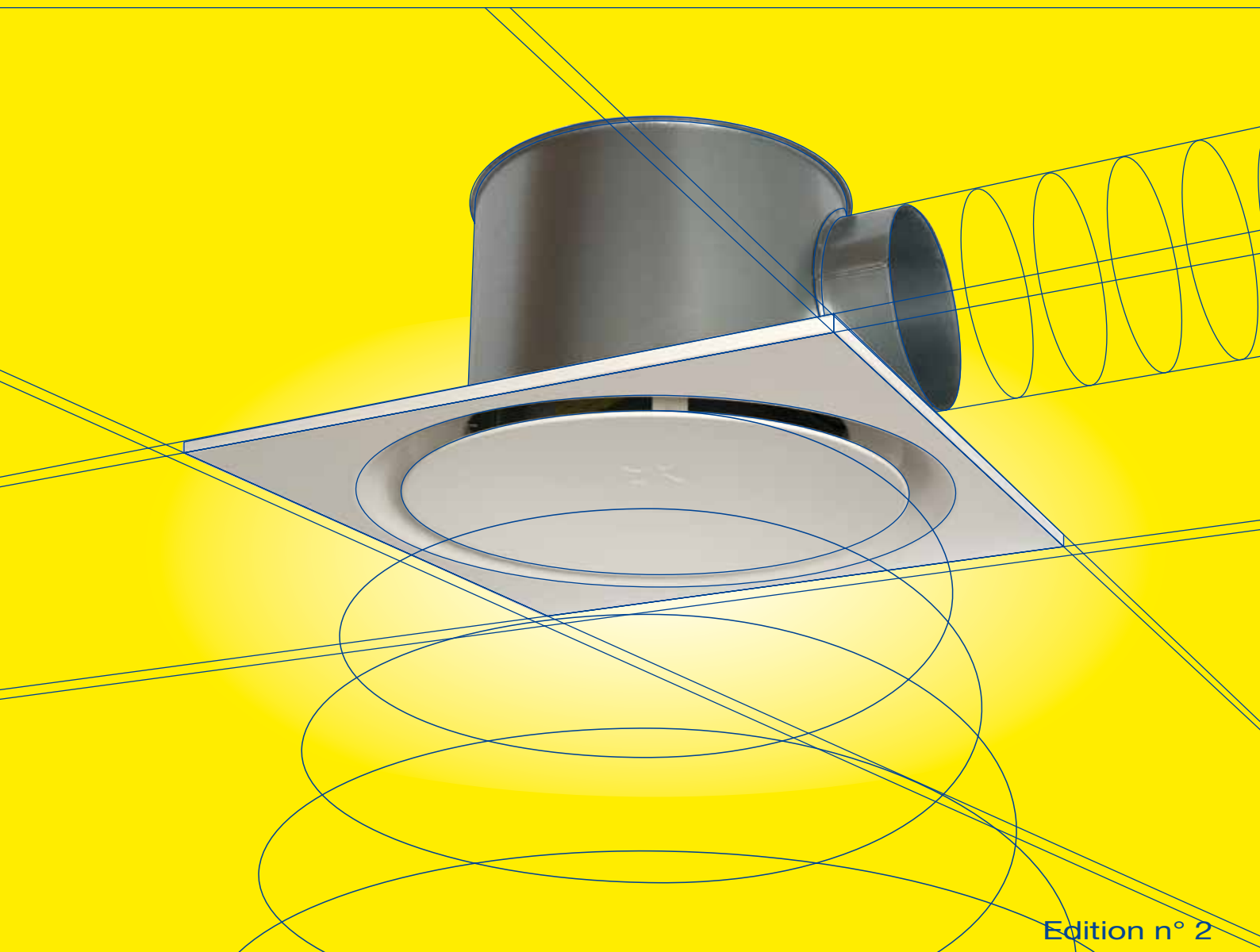


# Air Diffusion

Compulsor



Edition n° 2

Air diffusion and comfort

Small grilles

Indoor grilles

Ceiling diffusers










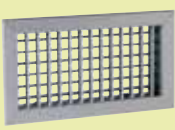
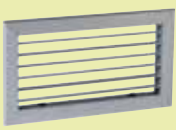


















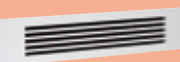




















Slot diffusers

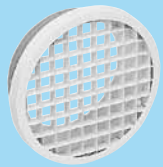
Swirl diffusers

Special diffusers

External louvres



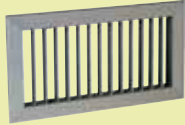
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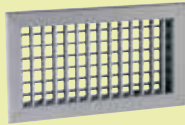
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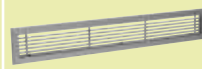
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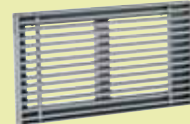
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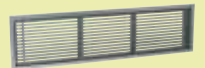
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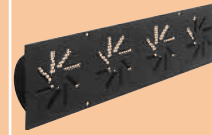
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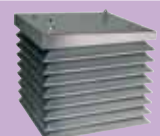
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The Aldes Group is nowadays present throughout the world in more than 100 countries through the subsidiaries and a network of distributors.

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## Indian Ocean

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Your contact in France \*:

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Tel: + 33 (0)4 78 77 15 15 - Fax: + 33 (0)4 78 77 15 56

### Staff:

Export Area Sales Managers, office-based technical sales reps and administrative assistants are at your service.

### Design:

A highly trained team will provide you with all necessary information and advice. A team of experts in technical design and costing studies.

\* For all countries in which Aldes does not have a subsidiary, the International Department remains your contact.

# Innovating, the mission of a leader.

*Improving the quality of the air we breathe inside buildings to improve our quality of life is not only a dream, it is also a marvellous company project, which all Aldes employees have been adhering to since 1925. And if Aldes is today leader in its sector of activity, the orientation taken by the Group has always used the same guideline: innovation!*

From single-family and multi-family Housing to Commercial Premises, Aldes has developed 5 business activities:

- Ventilation
- Températion®
- Centralised Vacuum Cleaning
- HVAC components
- Smoke extraction

## air&people, the commitment of a leader.

These two words sum up in themselves, the vocation of the Aldes Group. Improving air quality, thermal comfort and safety to improve people's lives and energy performance in buildings.

Yes, it may be a dream, but it is also a marvellous company project around which all of the Aldes employees have come together.

## Improving the quality of air.

Studies carried out on air quality inside buildings show the presence of a multitude of polluting elements that are dangerous to health. Faced with this parameter, the building construction market is confronted with a second challenge, that is just as important: the decrease in greenhouse gases.

Aldes ventilation products and global solutions allow them to meet head-on the importance of the health challenge, in agreement with the French Grenelle Environmental Forum.



## Way ahead of the regulations.

Since the beginning, Aldes has anticipated new regulations by putting products on the market with high performance airflow, sound attenuation (acoustics) and energy saving qualities even greater than the standards. This is why nowadays, products like air diffusers, the micro-watt range of low energy consumption fans, the Dee Fly and DFE HRV heat exchangers, the Modulated Ventilation system for Commercial

Premises, ducts and accessories with Virtuo-fix airtight seals, and Températion® domestic systems find themselves fully validated by the new airflow regulations.

## Aldes Test Centre, fully adapted technical resources



For high performance products and customised solutions, the Aldes Test Centre

relies on their human and technical skills to advise and accompany their customers throughout the tests right up to their complete satisfaction.

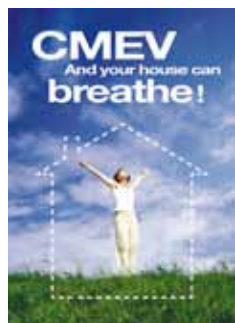
Aldes thereby offers high quality products in terms of aerualics, acoustics and aesthetic design that also respect energy performance requirements.

## Aldes commits itself to environmental protection.



As an active member of the Collective Action Group "Isolons la Terre contre le CO<sub>2</sub>" (Let's insulate the Earth against CO<sub>2</sub>) Aldes has committed itself, together with 9 other industrial leaders in the construction sector, to a large-scale plan for the reduction of greenhouse gas emissions and energy consumption in buildings.

This Collective Action Group was at the origin of the "Effinergie" low energy consumption label.





● Aldes' Subsidiaries

## Aldes without borders.

**Air has no border.** The need to breathe air of high quality is universal.

That of energy performance in buildings is just as important too.

Thus, the Aldes Group, via the intermediary of a vast sales network, exports its know-how to more than **100 countries in Europe, Africa, the Middle East, Asia and America.** In total, there are over one thousand staff who participate in the Aldes success story throughout the world.

## A few prestigious references.

Aldes is involved in most large scale projects around the world. We could quote numerous references such as the Twin Towers in Kuala Lumpur, Malaysia, the 'Arche de la Défense' and the Louvre in Paris etc. Aldes is also involved in over 2,500,000 houses and more than 3,000,000 multi-family housing apartments equipped with ventilation.



Villa des Hauts de Feuilly/MCP,  
Lyon France.



The Zital Tower,  
Madagascar.



Tour Oxygene  
Lyon France.



The Zenith in Dijon  
France.



Hospital of Nantes  
France.



Maple Garden Village  
Shanghai, China.



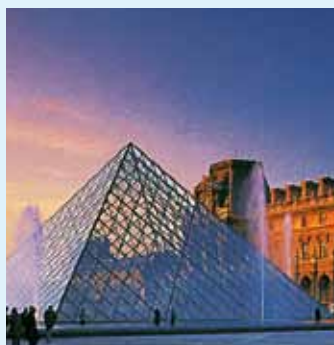
The Rhône-Alpes Pavillion, Universal  
Exhibition 2010 - Shanghai.



Arche de la Défense  
Paris, France.



Résidence Georges V  
Lyon, France.



The Louvre  
Paris, France.



Tournefeuille School  
France.

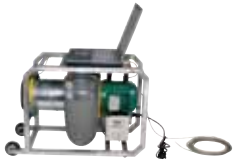


Twin Towers  
Kuala Lumpur, Malaysia.

# The Aldes **Services**

DIAGNOSIS  
DESIGN  
PRODUCTION  
MAINTENANCE

*From the diagnosis of the project to maintenance of the installation, Aldes, in addition to its training programmes, proposes services to accompany those who intervene in their specific mission and at each stage in order to encourage the smooth running of the systems. For indoor air quality, comfort and safety of the occupants, there are 4 families of services available:*



Measurement devices

## Diagnostics aid.

In both new construction and renovation, Aldes places its know-how at your disposal in terms of aerualics to help you analyse your buildings and advise you of the best adapted solution to your requirements.

Examples:

- Rental of measuring instruments.
- Permeability measurements in a dwelling.
- Measurement of a duct's air permeability.
- Help in controlling the installations.

## Installation support.



Due to their proximity, in the agencies or in the field, the Aldes teams can accompany you to carry out quality installations efficiently.

Examples:

- Installation guides.
- Participation, at your request, at a site co-ordination meeting.
- Help in checking the correct operation of the visible installation and adjustment by inspection and test methods carried out by request.



Inspection and test measurements



## Design Aid.

Thanks to its software programs and with back-up support from its employees, Aldes offers you its experience to accompany designers in dimensioning the systems and validating the products retained.

Examples:

- Dimensioning software (Conceptor) and selection software (Selector).
- Checking the principle of the coherence of the system and the dimensioning design study.
- Working site notification.
- Air diffusion tests or simulations.

## Maintenance Aid.

So that the installations preserve their performances over the long term and that their maintenance is as simple as possible, Aldes offers you various services.

Examples:

- Technical information on the products for your installation.
- Spare parts management.
- Proposition of a standard maintenance contract for certain products.
- Offer of an extended warranty period (for certain products and under certain conditions).



# Training at Aldes,

Meet the new requirements of your trade in complete serenity



*Aldes Training offers you suitably adapted courses concerning the technical and regulatory developments in your activity.*

## Specialised trainers.

A dedicated team of trainers ensures you have the technical training that is adapted to your requirements!

## High level technical resources.

Aldes Training offers you courses with a practical dimension, thanks to the real life handling of products and by recreating site conditions.

**Installing.**  
**Maintaining and replacing.**  
**Designing.**

**Diagnosing.**  
**Distributing.**



### Maintenance and cleaning of CMEV/ CMEV for Gas installations

Duration: 2 days

**Maintenance operators  
Installers**

### Further Training in Ventilation

Duration: 2 days

**Distributors**

### Ventilation in the Diagnosis of Energy Performance

Duration: 1 day

**Diagnosticians**

### Housing and Commercial buildings

Duration: 2 days

**Distributors**

### Ventilation Techniques in new Commercial Buildings

Duration: 2 days

**Installers  
Contract managers  
Technical Services**

### Private Housing Ventilation

Duration: 1 day

**Distributors**

### Ventilation Techniques in new Housing

Duration: 2 days

**Installers  
Contract managers  
Technical Services**

### Private Housing Ventilation: new buildings and renovation

Duration: 2 days

**Installers  
Builders  
Engineering Design Office**

### Installation and maintenance of Températion® domestic systems

Duration: 1 to 2 days

**Installers &  
maintenance operators**

### Compartmentalisation and smoke extraction

Duration: 2 days

**Installers  
Contract managers  
Technical Services**

**New.** Specific courses for Températion®, 4 in 1 systems (ventilation, heating, cooling and DHW) for improving user comfort by air handling and energy savings.

**aldes** formation



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The "Formations Aldes"  
(Training Courses)  
Brochure is available by  
simple request.  
Consult the programmes  
and the calendar on  
www.aldes.fr.  
Provider of profes-  
sional training services  
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826901889.

Selection Guide  
for air diffusion products

Saving time  
is easy like  
**Selector Koanda!**



Koanda is a software developed by Aldes  
**to facilitate the design offices' work.**

User-friendly, it enables you to carry out **technical selections**  
combining aesthetics, thermal comfort and acoustics.

# Air diffusion and comfort

Components of comfort - p 10

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Characteristic sizes - p 13

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Selection of diffusers - p 17

# Components of comfort

## AIR DIFFUSION AND COMFORT

Designing an air diffusion system means first making the right selection in order to guarantee comfort.

Comfort depends on three main components :

- The thermal component,
- The aeraulic component,
- The acoustic component.

## THE THERMAL AND AERAULIC COMPONENTS

These first two represent the area covered by the NF EN ISO 7730 standard, which specifies :

- room temperatures, according to the activity and cladding,
- discomfort caused by drafts,
- the feeling of warm or cold walls,
- tolerance of vertical temperature gradients.

Knowledge of the activity and cladding determine the optimum room temperature for obtaining ideal thermal comfort.

Cladding becomes clo, corresponding to the thermal insulation of clothing.

Physical activity is expressed in met, equivalent to the production of metabolic energy.

The feeling of discomfort caused by drafts depends on the speed of the air flow and its temperature.

Each room temperature therefore has a corresponding average residual speed,  $V_r$ , in the zone of occupation that conditions the absence of discomfort caused by drafts.

The terminal speed of the jet at the far end of its range,  $V_t$ , causes  $V_r$ . As a result respect for Aldes, selection recommendations, expressed in terms of  $V_t$  according to the use of the premises, quite simply provides optimum comfort .



**Worker**  
Activity: 2 Met  
Clothing: 0,8 Clo



**Office worker**  
Activity: 1,2 met  
Clothing: 0,5 Clo

## EXAMPLE OF COMMERCIAL PREMISES

Types of premises	Period of the year	T° room (°C)	Vt (m/s)	Vr (m/s)
Hotel rooms, individual offices, etc.	Summer	24.5 +/- 1.5	0.25	0.18
	Winter	21 +/- 2	0.25	0.12

## $V_t$ FOR OPTIMUM COMFORT ACCORDING TO THE APPLICATION

Types of premises	Vt (m/s)
Individual offices, hospital rooms, hotels...	0.25
Landscaped offices, meeting rooms, local shops...	0.37
Industrial premises...	0.5
Train stations, airports,...	0.625
Gymnasiums...	0.75

# Components of comfort

## THE ACOUSTIC COMPONENT

The ASHRAE recommendations in terms of acoustic pressure (sensation perceived by the occupant) according to the use of the premises, provides overall comfort.

The level of acoustic pressure in an area depends on the power levels (noise emitted by sound sources) :

- from the diffuser (s) ,
- equipment operating ahead of it/them (air conditioner, air processing unit, etc...),
- and sound sources in the premises.

Next the attenuation in the premises is integrated into the calculation, to provide an overall acoustic pressure level.

Comment : when there are several diffusion devices on the premises, the resulting level of acoustic pressure includes the pressure levels caused by each piece of equipment at the point of measurement, at a distance r (addition of the sound pressure levels by quadratic sum).

$$L_{Pt} = 10 \text{Log} \sum_1^n 10^{L_{pn}/10}$$

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

## COUNTING OF THE LEVEL OF ACOUSTICAL (Lp) :

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

Q : directivity; connected to the position of the terminal in the room.

d : distance in metres of the terminal from the centre of the room or the measuring sensor.

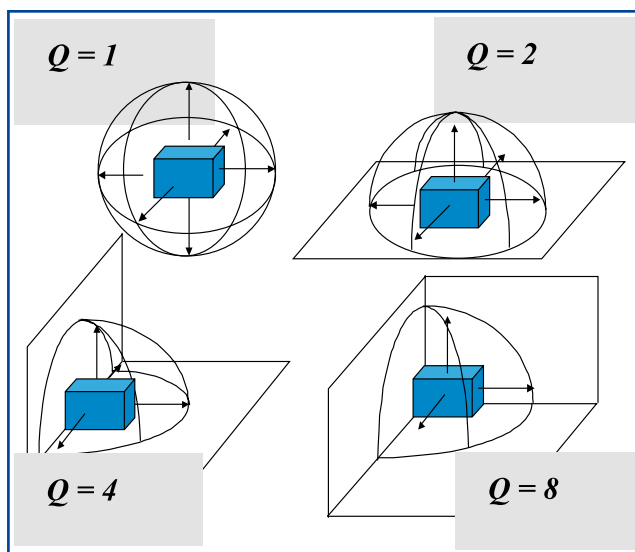
R : absorption constant of the premises  $\Rightarrow R = S\alpha / (1-\alpha)$ .

S : total surface area of the walls of the room in m<sup>2</sup>.

$\alpha$  : Sabine coefficient (see table hereafter).

## LEVEL OF ACOUSTIC PRESURE (Lp) : ASHRAE RECOMMENDATIONS

Premises	Criteria NR (ISO)	Level dB (A)
Radio, TV studio	NR 20	25
Conference room	NR 25	30
Hospital or hotel room	NR 25	30
Cinema	NR 30	30 - 35
Shop	NR 35	40
Restaurant	NR 35 - 40	40 - 45
Supermarket	NR 40	45
Gymnasium, swimming pool	NR 45 - 50	50 - 55
Assembly shop	NR 50	55
Heavy industry	NR 60 - 70	65 - 75
Dangerous noise level	NR 85	90



## ABSORPTION FACTOR OF $\alpha$ THE PREMISES

Premises	Characteristics of the premises	Value of $\alpha$
Radio, TV studio	Very deafening premises	0,45
Restaurant, meeting room	Deafening premises	0,25
Office, library	Average premises	0,15
Museum, hospital	Reverberating premises	0,10
Church, workshop, gymnasium	Very reverberating premises	0,05

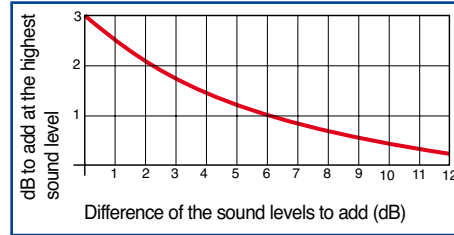
# Components of comfort

## RAPID DETERMINATION OF THE ACOUSTIC CRITERIA

As an initial approximation, the following tools can be used to select the terminals.

In the ALDES documentation, the acoustic performance of the diffusion terminals is expressed in power levels  $L_w$  (NR).

## ADDITION OF TWO DIFFERENT SOUND LEVELS

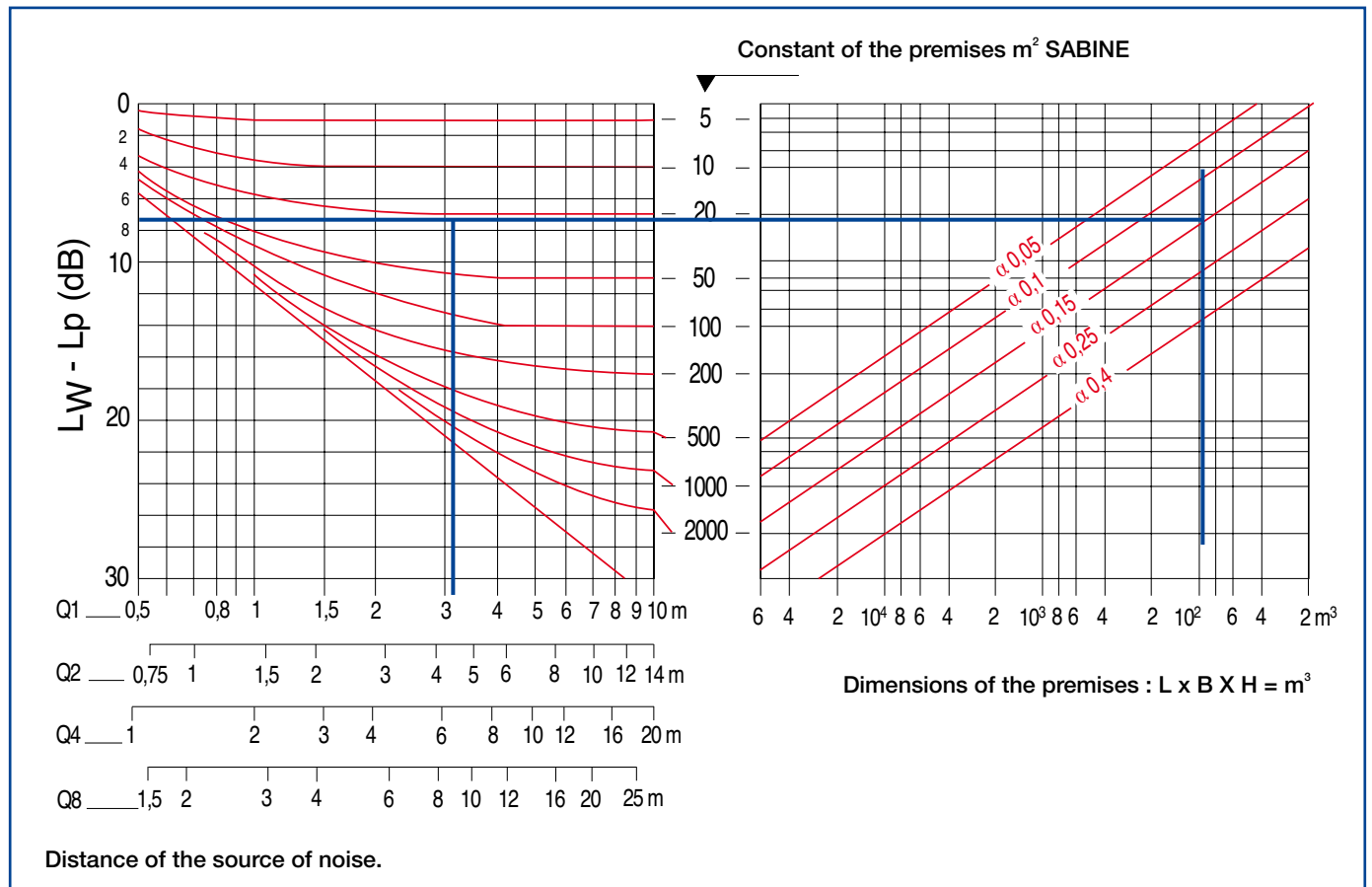


Example  
 $L_1 = 60$  dB et  $L_2 = 65$  dB  
 Therefore  $L_1 + L_2 = L_2 + 1.2$   
 $L_1 + L_2 = 66.2$  dB

## ADDITION OF IDENTICAL SOUND LEVELS

Number of sources	2	3	4	5	6	8	10
Increase of noise level	3	5	6	7	8	9	10

## ATTENUATION OF THE PREMISES



### Example:

Dimensions of the premises :  $L \times B \times H = 8 \times 4 \times 3.1$  m  
 Absorption factor of the premises = **0.15**

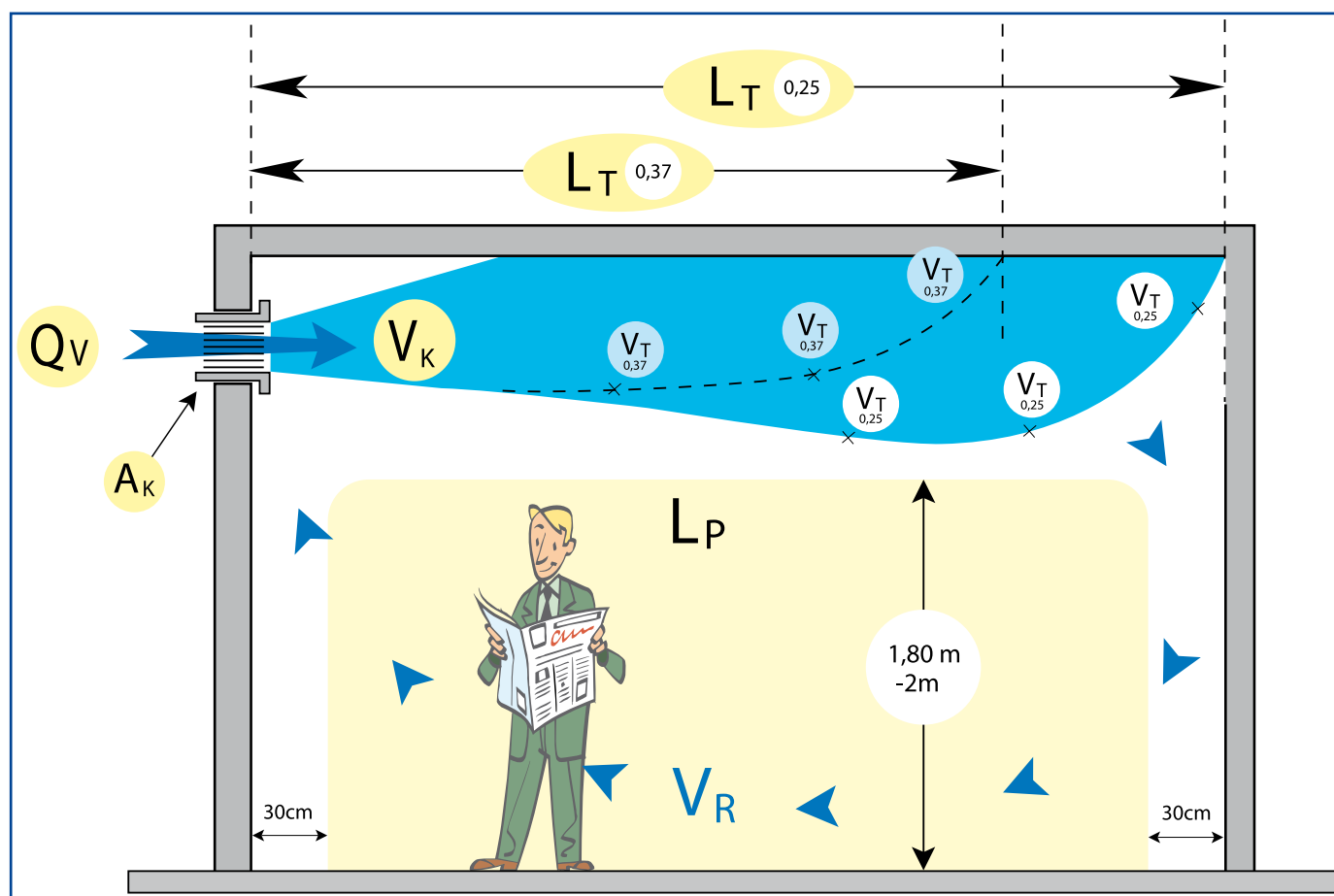
**Volume of the premises** =  $8 \times 4 \times 3.1 = 100$  m<sup>3</sup>  
 Constant of the premises = **25** m<sup>2</sup> Sabine (see diagram).  
 Location of the air supply grille : **Q = 1**  
 Distance of the source of noise = **3** m  
 Attenuation of the premises = **7.5** dB

# Characteristic sizes

## THE AREA OF OCCUPATION

This is the "user" zone for the premises, situated 30m from the walls and between 1.8 to 2 metres high.

The tables of the characteristic sizes of the diffusers qualifies all of the air diffusion and premises treated.



Symbols	Definitions
$A_K$ (m <sup>2</sup> )	Characteristic area of the terminal, determined by the ratio of the air flow $Q_V$ (calibrated and known) to the speed of passage $V_K$ (m/s), measured in accordance with the standard ISO EN 12238
$V_K$ (m/s)	Speed measured by passage of air at the level of the final unit
$L_t$ (m)	Throw or axial distance between the diffuser and the envelope (all of the points of the jet $V_t$ measured in accordance with the standard ISO EN 12238
$V_t$ (m/s)	Speed that defines the envelope of the jet and conditions the $V_r$
$V_r$ (m/s)	Average residual speed in the occupied zone, caused by the choice of speeds $V_t$ at the end of the range $L_t$ .
$L_p$ (NR)	Level of acoustic pressure, equal to the noise perceived by the occupant of the premises.
$L_w$ (NR)	Level of acoustic pressure emitted, or noise generated by the passage of air through the diffusion terminal, transcribed in accordance with the ASHRAE Noise Rating standard.
Rate of air renewal (Vol/h)	New hygienic air flow rate divided by the volume of the premises treated
Air circulation levels (Vol/h)	Total air supply flow rate per hour (fresh air flow + conditioned air flow), divided by the volume of the premises treated. The greater the mixing rate the greater the mixing capacity (CM) of a diffuser must be to guarantee the comfort
Rate of melange (MR)	Index of the Mixing Capacity of a diffuser, used to compare ALDES diffusers.

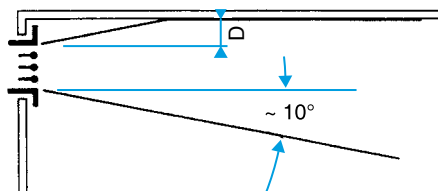
# Characteristic sizes

## THE COANDA EFFECT

Also called the ceiling or wall effect, it translates the tendency of the air current to follow the line of a surface when it is in contact with it.

The Coanda effect occurs starting at speeds  $V_k$  greater than 2m/s.

At equivalent size and flow-rate, the Coanda effect increases the range by approximately 30%. This more easily covers the surface to be treated.



The Coanda effect is optimum for a distance D less than 30 cm.

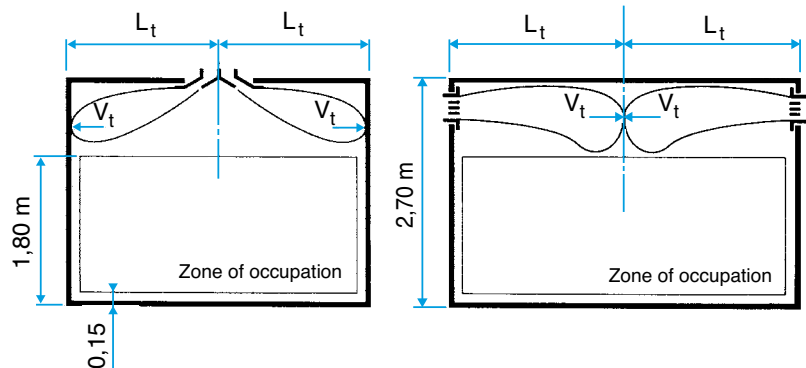
## THE THROW

The ranges are often given for one or two terminal speeds (for example 0.25 m/s and 0.5 m/s). The ranges for other terminal speeds are obtained using the correction factors indicated for each schematic.

## PREMISES WITH HFC\* LESS THAN 3 METRES

For most ceiling diffusers and wall grilles, the adequate throw length  $L_t$  is considered to be the distance between the terminal and the opposite wall, or half the distance between two terminals facing each other.

### HFC < 3



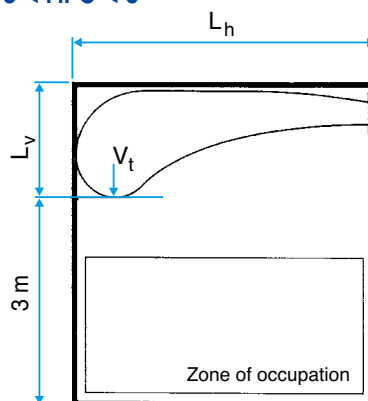
## PREMISES WITH HFC\* BETWEEN 3 AND 5 METRES :

For high ceilings, the distance between the terminal and the opposite wall can be added to.

This vertical throw  $L_v$  must be less than half the horizontal part  $L_h$ , therefore :

$$L_t = L_h + L_v \text{ where } L_v \leq L_h / 2$$

### 3 < HFC < 5



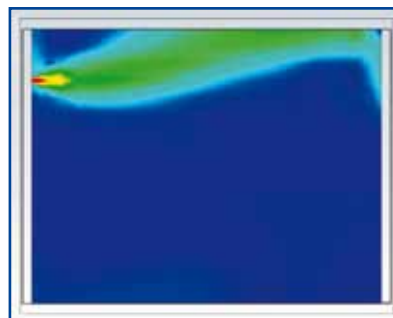
## PREMISES WITH HFC\* GREATER THAN 5 METRES

In premises with high ceilings, where the air supply generally comes from above, the difficulty lies in obtaining a good level of comfort year-round.

A controlled throw length reduces stratification phenomena in winter and the feeling of a "cold shower" in summer.

The matrices of the long-range ejectors and swirl diffusers allow the selection of a model adapted to air supply temperatures in summer and winter.

## HFC > 5 REPRESENTATION OF THE SPEEDS



Phenomenon of stratification in heating mode

\* HFC = Height From Ceiling.



# Characteristic sizes

## ANISOTHERMAL DIFFUSION

As part of anisothermal diffusion, the blown air is subjected to the Archimedes impulse. As a result, cold air has a tendency to descend, and warm air to rise and therefore to cause a phenomenon of drop (cold shower) or stratification (vertical temperature gradient).

### When cooling

The phenomena of premature drop of the jet are compensated for through use of the Coanda effect.

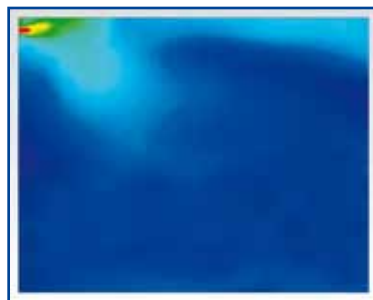
For air supply  $\Delta T$  greater than  $8^\circ\text{C}$  select, at the same time as the Coanda effect, a range where the  $V_t$  at the opposite wall is greater than or equal to  $0.37\text{ m/s}$ . For wall grilles, a vertical deflection of  $15^\circ$  can be used.

### When heating

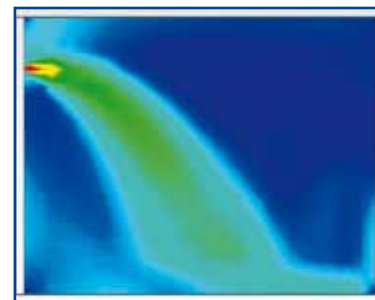
For the HFC greater than three metres, make sure to use an appropriate diffuser : swirl diffuser with vanes oriented downwards, vertical air supply...

This is to avoid the phenomena of stratification, particularly harmful for comfort in premises with a mezzanine.

## COANDA EFFECT AND ANISOTHERMAL DIFFUSION



Jet of fresh air with Coanda effect. There are no on-speeds in the zone of occupation.



This jet of fresh air, taken in without the Coanda effect, has too short a range and therefore generates a "cold shower."

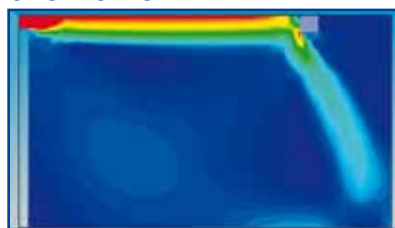
Numeric simulations show various physical phenomenon.

- Red airflows have a speed superior to  $0.5\text{ m/s}$ .
- Dark blue zones show speed zones inferior to  $0.2\text{ m/s}$ .

## DIGITAL SIMULATIONS DISPLAY DIFFERENT PHYSICAL PHENOMENA

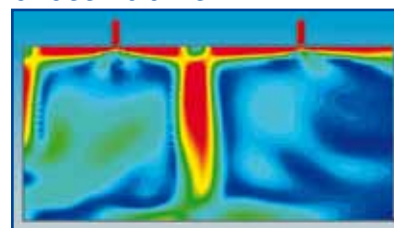
- The red air flows have a speed greater than  $0.5\text{ m/s}$ .
- The navy blue zones show zones with speed less than  $0.5\text{ m/s}$ .

## OBSTACLES



An obstacle becomes a real deflector when it is poorly placed in the air flow, particularly for jets of fresh air.

## CROSSING JETS



Avoid crossing air jets of speed greater than  $0.5\text{ m/s}$ .

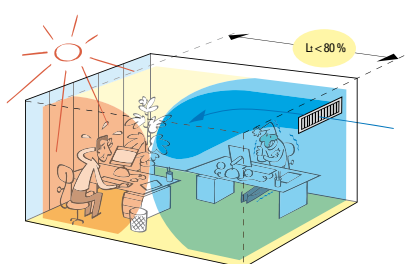
## ASYMMETRY OF DIFFUSION AND WINDOWED SURFACE

Too large temperature difference between the room and its walls can lead to discomfort :

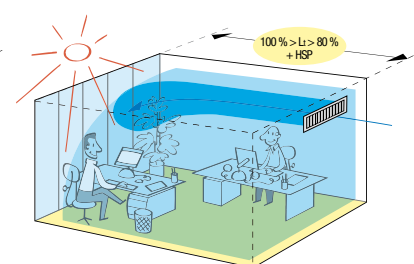
- A difference of  $10^\circ\text{C}$  between the contact temperature and the room temperature causes a sensation of cold walls in winter and hot walls in summer.

In the presence of large window surfaces favour the air supply towards it.

## ASYMMETRY OF DIFFUSION



Throw too short: hot zones and "cold shower".



Appropriate throw: optimal comfort.

## VARIABLE AIR-FLOW SYSTEMS

At the lowest flow-rate, make sure the diffusion equipment has :

- a  $V_k$  of at least  $2\text{ m/s}$ , to guarantee a proper Coanda effect and absence of a "cold shower".
- a throw  $L_t$  greater than  $80\%$  of the length of the ceiling, to avoid creation of warm and cold zones.

At max flow-rate, make sure the diffusion equipment has :

- a sound level compatible with use of the premises even in transition mode.
- a maximum range  $L_t$  of the length of the ceiling + the HFC (height from the ceiling), in order to avoid creating disagreeable drafts.

In summary, a selected range  $L_t$  between  $80\%$  and  $100\%$  of the length ceiling + HFC guarantees optimum comfort.

# Characteristic sizes

## POSITIONING THE EXHAUST

The position of the exhaust has only a slight impact on the speeds in the zone of occupation.

On the other hand, an exhaust grille positioned in an air supply flow with a speed greater than 0.37 m/s leads to a phenomenon of "bypass".

As a result this diminishes the air conditioning system performance.

## INAPPROPRIATE POSITIONING

Example of a comfortable installation in terms of speed in the zone of occupation, but uncomfortable from the point of view of temperature.

This installation is in cooling mode.

Representation of speeds

- 1 : Air supply diffuser.
- 2 : Exhaust diffuser.
- 3 : Lack of excessive speeds therefore no discomfort due to drafts.

This installation seems to provide satisfaction from an aerualic point of view.

Representation of temperatures

- 1 : Poor coverage of windowed surfaces on the left, thus local discomfort through asymmetric distribution.
- 2 : Exhaust temperature less than room temperature, thus poor air conditioning system yield.
- 3 : Room temperature too high.

The exhaust grille is positioned in the air supply flow with a speed greater than 0.37 m/s.

This can also imply acoustic discomfort as the air conditioning equipment operates at maximum to try to reach the recommended temperature.

With respect to speed and temperature parameters, this installation is uncomfortable.

## THE INTEGRATED AIR SUPPLY + EXHAUST DIFFUSERS

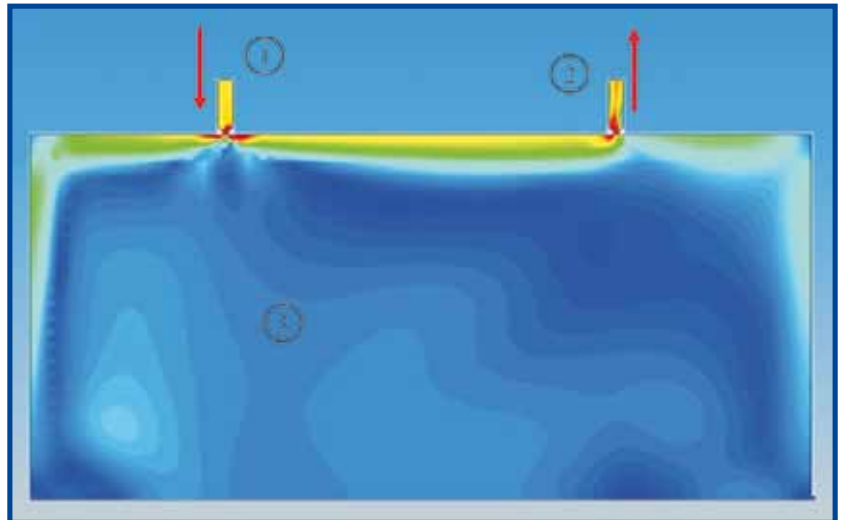
Use of this type of diffuser meets the position restrictions of the exhaust, and represents a significant gain in time for the installation.

In the Aldes range of COMBINED diffuser models incorporate the two air supply and exhaust functions on the same equipment.

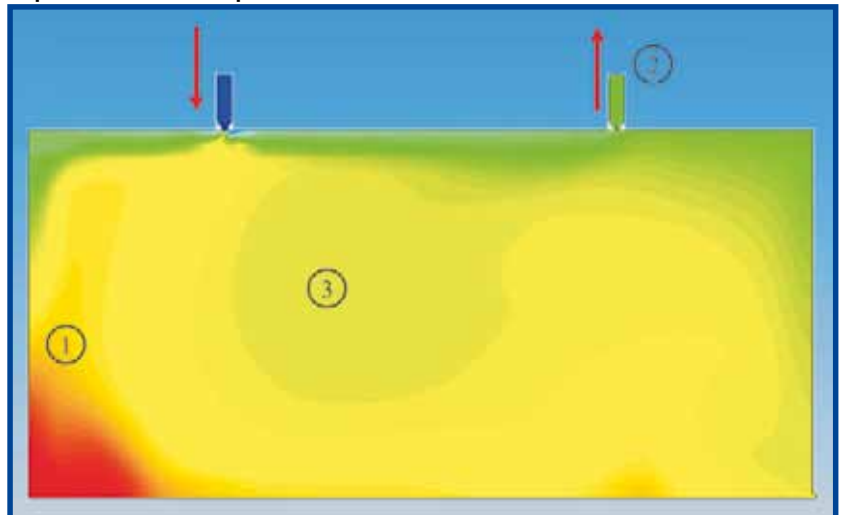
In the digital simulation opposite, you can see the efficiency of this solution :

- Absence of excess-speeds, therefore no discomfort due to drafts.
- No recycling between the air supply and the exhaust.

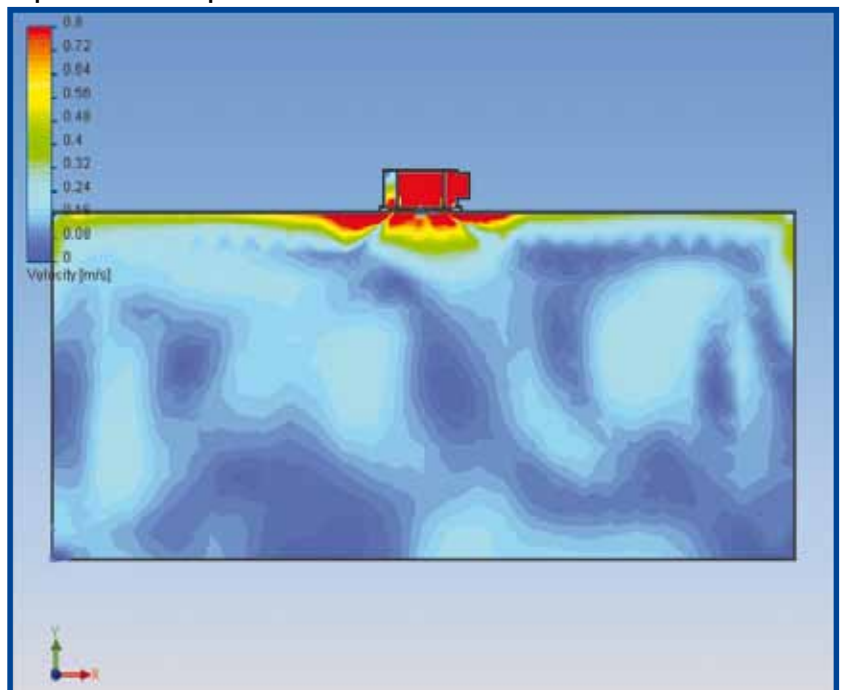
Representation of speeds



Representation of temperatures



Representation of speeds



# Selection of diffusers

## MODEL COMFORT AND SELECTION

Occupant comfort depends on relevant technical selection.

This selection is subject to the following constraints :

- Height from the ceiling (HFC) and position.
- Mixing rate.
- $\Delta T$  at the air supply.

Initially this means choosing the model adapted to the application so the dimensions can then be selected.

## MODEL SELECTION : HFC\*

In choosing a model adapted to the position and HFC, proper coverage of the zone to be treated without risk of discomfort from drafts is provided.

There is a range of products adapted to each HFC.

\*HFC : height from the ceiling

HFC (m)	Type of premises
HFC < 3	Commercial premises, hotels, etc...
3 < HFC < 5	Local shops, restaurants, halls, etc...
HFC > 5	Warehouses, exhibition halls, station halls, gymnasiums, industrial halls, etc...

## MODEL SELECTION : THE MIXING RATE

The mixing rate represents the ratio between the total air flow taken in (in m<sup>3</sup>/h) and the volume of the premises (in m<sup>3</sup>).

In particular it translates the thermal power to be transmitted to the premises, as well as the fresh air needs (ventilation).

The higher the mixing rate, the greater the mixing capacity of the diffuser has to be to guarantee even and comfortable temperatures throughout the zone of occupation.

Standard commercial applications	Air renewal rate* (Vol/h)	Air circulation level** (Vol/h)
Windowed individual offices	1 - 4	4 - 25
Meeting rooms	3 - 6	6 - 18
Restaurant	4 - 6	6 - 20

\*Hygienic fresh air flow rate divided by the volume of the premises treated

\*\*total air supply flow-rate per hour (fresh air flow + air conditioning flow), divided by the volume of the premises treated.

## THE TEMPERATURE AT THE END OF THE RANGE AND THE MIXING CAPACITY

The mixing capacity of a diffuser is in particular increased through the temperature difference at the end of the range and the desired room temperature.

The more this difference is reduced, the better the quality of the mix.

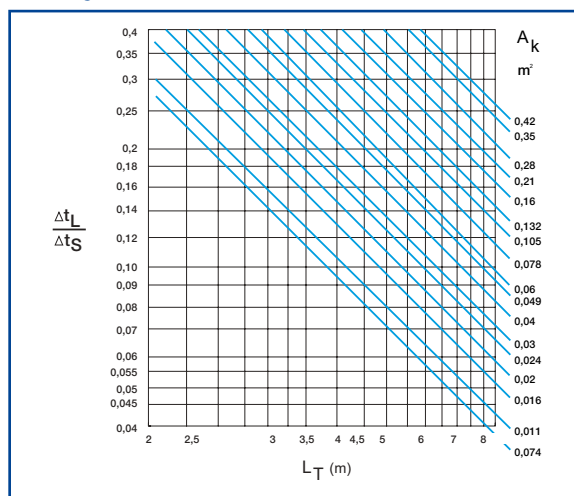
MR (Mixing Rate) is the ratio between :

- The difference between the temperature at the end of the throw and the room temperature ( $\Delta T_L$  in °C).
- and
- The difference between the air supply temperature and the room temperature ( $\Delta T_S$  in °C).

Therefore :

$$MR = \frac{\Delta t_L}{\Delta t_S}$$

## MIXING RATE



Example with a double deflection wall grille, dimensions 400 x 200 mm :

- $A_k = 0.049 \text{ m}^2$ .
- air supply temperature of 17°C.
- room temperature of 25°C.

For  $L_T = 7 \text{ m}$ , the value of the coefficient MR is : 0.12 (see graph).

$$MR = \frac{\Delta t_L}{\Delta t_S} = 0.12$$

Therefore at a distance of 7 m in front of the grille :

$$\text{The temperature in the air jet} = 25 - 8 \times MR = 25 - 0,96 = 24,04 \text{ °C.}$$

## MODEL SELECTION : THE EQUIPMENT UPSTREAM OF THE DIFFUSER

There are several ventilation and air-conditioning techniques. Often the two needs are combined in a single system.





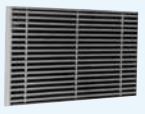
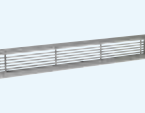






An air conditioning unit does not have the same air supply temperatures as a fan-convactor, either in a water loop or direct expansion.

By design, not all air diffusion products have the same capacity to treat hot or cold air flow.

The tables on the following pages are a summary of all these restrictions and make the selection of the appropriate diffusion terminal.

# Selection guide









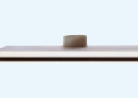






## Height from ceiling (HFC) < 3 meters




Applications	Range	Reference model		System upstream of diffuser		
				Ventilation	Air Handling Unit	Fan-coil unit
Wall Air supply	Small fixed grilles Air circulation levels 1 - 6	BIM 300		++	+	-
	Adjustable core grilles Air circulation levels 1 - 4	SR 145		++	-	-
	Double deflection grilles Air circulation levels 4 - 10	SC 102 D		++	++	+
	Fixed linear bar grilles Air circulation levels 4 - 10	AC 440		++	++	++
	Floor mounted fixed linear bars grilles Air circulation levels 4 - 10	AG 450		+	+	+
	Fixed aluminium linear bars grilles (L/H < 10) Air circulation levels 4 - 15	AC 440		+	++	++
	Fixed air transfer blade grilles	AC 181		++	++	++
Ceiling Air supply	Small terminals Air circulation levels 1 - 6	BIM 320		++	+	-
	Fixed circular diffuser for ceiling tile Air circulation levels 6 - 12	SC 832 T		++	+	-
	Adjustable circular diffusers for ceiling tiles Air circulation levels 6 - 25	AT 842		+	++	++
	Fixed square diffusers for ceiling tiles Air circulation levels 6 - 20	SF 704 TP		+	++	++
	Multi-slot diffusers for ceiling tile air supply + exhaust Air circulation levels 6 - 20	ALD 610 K Combined		+	++	++

++ Optimal comfort and system efficiency  
 + Correct comfort level and acceptable system performance  
 - Prior to use, an in depth diffusion study must be carried out.

# Selection guide

## Height from ceiling (HFC) < 3 meters




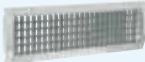









Applications	Range	Reference model		System upstream of diffuser		
				Ventilation 	Air Handling Unit 	Fan-coil unit 
Ceiling mounted air supply	Ajustable square diffuser perforate sheet for ceiling tiles Air circulation levels 6 - 20	SC 360 R		+	+	++
	Swirl square diffuser for ceiling tile Air circulation levels 6 - 28	SF 785		+	++	++
	Swirl diffusers for ceiling tiles Air circulation levels 6 - 32	Twisted 850		+	++	++
	Fixed linear diffusers Air circulation levels 6 - 18	ALD 610-620		++	+	++
	Adjustable slot diffusers Air circulation levels 6 - 20	AG 280 D		+	++	++
	Small flow-rate slot diffusers Air circulation levels 6 - 15	SN 231		++	+	-
Wall mounted air returned	Small fixed grilles	BIM 300		++	+	-
	Fixed blades grilles	AC 121		++	+	+
	Fixed blades grilles with filter	AC 161 W		++	+	+
Ceiling mounted air returned	Small fixed grilles	BIM 300		++	+	-
	Frameless grilles for ceiling tiles	AU 124		+	++	++
	Fixed grille with fitted filter for ceiling tiles	AG 637 W		+	++	++

 Optimal comfort and system efficiency  
 Correct comfort level and acceptable system performance  
 Prior to use, an in depth diffusion study must be carried out.

# Selection guide

## 3 < HFC < 5 meters










Generality

Applications	Range	Reference model		System upstream of diffuser		
				Ventilation 	Air Handling Unit 	Fan-coil unit 
Wall Exhaust or on ducts	Ajustable blades grilles Air circulation levels 4 - 10	GD 102 D		+++	+++	+
	Grilles with front fixed linear bars Air circulation levels 4 - 10	AC 440		+	+	-
	Fixed linear bar grilles (L/H < 10) Air circulation levels 4 - 15	AC 440		+	+++	+++
Ceiling Air supply	Adjustable circular diffuser Air circulation levels 6 - 25	AF 842		+	+++	+++
	Multidirection square diffuser Air circulation levels 6 - 20	SF 704		+	+++	+
	Square diffuser with perforated sheet Air circulation levels 6 - 20	SC 310 R		+	+++	+++
	Swirl diffuser Air circulation levels 6 - 28	SF 785		+	+	+
	Swirl diffuser Air circulation levels 6 - 32	Twisted 850		+	+	+
	Swirl diffuser Air circulation levels 6 - 25	SF 861		+	+	+
	Fixed linear diffusers Air circulation levels 6 - 25	ALD 610 - 620		+	+	+

++ Optimal comfort and system efficiency  
+ Correct comfort level and acceptable system performance  
- Prior to use, an in depth diffusion study must be carried out.

# Selection guide

## 3 < HFC < 5 meters


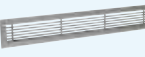
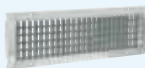






Applications	Range	Reference model		System upstream of diffuser		
				Ventilation 	Air Handling Unit 	Fan-coil unit 
Ceiling Air supply	Adjustable linear diffusers Air circulation levels 6 - 25	AG 280 D		+	+	++
	Long range ejectors Air circulation levels 10 - 25	DGH 2		-	+	+
Wall Exhaust or on ducts	Fixed blades grilles	AC 123		++	+	+
	Ajustable blades grille on ducts	GD 102		+	++	+
	Fixed blades grilles with filter	AC 161 W		+	++	+
Ceiling Exhaust	Fixed blade grilles	AG 637 W		+	++	++




- ++ Optimal comfort and system efficiency
- + Correct comfort level and acceptable system performance
- Prior to use, an in depth diffusion study must be carried out.

# Selection guide

## HFC > 5 meters

Generality

Applications	Range	Reference model		System upstream of diffuser		
				Fan coil unit	Air Handling Unit	Roof top*
Wall Exhaust or on ducts	Textile diffusers Air circulation levels 10 - 25	CSI		+	+	++
	Grilles with fixed front linear bars (L/H < 10) Air circulation levels 4 - 15	AC 440		+	+	-
	Grille with mobile vanes on ducts Air circulation levels 4 - 10	GD 102 D		++	++	+
Ceiling Air supply	Adjustable multidirection circular diffuser Air circulation levels 6 - 25	AF 842		+	++	+
	Adjustable swirl diffusers Air circulation levels 6 - 28	AR 883		-	+	+
	Long range ejectors Air circulation levels 10 - 25	DGH 2		-	++	++
Wall exhaust or on ducts	Fixed blades grilles	AC 123		+	++	+
	Fixed blades grille with filter	AC 161 W		++	+	-
	Single deflection grilles on ducts	GD 102		+	++	++

 Optimal comfort and system efficiency  
 Correct comfort level and acceptable system performance  
 Prior to use, an in depth diffusion study must be carried out.

