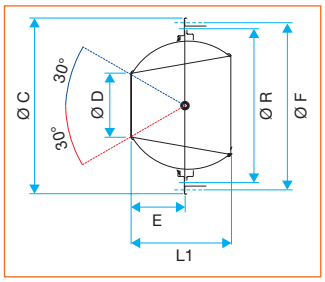
STANDARD DIMENSIONS

- Available from Ø 160 to Ø 400.

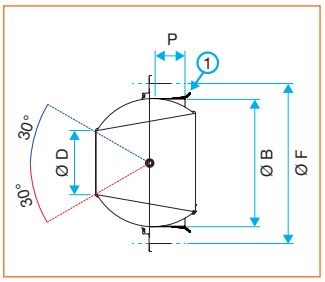
TECHNICAL DETAILS

- See selection tables and scales on following pages.
- See mixing capacity at end of chapter.

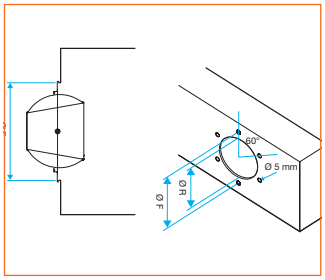
DIMENSIONS



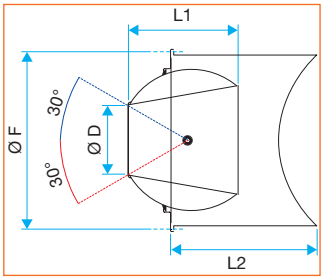
AR 190 diffuser



AR 190 C-1 diffuser: sleeve for circular duct



Mounted on rectangular duct



Mounted on circular duct

STANDARD DIMENSIONS

MODEL	DIAMETER (MM)	L1 (MM)	E (MM)	Ø B (MM)	Ø C (MM)	Ø D (MM)	P (MM)	Ø F (MM)	Ø R (MM)	L2 (MM)
80	160	121	68	158	249	80	50	226	205	200
110	200	144	82	198	289	110	50	266	250	300
150	315	220	128	313	389	150	50	366	352	300
200	400	286	170	398	489	200	50	466	452	350
230	400	278	162	398	489	230	-	466	452	350

SUPPLEMENTARY RANGE

- AR 190 C: multi-nozzle version available with 1, 2 or 3 diffuser lines.
- Wall-mounted or in circular duct. Please contact us.

AR 190 series

STANDARD RANGE

MODEL	AR 190	AR 190 C (WITH SLEEVE)
	CODE	CODE
Ø 160 / type 80	11003026	11003016
Ø 200 / type 110	11003027	11003017
Ø 315 / type 150	11003028	11003018
Ø 400 / type 200	11003029	11003019
Ø 400 / type 230	11003030	11003020

ATTACHMENT	FINISH
• AR190: visible screw attachment on rectangular duct. • AR190C : direct attachment to circular duct.	• Aluminium with epoxy paint coating RAL 9003 white.

SELECTION - AIR SUPPLY WITHOUT CEILING EFFECT

Ak (M²)	DIAMETER (MM)	AIRFLOW (M³/H)	100	200	300	500	800	1000	1200	1500	2000	2500
0.0054	Ø 160 / 80	Lw (dB(A))	6	26								
		ΔP (Pa)	16	57								
		Lt (m)	2.8	5.7								
0.0132	Ø 200 / 110	Lw (dB(A))			16	31	44					
		ΔP (Pa)			23	60	143					
		Lt (m)			5.4	9.1	23					
0.0179	Ø 315 / 150	Lw (dB(A))					39	43	48			
		ΔP (Pa)					81	123	172			
		Lt (m)					12.5	23	28			
0.0308	Ø 400 / 200	Lw (dB(A))					26	32	38	41	50	
		ΔP (Pa)					30	45	63	95	162	
		Lt (m)					9.5	11.9	14.2	17.8	23.7	
0.0401	Ø 400 / 230	Lw (dB(A))						26	31	37	46	49
		ΔP (Pa)						28	39	59	100	151
		Lt (m)						10.4	12.5	15.6	20.8	26

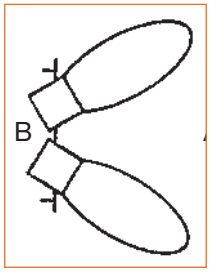
The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.5 m/s.

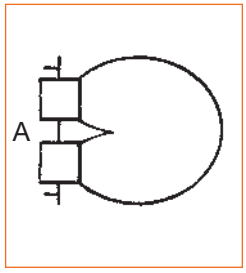
CORRECTIONS FOR OTHER Vt

Vt (M/S)	0.25	0.37	0.5	0.63	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67
Lt with ceiling effect	x 2.8	x 1.8	x 1.4	x 1.1	x 0.9

CORRECTIONS FOR CONCENTRATED JET

NUMBER OF DIFFUSERS	Lt (A)	Lt (B)	Lw (NR)
2	x 1.14	x 1	+ 3
3	x 1.20	x 1	+ 5
4	x 1.25	x 1	+ 6





CORRECTIONS FOR DAMPER

NO DAMPER	DAMPER 100 % OPEN	DAMPER 50 % OPEN	DAMPER 25 % OPEN
ΔPt x 1.00	ΔPt x 1.00	ΔPt x 2.25	ΔPt x 5.90
Lw + 0	Lw + 0	Lw + 10	Lw + 20

CORRECTIONS FOR VERTICAL AIR SUPPLY DEPENDING ON TEMPERATURE

ΔT (°C)	- 20	- 15	- 10	- 5	0	5	10	15	20
Lt (m)	x 2.5	x 2	x 1.7	x 1.3	x 1	x 0.7	x 0.5	x 0.4	x 0.33

AR 190 Thermo series - Aluminium

AR 190 Thermo jet diffuser

USE

- Air supply for high-ceiling buildings such as airports and exhibition centres.
- Long-throw diffusion to provide airflow to occupied areas, ideal for avoiding stratification of air in heating applications.
- Automatic diffusion orientation according to the temperature of the blown air, for optimum operation both in winter and summer.
- Can be inclined to 30°.
- Wall-mounted.

CONSTRUCTION

- Spun aluminium diffuser.
- Circular spun aluminium connection sleeve (supplied).
- Heat-sensitive spring made of nickel-titanium alloy to automatically toggle the diffusion angle according to the temperature of the blown air:
  - "winter" (heating) position for delamination of hot air,
  - "summer" position (cooling) for perfect management of air speeds in the occupied areas.
- "Winter" and "summer" angles can be adjusted by screws (max. angle +/- 30°) for perfect adaptation to conditions of use.

Note: no damper available for this range.

ATTACHMENT

- Concealed screw attachment on rectangular duct (or plenum), or direct connection to circular air supply duct.

FINISH

- Epoxy paint finish, RAL 9003 white 30%.
- Anodised aluminium finish, natural white hue.

ACCESSORIES

- Face plate to cover screws (supplied).
- Connection sleeve for flexible circular ducts (supplied).
- Connection sleeve for rectangular ducts (contact us).
- Connection sleeve for rigid circular ducts (contact us).

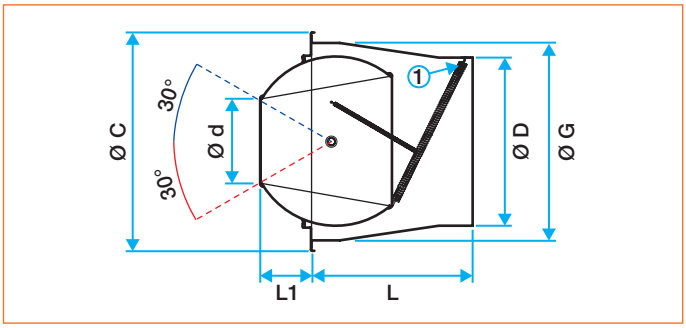
STANDARD DIMENSIONS

- Available from Ø 300 to Ø 400.

TECHNICAL DETAILS

- See selection table on following page.

DIMENSIONS



AR 190 Thermo diffuser
1- Heat-sensitive spring

STANDARD DIMENSIONS

MODEL	Ø d (MM)	Ø D (MM)	Ø G (MM)	C (MM)	L1 (MM)	L (MM)	AIRFLOW (M^3/H)
150	150	313	352	389	128	285	750
200	200	398	352	489	170	290	1300
230	230	398	352	489	162	290	1700

AR 190 Thermo series

STANDARD RANGE

DIMENSIONS (MM)	AR 190 THERMO JET DIFFUSER - ANODISED ALUMINIUM	AR 190 THERMO JET DIFFUSER - WHITE ALUMINIUM
	CODE	CODE
150	11051264	11051267
200	11051265	11051268
230	11051266	11051269

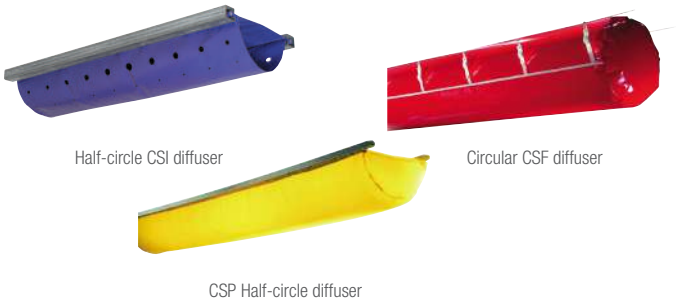
- Connection sleeve for flexible circular ducts: supplied.
- Connection sleeve for rectangular ducts or rigid circular ducts: contact us.

SELECTION - AIR SUPPLY WITHOUT CEILING EFFECT

Ak (M^2)	DIAMETER (MM)	AIRFLOW (M^3/H)	100	200	300	500	800	1000	1200	1500	2000	2500
0.0179	**Ø 150**	Lw (dB(A))					39	43	48			
		ΔP (Pa)					81	123	172			
		Lt (m)					12.5	23	28			
0.0308	**Ø 200**	Lw (dB(A))					26	32	38	41	50	
		ΔP (Pa)					30	45	63	95	162	
		Lt (m)					9.5	11.9	14.2	17.8	23.7	
0.0401	**Ø 230**	Lw (dB(A))						26	31	37	46	49
		ΔP (Pa)						28	39	59	100	151
		Lt (m)						10.4	12.5	15.6	20.8	26

The Lw (dB(A)) values do not take into account any noise attenuation in the room.

CSI - CSF - CSP series - Fabric



Half-circle CSI diffuser

Circular CSF diffuser

CSP Half-circle diffuser

USE

CSI diffusers

- Heating and cooling air conditioning of large-volume, commercial or public access buildings.
- Heating and/or cooling of high-ceiling industrial storage facilities.
- Ambient air conditioning of sensitive industrial production facilities.

CSF diffusers

- Cooling in food production industry.
- Ambient air conditioning for wine cellars and bottle storage warehouses.
- Ambient air conditioning for medium-height industrial facilities (H < 5 m).
- Heating large-volume and high-ceiling industrial facilities (H < 5 m).

CSP diffusers

- Cooling in food production industry.
- Sterile rooms.
- Air conditioning in industrial facilities.
- Air conditioning in low-ceiling commercial or industrial facilities (H < 4 m).

CONSTRUCTION

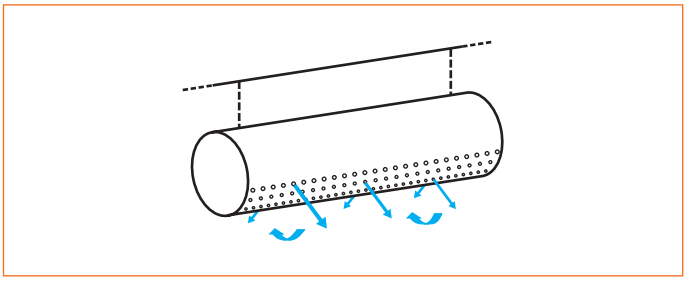
CSI diffusers

- Principle of operation based on the physical induction phenomenon. This effect is obtained with the CSI using a fabric duct suitable perforated along its whole length.
- Each hole operates as an air supply outlet and the air diffused exits at high speed (between 7 and 15 m/s) creating an area of negative pressure around it that makes the air mass move.
- The system offers better temperature balancing in the room without creating a bothersome air current.
- The fabric is available in 4 versions:
  - M0 glass fibre (incombustible) - mandatory in public-access buildings,
  - PVC M1 (non-inflammable).
  - Polyester M1 (non-inflammable) 80 g/m².
  - Polyester M1 (non-inflammable) 160 g/m².

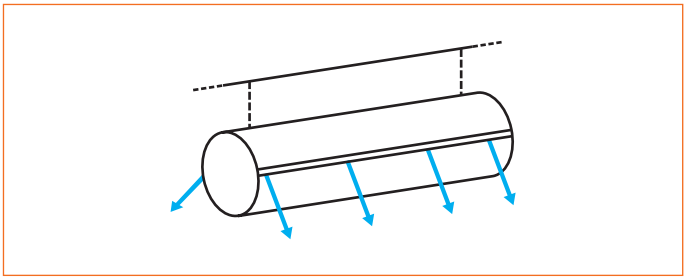
CSF diffusers

- Operation based on the principle of mixing air diffused through slots (primary air) with air in the surrounding room (secondary air) by induction.
- The fabric is available in 3 versions:
  - PVC M1 (non-inflammable).
  - Polyester M1 (non-inflammable) 80 g/m².
  - Polyester M1 (non-inflammable) 160 g/m².

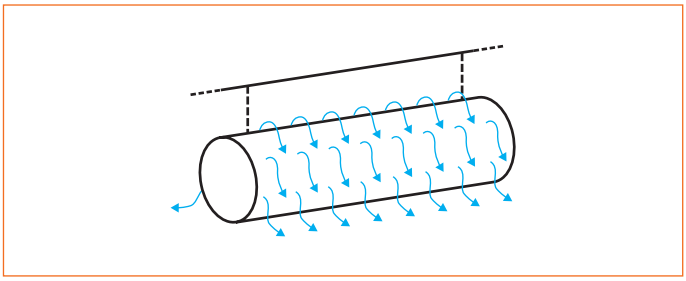
DIMENSIONS



CSI: very high induction through rows of perforated holes



CSF: medium induction through diffusive strips



CSP: total or partial diffusion through the porosity of the fabric

CSP diffusers

- Principle of operation based on the displacement of airflows. according to temperature differences. Principle used for cooling - the air diffused through the fabric (colder than ambient air) will naturally descend and progressively fill the treated zone.
- The fabric is available in 2 versions:
  - Polyester M1 micro-perforated (non-inflammable) 80 g/m².
  - Polyester M1 micro-perforated (non-inflammable) 160 g/m².

FINISH

- The M1 fabric is available in several colours (contact us).
- The M0 fabric (incombustible) is only available in aluminium grey, black or white.

ATTACHMENT

- Several support systems are available to suspend the duct (cables, rails with or without moving chariot). See details on the following page.
- Zipped closures every 15 m to facilitate installation.

STANDARD DIMENSIONS

- Any length with diameters from 200 to 1250 mm.
- Other diameters: please contact us.

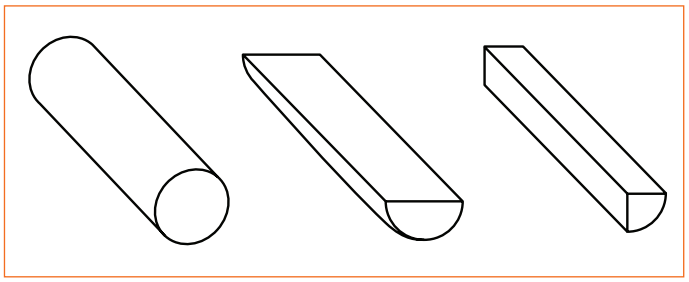
TECHNICAL DETAILS

- We perform design analyses for each project (contact us).

Diffuser shapes

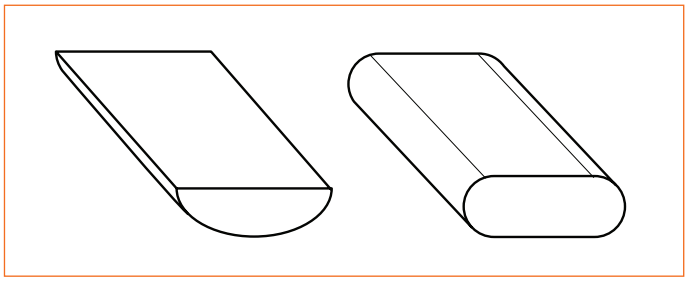
- Use of a fabric offers great flexibility in the geometrical shape of diffusers. It is very easy to integrate into a given architectural style.