\* Air-conditioning monoblock unit on the roof

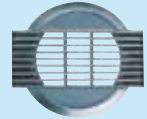


## Small grilles

Core grilles - p 24



Small fixed metal grilles - p 29



Safety grilles - p 32



# Core grilles

## Series SR 143 - SR 145 - steel



Grille SR 143



Grille SR 145

### APPLICATION

- Air exhaust or air supply.
- SR 143 : air exhaust only.
- SR 145 : air supply only.
- For wall or ceiling mounting.

### DESCRIPTION

- Adjustable central core grilles.
- Position locked after regulation by lock-nut.
- External ring with gasket.
- Steel.

### FINISH

- Epoxy paint steel, RAL9010 white.

### FIXING

- By clipping into the duct via a sleeve.

### ACCESSORIES

- Galvanized steel connection sleeve supplied.

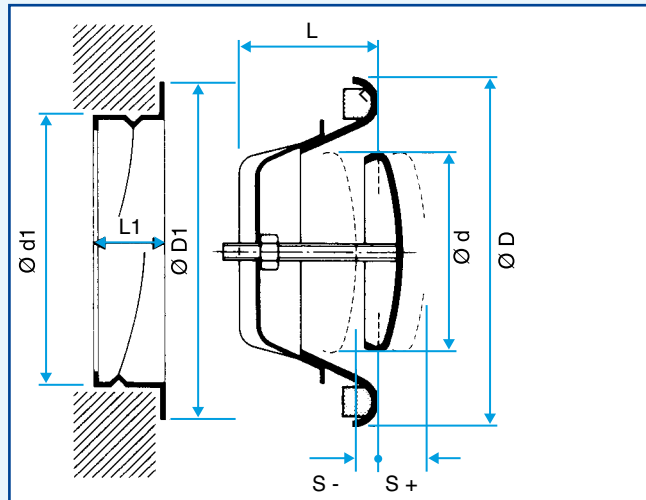
### STANDARD DIMENSIONS

- 80 mm to 200 mm diameters.

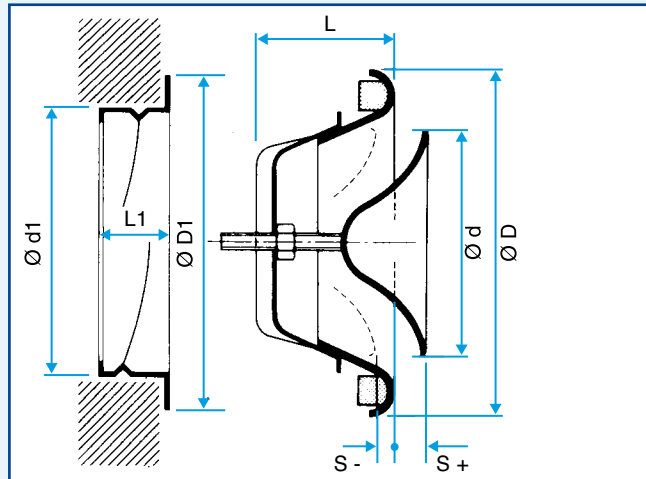
### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

### DIMENSIONS



Grille SR 143 with sleeve



Grille SR 145 with sleeve

### STANDARD DIMENSIONS

Ø d1 (mm)	Ø D1 (mm)	Ø d (mm)	Ø D (mm)	L1 (mm)	L (mm)
80	108	61	115	50	41
100	130	75	137	50	47
125	155	100	161	50	49
160	190	130	218	50	60
200	236	157	248	50	75

# Core grilles

## Series SR 149 - plastic



Grille SR 149

### APPLICATION

- Air exhaust or air supply.
- For wall or ceiling mounting.

### DESCRIPTION

- Adjustable central core grilles.
- Position locked after regulation by lock-nut.
- External ring with a gasket.
- Polypropylene.

### FINISH

- Polypropylene, RAL9010 white.

### FIXING

- By clipping into the duct via a sleeve.

### ACCESSORIES

- Plastic connection sleeve supplied.

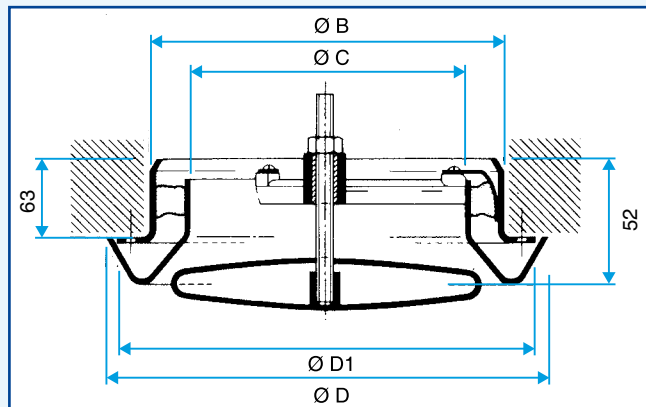
### STANDARD DIMENSIONS

- 100 mm to 200 mm diameters.

### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

### DIMENSIONS



Grille SR 149 with sleeve

### STANDARD DIMENSIONS

Ø B (mm)	Ø C (mm)	Ø D (mm)	Ø D1 (mm)
100	80	150	122
125	100	170	155
150	120	190	168
200	170	240	220

## Series SR 143 - SR 145 - SR 149

### Standard range

Dimensions	SR 143 Code	SR 145 (air supply) Code	SR 149 Code
Ø 100	11052226	11052204	11001996
Ø 125	11052227	11052205	11001997
Ø 150			11001998
Ø 160	11052228	11052206	
Ø 200	11052229	11052207	11001999
<b>Fixing</b>		<b>Finish</b>	
• By clipping into the duct with sleeve.		• Models 143 - 145 : steel epoxy paint RAL9010. • Model 149 : polypropylene RAL9010.	

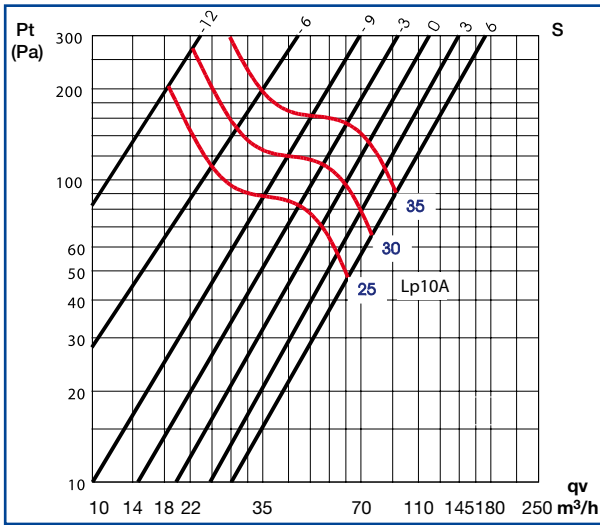
### PROPOSED ACCESSORIES

- Steel or plastic connection sleeve (supplied).

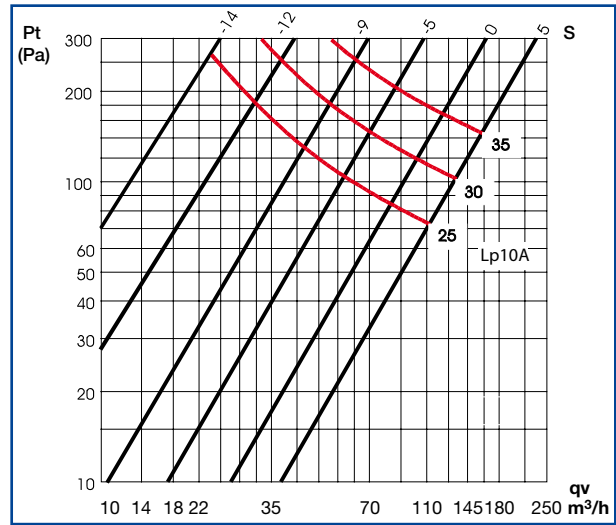
# Core grilles

## Series SR 143 - air exhaust

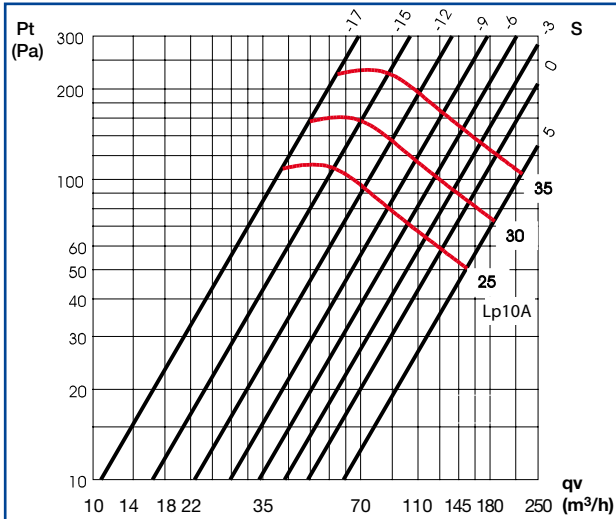
Diameter 80



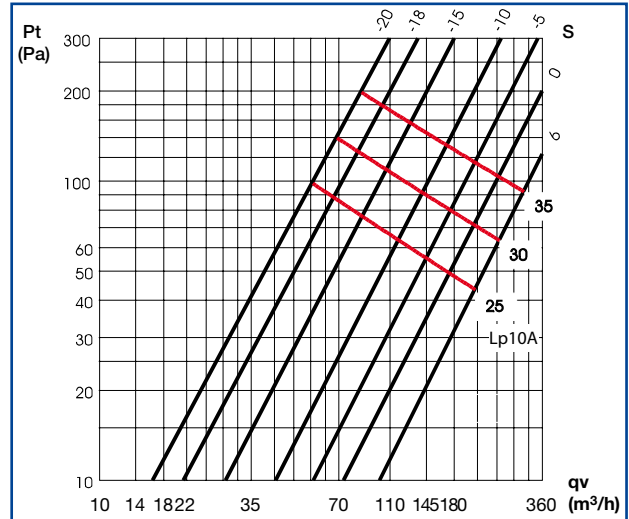
Diameter 100



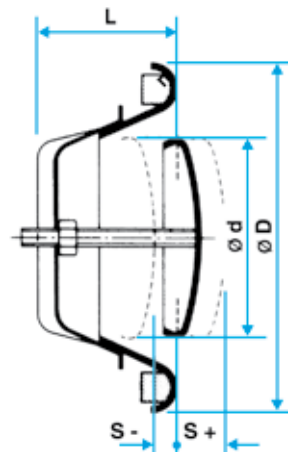
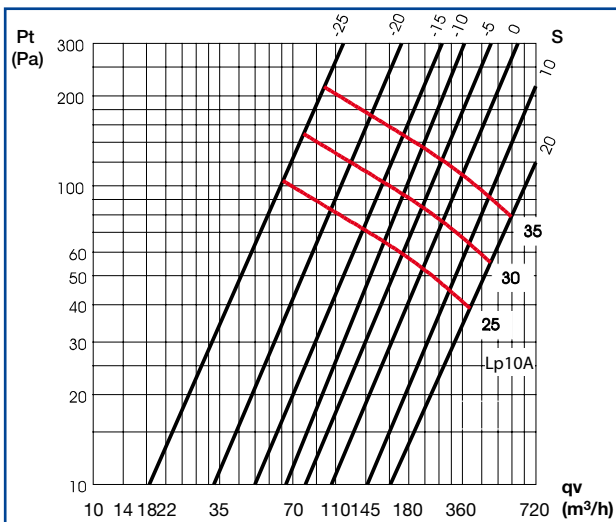
Diameter 125



Diameter 160



Diameter 200



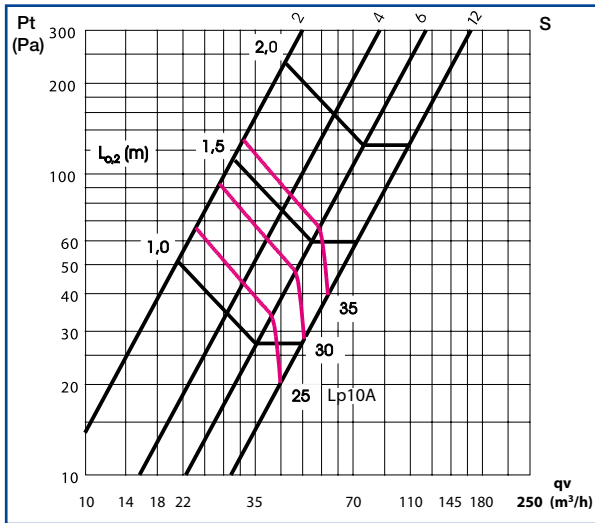
S = opening in mm.

Lp10A : acoustic pressure level (dB (A)) assuming attenuation of premises to be 4dB.

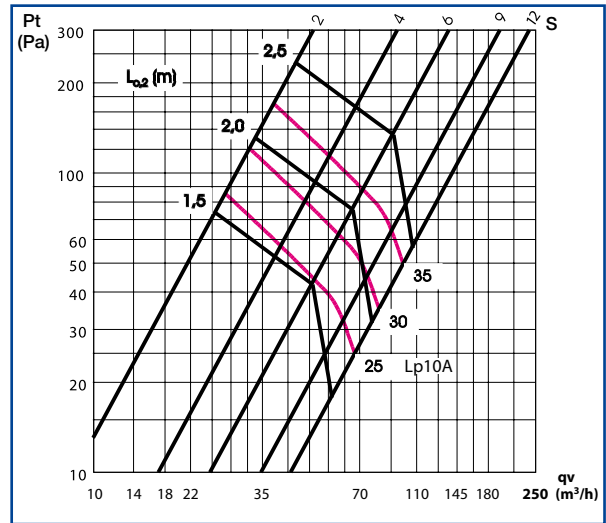
# Core grilles

## Series SR 145 - air supply

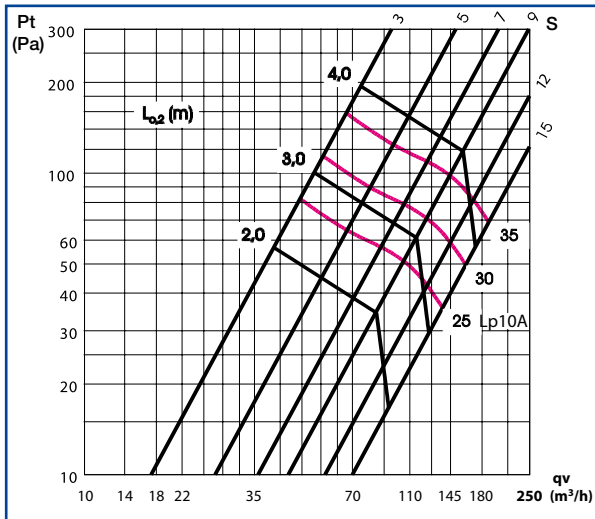
Diameter 80



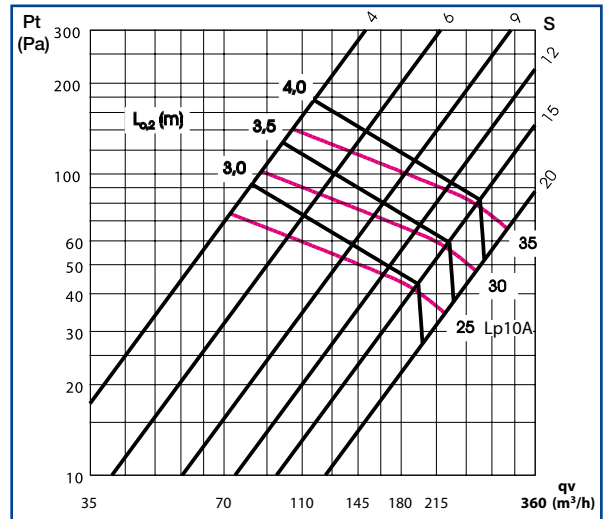
Diameter 100



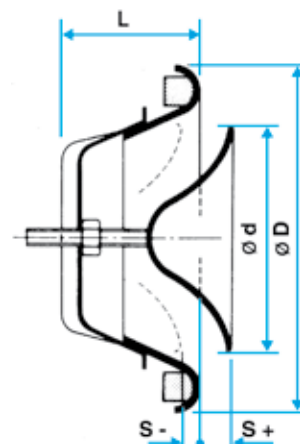
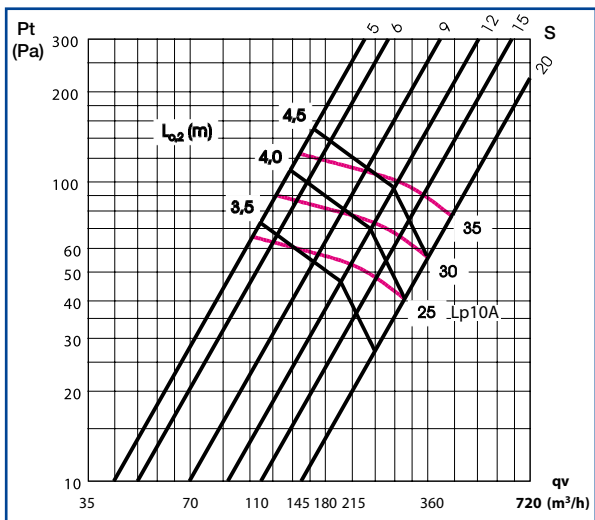
Diameter 125



Diameter 160



Diameter 200



S = opening in mm.

Lp10A : acoustic pressure level (dB (A)) assuming attenuation of premises to be 4dB.

# Core grilles

## Series SR 149

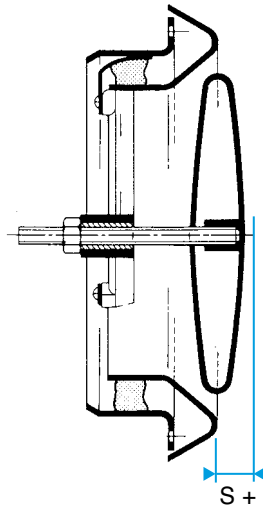
SELECTION - AIR SUPPLY - AIR EXHAUST

	Ø 100	qv (m³/h)	Airflow					
			50	60	80	100	150	200
S = opening in mm	+ 5	ΔPt (Pa)	105	150	240	350		
		L <sub>w</sub> (NR)	33	38	47	53		
	+ 10	ΔPt (Pa)	45	60	100	140	250	
		L <sub>w</sub> (NR)	23	29	37	44	55	
+ 15	ΔPt (Pa)		35	55	80	160	300	
	L <sub>w</sub> (NR)		22	30	38	48	46	
+ 20	ΔPt (Pa)		22	35	50	105	170	
	L <sub>w</sub> (NR)		-	25	31	45	50	

	Ø 125	qv (m³/h)	Airflow					
			50	60	80	100	150	200
S = opening in mm	+ 5	ΔPt (Pa)	80	115	180			
		L <sub>w</sub> (NR)	34	38	43			
	+ 10	ΔPt (Pa)		40	70	100	180	
		L <sub>w</sub> (NR)		29	35	40	43	
+ 15	ΔPt (Pa)		30	48	68	125	200	
	L <sub>w</sub> (NR)		25	31	35	44	50	
+ 20	ΔPt (Pa)			32	45	85	130	
	L <sub>w</sub> (NR)			26	31	38	46	

	Ø 150	qv (m³/h)	Airflow					
			60	80	100	150	200	300
S = opening in mm	+ 7	ΔPt (Pa)	36	60	95	215		
		L <sub>w</sub> (NR)	20	28	35	45		
	+ 10,5	ΔPt (Pa)	20	35	52	115	200	
		L <sub>w</sub> (NR)	-	21	27	37	45	
+ 14	ΔPt (Pa)			29	60	105	250	
	L <sub>w</sub> (NR)			20	27	37	47	

	Ø 200	qv (m³/h)	Airflow					
			80	100	150	200	300	400
S = opening in mm	+ 7	ΔPt (Pa)	42	65	140	240		
		L <sub>w</sub> (NR)	25	32	43	52		
	+ 10,5	ΔPt (Pa)		32	70	125	250	
		L <sub>w</sub> (NR)		22	36	44	56	
+ 14	ΔPt (Pa)			40	70	160	250	
	L <sub>w</sub> (NR)			27	35	47	56	



S = opening in mm.

# Small fixed metal grilles

## Series BIM 300 - BIM 320 - aluminium



BIM 300 white grille



BIM 320 white grille

### APPLICATION

- Air supply and air exhaust.
- BIM 300 : wall mounting only for air supply or wall and ceiling mounting for air exhaust.
- BIM 320 : ceiling mounting for air supply.

### DESCRIPTION

- Central core in extruded aluminium profiles.
- Deflection 0° for type 300 and deflection 90° for type 320.
- Polycarbonate M1 body.

### FINISH

- Natural gloss or RAL9010 white epoxy paint anodised aluminium finish.

### FIXING

- Wall fixing by clipping into the duct (screwed in if necessary)
- Into the ceiling by using the fixing lugs provided as accessories.

### ACCESSORIES

- Fixing lugs for ceiling mounting.

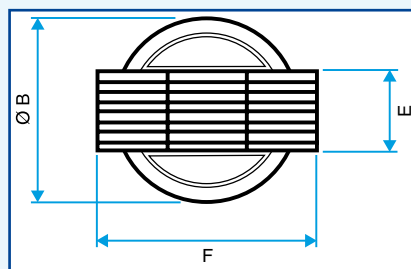
### STANDARD DIMENSIONS

- 100 mm to 160 mm diameters.

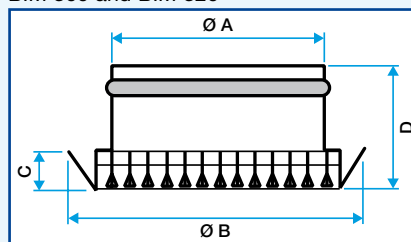
### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

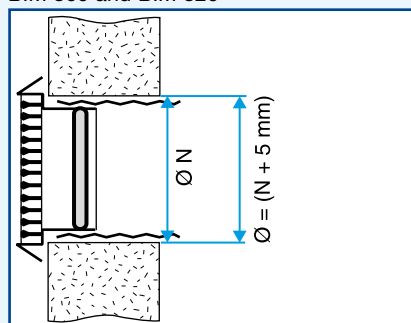
### DIMENSIONS



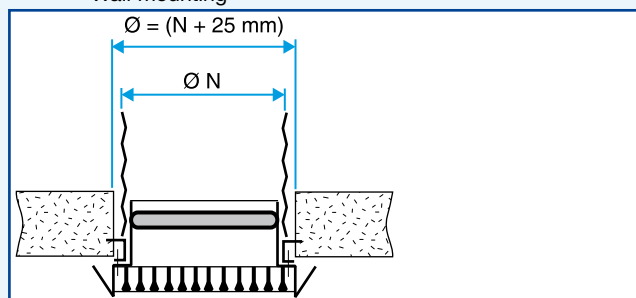
BIM 300 and BIM 320



BIM 300 and BIM 320



Wall mounting



Ceiling mounting (use the fixing lugs)

### STANDARD DIMENSIONS

Ø N (mm)	Ø A (mm)	Ø B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
100	99	151	28	73	68	172
125	124	172	28	78	82	194
160	159	213	28	93	105	247

# Small fixed metal grilles

## Series BIM 400 - BEM 780 - aluminium



BIM 400 White grille



BEM 780 White grille

### APPLICATION

- Air supply and air exhaust.
- BIM 400 : wall mounting only for air supply or wall and ceiling mounting for air exhaust.
- BEM 780 : air exhaust only. Wall mounting or ceiling mounting.

### DESCRIPTION

- Pressed aluminium body.
- BIM 400 : core made of extruded aluminium bars, inclined at 15°.
- BEM 780 : core made of a 15 x 15 mm mesh.

### FINISH

- Natural gloss or RAL9010 epoxy white anodised aluminium finish.
- Finish in accordance with the RAL colour chart. Consult the list of available colours in the appendix.

### FIXING

- Wall fixing by clipping into the duct (screwed in if necessary)
- Into the ceiling by using the fixing lugs legs provided as accessories.

### ACCESSORIES

- Mounting legs for use in the ceiling.

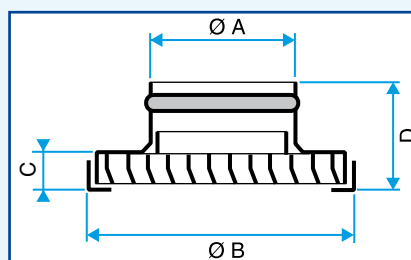
### STANDARD DIMENSIONS

- 100 mm to 200 mm diameters.

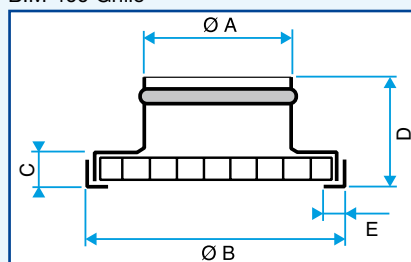
### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

### DIMENSIONS



BIM 400 Grille



BEM 780 grille

### STANDARD DIMENSIONS

Model	A (mm)	B (mm)	C (mm)	D (mm)
BIM 400	100	158	20	60
	125	158	20	60
	160	198	20	60
	200	248	20	60
BEM 780	100	158	14	54
	125	158	14	54
	160	198	14	54
	200	248	14	54

## Series BIM 300 - BIM 320 - BIM 400 - BEM 780

### Standard range

Dimensions	BIM 300 anodised Code	BIM 300 white Code	BIM 320 anodised Code	BIM 320 white Code	BIM 400 anodised Code	BIM 400 white Code	BEM 780 anodised Code	BEM 780 white Code
Ø 100	11052216	11052231	11052221	11052236	11052211	11052208	11052201	11052245
Ø 125	11052217	11052232	11052222	11052237	11052212	11052209	11052202	11052246
Ø 160	11052218	11052233	11052223	11052238	11052213	11052210	11052203	11052247
Ø 200					11052214	11052215	11052249	11052248

#### Fixing

- Fixing lugs for ceiling mounting.
- Wall mounting by clipping into the duct.

#### Finish

- Anodised aluminium or RAL9010 white.

### PROPOSED ACCESSORIES

- Fixing lugs for ceiling mounting (code 11053493).



# Small fixed metal grilles

## Series BIM 300 - BIM 320 - BIM 400 - BEM 780

### SELECTION - AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Ø (mm)	qv (m <sup>3</sup> /h)										Lw Vk	Lt Pa							
		30		60		75		90		130				160		210		250		300
0.0034	BIM 300 100	< 20	1,7	25	3,3	30	4,2	34	5,3											
		2,5	3	4,9	10	6,1	16	8,1	25											
0.0050	125	< 20	1,4	22	2,7	24	3,4	27	4,4	35	5,9	38	7,3							
		1,7	1	3,3	5	4,2	7	5,3	10	7,2	22	8,9	33							
0.0090	160									26	4,4	30	5,4	35	7,1	59	8,5			
										4	7	4,9	10	6,5	17	7,7	25			
0.0026	BIM 320 100	< 20	1,4	30	2,7	37	3,4	42	4,1											
		3,2	4	6,4	17	8	26	9,6	38											
0.0043	125	< 20	1,1	24	2,1	30	2,7	33	3,2	39	4,6	43	5,7							
		1,9	2	3,9	6	4,8	10	5,8	14	8,4	29	10,3	44							
0.0067	160									< 20	3,7	36	4,6	43	6					
										5,4	12	6,6	18	8,7	31					
0.0037	BIM 400 100	< 20	1,6	24	3,3	< 20	4,1	31	4,9											
		2,2	2	4,5	9	5,6	14	6,8	21											
0.0060	125	< 20	1,3	< 20	2,6	< 20	3,2	24	3,9	32	5,6	35	6,8							
		1,4	1	2,8	3	3,5	5	4,2	8	6	16	7,4	25							
0.0108	160									23	4,1	26	5,1	33	6,7	36	8			
										3,3	5	4,1	8	5,4	13	6,4	19			
0.0131	200	Lw	Lt							< 20	3,6	25	4,7	31	5,6	37	6,7			
		Vk	Pa							3,4	4	4,5	7	5,4	10	6,4	14			

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s.

### SELECTION - AIR EXHAUST

Ak (m <sup>2</sup> )	Ø (mm)	qv (m <sup>3</sup> /h)										Lw Vk	Lt Pa							
		30		60		75		90		130				160		210		250		300
0.0030	BIM 300 100	-	-	21	-	28	-	35	-											
		2,8	7	5,6	10	6,9	16	8,3	23											
0.0041	125	-	-	-	-	-	-	26	-	38	-	47	-							
		2	1	4,1	3	5,1	6	6,1	11	8,8	19	10,8	27							
0.0063	160									25	-	33	-	42	-	49	-			
										5,7	8	7,1	14	9,2	20	11,2	29			
0.0030	BIM 320 100	22	-	36	-	41	-	44	-											
		2,8	5	5,6	25	6,7	32	8,3	50											
0.0038	125	21	-	31	-	36	-	40	-	47	-	53	-							
		2,2	4	4,4	6	5,5	19	6,6	34	9,5	57	11,7	86							
0.0053	160									41	-	45	-	51	-					
										6,8	25	8,4	43	11	65					
0.0034	BIM 400 100	-	-	-	-	24	-	31	-											
		2,5	2	4,9	6	6,1	10	7,4	14											
0.0044	125	-	-	-	-	-	-	24	-	36	-	36	-							
		1,9	1	3,8	3	4,7	4	5,7	6	8,3	12	10,1	19							
0.0093	160									23	-	28	-	37	-	42	-			
										3,9	5	4,8	8	6,3	12	7,5	18			
0.0113	200													21	-	29	-	35	-	
														3,9	5	5,1	9	6,1	13	7,3
0.0043	BEM 780 100	-	-	-	-	23	-	32	-											
		2	1	4,5	3	6	6	7	9											
0.0055	125	-	-	-	-	-	-	-	-	20	-	26	-							
		1	1	2,5	1	3	2	4	3	5	5	6	6							
0.0117	160									-	-	-	-	23	-	29	-			
										3	2	4	4	5	5	6	7			
0.0132	200	Lw	-							-	-	20	-	25	-	29	-			
		Vk	Pa							2,6	3	3,4	5	4,1	7	4,9	10			

The values Lw (NR) do not include attenuation of the premises.

# Safety grilles

## Series SCR 125 - steel



Grille SCR 125 F14

### APPLICATION

- Air exhaust or air supply for all ventilation applications in security premises.
- The design of the SCR 125 makes it specially adapted to correctional facilities and psychiatric hospitals
- Wall or ceiling mounting.

### DESCRIPTION

- Galvanized sheet steel front and rear drum.
- 45 % free passage perforated sheet front.
- Galvanized steel mounting clip (fixing F14).

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish in accordance with the RAL colour chart. Consult the list of available colours in the appendix.

### FIXING

- Grille attached by rear clip (fixing F14).

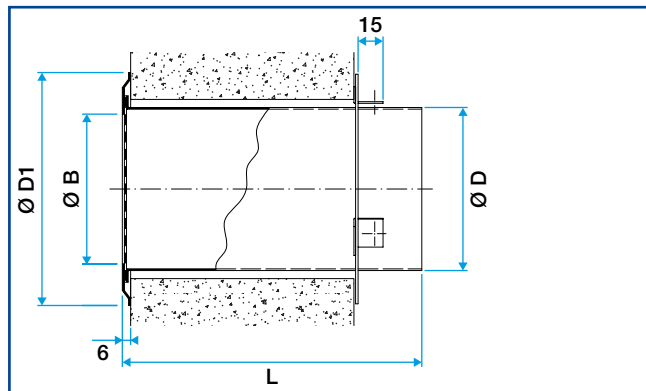
### STANDARD DIMENSIONS

- 100 mm to 250 mm diameters.

### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

### DIMENSIONS



Grille SCR 125 F14

### STANDARD DIMENSIONS

Ø D (mm)	Ø D1 (mm)	Ø B (mm)	L (mm)
100	132	80	175
125	157	105	175
160	192	140	175
200	232	180	175
250	282	230	175

## Series SCR 125

### Range with choice of options

Dimensions	SCR 125 F14 Code
Ø 100	11002991
Ø 125	11002992
Ø 160	11002993
Ø 200	11002994
Ø 250	11002995

### Options available

Fixing	Finish
<ul style="list-style-type: none"> <li>• Stainless F14 clip.</li> <li>• Pre-pierced F14 clip.</li> <li>• Specific length L.</li> </ul>	<ul style="list-style-type: none"> <li>• Epoxy paint in accordance with RAL colour chart. Consult the list of available colours in the appendix.</li> </ul>

# Safety grilles

## Series SCR 125

### SELECTION - AIR EXHAUST

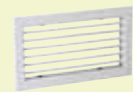
Ø (mm)		30 (m³/h)	60 (m³/h)	90 (m³/h)	120 (m³/h)	180 (m³/h)	210 (m³/h)	240 (m³/h)	270 (m³/h)	300 (m³/h)	350 (m³/h)	400 (m³/h)
100	Lw (NR)	-	24									
	ΔPt (Pa)	15	60									
125	Lw (NR)	-	-	-	26	38						
	ΔPt (Pa)	5	20	45	80	180						
160	Lw (NR)			-	-	27	35	41				
	ΔPt (Pa)			18	32	72	98	128				
200	Lw (NR)				-	-	-	23	27	33	37	
	ΔPt (Pa)				14	31	42	54	69	85	116	
250	Lw (NR)					-	-	-	-	23	26	31
	ΔPt (Pa)					13	17	22	28	35	47	62

The values Lw (NR) do not include attenuation of the premises.



# Indoor grilles

Single and double deflection grilles - p 36



Grilles for circular ducts - p 44



Grilles with fixed linear bars - p 50



Fixed blade grilles - p 68



Fixed front blade grilles - p 80



Fixed air transfer blade grilles - p 85



Pressed grilles - p 88



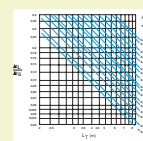
Accessories - p 91



Plenums - p 93



Mixing rates - p 95



# Single and double deflection grilles

## Series SC 101 - SC 101 D - steel



Grille SC 101



Grille SC 101 D

### APPLICATION

- Air supply or exhaust.
- Double deflection grilles for air supply.
- Single deflection grilles for air exhaust.
- Wall mounted.

### DESCRIPTION

- SC 101: single deflection grille (exhaust) with horizontal, mobile, individually adjustable blades, with a 20 mm spacing.
- SC 101 D: double deflection grille (air supply) by rear vertical and front horizontal, mobile, individually adjustable blades, 20 mm spacing.
- Made of steel.

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish with RAL color paint or natural colour galvanized steel. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
- F1: visible by screws in the frame.
- F3: hidden by friction clips.
- F5: hidden by snap-in fasteners.

For more information refer to p. 92

### ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper.
- S-clipped to grille (provided).
- F4 or F6 galvanized steel sheet mounting frame.
- Galvanized steel sheet connection plenum with rear or side mounted connection.

For more information refer to p.91 and 93.

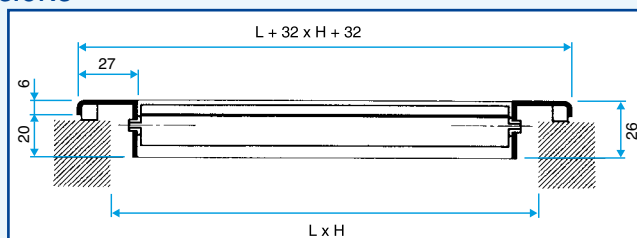
### STANDARD DIMENSIONS

- 75 x 75 to 2025 x 1500 range dimensions in 25 mm steps in L and H for the series SC 101.
  - 75 x 75 to 1500 x 1500 mm range dimensions in 25 mm steps in L and H for the series SC 101 D.
- For more information refer to the RANGE pages hereafter.

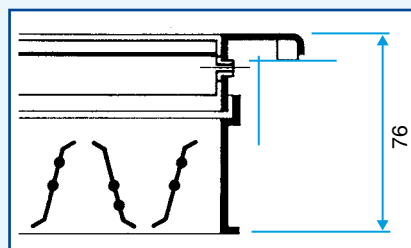
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

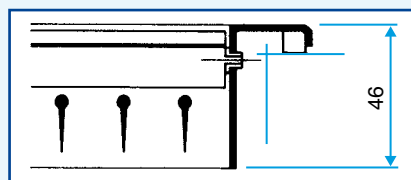
### DIMENSIONS



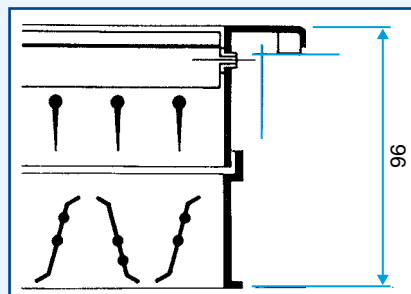
SC 101 - grille alone



SC 101 - grille with mounted AGB or SGS damper



SC101 D - grille alone



SC 101 D - grille with mounted AGB or SGS damper

# Single and double deflection grilles

## Series SC 102 - SC 102 D - steel



Grille SC 102



Grille SC 102 D

### APPLICATION

- Air supply or exhaust.
- Double deflection grilles for air supply.
- Single deflection grilles for air exhaust.
- Wall mounted.

### DESCRIPTION

- SC 102: single deflection grille (exhaust) with vertical, mobile, individually adjustable blades, 20 mm spacing.
- SC 102 D: double deflection grille (air supply) with rear horizontal and front vertical blades, mobile, individually adjustable, 20 mm spacing.
- Made of steel.

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish with RAL color paint or natural colour galvanized steel. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
  - F1: visible by screws in the frame.
  - F3: hidden by friction clips.
  - F5: hidden by snap-in fasteners.
- For more information refer to p.92.

### ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper.
  - S-clipped to grille (provided).
  - F4 or F6 galvanized steel sheet mounting frame.
  - Galvanized steel sheet connection plenum with rear or side mounted connection.
- For more information refer to p.91 and 93.

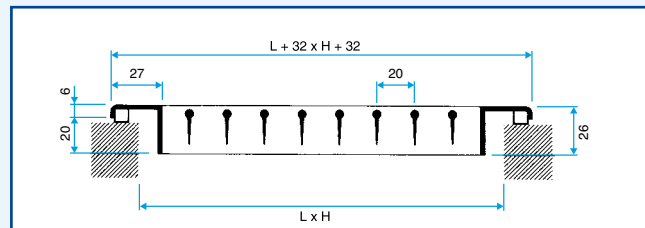
### STANDARD DIMENSIONS

- 75 x 75 to 1500 x 2025 mm range dimensions in 25 mm steps in L and H for the series SC 102.
  - 75 x 75 to 1500 x 1500 mm range dimensions in 25 mm steps in L and H for the series SC102 D.
- For more information refer to the RANGE pages hereafter.

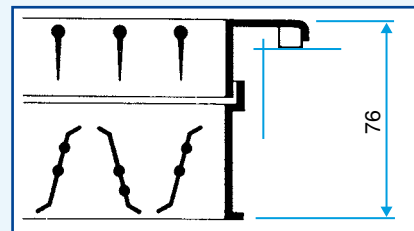
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

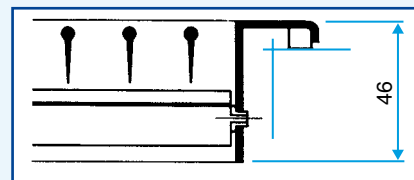
### DIMENSIONS



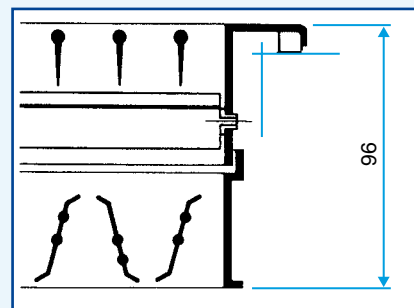
SC 102 - grille alone



SC 102 - grille with mounted AGB or SGS damper



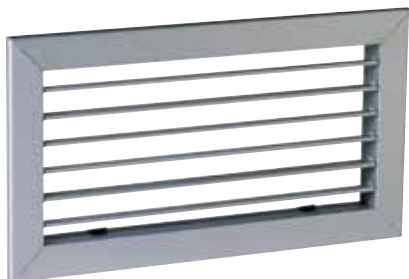
SC102 D - grille alone



SC 102 D - grille with mounted AGB or SGS damper

# Single and double deflection grilles

## Series AC 101 - AC 101 D - aluminium



Grille AC 101



Grille AC 101 D

### APPLICATION

- Air supply or exhaust.
- Double deflection grilles for air supply.
- Single deflection grilles for air exhaust.
- Wall mounted.

### DESCRIPTION

- AC 101: single deflection grille (exhaust) with horizontal, mobile, individually adjustable blades, 20 mm spacing.
- AC 101 D: double deflection grille (air supply) by rear vertical and front horizontal, mobile, individually adjustable blades, 20 mm spacing.
- Made of aluminium.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
- F1: visible by screws in the frame.
- F3: hidden by friction clips.
- F5: hidden by snap-in fasteners.

For more information refer to p.92.

### ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper.
- S-clipped to grille (provided).
- F4 or F6 galvanized steel sheet mounting frame.
- Galvanized steel sheet connection plenum with rear or side mounted connection.

For more information refer to p.91 and 93.

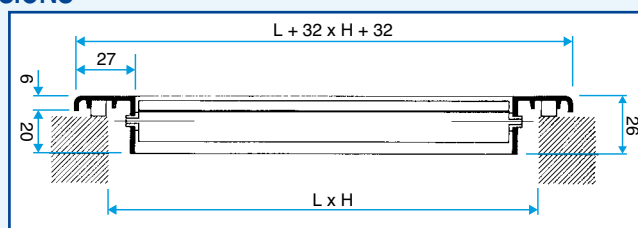
### STANDARD DIMENSIONS

- 75 x 75 to 2025 x 1500 range dimensions in 25 mm steps in L and H for the series AC 101.
  - 75 x 75 to 1500 x 1500 mm range dimensions in 25 mm steps in L and H for the series AC 101 D.
- For more information refer to the RANGE pages hereafter.

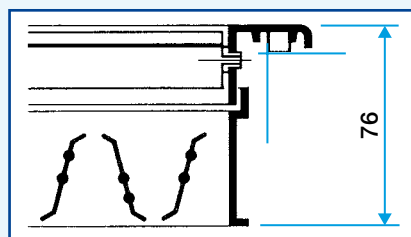
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

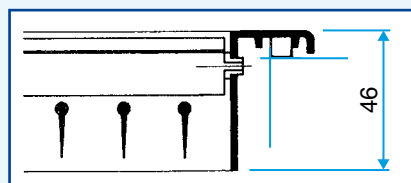
### DIMENSIONS



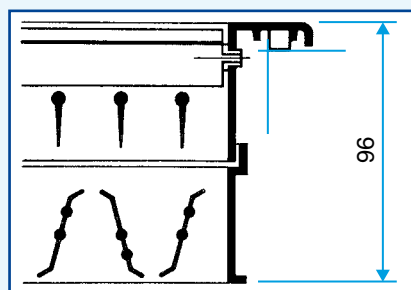
AC 101 - grille alone



AC 101 - grille with mounted AGB or SGS damper



AC101 D - grille alone



AC 101 D - grille with mounted AGB or SGS damper



# Single and double deflection grilles

## Series AC 102 - AC 102 D - aluminium



Grille AC 102



Grille AC 102 D

### APPLICATION

- Air supply or exhaust.
- Double deflection grilles for air supply.
- Single deflection grilles for air exhaust.
- Wall mounted.

### DESCRIPTION

- AC 102: single deflection grille (exhaust) with vertical, mobile, individually adjustable blades, 20 mm spacing.
- AC 102 D: double deflection grille (air supply) with rear horizontal and front vertical blades, mobile, individually adjustable, 20 mm spacing.
- Made of aluminium.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
  - F1: visible by screws in the frame.
  - F3: hidden by friction clips.
  - F5: hidden by snap-in fasteners.
- For more information refer to p.92.

### ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper
  - S-clipped to grille (provided).
  - F4 or F6 galvanized steel sheet mounting frame.
  - Galvanized steel sheet connection plenum with rear or side mounted connection.
- For more information refer to p.91 and 93.

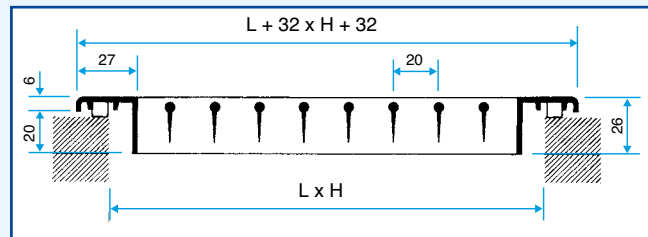
### STANDARD DIMENSIONS

- 75 x 75 to 1500 x 2025 mm range dimensions in 25 mm steps in L and H for the series AC 102.
  - 75 x 75 to 1500 x 1500 mm range dimensions in 25 mm steps in L and H for the series AC 102 D.
- For more information refer to the RANGE pages hereafter.

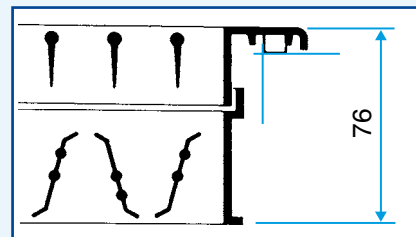
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

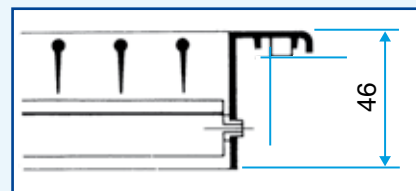
### DIMENSIONS



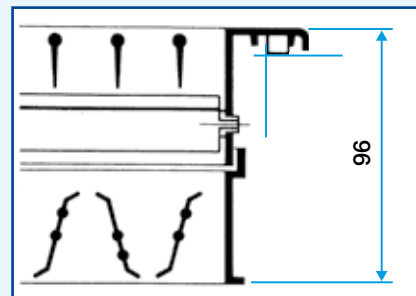
AC 102 - grille alone



AC 102 - grille with mounted AGB or SGS damper



AC 102 D - grille alone



AC 102 D - grille with mounted AGB or SGS damper

# Single and double deflection grilles

## Series 101 - 102

### Standard range

Dimensions	Grille DD AC 102 D F3 Code	Grille DD SC 102 D F3 Code	Grille SD AC 101 F3 Code	Grille SD SC 101 F3 Code
200 x 100	11050577	11050060	11050537	11050020
250 x 100	11050578	11050061	11050538	11050021
300 x 100	11050579	11050062	11050539	11050022
400 x 100	11050580	11050063	11050540	11050023
500 x 100	11050581	11050064	11050541	11050024
250 x 150	11050582	11050065	11050542	11050025
300 x 150	11050583	11050066	11050543	11050026
400 x 150	11050584	11050067	11050544	11050027
500 x 150	11050585	11050068	11050545	11050028
600 x 150	11050586	11050069	11050546	11050029
400 x 200	11050587	11050070	11050547	11050030
500 x 200	11050588	11050071	11050548	11050031
600 x 200	11050589	11050072	11050549	11050032
800 x 200	11050590	11050073	11050550	11050033
600 x 300	11050591	11050074	11050551	11050034
800 x 300	11050592	11050075	11050552	11050035
1000 x 300	11050593	11050076	11050553	11050036

Fixing	Finish
<ul style="list-style-type: none"> <li>• Hidden by friction clips.</li> </ul>	<ul style="list-style-type: none"> <li>• AC model: anodised aluminium natural glossy tone.</li> <li>• SC model: RAL9010 epoxy paint.</li> </ul>

### 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	11002023

### Range with choice of options

H / L (mm)	200	250	300	400	450	500	600	700	800	1000	1200
75	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
100	●	●	●	●	✗	●	✗	✗	✗	✗	✗
150	✗	●	●	●	✗	●	●	✗	✗	✗	✗
200	✗	✗	✗	●	✗	●	●	✗	●	✗	✗
250		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
300			✗	✗	✗	✗	●	✗	●	●	✗
400				✗	✗	✗	✗	✗	✗	✗	✗
450					✗	✗	✗	✗	✗	✗	✗
500						✗	✗	✗	✗	✗	✗

● Standard range dimensions.

### Options available

Fixing	Finish
<ul style="list-style-type: none"> <li>• F0: none</li> <li>• F1: visible by screws in the frame.</li> <li>• F3: hidden by friction clips.</li> <li>• F5: hidden by snap-in fasteners (use frame F6).</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodisation (AC models only).</li> <li>• Natural galvanized steel (SC models only).</li> <li>• Epoxy paint in accordance with RAL card (all models). Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- SGS and AGB dampers : see p.91.
- F4 and F6 mounting frames : see p.91.
- MT and ME plenums : see p.93.

# Single and double deflection grilles

## Series 101 - 102

### SELECTION - AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw Vk	Lt Pa													
		150		200		300		400		500		700				900		1200		1500		3000		5000				
0,0074	200 x 75	22	5,8	27	7,5																							
		5,9	25	7,5	40																							
0,0110	300 x 75 200 x 100	-	4,1	19	5,5	28	8,2																					
		3,8	10	5,0	18	7,6	40																					
0,0160	400 x 75 300 x 100	200 x 150	-	3,4	-	4,5	21	6,8	28	9,1																		
			2,6	5	3,5	8	5,2	19	6,9	34																		
0,0240	600 x 75 400 x 100	300 x 150 200 x 200		-	3,7	-	5,6	20	7,4	25	9,3																	
				2,3	4	34,5	8	4,6	15	5,8	23																	
0,0300	800 x 75 500 x 100			-	5,0	16	6,0	21	8,3	29	12																	
					2,8	5	3,7	10	4,6	15	6,5	29																
0,0400	1000 x 75 600 x 100	400 x 150 300 x 200					-	5,7	-	7,2	23	10	29	13														
							2,8	5	3,5	8	4,9	17	6,2	27														
0,0490	1200 x 75 800 x 100	500 x 150 400 x 200					-	5,2	-	6,5	19	9,1	25	12	32	16												
							2,3	4	2,8	6	4,0	11	5,1	18	6,8	32												
0,0600	1000 x 100 600 x 150	500 x 200 300 x 300					-	5,9	15	8,2	21	11	22	14	34	18												
							2,3	4	3,2	7	4,2	12	5,5	22	6,9	34												
0,0780	1200 x 100 800 x 150	600 x 200 400 x 300							-	7,2	16	9,2	23	12	29	15												
									2,5	4	3,2	7	4,3	13	5,3	20												
0,1050	1000 x 150 800 x 200	500 x 300 400 x 400								-	8,0	17	11	23	13													
										2,4	4	3,2	7	4,0	11													
0,1320	1200 x 150 1000 x 200	600 x 300 500 x 400										-	9,5	18	12	35	27											
												2,5	4	3,2	7	6,3	30											
0,1600	1200 x 200 800 x 300	600 x 400 500 x 500											-	9,5	15	12,5	31	24										
												2,1	3,0	2,6	5,0	5,1	18											
0,2100	1000 x 300 800 x 400	600 x 500												-	11	26	15	38	-									
														2,0	2,8	4,0	11	6,9	32									
0,2800	1200 x 300 1000 x 400	800 x 500													-	9,0	20	18	33	30								
															-	-	3,0	6	5,0	17								
0,3500	1200 x 400 1000 x 500																15	16,5	27	27								
																	2,4	4,1	4,0	11								
0,4200	1200 x 500																	-	15	24	25							
			Lw	Lt													Vk	Pa										
																		2,0	2,8	3,3	7,5							

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s.

Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - AIR EXHAUST

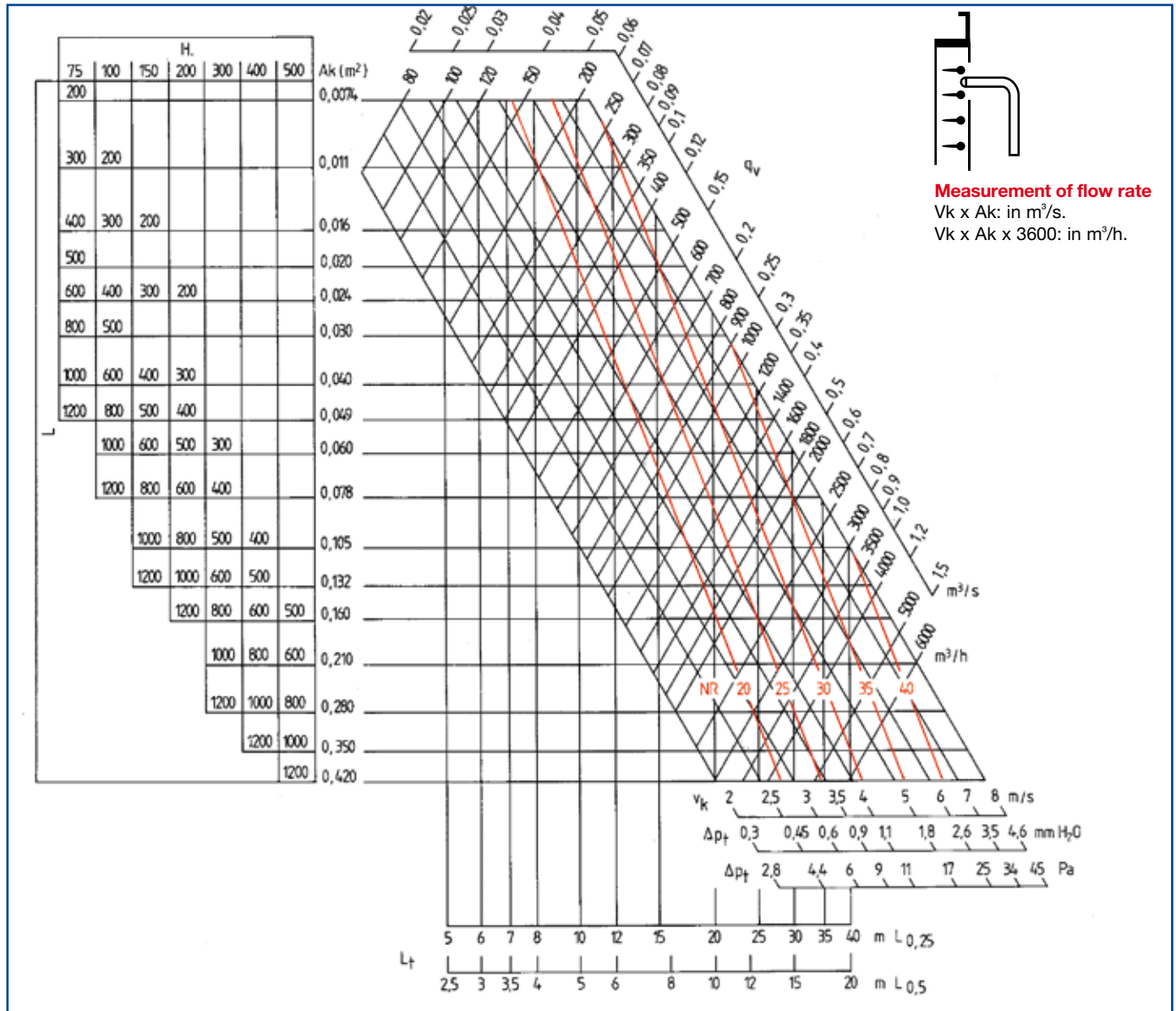
Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw Vk	Lt Pa													
		200		300		400		500		750		1000				1500		2000		3000		4000		5000				
0,013	200 x 100	17	-																									
		4,2	12																									
0,020	300 x 100 200 x 150	8	-	19	-																							
		2,8	5	4,2	12																							
0,030	400 x 100 300 x 150	200 x 200	-	-	11	-	18	-																				
			1,9	2	2,9	6	3,7	10																				
0,045	600 x 100 400 x 150	300 x 200			-	-	10	-	15	-																		
					1,9	2	2,5	4	3,1	7																		
0,060	800 x 100 500 x 150	400 x 200							9	-	19	-																
									2,3	4	3,5	8																
0,075	1000 x 100 600 x 150	500 x 200 300 x 300								-	14	-	22	-														
									1,8	2	2,7	5	3,8	10														
0,093	1200 x 100 800 x 150	600 x 200 400 x 300										10	-	18	-	27	-											
												2,2	4	3,0	6	4,5	14											
0,125	1000 x 150 800 x 200	500 x 300 400 x 400											-	11	-	21	-											
												1,6	2	2,2	4	3,4	8											
0,150	1200 x 150 600 x 300													-	-	17	-	24	-									
														1,8	2	2,7	5	3,7	9									
0,175	1000 x 200 500 x 400															-	-	13	-	21	-							
														1,6	2	2,4	4	3,2	7									
0,200	1200 x 200 800 x 300	600 x 400 500 x 500														11	-	18	-	28	-							
														2,1	3	2,8	5	4,1	12									
0,260	1000 x 300 800 x 400	600 x 500														-	-	13	-	23	-	29	-					
														1,6	2	2,2	4	3,2	7	4,1	12							
0,350	1000 x 400 800 x 500																	20	-	27	-							
																		2,8	5	3,7	9							
0,420	1200 x 400 1000 x 400																	13	-	20	-	26	-					
																2,0	3	2,6	5	3,3	8							
0,530	1200 x 500																			7	-	15	-	21	-			
			Lw	Lt																								
			Vk	Pa																								
																1,6	2	2,1	3	3,3	5							

The values Lw (NR) do not include attenuation of the premises.

Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

# Single and double deflection grilles

## Series 101 - 102 - air supply with ceiling effect



The Lw values (NR) do not include attenuation of the premises.

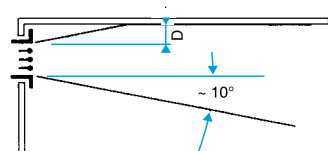
Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER Vt

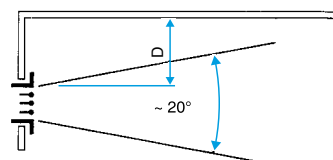
Vt (m/s)		0.25	0.375	0.5	0.625
Lt	A	x 1	x 0.67	x 0.5	x 0.4
	B	x 0.7	x 0.47	x 0.35	x 0.28

### CORRECTIONS FOR DEFLECTION

Blade angle	Lt	Vk	$\Delta p_t$	Lw
22°	x 0.77	x 1.15	x 1.30	+ 3
45°	x 0.55	x 1.25	x 1.60	+ 6



A) Air supply with ceiling effect where D is less than or equal to 30 cm.



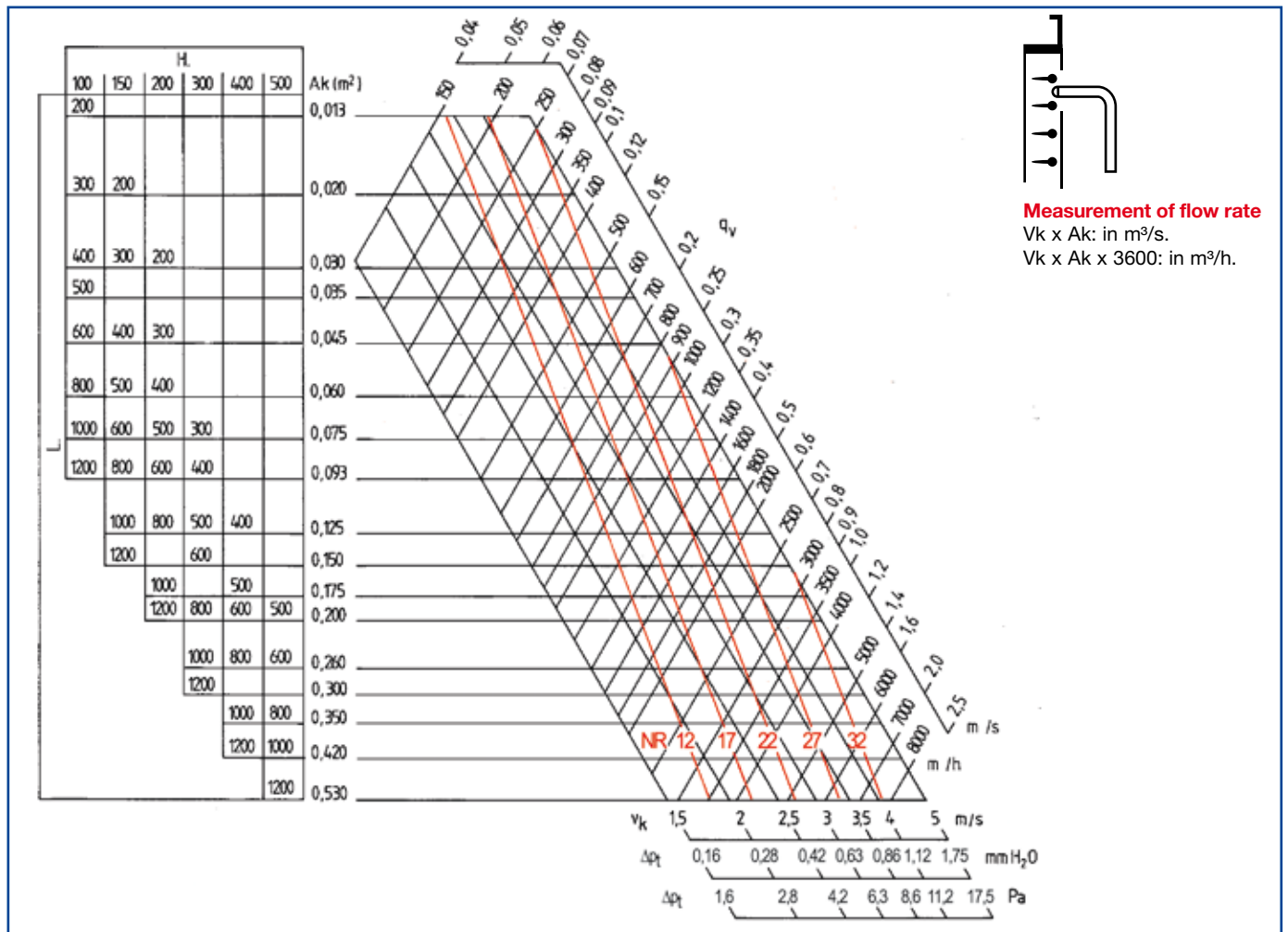
B) Air supply without ceiling effect where D is greater than 30 cm.

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta p_t \times 1.00$	$\Delta p_t \times 1.00$	$\Delta p_t \times 2.25$	$\Delta p_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

# Single and double deflection grilles

## Series 101 - 102 - air exhaust



The values NR do not include attenuation of the premises  
 Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta Pt \times 1.00$	$\Delta Pt \times 1.00$	$\Delta Pt \times 2.25$	$\Delta Pt \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

# Grilles for circular ducts

## Series GD 102 - GD 102 D - SD 102 - SD 102 D - steel



Grille GD 102 D - SD 102 D



Damper N

### APPLICATION

- Air supply, exhaust for all ventilation and air-conditioning applications.
- Double deflection grilles for air supply.
- Single deflection grilles for air exhaust.
- Mounted on cylindrical or oblong ductwork.

### DESCRIPTION

- GD 102 and SD 102 : single deflection grille (exhaust) with vertical, mobile, individually adjustable blades, 20 mm spacing.
- GD 102 D and SD 102 D : double deflection grille (air supply) with rear horizontal and front vertical blades, mobile, individually adjustable, with a 20 mm spacing.
- Made of steel.

### FINISH

- GD 102 and GD 102 D: natural tone galvanized steel.
- SD 102 and SD 102 D: RAL9010 epoxy paint white steel.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F1: visible by screws in the frame.
- For more information refer to p.92.

### ACCESSORIES

- Natural galvanized steel sheet inclined sliding rail damper N.  
Clip-mounted on grille. Optional locking screws.  
Used for air supply.
- Natural colour galvanized steel sheet straight sliding rail damper H.  
Clip-mounted on grille. Optional locking screws.  
Used for air exhaust.

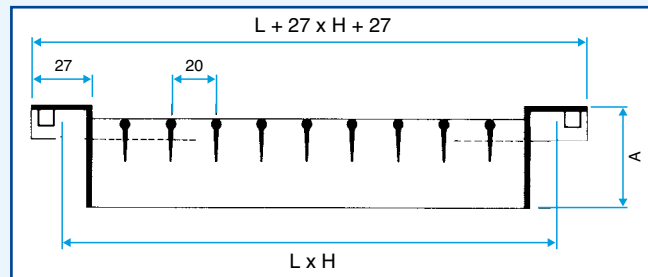
### STANDARD DIMENSIONS

- 325 x 75 to 1225 x 225 mm range dimensions in accordance with RANGE page hereafter.
- No other dimensions available.

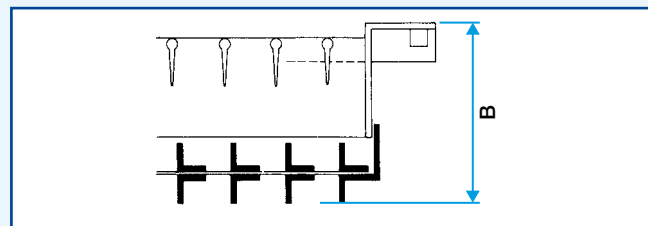
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

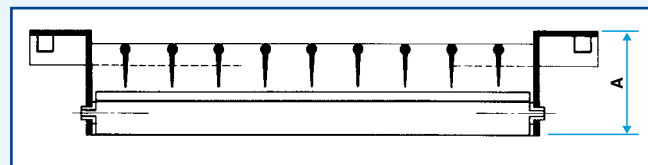
### DIMENSIONS



GD102 - SD102 - grille alone



GD102 - SD102 - grille with mounted H damper



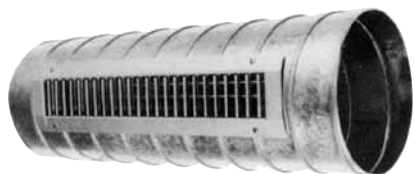
GD102 D - SD102 D - grille alone

### ADAPTED DUCT DIAMETERS AND DIMENSIONS

H (mm)	Diameter mini (mm)	Diameter maxi (mm)	A (mm)	B (mm)
75	160	400	42	86
125	315	900	46	90
175	450	1200	51	95
225	630	1600	56	100

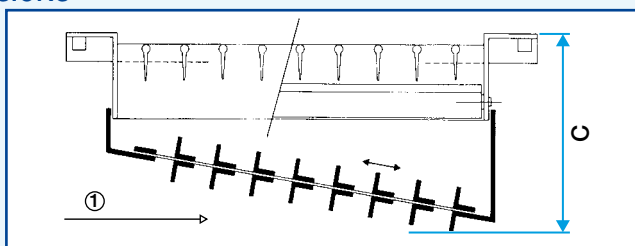
# Grilles for circular ducts

Series GD 102 - GD 102 D - SD 102 - SD 102 D - steel

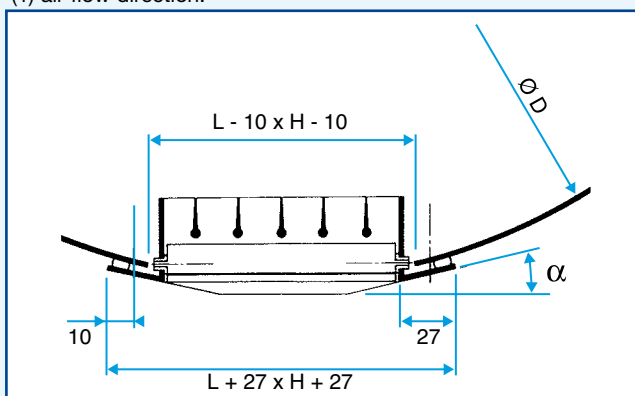


Grille GD 102 D mounted on duct

## DIMENSIONS



GD102 D - SD102 D - grille with mounted N damper.  
(1) air flow direction.



Mounted on circular duct

## AVAILABLE DIMENSIONS.

H (mm)	Diameter (mm)		α	A (mm)	B (mm)	C (fonction of L) (mm)						
	min.	max.				L325	L425	L525	L625	L825	L1025	L1225
75	150	400	20°	42	86	124	137	150	163	190	216	242
125	300	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	600	1600	12,5°	56	100	138	151	164	177	204	230	257

# Grilles for circular ducts

## Series SD 102 - SD 102 D - GD 102 - GD 102 D

### Standard range

Dimensions	Double deflection grille GD 102 D F1 Code	Single deflection grille GD 102 F1 Code	Straight slide damper H Code	Inclined slide damper N 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
425 x 125	11050143	11050103	11053953	11053963
525 x 125	11050144	11050104	11053954	11053964
625 x 125	11050145	11050105	11053955	11053965
525 x 225	11050146	11050106	11053956	11053966
625 x 225	11050147	11050107	11053957	11053967
825 x 225	11050154	11050114	11053958	11053968
<b>Fixing</b>		<b>Finish</b>		
• Attachment by screws, visible in the frame.		• Natural galvanized steel.		

### Range with choice of options

Painted steel model	Code	Slide damper	Code
SD 102	11002026	H	11002903
SD 102 D	11002027	N	11002902

### Usage dimensions

H / L (mm)	325	425	525	625	825	1025	1225
75	●	●	●	●	●	×	×
125	×	●	●	●	×	×	×
175	×	×	×	×	×	×	×
225	×	×	●	●	●	×	×

● Standard range dimensions. NOTE: height 175 mm not available for N and H dampers.

### Options available

Attachment	Finish	Damper
• F1: fixing by screws, visible in the frame.	• Finish with RAL color paint. Consult the list of available colours in the appendix. • natural colour galvanized steel.	• Locking screws. • Black shutters. • Delivered mounted on the grille.

### Proposed accessories

• Dampers N and H.



# Grilles for circular ducts

## Series SD 102 - GD 102

### SELECTION - AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw Vk	Lt Pa									
		100		150		200		300		400		600				800		1200		1800		2500		3500
0,011	325 x 75	32	2,8	43	4,1	50	5,5	60	8,3															
		2,5	16	3,8	35	5,1	62	7,6	140															
0,015	425 x 75	25	2,4	35	3,6	43	4,7	53	7,1	61	9,5													
		1,9	8,4	2,8	19	3,7	33	5,5	75	7,4	134													
0,019	525 x 75			30	3,2	38	4,2	48	6,3	56	8,4													
				2,2	12	2,9	21	4,4	47	5,8	83													
0,023	625 x 75	325 x 125			33	3,8	44	5,7	52	7,6														
					2,4	14	3,6	32	4,8	47														
0,030	825 x 75	425 x 125			38	5,0	46	6,7	56	10														
					2,8	19	3,7	33	5,1	75														
0,037	1025 x 75	525 x 125			34	4,5	41	6,0	52	9,0	59	12												
					2,2	15	3,0	22	4,5	49	6,0	88												
0,045	1225 x 75	625 x 125			37	5,5	47	8,2	55	11	59	14												
					2,5	15	3,7	33	4,9	59	5,5	75												
0,060	825 x 125	525 x 175			41	7,1	49	9,5	54	13														
					2,8	19	3,7	33	4,4	47														
0,075	1025 x 125	625 x 175			36	6,4	44	8,5	51	13														
					2,2	12	3,0	22	3,7	35														
0,090	1225 x 125	825 x 175			41	8,6	44	11	61	20														
					2,5	15	2,8	20	5,8	80														
0,120	1025 x 175	825 x 225			40	10	55	17																
					2,3	12,5	4,2	42																
0,150	1225 x 175	1025 x 225			50	15	58	21																
					3,3	28	4,5	50																
0,180	1225 x 225			Lw	Lt																			
				Vk	Pa																			
				47	14	54	17	62	26															
				2,8	21	3,8	35	5,5	80															

Corrections for grille without damper  
 $\Delta Pt$  Lw  
x 0,5 - 4

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s.

Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - AIR EXHAUST

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw Vk	Lt Pa									
		100		150		200		300		400		600				800		1200		1800		2500		3500
0,014	325 x 75	20	-	30	45	25	-																	
		2	4	3	18	4	31																	
0,019	425 x 75			-	-	-	-	48	-															
				2,3	12	3	18	4,8	40															
0,023	525 x 75			30	-	45	-	51	-															
				2,5	12	3,8	30	5	49															
0,028	625 x 75	325 x 125			-	-	40	-	47	-														
					2	8	3	18	4	32														
0,037	825 x 75	425 x 125			30	-	42	-	32	-														
					2,3	12	3	18	4,9	45														
0,046	1025 x 75	525 x 125			-	-	30	-	46	-	54	-												
					1,8	6	2,5	12	3,6	25	5	49												
0,055	1225 x 75	625 x 125			-	-	23	-	30	-														
					2	8	3	18	4	32														
0,074	825 x 125	525 x 175			30	-	44	-	54	-														
					2,3	10	3	18	4,6	42														
0,092	1025 x 125	625 x 175			-	-	40	-	49	-														
					1,8	5	2,5	12	3,5	24														
0,110	1225 x 125	825 x 175			-	-	43	-	56	-														
					2	8	3	18	4,2	37														
0,138	1025 x 175	825 x 225			42	-	52	-	60	-														
					2,4	10	3,7	27	5	49														
0,166	1225 x 175	1025 x 225			47	-	55	-																
					3	18	4	31																
0,220	1225 x 225			Lw	-																			
				Vk	Pa																			
				43	-	50	-	57	-															
				2,3	10	3,2	20	4,2	37															

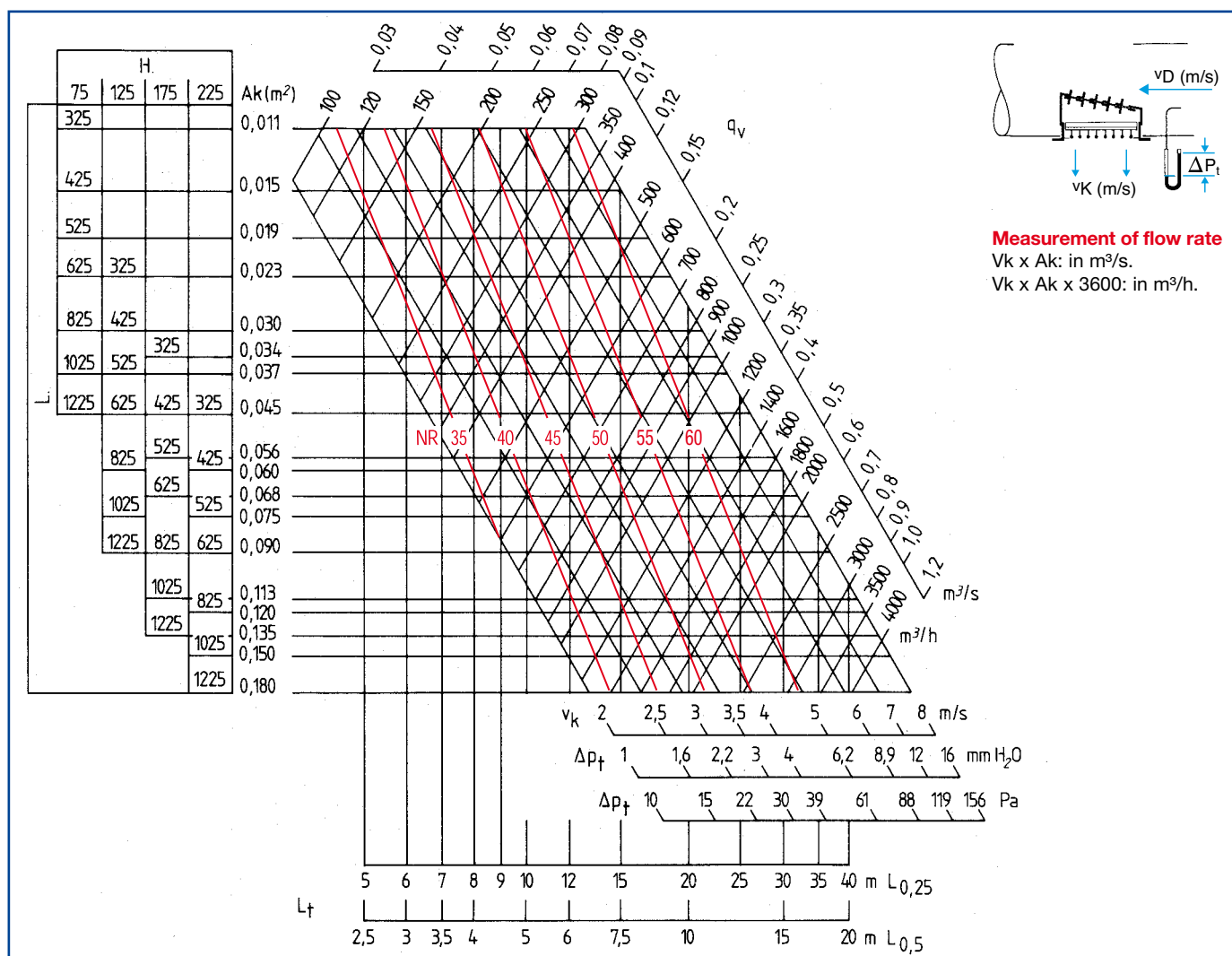
Corrections for grille without damper  
 $\Delta Pt$  Lw  
x 0,45 - 6

The Lw values (NR) do not include attenuation of the premises.

Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

# Grilles for circular ducts

## Series SD 102 - GD 102 - air supply with ceiling effect



The Lw values (NR) do not include attenuation of the premises.

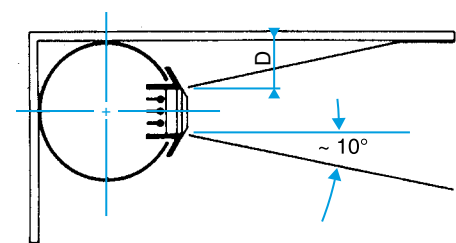
Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

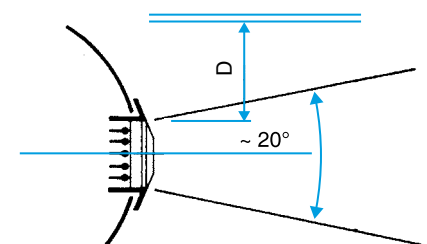
$V_t$ (m/s)	0.25	0.375	0.5	0.625
$L_t$ A	x 1	x 0.67	x 0.5	x 0.4
$L_t$ B	x 0.7	x 0.47	x 0.35	x 0.28

### CORRECTIONS FOR DEFLEXION

Blade angle	$L_t$	$V_k$	$\Delta p_t$	Lw
22°	x 0.77	x 1.15	x 1.30	+ 3
45°	x 0.55	x 1.25	x 1.60	+ 6



A) Air supply with ceiling effect where D is less than or equal to 30 cm.



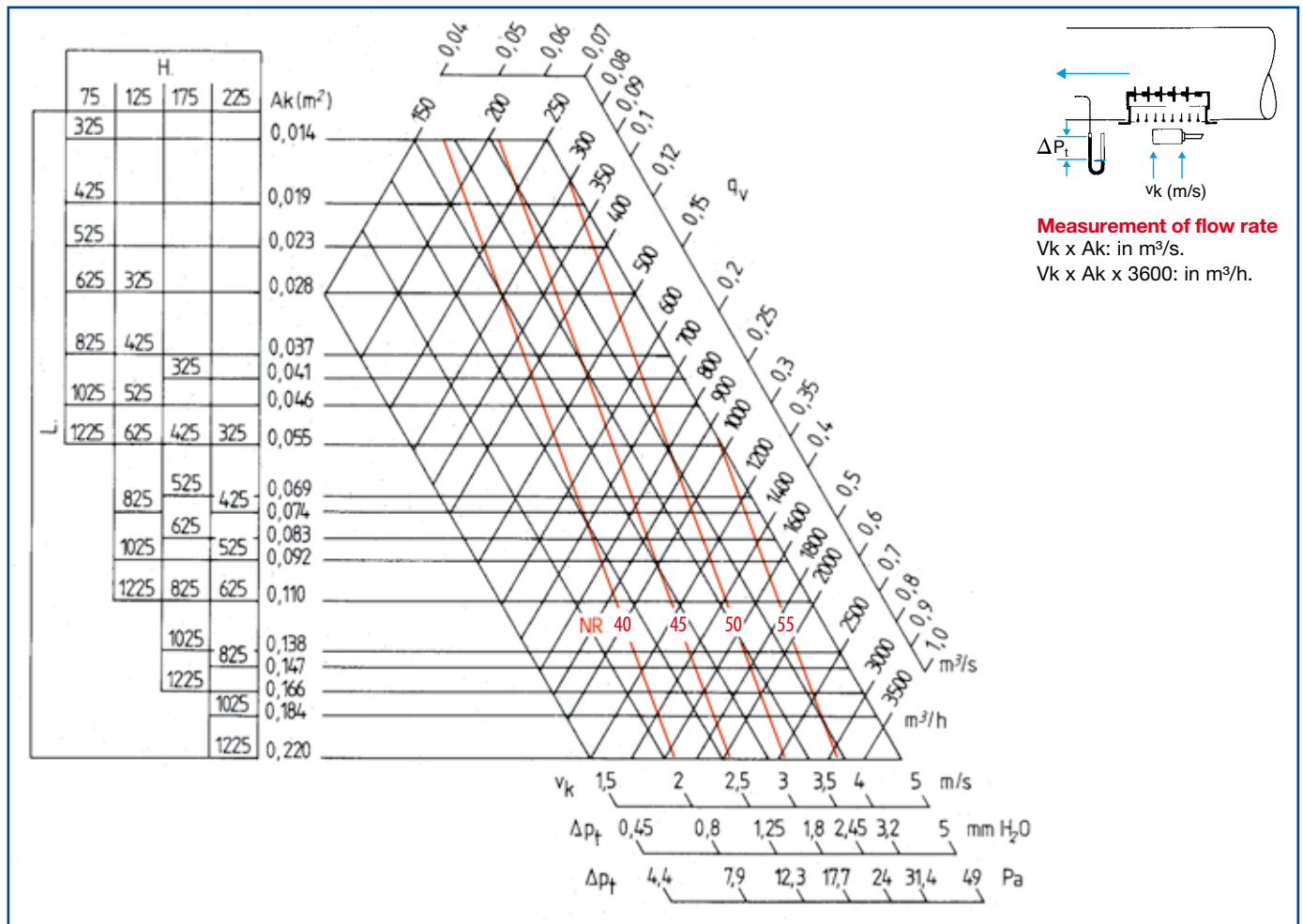
B) Air supply without ceiling effect where D is greater than 30 cm.

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta p_t \times 0.50$	$\Delta p_t \times 1.00$	$\Delta p_t \times 2.25$	$\Delta p_t \times 5.90$
Lw - 4	Lw + 0	Lw + 10	Lw + 20

# Grilles for circular ducts

## Series SD 102 - GD 102 - air exhaust



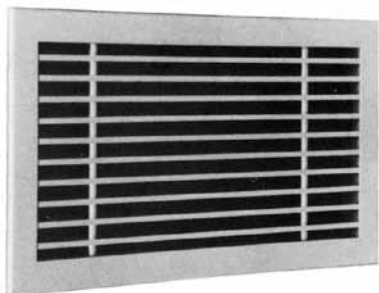
The Lw values (NR) do not include attenuation of the premises.  
 Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta Pt \times 0.45$	$\Delta Pt \times 1.00$	$\Delta Pt \times 2.25$	$\Delta Pt \times 5.90$
Lw - 6	Lw + 0	Lw + 10	Lw + 15

# Grilles with fixed linear bars

Series AC 430 - AN 430 - AC 430 D - AO 430 - aluminium



Grille AC 430



Grille AO 430

## APPLICATION

- Air supply or exhaust for all ventilation and air-conditioning applications.
- Grilles have rear deflection for air supply (430 D), or single for air exhaust.
- Wall or breast wall mounted.

## DESCRIPTION

- AC models: wide-frame grilles (27 mm).
- AN models: thin frame grilles (20 mm).
- AO models: grilles without frame (core only).
- Version 430: fixed front bar grilles, 17 mm spacing.
- Version 430 D: fixed front bar grilles, 17 mm spacing. Individually adjustable row of rear blades, perpendicular to the bars.
- Available in deflections 0°, 15° or twice 15°.

## FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

## FIXING

- F0: none.
- F1: visible by screws in the frame.
- F3: hidden by friction clips.
- F5: hidden by snap-in fasteners.

Note: attachments F1 and F5 are not available with the AN frame (thin frame).

- AO grilles fasteners without fixing.
- For more information refer to p.92.

## ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper.
- S-clipped to grille (provided).
- F4 or F6 galvanized steel sheet mounting frame.
- Galvanized steel sheet connection plenum with rear or side mounted connection.

For more information refer to p.91 and 93.

## OPTIONS

- Pivoting access hatch (one or two).
- Corner bracket at 90°.
- 'Pool' execution (corrosion resistance).

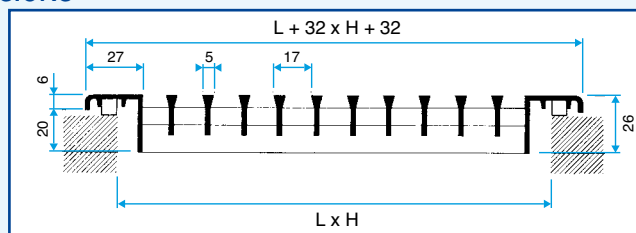
## STANDARD DIMENSIONS

- 75 x 75 to 2000 x 800 range dimensions in 25 mm steps.
- Beyond this the grille is comprised of median elements of 2000 mm with two ends of equal length always between 1000 and 2000 mm.

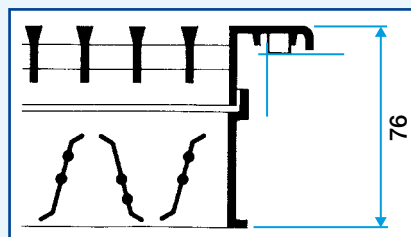
## TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

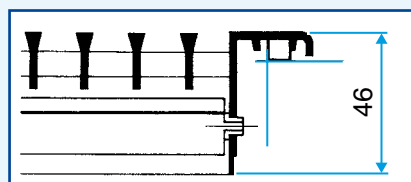
## DIMENSIONS



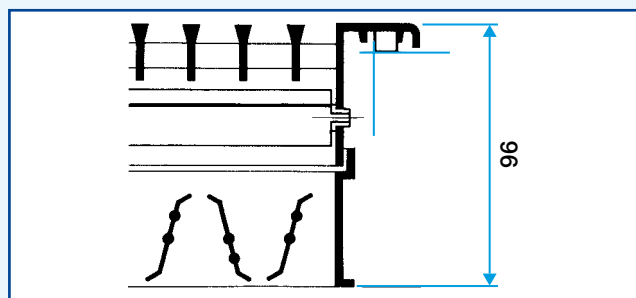
AC 430 - grille alone



AC 430 - grille with mounted AGB or SGS damper



AC 430 D - grille alone



AC 430 D - grille with mounted AGB or SGS damper



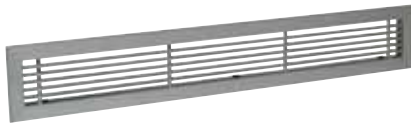
Deflection at 15° one direction



Deflection at 15° two directions

# Grilles with fixed linear bars

Series AC 440 - AN 440 - AC 440 D - AO 440 - aluminium



Grille AC 440



Grille AN 440 with access hatches

## APPLICATION

- Air supply or exhaust for all ventilation and air-conditioning applications.
- Grilles have rear deflection for air supply (440 D) or single for the air exhaust.
- Wall or breast wall mounted.

## DESCRIPTION

- AC models: wide-frame grilles (27 mm).
- AN models: thin frame grilles (20 mm).
- AO models: grilles without frame (core only).
- Version 440: fixed front bar grilles, 13 mm spacing.
- Version 440 D: fixed front bar grilles, 13 mm spacing. Individually adjustable row of rear blades, perpendicular to the bars.
- Available in deflections 0°, 15° or twice 15°.

## FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

## FIXING

- F0: none.
  - F1: visible by screws in the frame.
  - F3: hidden by friction clips.
  - F5: hidden by snap-in fasteners.
- Note: fixing F1 and F5 are not available with the AN frame (thin frame).
- AO grilles fasteners without fixing.
- For more information refer to p.92.

## ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper.
  - S-clipped to grille (provided).
  - F4 or F6 galvanized steel sheet mounting frame.
  - Galvanized steel sheet connection plenum with rear or side mounted connection.
- For more information refer to p.91 and 93.

## OPTIONS

- Pivoting access hatch (one or two).
- Corner bracket at 90°.
- 'Pool' execution (corrosion resistance).

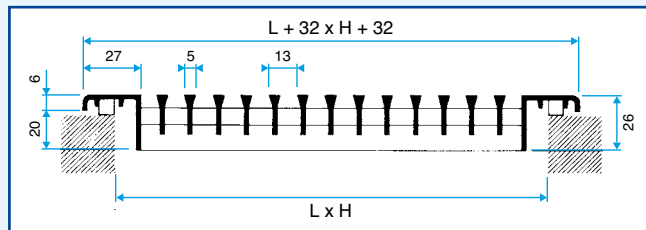
## STANDARD DIMENSIONS

- 75 x 75 to 2000 x 800 range dimensions in 25 mm steps.
- Beyond this the grille is comprised of median elements of 2000 mm with two ends of equal length always between 1000 and 2000 mm.

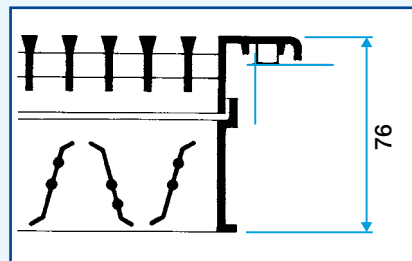
## TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

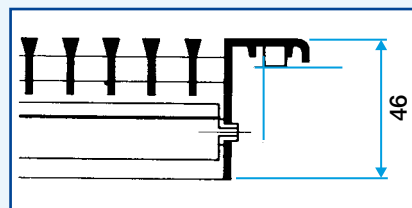
## DIMENSIONS



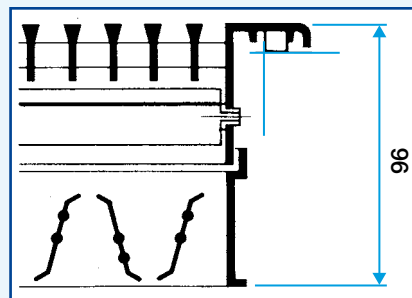
AC 440 - grille alone



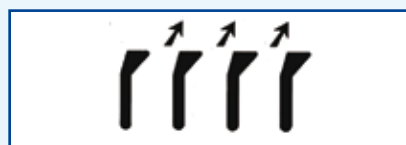
AC 440 - grille with mounted AGB or SGS damper



AC 440 D - grille alone



AC 440 D - grille with mounted AGB or SGS damper



Deflection at 15° one direction



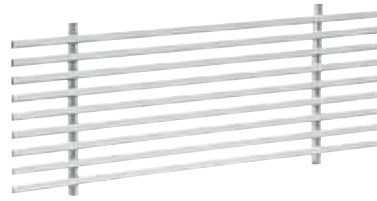
Deflection at 15° two directions

# Grilles with fixed linear bars

## Series 430 - 440



Grille AC440



Grille AO 440

### ASSEMBLIES

The fixed frontal bar grilles are specially designed to form attractive linear bands ('running' grilles):

- linear assemblies using alignment profiles, with or without end pieces (E).
- corner brackets (K) for creating a continuous assembly.

Note: the corner brackets are generally only for aesthetic purposes and are therefore not aerally connected.

### GRILLES AC 430 OR AC 440

For a complete linear bar order:

- $L = L_m + 2 \times L_{gd}$
- $L \text{ (overall)} = L_m + 2 \times L_{gd} + 32$

For an order of separate parts :

- $L \text{ (overall) median element} = L_m$
- $L \text{ (overall) left or right element} = L_{gd} + 16$

Note:

- $L_m \leq 2000 \text{ mm}$
- $1000 \leq L_{gd} \leq 2000$

### GRILLES AN 430 OR AN 440

For a complete linear bar order :

- $L = L_m + 2 \times L_{gd}$
- $L \text{ (overall)} = L_m + 2 \times L_{gd} + 18$

For an order of separate parts :

- $L \text{ (overall) median element} = L_m$
- $L \text{ (overall) left or right element} = L_{gd} + 9$

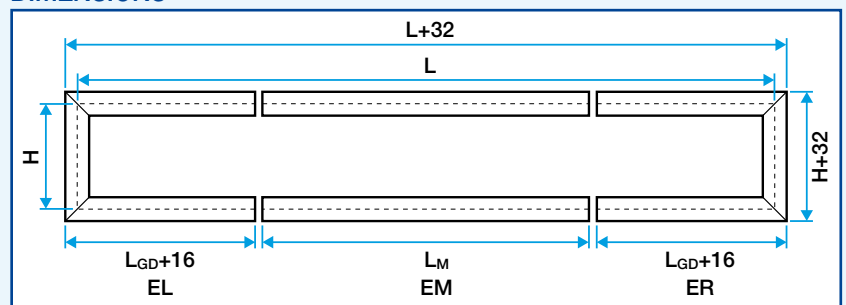
Note :

- $L_m \leq 2000 \text{ mm}$
- $1000 \leq L_{gd} \leq 2000$

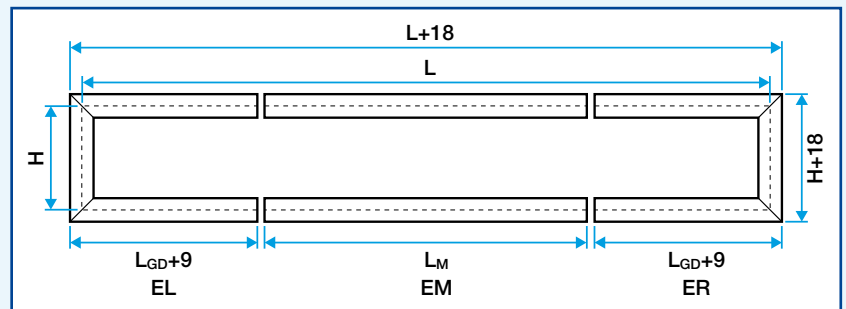
### AO 430 OR AO 440 GRILLES

Order for complete elements only.

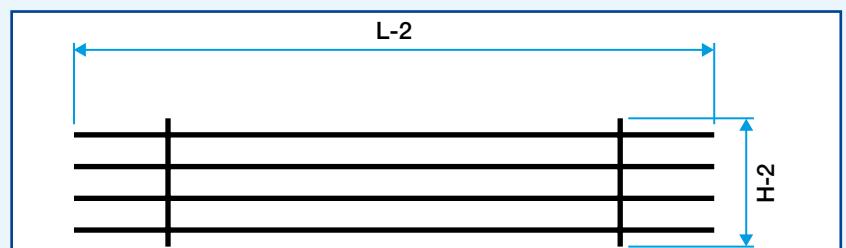
### DIMENSIONS



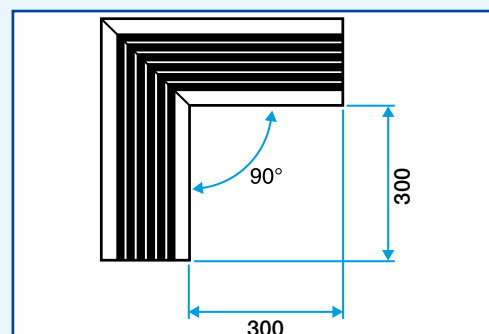
AC 430 or AC 440 grille  
Linear bar delivered with alignment legs



AN 430 or AN 440 grille  
Linear bar delivered with alignment legs



AO 430 or AO 440 grille  
Entire element only



Corner bracket at 90° for AC/AN 430 or 440 grille

# Grilles with fixed linear bars

## Series 430 - 440

### Standard range

Dimensions	Grille AC 440 F3 Code	Grille AC 440 Z F3 Code
800 x 75	11050825	
1000 x 75	11050826	11050226
200 x 100	11050827	11050227
250 x 100	11050828	
300 x 100	11050829	11050229
400 x 100	11050830	11050230
500 x 100	11050831	
600 x 100	11050832	11050232
800 x 100	11050833	11050233
1000 x 100	11050834	11050234
250 x 150	11050835	
300 x 150	11050836	11050236
400 x 150	11050837	11050237
500 x 150	11050838	
600 x 150	11050839	11050239
800 x 150	11050840	11050240
1000 x 150	11050841	11050241
1500 x 150	11050842	11050242
400 x 200	11050843	
500 x 200	11050844	
600 x 200	11050845	
800 x 200	11050846	
1000 x 200	11050847	
1500 x 200	11050848	

#### Fixing

#### Finish

- Hidden by friction clips.

- Natural glossy anodised aluminium or RAL9010 white epoxy paint (model AC 440 Z).

### Range with choice of options

Type	Name	Code	Type	Name	Code
Anodised alum frontal bars 17 mm steps	AC 430	11002041	Anodised alum frontal bars 17 mm steps	AN 430	11002043
Anodised alum frontal bars 17 mm steps with double deflection	AC 430 D	11002042	Anodised alum frontal bars 13 mm steps	AN 440	11002046
Anodised alum frontal bars 13 mm steps	AC 440	11002801	Anodised alum frontal bars core 17 mm steps	AO 430	11002052
Anodised alum frontal bars 13 mm steps with double deflection	AC 440 D	11002045	Anodised alum frontal bars core 13 mm steps	AO 440	11003601
Corner 17 mm steps	AC 430 K	11002059	Corner 13 mm steps	AC 440 K	11002060

### Range dimensions

H / L (mm)	200	250	300	400	450	500	600	700	800	1000	1200	1500
75	×	×	×	×	×	×	×	×	●	●	×	×
100	●	●	●	●	×	●	×	×	●	●	×	×
150	×	●	●	●	×	●	●	×	●	●	×	●
200	×	×	×	●	×	●	●	×	●	●	×	●
250		×	×	×	×	×	×	×	×	×	×	×
300			×	×	×	×	●	×	●	●	×	×
400				×	×	×	×	×	×	×	×	×

- Standard range dimensions.

- AC 430 K - AC 440 K: corner bracket, length of each element between 300 and 600 mm (the two elements are always of equal length).

### Options available

Fixing	Deflection	Construction	Finish
<ul style="list-style-type: none"> <li>• F0: none</li> <li>• F1: fixing by screws, visible in the frame (except AN frame).</li> <li>• F3: hidden by friction clips.</li> <li>• F5: hidden by snap-in fasteners (except AN frame)++</li> </ul>	<ul style="list-style-type: none"> <li>• 0°</li> <li>• 15°.</li> <li>• 2x15°.</li> </ul>	<ul style="list-style-type: none"> <li>• Access hatch (one or two)</li> <li>• 'Pool' execution.</li> <li>• Corner 90°.</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodisation.</li> <li>• Finish with RAL color paint. Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- SGS and AGB dampers: see p.91.
- F4 and F6 mounting frames: see p.91.
- MT and ME plenums: see p.93.

# Grilles with fixed linear bars

## Series AG 450 - aluminium



Grille AG 450



Removable core

### APPLICATION

- Air supply or exhaust.
- Grilles have rear deflection for air supply (accessory D 500).
- Single bar grilles for exhaust.
- Floor mounting (thin frame for embedding).

### DESCRIPTION

- AG 450: fixed front bar grilles, reinforced, 13 mm spacing. Available in deflection 0°, 15° or 2 x 15°.
- D 500: Individually adjustable row of rear blades and perpendicular to the bars, fixing by clips to the grille (clips in S provided).
- Durable frame reinforced using U profiles.
- Removable core (standard).
- Visible 5 mm edge.
- Version without frame (core only) : AO 450.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Grille frame delivered with sealing legs (standard).
- AO grille fasteners without fixing.

### ACCESSORIES

- Counter-rotating AGB damper, in primary aluminium. S-clipped to grille (provided).
- For more information refer to p.91.

### OPTIONS

- 'Pool' execution (corrosion resistance).
- Core fixed by a screws system (dismantled using a screwdriver only).
- Corner bracket at 90°.

### STANDARD DIMENSIONS

- 75 x 75 to 2000 x 400 range dimensions in 25 mm steps.

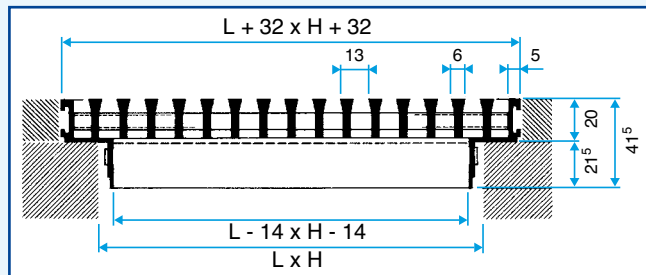
Beyond this the grille is comprised of median elements of 2000 mm with two ends of equal length always between 1000 and 2000 mm).

For more information refer to the RANGE pages hereafter.

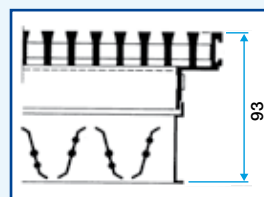
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

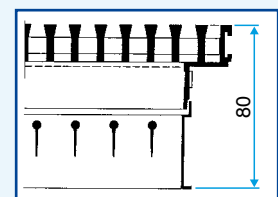
### DIMENSIONS



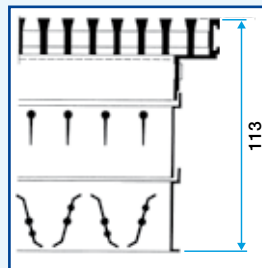
AG 450 - grille alone



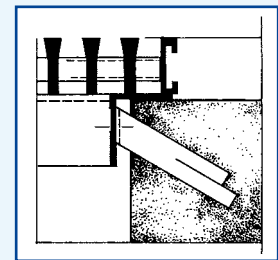
AG 450 - grille with mounted AGB damper



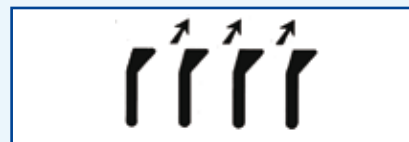
AG 450 D - grille alone



AG 450 D - grille with mounted AGB damper



Fixing by sealing legs



Deflection at 15° one direction



Deflection at 15° two directions



# Grilles with fixed linear bars

## Series AC 450 - AN 450 - aluminium



Grille AC 450



Grille AN 450

### APPLICATION

- Air supply or exhaust.
- Grilles have rear deflection for air supply (accessory D 500).
- Single bar grilles for air exhaust.
- Floor mounting (surface mounted frame).

### DESCRIPTION

- AC models: wide-frame grilles (20 mm).
- AN models: thin frame grilles (13 mm).
- AC 450 and AN 450: fixed front bar grilles, reinforced, 13 mm spacing. Available in deflection 0°, 15° or 2 times 15°.
- D 500: Individually adjustable row of rear blades and perpendicular to the bars, fixing by clips to the grille (clips in S provided).
- Durable and reinforced frame using U profiles.
- Removable core (standard).
- 20 mm visible edge.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Grille frame delivered with sealing legs (standard).

### ACCESSORIES

- Counter-rotating AGB damper, in primary aluminium. S-clipped to grille (provided).
- For more information refer to p.91.

### OPTIONS

- 'Pool' execution (corrosion resistance').
- Core fixed by a screws system (dismantled using a screwdriver only).

### STANDARD DIMENSIONS

- 75 x 75 to 2000 x 400 range dimensions in 25 mm steps.

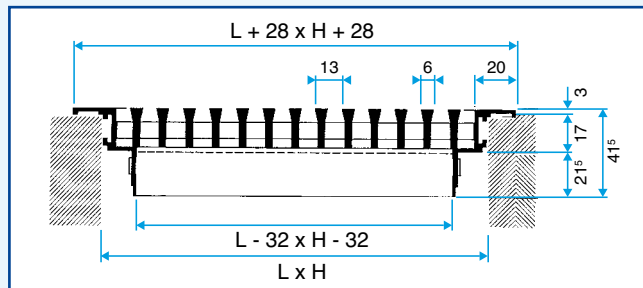
Beyond this the grille is comprised of median elements of 2000 mm with two ends of equal length always between 1000 and 2000 mm.

For more information refer to the RANGE pages hereafter.

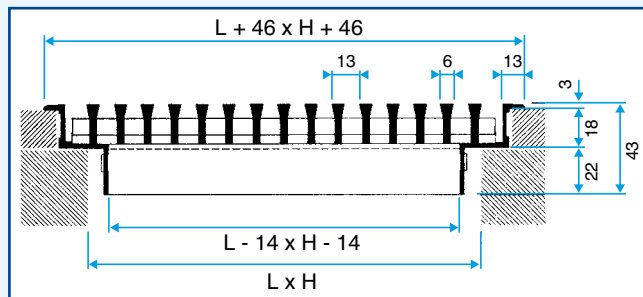
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

### DIMENSIONS



AC 450 grille alone



AN 450 grille alone



Deflection at 15° one direction



Deflection at 15° two directions

# Grilles with fixed linear bars

## Series AG 470 - aluminium



Grille AG 470

### APPLICATION

- Air supply or exhaust.
- Floor mounting. Ideal for technical flooring.
- High load resistance.

### DESCRIPTION

- AG 470: fixed front bar grilles, reinforced, 13 mm spacing.
- Aluminium frame.
- 30mm high bars.
- Removable core standard.
- Dimension C adjustable by 35 to 40 mm to adapt to the height of the technical floor (factory setting).
- Load resistance: 500 kg maximum, taking into account a load acting on an area of 25 x 25 mm, in the centre of a 600 x 600 grille.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Grille designed for installation on an adjustable base.

### ACCESSORIES

- Counter-rotating AGB damper, in primary aluminium. S-clipped to grille (provided).
- For more information refer to p.91.

### OPTIONS

- Adjustment to the height of the technical floor (specify the height).

### STANDARD DIMENSIONS

- 75 x 75 to linear x 600 range dimensions in 25 mm steps.

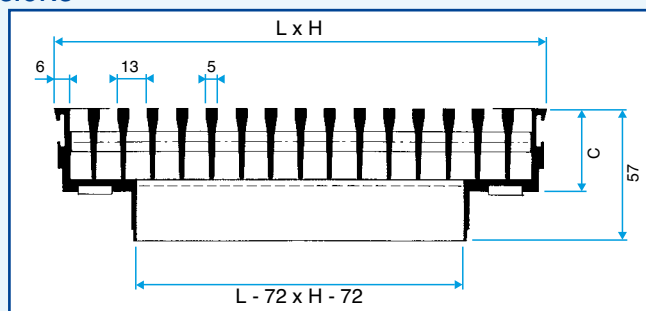
(\*Max length in a 2000mm part. Beyond this the grille is comprised of median elements of 2000 mm with two ends of equal length always between 1000 and 2000 mm).

For more information refer to the RANGE pages hereafter.

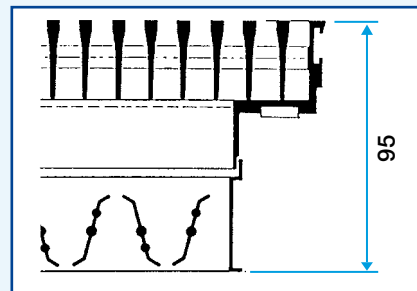
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

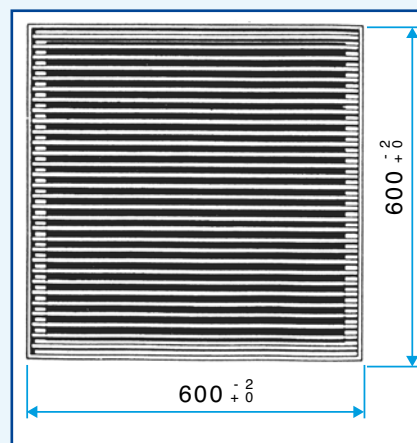
### DIMENSIONS



AG 470 - grille alone



AG 470 - grille with mounted AGB damper



Model for 600x600 tile

# Grilles with fixed linear bars

## Series AF 470 - AS 470 - aluminium



Grille AF 470



Grille AS 470

### APPLICATION

- Air supply or exhaust.
- Floor mounting.
- High load resistance.

### DESCRIPTION

- AF 470: 25 mm wide steel frame.
- AS 470: steel frame (without edge) 2,5 mm thick.
- AO 470: grille without frame (core only).
- Fixed frontal bar grille, reinforced, 13 mm spacing.
- 30mm high bars.
- Removable core standard.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Grille frame delivered with sealing legs (standard).
- AO grille fasteners without fixing.

### ACCESSORIES

- None.

### STANDARD DIMENSIONS

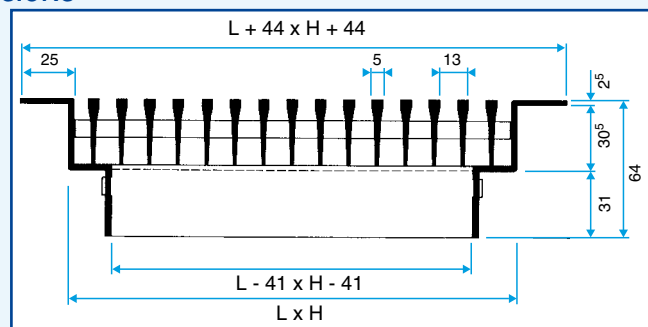
- 300 x 150 to 1200 x 600 range dimensions in 25 mm steps.

For more information refer to the RANGE pages hereafter.

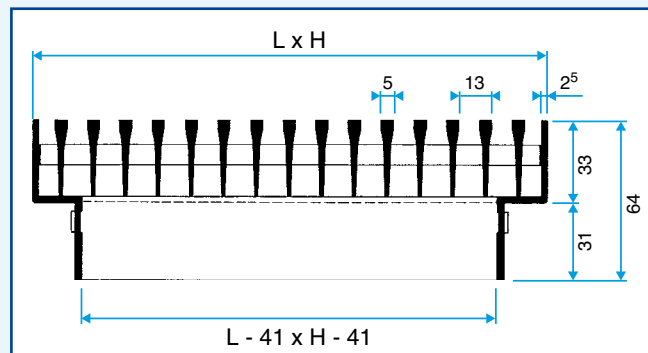
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

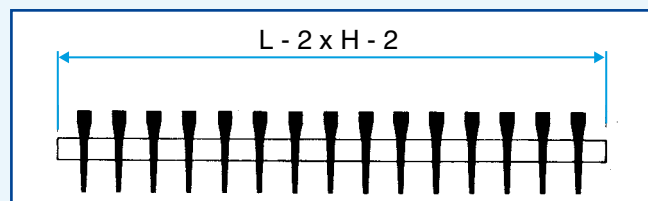
### DIMENSIONS



AF 470 - grille alone



AS 470 - grille alone



AO 470

# Grilles with fixed linear bars

## Series 450 - 470



Grille AG 450



Grille AG 470

### ASSEMBLIES

The fixed frontal bar ground grilles are specially designed to form attractive linear bands ('running' grilles):

- linear assemblies using alignment profiles, with or without end pieces (E).
- corner brackets (K) for creating a continuous assembly.

Note: the corner brackets are generally only for aesthetic purposes and are therefore not aerally connected.