DIFFUSER FORMS



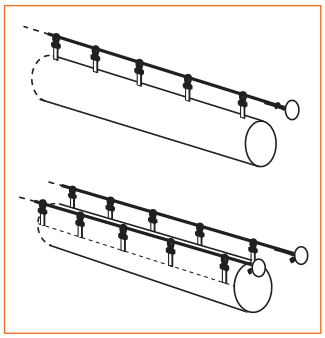
Circular, half-circle or quarter-circle form

DIFFUSER FORMS

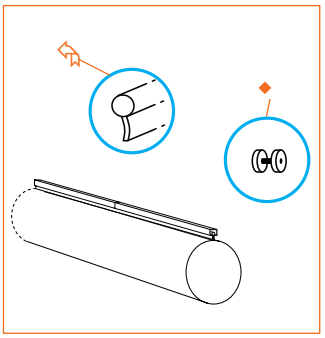


Bowstring or oblong form

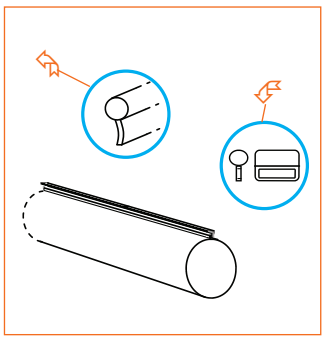
ATTACHMENT



Single or double cable attachment



Suspension for aluminium rails



Suspension for PVC shaped sections

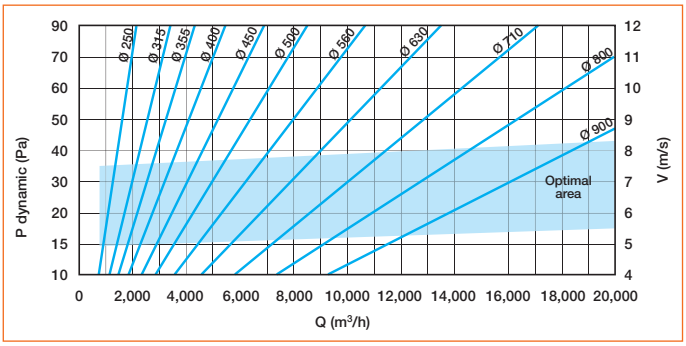
Fabric
Chariot
Slide

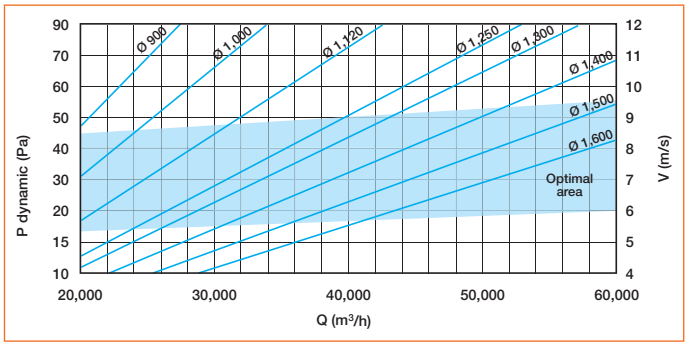
CSI - CSF - CSP series - Fabric

QUICK SELECT

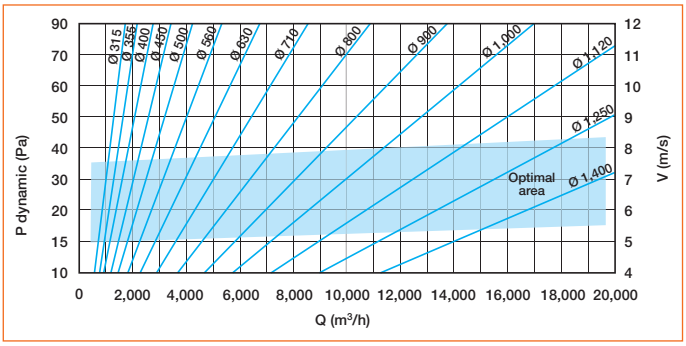
		HEATING ONLY			COOLING ONLY			HEATING + COOLING		
		THROW < 3 M	3 M < THROW < 7 M	THROW < 7 M	THROW < 3 M	3 M < THROW < 7 M	THROW < 7 M	THROW < 3 M	3 M < THROW < 7 M	THROW < 7 M
ERP	H < 4 m	CSI	CSI	CSI	CSI	CSI	CSI	CSI	CSI	CSI
	4 m < H < 8 m	CSI	CSI	CSI	CSI	CSI	CSI	CSI	CSI	CSI
	H > 8 m									
Dust control zone	H < 4 m	CSP	CSF		CSP	CSF		CSP	CSF	
	4 m < H < 8 m									
	H > 8 m									
Non-residential and industrial buildings	H < 4 m	CSP	CSF	CSI	CSP	CSF	CSF	CSP	CSF	CSI
	4 m < H < 8 m	CSI	CSI	CSI	CSF	CSF	CSF	CSI	CSI	CSI
	H > 8 m									
Industrial process buildings and storage facilities	H < 4 m	CSP	CSF	CSI	CSP	CSF	CSF	CSP	CSF	CSI
	4 m < H < 8 m	CSI	CSI	CSI	CSF	CSF	CSF	CSI	CSI	CSI
	H > 8 m	CSI	CSI	CSI	CSI	CSI	CSI	CSI	CSI	CSI

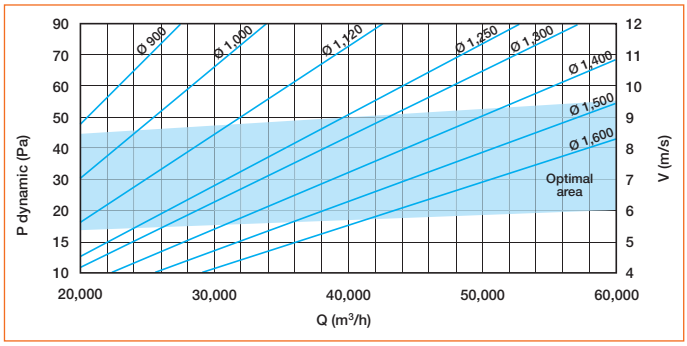
CSI SERIES - AIR SUPPLY FOR CIRCULAR DUCT



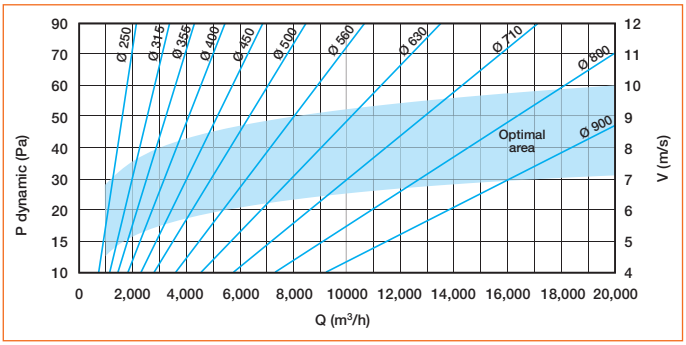


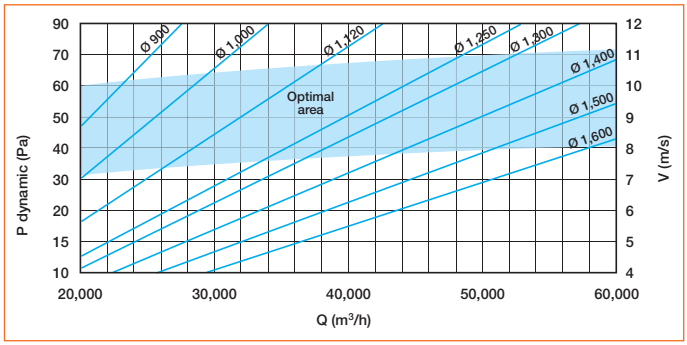
CSF SERIES - AIR SUPPLY FOR CIRCULAR DUCT



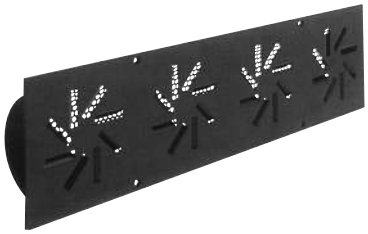


CSP SERIES - AIR SUPPLY FOR CIRCULAR DUCT





Mini AWT series - Steel



Mini-AWT diffuser

Mini-AWT diffuser 8

USE

- Diffuser designed for amphitheatres or auditoriums.
- Installation on step riser behind seats or on floor.
- Swirl jet diffusion ensuring good temperature balance.

CONSTRUCTION

- Made of galvanised steel plate.

FINISH

- Steel with epoxy paint finish RAL 9005 black 30% matt.

ATTACHMENT

- Visible screw attachment.

ACCESSORIES

- Semi-cylindrical distribution plate supplied as standard.

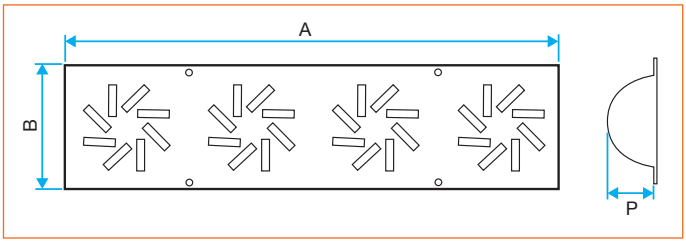
STANDARD DIMENSIONS

- From 130 to 498 mm in length.
- From 130 to 210 mm in height.

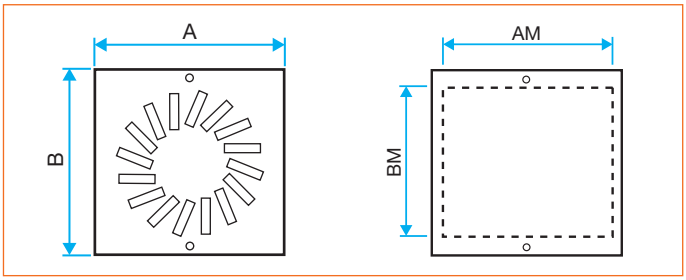
TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



Mini-AWT diffuser 4 x 8



Mini-AWT diffuser 16

STANDARD DIMENSIONS

AM x BM (MM)	NUMBER OF SLOTS	A x B (MM)	D (MM)
105 x 95	8	130 x 130	50
130 x 120	12	155 x 155	50
150 x 140	16	175 x 175	50
185 x 175	24	210 x 210	50
475 x 95	4 x 8	498 x 130	50

Mini-AWT series

STANDARD RANGE

DIMENSIONS (MM)	MINI-AWT DIFFUSER CODE
105 x 95	Please contact us
130 x 120	11051191
150 x 140	11051192
185 x 175	11051193

ATTACHMENT	FINISH
• Visible screw attachment on diffuser front panel.	• Steel with epoxy paint coating, RAL 9005 black. Contact us for closed codes.

ACCESSORIES PROPOSED

• Semi-cylindrical distribution plate supplied as standard.

SELECTION - AIR SUPPLY WITH WALL EFFECT

AK (M^2)	AM x BM (MM)	NUMBER OF SLOTS	10 (M^3/H)		20 (M^3/H)		30 (M^3/H)		50 (M^3/H)		60 (M^3/H)		80 (M^3/H)		100 (M^3/H)		120 (M^3/H)	
0.0010	**105 x 95**	8	-	0.06	-	0.12	21	0.18									Lw	Lt
			2.7	5.5	5.4	22.0	8.1	49.7									Vk	Pa
0.0015	**130 x 120**	12	-	0.05	-	0.10	-	0.15	26	0.25	35	0.15						
			1.8	2.5	3.6	9.8		22.1	9.0	61.3	10.9	88.3						
0.0020	**150 x 140**	16			-	0.09	-	0.13	23	0.21	26	0.12	32	0.16				
					2.7	5.5	4.1	12.4	6.8	34.5	8.1	49.7	10.9	88.3				
0.0031	**185 x 175**	24	Lw	Lt	-	0.07	-	0.11	-	0.18	21	0.09	27	0.12	31	0.15	35	0.18
			Vk	Pa	1.8	2.5	2.7	5.5	4.5	15.3	5.4	22.1	7.2	39.2	9.0	61.3	10.9	88.3

The Lw (dB(A)) values do not take into account any noise attenuation in the room. Vt = 0.2 m/s.

SR 161 series - Steel

SR 161 diffuser

USE

- Diffuser designed for amphitheatres or auditoriums
- Installation in floor, for example under seats
- Swirl jet diffusion ensuring good temperature balance
- Ideal for usage where particular thermal and acoustic comfort are required

CONSTRUCTION

- Painted galvanised steel (standard version)
- Diffusing section made of rough stainless steel on request

FINISH

- Epoxy paint RAL 9005 black 30% matt.

ATTACHMENT

- Use attachment ring suited to floor type
- Install the diffuser in the ring
- If technical floor not airtight, use the plenum proposed as an accessory

ACCESSORIES

- Attachment ring
- Recovery basket
- Damper
- Connection plenum with side connection

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS

SR 161 diffuser

STANDARD DIMENSIONS

DIMENSIONS (MM)	Ø D (MM)	Ø A (MM)	D (MM)	H (MM)
Ø 125	123	198	65	70
Ø 160	158	198	65	70
Ø 225	223	252	70	125

SR 161 series - Steel

STANDARD RANGE

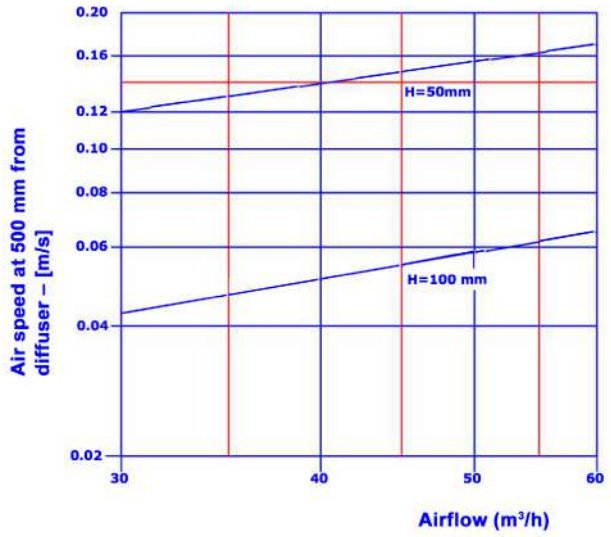
DIMENSIONS (MM)	SR 161 DIFFUSER	ATTACHMENT RING TECHNICAL FLOORS	ATTACHMENT RING CONCRETE FLOOR	RECOVERY BASKET
	CODE	CODE	CODE	CODE
Ø 125	Please contact us	Please contact us	Please contact us	Please contact us
Ø 160	Please contact us	Please contact us	Please contact us	Please contact us
Ø 225	Please contact us	Please contact us	Please contact us	Please contact us

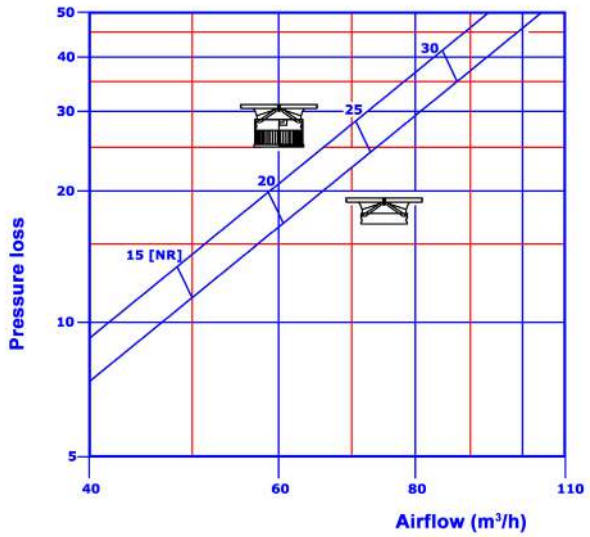
ACCESSORIES PROPOSED

- Damper for recovery basket.