### GRILLES AG 450 - AC 450 - AN 450

For a complete linear bar order:

- $L = L_m + 2 \times L_{gd}$
- $L \text{ (overall)} = L_m + 2 \times L_{gd} + a$

For an order of separate parts :

- $L \text{ (overall) median element} = L_m$
- $L \text{ (overall) left or right element} = L_{gd} + b$

Note :

$L_m \leq 2000 \text{ mm}$   
 $1000 \leq L_{gd} \leq 2000$

### GRILLES AG 470 - AF 470 - AS 470

For a complete linear bar order :

- $L = L_m + 2 \times L_{gd}$
- $L \text{ (overall)} = L_m + 2 \times L_{gd} + a$

For an order of separate parts :

- $L \text{ (overall) median element} = L_m$
- $L \text{ (overall) left or right element} = L_{gd} + b$

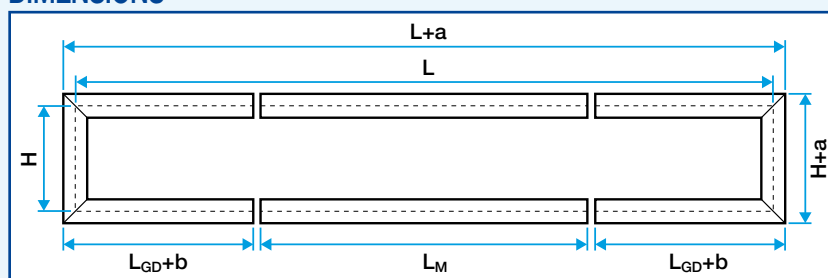
Note :

$L_m \leq 2000 \text{ mm}$   
 $1000 \leq L_{gd} \leq 2000$

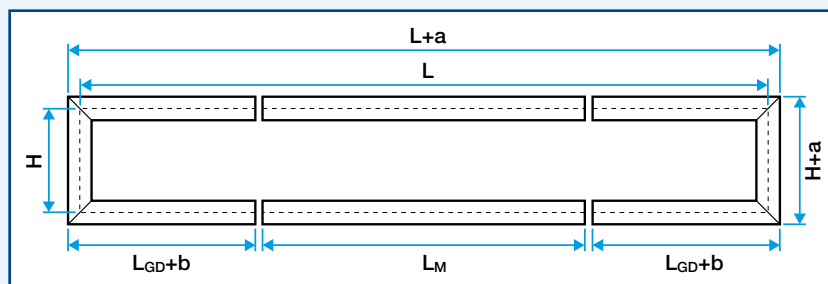
### AO 450 - AO 470 - AS 470 GRILLES

Order for complete elements only.

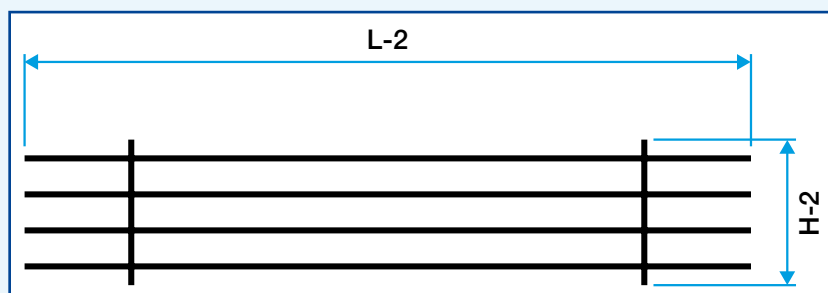
### DIMENSIONS



Grille type 450  
 Linear bar delivered with alignment legs



Grille type 470  
 Linear bar delivered with alignment legs



AO 450 or AO 470 grille  
 Entire element only

### DIMENSIONS TYPE 450

Model	a	b
AG 450	32	16
AC 450	28	14
AN 450	46	23

### DIMENSIONS TYPE 470

Model	a	b
AG 470	0	0
AF 470	44	22
AS 470	0	0

# Grilles with fixed linear bars

## Series 450 - 470

### Standard range

Dimensions	Ground grille AG 450 F0 Code
200 x 100	11050881
300 x 100	11050882
300 x 150	11050883
400 x 150	11050884
400 x 200	11050885
600 x 200	11050886
500 x 300	11050887
600 x 300	11050888
600 x 600	11050889

Fixing	Finish
• By embedding in ground and sealing legs.	• Natural glossy anodised aluminium.

### Range with choice of options

Type	Name	Code	Type	Name	Code
Anodised alum frontal bars for ground	AG 450	11003401	Anodised alum frontal bars reinforced for ground	AG 470	11002061
Offset double deflection	D 500	11003202	Anodised alum frontal bars reinforced for ground	AF 470	11002055
Anodised alum frontal bars for ground	AC 450	11002048	Anodised alum frontal bars reinforced for ground	AS 470	11002056
Anodised alum frontal bars for ground	AN 450	11002049	Anodised alum frontal bars core for ground	AO 450	11002057
Corner 90° or 135° for ground	AG 450 K	11002495	Anodised alum frontal bars core reinforced for ground	AO 470	11002058

### Range dimensions

H / L (mm)	200	250	300	400	450	500	600	700	800	1000	1200
75	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
100	●	✕	●	✕	✕	✕	✕	✕	✕	✕	✕
150	✕	✕	●	●	✕	✕	✕	✕	✕	✕	✕
200	✕	✕	✕	●	✕	✕	●	✕	✕	✕	✕
250		✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
300			✕	✕	✕	●	●	✕	✕	✕	✕
600							●	✕	✕	✕	✕

● Standard range dimensions.

• AG 450 K: corner bracket, length of each element between 300 and 600 mm (the two elements are always of equal length).

### Options available

Fixing	Deflection	Construction	Finish
• F0: sealing legs.	• 0° • 15° • 2x15°	• Height of suspended ceiling to specify (series 470 only). • 'Pool' execution. • Corner 90°.	• Natural glossy anodisation. • Finish with RAL color paint. Consult the list of available colours in the appendix.

### PROPOSED ACCESSORIES

• AGB dampers : see p.91.

# Grilles with fixed linear bars

## Series 430 - 440 - 450 - 470

### SELECTION - AIR SUPPLY WITH CEILING EFFECT FOR SERIES 430

Ak (dm <sup>2</sup> )	L x H (mm)		qv (m <sup>3</sup> /h)												Lw	Lt													
			100		200		300		400		600		800				1000		1500		2000		2500		3000				
0,009	300 x 75	200 x 100	-	3,0	24	7,0																			Vk	Pa			
			3,0	6,0	6,0	25																							
0,013	400 x 75 200 x 75	300 x 100	-	2,0	18	5,6	27	8,6																					
			2,2	3,5	4,5	13	6,5	30																					
0,021	600 x 75 300 x 150	400 x 100 200 x 200		-	4,0	18	6,7	24	9,0																				
				2,6	4,9	4,0	11,0	5,3	20																				
0,026	800 x 75	500 x 100																											
							13	6,0	20	7,9	30	12,0																	
0,034	1000 x 75 400 x 150	600 x 100 300 x 200																											
							3,2	7,0	5,0	17,0	6,8	32																	
0,042	1200 x 75 500 x 150	800 x 100 400 x 200																											
							12	6,3	20	9,8	27	12,6	32	16,5															
0,051	1000 x 100 500 x 200	600 x 150 300 x 300																											
							17	8,2	23	11,1	28	14,0																	
0,067	1200 x 100 600 x 200	800 x 150 400 x 300																											
							18	9,8	22	14	33	19,0																	
0,090	1000 x 150 500 x 300	800 x 200																											
							3,1	6,5	4,8	16,0	6,1	26	33	21,0															
0,114	1200 x 150 600 x 300	1000 x 200																											
							12	13,0	22	13,0	29	19,0	34	23,0															
0,138	1200 x 200	800 x 300																											
							18	12,7	25	17,5	31	21,0	35	26,0															
0,181	1000 x 300																												
							3,0	6,0	4,0	11,0	5,0	17,0	6,2	26															
0,242	1200 x 300																												
			Lw	Lt																							19	16,0	24
			Vk	Pa																						2,7	5,0	3,4	8,5

The Lw values (NR) do not include attenuation of the premises. Vt = 0.37 m/s.

Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - AIR SUPPLY WITH CEILING EFFECT FOR SERIES 440 - 450 - 470

Ak (m <sup>2</sup> )	L x H (mm)		qv (m <sup>3</sup> /h)												Lw	Lt															
			100		200		300		400		600		800				1000		1500		2000		2500		3000						
0,008	300 x 75	200 x 100	15	4	25	9																				Vk	Pa				
			3,5	8,6	7,0	35																									
0,012	400 x 75 200 x 150	300 x 100	-	3	20	8	25	12																							
			2,3	4	4,8	16	7,0	35																							
0,018	600 x 75 300 x 150	400 x 100 200 x 200																													
							15	6	20	9	25	12	30	17																	
0,022	800 x 75	500 x 100																													
							15	6	20	9	25	12	30	17																	
0,029	1000 x 75 400 x 150	600 x 100 300 x 200																													
							16	7	20	10	25	15	30	17																	
0,036	1200 x 75 500 x 150	800 x 100 400 x 400																													
							20	9	25	13	25	16																			
0,044	1000 x 100 500 x 200	600 x 150 300 x 300																													
							15	8	20	12	20	14	30	20																	
0,057	1200 x 100 600 x 200	800 x 150 400 x 300																													
							15	10	15	12	25	18																			
0,077	1000 x 150 500 x 300	800 x 200 400 x 400																													
							-	9	-	11	20	15	31	17																	
0,097	1200 x 150 600 x 300	1000 x 200 500 x 400																													
							2,2	3,5	2,3	4	3,7	10	5,5	22																	
0,117	1200 x 200 600 x 400	800 x 200																													
							15	13	27	16	30	27																			
0,154	1000 x 300	800 x 400																													
							2,3	4	3,5	8,8	4,8	16	5,9	25																	
0,205	1200 x 300 600 x 600	1000 x 400																													
			Lw	Lt																							19	14	24	18	27
			Vk	Pa																						2,7	5	3,4	8	4	11

The Lw values (NR) do not include attenuation of the premises. Vt = 0.37 m/s.

Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

# Grilles with fixed linear bars

## Series 430 - 440 - 450 - 470

### SELECTION - AIR EXHAUST FOR SERIES 430

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)														
		200	300	400	500	750	1000	1500	2000	3000	4000	5000	Lw	-		
0,013	200 x 100	20	-												Lw	-
		4,2	18												Vk	Pa
0,020	300 x 100	11	-	22	-											
	200 x 150	2,8	8	4,2	18											
0,030	400 x 100	-	-	14	-	21	-									
	300 x 150	1,9	4	2,9	8	3,7	14									
0,045	600 x 100			-	-	13	-	18	-							
	400 x 150			1,9	4	2,5	6	3,1	10							
0,060	800 x 100					12	-	22	-							
	500 x 150					2,3	5	3,5	12							
0,075	1000 x 100					-	-	17	-	25	-					
	600 x 150					1,8	3	2,7	8	3,8	14					
0,093	1200 x 100					13	-	20	-	30	-					
	800 x 150					2,2	5	3,0	9	4,5	20					
0,125	1000 x 150					-	-	14	-	24	-					
	800 x 200					1,6	3	2,2	5	3,4	11					
0,150	1200 x 150							-	-	20	-	27	-			
	600 x 300							1,8	4	2,7	8	3,7	13			
0,175	1000 x 200							-	-	16	-	24	-			
	500 x 400							1,6	3	2,4	6	3,2	10			
0,200	1200 x 200									14	-	21	-	31	-	
	800 x 300									2,1	5	2,8	8	4,1	17	
0,260	1000 x 300									-	-	16	-	26	-	32
	800 x 400									1,6	3	2,2	5	3,2	10	4,1
0,350	1000 x 400													23	-	30
	800 x 500													2,8	7	3,7
0,420	1200 x 400													16	-	23
	1000 x 400													2,0	4	2,6
0,530	1200 x 500	Lw	-											10	-	18
		Vk	Pa											1,6	3	2,1

The Lw values (NR) do not include attenuation of the premises.

Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - AIR EXHAUST FOR SERIES 440 - 450 - 470

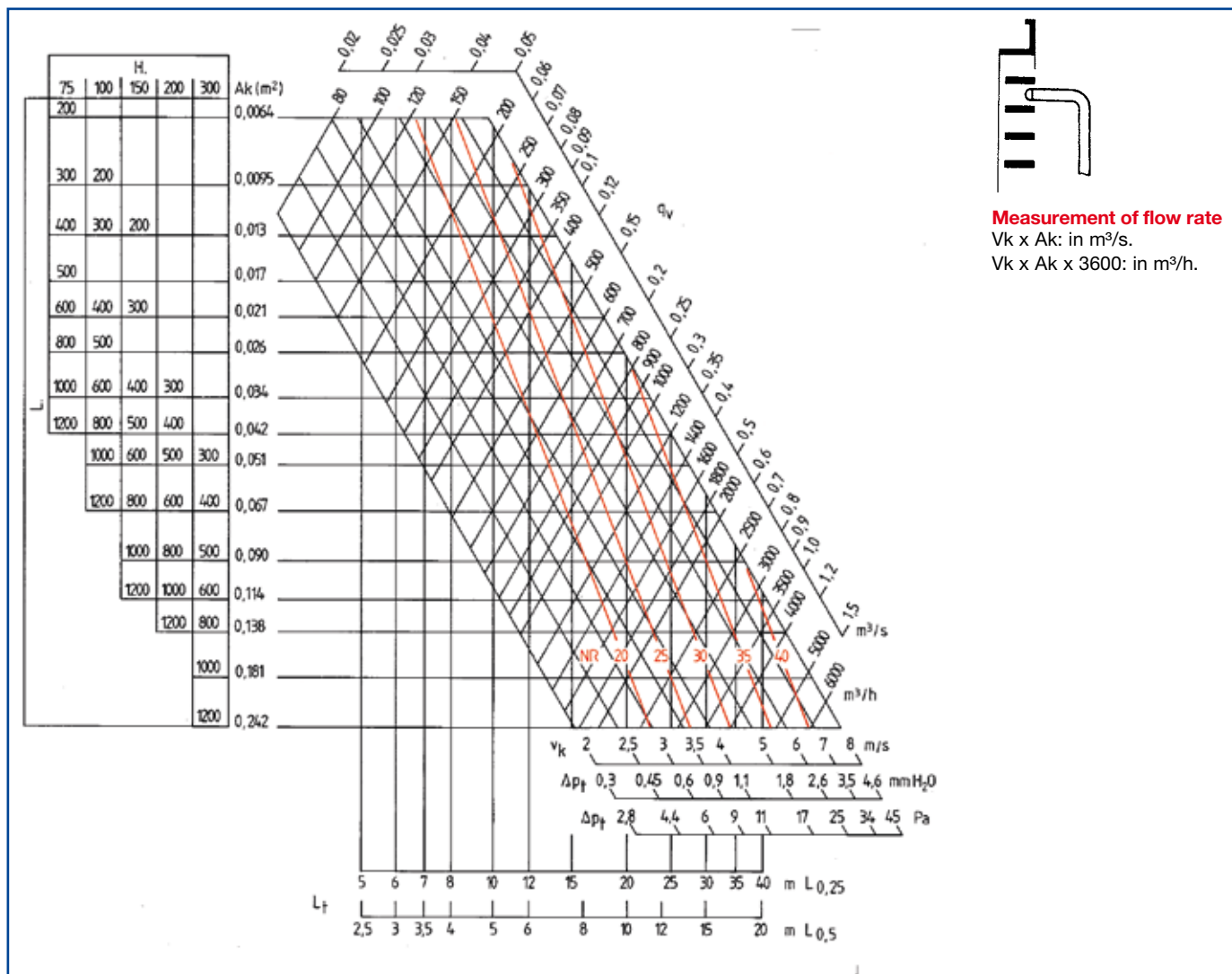
Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)														
		200	300	400	500	750	1000	1500	2000	3000	4000	5000	Lw	-		
0,013	200 x 100	24	-												Lw	-
		4,2	32												Vk	Pa
0,020	300 x 100	15	-	26	-											
	200 x 150	2,8	14	4,2	32											
0,030	400 x 100	-	-	18	-	25	-									
	300 x 150	1,9	6	2,9	14	3,7	24									
0,045	600 x 100			-	-	17	-	22	-							
	400 x 150			1,9	6	2,5	11	3,1	18							
0,060	800 x 100					16	-	26	-							
	500 x 150					2,3	9	3,5	22							
0,075	1000 x 100					-	-	21	-	29	-					
	600 x 150					1,8	6	2,7	14	3,8	25					
0,093	1200 x 100					17	-	24	-	34	-					
	800 x 150					2,2	9	3,0	16	4,5	36					
0,125	1000 x 150					-	-	18	-	28	-					
	800 x 200					1,6	4	2,2	9	3,4	20					
0,150	1200 x 150							-	-	24	-	31	-			
	600 x 300							1,8	6	2,7	14	3,7	23			
0,175	1000 x 200							-	-	20	-	28	-			
	500 x 400							1,6	5	2,4	10	3,2	18			
0,200	1200 x 200									18	-	25	-	35	-	
	800 x 300									2,1	8	2,8	14	4,1	30	
0,260	1000 x 300									-	-	20	-	30	-	36
	800 x 400									1,6	5	2,2	9	3,2	18	4,1
0,350	1000 x 400													27	-	34
	800 x 500													2,8	13	3,7
0,420	1200 x 400													20	-	27
	1000 x 400													2,0	7	2,6
0,530	1200 x 500	Lw	-											14	-	22
		Vk	Pa											1,6	4	2,1

The Lw values (NR) do not include attenuation of the premises.

Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

# Grilles with fixed linear bars

## Series 430 - air supply with ceiling effect



The  $L_w$  values (NR) do not include attenuation of the premises.

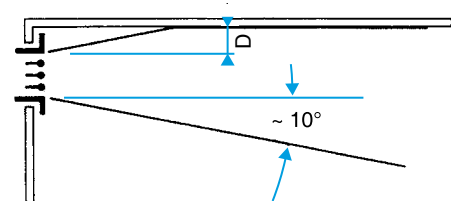
Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (ms)		0.25	0.375	0.5	0.625
$L_t$	A	x 1	x 0.67	x 0.5	x 0.4
$L_t$	B	x 0.7	x 0.47	x 0.35	x 0.28

### CORRECTIONS FOR DEFLECTION

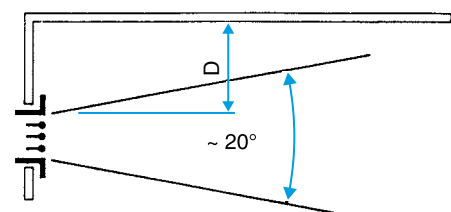
Blade angle	$L_t$	$V_k$	$\Delta P_t$	$L_w$
22°	x 0.77	x 1.15	x 1.30	+ 3
45°	x 0.55	x 1.25	x 1.60	+ 6



A) Air supply with ceiling effect where  $D$  is less than or equal to 30 cm.

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
$L_w + 0$	$L_w + 0$	$L_w + 10$	$L_w + 20$

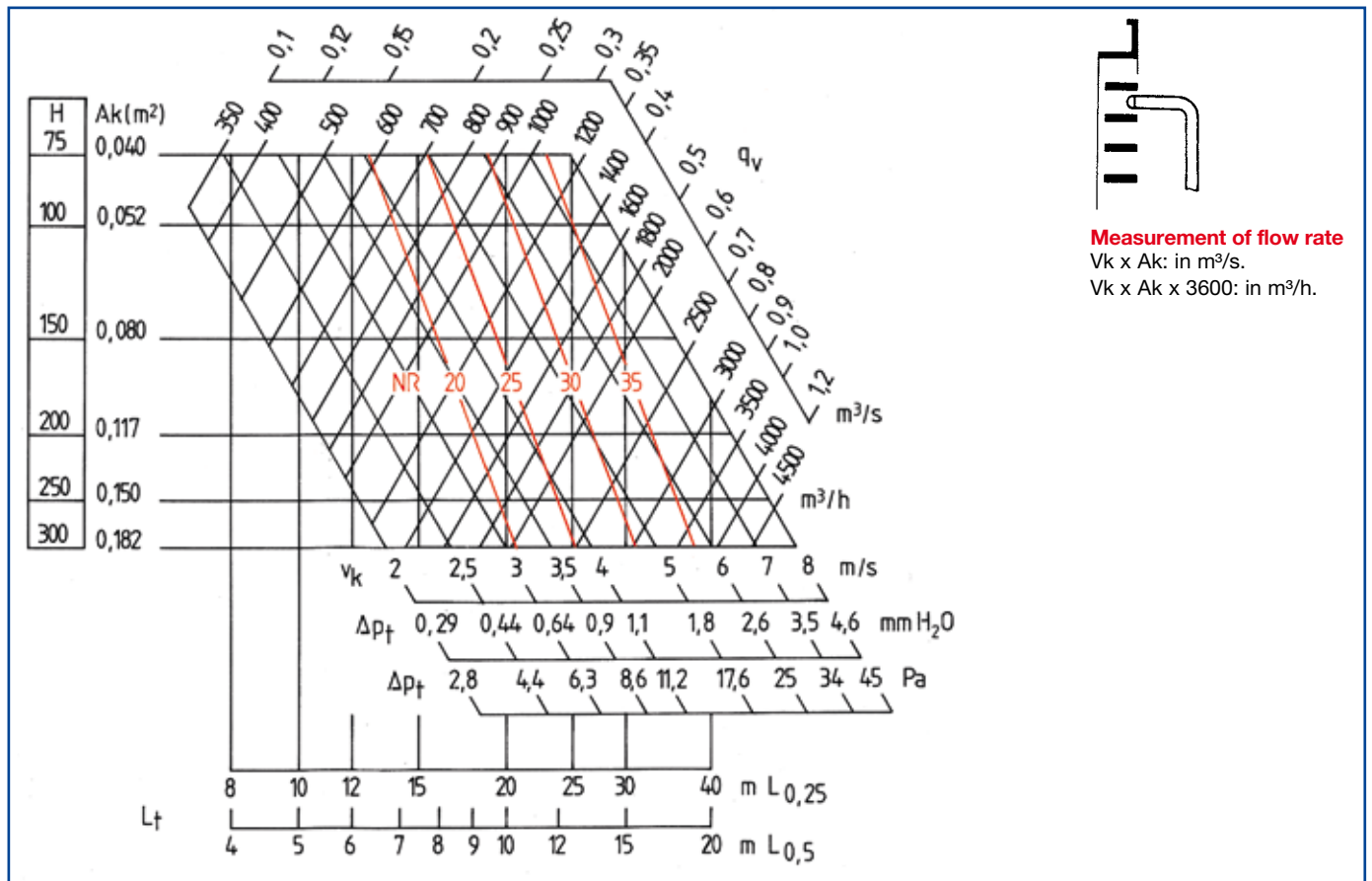


B) Air supply without ceiling effect where  $D$  is greater than 30 cm.



# Grilles with fixed linear bars

## Series 430 - linear air supply with ceiling effect



The Lw values (NR) do not include attenuation of the premises.

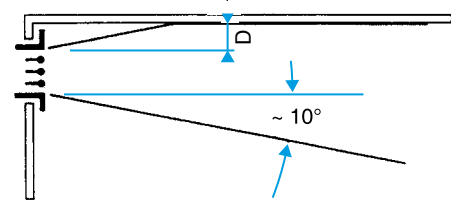
Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (ms)	0.25	0.375	0.5	0.625
Lt A	x 0.1	x 0.67	x 0.5	x 0.4
Lt B	x 0.7	x 0.47	x 0.35	x 0.28

### CORRECTIONS FOR DEFLECTION

Blade angle	Lt	$V_k$	$\Delta P_t$	Lw
22°	x 0.77	x 1.15	x 1.30	+ 3
45°	x 0.55	x 1.25	x 1.60	+ 6



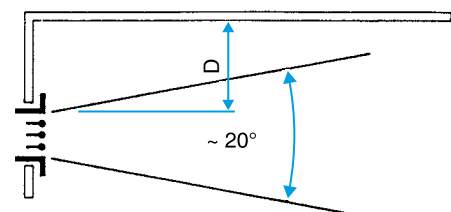
A) Air supply with ceiling effect where D is less than or equal to 30 cm.

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

### CORRECTIONS FOR OTHER LENGTHS

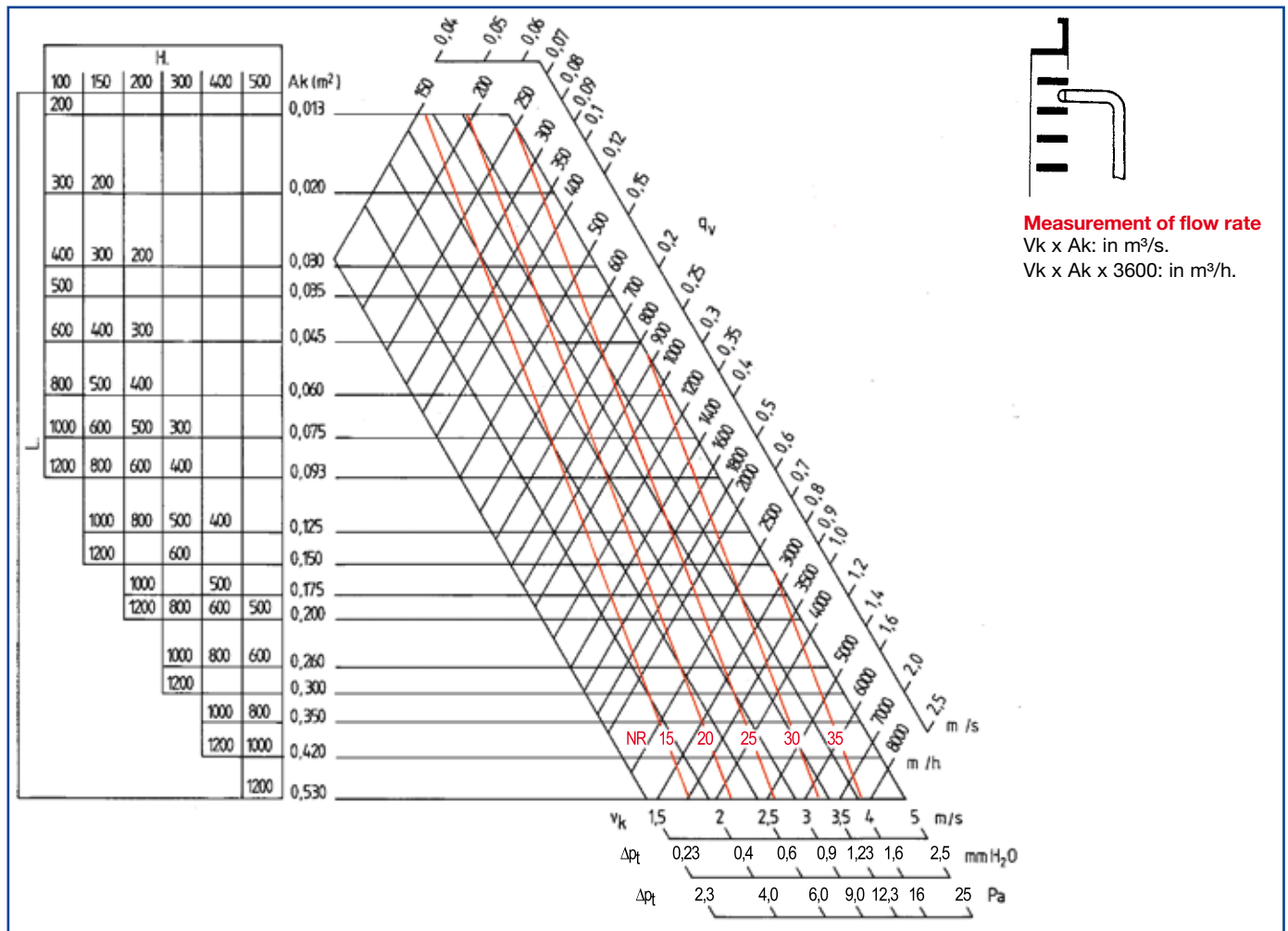
L (m)	1	1.5	2	2.5	3	4	5	6	8	10
Lt (m)	x 1	x 1.05	x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.15	x 1.15	x 1.15
Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10



B) Air supply without ceiling effect where D is greater than 30 cm.

# Grilles with fixed linear bars

## Series 430 - air exhaust



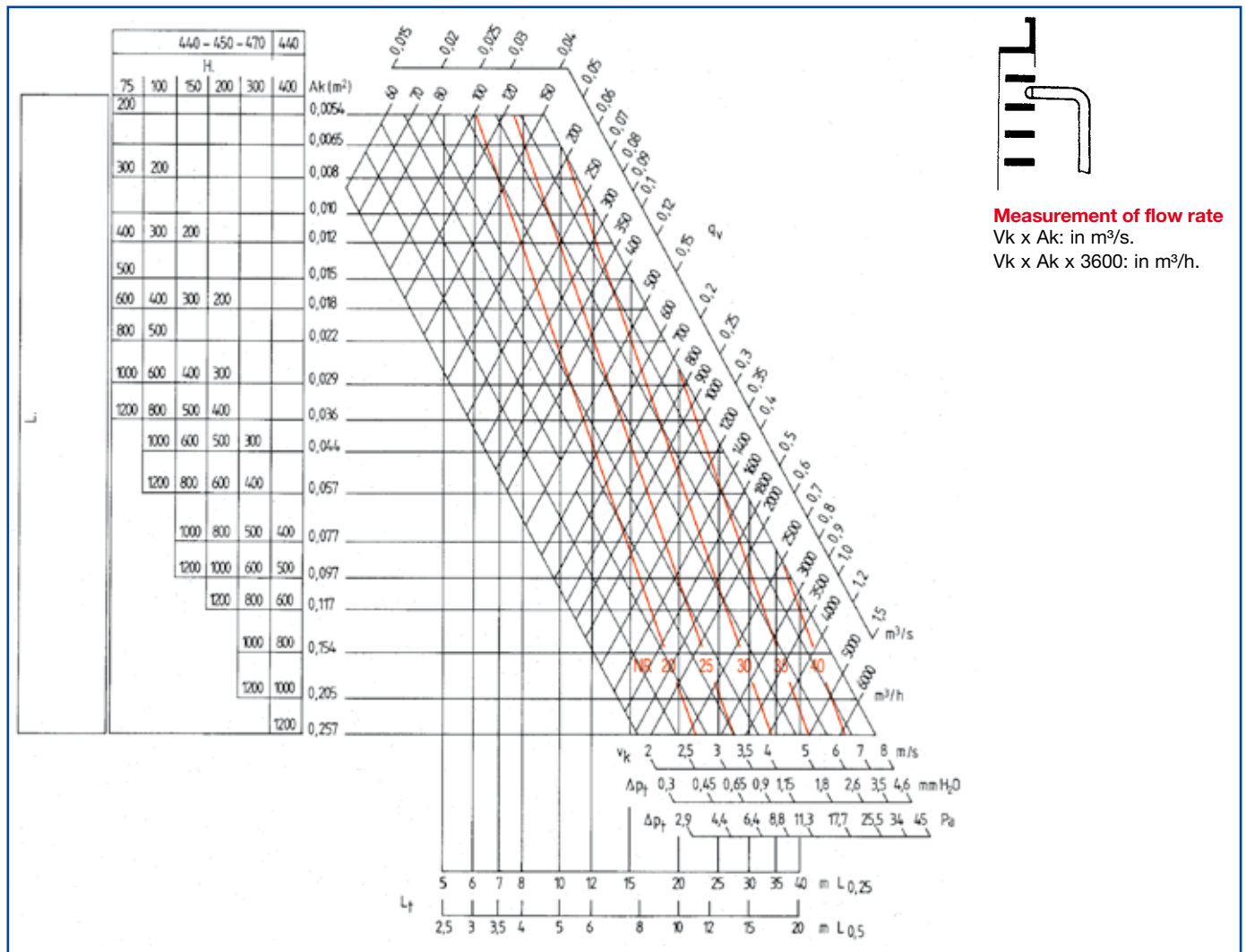
The Lw values (NR) do not include attenuation of the premises.  
 Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR DAMPER

No damper	Damper 100 % open	Damper 50 % open	Damper 25 % open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

# Grilles with fixed linear bars

Series 440 - 450 - 470 - air supply with ceiling effect



The Lw values (NR) do not include attenuation of the premises.

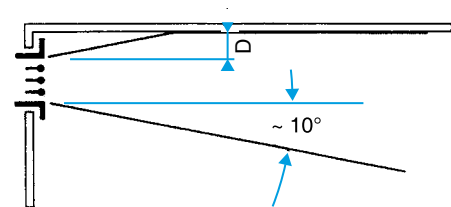
Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER Vt

Vt (ms)	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

## CORRECTIONS FOR DEFLECTION

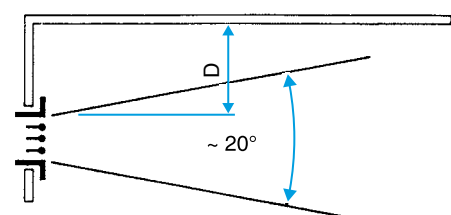
Blade angle	Lt	Vk	ΔPt	Lw
22°	x 0.77	x 1.15	x 1.30	+ 3
45°	x 0.55	x 1.25	x 1.60	+ 6



A) Air supply with ceiling effect where D is less than or equal to 30 cm.

## CORRECTIONS FOR DAMPER

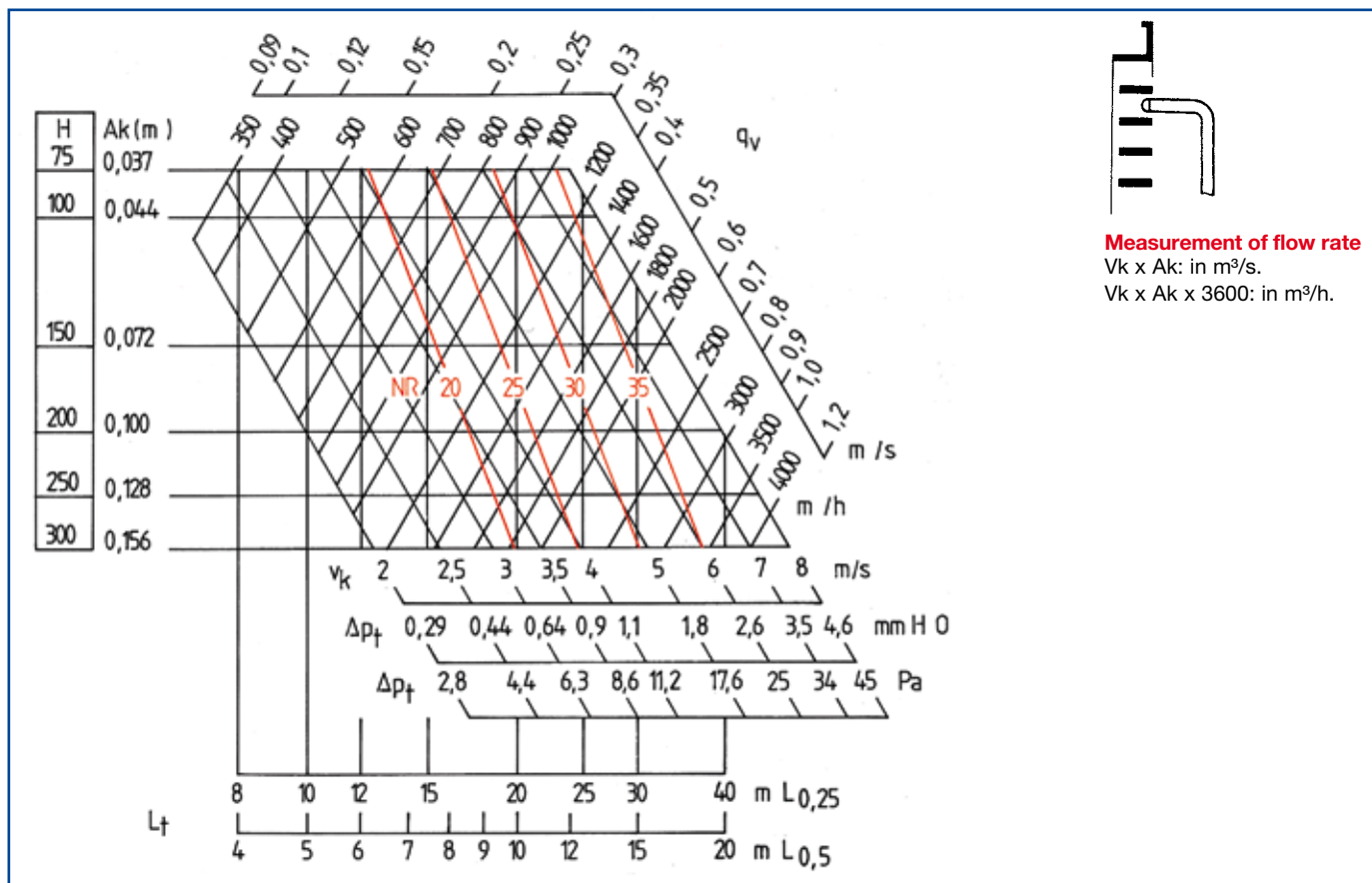
No damper	Damper 100% open	Damper 50% open	Damper 25% open
ΔPt x 1.00	ΔPt x 1.00	ΔPt x 2.25	ΔPt x 5.90
Lw + 0	Lw + 0	Lw + 10	Lw + 20



B) Air supply without ceiling effect where D is greater than 30 cm.

# Grilles with fixed linear bars

## Series 440 - 450 - 470 - linear air supply with ceiling effect

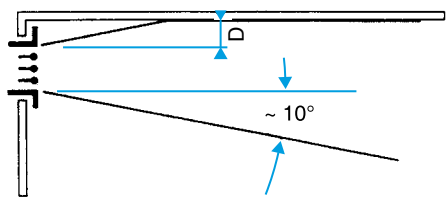


The Lw values (NR) do not include attenuation of the premises.

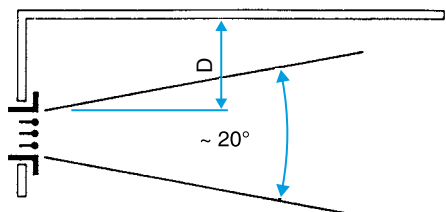
Tests performed on the double deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (ms)		0.25	0.375	0.5	0.625
Lt	A	x 0.1	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 is less than or equal to 30 cm.



B) Air supply without ceiling effect where D is greater than 30 cm.

### CORRECTIONS FOR DEFLECTION

Blade angle	Lt	Vk	$\Delta P_t$	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

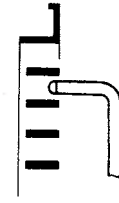
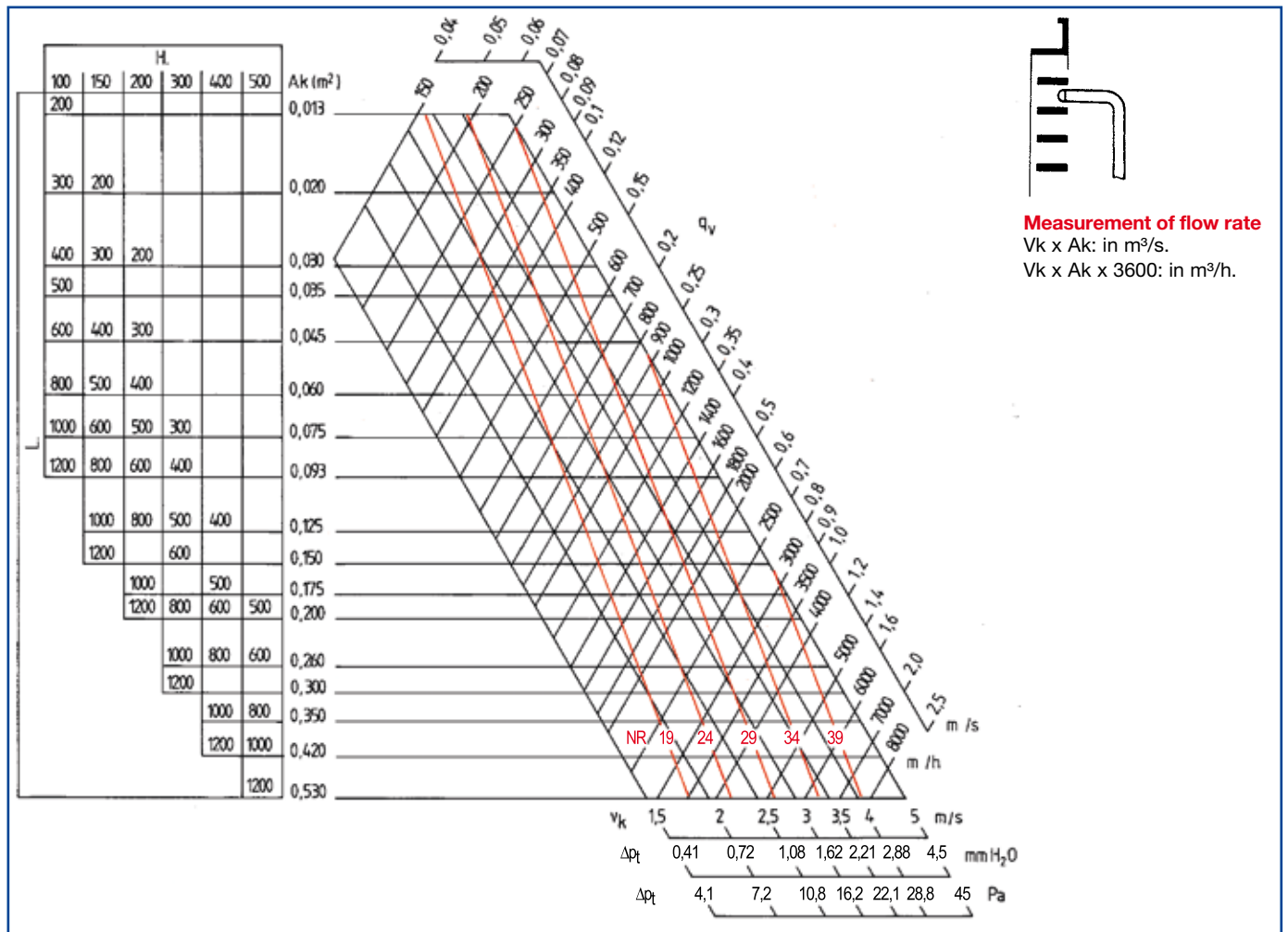
No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

### CORRECTIONS FOR OTHER LENGTHS

L (m)	1	1.5	2	2.5	3	4	5	6	8	10
Lt (m)	x 1	x 1.05	x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.15	x 1.15	x 1.15
Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10

# Grilles with fixed linear bars

## Series 440 - 450 - 470 - air exhaust



**Measurement of flow rate**  
 V<sub>k</sub> x A<sub>k</sub>: in m<sup>3</sup>/s.  
 V<sub>k</sub> x A<sub>k</sub> x 3600: in m<sup>3</sup>/h.

The L<sub>w</sub> values (NR) do not include attenuation of the premises. Tests performed on the single deflection grilles with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR DAMPER

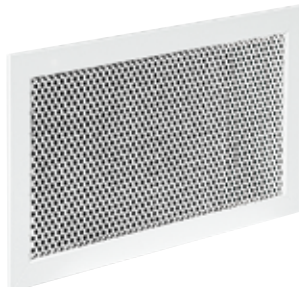
No damper	Damper 100% open	Damper 50% open	Damper 25% open
ΔP <sub>t</sub> x 1.00	ΔP <sub>t</sub> x 1.00	ΔP <sub>t</sub> x 2.25	ΔP <sub>t</sub> x 5.90
L <sub>w</sub> + 0	L <sub>w</sub> + 0	L <sub>w</sub> + 10	L <sub>w</sub> + 20

# Fixed blade grilles

## Series SC 121 - SC 125 - steel



Grille SC 121



Grille SC 125

### APPLICATION

- Exhaust.
- Wall mounted.

### DESCRIPTION

- SC 121: single deflection grille with fixed horizontal blades, inclined at 40°, 20 mm spacing.
- SC 125: perforated sheet grille with 45% free surface.
- Made of steel.

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
  - F1: visible by screws in the frame.
  - F3: hidden by friction clips.
- For more information refer to p.92.

### ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper
  - S-clipped to grille (provided).
  - F4 galvanized steel sheet mounting frame.
  - Galvanized steel sheet connection plenum with rear or side mounted connection.
- For more information refer to p.91 and 93.

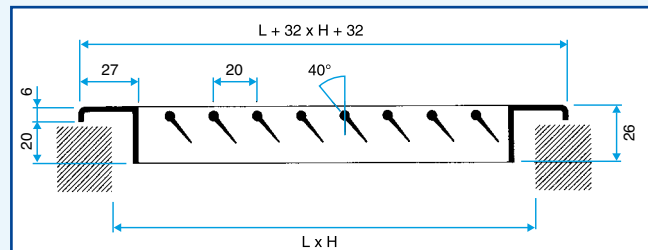
### STANDARD DIMENSIONS

- 75 x 75 to 1200 x 1200 range dimensions in 25 mm steps in L and H for the series SC 121.
  - 75 x 75 to 1200 x 600 range dimensions in 25 mm steps in L and H for the series SC 125.
- For more information refer to the RANGE pages hereafter.

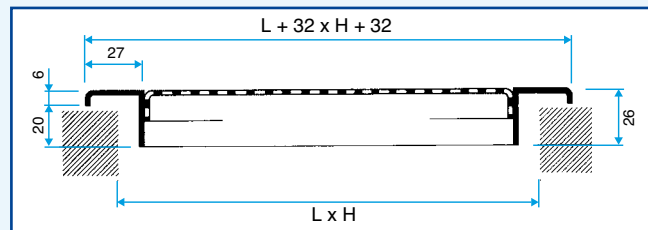
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

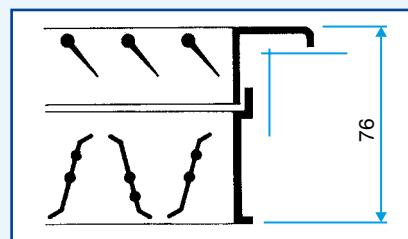
### DIMENSIONS



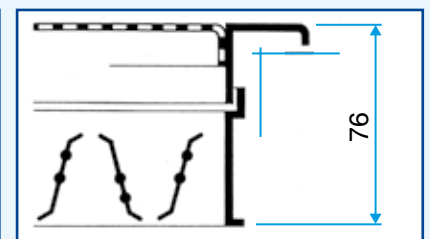
SC 121 - grille alone



SC 125 - grille alone



SC 121 - grille with mounted AGB or SGS damper



SC 125 - grille with mounted AGB or SGS damper

# Fixed blade grilles

## Series AC 121 - AC 123 - AC 124 - aluminium



Grille AC 121



Grille AC 123

### APPLICATION

- Exhaust.
- Wall mounted.

### DESCRIPTION

- AC 121: single deflection grille with fixed horizontal blades, inclined at 40°, 20 mm spacing.
- AC 123: 15x15 mm square mesh grille with free surface of 90%.
- AC 124: 15x15 mm square mesh grille inclined at 45° with free surface of 90%.
- Made of aluminium.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
  - F1: visible by screws in the frame.
  - F3: hidden by friction clips.
  - F5: hidden by snap-in fasteners (except AC 121).
- For more information refer to p.92.

### ACCESSORIES

- SGS counter-rotating damper, in natural tone galvanized steel sheet. S-clipped to grille (provided).
  - Counter-rotating AGB damper, in primary aluminium. S-clipped to grille (provided).
  - F4 or F6 galvanized steel sheet mounting frame.
  - Galvanized steel sheet connection plenum with rear or side mounted connection.
- For more information refer to p.91 and 93.

### STANDARD DIMENSIONS

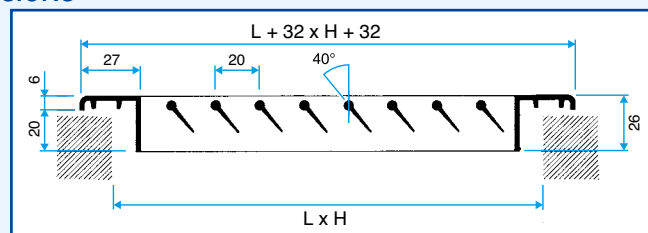
- 75 x 150 to 2000 x 1200 mm range dimensions in 25 mm steps in L and H for the series AC 121.
- 75 x 150 to 2025 x 2025 mm range dimensions in 25 mm steps in L and H for the series AC 123 and AC124.

For more information refer to the RANGE pages hereafter.

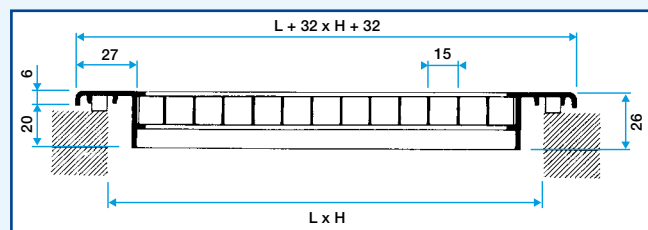
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

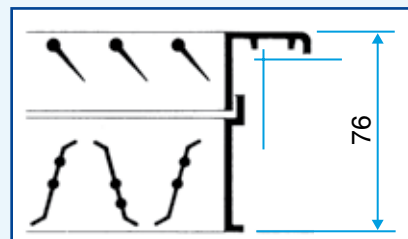
### DIMENSIONS



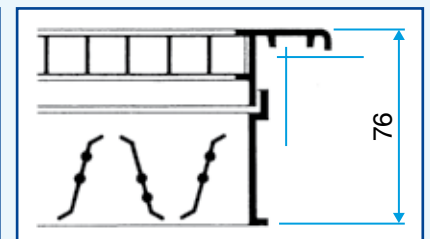
AC 121 - grille alone



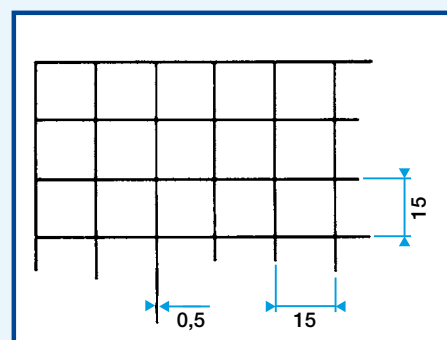
AC123 or AC 124 - grille alone



AC 121 - grille with mounted AGB or SGS damper



AC 123 or AC 124 - grille with mounted AGB or SGS damper



AC 123 or AC 124 interior core

# Fixed blade grilles

Series AO 123 - AU 123 - AU 124 - SC 370 - aluminium or steel



Grille AO 123 Z



Grille SC 370

## APPLICATION

- Special grilles for suspended ceiling tiles.
- Air exhaust.
- Ceiling mounted replacing a 600x600mm tile.

## DESCRIPTION

- AO 123: straight square mesh grille of 15 x 15 mm without frame.
- AU 123: straight square mesh grille of 15 x 15 mm with thin frame of 5 mm.
- AU 124: 15mm square mesh grille of inclined at 45° with thin frame of 5 mm.
- SC 370: perforated sheet with 45% free surface without frame.
- AO and AU: made of aluminium.
- SC: made of steel.

## FINISH

- AO 123 Z and AU 123 Z : RAL9010 white epoxy paint aluminium.
- AU 124 Z : RAL9010 white epoxy paint aluminium.
- SC 370: RAL9010 white epoxy paint steel.
- AU 124 extended range : natural colour anodised aluminium.
- Finish with RAL color paint. Consult the list of available colours in the appendix (except AO123 RAL 9010 only).

## FIXING

- By gravity on the T supports of the suspended ceiling.

## ACCESSORIES

- Galvanized steel sheet connection plenum with rear mounted connection (RT123) or side mounted connection (RE123).

## STANDARD DIMENSIONS

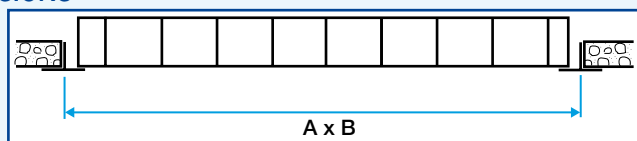
- Range dimensions adapted to standard 600 x 600 mm and 1200 x 600 mm suspended ceiling tiles.
- 100 x 100 to 600 x 600 mm range dimensions in 25 mm steps in L and H for the extended range.

For more information refer to the RANGE pages hereafter.

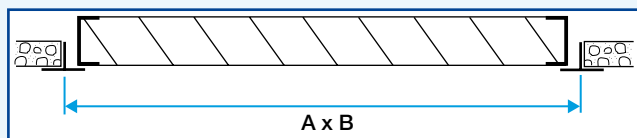
## TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

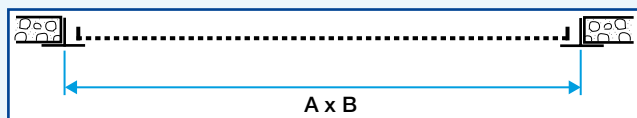
## DIMENSIONS



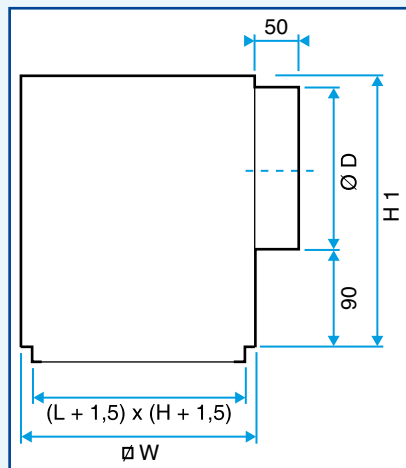
Grille AO 123



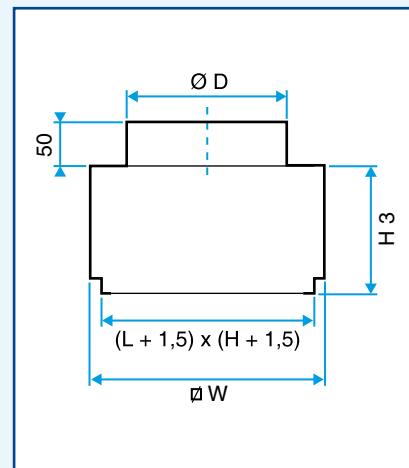
Grille AU 123 or AU 124



Grille SC 370



Plenum RE 123



Plenum RT 123

## DIMENSIONS

A x B (mm)	W (mm)	H1 (mm)	H3 (mm)	ØD (mm)
600 x 600	598 x 598	330	215	250



# Fixed blade grilles

## Series AC 161 - AC 163 - aluminium



Grille AC 161



Grille AC 163

### APPLICATION

- Opening filter-holder grilles.
- Air exhaust.
- Wall mounted.

### DESCRIPTION

- AC 161: single deflection grille with horizontal blades, fixed, inclined at 40°, 20 mm spacing. Housing for 15 mm thick filter. Grille front articulated by stainless steel hinges and closed by screws buttons. Opening through 180° for easy filter change.
- AC 163: 15 x 15 mm square mesh grille with free surface of 90 %. Housing for 15 mm thick filter. Grille front articulated by stainless steel hinges and closed by screws buttons. Opening through 180° for easy filter change.
- W: 20 mm thick G3 filter with M1 fire rating available as option.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours page RAL.

### FIXING

- F0: none.
- F1: visible by screws in the frame.

For more information refer to p.92.

### ACCESSORIES

- Galvanized steel sheet connection plenum with rear mounted connection type RT.
- 20 mm thick G3 filter with type W M1 fire rating.

### STANDARD DIMENSIONS

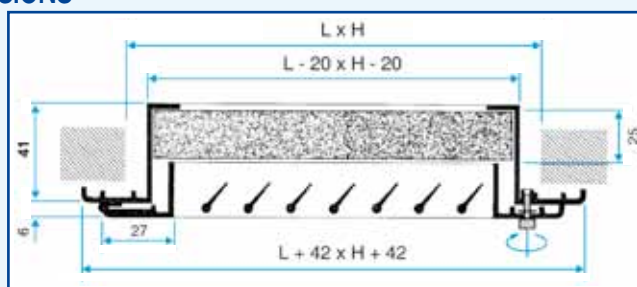
- AC 161: 172 x 122 to 2022 x 1222 range dimensions in 25 mm steps.
- AC 161: 172 x 122 to 1222 x 622 range dimensions in 25 mm steps.

For more information refer to the RANGE pages hereafter.