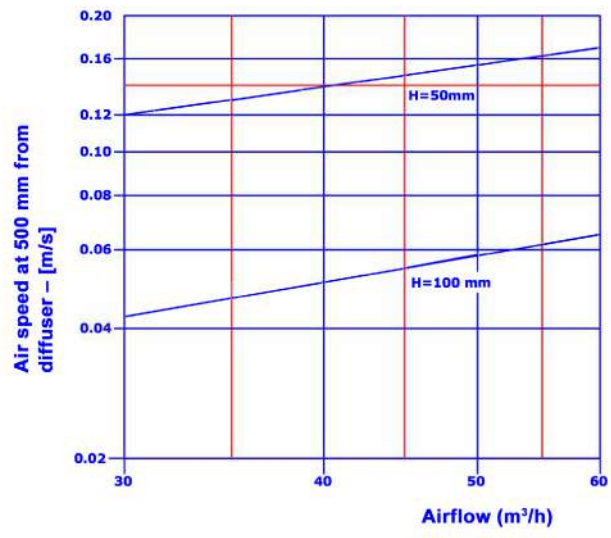
SR 161 series - Air supply selection

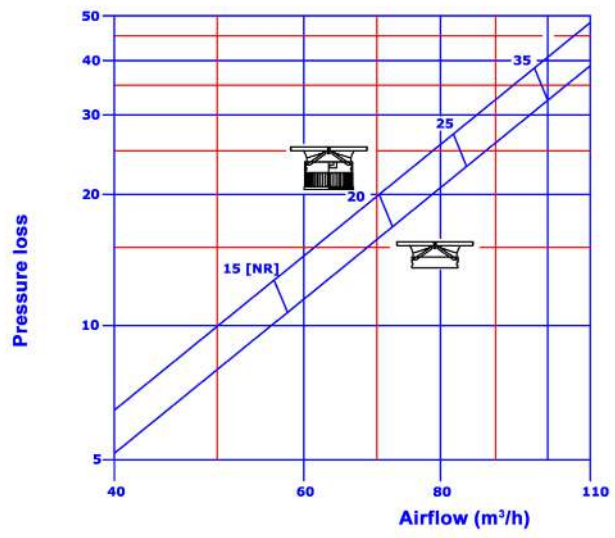
SELECTION Ø 125





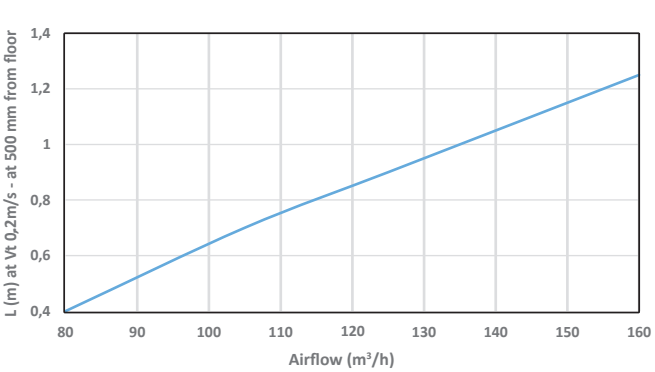
SELECTION Ø 160

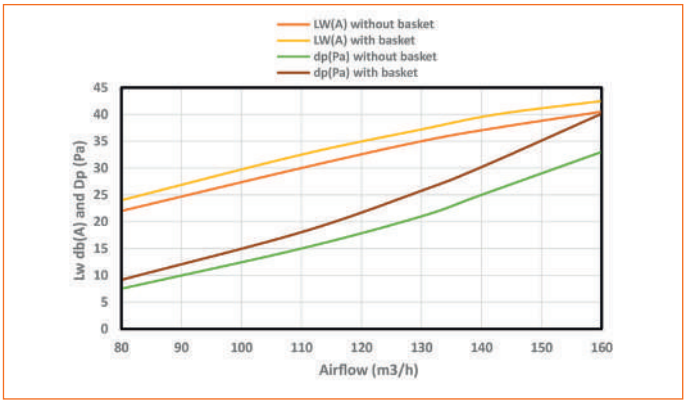




SR 161 diffuser

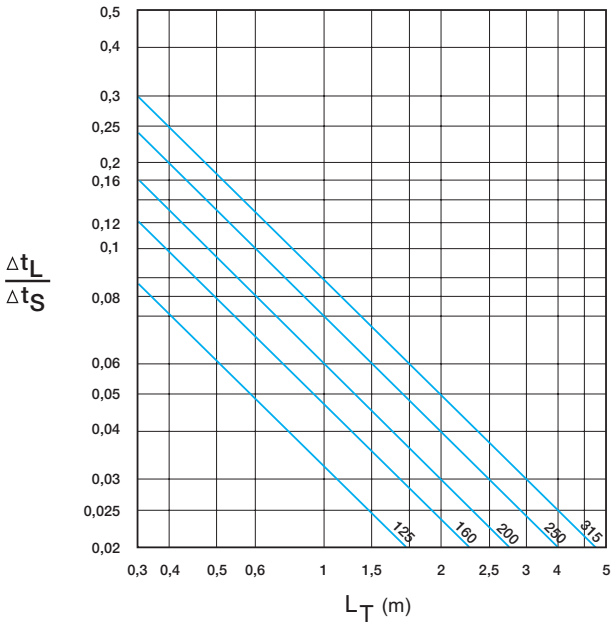
SELECTION Ø 225



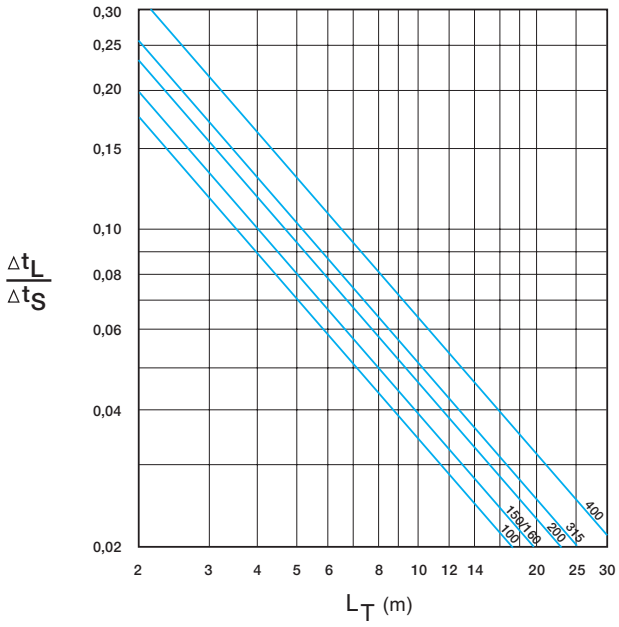


Mixing capacity (TM)

CAPACITY FOR 984 SERIES DIFFUSER



CAPACITY FOR AR190 SERIES DIFFUSER

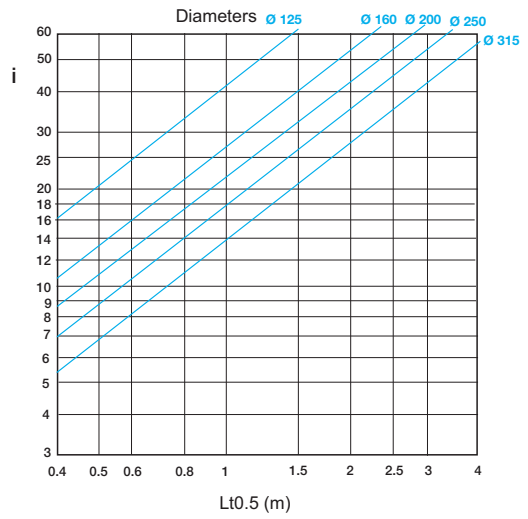


SYMBOLS

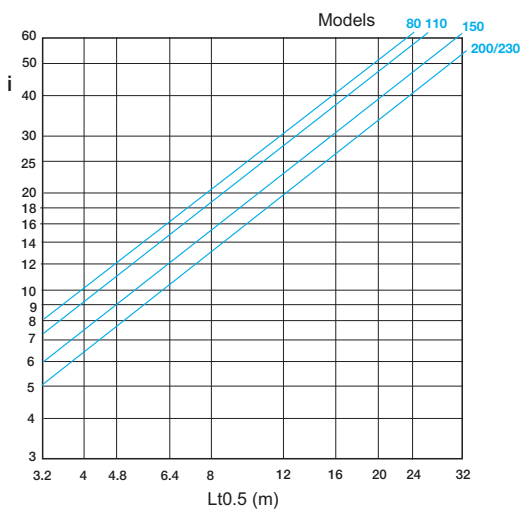
Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
ΔTL (°C)	Difference between temperature at end of throw and ambient temperature (in °C)
ΔTS (°C)	Difference between air supply temperature and ambient temperature (in °C)
TM = ΔTL / ΔTS	Ratio between temperature differences. This value defines the diffuser's capacity to quickly mix new air with the ambient air.
EXAMPLE WITH AIR SUPPLY AT 15°C AND AMBIENT AIR TEMPERATURE OF 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x capacity (°C)

Induction rate (i)

INDUCTION RATE FOR 984 SERIES DIFFUSERS



INDUCTION RATE FOR AR190 SERIES DIFFUSERS



SYMBOLS

Lt 0.5 (m)	Air jet throw at Vt = 0.5 m/s
Q1 (m^3/h)	Primary airflow rate
Q2 (m^3/h)	Airflow induced in room
QL (m^3/h)= Q1 + Q2	Total airflow in movement at end of throw
i = QL / Q1	Induction rate

CONTENTS

AVF 75

AG 639

AG 645

AP 639

AR 637

AVF 75 - ANF 75 - ATO 75 series - Aluminium

AVF 75 damper

ATO 75 damper

USE

- Backdraft dampers. Enable positive or negative pressurisation of an area.
- Wall-mounted indoors (AVF 75 - ANF 75).
- Duct-mounted in ductwork (ATO 75).

CONSTRUCTION

- Frame and vanes made of extruded aluminium.

FINISH

- Vanes: rough aluminium finish.
- Frame: standard anodised aluminium finish with satin aspect.

ATTACHMENT

- Visible attachment with screws in frame.

STANDARD DIMENSIONS

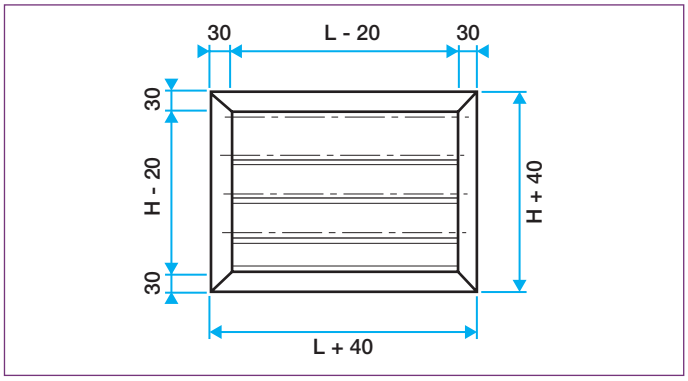
- Sizes up to 1000 x 500 mm

For further information refer to the Range pages below.

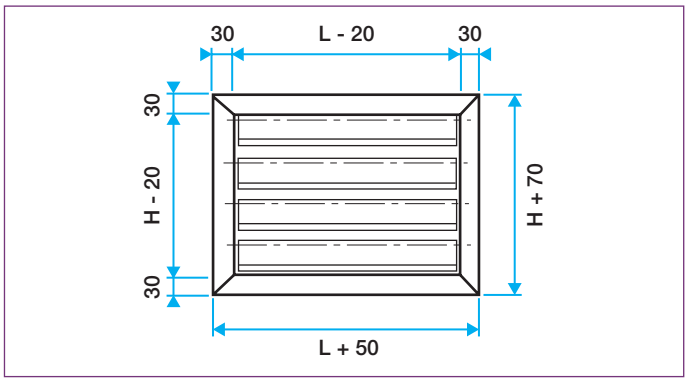
TECHNICAL DETAILS

- See selection tables on following pages.

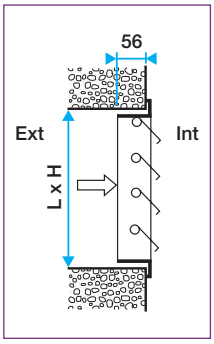
DIMENSIONS



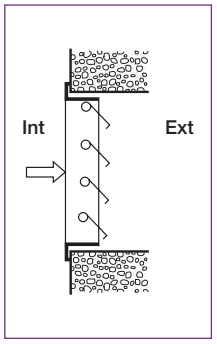
AVF 75 damper



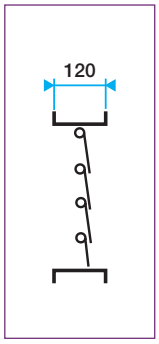
ATO 75 damper



AVF 75 damper
Negative pressure



ANF 75 damper
Positive pressure



ATO 75 damper
Positive or negative pressure for ducts

AU 661 - AG 662 - AG 663 series - Aluminium

AG 662 damper

USE

- Backdraft dampers. Enable positive or negative pressurisation of an area.
- Wall-mounted outside room (AG 662 - AG 663).
- Duct-mounted in ductwork (AU 661).

CONSTRUCTION

- Adjustable vanes made of shaped aluminium, fitted with sealing strip on bottom edge.
- Vanes mounted on nylon spindles and linked together with rods.
- AU 661: U-shaped galvanised steel frame.
- AG 662 and 663: extruded aluminium frame.

FINISH

- Standard rough aluminium finish.
- Epoxy paint finish from RAL colour chart.
  View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: fixed to frame using visible screws.

ACCESSORIES

- K1: counterweight for low pressures.
  Adjustment of K1 facilitates damper opening.
  Not available for H < 400 mm.
- K2: counterweight for high pressures.
  Adjustment of K2 facilitates damper closure.
- K1 + K2: double counterweights for use if dampers mounted horizontally.

STANDARD DIMENSIONS

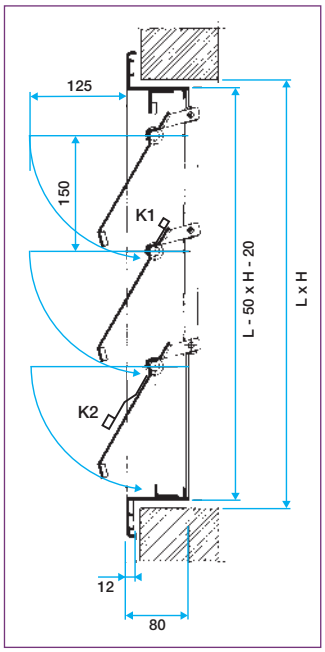
- Dimensions range from 200 x 200 to 1600 x 2000 mm with increments of 25 mm in width & 150 mm in height.

For further information refer to the Range pages below.

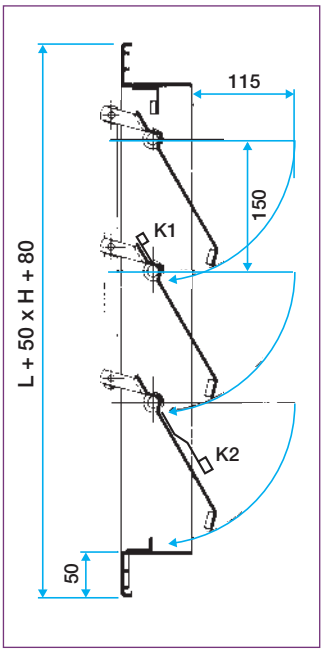
TECHNICAL DETAILS

- See diagram and selection tables on following pages.

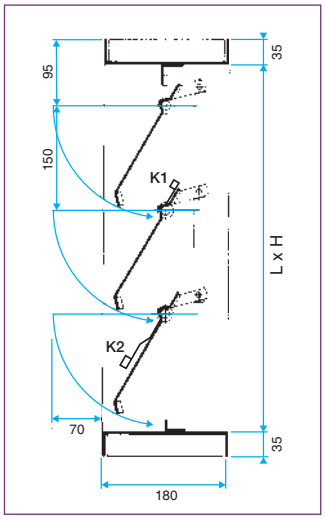
DIMENSIONS



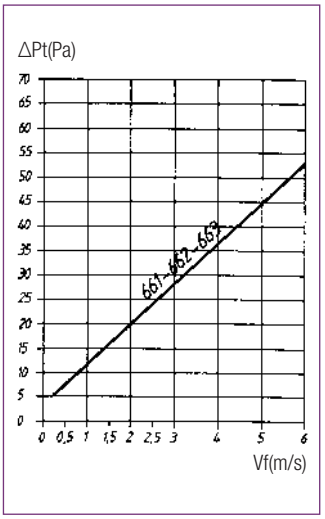
AG 663 - overpressure damper



AG 662 - negative pressure damper



AU 661 - duct damper



Pressure drops according to frontal speed Vf

75 - 661 - 662 - 663 series

STANDARD RANGE

DIMENSIONS (MM)	AVF 75 AIR INLET	ATO 75 DUCT	ANF 75 AIR OUTLET
	CODE	CODE	CODE
300 x 200	11051705		11051718
400 x 200	11051706		11051719
300 x 300	11051707		11051720
400 x 400	11051708		11051721
600 x 400	11051709	11051735	11051722
800 x 400	11051710	11051736	11051723
500 x 500	11051711	11051737	11051724
800 x 500	11051712	11051738	11051725
1000 x 500	11051713	11051739	11051726

ATTACHMENT	FINISH
• Visible with screws in frame.	• Anodised aluminium, natural satin hue.

RANGE WITH CHOICE OF OPTIONS

SHUTTER	CODE
AU 661	11002494
AG 663	11002496
AG 662	11002488

OPERATIONAL DIMENSIONS

H/W (MM)	300	400	500	600	800	1000	1200	1400	1600
200	•	•	x	x	x	x	x	x	x
300	•	x	x	x	x	x	x	x	x
400	x	•	x	•	•	x	x	x	x
500	x	x	•	x	•	•	x	x	x
600	x	x	x	x	x	x	x	x	x
800	x	x	x	x	x	x	x	x	x
1000	x	x	x	x	x	x	x	x	x
1200	x	x	x	x	x	x	x	x	x
1400	x	x	x	x	x	x	x	x	x
1600	x	x	x	x	x	x	x	x	x

• Dimensions of standard range.

AVAILABLE OPTIONS

ATTACHMENT	ACCESSORIES (660 SERIES)	FINISH
• F0: none • F1: visible attachment with screws in frame.	• K1 counterweight. • K2 counterweight. • K1 + K2 counterweight.	• Anodised with natural satin hue. • Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

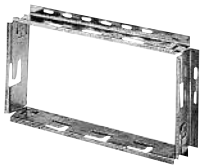
SELECTION - POSITIVE PRESSURE OR NEGATIVE PRESSURE

AK (M^2)	L X H (MM)	Qv (M^3/H)															
		250		500		750		1000		1500		2000		3000		5000		7500		10000	
-	300 x 200	-	-	-	-	-	-													-	-
		1.2	13	2.7	22	3.5	29													Vc	Pa
-	300 x 300			-	-	-	-	-	-												
	400 x 200			1.5	16	2.3	22	3.1	26												
-	400 x 400					-	-	-	-	-	-	-	-	-	-						
						1.3	14	1.7	18	2.6	24	3.5	29	5.2	42						
-	600 x 400							-	-	-	-	-	-	-	-						
	500 x 500							1.2	13	1.7	18	2.3	22	3.5	28						
-	800 x 400									-	-	-	-	-	-	-	-				
										1.2	13	1.5	16	2.3	22	3.9	29				
-	800 x 500													-	-	-	-	-	-		
														1.7	18	2.9	24	4.3	34		
-	1000 x 500	-	-													-	-	-	-	-	-
		Vc	Pa													2.2	22	3.3	27	4.3	34

Vc = Speed in duct (m/s).

AWA 251 series - Aluminium - Small dimensions

AWA 251 terminal



F4 mounting frame

USE

- Fresh air inlet or exhaust air outlet.
- Wall-mounted.

CONSTRUCTION

- Extruded aluminium frame with extruded aluminium horizontal rain-guard vanes, 45° incline.
- Vane pitch 25 mm
- Interior section with protective square-mesh galvanised steel screen 12 x 12 mm, Ø 1.2 mm (stainless steel on request).
- Optional anti-insect screen (square mesh 1 x 1 x Ø 0.4 mm).
- Bottom vane positioned to help water run-off.

FINISH

- Anodised aluminium finish, natural satin hue.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Visible attachment with screws in frame (pre-drilled).

ACCESSORIES

- F4: galvanised steel mounting frame.
- Galvanised steel plate MT F3 connection plenum with rear connection.

For more information, see pages 98 and 100.

STANDARD DIMENSIONS

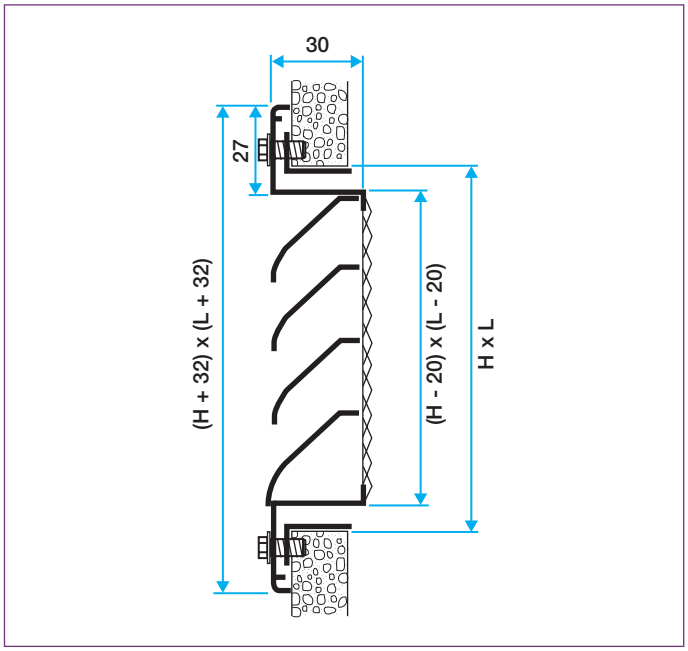
- Dimensions range from 200 x 75 to 1200 x 1200 mm with increments of 25 mm in width & height.

For further information refer to the Range pages below.

TECHNICAL DETAILS

- See selection tables on following pages.

DIMENSIONS



AWA 251 terminal with F4 mounting frame

AWA 251 Series

STANDARD RANGE

DIMENSIONS (MM)	AWA 251 SERIES CODE
100 x 500	11052026
100 x 800	11052074
150 x 300	11052028
150 x 900	11052082
150 x 1000	11052083
200 x 200	11052032
200 x 300	11052033
200 x 400	11052034
200 x 500	11052035
250 x 250	11052090
250 x 900	11052099
300 x 300	11052039
300 x 400	11052040
300 x 500	11052041
300 x 600	11052042
350 x 200	11052132
350 x 350	11052135

DIMENSIONS (MM)	AWA 251 SERIES CODE
350 x 800	11052141
350 x 900	11052142
400 x 400	11052045
400 x 500	11052046
400 x 600	11052047
400 x 800	11052049
450 x 450	11052154
450 x 700	11052157
500 x 500	11052052
500 x 600	11052064
500 x 700	11052065
500 x 800	11052066
500 x 1000	11052068
600 x 600	11052167
700 x 700	11052173
700 x 900	11052175
800 x 800	11052179

RANGE WITH CHOICE OF OPTIONS

TERMINAL	CODE	MOUNTING FRAME	CODE
AWA 251	11002504	F4	11003001

OPERATIONAL DIMENSIONS

H / L (mm)	200	250	300	350	400	450	500	600	700	800	900	1000
100	•	•	•	•	•	•	•	•	•	•	•	•
150	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•	•	•	•	•
350	•	•	•	•	•	•	•	•	•	•	•	•
400	•	•	•	•	•	•	•	•	•	•	•	•
450	•	•	•	•	•	•	•	•	•	•	•	•
500	x	x	x	x	x	x	•	•	•	•	•	•
600	x	x	x	x	x	x	x	•	•	•	•	•
700	x	x	x	x	x	x	x	•	•	•	•	•
800	x	x	x	x	x	x	x	•	•	•	•	•

• Dimensions of standard range.

AVAILABLE OPTIONS

ATTACHMENT	SCREEN	FINISH
• F0: none • F1: visible attachment with screws in frame (pre-drilled).	• Galvanised protective screen (as standard). • Stainless steel protective screen. • Galvanised steel anti-insect screen.	• Anodised with natural satin hue • Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

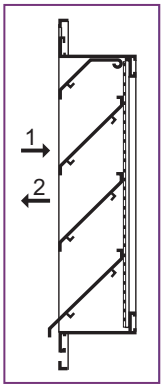
ACCESSORY PROPOSED

• F4 mounting frame.

251 series

SELECTION - AIR INLET AND OUTLET

Af (M²)	L X H (MM)	Qv (M³/H) 250		500		750		1000		1500		2000		2500		3000		3500		4000		5000		6000		7000		8000	
0.010	200 x 100	38	88																									Lw	Pa1
		7	68																									Vf	Pa2
0.015	300 x 100	25	36	49	156																								
0.017	200 x 150	4.6	30	9.2	120																								
0.020	400 x 100	-	22	39	80																								
	200 x 200	3.5	17	6.9	60																								
0.025	500 x 100	-	14	31	51	47	15																						
	300 x 150	2.8	11	5.5	38	8.3	86																						
0.033	400 x 150	-	10	26	39	42	90																						
	300 x 200	2.4	8	4.6	29	7.1	70																						
0.040	500 x 150			-	22	31	51	43	91																				
	400 x 200			3.5	16	5.3	39	7.1	69																				
0.050	600 x 150 - 500 x 150			-	13	-	34	36	65	49	120																		
	300 x 300			2.7	10	4.3	25	6	50	8.1	90																		
0.070	600 x 200					-	19	28	37	41	68																		
	400 x 300					3.2	14	4.5	28	6.1	51																		
0.080	700 x 200					-	13	-	26	38	55	48	118																
						2.7	18	3.7	20	5.6	43	7.5	89																
0.090	800 x 200 - 500 x 300					25	10	-	20	34	42	44	80	45	125	57	160												
	400 x 400					2.4	8	3.2	15	4.9	33	6.6	60	8.3	94	9.5	130												
0.100	600 x 300							-	16	32	33	41	63	50	98	54	126												
								2.8	12	4.4	26	5.9	47	7.4	73	8.4	102												
0.120	500 x 400							-	10	28	27	38	51	44	80	50	102												
								2.6	8	3.9	21	5.3	38	6.6	59	7.6	83												
0.125	700 x 300									27	24	35	46	43	72	49	93												
										3.7	19	5	35	6.3	55	7.3	76												
0.140	600 x 400									-	16	28	29	35	45	42	65	46	89	51	116								
	800 x 300									3	12	4	22	5	34	5.7	43	6.7	59	7.7	77								
0.150	500 x 500									-	15	27	27	34	42	39	60	44	82	49	107								
										2.9	11	3.8	20	4.8	31	5.5	40	6.4	54	7.3	71								
0.160	700 x 400											26	16	30	25	36	48	41	65	44	85								
												3.4	14	4.3	22	4.9	32	5.7	44	6.5	58								
0.180	600 x 500											26	14	29	22	34	42	39	57	43	74	53	116						
												3.2	12	4	19	4.6	28	5.4	38	6.2	50	7.8	78						
0.190	800 x 400											-	12	28	17	32	32	36	44	42	58	49	91						
												3	11	3.8	15	4.3	21	5	299	5.7	38	7.1	59						
0.210	900 x 400											-	11	-	16	29	26	35	35	39	46	47	72						
	700 x 500											2.8	10	3.5	15	4	19	4.7	26	5.4	34	6.8	53						
0.220	600 x 600											-	10	-	15	30	26	32	30	32	33	39	52						
												2.5	9	3.2	13	3.8	19	4.0	21	4.2	24	5.3	38						
0.240	1000 x 400											-	11	-	15	-	23	32	31	38	41	46	70						
	800 x 500											2.5	9	3.1	12	3.6	17	4.2	23	4.8	30	6.2	50						
0.260	700 x 600											-	9	-	14	-	22	32	30	38	40	46	70						
	600 x 700											2.1	8	2.7	11	3.2	15	3.9	21	4.3	29	5.3	50						
0.270	900 x 500													-	12	-	18	-	25	29	25	35	36						
														2.8	10	3.2	13	3.7	18	3.8	18	4.5	28						
0.295	600 x 800 - 800 x 600													-	11	-	16	-	23	30	28	42	44						
	700 x 700													2.4	10	2.9	11	3.3	16	3.8	20	4.8	31						
0.300	1000 x 500															-	14	-	19	40	46	48	72						
																2.8	10	3.3	14	5.1	34	6.3	53						
0.340	700 x 800 - 800 x 700															-	11	-	16	-	20	40	35	44	45	47	60		
	900 x 600															2.5	8	2.9	11	3.3	15	4.3	25	5	35	5.9	45		
0.360	1000 x 600															-	12	-	14	-	18	36	30	40	40	44	56		
																2.4	9	2.7	10	3.2	14	4	23	4.8	31	5.7	43		
0.390	900 x 700																			-	15	32	22	38	35	43	45		
	800 x 800																			2.9	8	3.5	17	4.4	27	5	35		
0.440	1000 x 700																			-	13	28	20	35	30	39	36	42	50
	900 x 800																			2.6	10	3.4	15	4	23	4.5	28	5.2	39
0.480	1000 x 800	Lw	Pa1																	-	9	-	15	33	23	36	30	38	39
		Vf	Pa2																	2.3	7	2.9	12	3.5	18	4	23	4.6	30



The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Pa1 (Pa) = pressure drop on air inlet
Pa2 (Pa) = pressure drop on outlet

Af (m²) = frontal surface
Vf (m/s) = frontal speed

AG 638 series - Aluminium

AG 638 terminal

AG 638 terminal
with F10 mounting frame

USE

- Fresh air inlet or exhaust air outlet.
- Mounted on an exterior wall.
- Rain hood function.

CONSTRUCTION

- Extruded aluminium frame with extruded aluminium horizontal rain-guard vanes, 45° incline.
- Vane pitch 40 mm.
- Interior section with protective square 12 x 12 mesh screen, Ø 1.2 mm galvanised steel.

FINISH

- Anodised aluminium with a natural tint.
- Optional epoxy paint (as per RAL colour chart).

ATTACHMENT

- F1: directly fixed to wall, held in place by screws in the pre-drilled outer frame.
- F2: directly fixed to wall using sealing brackets.
- CC: Suitable for use with F10 mounting frame (pre-drilled outer frame). Supplied without mounting frame.
- CCM: supplied with fitted F10 mounting frame (screws supplied).

ACCESSORIES

- F10: galvanised steel mounting frame fitted with sealing brackets.
- Stainless steel anti-bird screens.
- Optional anti-insect screen (square mesh 1 x 1 x Ø 0.4 mm).

M1 fire protection rating.

STANDARD DIMENSIONS

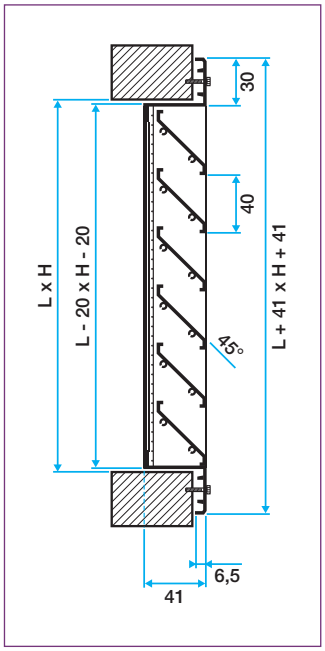
- Dimensions range from 200 x 200 to 1200 x 1200 mm with increments of 100 mm in width & height.

For further information refer to the Range pages below.

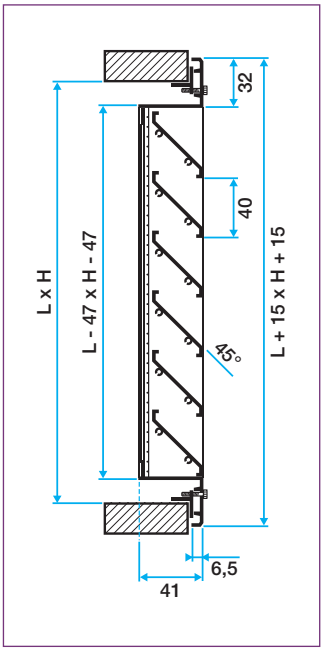
TECHNICAL DETAILS

- See selection tables on the following pages.
- See free surface areas on the following pages.

DIMENSIONS

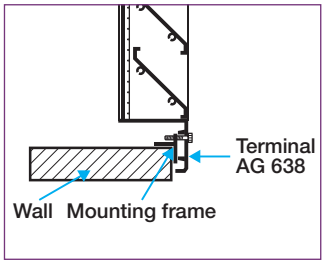


AG 638 terminal



AG 638 terminal with F10 mounting frame

DETAILS OF F10 ATTACHMENT METHOD



AG 639 series - Aluminium

AG 639 terminal

F10 mounting frame

USE

- Fresh air inlet or exhaust air outlet.
- Wall-mounted.
- Rain hood function.

CONSTRUCTION

- Extruded aluminium frame with extruded aluminium horizontal rain-guard vanes, 45° incline.
- Vane pitch 100 mm.
- Interior section with protective square 12 x 12 mesh screen, Ø 1.2 mm galvanised steel.

FINISH

- Rough aluminium finish.
- Optional epoxy paint (as per RAL colour chart).

ATTACHMENT

- F1: directly fixed to wall, held in place by screws in the pre-drilled outer frame.
- F2: directly fixed to wall using sealing brackets.
- CC: Suitable for use with F10 mounting frame (pre-drilled outer frame). Supplied without mounting frame.
- CCM: supplied with fitted F10 mounting frame (screws supplied).