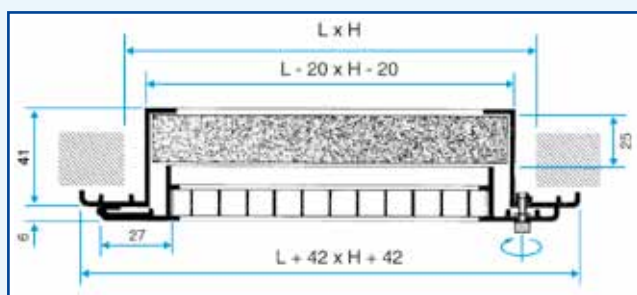
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

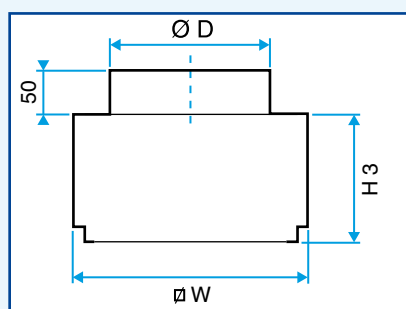
### DIMENSIONS



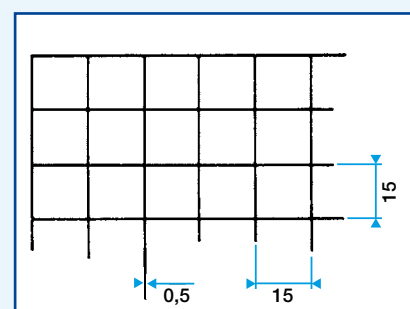
AC 161 W - grille with filter



AC 163 W - grille with filter



Plenum RT



Core AC 163

### STANDARD RANGE DIMENSIONS

L x H (mm)	Standard filter (mm)	W (mm)	H3 (mm)	Diameter D (mm)
622 x 322	596 x 296	606 x 306	215	250
522 x 422	496 x 396	506 x 406	215	355
622 x 422	596 x 396	606 x 406	215	355
522 x 522	496 x 496	506 x 506	215	400
622 x 522	596 x 496	606 x 606	215	450

# Fixed blade grilles

## Series AG 637 - AC 174 - special ceiling tile opening grilles - aluminium



Grille AG 637 W



Grille AC 174 W

### APPLICATION

- Filter holder grilles for suspended ceiling tiles.
- Air exhaust.
- Mounted in standard 600 x 600 and 675 x 675 ceiling tiles or on a wall.
- Models adapted to staff or BA13 type non-removable ceilings.

### DESCRIPTION

- AG 637: fixed vane grille inclined at 45°.
- AC 174: 15x15 mm square mesh grille inclined at 45°.
- Opening door on hinges for easy access to the filter.
- W: 20 mm thick G3 filter with M1 fire rating available as option.
- Made of aluminium.

### FINISH

- RAL9010 epoxy paint.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: by gravity on the T supports of the suspended ceiling and drywall screws in the connection plenum.
- F1: visible by screws in the frame and drywall screws in the connection plenum (for the non-removable ceilings).

For more information refer to p.92.

### ACCESSORIES

- Galvanized steel sheet connection plenum with side mounted connection type RE.
- 20 mm thick G3 plane filter with M1 fire rating type W.

### STANDARD DIMENSIONS

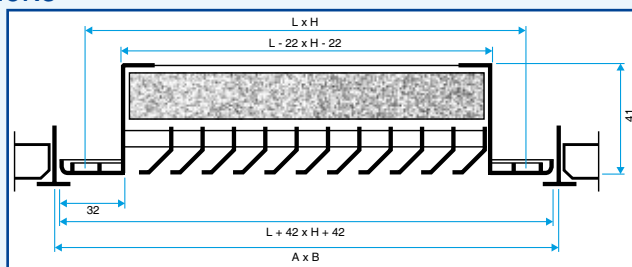
- Standard dimensions adapted to suspended ceiling tiles or staff ceilings.
- AG 637: 300 x 300 to 1200 x 600 range dimensions in 25 mm steps.
- AC 174: 400 x 200 to 563 x 563 range dimensions in 25 mm steps.

For more information refer to the RANGE pages hereafter.

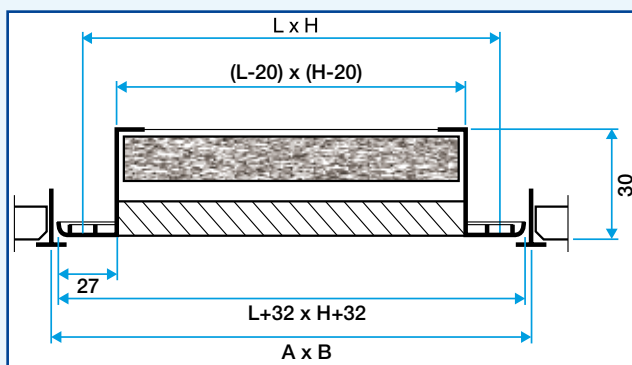
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

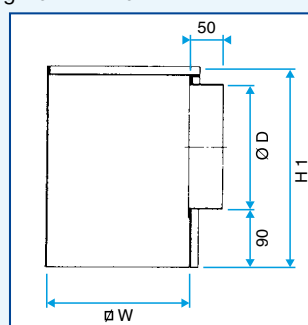
### DIMENSIONS



AG 637 W - grille with filter



AC 174 W - grille with filter



Plénum RE

### STANDARD RANGE DIMENSIONS AG 637

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	360
600 x 600	554 x 554	531 x 531	250	537 x 537	360
675 x 675	628 x 628	605 x 605	250	611 x 611	360

### STANDARD RANGE DIMENSIONS AC 174

A x B*	L x H (mm)	Filtre standard (mm)	Diameter D (mm)	W (mm)	H1 (mm)
600 x 300	563 x 263	551 x 251	250	550 x 250	360
600 x 600	563 x 563	551 x 551	250	550 x 550	360
-	400 x 200	388 x 188	200	385 x 185	360
-	500 x 500	488 x 488	250	485 x 485	410

\* Tile dimensions.

# Fixed blade grilles

## Series 121 - 123 - 124 - 125 - 370

### Standard range

Dimensions	Aluminium grille AC 121 F3	Aluminium grille AC 123 F3	Steel grille SC 121 F3	Steel grille SC 125 F3	White perforated sheet SC 370	White perforated sheet + filter SC 370 W	Replac- ement filter W3	White mesh grille AO 123 Z	White mesh grille AU 123 Z	White mesh grille AU 124 Z	Side spur plenum RE 123
	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code
200 x 100	11050621	11050641	11050200	11050011							
300 x 150	11050622	11050642	11050204	11050012							
400 x 200	11050623	11050643	11050208	11050013							
600 x 200	11050624	11050644	11050210	11050014							
300 x 300	11050625	11050645	11050211	11050015							
500 x 300	11050626	11050646	11050212	11050016							
600 x 300	11050627	11050647	11050213	11050017							
800 x 300	11050628	11050648	11050214	11050018							
600 x 600	11050629	11050649	11050218	11050019	11050669	11050670	11053499	11050661	11050725	11050727	11053694
1000 x 600	11050630	11050650									
1200 x 600								11050662			

**Fixing**

- AC and SC models: hidden by friction clips.
- AO models and AU: by gravity on the T supports of the ceiling.

**Finish**

- AC model: anodised aluminium natural glossy tone.
- SC model: RAL9010 epoxy paint.
- AO and AU models: RAL9010 epoxy paint.

### Range with choice of options - grilles

Type	Name	Code	Type	Name	Code
RAL9010 steel fixed vanes	SC 121	11002024	Anodised alum fixed vanes	AC 121	11002401
RAL9010 perforated steel sheet	SC 125	11002025	Anodised alum square mesh	AC 123	11002601
Anodised alum square mesh core	AO 123	11002008	Anodised alum inclined square mesh	AC 124	11002602
Anodised alum square mesh	AU 123	11002607	Anodised alum inclined square mesh	AU 124	11002606

### Range with choice of options - side spur plenums for 600x600 tiles

Dimensions (mm)	Name	Code	Dimensions (mm)	Name	Code
600x600	Side spur plenum RE 123	11003307	600x600	Rear spur plenum RT 123	11003305

### Available dimensions

H / L (mm)	200	250	300	400	450	500	600	700	800	1000	1200
100	●	×	×	×	×	×	×	×	×	×	×
150	×	×	●	×	×	×	×	×	×	×	×
200	×	×	×	●	×	×	●	×	×	×	×
250		×	×	×	×	×	×	×	×	×	×
300			●	×	×	●	●	×	●	×	×
400				×	×	×	●	×	×	×	×
450					×	×	×	×	×	×	×
500						×	×	×	×	×	×
600							●	×	×	●	●

● Standard range dimensions.

### Options available

Attachment	Finish
<ul style="list-style-type: none"> <li>• F0: none</li> <li>• F1: fixing by screws, visible in the frame (except models AO and AU).</li> <li>• F3: hidden by friction clips (except models AO and AU).</li> <li>• F5: hidden by snap-in fasteners (only SC 125 and AC 123-124).</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodisation (AC models only).</li> <li>• Epoxy paint in accordance with RAL card (all models except A0123). Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- SGS and AGB dampers : see p.91.
- F4 and F6 mounting frames : see p.91.
- MT and ME plenums : see p.93.
- Replacement filter W3.

# Fixed blade grilles

## Series 161 - 163

### Standard range AC 161 - AC 163

Dimensions	Mesh grille AC 161 WZ F1 Code	Vane grille AC 163 WZ F1 Code	Filter W3 Code	Rear plenum RT 160 Code
622 x 322	11050744	11050754	11053501	11053531
522 x 422	11050745	11050755	11053502	11053532
622 x 422	11050746	11050756	11053504	11053533
522 x 522	11050747	11050757	11053503	11053534
622 x 522	11050748	11050758	11053505	11053535

Fixing	Finish	Filter
• F1: hidden by screws in the filter housing.	• Natural glossy anodised aluminium.	• G3 filter included.

### Range with choice of options

Type	Name	Code	Type	Name	Code
Anodised alum fixed vanes	AC 161	11002010	Anodised alum square mesh	AC 163	11002012
Anodised alum fixed vanes delivered with filter	AC 161 W	11002011	Anodised alum square mesh delivered with filter	AC 163 W	11002013
Replacement filter	W 2	11002031			

### Usage dimensions

H / L (mm)	322	372	422	472	522	572	622	722	822	1022	1222
322	✗	✗	✗	✗	✗	✗	●	✗	✗	✗	✗
372		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
422			✗	✗	●	✗	●	✗	✗	✗	✗
472				✗	✗	✗	✗	✗	✗	✗	✗
522					●	✗	●	✗	✗	✗	✗
572						✗	✗	✗	✗	✗	✗
622							✗	✗	✗	✗	✗

● Standard range dimensions.

### Options available

Fixing	Finish
<ul style="list-style-type: none"> <li>• F0 : none.</li> <li>• F1 : hidden by screws in the filter housing.</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodisation.</li> <li>• Epoxy paint in accordance with RAL card (all models). Consult the list of available colours page RAL.</li> </ul>

### PROPOSED ACCESSORIES

- Plenums RT.
- Replacement filter W3 or W2.

# Fixed blade grilles

## Serie 174 - 637

### Standard range for suspended ceiling

Dimensions	White-blade grille AG 637 WZ F0	Side plenum RE 637	Mesh grille 45° AC 174 WZ F0	Side plenum RE 174	Replacement filter for AG 637 W3
	Code	Code	Code	Code	Code
600 x 300	11050682	11053575	11050742	11053572	11053515
600 x 600	11050681	11053577	11050743	11053570	11053514
675 x 675	11050683	11053579			11053516
Fixing		Finish		Filter	
• F0 : hidden by gravity in suspended ceiling frames.		• Natural glossy anodised aluminium.		• G3 filter included.	

### Standard range for non-removable ceilings or walls

Dimensions	Mesh grille 45° AC 174 WZ F1	Side plenum RE174	Replacement filter W3	Rear plenum MT F3	Side plenum ME F3
	Code	Code	Code	Code	Code
500 x 500	11050741	11053578	11053518		
400 x 200	11050740		11053517	11053648	11053678
Fixing		Finish		Filter	
• F1 : non-visible by screws in the filter housing..		• Natural glossy anodised aluminium.		• G3 filter included.	

### Range with options

Type	Name	Code	Type	Name	Code
Anodised alum square mesh	AC 174	11002037	Anodised alum fixed vanes	AG 637	11002035
Exchange filter for AC 174	W 3	11002030	Exchange filter for AG 637	W 3	11002030

### Usage dimensions

H / L (mm)	300	350	400	450	500	550	600	700	800	1000	1200
300	✗	✗	✗	✗	✗	✗	●	✗	✗	✗	✗
350		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
400			✗	✗	✗	✗	✗	✗	✗	✗	✗
450				✗	✗	✗	✗	✗	✗	✗	✗
500					●	✗	✗	✗	✗	✗	✗
550						✗	✗	✗	✗	✗	✗
600							●	✗	✗	✗	✗

● Standard range dimensions.

### Options available

Attachment	Finish	Filter
<ul style="list-style-type: none"> <li>• F0 : none.</li> <li>• F1 : fixing by screws, visible in the frame.</li> </ul>	<ul style="list-style-type: none"> <li>• Natural-colour glossy anodisation (AG637 only).</li> <li>• RAL-color epoxy paint (all models). Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>• G3 filter, M1 fire-rating.</li> </ul>

### ACCESSORIES

- RE 637 and RE 174 plenums.
- ME F3 and MT F3 plenums.
- W3 replacement filter.

# Fixed bade grilles

## Series 121 - 123 - 124 - 161 - 163 - 174

### SELECTION - EXHAUST FOR SERIES 121 - 161

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw	Pa2										
		200		300	400		500		750		1000		1500			2000		3000		4000		5000			
0,013	200 x 100	25	90																				Lw	Pa2	
		4,2	35																						
0,020	300 x 100	16	41	27	90																		Lw	Pa2	
	200 x 150	2,8	15	4,2	35																				Vk
0,030	400 x 100	–	16	19	41	26	70																Lw	Pa2	
	300 x 150	1,9	7	2,9	16	3,7	27																		Vk
0,045	600 x 100	–	16	18	32	23	50																Lw	Pa2	
	400 x 150	1,9	7	2,5	12	3,1	20																		Vk
0,060	800 x 100					17	28	27	63															Lw	Pa2
	500 x 150					2,3	10	3,5	24																
0,075	1000 x 100					–	14	22	37	30	74													Lw	Pa2
	600 x 150					1,8	6,5	2,7	15	3,8	28														
0,093	1200 x 100							18	25	25	47	35	104											Lw	Pa2
	800 x 150					2,2	10	3,0	18	4,5	40														
0,125	1000 x 150					–	13	19	26	29	59													Lw	Pa2
	800 x 200					1,6	5	2,2	10	3,4	22														
0,150	1200 x 150					–	14	25	37	32	70													Lw	Pa2
	600 x 300					1,8	7	2,7	15	3,7	26														
0,175	1000 x 200					–	13	21	29	29	53													Lw	Pa2
	500 x 400					1,6	5	2,4	11	3,2	20														
0,200	1200 x 200							19	22	26	40	36	86											Lw	Pa2
	800 x 300					2,1	9	2,8	15	4,1	33														
0,260	1000 x 300					–	13	21	25	31	53	37	86											Lw	Pa2
	800 x 400					1,6	5	2,2	10	3,2	20	4,1	33												
0,350	1000 x 400											28	40	35	70									Lw	Pa2
	800 x 500					2,8	14	3,7	26																
0,420	1200 x 400											21	21	28	35	34	57							Lw	Pa2
												2,0	8	2,6	13	3,3	22								
0,530	1200 x 500											15	13	23	22	29	32							Lw	Pa2
												1,6	5	2,1	9	2,5	13								

The Lw values (NR) do not include attenuation of the premises.

Tests performed on the grilles with a 'perfect' plenum in accordance with the EN 12238 standard.

Pa = grille without filter pressure drop. Pa2 = G3 filter pressure drop included.

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

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw	Pa2										
		200		300	400		500		750		1000		1500			2000		3000		4000		5000			
0,013	200 x 100	16	67																				Lw	Pa2	
		4,2	11																						
0,020	300 x 100	7	30	18	67																		Lw	Pa2	
	200 x 150	2,8	5	4,2	11																				Vk
0,030	400 x 100	–	16	10	32	17	52																Lw	Pa2	
	300 x 150	1,9	2	2,9	5	3,7	8																		Vk
0,045	600 x 100	–	16	9	24	14	37																Lw	Pa2	
	400 x 150	1,9	2	2,5	4	3,1	6																		Vk
0,060	800 x 100					8	20	18	46															Lw	Pa2
	500 x 150					2,3	3	3,5	7																
0,075	1000 x 100					–	12	13	28	21	54													Lw	Pa2
	600 x 150					1,8	2	2,7	5	3,8	8														
0,093	1200 x 100					–	18	17	34	26	76													Lw	Pa2
	800 x 150					2,2	3	3,0	5	4,5	12														
0,125	1000 x 150					–	10	10	18	20	44													Lw	Pa2
	800 x 200					1,6	1,5	2,2	3	3,4	7														
0,150	1200 x 150					–	12	16	28	23	52													Lw	Pa2
	600 x 300					1,8	2	2,7	5	3,7	8														
0,175	1000 x 200					–	10	12	21	20	39													Lw	Pa2
	500 x 400					1,6	1,5	2,4	3	3,2	6														
0,200	1200 x 200							10	16	17	30	27	64											Lw	Pa2
	800 x 300					2,1	2	2,8	5	4,1	10														
0,260	1000 x 300					–	10	12	18	22	39	28	64											Lw	Pa2
	800 x 400					1,6	1,5	2,2	3	3,2	6	4,1	10												
0,350	1000 x 400											19	30	26	52									Lw	Pa2
	800 x 500					2,8	8	5	3,7	8															
0,420	1200 x 400											12	15	19	25	25	42							Lw	Pa2
												2,0	2	2,6	4	3,3	7								
0,530	1200 x 500											6	10	14	17	20	24							Lw	Pa2
												1,6	1,5	2,1	3	2,5	4								

Corrections pour série 124 -174  
Pa x3 (hors filtre) Lw + 1

The Lw values (NR) do not include attenuation of the premises.

Tests performed on the grilles with a 'perfect' plenum in accordance with the EN 12238 standard.

# Fixed blade grilles

## Series 125 - 370 - 637

### SELECTION - EXHAUST FOR SERIES 125 - 370

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)										Lw Vk	- Pa						
		200	300	400	500	750	1000	1500	2000	3000	4000			5000					
0,013	200 x 100	26	-												Lw	-			
		4,2	42												Vk	Pa			
0,020	300 x 100	16	-	28	-														
	200 x 150	2,8	18	4,2	42														
0,030	400 x 100	-	-	19	-	27	-												
	300 x 150	1,9	8	2,9	19	3,7	32												
0,045	600 x 100			-	-	19	-	24	-										
	400 x 150			1,9	8	2,5	14	3,1	24										
0,060	800 x 100					18	-	28	-										
	500 x 150					2,3	12	3,5	29										
0,075	1000 x 100					-	-	23	-	31	-								
	600 x 150					1,8	8	2,7	18	3,8	34								
0,093	1200 x 100							19	-	26	-	36	-						
	800 x 150							2,2	12	3,0	22	4,5	48						
0,125	1000 x 150							-	-	19	-	30	-						
	800 x 200							1,6	6	2,2	12	3,4	27						
0,150	1200 x 150									-	-	26	-	33	-				
	600 x 300									1,8	8	2,7	18	3,7	31				
0,175	1000 x 200											22	-	30	-				
	500 x 400									1,6	6	2,4	13	3,2	24				
0,200	1200 x 200											20	-	27	-	37			
	800 x 300											2,1	11	2,8	18	4,1	40		
0,260	1000 x 300													22	-	32	-		
	800 x 400											1,6	6	2,2	12	3,2	24	4,1	40
0,350	1000 x 400													29	-	36	-		
	800 x 500													2,8	17	3,7	31		
0,420	1200 x 400													22	-	28	-	35	
	1000 x 400													2,0	10	2,6	16	3,3	26
0,530	1200 x 500	Lw	-																
		Vk	Pa											16	-	23	-	30	-
														1,6	6	2,1	11	3,3	22

The Lw values (NR) do not include attenuation of the premises.

Tests performed on the grilles with a 'perfect' plenum in accordance with the EN 12238 standard.

### SELECTION - EXHAUST FOR SERIES 637

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)										Lw Vk	Pa2 Pa	
		800	1200	1600	2000	2500	3000	4000						
0,15	554 x 254	26	35	36	80								Lw	Pa2
		1,5	13	2,5	30								Vk	Pa
0,30	554 x 554	-	9	25	20	33	39	38	61	43	95			
		0,8	3	1,3	7	1,5	17	1,8	23	2,3	30			
0,38	628 x 628	Lw	Pa2	30	13	34	24	37	30	42	64	46	92	
		Vk	Pa	1	6	1,2	11	1,5	18	2	32	2,5	50	

The Lw values (NR) do not include attenuation of the premises.

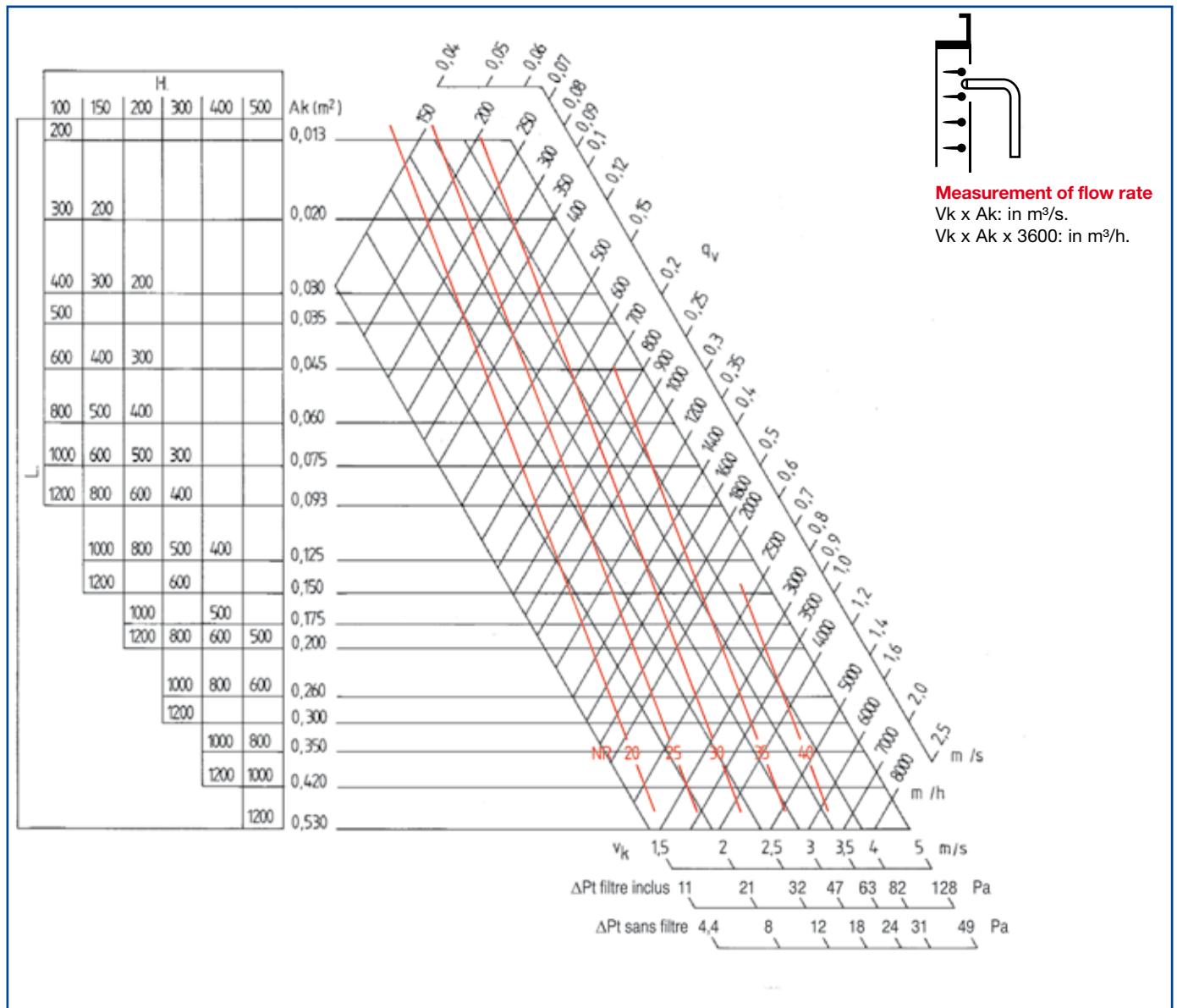
Tests performed on the grilles with a 'perfect' plenum in accordance with the EN 12238 standard.

Pa = grille without filter pressure drop.

Pa2 = G3 filter pressure drop included.

# Fixed blade grilles

## Series 121 - 161 - air exhaust



The Lw values (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in accordance with the EN 12238 standard.

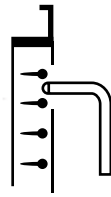
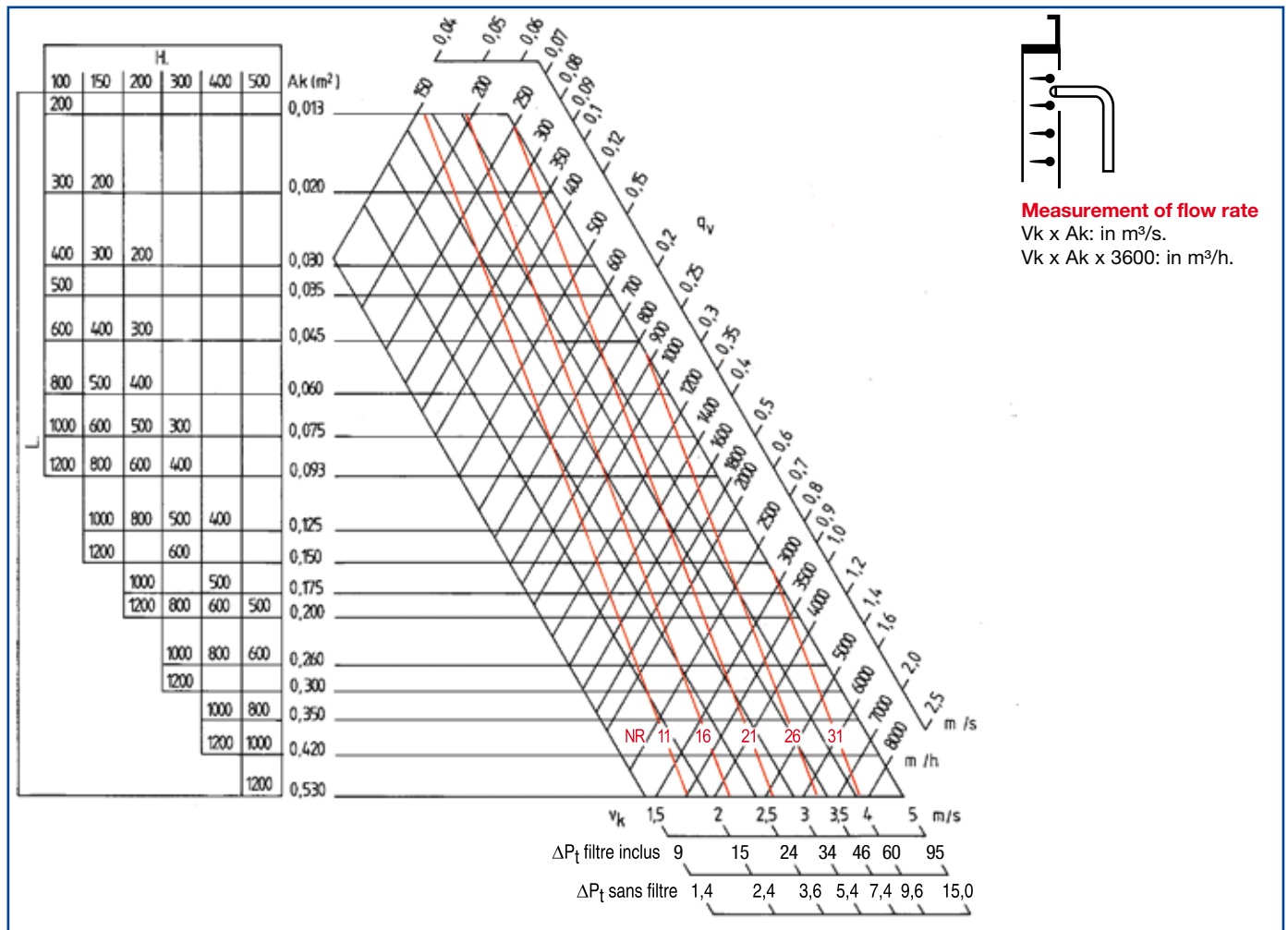
### CORRECTIONS FOR SERIES 125

$\Delta Pt$	Lw
$\Delta Pt \times 1.20$	Lw + 1



# Fixed blade grilles

## Series 123 - 163 - air exhaust



**Measurement of flow rate**  
 $V_k \times A_k$ : in m³/s.  
 $V_k \times A_k \times 3600$ : in m³/h.

The Lw values (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in accordance with the EN 12238 standard.

### CORRECTIONS FOR SERIES 124 - 174

$\Delta P_t$	Lw
$\Delta P_t \times 3$	Lw + 1

# Fixed front blade grilles

## Series AC/AN 127 - 128 - 129 - AO 129 - aluminium



Grille AC127



Grille AC128



Grille AC 129

### APPLICATION

- Air supply, exhaust or transfer.
  - Wall or ceiling mounted (air supply only in ceiling).
- Comment: use for ceiling air supply is only possible with 'narrow' grilles (H£ 150 mm).

### DESCRIPTION

- AC models: wide-frame grilles (27 mm).
- AN models: thin frame grilles (20 mm).
- AO models: grilles without frame (core only).
- Fixed front blade grilles inclined at 45°.
- Version 127: blades 13 mm spacing. Blades inclined in one direction.
- Version 128: blades 13 mm spacing. Blades inclined in two directions.
- Version 129: blades 17 mm spacing. Blades inclined in one direction.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F1: visible by screws in the frame.
- F3: hidden by friction clips.
- By gravity on the T of the suspended ceiling (AO 129 only).

For more information refer to p.92.

### ACCESSORIES

- SGS (galvanized steel) and AGB (primary aluminium) counter-rotating damper
- S-clipped to grille (provided).
- F4 galvanized steel sheet mounting frame.
- Galvanized steel sheet connection plenum with rear or side mounted connection.

Note: dampers and mounting frames not available for the AO 129. Use plenum RE123 (chapter on special ceiling tile grilles).

For more information refer to p.91 and 93.

### STANDARD DIMENSIONS

- 75 x 75 to 2000 x 1000 range dimensions in 25 mm steps.

Beyond this the grille is comprised of median elements of 2000 mm with two ends of equal length always between 1000 and 2000 mm.

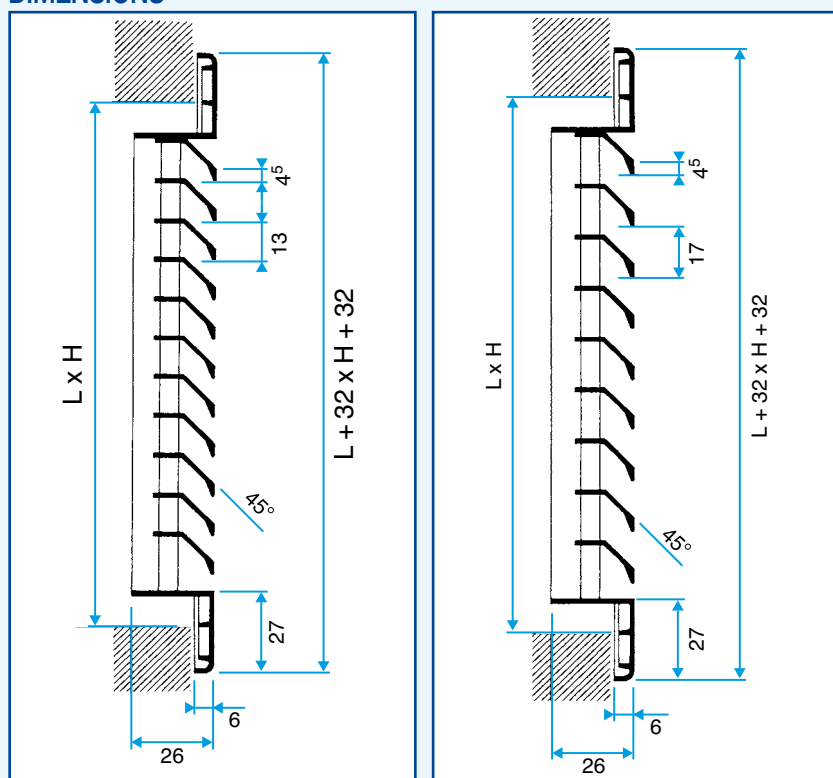
- AO 129: adapted to standard 600 x 600 mm and 1200 x 600 mm suspended ceiling tiles.

For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

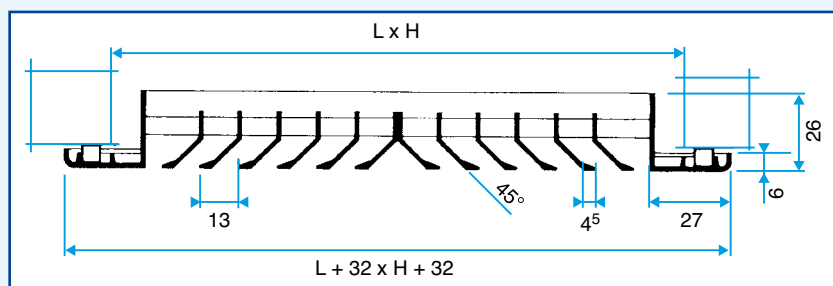
- See selection tables and matrices on the following pages.
- See Mixing Capacity (MC) at the end of the chapter.

### DIMENSIONS



AC 127 - grille alone

AC 129 - grille alone



AC128 - grille alone

# Fixed front blade grilles

## Series 127 - 128 - 129

### Standard range

Dimensions	White mesh grille	Anodised mesh grille
	AO 129 Z	AO 129
	Code	Code
600 x 600	11050665	11050663
1200 x 600	11050666	11050664

Fixing	Finish
<ul style="list-style-type: none"> <li>By gravity on the T supports of the suspended ceiling.</li> </ul>	<ul style="list-style-type: none"> <li>Natural color anodised aluminium</li> <li>RAL9010 (type Z) white epoxy paint.</li> </ul>

### Range with choice of options

Type	Name	Code	Type	Name	Code
Anodised alum fixed vanes 13 mm	AC 127	11002017	Anodised alum fixed vanes 13 mm	AN 127	11002032
Anodised alum fixed vanes 13 mm two directions	AC 128	11002018	Anodised alum fixed vanes 13 mm two directions	AN 128	11002033
Anodised alum fixed vanes 17 mm	AC 129	11002019	Anodised alum fixed vanes 17 mm	AN 129	11002034

### Range dimensions

H / L (mm)	200	250	300	350	400	450	500	600	700	800	900	1000	1200
75	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
100	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
150	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
200	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
250		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
300			✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
400					✗	✗	✗	✗	✗	✗	✗	✗	✗

### Options available

Fixing	Finish
<ul style="list-style-type: none"> <li>F0: none</li> <li>F1: fixing by screws, visible in the frame.</li> <li>F3: hidden by friction clips.</li> </ul>	<ul style="list-style-type: none"> <li>Natural glossy anodisation.</li> <li>Finish with RAL color paint. Consult the list of available colours in the appendix.</li> </ul>

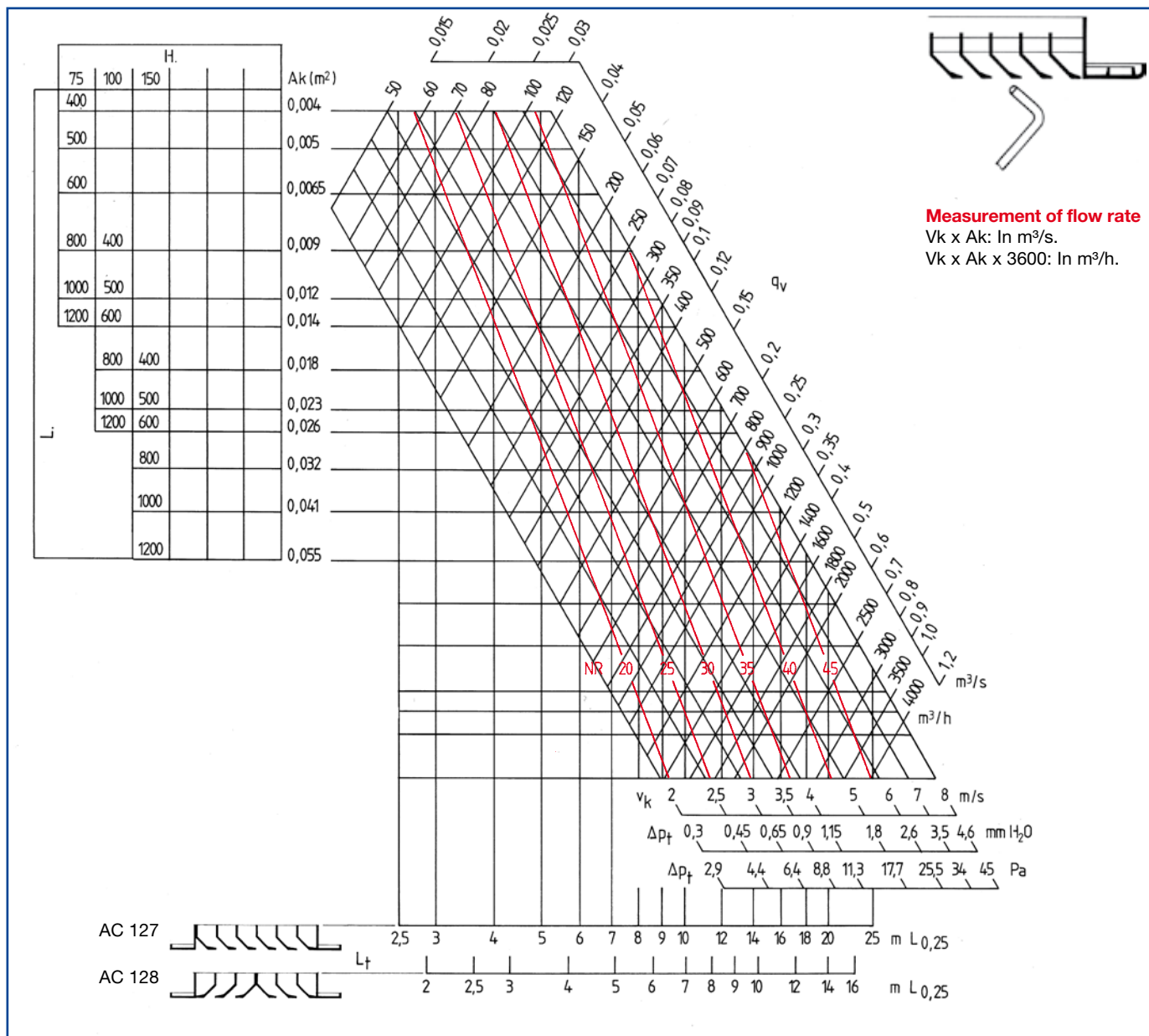
### PROPOSED ACCESSORIES

- SGS and AGB dampers: see p.91.
- Mounting frames F4: see p.91.
- MT and ME plenums: see p.93.



# Fixed front blade grilles

Series 127 - 128 - 129 - air supply with ceiling effect



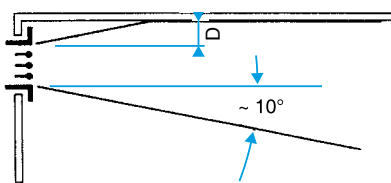
The  $L_w$  values (NR) do not include attenuation of the premises. Tests performed with a 'perfect' plenum in accordance with the EN 12238 standard.

## CORRECTIONS FOR OTHER $V_t$

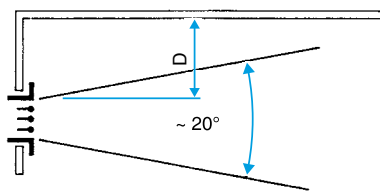
$V_t$ (ms)	0.25	0.375	0.5	0.625
$L_t$ A	x 1	x 0.67	x 0.5	x 0.4
$L_t$ B	x 0.7	x 0.47	x 0.35	x 0.28

## CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
$L_w + 0$	$L_w + 0$	$L_w + 10$	$L_w + 20$



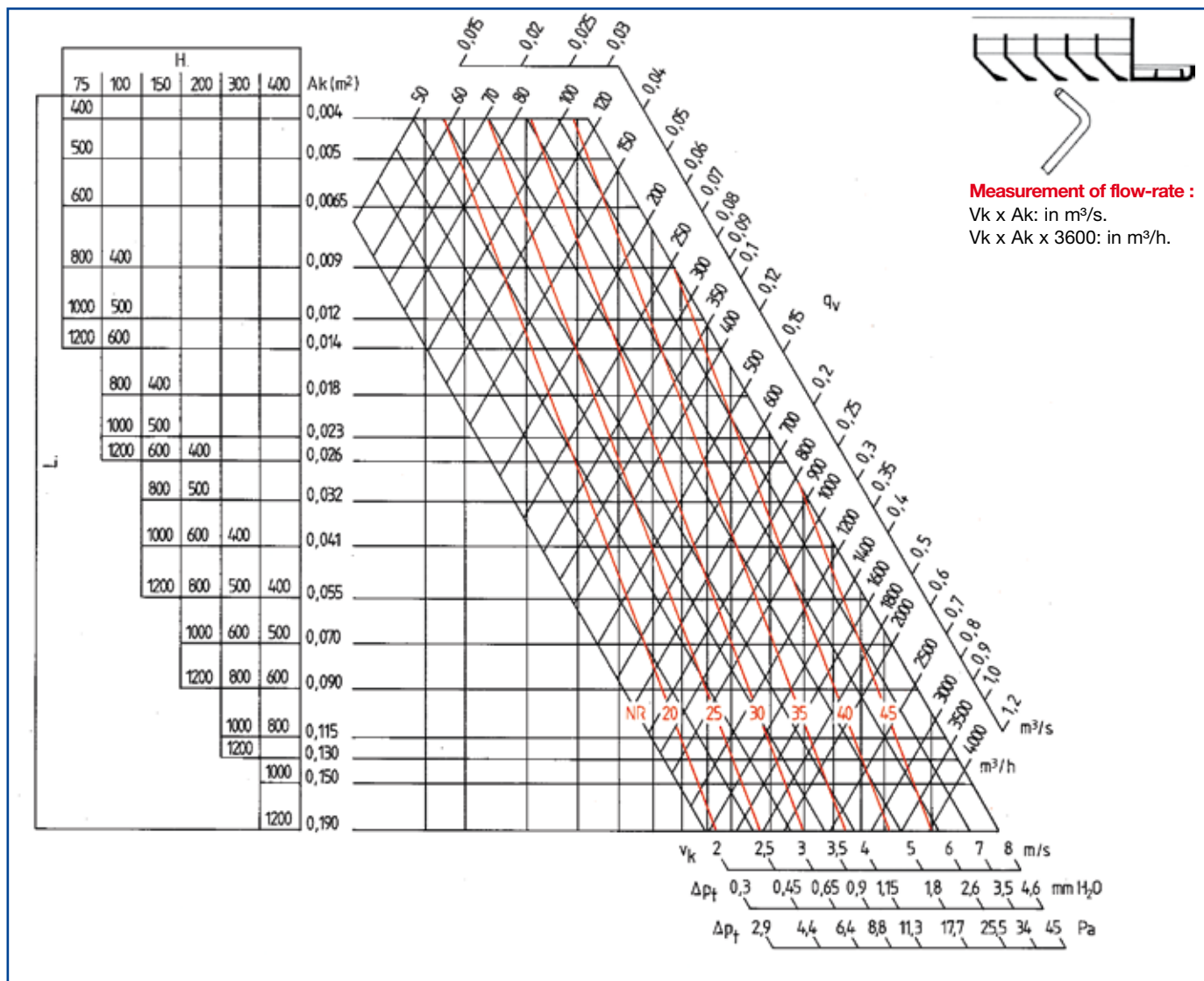
A) Air supply with ceiling effect where  $D$  is less than or equal to 30 cm.



B) Air supply without ceiling effect where  $D$  is greater than 30 cm.

# Fixed front blade grilles

## Series 127 - 128 - 129 - air exhaust



The Lw values (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in accordance with the EN 12238 standard.

### CORRECTIONS FOR DAMPER

No damper	Damper 100 % open	Damper 50 % open	Damper 25 % open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

# Fixed transfer blade grilles

## Series AC 180 - AC 181 - aluminium



Grille AC 181

### APPLICATION

- Air transfer from one location to another.
- Anti-view function.
- Wall mounted, essentially like a door grille.

### DESCRIPTION

- AC 180: blades in V mounted horizontally.
- Comment : two grilles AC 180 mounted on either side of the wall isolating the premises from light (for example for use in a darkroom).
- AC 181: blades in V mounted horizontally and enclosure frame. Mounted in a thin wall maximum 55 mm (doors or partitions).

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL card paint. Consult the list of available colours in the appendix.

### FIXING

- F0: none.
  - F1: fixing visible by screws in the frame.
- For more information refer to p.92.

### ACCESSORIES

- No accessories available.

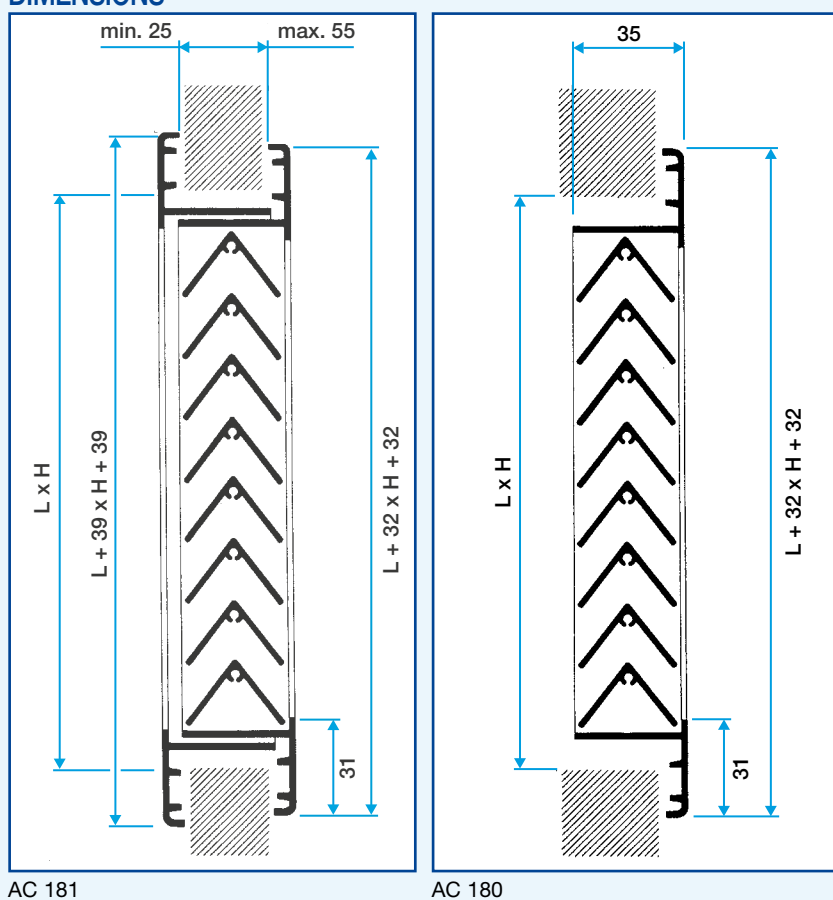
### STANDARD DIMENSIONS

- 200 x 65 to 1200 x 1200 range dimensions in 25 mm steps in L and 20 mm in H.
- For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

### DIMENSIONS



AC 181

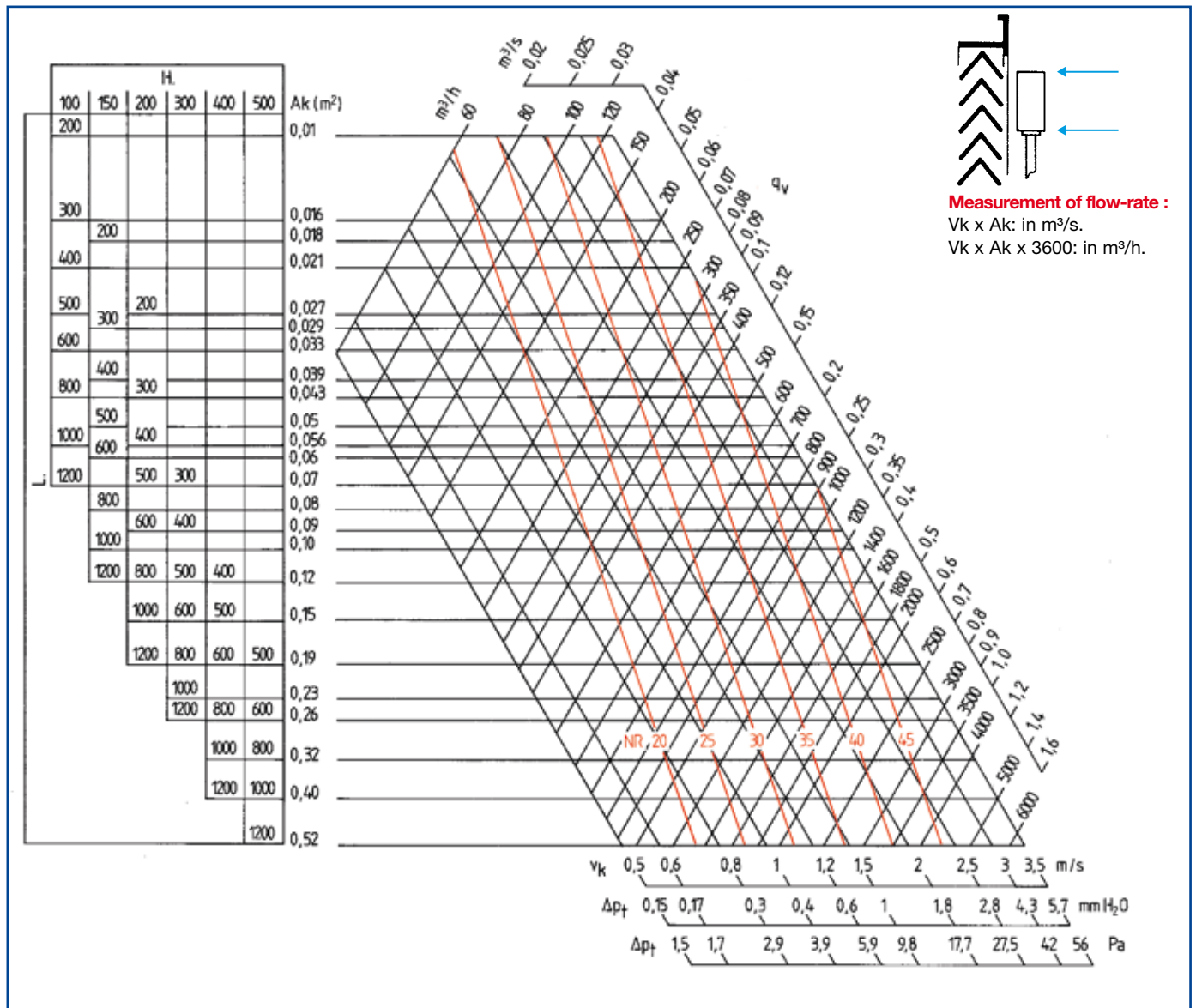
AC 180





# Fixed transfer blade grilles

## Series 180 - 181 - transfer



The  $L_w$  values (NR) do not include attenuation of the premises.

# Pressed grilles

## Series SR 377 - SR 378 - steel



Grille SR 377



Grille SR 378

### APPLICATION

- Air Exhaust.
- Wall mounted.

### DESCRIPTION

- SR 377: single deflection grille with horizontal blades, inclined at 20°, 8,5 mm spacing.
- SR 378: single deflection grille with horizontal blades, inclined at 20°, 8,5 mm spacing.
- Embedded steel.

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F1: fixing visible by screws in the frame.
- For more information refer to p.92.

### ACCESSORIES

- No accessories available.

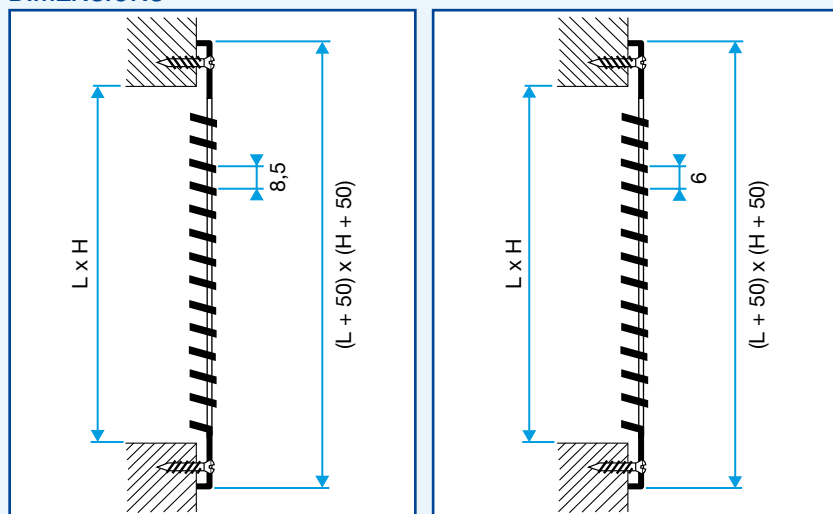
### STANDARD DIMENSIONS

- Range dimensions in RANGE pages hereafter.
- No other dimensions available.

### TECHNICAL CHARACTERISTICS

- See following selection tables.

### DIMENSIONS



Grille SR 377

Grille SR 378

# Pressed grilles

## Series SR 356 - SR 413 - steel



Grille SR 356



Grille SR 413

### APPLICATION

#### SR 356

- Air supply.
- Wall mounted.

#### SR 413

- Air supply on ground at edge of premises.
- Floor mounting.

### DESCRIPTION

#### SR 356

- Single deflection grille with vertical blades, inclined at 20° to the right and left, 8.5 mm spacing.
- Embedded steel.

#### SR 413

- Single deflection grille with vertical blades, inclined at 30° to the right and left, 12.5 mm spacing.
- Embedded steel.

### FINISH

- RAL 9010 white steel.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

#### SR 356

- Fixed by screws, visible in the frame.

#### SR 413

- Fixed by embedding in the ground in the duct.

For more information refer to ACCESSORIES pages at the end of the chapter.

### ACCESSORIES

- Damper with multiple parallel movement blades. Integrated in the grille (all models).

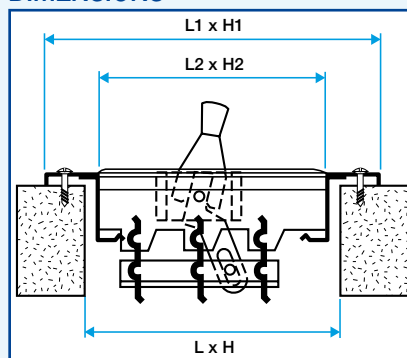
### STANDARD DIMENSIONS

- Range dimensions in RANGE pages hereafter.
- No other dimensions available.

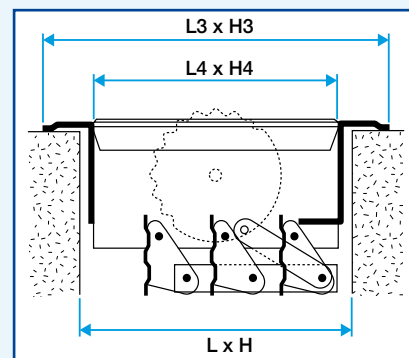
### TECHNICAL CHARACTERISTICS

- See following selection tables.