ACCESSORIES

- F10 galvanised steel mounting frame, fitted with sealing brackets.
- Stainless steel anti-bird screens.
- Optional galvanised anti-insect screen (square mesh 1 x 1 x Ø 0.4 mm).

STANDARD DIMENSIONS

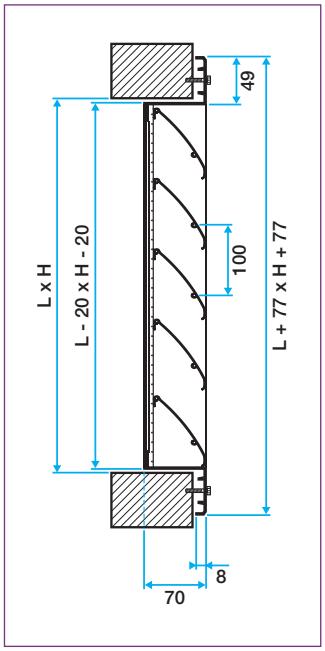
- Dimensions range from 600 x 600 to 2000 x 2000 mm with increments of 100 mm in width & height.

For further information refer to the Range pages below.

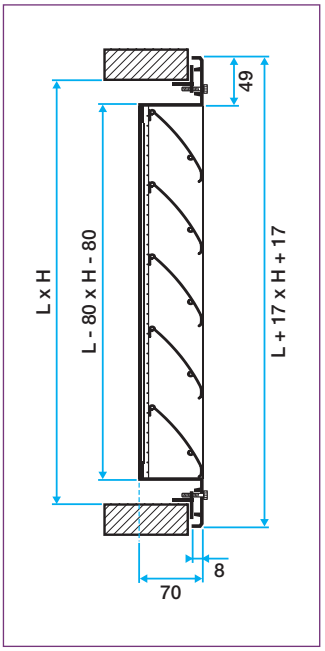
TECHNICAL DETAILS

- See selection tables on the following pages.
- See free surface areas on the following pages.

DIMENSIONS

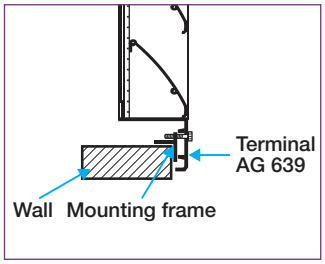


AG 639 terminal



AG 639 terminal with F10 mounting frame

DETAILS OF F10 ATTACHMENT METHOD



AG 638 - AG 639 Series - Attachment

F1 ATTACHMENT METHOD

Installation without a mounting frame. The terminal is attached directly to the stonework using screws through the outer frame (see tables below). Screws are not supplied.

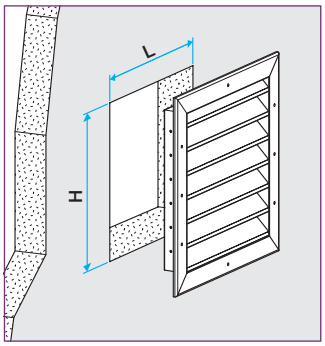
AG 638 SERIES - POSITION

H (MM)	L (MM)							
	200	300	400	500	600	800	1000	1200
200				E			F	
300								
400								
500				A			B	
600								
800								
1000				D			C	
1200								

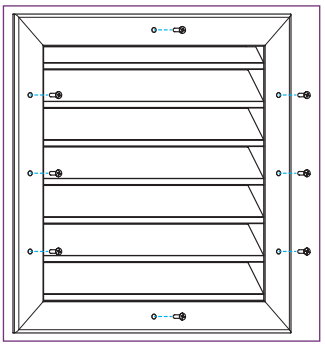
AG 639 SERIES - POSITION

H (MM)	L (MM)							
	600	800	1000	1200	1400	1600	1800	2000
600								
800		A				B		
1000								
1200								
1400								
1600		D				C		
1800								
2000								

INSTALLATION

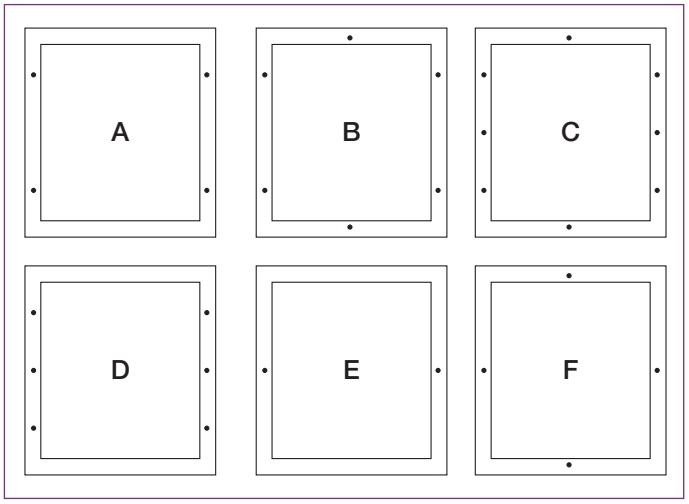


Position the terminal in front of the opening



Screw the terminal onto the stonework. The holes have been pre-drilled. The number of screws depends on the size of terminal (see tables below)

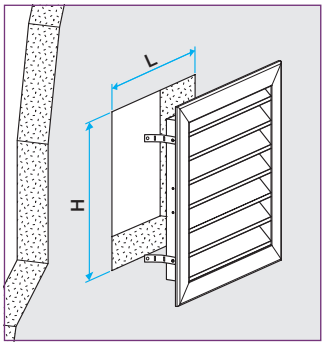
POSITIONING OF MOUNTS



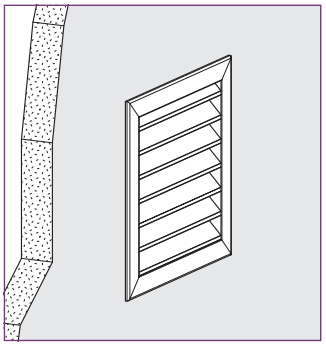
F2 ATTACHMENT METHOD

Installation without a mounting frame. Terminal held in place by sealing brackets. There are four of these brackets for the whole AG 638 - AG 639 range.

INSTALLATION



Position the terminal in front of the opening



Seal into the wall. This type of attachment method has the advantage of being invisible and also prevents damage to the exterior stonework

AG 638 - AG 639 Series - Attachment

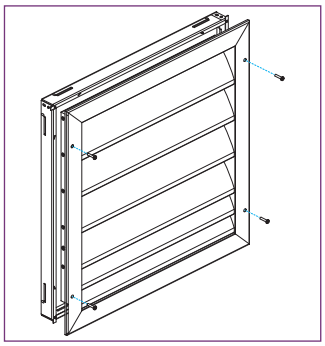
CCM ATTACHMENT

Installation using mounting frame. The mounting frame is fitted into the opening then the terminal is screwed onto it. Screws are supplied to assemble the mounting frame and terminal. The terminal and frame are supplied pre-assembled.

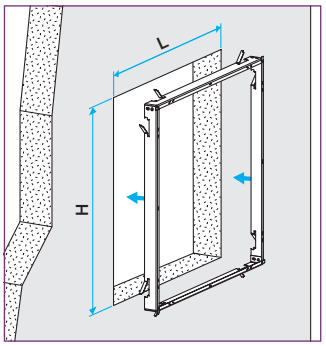
CC ATTACHMENT

Installation using mounting frame. Identical installation process to that used for the CCM attachment method. The terminal and frame are supplied separately. The screws used to attach the terminal to the mounting frame are supplied. See CCM attachment method for the steps of the installation process.

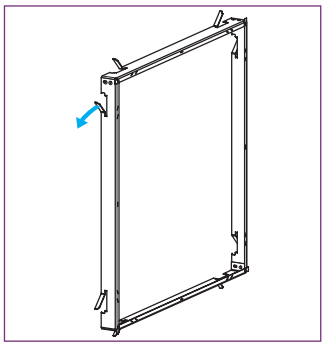
INSTALLATION



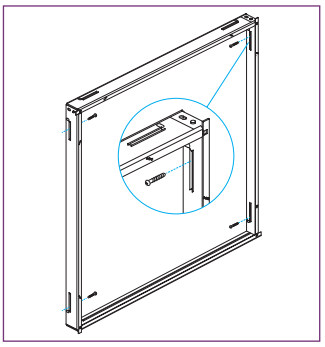
Unscrew the terminal from the mounting frame



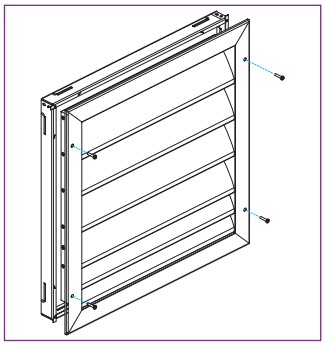
Fit the mounting frame in place



Option 1: Mortar seal: use and cut out the mounting frame brackets (up to 8 brackets per frame)



Option 2: Screw-fit: directly into the stonework (screws not supplied)



Screw the terminal onto the mounting frame (screws supplied - see tables on previous page)

AG 638 - AG 639 Series

STANDARD RANGE

DIMENSIONS (MM)	AG 638 TERMINAL F1 CODE	AG 639 TERMINAL F1 CODE
200 x 200	11052011	-
300 x 300	11052012	-
400 x 400	11052013	-
500 x 500	11052014	-
600 x 600	11052015	11052283
800 x 800	-	11052286
1000 x 1000	-	11052288

RANGE WITH CHOICE OF OPTIONS

TERMINAL	CODE	MOUNTING FRAME	CODE
AG 638	11003254	F10	11003259
AG 639	11003255	F10	11003259

OPERATIONAL DIMENSIONS AG 638

H / L (MM)	AG 638 TERMINAL ARTICLE CODE 11003254							
	200	300	400	500	600	800	1000	1200
200	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•
400	•	•	•	•	•	•	•	•
500	•	•	•	•	•	•	•	•
600	•	•	•	•	•	•	•	•
800	•	•	•	•	•	•	•	•
1000	•	•	•	•	•	•	•	•
1200	•	•	•	•	•	•	•	•

OPERATIONAL DIMENSIONS AG 639

H / L (MM)	AG 639 TERMINAL ARTICLE CODE 11003255							
	600	800	1000	1200	1400	1600	1800	2000
600	•	•	•	•	•	•	•	•
800	•	•	•	•	•	•	•	•
1000	•	•	•	•	•	•	•	•
1200	•	•	•	•	•	•	•	•
1400	•	•	•	•	•	•	•	•
1600	•	•	•	•	•	•	•	•
1800	•	•	•	•	•	•	•	•
2000	•	•	•	•	•	•	•	•

DIMENSIONS WITH F10 FRAME

H / L (MM)	F10 MOUNTING FRAME - CODE 11003259											
	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
200	•	•	•	•	•	•	•	•	-	-	-	-
300	•	•	•	•	•	•	•	•	-	-	-	-
400	•	•	•	•	•	•	•	•	-	-	-	-
500	•	•	•	•	•	•	•	•	-	-	-	-
600	•	•	•	•	•	•	•	•	•	•	•	•
800	•	•	•	•	•	•	•	•	•	•	•	•
1000	•	•	•	•	•	•	•	•	•	•	•	•
1200	•	•	•	•	•	•	•	•	•	•	•	•
1400	•	•	•	•	•	•	•	•	•	•	•	•
1600	•	•	•	•	•	•	•	•	•	•	•	•
1800	•	•	•	•	•	•	•	•	•	•	•	•
2000	•	•	•	•	•	•	•	•	•	•	•	•

AVAILABLE OPTIONS

ATTACHMENT	SCREEN	FINISH
F1: directly attached to wall, held in place by screws in the pre-drilled outer frame.	Stainless steel protective screen.	Rough aluminium (AG 639 only).
F2: directly attached to wall using sealing brackets.	Galvanised steel anti-insect screen.	Natural anodised finish (AG 638 only).
CC: Suitable for use with F10 mounting frame (pre-drilled outer frame). Supplied without mounting frame.		Epoxy paint as per RAL colour chart.
CCM: supplied with fitted F10 mounting frame (screws supplied).		

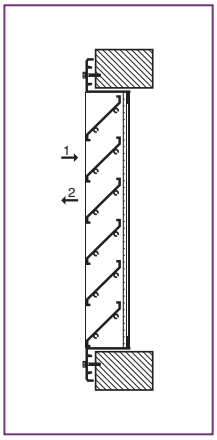
RANGE OF ACCESSORIES FOR AG 638 - AG 639

- F10 mounting frame.

AG 638 Series

SELECTION - AIR INLET AND OUTLET

Al (m²)	W x H (mm)	Airflow (m³/h)																	
		200		400		600		800		1000		1500		2000		2500		3000		4000		5000	
0.02	200 x 200	32	23																				
		30	19																				
0.046	400 x 200	25	25	35	33	46	44	55	53														
		6	5	24	20	54	45	94	80														
0.072	600 x 200			25	25	35	33	43	41	50	48												
				10	8	21	17	37	36	58	49												
0.097	800 x 200			25	25	27	25	35	33	42	40	54	52										
				5	4	11	9	20	16	31	26	69	58										
0.123	1000 x 200			25	25	25	25	31	29	38	36	50	48										
				4	3	8	7	14	12	22	18	50	41										
0.148	1200 x 200							26	25	33	31	44	42	53	51								
								10	8	15	12	33	27	58	49								
0.118	400 x 400					25	25	31	29	38	36	50	48										
						8	7	14	12	22	18	50	46										
0.184	600 x 400							25	25	27	25	39	37	47	45	54	52						
								6	5	10	8	21	17	37	31	58	49						
0.249	800 x 400									25	25	32	31	41	39	47	45	53	51				
										6	5	13	10	22	18	35	29	50	41				
0.315	1000 x 400													32	30	39	37	44	42	57	55		
														12	10	23	17	38	25	51	42		
0.38	1200 x 400											25	25	30	28	37	35	42	40	51	49	57	55
												5	4	10	8	15	12	21	17	37	31	58	49
0.296	600 x 600											28	26	37	35	43	41	48	46	57	55		
												9	7	16	13	25	20	35	29	62	52		
0.401	800 x 600													29	27	36	34	41	39	49	47	56	54
														9	7	13	11	19	16	34	28	53	44
0.507	1000 x 600															30	28	35	33	44	42	50	48
																9	7	12	10	19	18	33	28
0.612	1200 x 600																	31	29	39	37	46	44
																		9	7	15	12	24	20
0.262	400 x 800									25	25	31	29	39	37	46	44	51	49				
										9	4	11	9	19	16	30	25	43	36				
0.408	600 x 800											25	25	29	27	35	33	40	38	49	47	55	53
												5	4	8	7	13	10	18	15	32	27	50	42
0.553	800 x 800													25	25	28	26	34	32	42	40	49	46
														5	4	7	6	11	9	19	15	29	24
0.699	1000 x 800															25	25	28	26	36	34	42	40
																5	4	7	5	11	9	18	15
0.844	1200 x 800																	25	25	32	30	38	36
																		5	4	8	7	13	10
0.334	400 x 1000											25	25	34	32	40	38	45	43	56	54		
												7	6	12	10	19	16	28	23	49	41		
0.52	600 x 1000																	35	33	43	41	55	53
																		12	10	21	17	24	27
0.705	800 x 1000																	28	26	36	34	42	40
																		7	5	11	9	18	15
0.891	1000 x 1000																	25	25	30	28	36	34
																		4	3	7	6	11	9
1.076	1200 x 1000																			25	25	32	30
																				3	2	8	6
0.406	400 x 1200													30	28	35	33	40	38	49	47		
														8	7	13	10	18	15	32	27		
0.632	600 x 1200															25	25	30	28	38	36	45	43
																6	4	8	6	14	11	22	18
0.857	800 x 1200																	25	25	31	29	37	35
																		4	4	8	6	12	10
1.083	1000 x 1200																			25	25	32	30
																				5	4	8	6
1.308	1200 x 1200	Lw1	Lw2																	25	25	28	26
		ΔP1	ΔP2																	3	3	5	4

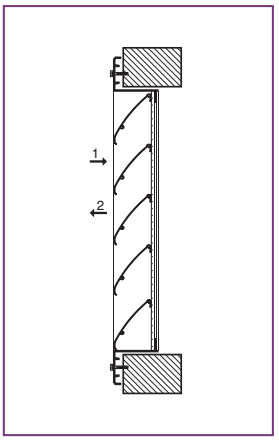


The values Lw1 and Lw2 (in dB(A)) do not take into account any noise attenuation in the room.
ΔP 1 (Pa) = pressure drop on air inlet.
ΔP 2 (Pa) = pressure drop on air outlet
Al (m²) = free surface area

AG 639 Series

SELECTION - AIR INLET AND OUTLET

Al (m²)	W x H (mm)	Airflow (m³/h)															
		1000		1500		2000		3000		5000		7000		9000		12000	15000
0.26	600 x 600	30	19	41	33	48	42										
		8	8	19	17	32	30										
0.35	800 x 600	23	12	34	25	41	34	52	47								
		4	4	10	9	18	16	40	37								
0.44	1000 x 600	18	6	29	19	36	28	47	41								
		3	3	6	6	11	10	25	23								
0.53	1200 x 600			25	14	32	23	43	36	57	53						
				4	4	8	7	17	16	48	44						
0.63	1400 x 600			21	10	29	19	40	32	54	48						
				3	3	6	5	13	12	35	32						
0.72	1600 x 600			18	6	26	15	37	28	51	45	60	56				
				2	2	4	4	10	9	27	24	52	48				
0.81	1800 x 600			16	3	23	12	35	25	49	42	58	52				
				2	2	3	3	8	7	21	19	41	37				
0.9	2000 x 600					21	10	32	23	47	39	56	49				
						3	2	6	6	17	15	33	30				
0.5	800 x 800	15	2	26	15	34	25	44	38	58	54						
		2	2	5	4	9	8	20	18	54	50						
0.63	1000 x 800			21	9	29	19	40	32	53	48						
				3	3	5	5	12	11	34	31						
0.77	1200 x 800			17	5	25	14	36	27	50	43	59	54				
				2	2	4	3	8	8	23	21	46	42				
0.9	1400 x 800					21	10	32	23	47	39	56	50				
						3	2	6	6	17	16	33	31				
1.03	1600 x 800					18	6	30	19	44	35	53	46	60	54		
						2	2	5	4	13	12	25	23	42	38		
1.16	1800 x 800							27	16	42	32	51	43	58	51		
								4	3	10	9	20	18	33	30		
1.29	2000 x 800							25	13	39	29	49	40	56	48		
								3	3	8	7	16	15	26	24		
0.83	1000 x 1000			15	3	23	12	34	25	48	41	58	52				
				2	2	3	3	7	7	20	18	39	36				
1	1200 x 1000					19	7	30	20	45	36	54	47	61	55		
						2	2	5	5	14	13	27	25	44	41		
1.17	1400 x 1000					16	3	27	16	41	32	51	43	58	51		
						2	1	4	3	10	9	20	18	32	30		
1.34	1600 x 1000							24	12	39	28	48	39	55	47		
								3	3	8	7	15	14	25	23		
1.51	1800 x 1000							22	9	36	25	46	36	53	44	61	53
								2	2	6	5	12	11	19	18	34	32
1.69	2000 x 1000							19	6	34	22	44	33	51	41	59	50
								2	2	5	4	9	9	16	14	28	25
1.02	1000 x 1200					19	6	30	19	44	36	54	46	61	54		
						2	2	5	4	13	12	26	24	43	39		
1.23	1200 x 1200							26	14	40	31	50	41	57	49		
								3	3	9	8	18	16	29	27		
1.44	1400 x 1200							23	10	37	26	47	37	54	45	62	54
								2	2	7	6	13	12	21	20	38	35
1.65	1600 x 1200							20	7	35	23	44	33	51	41	60	50
								2	2	5	5	10	9	16	15	29	26
1.87	1800 x 1200	Lw1	Lw2							32	20	42	30	49	38	58	47	64	54
		ΔP1	ΔP2							4	4	8	7	13	12	23	21	35	32

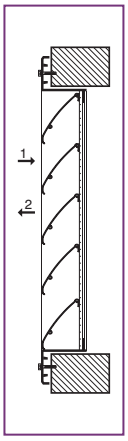


The values Lw1 and Lw2 (in dB(A)) do not take into account any noise attenuation in the room.
ΔP 1 (Pa) = pressure drop on air inlet
ΔP 2 (Pa) = pressure drop on air outlet
Al (m²) = free surface area

AG 639 series

SELECTION - AIR INLET AND OUTLET

Al (m²)	W x H (mm)	Airflow (m³/h)																	
		3000		5000		7000		9000		12000		15000		18000		20000		25000	
2.1	2000 x 1200			30	17	40	27	47	35	56	44	62	51						
				3	3	6	6	10	9	18	17	28	26						
1.71	1400 x 1400	19	6	34	22	44	32	51	40	59	49								
		2	2	5	4	9	8	15	14	27	25								
1.97	1600 x 1400			31	18	41	29	48	37	57	46	63	53						
				4	3	7	6	11	11	20	10	32	29						
2.22	1800 x 1400			29	15	39	26	46	33	54	42	61	49	66	55				
				3	3	5	5	9	8	16	15	25	23	36	33				
2.47	2000 x 1400			27	12	37	23	44	30	52	39	59	46	64	52	68	55		
				2	2	4	4	7	7	13	12	20	19	29	27	36	33		
1.69	1200 x 1600	19	6	34	22	44	33	51	41	59	50								
		2	2	5	4	9	9	15	14	27	25								
1.99	1400 x 1600			31	18	41	28	48	36	56	45	63	52						
				3	3	7	6	11	10	20	18	31	29						
2.28	1600 x 1600			28	14	38	25	45	33	54	42	60	49	66	54				
				3	2	5	5	9	8	15	14	24	22	34	31				
2.57	1800 x 1600			26	11	36	22	43	29	52	38	58	45	64	51	67	54		
				2	2	4	4	7	6	12	11	19	17	27	25	33	30		
2.86	2000 x 1600			24	8	34	19	41	27	50	35	56	42	62	48	65	51		
				2	2	3	3	5	5	10w	9	15	14	22	20	27	24		
1.93	1200 x 1800			32	19	41	29	49	37	57	46	63	53						
				4	3	7	7	12	11	21	19	33	30						
2.26	1400 x 1800			28	15	38	25	46	33	54	42	61	49	66	55				
				3	2	5	5	9	8	15	14	24	22	35	32				
2.59	1600 x 1800			26	11	36	21	43	29	52	38	58	45	64	51	67	54		
				2	2	4	4	7	6	12	11	18	17	26	24	33	30		
2.92	1800 x 1800					33	18	41	26	49	35	56	42	61	48	65	51		
						3	3	5	5	9	8	14	13	21	19	26	24		
3.25	2000 x 1800					31	15	39	23	47	32	54	39	60	45	63	48	69	55
						3	2	4	4	7	7	12	11	17	15	21	19	32	30
2.16	1200 x 2000			29	16	39	26	46	32	55	43	61	50						
				3	3	6	5	10	9	17	16	26	24						
2.53	1400 x 2000			26	12	36	22	44	30	52	39	59	46	64	51	67	55		
				2	2	4	4	7	6	12	11	19	18	28	25	34	31		
2.9	1600 x 2000			23	8	33	18	41	26	50	35	56	42	62	48	65	51		
				2	1	3	3	5	5	9	9	15	13	21	19	26	24		
3.27	1800 x 2000			21	5	31	15	39	23	47	32	54	39	59	44	63	48	69	55
				1	1	2	2	4	4	7	7	11	11	17	15	20	19	32	29
3.65	2000 x 2000	Lw1	Lw2	19	2	29	12	37	20	45	29	52	36	58	41	61	45	68	52
		ΔP1	ΔP2	1	1	2	2	3	3	6	5	9	8	13	12	16	15	26	24



The values Lw1 and Lw2 (in dB(A)) do not take into account any noise attenuation in the room.
ΔP 1 (Pa) = pressure drop on air inlet.
ΔP 2 (Pa) = pressure drop on air outlet.
Al (m²) = free surface area.

AG 638 - AG 639 Series

KOCT CORRECTION (dB)

VC* \ Hz		100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
If V ≤ 1 m/s	Air supply	8.3	3.8	1.6	-1.2	-3.0	-5.6	-8.5	-10.2	-12.2	-15.3	-17.5	-19.3	-22.1	-22.7	-22.9	-23.8	-23.4	-21.9	-19.6	-18.5	-16.3
	Exhaust	-4.8	-7.5	-8.5	-9.4	-8.6	-9.0	-9.6	-7.0	-1.7	-7.2	-14.8	-15.9	-21.5	-25.8	-28.7	-30.6	-29.6	-29.0	-27.9	-25.6	-23.7
If 1 < V ≤ 1.5 m/s	Air supply	2.5	5.8	1.0	-1.7	-1.9	-3.2	-5.9	-7.2	-8.7	-10.9	-13.1	-15.2	-19.3	-22.1	-25.0	-28.7	-30.6	-30.7	-30.8	-29.5	-28.0
	Exhaust	-7.6	-9.7	-10.8	-10.0	-11.2	-12.3	-12.1	-11.4	-12.2	-10.1	-6.1	-6.2	-14.2	-17.7	-20.2	-24.7	-29.1	-32.6	-33.3	-31.8	-30.3
If 1.5 < V ≤ 2 m/s	Air supply	-2.9	-2.1	1.9	-0.4	-3.0	-4.2	-5.7	-6.4	-7.7	-9.5	-11.1	-12.6	-16.5	-19.6	-23.3	-28.2	-31.9	-34.0	-35.5	-34.6	-33.5
	Exhaust	-5.7	-7.4	-8.3	-9.9	-10.1	-11.1	-11.7	-12.2	-10.6	-10.4	-9.0	-5.7	-8.3	-13.9	-17.2	-21.1	-25.5	-30.5	-34.4	-35.8	-35.7
If 2 < V ≤ 2.5 m/s	Air supply	-7.1	-6.9	-5.9	-0.9	0.5	-5.3	-6.9	-7.0	-7.9	-9.1	-10.3	-11.4	-14.3	-16.9	-19.9	-24.3	-28.4	-32.3	-35.7	-37.2	-37.0
	Exhaust	-6.2	-7.3	-8.9	-9.3	-10.5	-11.5	-12.3	-12.4	-12.1	-11.3	-8.9	-6.8	-8.8	-9.5	-12.9	-17.0	-20.2	-24.4	-28.4	-32.1	-34.4
If V > 2.5 m/s	Air supply	-9.0	-8.7	-8.5	-6.6	-2.6	-1.8	-6.5	-8.1	-8.4	-9.2	-10.5	-10.9	-13.5	-15.5	-18.0	-21.7	-24.9	-28.5	-32.1	-35.5	-38.0
	Exhaust	-9.8	-7.6	-10.7	-11.0	-10.4	-13.1	-13.5	-14.0	-13.7	-13.5	-11.6	-5.2	-10.9	-11.6	-12.3	-16.1	-19.5	-23.1	-26.4	-30.4	-34.7

VC*: Speed through the section W x H = Q / (W x H) x 3600

Lw oct = Lw (dB(A)) + Koct (dB)

AG 638 SERIES - FREE SURFACE AREA (AL) IN M²

H (MM) \ L (MM)	200	300	400	500	600	800	1000	1200
200	0.020	0.033	0.046	0.059	0.072	0.097	0.123	0.148
300	0.036	0.059	0.082	0.105	0.128	0.173	0.219	0.264
400	0.052	0.085	0.118	0.151	0.184	0.249	0.315	0.380
500	0.068	0.111	0.154	0.197	0.240	0.325	0.411	0.496
600	0.084	0.137	0.190	0.243	0.296	0.401	0.507	0.612
800	0.116	0.189	0.262	0.335	0.408	0.553	0.699	0.844
1000	0.148	0.241	0.334	0.427	0.520	0.705	0.891	1.076
1200	0.180	0.293	0.406	0.519	0.632	0.857	1.083	1.308

AG 639 SERIES - FREE SURFACE AREA (AL) IN M²

H (MM) \ L (MM)	600	800	1000	1200	1400	1600	1800	2000
600	0.26	0.35	0.44	0.53	0.63	0.72	0.81	0.9
800	0.37	0.5	0.63	0.77	0.9	1.03	1.16	1.29
1000	0.48	0.65	0.83	1	1.17	1.34	1.51	1.69
1200	0.59	0.81	1.02	1.23	1.44	1.65	1.87	2.1
1400	0.71	0.96	1.21	1.46	1.71	1.97	2.22	2.47
1600	0.82	1.11	1.4	1.69	1.99	2.28	2.57	2.86
1800	0.93	1.26	1.59	1.93	2.26	2.59	2.92	3.25
2000	1.04	1.41	1.79	2.16	2.53	2.9	3.27	3.65

AG 638 - AG 639 SERIES - CE & CD COEFFICIENTS

TERMINAL	CE*	CD*
AG 638	0.28	0.32
AG 639	0.37	0.4

Ce = Coefficient for the ratio between the actual air passage and the theoretical air passage (inlet).
Cd = Coefficient for the ratio between the actual air passage and the theoretical air passage (outlet).
As per European standard EN 13030.

* Coefficients applied to L x H

AG 645 series - Aluminium

AG 645 terminal

AG 645 terminal
with manual control

USE

- Fresh air inlet or exhaust air outlet.
- Wall-mounted.
- Possible to enable closure.

CONSTRUCTION

- AG 645: extruded aluminium frame with extruded aluminium horizontal vanes.
- Vane pitch 100 mm.
- Vanes with cadmium-coated shafts are mounted on nylon spindles and coupled using external attachments to enable total closure of the terminal.
- Galvanised steel protective mesh screen (12 x 12 x Ø 1.2 mm).

FINISH

- Rough aluminium finish.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- F0: none.
- F1: visible attachment with screws in pre-drilled frame.

Accessories

- Manual closure control using lever.
- Motorised closure control (On/Off, 24 V or 230 V) for H >= 500 mm.
- Galvanised steel anti-insect screen (1 x 1 x Ø 0.4 mm).
- Galvanised steel protective screen (5 x 5 x Ø 0.7 mm).

STANDARD DIMENSIONS

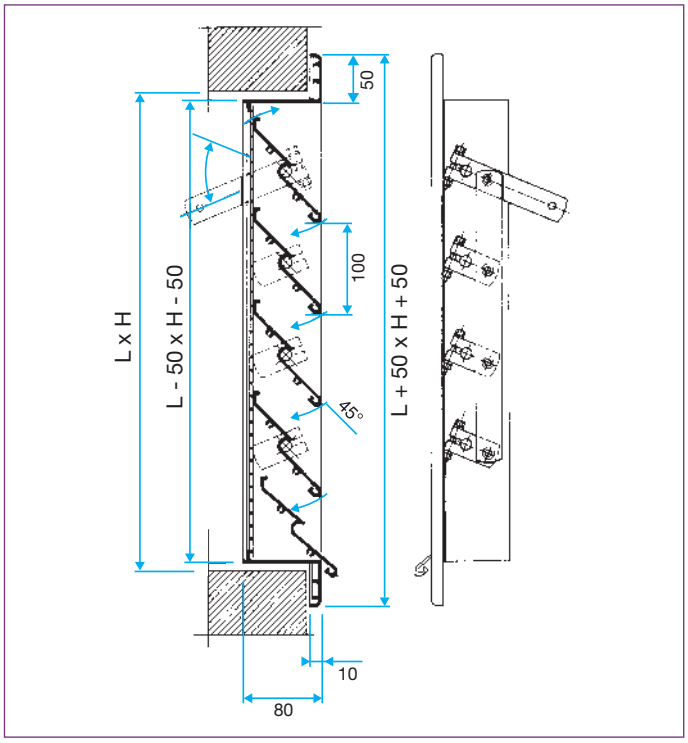
- Dimensions range from 200 x 200 to 1600 x 2000 mm with increments of 25 mm in width & 100 mm in height.

For further information refer to the Range pages below.

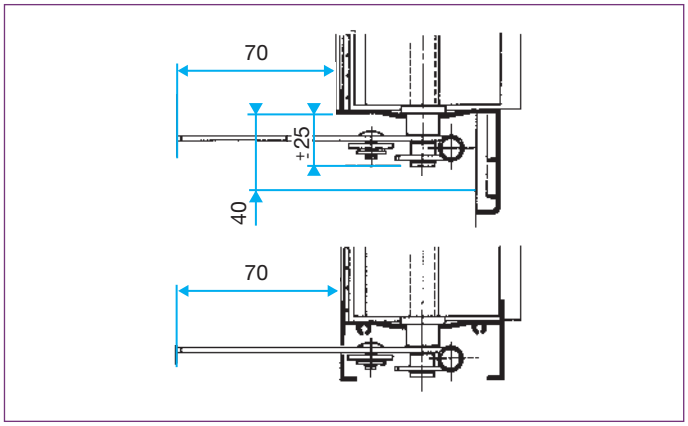
TECHNICAL DETAILS

- See selection tables on following page.
- See Af frontal surface areas at end of chapter.