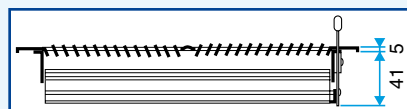
### DIMENSIONS



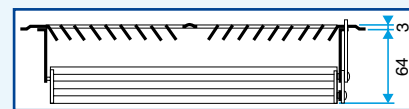
Grille SR 356



Grille SR 413



Grille SR 356



Grille SR 413

### GRILLE SR 356

L (mm)	H (mm)	L1 (mm)	H1 (mm)	L2 (mm)	H2 (mm)
203	102	242	145	00	00
305	102	344	145	00	00
254	152	293	193	00	00
305	152	00	00	00	00
406	203	00	00	00	00

### GRILLE SR 413

L (mm)	H (mm)	L3 (mm)	H3 (mm)	L4 (mm)	H4 (mm)
305	102	343	137	288	93
356	102	394	137	339	93

# Pressed grilles

## Series 377 - 356 - 413

### Standard range

Dimensions	Grille SR 377 Code	Grille SR 378 Code	Grille SR 356 Code	Grille SR 413 Code
100 x 100		11050272		
200 x 100	11050260			
250 x 100	11050261			
300 x 100	11050262			
100 x 150		11050273		
150 x 150		11050274		
250 x 150		11050275		
350 x 150	11050263			
400 x 150	11050264			
100 x 200		11050276		
200 x 200		11050277		
300 x 300	11050265			
600 x 300	11050266			
400 x 400	11050267			
500 x 500	11050268			
600 x 600	11050269			
750 x 750	11050270			
900 x 900	11050271			
213 x 102			11050180	
315 x 102			11050181	
264 x 152			11050182	
315 x 152			11050183	
406 x 203			11050184	
305 x 102				11050220
356 x 102				11050221
<b>Fixing</b>		<b>Finish</b>		
<ul style="list-style-type: none"> <li>• Visible by screws in the frame for SR 377/ 378 and SR 356.</li> <li>• By embedding in ground for SR 413.</li> </ul>		<ul style="list-style-type: none"> <li>• RAL9010 white steel.</li> </ul>		

## Series 377 - 378 - 356 - 413

### SELECTION - EXHAUST

L x H (mm)	Surface Af (m <sup>2</sup> )	Airflow for Lw < NR30 (m <sup>3</sup> /h)
<b>SR 377 - SR 378</b>		
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
<b>SR 356</b>		
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
<b>SR 413</b>		
263 x 102	0,022	250
406 x 203	0,025	400

The Lw values (NR) do not include attenuation of the premises.

# Inside grille accessories

## Series SGS - AGB - aluminium or steel



SGS or AGB damper



Mounting frame F4

### APPLICATION

- SGS and AGB: flow-rate regulating damper.
- F4: mounting frame for easy installation of steel or aluminium grilles using friction clips (attachment F3).

### DESCRIPTION

- SGS: counter-rotating damper. The mobile blades are kept in place by a comb that prevents vibrations. Adjusted from the front of the grille using a screwdriver directly on the blades. An adjusting screws is available as an option.

Made of steel.

- AGB: counter-rotating damper. The mobile blades are kept in place by a comb that prevents vibrations. Adjusted from the front of the grille using a screwdriver acting on the adjusting screws included.

Made of aluminium.

- F4: mounting frame. Galvanized steel profiles excepting bars. The mounting frame is delivered in 4 elements to be assembled on-site au using the grooves and linking tongues.

### FINISH

- SGS: natural colour or black galvanized steel or on request.
- AGB: primary or black aluminium on request.
- F4: natural colour galvanized steel.

### FIXING

- SGS and AGB: fixing to the grille using clips in 'S'.
- F4: fixing by screws or sealing in the stonework.

### ACCESSORIES

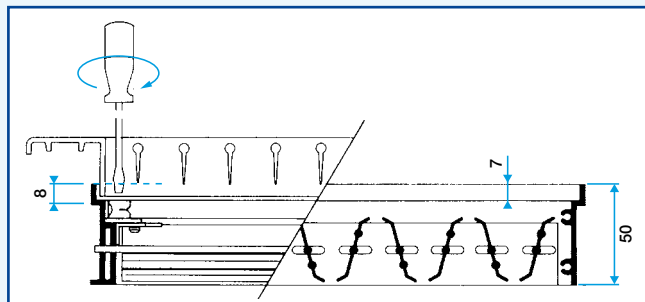
- Adjustment screws for damper SGS.

### STANDARD DIMENSIONS

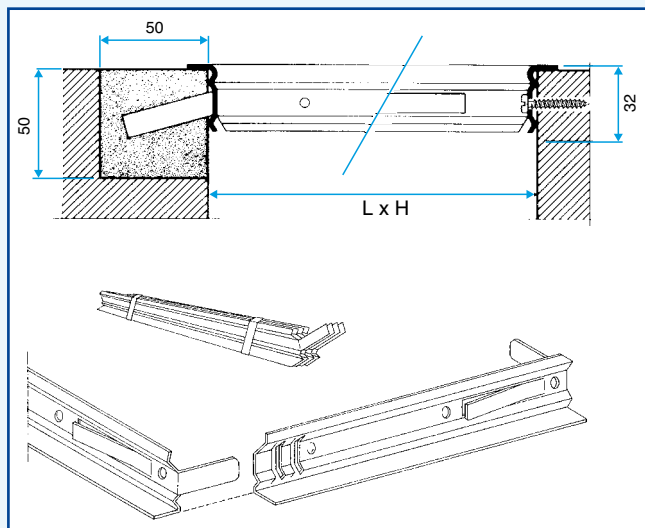
- 200 x 75 to 1200 x 500 mm range dimensions in 25 mm steps.

For more information refer to the RANGE pages hereafter.

### DIMENSIONS



AGB or SGS - Damper



F4 - mounting frame

# Inside grille accessories

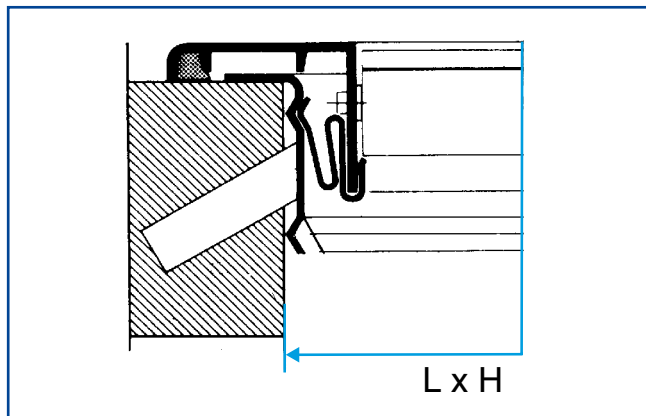
## Series F1 - F3 - F5 - fixing available

### APPLICATION

- F1 : fixing visible by screws in the frame of the grille.  
The screws are not provided.
- F3 : fixing hidden by friction clips.
- F5 : fixing hidden by snap-in fasteners.

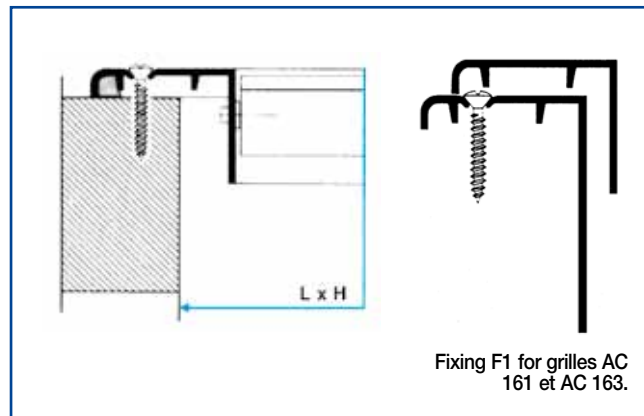
### FIXING TYPE F3

Friction clips and mounting frame F4.  
Ceiling mounting excluded.



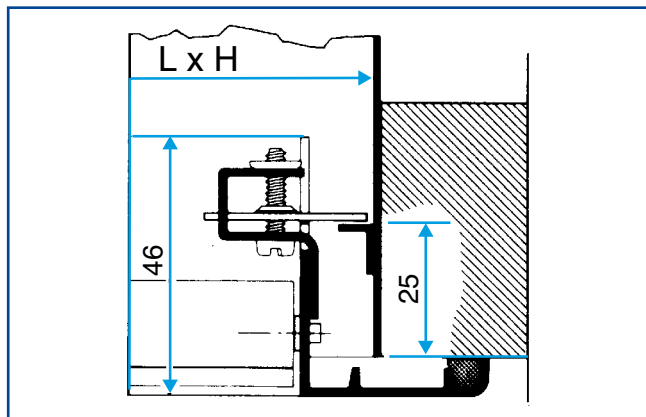
### FIXING TYPE F1

Screws visible in the frame.



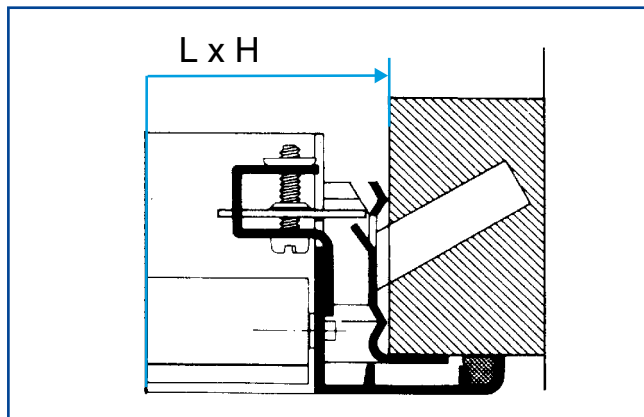
### FIXING TYPE F5

Snap-in fastener with hidden screws.  
Mounted on plenum ME F5 or MT F5



### FIXING TYPE F6

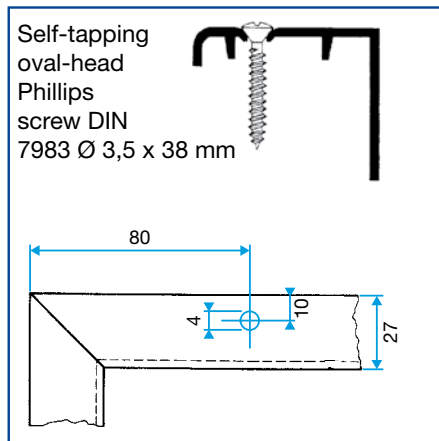
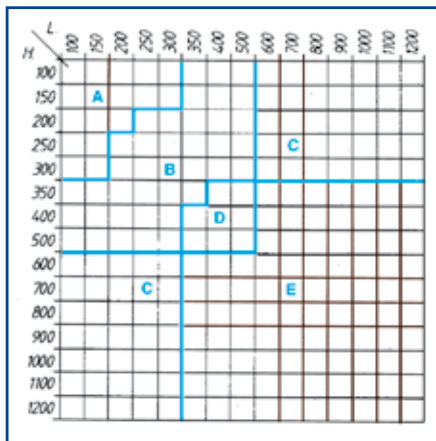
Snap-in fastener with hidden screws.  
Mounted with mounting frame F6



### POSITION OF FIXINGS



Nombre de points de fixation



Position of attachment F1 holes

# Inside grille plenums interior

## Series ME F3 - ME F5 - MT F3 - MT F5 - steel



MT F3 rear mounted connection plenum



ME F3 side mounted connection plenum

### APPLICATION

- Connection plenums with circular mounted connection on the top or side.
- Adapted to the range of indoor grilles.
- Plenums MT F3 and ME F3 are adapted to fixing F3 (clips) of standard grilles and don't require use of an F4 mounting frame.
- Plenums MT F5 and ME F5 are adapted to fixing F5 (snap-in fasteners) of standard grilles and don't require use of an F6 mounting frame.

### DESCRIPTION

- MT F3 and MT F5: connection plenum with rear mounted connection. Made of galvanized steel sheet. There are two models depending on the mounted connection diameter.
  - Model '90°' if mounted connection diameter nominal height of the grille.
  - Model '83°' if mounted connection diameter nominal height of the grille (indicated by\*).
- ME F3 and ME F5: connection plenum with side mounted connection. Made of galvanized steel sheet.
- Option insulation 5 sides (thermal) or 2 sides (acoustic).

### FINISH

- Raw galvanized steel.

### FIXING

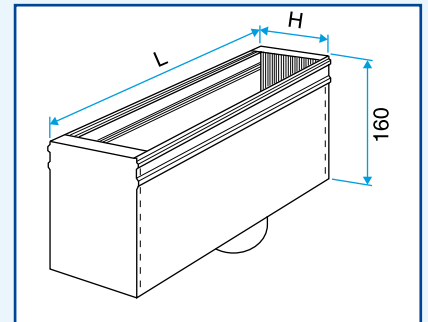
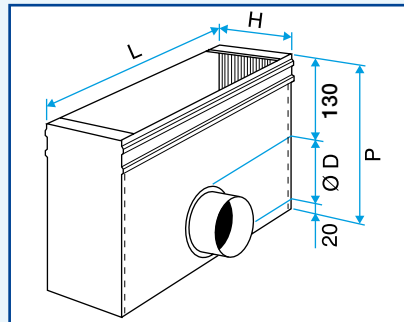
- Fixing to the ceiling using threaded rods or suspension cables that are not provided.

### STANDARD DIMENSIONS

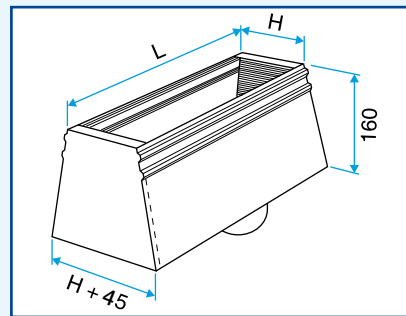
- 200 x 75 to 1500 x 600 mm range dimensions in 25 mm steps.

For more information refer to the RANGE pages hereafter.

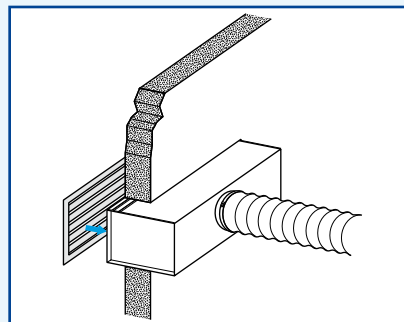
### DIMENSIONS



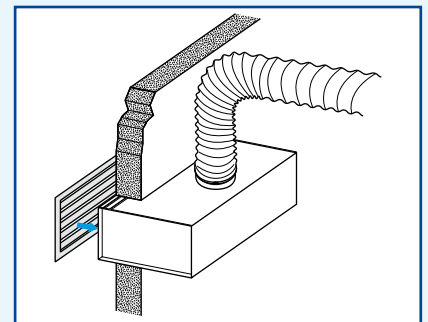
ME F3 : side mounted connection plenum. MT F3 : rear mounted connection plenum 90°



MT F3 : rear mounted connection plenum 83°



Installation of plenum MT



Installation of plenum ME

### STANDARD RANGE DIMENSIONS

L (mm)	H = 75		H = 100		H = 150		H = 200		H = 300
	ME / MT F3	ME / MT F3	ME F3 Clim.	ME / MT F3	ME F3 Clim.	ME / MT F3	ME F3 Clim.	ME / MT F3	
200	-	Ø 80*	Ø 125	-	-	-	-	-	
250	-	Ø 100	-	Ø 125*	-	-	-	-	
300	-	Ø 125	Ø 160	Ø 160	Ø 200	-	-	2xØ 250	
400	-	Ø 125	-	Ø 160	-	Ø 200	Ø 200	-	
500	-	Ø 125	-	Ø 160	-	Ø 200	-	Ø 315	
600	-	2xØ 100	-	Ø 160	-	Ø 200	-	Ø 250*	
800	2xØ 100	2xØ 125	-	2xØ 160	-	2xØ 200	-	2xØ 250*	
1000	2xØ 100	2xØ 125	-	2xØ 160	-	2xØ 200	-	2xØ 250*	
1500	-	-	-	3xØ 160	-	3xØ 200	-	-	

All of the MT dampers are 83° models, except when marked (\*).

# Inside grille plenums

## Series SGS - AGB - F4 - ME F3 - MT F3 - ME F5 - MT F5

### Standard range

Dimensions	Damper SGS Code	Mounting frame F4 Code	Rear plenum MT F3 Code	Side plenum ME F3 Code	Rear clim plenum ME F3 Code	Rear clim plenum insulated 5 sides MEIF(5) F3 Code
800 x 75	11053258	11053778	11053630	11053660		
1000 x 75	11053259	11053779	11053631	11053661		
200 x 100	11053241	11053761	11053632	11053662	11053381	11053391
250 x 100	11053242	11053762	11053633	11053663		
300 x 100	11053243	11053763	11053634	11053664	11053382	11053392
400 x 100	11053244	11053764	11053635	11053665		
500 x 100	11053245	11053765	11053636	11053666		
600 x 100	11053271	11053780	11053637	11053667		
800 x 100	11053272	11053781	11053638	11053668		
1000 x 100	11053273	11053782	11053639	11053669		
250 x 150	11053246	11053766	11053640	11053670		
300 x 150	11053247	11053767	11053641	11053671	11053383	11053393
400 x 150	11053248	11053768	11053642	11053672		
500 x 150	11053249	11053769	11053643	11053673		
600 x 150	11053250	11053770	11053644	11053674		
800 x 150	11053274	11053783	11053645	11053675		
1000 x 150	11053275	11053784	11053646	11053676		
1500 x 150	11053276	11053785	11053647	11053677		
400 x 200	11053251	11053771	11053648	11053678		11053394
500 x 200	11053252	11053772	11053649	11053679		
600 x 200	11053253	11053773	11053650	11053680		
800 x 200	11053254	11053774	11053651	11053681		
1000 x 200	11053277	11053786	11053652	11053682		
1500 x 200	11053278	11053787	11053653	11053683		
300 x 300	11053268	11053788	11053657	11053687		
500 x 300	11053269	11053789	11053658	11053688		
600 x 300	11053255	11053775	11053654	11053684		
800 x 300	11053256	11053776	11053655	11053685		
1000 x 300	11053257	11053777	11053656	11053686		
600 x 600	11053270	11053790	11053659	11053689		
1000 x 600	11053267	11053791	11053691	11053690		

### Range with choice of options

Damper and mounting frame	Code	Damper for ground grille	Code
SGS - acier	11003211	AGB 450 G - alu (pour AG/AN 450)	11003205
AGB - alu	11003201	AGB 450 C - alu (pour AC 450)	11003206
		AGB 470 G - alu (pour AG 470)	11003207
		AGB 470 F - alu (pour AF/AS 470)	11003208

Offset double deflection	Code	Mounting frame	Code	Steel plenum	Code
D 500	11003202	F4 fixation par clips (grilles cadre AC)	11003001	ME F3 piquage côté	11053701
D 500 450 G (pour AG/AN 450)	11003212	F4 AN fixation par clips (grilles cadre AN)	11003002	MT F3 piquage arrière	11053703
D 500 450 C (pour AC 450)	11003213	F6 fixation par fermoirs	11002512	ME F5 piquage côté	11053702
				MT F5 piquage arrière	11053704

### Usage dimensions

H / L (mm)	200	250	300	400	450	500	600	700	800	1000	1200
75	✗	✗	✗	✗	✗	✗	✗	✗	●	●	✗
100	●	●	●	●	✗	●	●	✗	●	✗	✗
150	✗	●	●	●	✗	●	●	✗	●	●	✗
200	✗	✗	✗	●	✗	●	●	✗	●	●	✗
250		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
300			●	✗	✗	●	●	✗	●	●	✗
400				✗	✗	✗	✗	✗	✗	✗	✗
450					✗	✗	✗	✗	✗	✗	✗
500						✗	✗	✗	✗	✗	✗

● Standard range dimensions.

### Options available

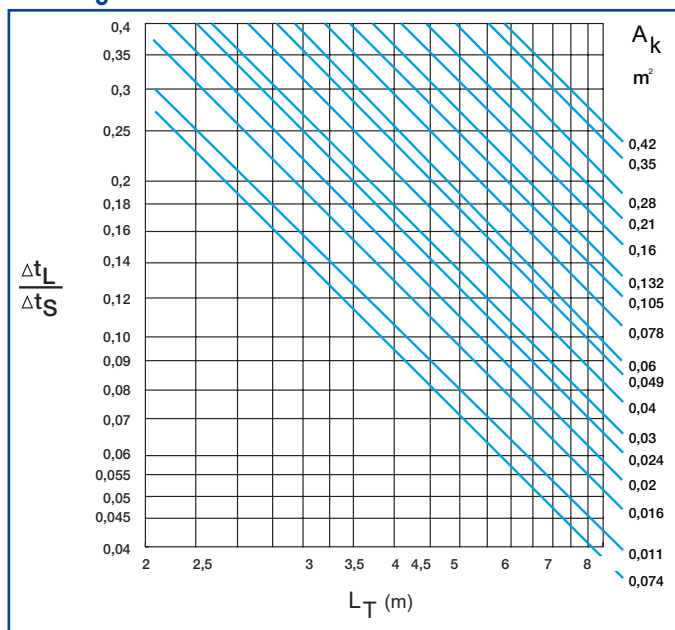
Steel damper SGS	Alu damper AGB	Double deflexion D 500	Plenum
<ul style="list-style-type: none"> <li>Delivered mounted</li> <li>Black shutters</li> <li>Screws control</li> </ul>	<ul style="list-style-type: none"> <li>Delivered mounted</li> <li>Black shutters</li> <li>Inox screws</li> </ul>	<ul style="list-style-type: none"> <li>Delivered mounted</li> <li>Black shutters</li> </ul>	<ul style="list-style-type: none"> <li>Connection diameters from Ø 80 to Ø 500 mm</li> <li>1 or 2 mounted connections</li> <li>Depth out of standard</li> </ul>



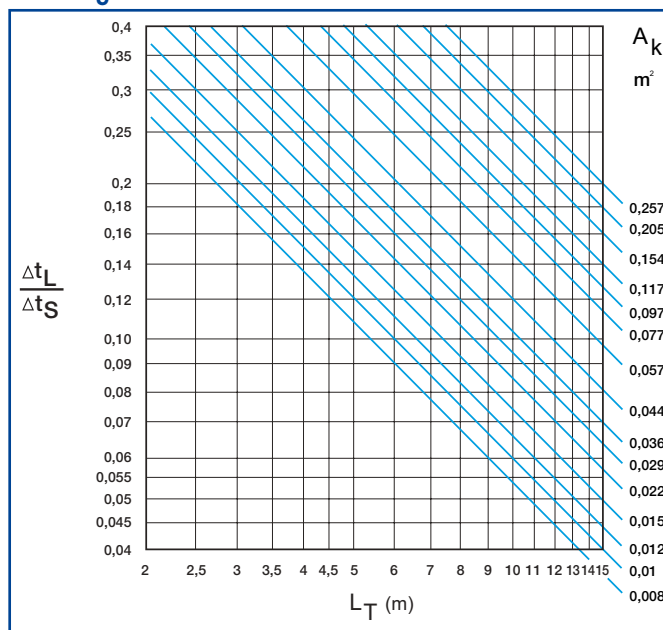
# Inside grilles

## Mixing rates (MR) and corrections for deflection

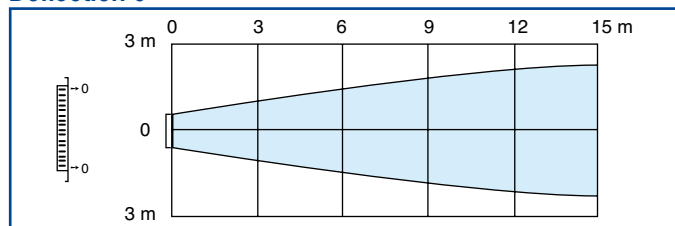
MR for grille Series 100



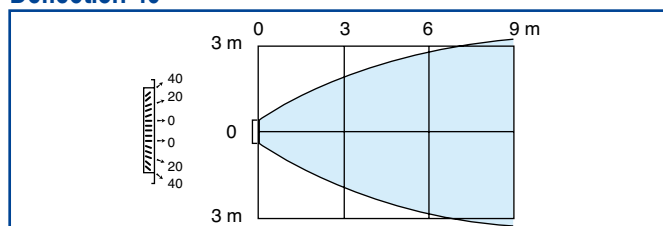
MR for grille Series 400



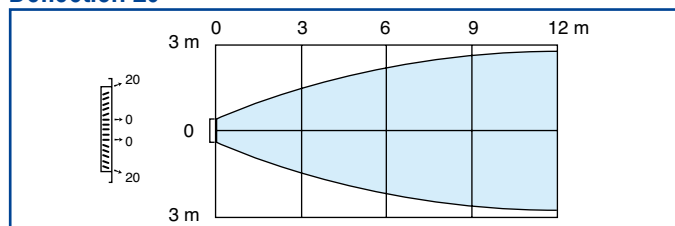
Deflection 0°



Deflection 40°



Deflection 20°



Corrections for deflection

Blades	22°	45°
Air jet angle	35°	60°
Lt	x 0,77	x 0,55
Vk	x 1,15	x 1,25
ΔPt	x 1,30	x 1,60
Lw	+ 3	+ 5

Symbols

Lt (m)	Throw in m
ΔTL (°C)	Difference between the end of throw temperature and room temperature (in °C)
ΔTS (°C)	Difference between the air supply temperature and room temperature (in °C)
MR = ΔTL / ΔTS	Ratio of temperature differences. This value is proportional to the capacity of the terminal to 'quickly' mix the air taken in at room temperature.
Example with air supply temperature at 15°C and room temperature at 25°C	The temperature in the air jet at X (m) from the terminal = 25 - 10 x MR (°C)



# Ceiling diffusers

Fixed circular diffusers - p 98



Adjustable circular diffusers - p 100



Curved blade square diffusers - p 103



Diffusers with removable core - p 107



Square diffusers with perforated sheet - p 126



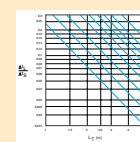
Square multi-slot diffusers - p 136



Ceiling mountings - p 143



Mixing rates - p 144



# Fixed circular diffusers

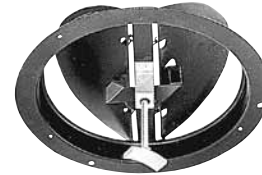
## Series SC 831- SC 832 TP - steel



SC 831 diffuser



SC 832 TP diffuser



BY damper

### APPLICATION

- Horizontal air supply and fixed diffusion.
- Ceiling mounted or on exposed ductwork.
- Version designed to replace a standard 600 x 600 mm ceiling tile (model SC 832 TP).

### DESCRIPTION

- Pressed steel concentric circular cones.
- Steel square compensation sheet for the SC 832 TP version.

### FINISH

- Epoxy paint steel, RAL9010 white.

### FIXING

- Visible screw fixing to the ceiling at the external cone.
- Connection to the circular circuit using the FR U-screws or the BY damper (model SC 831) or directly to the collar (model SC 832 TP).

### ACCESSORIES

#### For model SC 831:

- Steel FR U-screws.
- Steel BY damper also acting as U-screws. Regulated through the centre of the diffuser. Regulation key provided with the damper.
- LRE connection plenum (mounted connection on side) in galvanized steel.

#### For model SC 832 TP:

- Butterfly-type BR damper with 2 blades in V. Made of steel.
- Regulated through the diffuser by screws.
- LRE connection plenum (mounted connection on side) in galvanized steel.

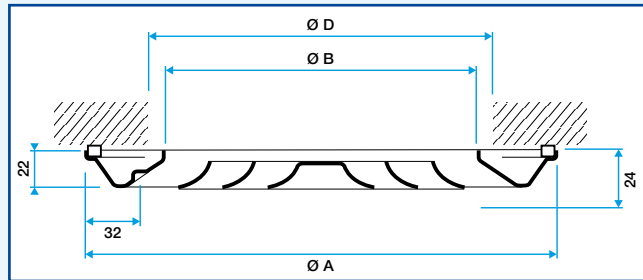
### STANDARD DIMENSIONS

- 160 mm to 355 mm diameters.
- Model SC 832 TP: overall adapted to standard 600 x 600 mm ceilings in T.

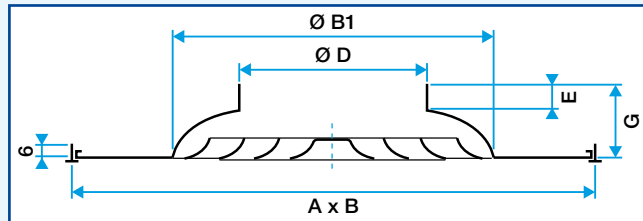
### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.
- See mixing rates (MR) at the end of the chapter.

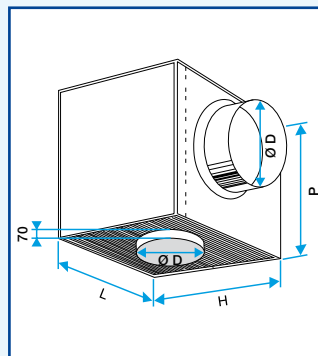
### DIMENSIONS



SC 831 diffuser



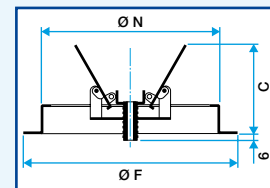
SC 832 TP diffuser



LRE plenum



FR U-bolt



BY damper

### STANDARD DIMENSIONS

D (mm)	A x B* (mm)	A (mm)	B (mm)	B1 (mm)	G (mm)	F (mm)	C (mm)	P (mm)	L x H (mm)
160	600 x 600	230	134	188	104	190	110	210	220 x 220
200	600 x 600	282	186	235	104	240	110	250	265 x 265
250	600 x 600	334	238	294	104	290	140	300	315 x 315
315	600 x 600	386	290	370	104	340	165	365	375 x 375
355*	Not available	440	340	-	-	390	180	405	420 x 420

\*Nominal tile dimensions

# Fixed circular diffusers

## Series SC 831 - SC 831 TP

### Standard range

Dimensions	Diffuser SC 831	U-bolt	Damper BY	Diffuser SC 832 TP	Plenum LRE Side mounted connection	Damper BR
	Code	Code	Code	Code	Code	Code
Ø 160	11051020	11053440	11053180	11051015	11053311	11053220
Ø 200	11051021	11053441	11053181	11051016	11053312	11053221
Ø 250	11051022	11053442	11053182	11051017	11053313	11053222
Ø 315	11051023	11053443	11053183	11051018	11053314	11053223
Fixing			Finish			
• Visible by screw (SC 831) and hidden (SC 832 TP).			• Epoxy paint steel RAL9010.			

### PROPOSED ACCESSORIES

- BY and BR dampers.
- FR U-bolt.
- LRE plenum.

## Series 831 - 832

### SELECTION - AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Ø N (mm)	qv (m <sup>3</sup> /h)												Lw	Lt										
		150		200		300		400		500		600				800		1000		1200		1400			
0,011	160	-	1,1	28	1,5	42	2,2																	Lw	Lt
		3,8	8	5	15	7,5	35																	Vk	Pa
0,020	200	-	0,8	-	1,1	2,5	1,7	34	2,2	42	2,8														
		2,2	4	2,8	5	4,1	12	5,5	20	7	30														
0,031	250					-	1,3	20	3,7	28	2,1	34	2,5	45	3,5										
						2,6	5	3,5	2	4,5	13	5,5	26	7,5	50										
0,046	300							-	1,4	-	1,7	22	2,1	32	2,7	40	3,5	46	4,1						
								2,5	4	3	6	3,7	14	5,0	22	6,2	35	7,5	50						
0,061	355	Lw	Lt							-	1,5	20	1,6	30	2,4	37	3	40	3,8	50	4,8				
		Vk	Pa							2,2	4	3,5	7	4,8	12	6	20	7	28	10,2	39,2				

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s.

Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### 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

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

# Adjustable circular diffusers

## Series AF 842 - AT 842 - aluminium



AF 842 diffuser



AT 842 diffuser

### APPLICATION

- Horizontal or vertical air supply. Adjustable diffusion.
- Ceiling mounted or on exposed ductwork.
- Version designed to replace a standard 600 x 600 mm ceiling tile (model AT 842).

### DESCRIPTION

- Aluminium external cone and embedded steel core. Adjustable diffusion by endless screw system.

### FINISH

- Epoxy paint finish, RAL9010 white or RAL 9006 alum.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: Hidden lateral screw fixing in the collar.
- F16: Hidden fixing with 3 anchoring legs riveted to the shoulder.
- Connection to the circular duct.

### ACCESSORIES

- BR: butterfly-type damper with 2 or 4 blades in V (depending on diameter). Made of steel. Regulated through the diffuser by screws.
- IBY: butterfly-type damper with 2 or 4 blades in V (depending on diameter). Made of steel. Regulated through the diffuser by direct action on the blades. Not available in 500 and 630 mm diameters.
- LRE: galvanized steel connection plenum (mounted connection on side).

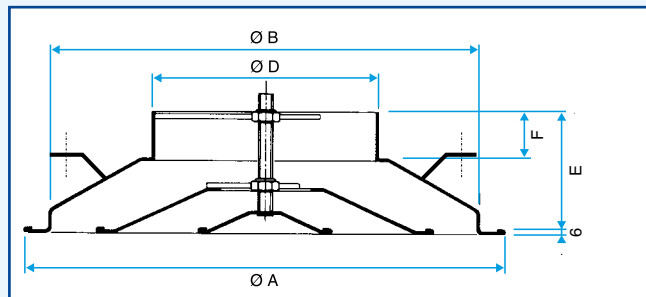
### STANDARD DIMENSIONS

- 160 mm to 630 mm diameters.
- Model AT 842 designed for installation in place of a 600 x 600 mm ceiling tile.

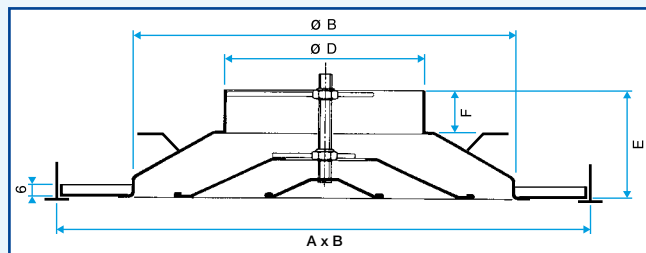
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See Mixing Capacity (MC) at the end of the chapter.

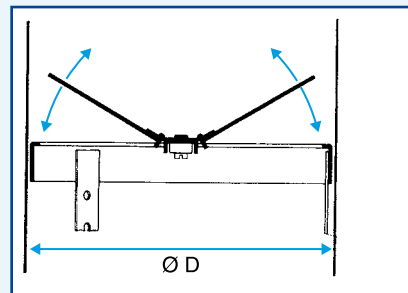
### DIMENSIONS



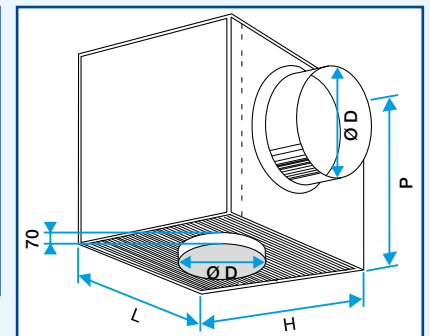
AF 842 diffuser



AT 842 diffuser



BR damper



BR damper

### STANDARD DIMENSIONS

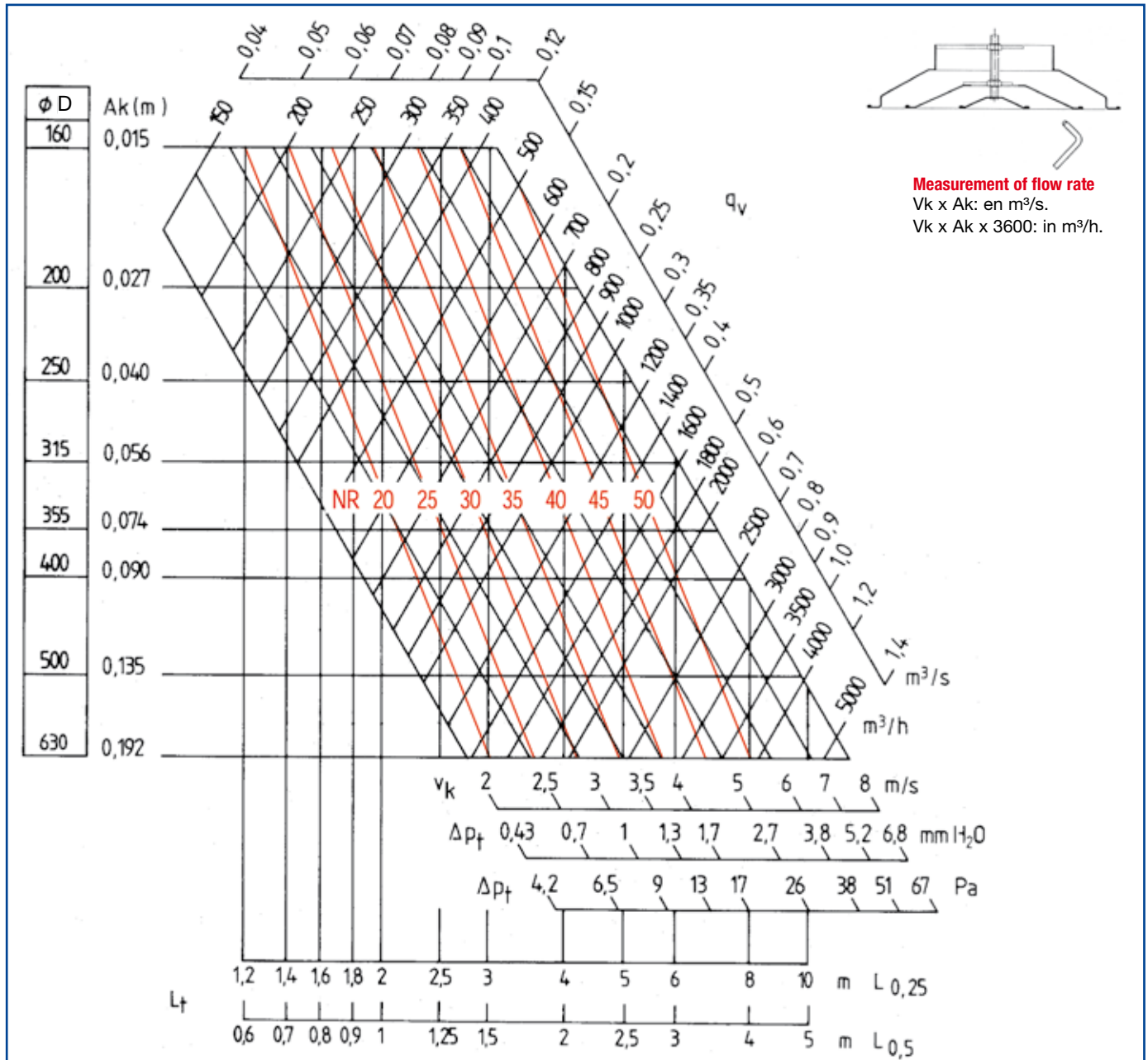
Ø D (mm)	A x B* (mm)	A (mm)	B (mm)	E (mm)	F (mm)	P (mm)	L x H (mm)
160	600 x 600	354	295	110	55	270	220 x 220
200	600 x 600	428	370	120	50	310	265 x 265
250	600 x 600	532	465	135	50	360	315 x 315
315	600 x 600	623	555	150	50	425	375 x 375
355	Not available	730	645	187	75	465	420 x 420
400	Not available	776	690	185	78	510	460 x 460
500	Not available	909	807	195	79	610	560 x 560
630	Not available	1045	950	184	75	740	690 x 690

\*Nominal tile dimensions.



# Fixed circular diffusers

## Series 842 - air supply with ceiling effect



The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625
$L_t$	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
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
$L_w + 0$	$L_w + 0$	$L_w + 10$	$L_w + 20$

### CORRECTIONS FOR VERTICAL AIR SUPPLY

Ecart température	-10°C	0°C	+10°C	+20°C
$L_t$	x 2	x 1,15	x 0,8	x 0,5
$V_d^*$	x 1,15	x 1,15	x 1,15	x 1,15
$DP_t$	x 1,3	x 1,3	x 1,3	x 1,3
$L_w$	4	4	4	4

\* Vitesse au col du diffuseur.

### CORRECTIONS FOR APPLICATION IN AIR EXHAUST

Ø 160	Ø 200	Ø 250	Ø 315	Ø 355	Ø 400	Ø 450	Ø 500	Ø 630
$DP_t \times 1,2$	$DP_t \times 1,2$	$DP_t \times 1,4$	$DP_t \times 1,8$	$DP_t \times 1,8$	$DP_t \times 1,9$	$DP_t \times 2,1$	$DP_t \times 2,3$	$DP_t \times 2,5$
$L_w + 5$	$L_w + 5$	$L_w + 5$	$L_w + 8$	$L_w + 8$	$L_w + 8$	$L_w + 8$	$L_w + 10$	$L_w + 10$



# Curved blade square diffusers

## Series AC 500 - aluminium



AC 504 diffuser

### APPLICATION

- Multi-directional horizontal air supply.
- One, two, or four air supply directions.
- Adjustable diffusion.
- Wall or ceiling (flush with ceiling) mounted.

### DESCRIPTION

- Extruded aluminium profile external frame and blades.
- Individually adjustable curved blades.
- A row of rear blades, individually adjustable and perpendicular to the curved blades, can be added, clipped to the grille (Type D500 - clips in 'S' form provided).

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: fixed by screw to the diffuser collar.
- F1: fixed by screws, visible in the frame.
- F3: hidden fixing by friction clips.
- F5: hidden fixing by snap-in fasteners to the mounting frame F6.

For more information refer to the ACCESSORIES pages at the end of the chapter 'Indoor grilles.'

### ACCESSORIES

- SGS (galvanized steel) and counter-rotating AGB (primary aluminium) damper.
- S-clipped to grille (provided).
- Galvanized steel sheet F4 or F6 mounting frame.
- Galvanized steel sheet connection plenum with rear or side mounted connection.

For more information refer to the ACCESSORIES pages and PLENUMS at the end of the chapter 'Indoor grilles.'

### STANDARD DIMENSIONS

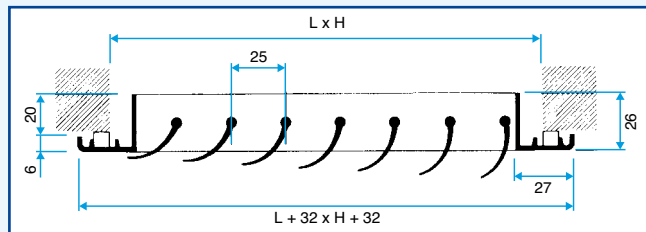
- 75 x 200 to 1200 x 600 mm range in steps of 25 mm in L and H.

For more information refer to the RANGE pages hereafter.

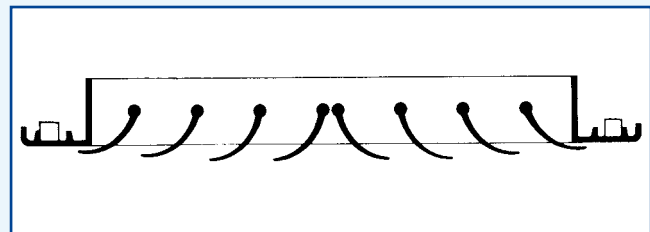
### TECHNICAL CHARACTERISTICS

- See selection matrices on the following pages.
- See Mixing Capacity (MC) at the end of the chapter.

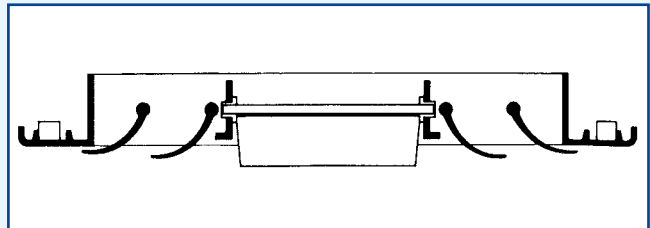
### DIMENSIONS



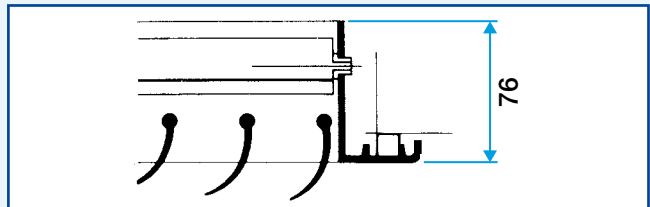
AC 511 diffuser



AC 522 diffuser



AC 504 diffuser



AC 511 diffuser with double deflection D500

# Curved blade square diffusers

## Series AC 500 - aluminium



AC 504 diffuser

### ADJUSTMENTS

The AC 500 air supply diffusers are manufactured with individually adjustable curved blades. This adjusts the air flow in order to provide optimum user comfort.

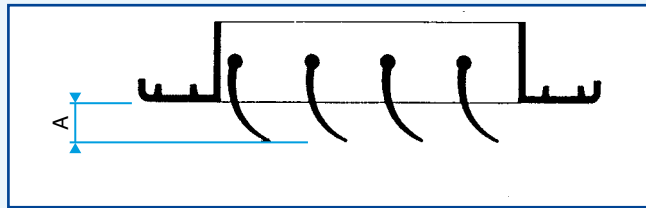
### SELECTION METHOD

The selection matrix is based on a blade direction with  $A = 9$  mm.

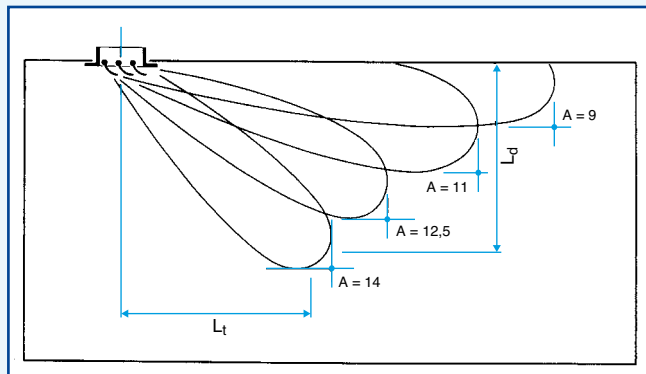
### CORRECTION FACTORS

The range is given for a  $V_t$  of 0.5 m/s. For other terminal speeds, use the correction factors indicated in the selection matrices on the following pages.

### DEFLECTOR DIRECTION



AC 500 distance A



Flow shapes for different blade orientations.

### RANGE CORRECTION FACTORS

A (mm)	Lt	Ld	$\Delta Pt$
9	x 1.00	0.10 x Lt	x 1.00
11	x 0.75	0.12 x Lt	x 0.80
13	x 0.60	0.25 x Lt	x 0.65
14	X 0.50	0.40 x Lt	x 0.50

### AIR SUPPLY CONFIGURATIONS

4 directions	Type 504	
2 directions	Type 522	
1 direction	Type 511	

# Curved blade square diffusers

## Series AC 511 - AC 522 - AC 504

### Range with choice of options

1 or 2 way model	Code	4 way model	Code	Double deflection	Code
AC 511	11002163	AC 504	11002168	D 500	11003202
AC 522	11002166				

### Range dimensions

H / L (mm)	200	250	300	400	450	500	600	700	800	1000	1200
100	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
150	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
200	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
250		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
300			✗	✗	✗	✗	✗	✗	✗	✗	✗
400				✗	✗	✗	✗	✗	✗	✗	✗
450					✗	✗	✗	✗	✗	✗	✗
500						✗	✗	✗	✗	✗	✗
600							✗	✗	✗	✗	✗

### Options available

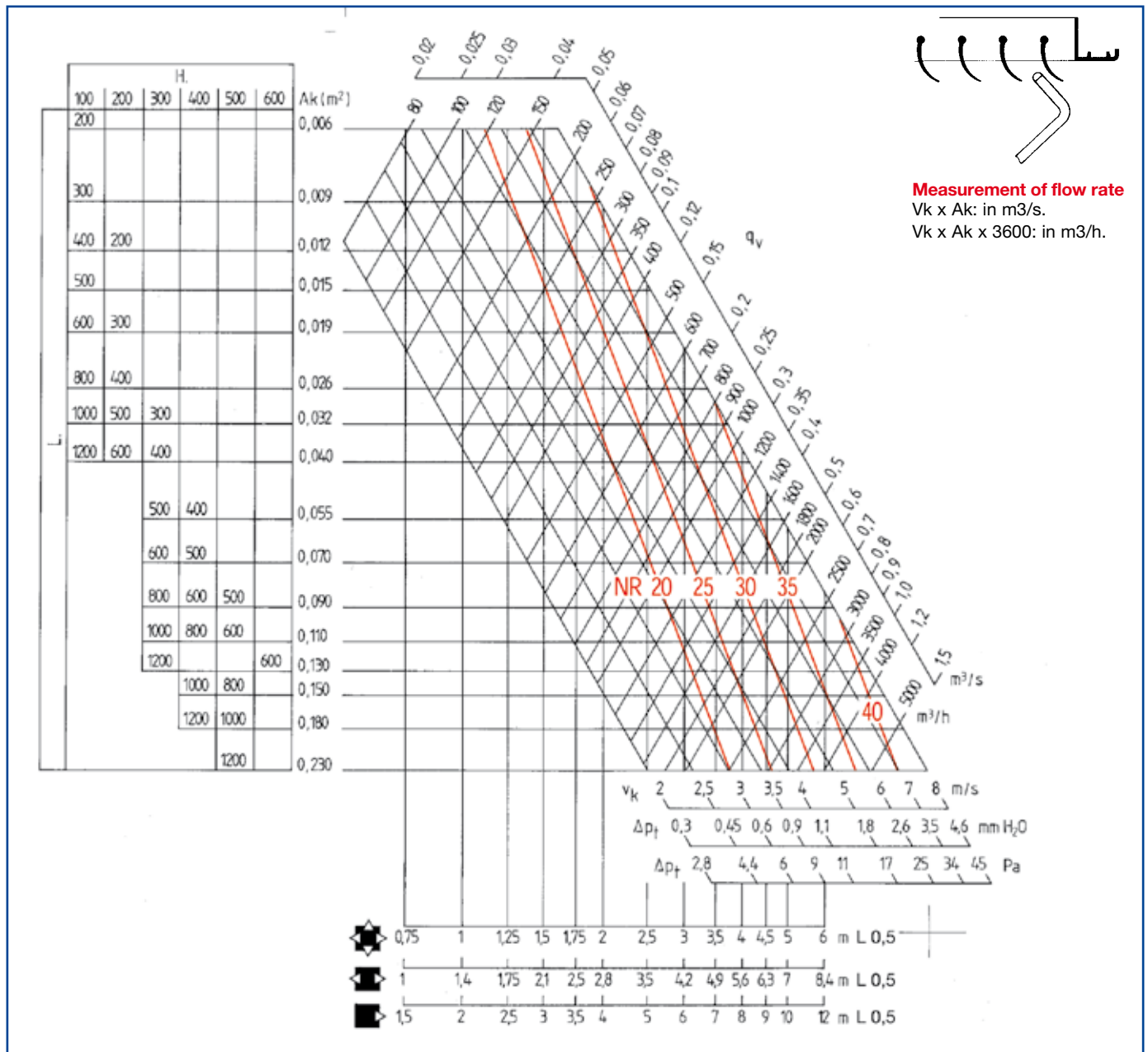
Fixing	Finish
<ul style="list-style-type: none"> <li>• F0: none</li> <li>• F1: visible by screws in the frame.</li> <li>• F3: hidden by friction clips.</li> <li>• F5: hidden by snap-in fasteners (use frame F6).</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodisation.</li> <li>• Epoxy paint in accordance with RAL color (all models). Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- AGB damper: see p.91.
- F4 and F6 mounting frames: see p.91.
- Plenums MT and ME: voir p.93.

# Curved blade square diffusers

## Series 500 - air supply with ceiling effect



The values Lw (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (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
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

# Square diffuser with removable core

## Series SF 700 - SN 700 - steel



SF 704 diffuser



B 700 damper

### APPLICATION

- Multidirectional horizontal air supply.
- One, two, three or four air supply directions.
- Ceiling mounted. Mounting flush with the ceiling.
- Fixed diffusion.

### DESCRIPTION

- Profiled steel sheet external frame and core.
- Removable and interchangeable core.
- Model SF: Frame width 32 mm.
- Model SN: Frame width 6 mm.

### FINISH

- RAL 9010 white epoxy paint steel
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: Hidden lateral screw fixing in the diffuser collar.
- F1: Fixing by screw, visible in the frame, only for frame F.
- F7: Invisible system by screws and suspension bridge, preferred fixing for installation in non-removable ceilings.

For more information refer to the 'Fixing' pages hereafter.

### ACCESSORIES

- B 700: counter-rotating damper, in primary aluminium. Adjustable via the front of the diffuser using a lever hidden between the frame and the core. Clip-mounted on diffuser.
- W4 folded filter (height 50 mm) G3 M1 fire rating for use in air exhaust. Filter accessed by dismantling the central core from the front.  
NB: the W4 filter cannot be used with the B 700 damper.
- Galvanized steel sheet connection plenums with top or side mounted connection. Available in single or insulated versions.

For more information refer to the '700 Accessories' pages hereafter.

### STANDARD DIMENSIONS

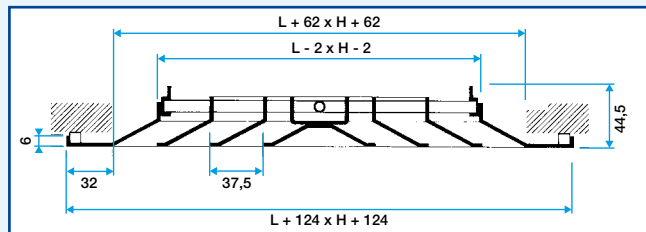
- 150 x 150 to 600 x 600 mm range dimensions in steps of 75 mm L and H.
- Dimension 472 x 472 adapted to standard 600 x 600 mm ceiling tiles.

For more information refer to the RANGE pages hereafter.

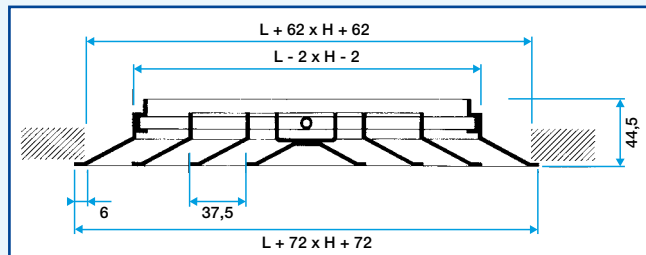
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

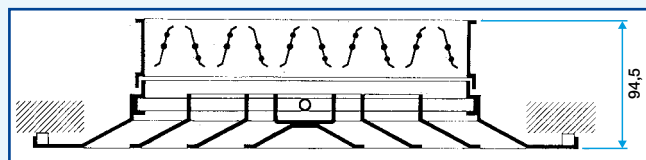
### DIMENSIONS



SF 700: frame type F  
Diffuser only



SN 700: frame type N  
Diffuser only



SF 700  
Diffuser with mounted damper

### DIMENSIONS ADAPTED TO STANDARD CEILING TILES

A x B* (mm)		600 x 600	675 x 675
		L x H (mm)	SF 700 472 x 472
		SN 700 525 x 525	
* Nominal tile dimensions			

# Square diffuser with removable core

## Series AF 700 - AN 700 - aluminium



AF 704 diffuser



B 700 damper

### APPLICATION

- Multidirectional horizontal air supply.
- One, two, three or four air supply directions.
- Ceiling mounted. Mounting flush with the ceiling.
- Fixed diffusion.

### DESCRIPTION

- Extruded aluminium profile external frame and core.
- Removable and interchangeable core.
- Model AF: Frame width 32 mm.
- Model AN: Frame width 6 mm.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: Hidden lateral screw fixing in the diffuser collar.
- F1: Fixing by screw, visible in the frame, only for frame F.
- F7: Invisible system by screws and suspension bridge, preferred fixing for installation in non-removable ceilings.

For more information refer to the 'Fixing' pages hereafter.

### ACCESSORIES

- B 700: counter-rotating damper, in primary aluminium. Adjustable via the front of the diffuser using a lever hidden between the frame and the core. Clip-mounted on diffuser.
- W4 folded filter (height 50 mm) G3 M1 fire rating for use in air exhaust. Filter accessed by dismantling the central core from the front.