DIMENSIONS



AG 645 terminal



Manual control lever

645 series

RANGE WITH CHOICE OF OPTIONS

AG FRAME TERMINAL	CODE
AG 645	11002483

OPERATIONAL DIMENSIONS

H / L (MM)	400	500	600	800	1000	1200
400	x	x	x	x	x	x
500	x	x	x	x	x	x
600	x	x	x	x	x	x
800	x	x	x	x	x	x
1000	x	x	x	x	x	x
1200	x	x	x	x	x	x
1400	x	x	x	x	x	x
1600	x	x	x	x	x	x
1800	x	x	x	x	x	x
2000	x	x	x	x	x	x

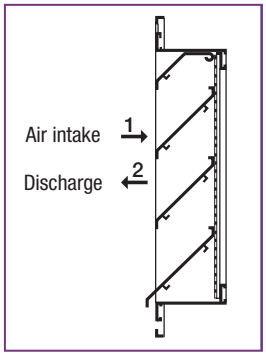
AVAILABLE OPTIONS

ATTACHMENT	SCREEN	CLOSURE CONTROL	FINISH
• F0: none • F1: visible attachment with screws in frame.	• Galvanised protective screen (as standard). • Stainless steel protective screen. • Galvanised steel anti-insect screen.	• Manual control lever. • On/Off 230 V motor fitted*. • On/Off 24 V motor fitted*.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

* Motor delivered fitted: specify position (left or right of terminal)

SELECTION - AIR INLET AND OUTLET

Af (M²)	L x H (MM)	Qv (M³/H) 1000		1500		2000		3000		5000		7000		9000		12000		15000	
0.10	400 x 400	46	46															Lw	Pa1
		2.8	35															Vf	Pa2
0.16	600 x 400	35	17	47	39														
		1.7	13	2.6	30														
0.27	600 x 600			34	13	42	26												
				1.5	10	2.1	20												
0.37	800 x 600					34	13	46	31										
						1.5	10	2.3	24										
0.46	1000 x 600							41	19										
								1.8	14										
0.53	800 x 800							40	15	52	39								
								1.6	11	2.6	30								
0.66	1000 x 800									47	26								
										2.1	10								
0.80	1200 x 800									42	17	52	33						
										1.7	13	2.4	26						
0.86	1000 x 1000									40	15	50	31						
										1.6	11	2.3	24						
0.93	1400 x 800									38	11	48	26						
										1.4	8	2.1	19						
1.03	1200 x 1000											45	21	53	33				
												1.9	16	2.4	26				
1.21	1400 x 1000											42	15	49	26				
												1.6	11	2.1	20				
1.27	1200 x 1200													48	23				
														2.0	18				
1.38	1600 x 1000													46	19	55	33		
														1.8	14	2.4	26		
1.70	1600 x 1200	Lw	Pa1											40	11	49	23	54	42
		Vf	Pa2											1.4	9	2.0	18	2.7	33



The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Pa1 (Pa) = pressure drop on air inlet.
Pa2 (Pa) = pressure drop on outlet.
Af (m²) = frontal surface.
Vf (m/s) = frontal speed.

AP 639 series - Aluminium

AP 639 penthouse

Penthouse with stack base for flat roof

USE

- Fresh air inlet or exhaust air outlet.
- Installation on roof.
- Rain hood function.
- Specially-designed, robust anti-intrusion terminals.

CONSTRUCTION

- Extruded aluminium frame and horizontal rain-guard vanes.
- Galvanised steel protective mesh screen (12 x 12 x Ø 1.2 mm).
- Vane pitch 100 mm.
- Bottom vane positioned to help water run-off.
- Rough aluminium roof fitted with lifting lugs.

FINISH

- Rough aluminium finish.
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

- Visible screw attachment to frame.
- Positioned on concrete base. The base of the penthouse is fitted with an L-shape frame laid on top of the masonry stack.

ACCESSORIES

- Galvanised steel stack base for flat roof. (RF 639).
- Separation plate: possible to handle two distinct ventilation circuits.
- Galvanised steel protective screen (5 x 5 x Ø 0.7 mm).

STANDARD DIMENSIONS

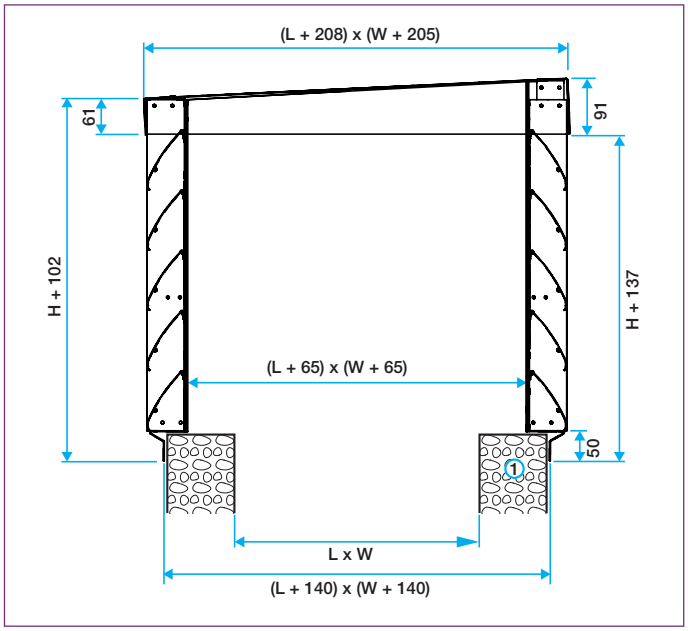
- Ground dimensions (L x W) range from 300 x 300 to 1200 x 1200 mm with increments of 25 mm. Nominal ground dimensions (L x W) correspond to the cross-section of the duct arriving at the roof.
- Available heights H (mm): 300 - 400 - 500 - 600 - 800.

For further information refer to the Range pages below.

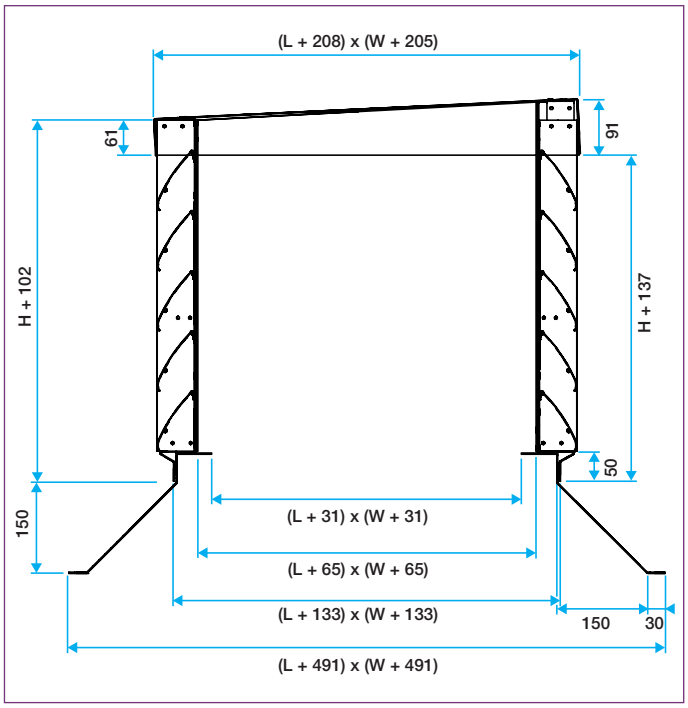
TECHNICAL DETAILS

- See selection tables on following page.

DIMENSIONS



AP 639 penthouse



AP 639 penthouse with metal stack base for flat roof. (RF 639)

AP 639 series

RANGE WITH CHOICE OF OPTIONS

PENTHOUSE	CODE	STACK BASE FOR FLAT ROOF	CODE
AP 639 H 300	11003240	**RF 639**	11003249
AP 639 H 400	11003241		
AP 639 H 500	11003242		
AP 639 H 600	11003243		
AP 639 H 800	11003244		

OPERATIONAL DIMENSIONS

W / L (MM)	300	400	500	600	700	800	900	1000	1100	1200
300	x	x	x	x	x	x	x	x	x	x
400	x	x	x	x	x	x	x	x	x	x
500	x	x	x	x	x	x	x	x	x	x
600	x	x	x	x	x	x	x	x	x	x
700	x	x	x	x	x	x	x	x	x	x
800	x	x	x	x	x	x	x	x	x	x
900	x	x	x	x	x	x	x	x	x	x
1000	x	x	x	x	x	x	x	x	x	x
1100	x	x	x	x	x	x	x	x	x	x
1200	x	x	x	x	x	x	x	x	x	x

AVAILABLE OPTIONS

ATTACHMENT	SCREEN	SEPARATION PLATE	FINISH
• Screwed to masonry stack base. • Screwed to galvanised steel stack base.	• Galvanised protective screen (as standard). • Stainless steel protective screen.	• Separation plate: possible to handle two distinct ventilation circuits.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

ACCESSORY PROPOSED

• RF 639 stack base for flat roof.

SELECTION - AIR INLET AND OUTLET

AI (M^2)	H (MM) L x W (MM)	AIRFLOW (M^3/H)	1000	1500	2000	2500	3000	4000	5000	6000	8000
0.252	**H 300 300 x 300**	Lw (dB(A))	41	48							
		Pa1 (Pa)	19	41							
		Pa2 (Pa)	16	35							
0.356	**H 300 400 x 400**	Lw (dB(A))	27	39	47						
		Pa1 (Pa)	9.40	21	36						
		Pa2 (Pa)	8	18	30						
0.458	**H 400 400 x 400**	Lw (dB(A))	25	34	42	49					
		Pa1 (Pa)	6	14	24	36					
		Pa2 (Pa)	5	12	20	31					
0.573	**H 400 500 x 500**	Lw (dB(A))	25	28	36	43	48				
		Pa1 (Pa)	4	9	15	23	33				
		Pa2 (Pa)	3	7	13	19	27				
0.732	**H 500 500 x 500**	Lw (dB(A))		25	29	35	40	49			
		Pa1 (Pa)		5	8	13	18	31			
		Pa2 (Pa)		4	7	11	15	26			
0.878	**H 500 600 x 600**	Lw (dB(A))			25	31	36	44	51		
		Pa1 (Pa)			6	9	12	22	33		
		Pa2 (Pa)			5	8	11	18	28		
1.048	**H 600 600 x 600**	Lw (dB(A))				25	30	38	45	50	
		Pa1 (Pa)				6	8	14	21	30	
		Pa2 (Pa)				5	7	12	18	26	
1.496	**H 800 600 x 600**	Lw (dB(A))					25	31	37	42	51
		Pa1 (Pa)					4	7	11	16	28
		Pa2 (Pa)					4	6	10	14	24

Pa1 (Pa) = pressure drop on air inlet.
Pa2 (Pa) = pressure drop on outlet.

The Lw dB(A) values do not take into account any noise attenuation in the room.
For a more comprehensive selection use the Koanda 3D software.

AI (m^2) = free surface area

AR 637 series - Aluminium

AR 637 terminal up to Ø 315 mm

AR 637 terminal beyond Ø 400 mm

USE

- Fresh air inlet or exhaust air outlet.
- Wall-mounted.

CONSTRUCTION

Diameters from 125 to 315 mm:
- Rain guard vanes, pitch 20 mm,
- Made of aluminium.

Diameters from 400 to 630 mm:
- Rain guard vanes, pitch 50 mm,
- Made of aluminium,
- Galvanised steel protective mesh screen 12 x 12 mm.

FINISH

Diameters from 125 to 315 mm:
- Anodised aluminium finish, natural satin hue,
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

Diameters from 400 to 630 mm:
- Rough aluminium finish,
- Paint finish from RAL colour chart. View the list of available colours in the appendix.

ATTACHMENT

Diameters from 125 to 315 mm:
- Concealed attachment using screws in internal collar.

Diameters from 400 to 630 mm:
- Visible attachment with screws in frame.

ACCESSORIES

- Galvanised steel anti-insect screen (optional from Ø 125 to Ø 315).

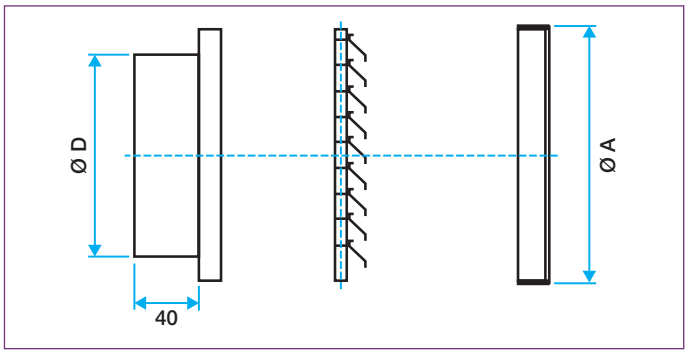
STANDARD DIMENSIONS

- Diameters from 125 mm to 630 mm.

TECHNICAL DETAILS

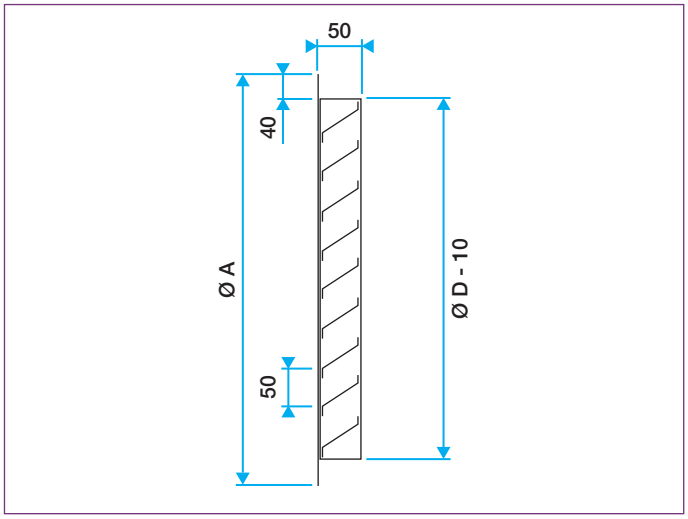
- See selection tables on following page.

DIMENSIONS



AR 637 terminal from Ø 125 to Ø 315

Ø D (MM)	Ø A (MM)
125	160
160	200
200	250
250	315
315	385



AR 637 terminal from Ø 400 to Ø 630

Ø D (MM)	Ø A (MM)
400	450
450	500
500	550
560	610
630	680

AR 637 series

STANDARD RANGE

DIAMETER (MM)	AR 637 CIRCULAR TERMINAL CODE
Ø 125	11052240
Ø 160	11052241
Ø 200	11052242
Ø 250	11052243
Ø 315	11052244
Ø 400	11052260
Ø 450	11052261
Ø 500	11052262
Ø 560	11052263
Ø 630	11052264

AVAILABLE OPTIONS

ATTACHMENT	FINISH
• Concealed attachment using screws in internal collar (diameters from 125 to 315 mm). • Visible screw attachment to frame (diameters from 400 to 630 mm).	• Anodised aluminium with natural satin hue (diameters from 125 to 315 mm). • Rough aluminium (diameters from 400 to 630 mm).

RANGE WITH CHOICE OF OPTIONS

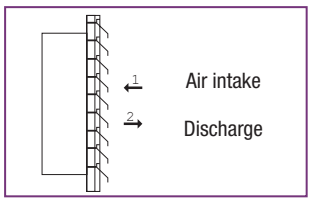
DIAMETER (MM)	AR 637 CIRCULAR TERMINAL CODE
Ø 125	11002505
Ø 160	11002506
Ø 200	11002507
Ø 250	11002508
Ø 315	11002509

AVAILABLE OPTIONS

MESH SCREEN	FINISH
• Galvanised steel protective screen.	• Epoxy paint from RAL colour chart. View the list of available colours in the appendix.