NB: the W4 filter cannot be used with the B 700 damper.

- Galvanized steel sheet connection plenums with top or side mounted connection. Available in single or insulated versions.

For more information refer to the '700 Accessories' pages hereafter.

### STANDARD DIMENSIONS

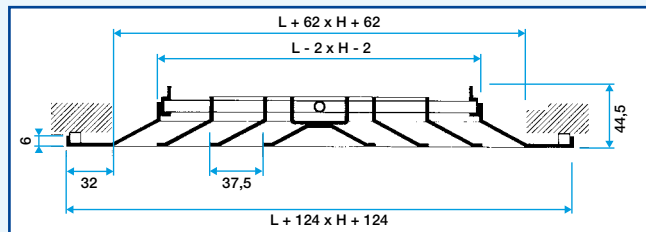
- 150 x 150 to 600 x 600 mm range dimensions in steps of 75 mm L and H.
- Dimension 472 x 472 adapted to standard 600 x 600 mm ceiling tiles.

For more information refer to the RANGE pages hereafter.

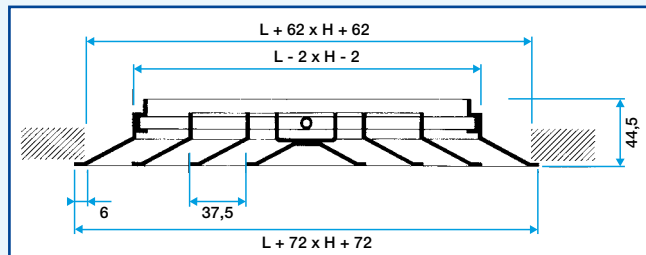
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

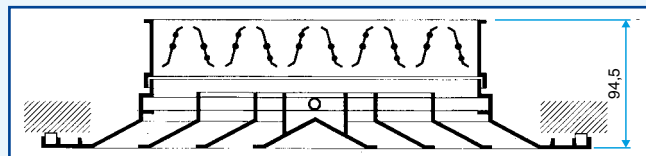
### DIMENSIONS



AF 700 : frame F  
Diffuser only



AN 700 : frame N  
Diffuser only



AF 700  
Diffuser with B 700 mounted damper

### DIMENSIONS ADAPTED TO STANDARD CEILING TILES

A x B* (mm)		600 x 600	675 x 675
L x H (mm)	AF 700	472 x 472	
	AN 700	525 x 525	600 x 600
* Nominal tile dimensions			

# Square diffuser with removable core

Series 700 - steel or aluminium



AF 701 diffuser

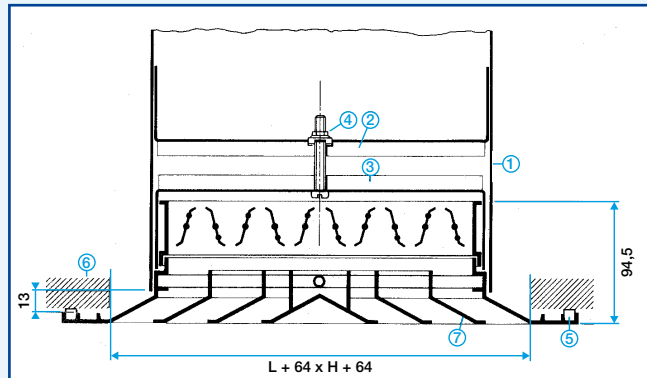


AF 703 diffuser

## FIXING

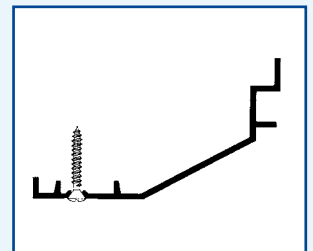
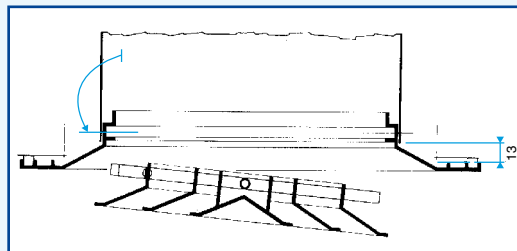
- F0: Hidden lateral screw fixing in the diffuser collar.
- F1: Fixing by screw, visible in the frame, only for frame F.
- F7: Invisible system by screw and suspension bridge, fixing to be preferred for installation in non-removable ceilings types staff or BA13.

## FIXING



F7: fixing by nut and screws mounted on the bridge guides.

Reference	Name
1	Connection plenum
2	Bridge guide with spring nut
3	Bridge guide with screws, mounted on the diffuser collar.
4	Nut
5	Ceiling
6	Removable core



F0 : fixing by self-tapping screws in the diffuser collar. F1 : fixing by screw in the frame, only for frame F.

## AIR SUPPLY COMBINATIONS

Format	4 directions	3 directions	2 directions	1 direction
Square shape				
	Type 704	Type 703*	Type 702*	Type 701*
Rectangular shape				
			Type 712*	Type 711*

\* Not available in N steel frame (SN 700 models)

# Square diffuser with removable core

## Series SF 704 TP - AN 704 TP - aluminium or steel



SF 704 TP diffuser



B 700 damper

### APPLICATION

- Diffusers designed to replace a standard ceiling tile.
- 4-direction horizontal air supply.
- Fixed diffusion.
- Ceiling mounted. Mounting in place of a standard 600 x 600 mm or 675 x 675 mm ceiling tile.
- Adapted to 'Tbar' or 'Fine Line' type suspended ceiling frames.

### DESCRIPTION

- SF 704 TP: Designed from an SF 704 with a steel compensation plate.
- AN 704 TP: Designed from a AN 704 with an aluminium compensation plate.
- The compensation plate is adapted to perfectly match the chosen type of ceiling (Tbar or Fine Line frame).

### FINISH

- RAL 9010 white epoxy paint.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden fixing to plenum by side screws in the diffuser collar.

Assembly attached to the concrete tile using legs located on the connection plenum (the weight of the diffuser must not be borne by the ceiling frame).

### ACCESSORIES

- B 700: counter-rotating damper, in primary aluminium. Adjustable via the front of the diffuser using a lever hidden between the frame and the core. Clip-mounted on diffuser.
- W4 folded filter (height 50 mm) G3 M1 fire rating for use in air exhaust. Filter accessed by dismantling the central core from the front.  
NB: the W4 filter cannot be used with the B 700 damper.
- Galvanized steel sheet connection plenums with top or side mounted connections. Available in single or insulated versions.

For more information refer to the '700 Accessories' pages hereafter.

### STANDARD DIMENSIONS

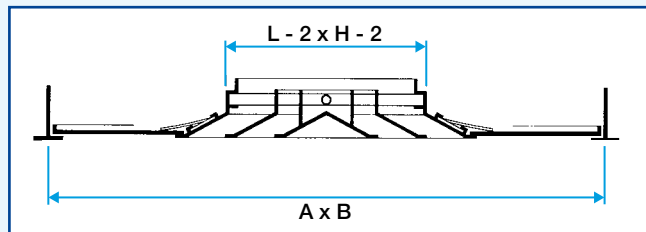
- See attached table.

For more information refer to the RANGE pages hereafter.

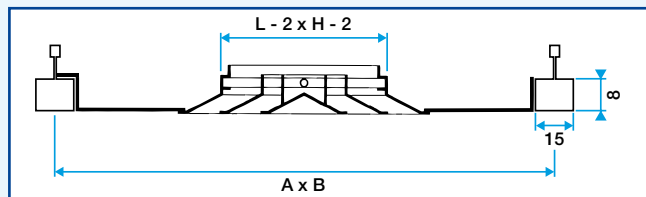
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

### DIMENSIONS



SF 704 TP or AN 704 TP  
For Tbar-type ceiling frames



SF 704 TP or AN 704 TP  
For Fine Line-type ceiling frames

### 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		450 x 450
	525 x 525		525 x 525

\* Nominal tile dimensions. 675 x 675 mm not available on the aluminium model.



# Square diffuser with removable core

## Series SF 704 R TP - steel



SF 704 R diffuser



BR damper

### APPLICATION

- Diffusers designed to replace a standard ceiling tile.
- Connection plenum integrated in the diffuser.
- Air supply for all ventilation and air conditioning applications.
- 4-direction horizontal air supply.
- Fixed diffusion.
- Ceiling mounted. Mounting in place of a standard 600 x 600 mm ceiling tile.
- Adapted to 'Tbar'-type suspended ceiling frames.

### DESCRIPTION

- Pressed steel sheet external frame and connection plenum.
- Profiled steel sheet core.
- Fixed core.
- Frame width 27 mm.

### FINISH

- RAL 9010 white epoxy paint.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden direct fixing by side screws to the diffuser collar (attached to the concrete tile).
- F16: hidden fixing at the legs located on the diffuser shell (attached to the concrete tile).

NB: the weight of the diffuser must not be borne by the ceiling frame.

### ACCESSORIES

- BR: butterfly-type damper with 2 or 4 blades in V (depending on diameter). Made of steel. Regulated through the diffuser by screws.

For more information refer to the chapter on adjustable circular diffusers.

- Thermally insulated diffuser (insulation outside the shell).

### STANDARD DIMENSIONS

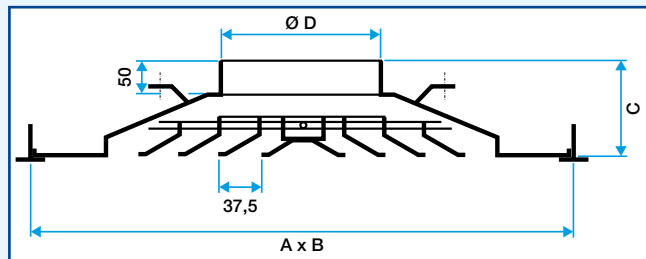
- Range dimensions adapted to 600 x 600 mm ceiling tiles:

160  
200  
250  
315

### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the 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 tile dimensions.

# Square diffuser with removable core

## Series AF 791 - AF 792 - aluminium



AF 792 diffuser

### APPLICATION

- Air supply for all ventilation and air conditioning applications.
- One or two air supply directions.
- Ceiling mounted. Mounting flush with the ceiling.
- Linear horizontal air supply.
- Fixed diffusion.

### DESCRIPTION

- AF 791: one air supply direction.
- AF 792: two air supply directions.
- Extruded aluminium profile external frame and core.
- Fixed core (optionally removable).
- Frame width 32 mm.

### FINISH

- Anodised aluminium, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden fixing to plenum by side screws in the diffuser collar.
- F1: fixing by screw, visible in the frame.
- F7: invisible screw and suspension bridge system, fixing to be preferred for installation in non-removable ceilings.

NB: with the fixing F7 the 'removable core' option must be chosen.

For more information refer to the preceding 'Fixing' pages.

### ACCESSORIES

- B 700: counter-rotating damper, in primary aluminium. Adjustable via the front of the diffuser using a lever hidden between the frame and the core. Clip-mounted on diffuser.
  - Option removable core (not available on height H 75 mm).
  - Galvanized steel sheet connection plenums with top or side mounted connections. Available in single or insulated versions.
- For more information refer to the '700 Accessories' pages hereafter.

### STANDARD DIMENSIONS

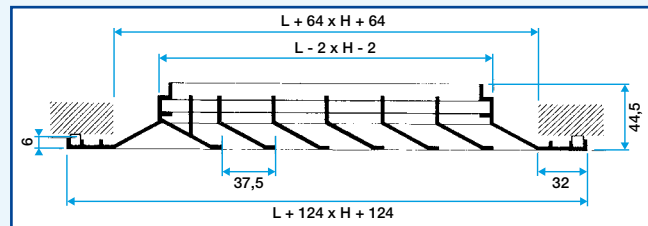
- Range dimensions 150 x 75 to 2000 x 300 in steps of 25 mm long and 75 mm high.

Beyond 2 m the diffuser is comprised of 2000 mm median components with two equal length ends always between 1000 and 2000 mm.

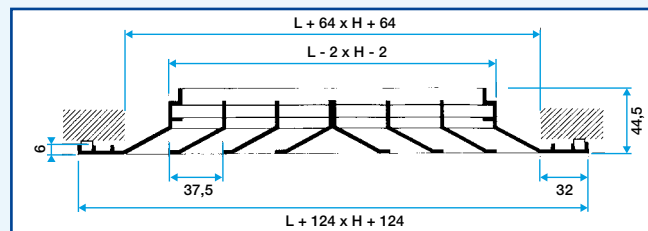
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

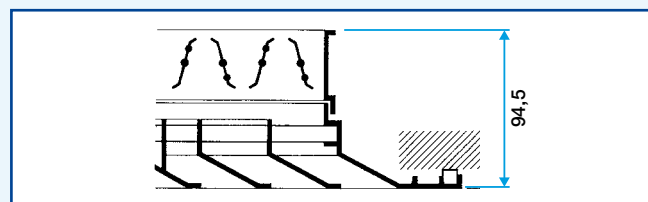
### DIMENSIONS



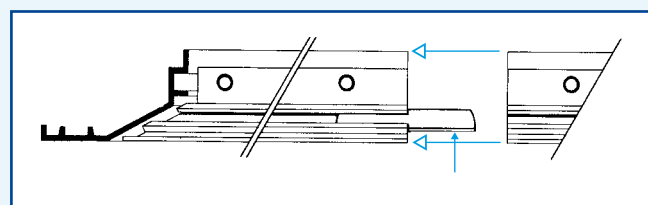
AF 791  
Diffuser only



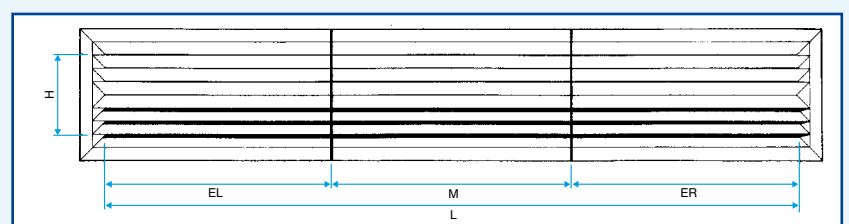
AF 792  
Diffuser only



AF 790  
Diffuser with mounted damper



Perfect alignment is ensured via specific legs.



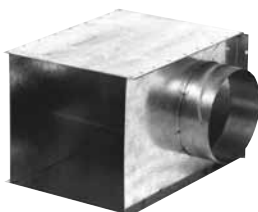
Linear assembly.

# Square diffuser with removable core

## Accessory Series 700 - aluminium or steel



B 700 damper



RE plenum

### APPLICATION

- B 700: counter-rotating damper, in aluminium. Adjustable via the front of the diffuser using a lever hidden between the frame and the core. Clip-mounted on diffuser. The special design of the blades provides optimum closing by enclosure.
  - RT: Connection plenum with circular mounted connection on the top.
  - RE: Connection plenum with circular mounted connection on the side.
  - Possibility of perforated sheet inside the RE and RT plenums for improved air flow distribution to the air supply.
  - Possible insulation inside the RE and RT plenums. 5-side thermal or 2-side acoustic insulation.
  - W4 folded filter (height 50 mm) G3 M1 fire rating for use in air exhaust. Filter accessed by dismantling the central core from the front.
- NB: the W4 filter cannot be used with the B 700 damper.

### DESCRIPTION

- B 700: extruded aluminium frame and blades.
- RT: Galvanized steel sheet connection plenum.
- RE: Galvanized steel sheet connection plenum.
- M1 polyurethane foam insulation, thickness 5 mm.

### FINISH

- Galvanized raw steel.
- Black paint finish on request (B 700 damper only).

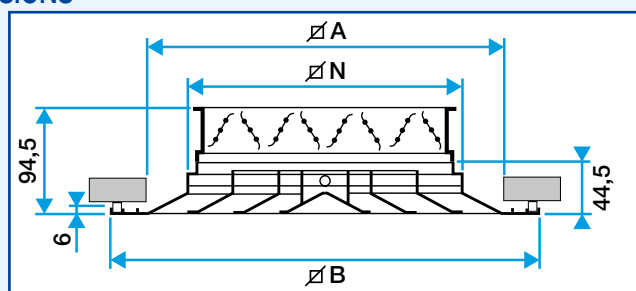
### FIXING

- The plenums have suspension legs for fixing to the concrete tile.

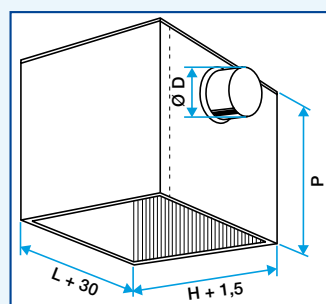
### STANDARD DIMENSIONS

- Consult the table of standard dimensions. For more information refer to the RANGE pages hereafter.

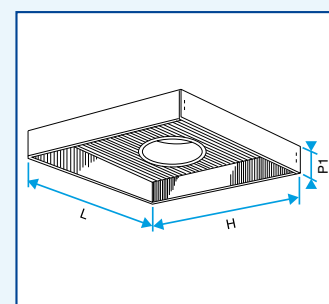
### DIMENSIONS



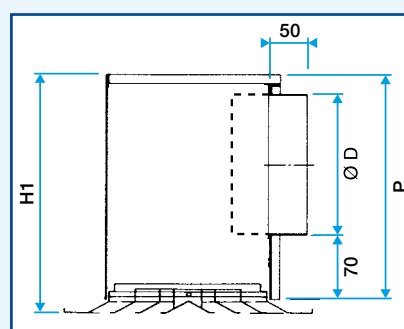
B 700 damper



RE plenum



RT plenum



RE plenum with perforated distribution sheet

### STANDARD PLENUM DIMENSIONS

L x H (mm)	Ø D (mm)	P (mm)	H1 (mm)	P1 (mm)
150 x 150	125	215	230	115
225 x 225	160	250	265	115
300 x 300	250	340	355	165
375 x 375	315	405	420	165
450 x 450	355	445	460	215
472 x 472	355	445	460	215
525 x 525	355	445	460	215
600 x 600	400	490	505	215

# Square diffuser with removable core

## Series SF/SN 701 - 702 - 703 - 704 - 711 - 712

### Standard range

Dimensions	4-way diffuser White steel SF 704 Code	4-way diffuser White steel SF 704 TP Code
150 x 150	11051548	11051076
225 x 225	11051549	11051077
300 x 300	11051550	11051078
375 x 375	11051551	11051079
472 x 472	11051555	
525 x 525	11051553	
600 x 600	11051554	

Dimensions	Insulated steel diffuser SF 704 RI TP (5) F16 Code	Steel diffuser SF 704 R TP F16 Code	Damper BR Code
Ø 160		11051086	11053220
Ø 200	11051090	11051087	11053221
Ø 250	11051091	11051088	11053222
Ø 315	11051092	11051089	11053223

**Fixing** **Fixing**

• Hidden by lateral screw attachment in the collar or suspension legs • Epoxy paint steel RAL9010.

### Range with choice of options : square diffusers

L x H (mm)	Code SF 701	Code SF 702	Code SF 703	Code SF 704	Code SF 704 TP AxB 600x600	Code SF 704 TP AxB 675x675	Code SN 704
150 x 150	11002211	11002231	11002651	11002671	11002691	11002696	11002681
225 x 225	11002212	11002232	11002652	11002672	11002692	11002697	11002682
300 x 300	11002213	11002233	11002653	11002673	11002693	11002698	11002683
375 x 375	11002214	11002234	11002654	11002674	11002694	11002699	11002684
450 x 450	11002215	11002235	11002655	11002675	11002695	11002700	11002685
472 x 472	11002216	11002236	11002656	11002676		11002709	11002686
525 x 525	11002217	11002237	11002657	11002677		11002710	11002687
600 x 600	11002218	11002238	11002658	11002678			11002688

### Range with choice of options : square diffusers with circular connection

Ø D (mm)	Code SF 704 R TP AxB 600x600
Ø 160	11003231
Ø 200	11003232
Ø 250	11003233
Ø 315	11003234

### Range with choice of options : rectangular diffusers

Large frame model	Code
SF 711	11002251
SF 712	11002252

### Rectangular range dimensions

H / L (mm)	225	300	375	450	472	525	600
150	✗	✗	✗	✗	✗	✗	✗
225		✗	✗	✗	✗	✗	✗
300			✗	✗	✗	✗	✗
375				✗	✗	✗	✗
450					✗	✗	✗
472						✗	✗
525						✗	✗

### Options available

Fixing	Adapted to suspended ceilings	Thermal insulation	Finish
<ul style="list-style-type: none"> <li>F0: hidden by screw in the collar.</li> <li>F1: visible by screw in the frame (frame SF only).</li> <li>F7: hidden by bridge guide in the plenum.</li> <li>F16: anchoring legs provided (SF 704 R TP only).</li> </ul>	<ul style="list-style-type: none"> <li>Tbar frame.</li> <li>Fine-Line frame (SF 704 TP models only).</li> </ul>	<ul style="list-style-type: none"> <li>Insulation outside the shell (SF 704 R TP only).</li> </ul>	<ul style="list-style-type: none"> <li>Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

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

# Square diffuser with removable core

## Series AF/AN 701 - 702 - 703 - 704 - 711 - 712

### Standard range

Dimensions	4-way diffuser White alum AF 704 Z Code	4-way diffuser Alum AF 704 Code	4-way diffuser White alum AN 704 Z TP Code
150 x 150	11051577	11051560	11051746
225 x 225	11051578	11051561	11051747
300 x 300	11051579	11051562	11051748
375 x 375	11051596	11051563	11051749
472 x 472	11051597	11051675	
525 x 525	11051598	11051565	
600 x 600	11051599	11051566	

Fixing	Finition
<ul style="list-style-type: none"> <li>Hidden by lateral screws in the collar.</li> </ul>	<ul style="list-style-type: none"> <li>Anodised aluminium, natural tone or RAL9010 aluminium epoxy paint (type Z).</li> </ul>

### Range with choice of options : square diffusers

L x H (mm)	Code AF 701	Code AF 702	Code AF 703	Code AF 704	Code AN 704 TP AXB 600x600	Code AN 701	Code AN 702	Code AN 703	Code AN 704
150 x 150	11002701	11002721	11002741	11002761	11002811	11002711	11002731	11002751	11002771
225 x 225	11002702	11002722	11002742	11002762	11002812	11002712	11002732	11002752	11002772
300 x 300	11002703	11002723	11002743	11002763	11002813	11002713	11002733	11002753	11002773
375 x 375	11002704	11002724	11002744	11002764	11002814	11002714	11002734	11002754	11002774
450 x 450	11002705	11002725	11002745	11002765	11002815	11002715	11002735	11002755	11002775
472 x 472	11002706	11002726	11002746	11002766		11002716	11002736	11002756	11002776
525 x 525	11002707	11002727	11002747	11002767		11002717	11002737	11002757	11002777
600 x 600	11002708	11002728	11002748	11002768		11002718	11002738	11002758	11002778

### Range with choice of options : rectangular diffusers

Large frame model	Code	Fine frame model	Code
AF 711	11002271	AN 711	11002280
AF 712	11002272	AN 712	11002281

### Rectangular range dimensions

H / L (mm)	225	300	375	450	472	525	600
150	✗	✗	✗	✗	✗	✗	✗
225		✗	✗	✗	✗	✗	✗
300			✗	✗	✗	✗	✗
375				✗	✗	✗	✗
450					✗	✗	✗
472						✗	✗
525							✗

### Options available

Fixing	Finish
<ul style="list-style-type: none"> <li>F0: hidden by screw in the collar.</li> <li>F1: visible by screw in the frame.</li> <li>F7: hidden by bridge guide in the plenum.</li> </ul>	<ul style="list-style-type: none"> <li>Anodised aluminium, natural tone.</li> <li>Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- B 700 damper.
- RE and RT plenums.
- W4 folded filter.

# Square diffuser with removable core

## Series AF 791 - AF 792

### Standard range

Dimensions	1 way diffuser AF 791 Z F0	2 way diffuser AF 792 Z F0	2 way diffuser AF 792-1 Z F0	Damper B 700	Side mounted connection plenum RE
	Code	Code	Code	Code	Code
472 x 75	11051241			11051331	11053541
472 x 150	11051242			11051334	11053544
547 x 75	11051243			11051332	11053542
1072 x 75	11051244			11051333	11053543

Fixing	Core	Finish
<ul style="list-style-type: none"> <li>Hidden by lateral screws in the collar.</li> </ul>	<ul style="list-style-type: none"> <li>Fixed.</li> </ul>	<ul style="list-style-type: none"> <li>Epoxy paint aluminium, RAL9010.</li> </ul>

### Range with choice of options

Designation	Code
AF 791	11002291
AF 792	11002292

### Range dimensions

H / L (mm)	600	800	1000	1200	1400	1600	1800	2000
150	✗	✗	✗	✗	✗	✗	✗	✗
225	✗	✗	✗	✗	✗	✗	✗	✗
300	✗	✗	✗	✗	✗	✗	✗	✗

### Options available

Fixing	Core	Finish
<ul style="list-style-type: none"> <li>F0 : hidden by screw in the collar.</li> <li>F1 : visible by screw in the frame.</li> <li>F7 : hidden by bridge guide in the plenum.</li> </ul>	<ul style="list-style-type: none"> <li>Fixed core.</li> <li>Removable core (not available for height H = 75 mm).</li> </ul>	<ul style="list-style-type: none"> <li>Anodised aluminium, natural tone.</li> <li>Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- B 700 damper.
- RE and RT plenums.

## Series RE - RT - B 700 - CW4 - W4

### Standard range

Dimensions	Damper B 700	Filter cassette (G3 filter included) CW4	G3 filter only (for replacement) W4	Rear plenum RT	Insulated side plenum REIF (5)	Side plenum RE
	Code	Code	Code	Code	Code	Code
150 x 150	11051321	11053431	11053371	11053580		11053610
225 x 225	11051322	11053432	11053372	11053583	11053594	11053613
300 x 300	11051323	11053433	11053373	11053585	11053595	11053615
375 x 375	11051324	11053434	11053374	11053588	11053596	11053618
472 x 472	11051328	11053435	11053375	11053592	11053597	11053609
525 x 525	11051326			11053590		11053620
600 x 600	11051327			11053591		11053621

### Range with choice of options : for square diffusers

L x H (mm)	Code RE	Code RT
150 x 150	11003271	11003281
225 x 225	11003272	11003282
300 x 300	11003273	11003283
375 x 375	11003274	11003284
450 x 450	11003275	11003285
472 x 472	11003276	11003286
525 x 525	11003277	11003287
600 x 600	11003278	11003288

### Range with choice of options : all models

Accessories	Code	Plenums	Code
B 700 damper	11003203	RE side mounted connection	11003270
CW4 cassette filter	11003250	RT top mounted connection	11003280
Replacement filter W4	11053370		

### Available rectangular dimensions

H / L (mm)	225	300	375	450	472	525	600
150	✗	✗	✗	✗	✗	✗	✗
225		✗	✗	✗	✗	✗	✗
300			✗	✗	✗	✗	✗
375				✗	✗	✗	✗
450					✗	✗	✗
472						✗	✗
525							✗

### Options available

Damper	Fixing (Plenum)	Plenum
<ul style="list-style-type: none"> <li>Black shutters.</li> </ul>	<ul style="list-style-type: none"> <li>F7: bridge. Available only with RE models code 11003270 and RT code 11003280.</li> <li>F0: screw in the collar.</li> </ul>	<ul style="list-style-type: none"> <li>Special depth.</li> <li>Special spigots.</li> <li>Perforated distribution sheet.</li> <li>Insulation on 2 or 5 sides.</li> </ul>

# Square diffuser with removable core

## Series 703 - 704 - 701 - 702 - SF704 R TP

### SELECTION - AIR SUPPLY WITH CEILING EFFECT FOR SERIES 703 - 704

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw	Lt														
		100		150		200		250		300		400				500		600		800		1000		1200		1500			
0,011	150 x 150	20	0,7	29	1,0	34	1,4																						
		2,8	4,6	4,2	10	5,6	19																						
0,023	225 x 225			17	0,8	23	1,0	28	1,2	32	1,5	37	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							1,8	0,9	2,2	1,1	2,8	1,5	3,2	1,8	3,6	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	25	1,5	29	1,8	35	2,4	40	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															23	1,5	29	2,0	33	2,4	37	3,0	42	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																	24	1,7	28	2,1	32	2,6	37	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															20	1,5	24	1,8	28	2,2	32	2,7				
		Vk	Pa															1,5	1	2	2,4	2,5	3,8	3	5,4				

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.

Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - AIR SUPPLY WITH CEILING EFFECT FOR SERIES 701 - 702

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw	Lt														
		100		150		200		250		300		400				500		600		800		1000		1200		1500			
0,008	150 x 150	25	1,6	33	2,4	39	3,3																						
		3,5	7	5,2	16	6,9	29																						
0,018	225 x 225			20	1,6	25	2,2	30	2,7	34	3,3	40	4,3																
				2,3	3,2	3,1	6	3,9	9	4,6	13	6,2	23																
0,032	300 x 300							20	2,0	24	2,4	30	3,3	34	4,1	38	4,9												
								2,2	3	2,6	4	3,5	7	4,3	11	5,2	16												
0,049	375 x 375											22	2,6	27	3,3	38	3,9	37	5,3	42	6,6								
												2,3	3	2,8	4,8	3,4	7	4,5	12	5,7	19								
0,078	472 x 472													23	3,1	29	4,2	33	5,2	37	6,2	42	7,8						
														2,1	3	2,8	5	3,6	8	4,3	11	5,3	17						
0,098	525 x 525															25	3,7	29	4,6	33	5,6	38	7						
																2,3	3	2,8	5	3,4	7	4,3	11						
0,126	600 x 600	Lw	Lt															25	4,1	29	4,9	34	6,1						
		Vk	Pa															2,3	3	2,6	4	3,3	7						

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.

Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

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

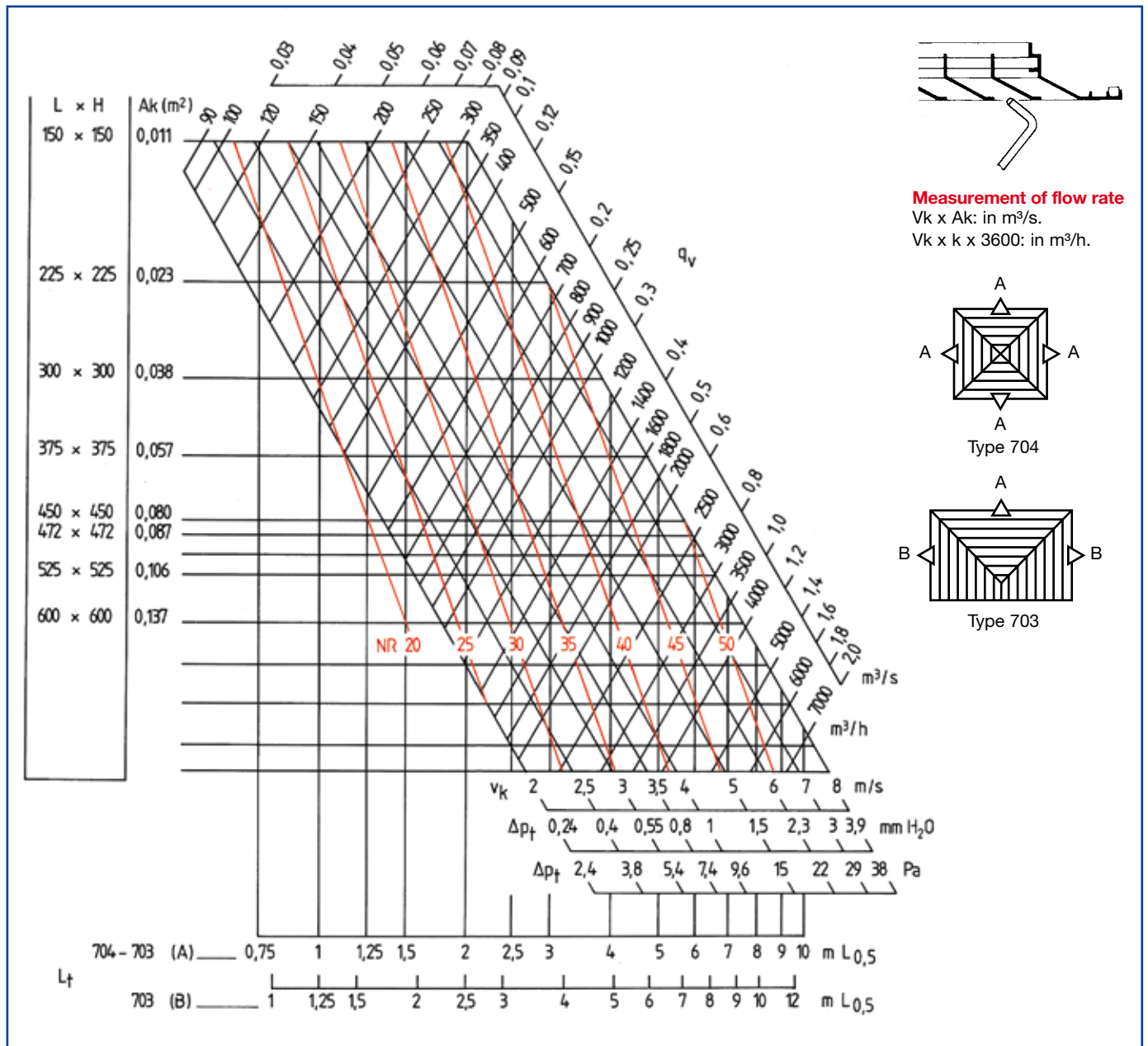
Ak (m <sup>2</sup> )	Ø N (mm)	qv (m <sup>3</sup> /h)												Lw	Lt														
		150		200		250		300		400		500				600		800		1000		1200		1500					
0,022	Ø 160	18	1	24	1,2	29	1,4	35	1,7	39	2,2																		
		2,1	4	2,9	7	3,7	13,2	4,2	16	5,6	22																		
0,034	Ø 200					19	1,2	24	1,5	29	1,7	34	2,1	41	3														
						2,1	5	2,5	5,4	3,4	6,8	4,2	15	5	19														
0,054	Ø 250									22	1,5	28	1,8	30	2,2	38	2,8	46	3,4										
										2,3	5	2,8	7	3,5	12	4,5	17	5,6	22										
0,085	Ø 315	Lw	Lt											25	1,7	28	2,2	35	2,6	39	3,3	44	4,1						
		Vk	Pa											2,1	4,5	2,8	6,1	3,4	12	4,2	15	5,1	20						

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.

Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

# Square diffuser with removable core

## Series 703 - 704 - air supply with ceiling effect



The values Lw (NR) do not include attenuation of the premises. Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER V<sub>t</sub>

V <sub>t</sub> (m/s)	0.25	0.375	0.5	0.625	0.75
L <sub>t</sub>	x 2	x 1.33	x 1	x 0.8	x 0.67

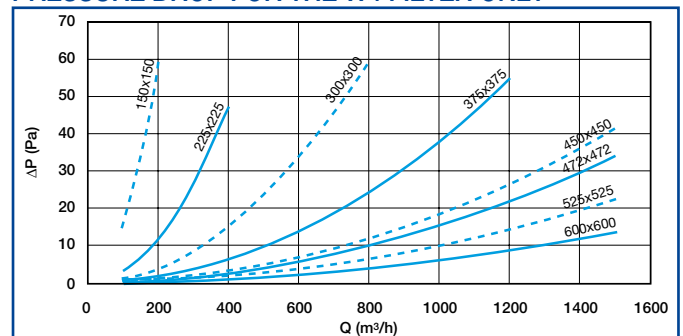
### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta p_t \times 1.00$	$\Delta p_t \times 1.00$	$\Delta p_t \times 2.25$	$\Delta p_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

### CORRECTIONS FOR APPLICATION IN AIR EXHAUST

Sizes 150 and 225	Sizes 300 and 375	Sizes 450 and 472	Sizes 525 and 600
$\Delta p_t \times 1.20$	$\Delta p_t \times 1.30$	$\Delta p_t \times 1.40$	$\Delta p_t \times 1.45$
Lw + 2	Lw + 3	Lw + 4	Lw + 5

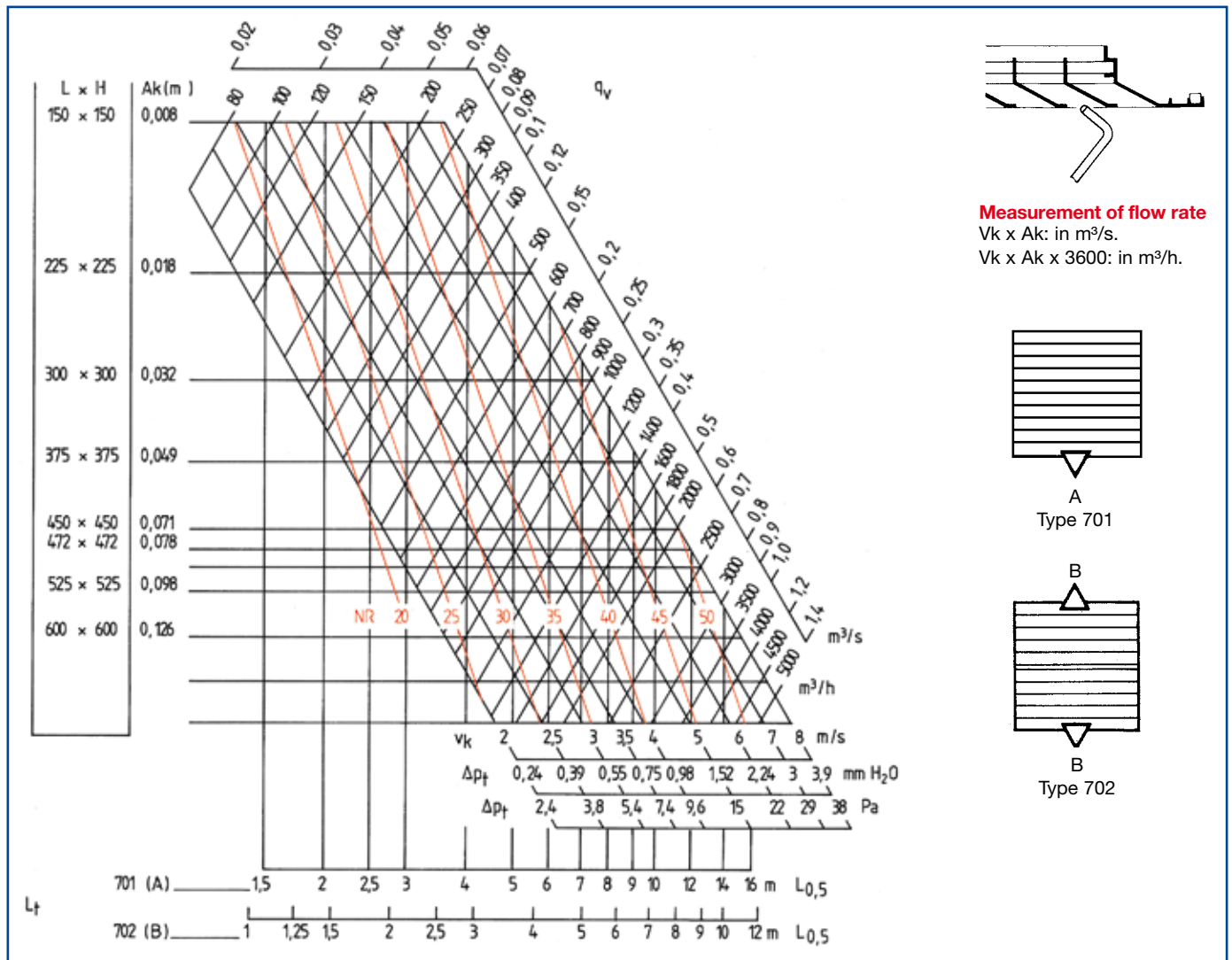
### PRESSURE DROP FOR THE W4 FILTER ONLY





# Square diffuser with removable core

Series 701 - 702 - air supply with ceiling effect



The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625	0.75
$L_t$	x 2	x 1.33	x 1	x 0.8	x 0.67

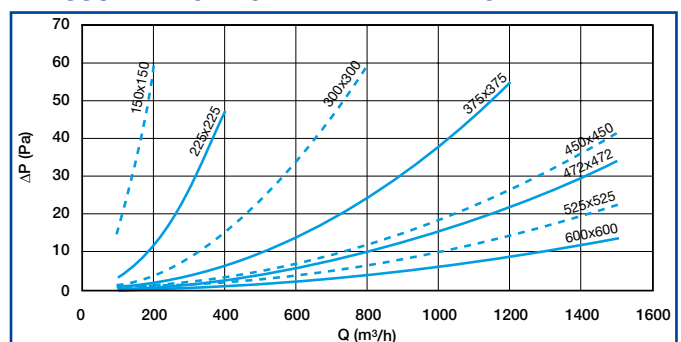
## CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
$L_w + 0$	$L_w + 0$	$L_w + 10$	$L_w + 20$

## CORRECTIONS FOR APPLICATION IN AIR EXHAUST

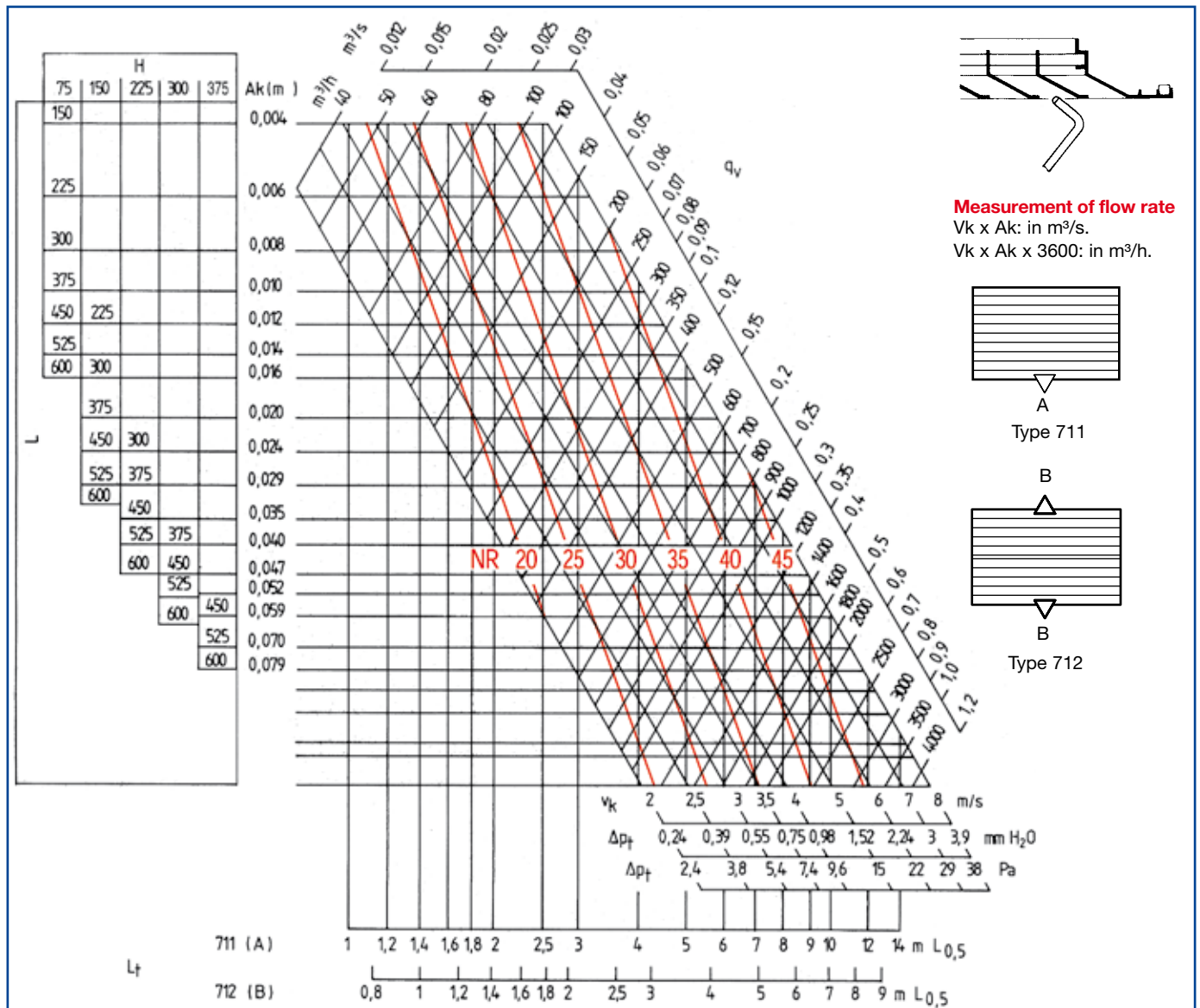
Sizes 150 and 225	Sizes 300 and 375	Sizes 450 and 472	Sizes 525 and 600
$\Delta P_t \times 1.20$	$\Delta P_t \times 1.30$	$\Delta P_t \times 1.30$	$\Delta P_t \times 1.45$
$L_w + 2$	$L_w + 3$	$L_w + 4$	$L_w + 5$

## PRESSURE DROP FOR THE W4 FILTER ONLY



# Square diffuser with removable core

## Series 711 - 712 - air supply with ceiling effect



The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### CORRECTIONS FOR OTHER $V_t$

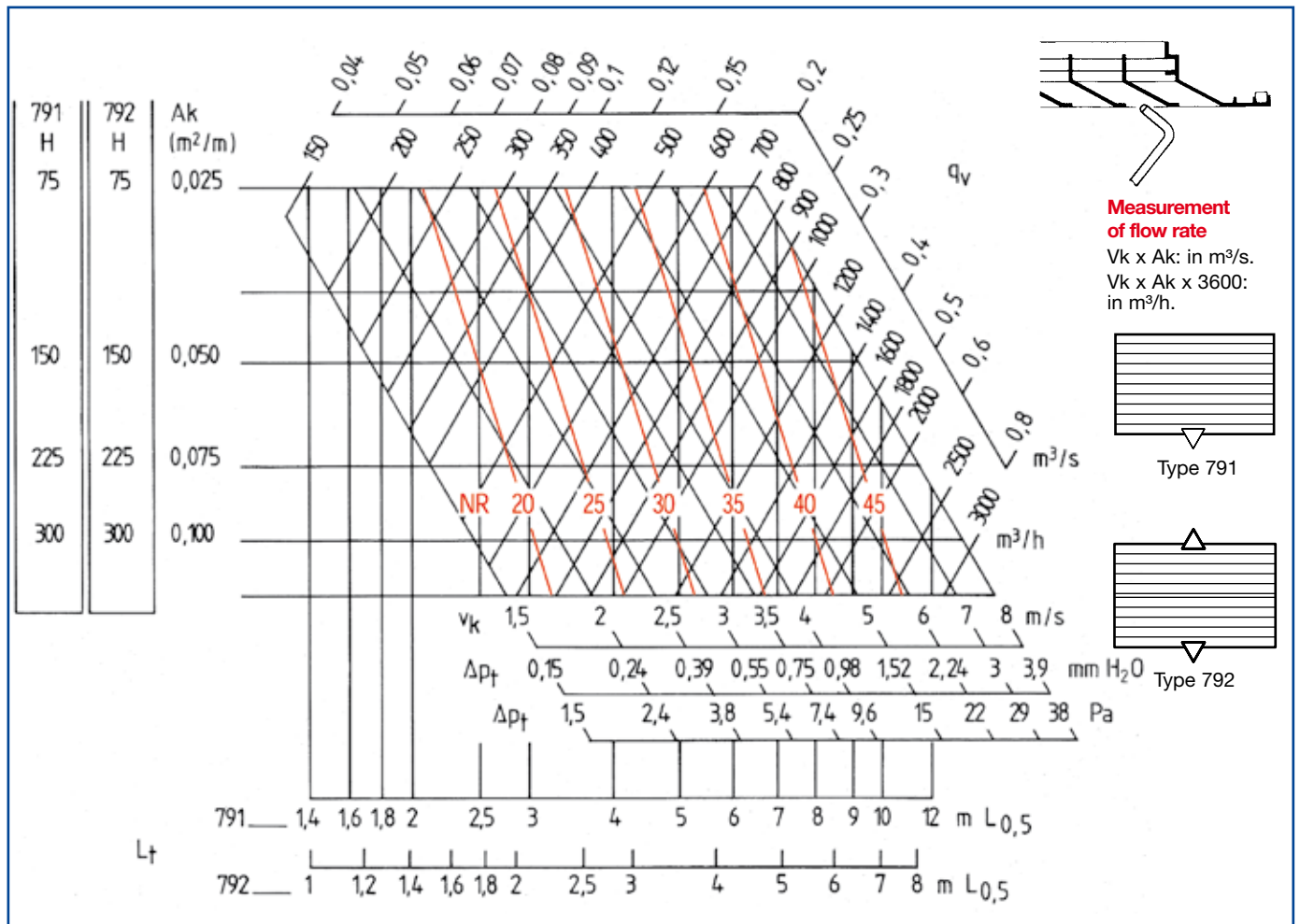
$V_t$ (m/s)	0.25	0.375	0.5	0.625	0.75
$L_t$	x 2	x 1.33	x 1	x 0.8	x 0.67

### CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta p_t \times 1.00$	$\Delta p_t \times 1.00$	$\Delta p_t \times 2.25$	$\Delta p_t \times 5.90$
$L_w + 0$	$L_w + 0$	$L_w + 10$	$L_w + 20$

# Square diffuser with removable core

Series 791 - 792 - air supply with ceiling effect - length 1 m



The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625	0.75
$L_t$	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
$\Delta p_t \times 1.00$	$\Delta p_t \times 1.00$	$\Delta p_t \times 2.25$	$\Delta p_t \times 5.90$
$L_w + 0$	$L_w + 0$	$L_w + 10$	$L_w + 20$

## CORRECTIONS FOR OTHER LENGTHS

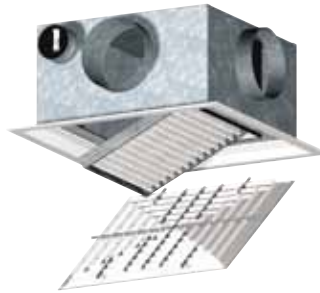
$L$ (m)	1	1.5	2	2.5	3	4	5	6	8	10
$L_t$ (m)	x 1	x 1.05	x 1.1	x 1.1	x 1.1	x 1.1	x 1.1	x 1.15	x 1.15	x 1.15
$L_w$ (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10

# Square diffuser with removable core

Combined Series air supply + air air exhaust - aluminium or steel



SF704S Combined Diffuser



## APPLICATION

- Simultaneous air supply and air air exhaust.
- Ceiling mounted. Mounting flush with the ceiling.
- Adapted to standard 600 x 600 mm or 675 x 675 mm ceiling tiles.
- Horizontal air supply in four directions.
- Fixed diffusion.

## DESCRIPTION

- Double-plenum and diffuser assembly performs the air supply (peripherally) and air exhaust (centrally) functions.
- Diffuser has profiled steel sheet (models SN and SF) or extruded aluminium (models AN and AF) external frame and core.
- Removable core.
- Models SN and AN: Frame width 6 mm.
- Models SF and AF: Frame width 32 mm.
- Blades with spacing of 37 mm.
- Plenum in galvanized steel two mounted connection at 90°.
- Anti-condensate thermal insulation on the inside plenum (5mm M1 polyurethane foam).
- Possibility of air exhaust zone filtering, with easy access to the filter from the front of the diffuser.

## FINISH

- Epoxy paint steel, RAL9010 white (models SN and SF) or anodised aluminium, natural tone (models AN and AF).
- Finish with RAL color paint. Consult the list of available colours in the appendix.

## FIXING

- F0: Hidden lateral screw fixing in the diffuser collar.
- F1: Fixing by screw, visible in the frame, only for frame F.

## ACCESSORIES

- G3 folded filter for the air exhaust (equivalent to current filter on the fan-convector that can have ducts). M1 fire rating.

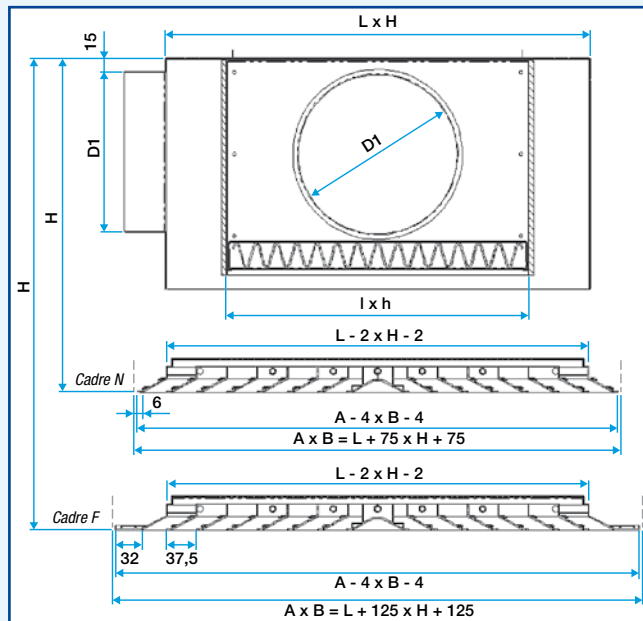
## STANDARD DIMENSIONS

- 3 sizes available LxH (mm) : 472x472, 525x525 and 600 x 600 adapted to ceiling standard.
- See table opposite.

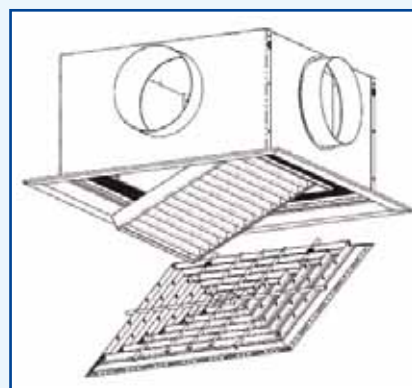
## TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See Mixing Capacity (MC) at the end of the chapter.

## DIMENSIONS



Combined Diffuser frame N and F



Installing the filter

## STANDARD DIMENSIONS

Model	A x B*	L x H	I x h	H	D1
AF/SF 704 S R/REI	600 x 600	472 x 472	323 x 323	355	250
AN/SN 704 S R/REI	600 x 600	525 x 525	375 x 375	420	315
	675 x 675	600 x 600	375 x 375	420	315

\* Nominal tile dimensions.

# Square diffuser with removable core

## Combined Series - Air supply + air exhaust - aluminium or steel

### Standard range

Dimensions	Description	Code
472 x 472	Diffuser SF 704 S	11051051
472 x 472	Filter (L1 x H1) W	11053511
525 x 525 + 600 x 600	Filter (L1 x H1) W	11053512
Fixing	Finish	
• Hidden by side screw in the collar.	• Epoxy paint steel RAL9010.	

### Range with choice of options

Dimensions	Combined	Diffuser	Plenum
472 x 472	SF 704 S R-REI	11002803	11003291
472 x 472	AF 704 S R-REI	11002804	11003291
525 x 525	SN 704 S R-REI	11002805	11003292
600 x 600	SN 704 S R-REI	11002806	11003293
525 x 525	AN 704 S R-REI	11002807	11003292
600 x 600	AN 704 S R-REI	11002808	11003293

### Options available

Fixing	Finish
• Hidden by side screw in the collar.	• Anodised aluminium, natural tone or RAL9010 epoxy steel. Epoxy paint in accordance with RAL color L. Consult the list of available colours in the appendix.

## Combined Series

### SELECTION - AIR SUPPLY WITH CEILING EFFECT

Type	Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)													
			450		550		650		750		850		950		1100	
SF/AF	0.05	472 x 472	29	2.1	33	2.6	36	3.1	39	3.5					Lw	Lt
			2.5	21	3.1	32	3.61	45	4.2	60					Vk	Pa*
SN/AN	0.06	525 x 525			30	2.4	33	2.8	36	3.2	38	3.7				
					2.6	22	3	31	3.5	42	3.9	53				
SN/AN	0.09	600 x 600	Lw	Lt							31	3	33	3.4	36	4
			Vk	Pa*							2.6	24	3	29	3.4	40

The values Lw (NR) do not include attenuation of the premises and concern the Combined assembly in air supply and air exhaust. Vt = 0.5 m/s.