SELECTION - AIR INLET AND OUTLET

Af (M²)	D (MM)	50 (M³/H)		100 (M³/H)		150 (M³/H)		200 (M³/H)		300 (M³/H)		500 (M³/H)		800 (M³/H)		1000 (M³/H)		1500 (M³/H)		2000 (M³/H)		2500 (M³/H)		3000 (M³/H)	
0.007	**125**	5	8	25	32	32	64																	Lw	Pa1
		2.0	6	4.0	26	5.9	51																	Vf	Pa2
0.012	**160**			5	10	5	22	26	40	41	90														
				2.3	8	3.4	17	4.6	32	6.9	72														
0.019	**200**					5	9	5	16	33	36	49	97												
						2.2	7	2.9	13	4.4	28	7.3	77												
0.029	**250**							5	7	5	16	27	42	49	107										
								1.9	6	2.9	13	4.7	33	7.5	86										
0.047	**315**									5	6	5	18	28	42	43	65								
										1.8	5	3	14	4.7	33	5.9	53								
0.070	**400**											5	16	27	41	33	64								
												2	13	3.2	33	4	51								
0.090	**450**													5	25	28	39	40	88						
														2.5	20	3.1	31	4.6	70						
0.120	**500**															5	21	31	47	43	83				
																2.3	17	3.5	38	4.6	67				
0.150	**560**																	5	31	39	55	45	86		
																		2.8	25	3.7	44	4.6	68		
0.200	**630**	Lw	Pa1																	25	31	31	48	37	69
		Vf	Pa2																	2.8	25	3.5	39	4.2	55



The Lw (dB(A)) values do not take into account any noise attenuation in the room.
Pa1 (Pa) = pressure drop on air inlet.
Pa2 (Pa) = pressure drop on outlet.

Af (m²) = frontal surface.
Vf (m/s) = frontal speed.

RAL 1 colour group

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
9010	Pure white	standard (30 % ± 5 %)
9010	Pure white	matt (30% ± 5%)
9010	Pure white	sat (70% ± 5%)
1001	Beige	sat (70% ± 5%)
1002	Sand yellow	sat (70% ± 5%)
1011	Brown beige	sat (70% ± 5%)
1013	Pearl white	sat (70% ± 5%)
1013	Pearl white	matt (30% ± 5%)
1014	Ivory	sat (70% ± 5%)
1014	Ivory	matt (30% ± 5%)
1015	Light ivory	sat (70% ± 5%)
1015	Light ivory	matt (30% ± 5%)
1019	Grey beige	sat (70% ± 5%)
1020	Olive yellow	sat (70% ± 5%)
1024	Ochre yellow	sat (70% ± 5%)
3007	Black red	sat (70% ± 5%)
3009	Oxide red	sat (70% ± 5%)
3012	Beige red	sat (70% ± 5%)
3022	Salmon pink	sat (70% ± 5%)
3022	Salmon pink	matt (30% ± 5%)
5000	Violet blue	sat (70% ± 5%)
5000	Violet blue	matt (30% ± 5%)
5001	Green blue	sat (70% ± 5%)
5001	Green blue	matt (30% ± 5%)
5003	Sapphire blue	sat (70% ± 5%)
5003	Sapphire blue	matt (30% ± 5%)
5004	Black blue	sat (70% ± 5%)
5007	Brilliant blue	sat (70% ± 5%)
5007	Brilliant blue	matt (30% ± 5%)
5008	Grey blue	sat (70% ± 5%)
5008	Grey blue	matt (30% ± 5%)
5009	Azure blue	sat (70% ± 5%)
5009	Azure blue	matt (30% ± 5%)
5011	Steel blue	sat (70% ± 5%)
5012	Light blue	sat (70% ± 5%)
5012	Light blue	matt (30% ± 5%)
5014	Pigeon blue	sat (70% ± 5%)
5014	Pigeon blue	matt (30% ± 5%)
5015	Sky blue	sat (70% ± 5%)
5015	Sky blue	matt (30% ± 5%)
5017	Traffic blue	sat (70% ± 5%)
5018	Turquoise blue	sat (70% ± 5%)
5019	Capri blue	sat (70% ± 5%)
5019	Capri blue	matt (30% ± 5%)
6003	Olive green	sat (70% ± 5%)
6003	Olive green	matt (30% ± 5%)
6005	Moss green	sat (70% ± 5%)
6007	Bottle green	sat (70% ± 5%)

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
6007	Bottle green	matt (30% ± 5%)
6008	Brown green	sat (70% ± 5%)
6009	Fir green	sat (70% ± 5%)
6009	Fir green	matt (30% ± 5%)
6011	Reseda green	sat (70% ± 5%)
6011	Reseda green	matt (30% ± 5%)
6012	Black green	sat (70% ± 5%)
6013	Reed green	sat (70% ± 5%)
6013	Reed green	matt (30% ± 5%)
6014	Yellow olive	sat (70% ± 5%)
6015	Black olive	sat (70% ± 5%)
6015	Black olive	matt (30% ± 5%)
6019	White green	sat (70% ± 5%)
6020	Chromium green	sat (70% ± 5%)
6020	Chromium green	matt (30% ± 5%)
6021	Pale green	sat (70% ± 5%)
6025	Fern green	sat (70% ± 5%)
6027	Light green	sat (70% ± 5%)
6027	Light green	matt (30% ± 5%)
7000	Squirrel grey	sat (70% ± 5%)
7000	Squirrel grey	matt (30% ± 5%)
7001	Silver grey	sat (70% ± 5%)
7003	Moss grey	sat (70% ± 5%)
7003	Moss grey	matt (30% ± 5%)
7004	Signal grey	sat (70% ± 5%)
7004	Signal grey	matt (30% ± 5%)
7005	Mouse grey	sat (70% ± 5%)
7006	Beige grey	sat (70% ± 5%)
7008	Khaki grey	sat (70% ± 5%)
7010	Tarpaulin grey	sat (70% ± 5%)
7010	Tarpaulin grey	matt (30% ± 5%)
7011	Iron grey	sat (70% ± 5%)
7011	Iron grey	matt (30% ± 5%)
7012	Basalt grey	sat (70% ± 5%)
7013	Brown grey	sat (70% ± 5%)
7013	Brown grey	matt (30% ± 5%)
7015	Slate grey	sat (70% ± 5%)
7015	Slate grey	matt (30% ± 5%)
7016	Anthracite grey	sat (70% ± 5%)
7016	Anthracite grey	matt (30% ± 5%)
7021	Black grey	sat (70% ± 5%)
7021	Black grey	matt (30% ± 5%)
7022	Umbra grey	sat (70% ± 5%)
7022	Umbra grey	matt (30% ± 5%)
7023	Concrete grey	sat (70% ± 5%)
7023	Concrete grey	matt (30% ± 5%)
7024	Graphite grey	sat (70% ± 5%)
7024	Graphite grey	matt (30% ± 5%)

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
7030	Stone grey	sat (70% ± 5%)
7030	Stone grey	matt (30% ± 5%)
7031	Blue grey	sat (70% ± 5%)
7032	Pebble grey	sat (70% ± 5%)
7032	Pebble grey	matt (30% ± 5%)
7035	Light grey	sat (70% ± 5%)
7035	Light grey	matt (30% ± 5%)
7036	Platinum grey	sat (70% ± 5%)
7036	Platinum grey	matt (30% ± 5%)
7037	Dusty grey	sat (70% ± 5%)
7037	Dusty grey	matt (30% ± 5%)
7038	Agate grey	sat (70% ± 5%)
7038	Agate grey	matt (30% ± 5%)
7039	Quartz grey	sat (70% ± 5%)
7039	Quartz grey	matt (30% ± 5%)
7042	Traffic grey A	sat (70% ± 5%)
7042	Traffic grey A	matt (30% ± 5%)
7043	Traffic grey B	sat (70% ± 5%)
7043	Traffic grey B	matt (30% ± 5%)
8000	Green brown	sat (70% ± 5%)
8007	Fawn brown	sat (70% ± 5%)
8008	Olive brown	sat (70% ± 5%)
8011	Nut brown	sat (70% ± 5%)
8012	Red brown	sat (70% ± 5%)
8012	Red brown	matt (30% ± 5%)
8014	Sepia brown	sat (70% ± 5%)
8014	Sepia brown	matt (30% ± 5%)
8015	Brown	sat (70% ± 5%)
8016	Mahogany brown	sat (70% ± 5%)
8016	Mahogany brown	matt (30% ± 5%)
8017	Chocolate brown	sat (70% ± 5%)
8017	Chocolate brown	matt (30% ± 5%)
8019	Grey brown	sat (70% ± 5%)
8019	Grey brown	matt (30% ± 5%)
8022	Black brown	sat (70% ± 5%)
8022	Black brown	matt (30% ± 5%)
8024	Beige brown	sat (70% ± 5%)
8024	Beige brown	matt (30% ± 5%)
8025	Pale brown	sat (70% ± 5%)
8025	Pale brown	matt (30% ± 5%)
8077	Dark brown	sat (70% ± 5%)
9001	Cream	sat (70% ± 5%)
9001	Cream	matt (30% ± 5%)
9002	Grey white	sat (70% ± 5%)
9002	Grey white	matt (30% ± 5%)
9003	Signal white	sat (70% ± 5%)
9003	Signal white	matt (30% ± 5%)
9005	Jet black	sat (70% ± 5%)

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
9005	Jet black	matt (30% ± 5%)
9011	Graphite black	sat (70% ± 5%)
9011	Graphite black	matt (30% ± 5%)
9016	Traffic white	sat (70% ± 5%)
9016	Traffic white	matt (30% ± 5%)
9018	Papyrus white	sat (70% ± 5%)
9018	Papyrus white	matt (30% ± 5%)

RAL 2 colour group

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
1000	Green beige	sat (70% ± 5%)
1017	Saffron yellow	sat (70% ± 5%)
1019	Grey beige	matt (30% ± 5%)
1033	Dahlia yellow	sat (70% ± 5%)
2012	Salmon orange	sat (70% ± 5%)
3011	Brown red	sat (70% ± 5%)
3014	Antique pink	sat (70% ± 5%)
3015	Light pink	sat (70% ± 5%)
3015	Light pink	matt (30% ± 5%)
3016	Coral red	sat (70% ± 5%)
4002	Red violet	sat (70% ± 5%)
4005	Blue lilac	sat (70% ± 5%)
4009	Pastel violet	sat (70% ± 5%)
4009	Pastel violet	matt (30% ± 5%)
5002	Ultramarine blue	sat (70% ± 5%)
5002	Ultramarine blue	matt (30% ± 5%)
5004	Black blue	matt (30% ± 5%)
5005	Signal blue	sat (70% ± 5%)
5010	Gentian blue	sat (70% ± 5%)
5010	Gentian blue	matt (30% ± 5%)
5011	Steel blue	matt (30% ± 5%)
5013	Cobalt blue	sat (70% ± 5%)
5013	Cobalt blue	matt (30% ± 5%)
5020	Ocean blue	sat (70% ± 5%)
5020	Ocean blue	matt (30% ± 5%)
5021	Water blue	sat (70% ± 5%)
5022	Night blue	sat (70% ± 5%)
5022	Night blue	matt (30% ± 5%)
5023	Distant blue	sat (70% ± 5%)
5023	Distant blue	matt (30% ± 5%)
5024	Pastel blue	sat (70% ± 5%)
6000	Patina green	sat (70% ± 5%)
6000	Patina green	matt (30% ± 5%)
6001	Emerald green	sat (70% ± 5%)
6002	Leaf green	sat (70% ± 5%)
6002	Leaf green	matt (30% ± 5%)
6004	Blue green	sat (70% ± 5%)
6004	Blue green	matt (30% ± 5%)
6005	Moss green	matt (30% ± 5%)
6006	Grey olive	sat (70% ± 5%)
6006	Grey olive	matt (30% ± 5%)
6010	Grass green	sat (70% ± 5%)
6012	Black green	matt (30% ± 5%)
6016	Turquoise green	sat (70% ± 5%)
6017	May green	sat (70% ± 5%)
6018	Yellow green	sat (70% ± 5%)
6022	Brown olive	sat (70% ± 5%)
6024	Traffic green	sat (70% ± 5%)

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
6026	Opal green	sat (70% ± 5%)
6026	Opal green	matt (30% ± 5%)
6028	Pine green	matt (30% ± 5%)
6028	Pine green	sat (70% ± 5%)
6029	Mint green	sat (70% ± 5%)
6029	Mint green	matt (30% ± 5%)
6032	Signal green	sat (70% ± 5%)
6033	Mint turquoise	sat (70% ± 5%)
6034	Pastel turquoise	sat (70% ± 5%)
7002	Olive grey	sat (70% ± 5%)
7002	Olive grey	matt (30% ± 5%)
7005	Mouse grey	matt (30% ± 5%)
7009	Green grey	sat (70% ± 5%)
7009	Green grey	matt (30% ± 5%)
7012	Basalt grey	matt (30% ± 5%)
7026	Granite grey	sat (70% ± 5%)
7026	Granite grey	matt (30% ± 5%)
7031	Blue grey	matt (30% ± 5%)
7033	Cement grey	sat (70% ± 5%)
7033	Cement grey	matt (30% ± 5%)
7034	Yellow grey	sat (70% ± 5%)
7034	Yellow grey	matt (30% ± 5%)
7040	Window grey	sat (70% ± 5%)
7040	Window grey	matt (30% ± 5%)
7044	Silk grey	sat (70% ± 5%)
7044	Silk grey	matt (30% ± 5%)
7045	Telegrey 1	sat (70% ± 5%)
7046	Telegrey 2	sat (70% ± 5%)
7047	Telegrey 4	sat (70% ± 5%)
7047	Telegrey 4	matt (30% ± 5%)
8001	Ochre brown	sat (70% ± 5%)
8002	Signal brown	sat (70% ± 5%)
8003	Clay brown	sat (70% ± 5%)
8004	Copper brown	sat (70% ± 5%)
8004	Copper brown	matt (30% ± 5%)
8011	Nut brown	matt (30% ± 5%)
8015	Brown	matt (30% ± 5%)
8023	Orange brown	sat (70% ± 5%)
8023	Orange brown	matt (30% ± 5%)
8027	Leather brown	sat (70% ± 5%)
8028	Terra brown	sat (70% ± 5%)
9004	Signal black	sat (70% ± 5%)
9004	Signal black	matt (30% ± 5%)
9017	Traffic black	sat (70% ± 5%)
9017	Traffic black	matt (30% ± 5%)
9021	Camouflage black	sat (70% ± 5%)

RAL 3 colour group

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
1004	Golden yellow	sat (70% ± 5%)
1004	Golden yellow	matt (30% ± 5%)
1005	Honey yellow	sat (70% ± 5%)
1006	Maize yellow	sat (70% ± 5%)
1006	Maize yellow	matt (30% ± 5%)
1007	Daffodil yellow	sat (70% ± 5%)
1012	Lemon yellow	sat (70% ± 5%)
1016	Sulphur yellow	sat (70% ± 5%)
1018	Zinc yellow	sat (70% ± 5%)
1021	Rape yellow	sat (70% ± 5%)
1021	Rape yellow	matt (30% ± 5%)
1023	Traffic yellow	sat (70% ± 5%)
1023	Traffic yellow	matt (30% ± 5%)
1027	Curry yellow	sat (70% ± 5%)
1028	Melon yellow	sat (70% ± 5%)
1032	Broom yellow	sat (70% ± 5%)
1032	Broom yellow	matt (30% ± 5%)
1034	Pastel yellow	sat (70% ± 5%)
1036	Pearl gold	sat (80 % ± 5%)
2000	Yellow orange	sat (70% ± 5%)
2000	Yellow orange	matt (30% ± 5%)
2001	Red orange	sat (70% ± 5%)
2002	Blood orange	matt (30% ± 5%)
2003	Pastel orange	sat (70% ± 5%)
2008	Bright red orange	matt (30% ± 5%)
2010	Signal orange	sat (70% ± 5%)
3000	Flame red	sat (70% ± 5%)
3000	Flame red	matt (30% ± 5%)
3001	Signal red	sat (70% ± 5%)
3002	Carmine red	sat (70% ± 5%)
3002	Carmine red	matt (30% ± 5%)
3003	Ruby red	sat (70% ± 5%)
3003	Ruby red	matt (30% ± 5%)
3004	Purple red	sat (70% ± 5%)
3004	Purple red	matt (30% ± 5%)
3005	Wine red	sat (70% ± 5%)
3005	Wine red	matt (30% ± 5%)
3007	Black red	matt (30% ± 5%)
3013	Tomato red	sat (70% ± 5%)
3017	Rose	sat (70% ± 5%)
3018	Strawberry red	sat (70% ± 5%)
3020	Traffic red	sat (70% ± 5%)
3020	Traffic red	matt (30% ± 5%)
3027	Raspberry red	sat (70% ± 5%)
3031	Orient red	sat (70% ± 5%)
3031	Orient red	matt (30% ± 5%)
4003	Heather violet	sat (70% ± 5%)
4010	Telemagenta	sat (70% ± 5%)

RAL REFERENCE	TITLE	BRIGHTNESS VALUE
6018	Yellow green	matt (30% ± 5%)
6021	Pale green	matt (30% ± 5%)
6031	Bronze green	sat (70% ± 5%)
7048	Pearl mouse grey	sat (70% ± 5%)
9006	White aluminium	matt (30% ± 5%)
9007	Grey aluminium	matt (30% ± 5%)

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For more information about the**Air Diffusion** range,
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