Tests performed with the standard plenum.

\* Pressure drops for the Combined air supply assembly.

### SELECTION - AIR EXHAUST

Type	Ak (m <sup>2</sup> )	L x H (mm)	L1 x H1 (mm)	qv (m <sup>3</sup> /h)													
				450		550		650		750		850		950		1100	
SF/AF	0.07	472 x 472	323 x 323	1,8	16	2,2	24	2,6	34	3	45					Vk	Pa*
SN/AN	0.094	525 x 525	375 x 375			1,6	14	1,9	19	2,2	25	2,5	32				
SN/AN	0.094	600 x 600	375 x 375	Vk	Pa*							2,5	32	2,8	40	3,2	53

Tests performed with the standard plenum.

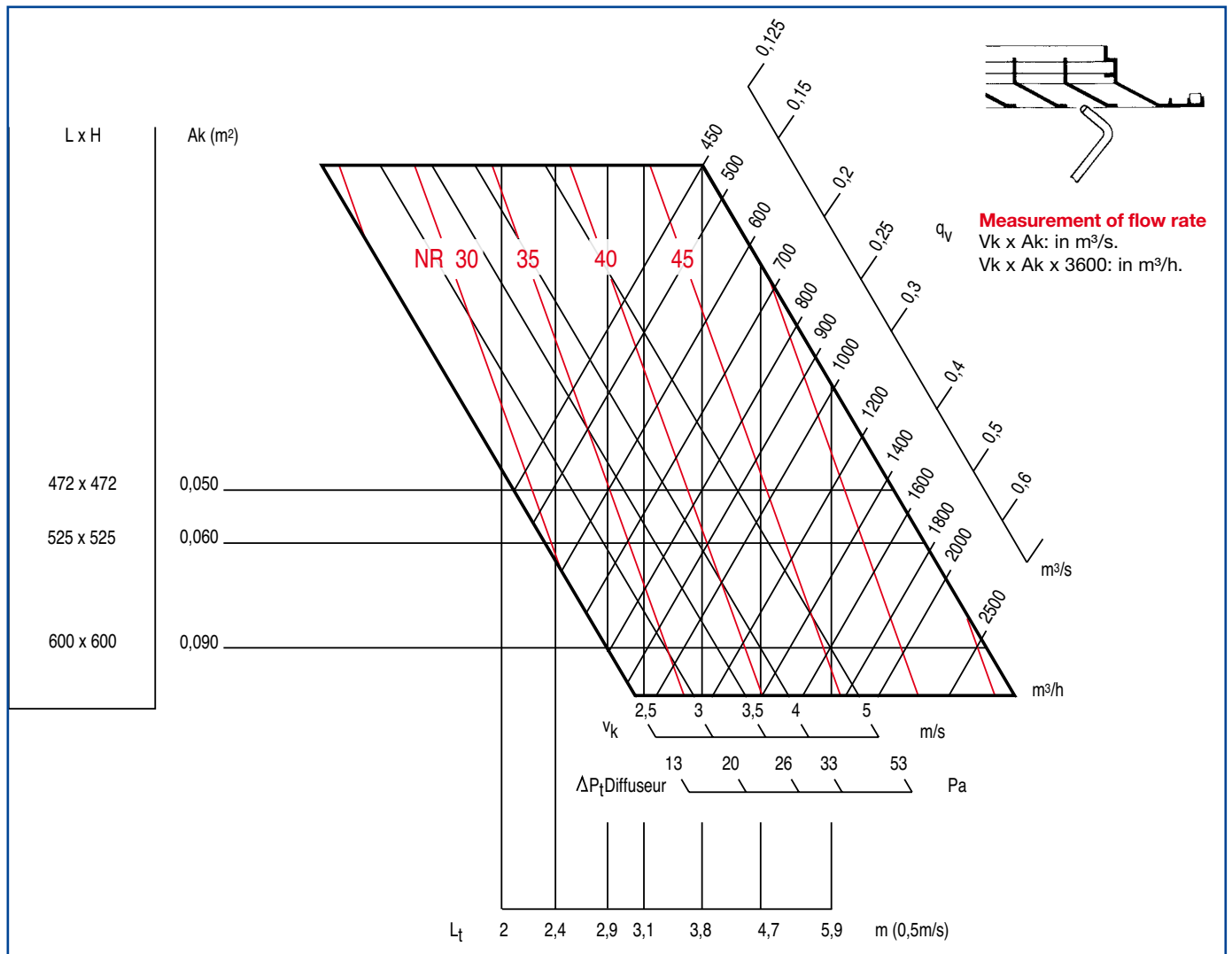
\* Pressure drops for Combined air exhaust assembly.

### SELECTION - AIR EXHAUST FILTER ONLY

Type	Ak (m <sup>2</sup> )	L x H (mm)	L1 x H1 (mm)	qv (m <sup>3</sup> /h)									
				450	550	650	750	850	950	1100			
SF/AF	0.07	472 x 472	323 x 323	21	25	29	33					Pa	
SN/AN	0.094	525 x 525	375 x 375			19	22	25			29		
SN/AN	0.094	600 x 600	375 x 375			Pa					29	34	42

# Square diffuser with removable core

## Combined Series - air supply with ceiling effect

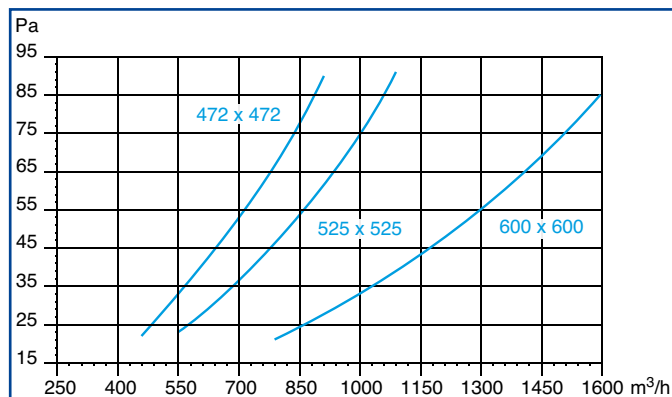


The values  $L_w$  (NR) do not include attenuation of the premises.  
 Tests performed with the standard plenum.

### CORRECTIONS FOR OTHER $V_t$

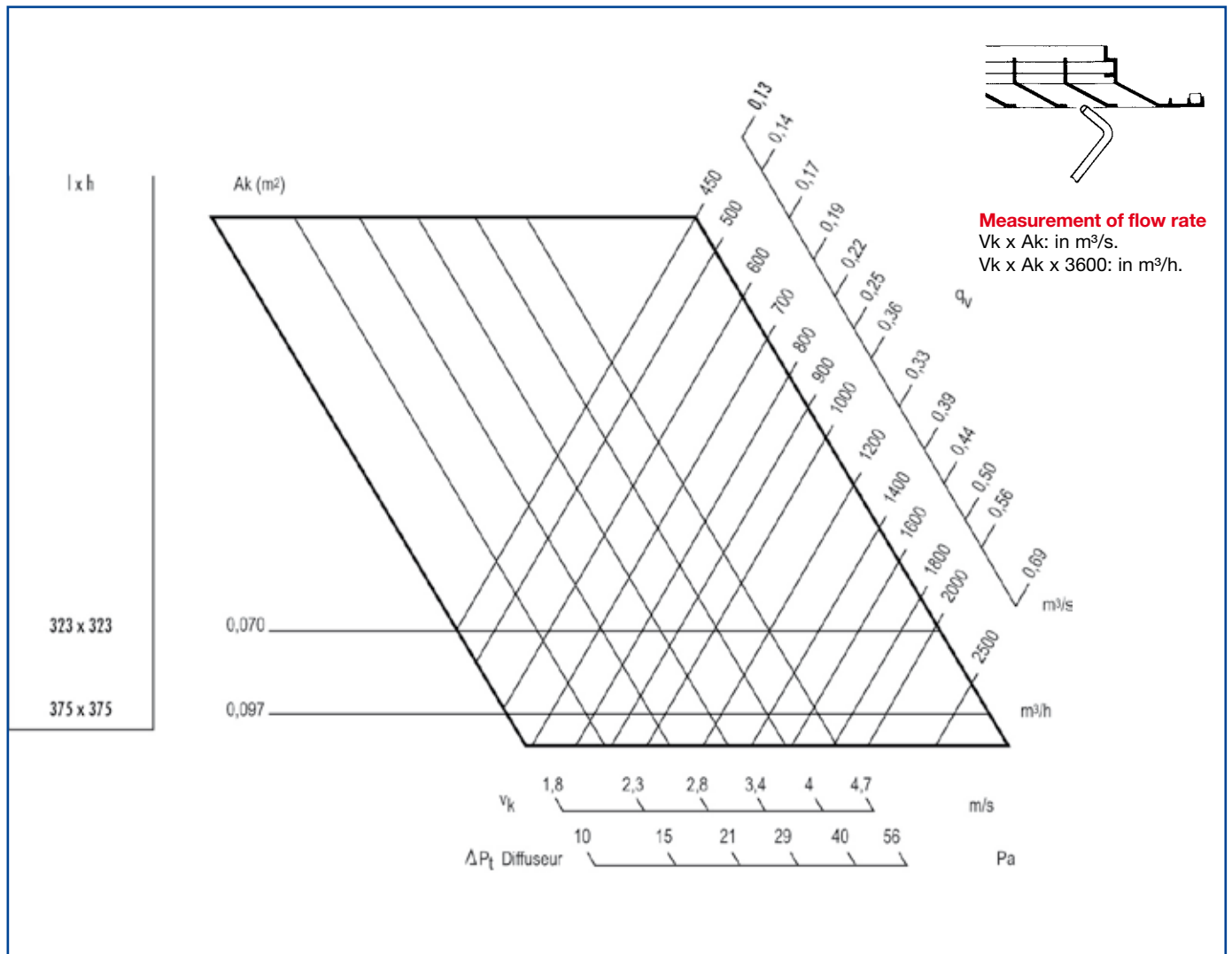
$V_t$ (m/s)	0.25	0.375	0.5	0.625	0.75
$L_t$	x 2	x 1.33	x 1	x 0.8	x 0.67

### COMBINED PRESSURE DROPS- AIR SUPPLY



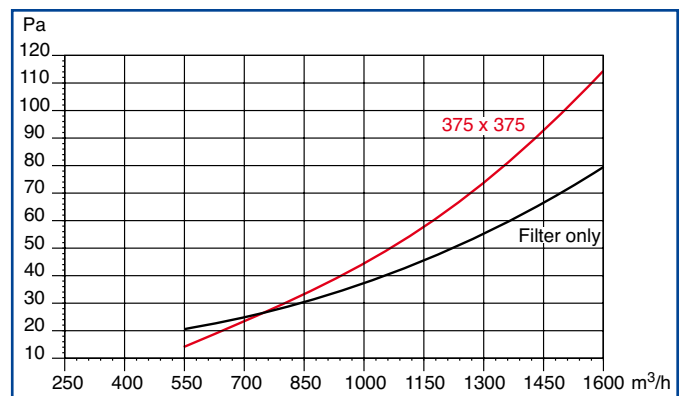
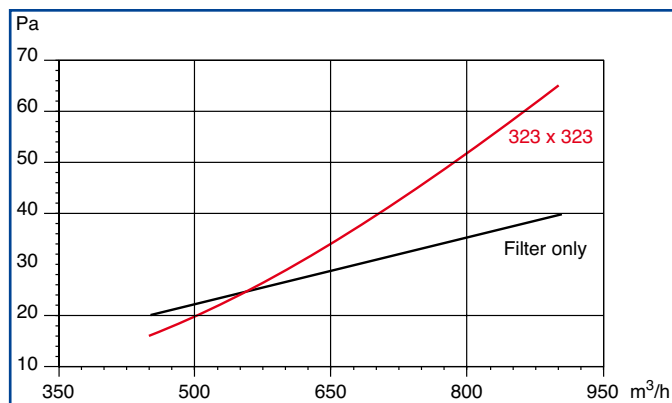
# Square diffuser with removable core

## Combined Series - air exhaust



The values  $L_w$  (NR) do not include attenuation of the premises.  
 Tests performed with the standard plenum.

### COMBINED PRESSURE DROPS - AIR EXHAUST



# Square diffusers with perforated sheet

## Series SC 310 R - SC 319 R - steel



SC 310 R diffuser



BR damper

### APPLICATION

- Air supply or air exhaust.
- One, two, three or four air supply directions.
- Ceiling mounted. Mounting flush with the ceiling.
- Adjustable diffusion.
- Air exhaust version with possibility of filtering.

### DESCRIPTION

- Galvanized steel square diffuser with perforated front.
- Opening perforated sheet.
- Circular connection.
- SC 310 R : multi-directional air supply with 1 to 4 channels via individually adjustable deflectors.
- SC 319 R : perforated sheet for the air exhaust.

### FINISH

- RAL 9010 white epoxy paint steel
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden fixing by side screws in the collar.
- F16: hidden fixing with 3 anchoring legs riveted to the shell.
- Connection to the circular duct.

### ACCESSORIES

- BR: butterfly-type damper with 2 or 4 blades in V (depending on diameter). Made of steel. Regulated through the diffuser by screws.
- Thermal insulation on the outside of the shell (MI polyurethane foam).
- W: M1 fire rating G3 efficiency plane filter.
- NE: galvanized steel connection plenum side mounted connection. The NE plenum may have an internal perforated sheet for improved air flow distribution at the air supply.

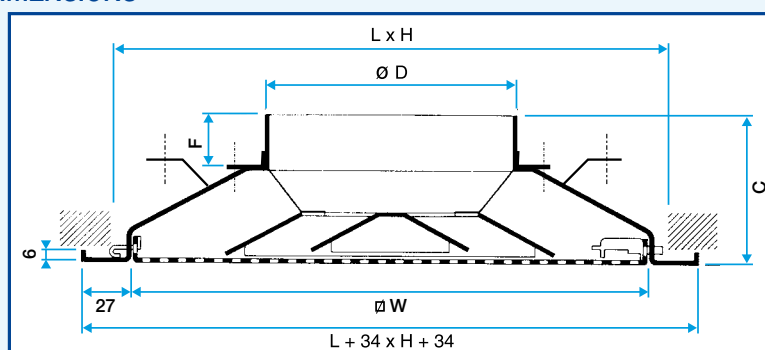
### STANDARD DIMENSIONS

- Range dimensions L x H (mm):  
300 x 300  
400 x 400  
500 x 500  
562 x 562 (dimension adapted to standard 600 x 600 mm ceiling tiles).
- See table opposite.
- For more information refer to the RANGE pages hereafter.

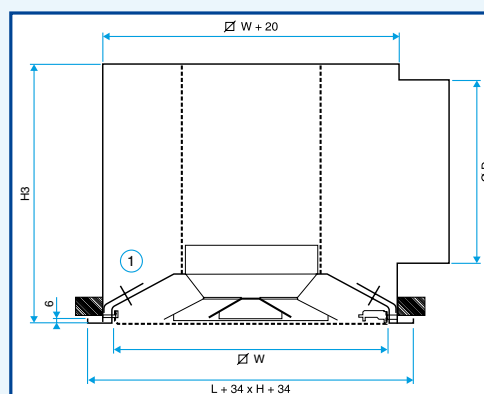
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

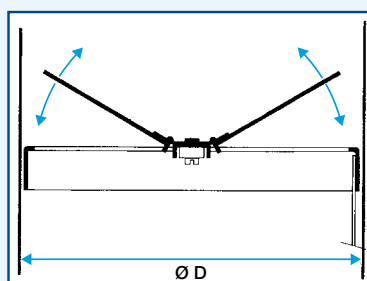
### DIMENSIONS



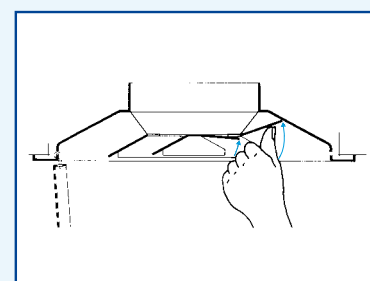
SC 310 R diffuser



SC 310 R diffuser with NE plenum and perforated distribution sheet



BR damper



The deflectors are positioned after the perforated sheet 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



# Square diffusers with perforated sheet

## Series SC 350 R - SC 359 R - steel



SC 350 R diffuser



SC 350 R diffuser - internal diffusion component

### APPLICATION

- Air supply or air exhaust.
- Fixed diffusion in four air supply directions.
- Ceiling mounted. Mounting in place of a standard 600 x 600 mm or 675 x 675 mm ceiling tile.
- Adapted to 'Tbar' or 'Fine Line' type suspended ceiling frames.

### DESCRIPTION

- Fixed perforated sheet ceiling panel (galvanized steel).
- Circular connection.
- SC 350 R: fixed 4-direction air supply.
- SC 359 R: perforated sheet for the air exhaust.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden fixing by side screws in the collar.
- F16: hidden fixing with 3 anchoring legs riveted to the shell.
- Connection to the circular duct.

### ACCESSORIES

- BR: butterfly-type damper with 2 or 4 blades in V (depending on diameter). Made of steel. Regulated through the diffuser by screws.
- Thermal insulation on the outside of the shell (MI polyurethane foam).
- NE: connection plenum side mounted connection in galvanized steel. The NE plenum may have an internal perforated sheet for improved air flow distribution at the air supply.

### STANDARD DIMENSIONS

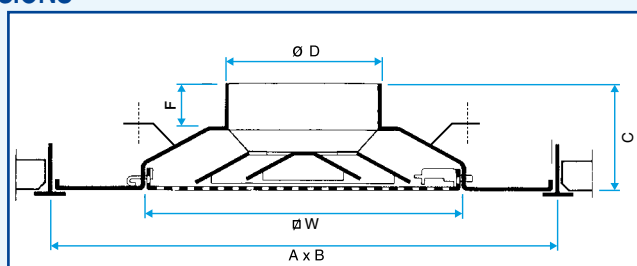
- A x B ceiling dimensions available:  
600 x 600 mm  
675 x 675 mm.
- Connection diameters D from 160 to 315 mm. See table opposite.

For more information refer to the RANGE pages hereafter.

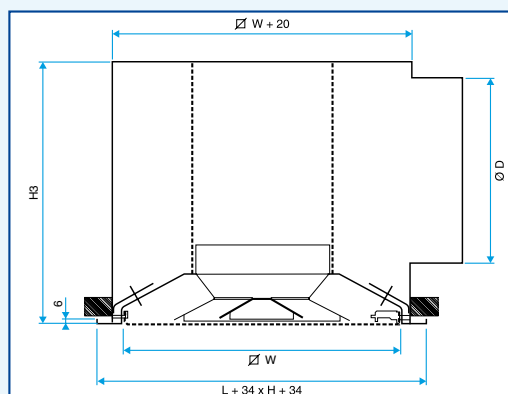
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

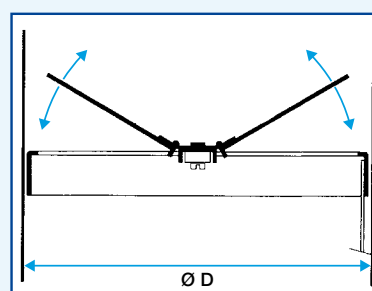
### DIMENSIONS



SC 350 R diffuser



SC 350 R diffuser with NE plenum and perforated distribution sheet



BR damper

### STANDARD DIMENSIONS

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 tile dimensions

# Square diffusers with perforated sheet

## Series SC 360 R - SC 369 R



SC 360 R diffuser



SC 360 R diffuser - rear view

### APPLICATION

- Air supply or air exhaust.
- One, two, three or four air supply directions.
- Ceiling mounted. Mounting in place of a standard 600 x 600 mm or 675 x 675 mm ceiling tile.
- Adapted to 'Tbar' or 'Fine Line' type suspended ceiling frames.
- Adjustable diffusion.
- Air exhaust version with possibility of filtering.

### DESCRIPTION

- Square diffuser with removable perforated front in galvanized steel.
- Dimensions adjusted to ceiling modules by a full sheet compensation plate.
- Circular connection.
- SC 360 R: multi-directional air supply with 1 to 4 channels via individually adjustable deflectors.
- SC 369 R: perforated sheet for the air exhaust.
- Opening central perforated sheet for easy access to the deflectors or filter.

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden fixing by side screws in the collar.
- F16: hidden fixing with 3 anchoring legs riveted to the shell.
- Connection to the circular duct.

### ACCESSORIES

- BR: butterfly-type damper with 2 or 4 blades in V (depending on diameter). Made of steel. Regulated through the diffuser by screws.
- Thermal insulation on the outside of the shell (MI polyurethane foam).
- W: G3 efficiency plane filter M1 fire rating.
- NE: galvanized steel connection plenum side mounted connection. The NE plenum may have an internal perforated sheet for improved air flow distribution at the air supply.

### DIMENSIONS STANDARD

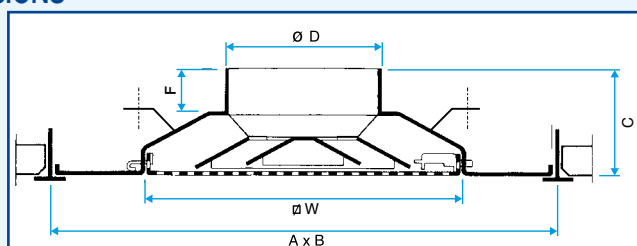
- Available A x B ceiling dimensions : 600 x 600 and 675 x 675 mm.
- Connection diameters D from 160 to 315 mm. See table opposite.

For more information refer to the RANGE pages hereafter.

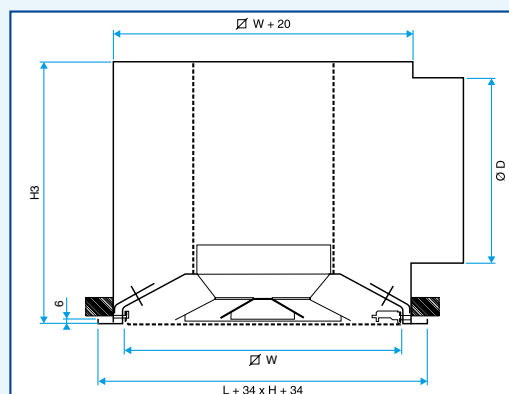
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

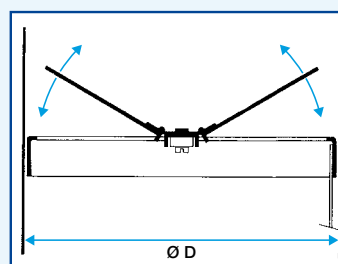
### DIMENSIONS



SC 360 R diffuser



SC 360 R diffuser with NE plenum and perforated distribution sheet



BR damper

### AVAILABLE DIMENSIONS.

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 tile dimensions

# Square diffusers with perforated sheet

Series 310 - 319 - 350 - 359 - 360 - 369

## Standard range

Dimensions	Insulated air supply diffuser SC310 RIF (5) F16 Code	Insulated air supply diffuser SC360 RIF (5) F16 Code	Air supply diffuser SC 310 R F16 Code	Air exhaust diffuser SC 319 R F16 Code	Air supply diffuser SC 360 R F16 Code	Air exhaust diffuser SC 369 R F16 Code	Filter W Code	Damper BR 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
<b>Fixing</b>					<b>Finish</b>			
• F16 : hidden fixing with 3 anchoring legs riveted to the shell.					• Epoxy paint steel RAL9010.			

## Range with choice of options : square diffusers

L x H / D (mm)	Code SC 310 R	Code SC 319 R	Plenum NE side mounted connection
300 x 300 / 160	11002141	11002146	11003301
400 x 400 / 200	11002142	11002147	11003302
500 x 500 / 250	11002143	11002148	11003303
562 x 562 / 315	11002144	11002149	11003304

## Range with choice of options : square diffusers for tiles

L x H / Ø D (mm)	Code SC 350 R	Code SC 359 R	Code SC 360 R	Code SC 369 R	Plenum NE side mounted connection
600 x 600 / Ø 160	11002535	11002565	11002585	11002635	11003301
600 x 600 / Ø 200	11002537	11002567	11002587	11002637	11003302
600 x 600 / Ø 250	11002539	11002569	11002589	11002639	11003303
600 x 600 / Ø 315	11002541	11002571	11002591	11002641	11003304
675 x 675 / Ø 160	11002573	11002577	11002594	11002644	11003301
675 x 675 / Ø 200	11002574	11002578	11002596	11002646	11003302
675 x 675 / Ø 250	11002575	11002579	11002598	11002648	11003303
675 x 675 / Ø 315	11002576	11002580	11002600	11002650	11003304

## Options available

Fixing	Thermal insulation	Finish
<ul style="list-style-type: none"> <li>• F0: hidden fixing by side screws in the collar.</li> <li>• F16: hidden fixing with 3 anchoring legs riveted to the shell.</li> </ul>	<ul style="list-style-type: none"> <li>• Insulation outside the shell.</li> <li>• Insulation inside NE Plenum.</li> </ul>	<ul style="list-style-type: none"> <li>• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>

## PROPOSED ACCESSORIES

- BR damper.
- W plane filter.

# Square diffusers with perforated sheet

## Series 310 - 350 - 360

### SELECTION - 4 DIRECTION AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	Ø D (mm)	qv (m <sup>3</sup> /h)												Lw	Lt						
			125		150		200		250		300		400				600		800		1000	
0,018	300 x 300	160	-	0,8	-	1,0	21	1,3	28	1,7	34	2,0							Lw	Lt		
			1,9	3,2	2,3	4,6	3,1	8,1	3,9	13	4,6	18									Vk	Pa
0,034	400 x 400	200					-	1,0	-	1,2	19	1,5	27	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	27	2,3	37	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	16	1,9	25	2,5	32	3,2		
			Vk	Pa									1,4	1,7	2,1	3,9	2,8	6,9	3,5	11		

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.  
Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - 3 DIRECTION AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	Ø D (mm)	qv (m <sup>3</sup> /h)												Lw	Lt						
			125		150		200		250		300		400				600		800		1000	
0,015	300 x 300	160	-	0,9	-	1,1	27	1,4	35	1,8	41	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	23	1,5	32	2,1								
							2,0	4,4	2,5	7	3,0	10	4,0	18								
0,046	500 x 500	250									-	1,2	-	1,6	31	2,4	41	3,2				
											1,8	4	2,4	7	3,6	15	4,8	26				
0,067	562 x 562	315	Lw	Lt									-	2,0	30	2,7	37	3,3				
			Vk	Pa									2,5	7	3,3	12	4,1	19				

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.  
Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - 2 DIRECTION AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	Ø D (mm)	qv (m <sup>3</sup> /h)												Lw	Lt						
			125		150		200		250		300		400				600		800			
0,012	300 x 300	160	-	1,2	25	1,4	34	1,9	42	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	23	1,7	29	2,1	38	2,7								
							2,4	7	3,0	11	3,6	16	4,8	28								
0,037	500 x 500	250									-	1,6	25	2,2	38	3,2						
											2,3	6	3,0	11	4,5	25						
0,054	562 x 562	315	Lw	Lt									-	1,8	27	2,7	37	3,6				
			Vk	Pa									2,1	5	3,1	11	4,1	20				

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.  
Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

### SELECTION - 1 DIRECTION AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	Ø D (mm)	qv (m <sup>3</sup> /h)												Lw	Lt						
			125		150		200		250		300		400				600					
0,009	300 x 300	160	27	2,0	33	2,4	42	3,2							Lw	Lt						
			3,9	18	4,6	27	6,2	44									Vk	Pa				
0,017	400 x 400	200	20	1,5	20	1,7	24	2,3	31	2,9	37	3,5										
			2,0	5	2,5	3	3,3	13	4,1	21	4,9	30										
0,027	500 x 500	250					20	1,8	20	2,3	24	2,8	34	3,7								
							2,1	5	2,6	8	3,1	12	4,1	21								
0,040	562 x 562	315	Lw	Lt									20	2,3	23	3,0	36	4,5				
			Vk	Pa									2,1	5	2,8	10	4,2	22				

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.  
Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

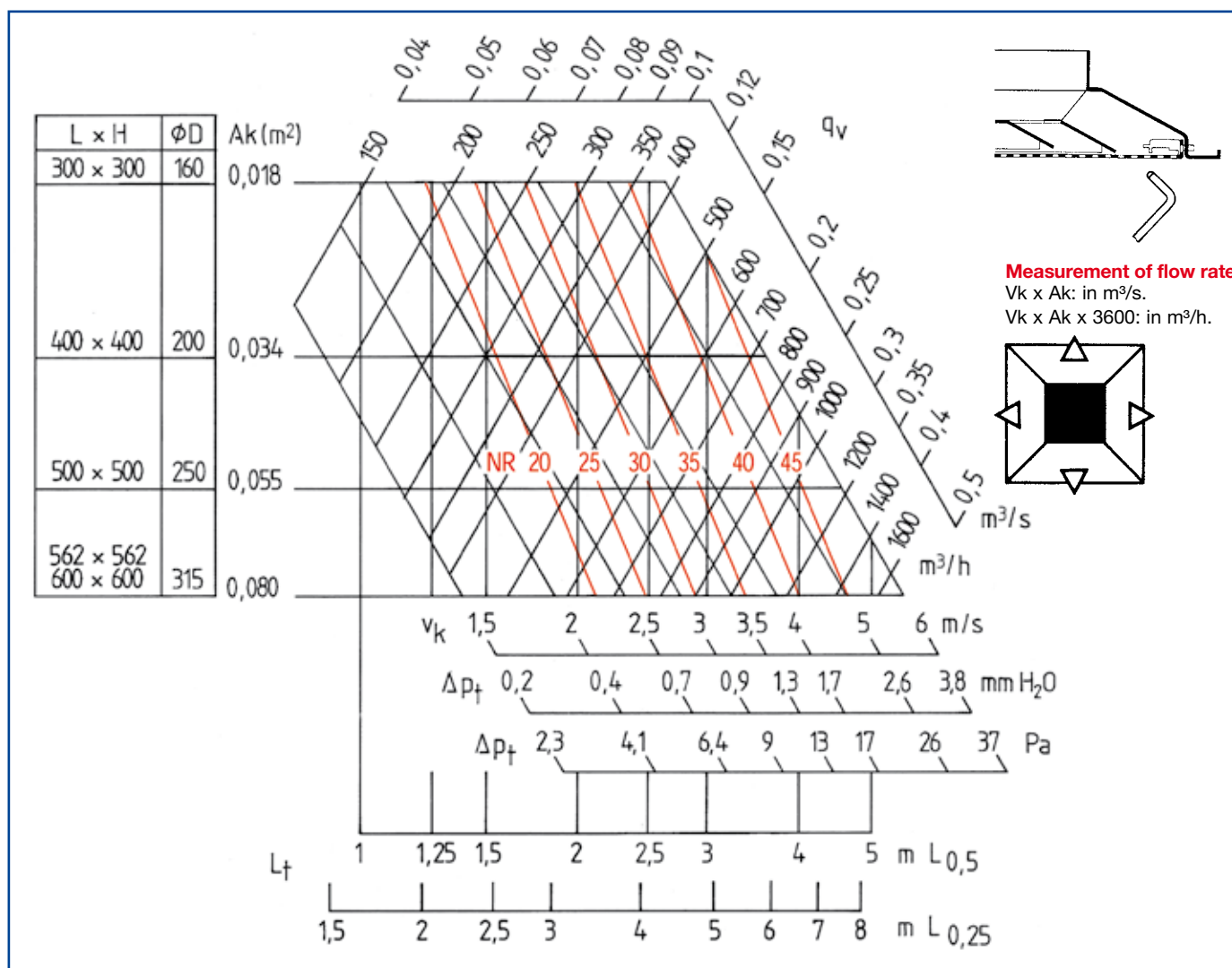
### SELECTION - AIR EXHAUST

Ak (m <sup>2</sup> )	L x H (mm)	Ø D (mm)	150 (m <sup>3</sup> /h)		300 (m <sup>3</sup> /h)		400 (m <sup>3</sup> /h)		600 (m <sup>3</sup> /h)		800 (m <sup>3</sup> /h)		1000 (m <sup>3</sup> /h)		1200 (m <sup>3</sup> /h)		1400 (m <sup>3</sup> /h)		1600 (m <sup>3</sup> /h)					
0,0200	300 x 300	160	-	-	29	-													Lw	-				
			2,1	12	4,2	48													Vk	Pa				
0,0350	400 x 400	200			-	-	24	-	34	-														
					2,5	15	3,3	28	5	60														
0,0600	500 x 500	250					-	-	23	-	31	-	36	-										
							1,9	9	2,8	19	3,8	35	4,8	55										
0,0930	562 x 562	315	Lw	-									-	-	21	-	26	-	31	-	34	-	38	-
			Vk	Pa									1,7	8	2,5	15	3	22	3,6	33	4,1	42	4,9	57

The values Lw (NR) do not include attenuation of the premises.  
Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

# Square diffusers with perforated sheet

Series 310 - 350 - 360 - 4 direction air supply with ceiling effect



The values Lw (NR) do not include attenuation of the premises.  
Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER Vt

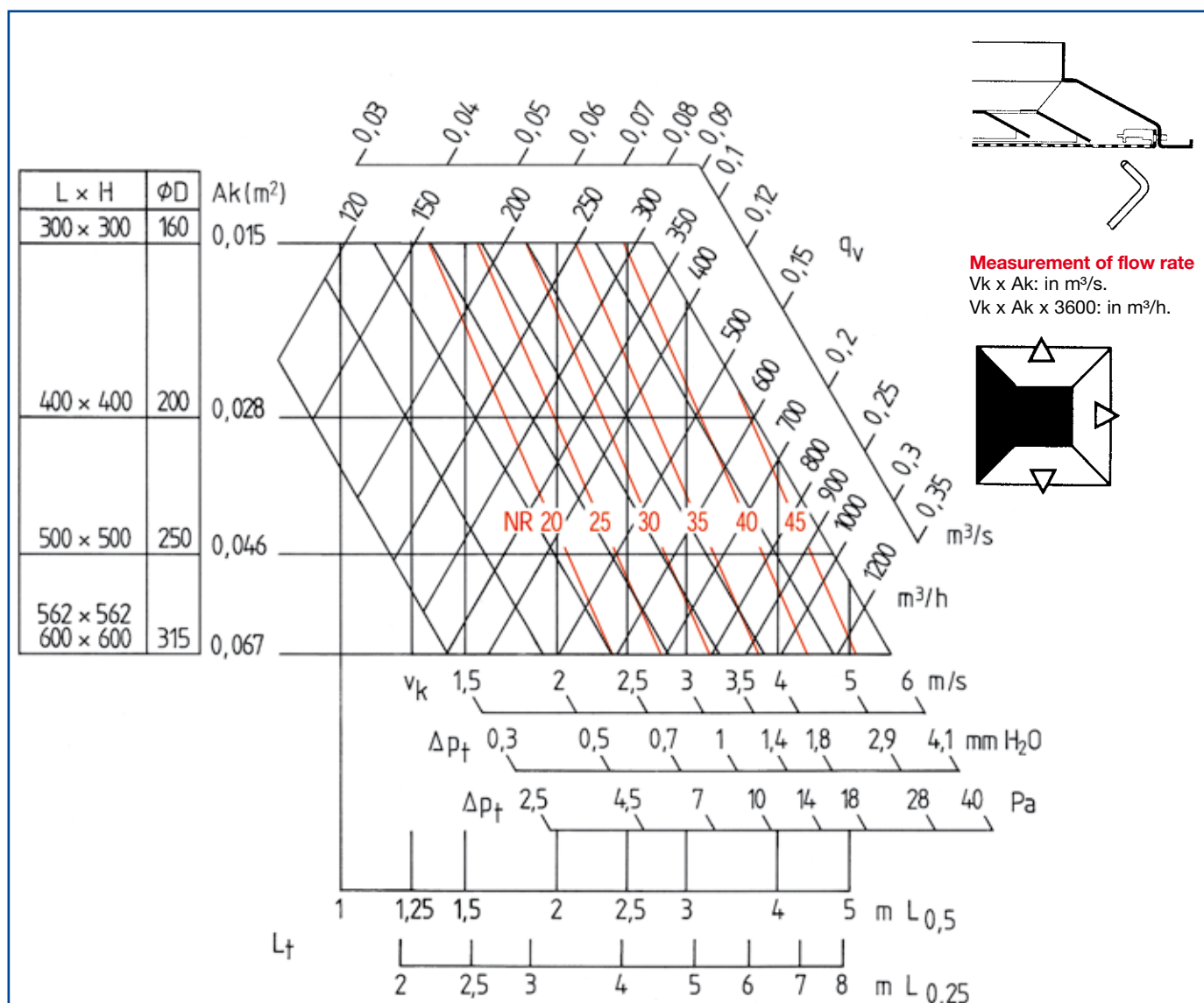
Vt (m/s)	0.25	0.375	0.5	0.625	.075
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

## CORRECTIONS FOR DAMPER

No damper	Damper 100 % open	Damper 50 % open	Damper 25 % open
$\Delta P \times 1.00$	$\Delta P \times 1.94$	$\Delta P \times 4.37$	$\Delta P \times 11.45$
Lw + 0	Lw + 7	Lw + 17	Lw + 27

# Square diffusers with perforated sheet

Series 310 - 360 - 3 direction air supply with ceiling effect



The values Lw (NR) do not include attenuation of the premises.

Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER $V_t$

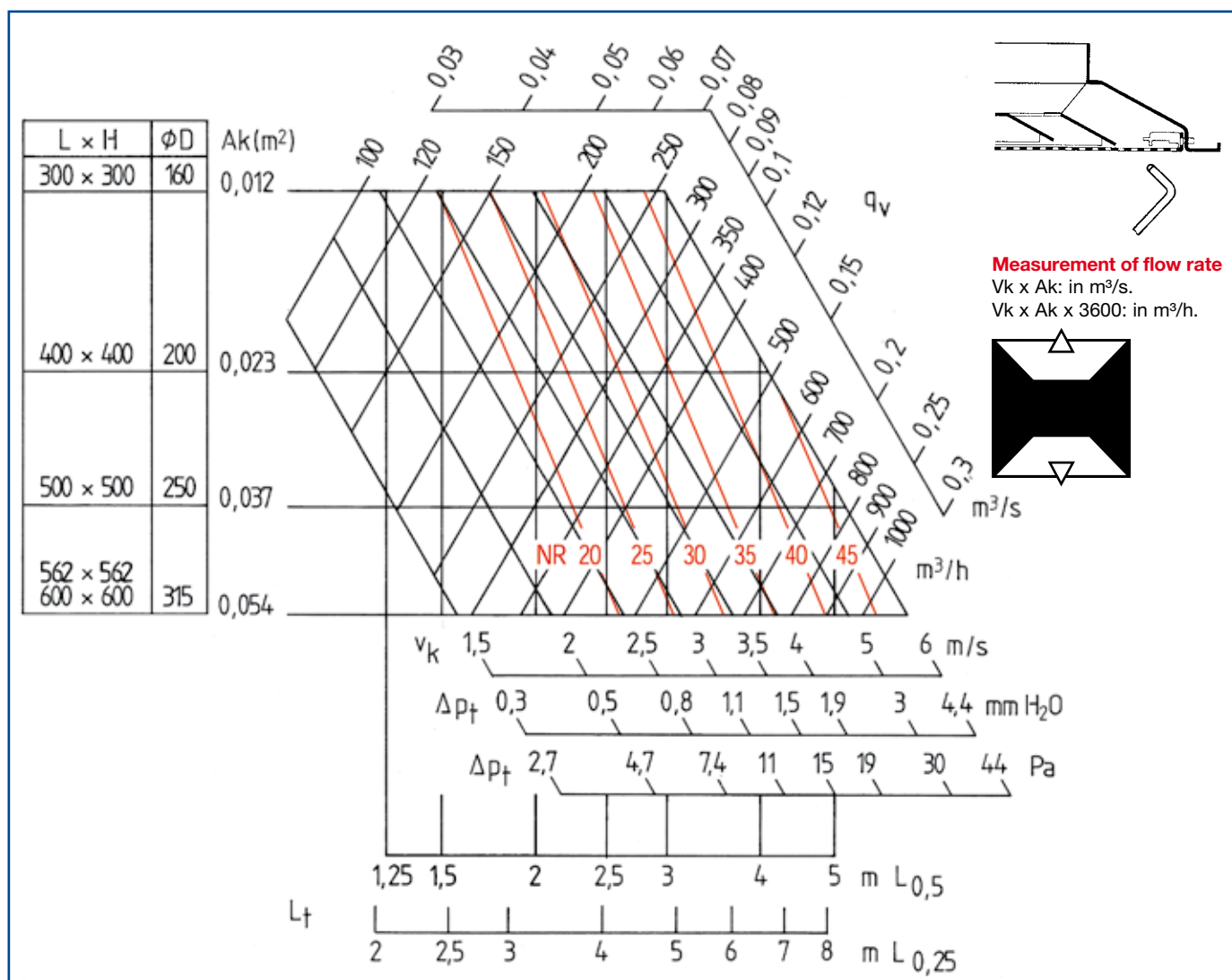
$V_t$ (m/s)	0.25	0.375	0.5	0.625	.075
$L_t$	x 2	x 1.33	x 1	x 0.8	x 0.67

## CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P \times 1.00$	$\Delta P \times 1.6$	$\Delta P \times 3.6$	$\Delta P \times 9.44$
$L_w + 0$	$L_w + 5$	$L_w + 15$	$L_w + 25$

# Square diffusers with perforated sheet

Series 310 - 360 - 2 direction air supply with ceiling effect



The values  $L_w$  (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER $V_t$

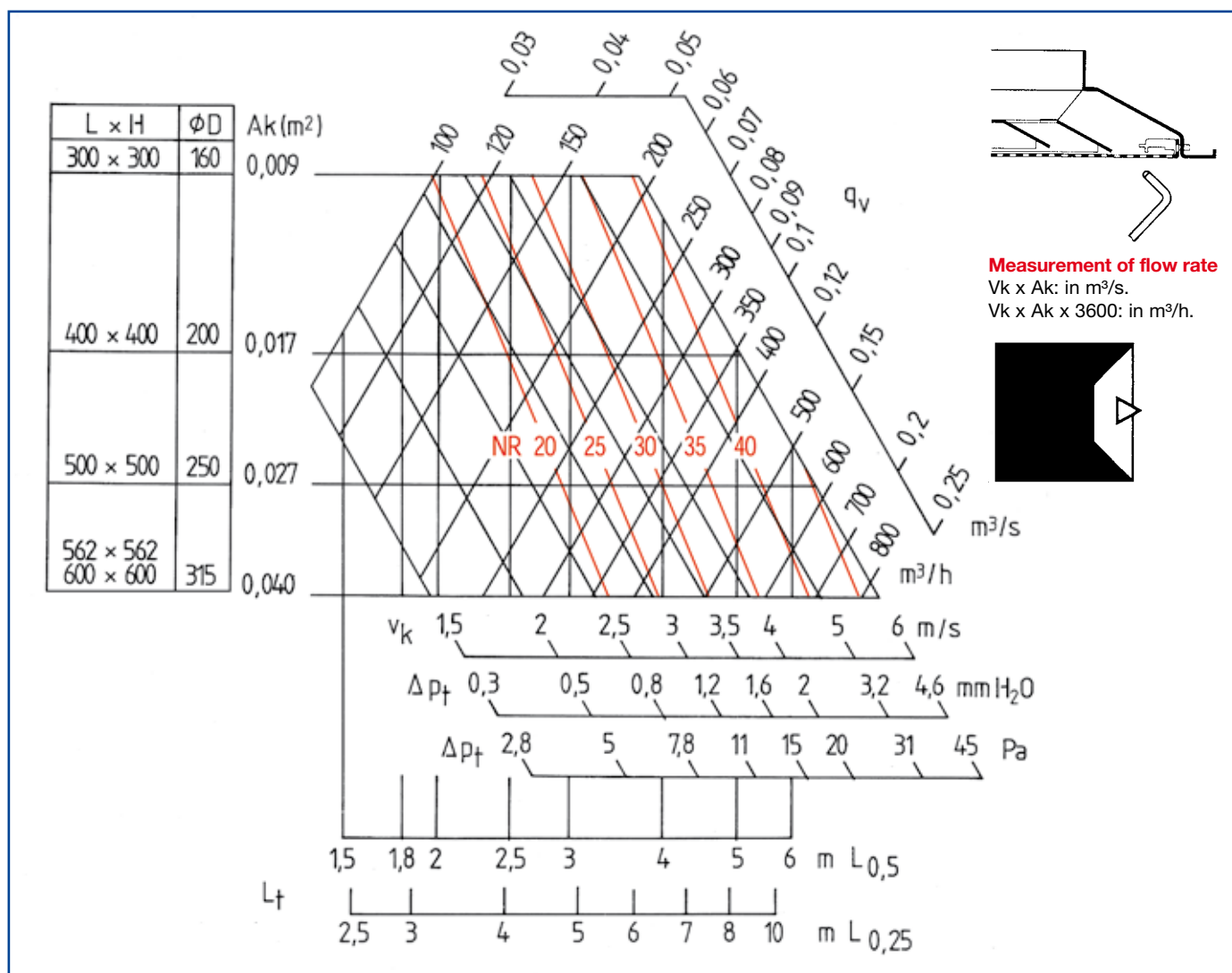
$V_t$ (m/s)	0.25	0.375	0.5	0.625	.075
$L_t$	x 2	x 1.33	x 1	x 0.8	x 0.67

## CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P \times 1.00$	$\Delta P \times 1.37$	$\Delta P \times 3.08$	$\Delta P \times 8.08$
$L_w + 0$	$L_w + 3$	$L_w + 13$	$L_w + 23$

# Square diffusers with perforated sheet

Series 310 - 360 - air supply 1 direction with ceiling effect



The values Lw (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR OTHER Vt

Vt (m/s)	0.25	0.375	0.5	0.625	.075
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

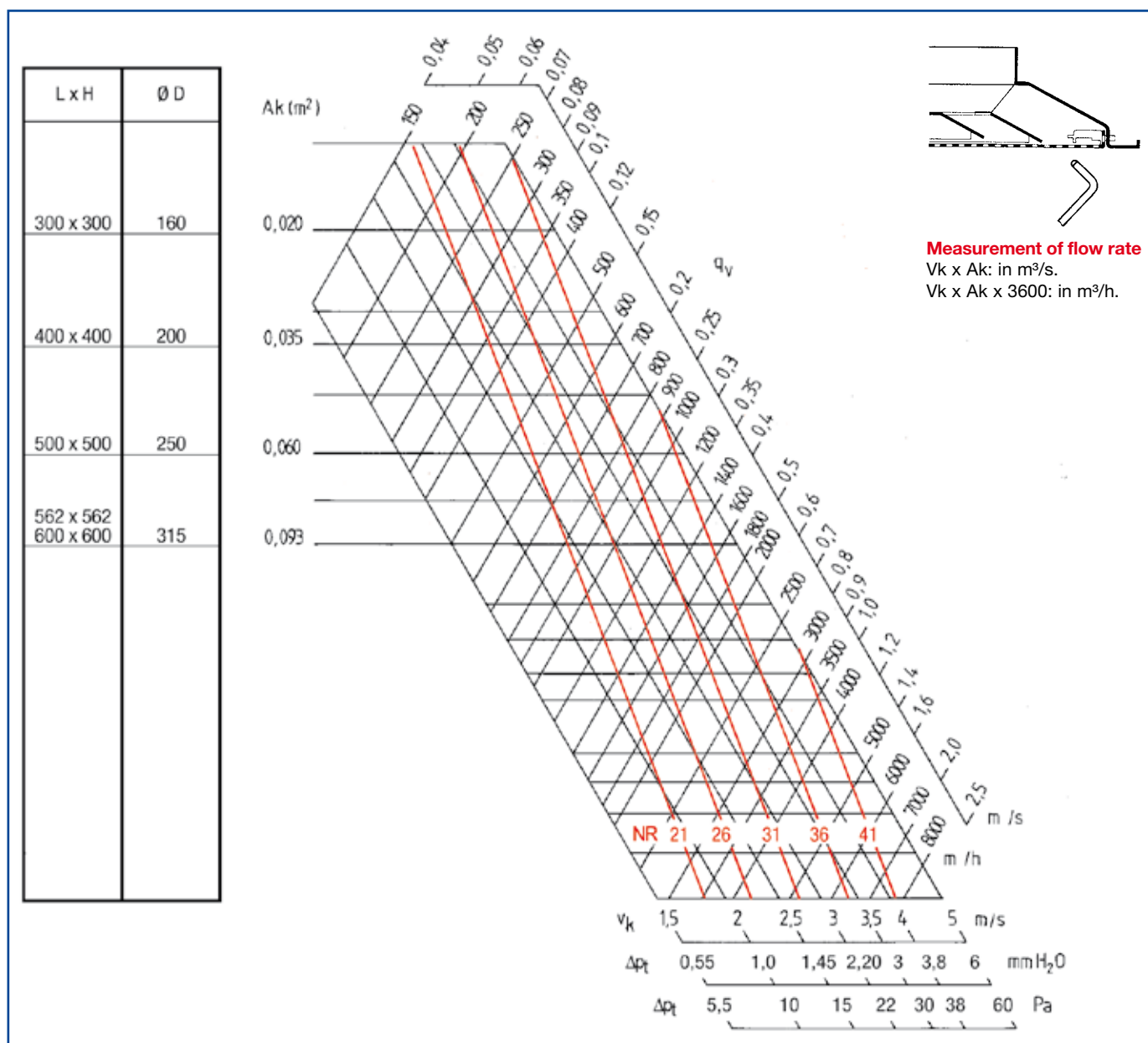
## CORRECTIONS FOR DAMPER

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



# Square diffusers with perforated sheet

Series 319 - 359 - 369 - air exhaust



The values Lw (NR) do not include attenuation of the premises.  
 Tests performed with a 'perfect' plenum in compliance with the EN 12238 standard.

## CORRECTIONS FOR DAMPER

No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P \times 1.00$	$\Delta P \times 1.19$	$\Delta P \times 2.68$	$\Delta P \times 7.02$
Lw + 0	Lw + 3	Lw + 13	Lw + 21

# Square multi-slot diffusers

## Series ALD 610 K - aluminium



ALD 610 K with central plate



ALD 610 K with suspended ceiling tile

### APPLICATION

- Air supply or air exhaust.
- Fixed horizontal four direction diffusion with 1, 2, 3 or 4 slots.
- Filter-holder air exhaust version with opening core for easy access to the filter inside.
- Ceiling diffuser designed to replace standard 600 x 600 or 675 x 675 mm suspended-ceiling tile (Tbar profiles).
- A filter can be added to the air exhaust diffuser to replace, for example, that of the connected fan-convector that can take ducts.

### DESCRIPTION

- Extruded aluminium profile external body and deflectors.
- Steel sheet central plate.  
Note: the central plate can be replaced by a suspended ceiling tile cut to the same format for improved aesthetic integration.
- Filter-holder air exhaust model with central opening core for easy access to the filter inside.
- Connection plenum in galvanized steel, with side (type RE) or top (type RT) mounted connection, single or insulated.

### FINISH

- Epoxy paint aluminium, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Hidden fixing of the diffuser to the plenum using non-removable clips.
- Assembly fixed to the concrete tile using legs located on the plenum.

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

### ACCESSORIES

- G2 or G3 plane filter for the air exhaust (M1 fire rating).
- Regulating damper mounted on the plenum with access through the diffuser.
- Insulation of the plenum on 2 or 5 sides (MI polyurethane foam).
- Additional mounted connection on the plenum.

### STANDARD DIMENSIONS

- See table opposite.

For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

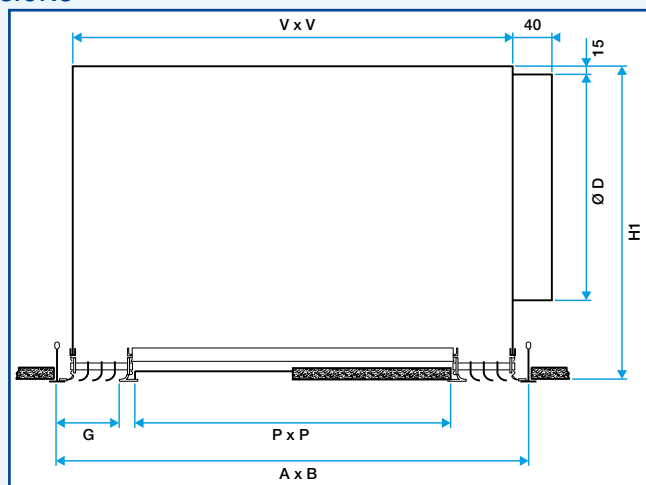
- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

See selection table on page 308.

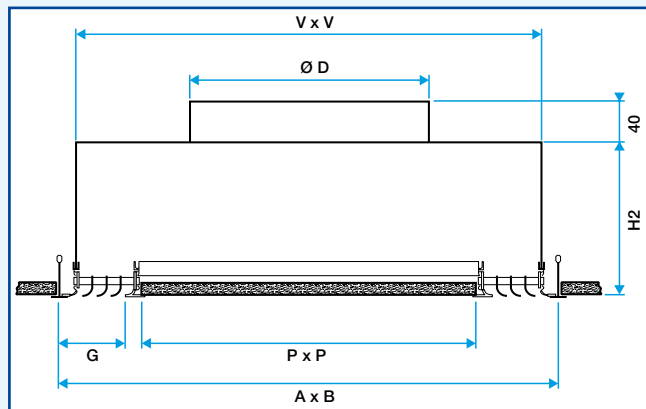
\* Dimensions for suspended ceiling tiles 600 x 600.

\* Dimensions for suspended ceiling tiles 675 x 675.

### DIMENSIONS



ALD 610 K diffuser with plenum side mounted connection



ALD 610 K diffuser with plenum top mounted connection

### STANDARD DIMENSIONS

A x B* (mm)	No. slots	P x P (mm)	V x V (mm)	H1 (mm)	H2 (mm)	G (mm)	Ø D (mm)	H1** (mm)	Ø D** (mm)
600 x 600	1	508 x 508	560 x 560	265	125	25	200	325	250
600 x 600	2	474 x 474	560 x 560	325	125	42	250	325	250
600 x 600	3	440 x 440	560 x 560	325	125	59	250	325	250
600 x 600	4	406 x 406	560 x 560	325	125	76	250	325	250
675 x 675	1	583 x 583	635 x 635	265	125	25	200	325	250
675 x 675	2	549 x 549	635 x 635	325	125	42	250	325	250
675 x 675	3	515 x 515	635 x 635	325	125	59	250	325	250
675 x 675	4	481 x 481	635 x 635	325	125	76	250	325	250

\* Nominal tile dimensions. \*\* Version opening diffuser with filter only.

# Square multi-slot diffusers

## Combined Series ALD 610 K - aluminium



ALD 610 K Combined Diffuser

### APPLICATION

- Simultaneous air supply (peripherally) and air exhaust (centrally) for all ventilation and air conditioning applications.
- Fixed horizontal four direction diffusion with 1, 2, 3 or 4 slots.
- Ceiling diffuser designed to replace standard 600 x 600 or 675 x 675 mm suspended-ceiling tile (Tbar profiles).
- A filter can be added to the air exhaust part to replace, for example, that of the connected fan-convector that can take ducts.

### DESCRIPTION

- Diffuser equipped with a double plenum for simultaneous air supply and air exhaust functions.
- Aluminium profile air supply body and deflectors.
- Central plate (for the air exhaust) comprised of a perforated steel sheet. This plate can have a filter, and in this case the central core opens for easy access.
- Double plenum in galvanized steel with two opposing mounted connection.

### FINISH

- Epoxy paint aluminium, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Hidden fixing of the diffuser to the plenum using non-removable clips.  
The assembly is delivered factory mounted.
- Assembly fixed to the concrete tile using legs located on the plenum.

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

### ACCESSORIES

- G2 or G3 plane filter for the air exhaust zone (M1 fire rating).
- Insulation of the double plenum on 5 sides (M1 polyurethane foam).
- Air supply and air exhaust mounted connection positioned at 90°.

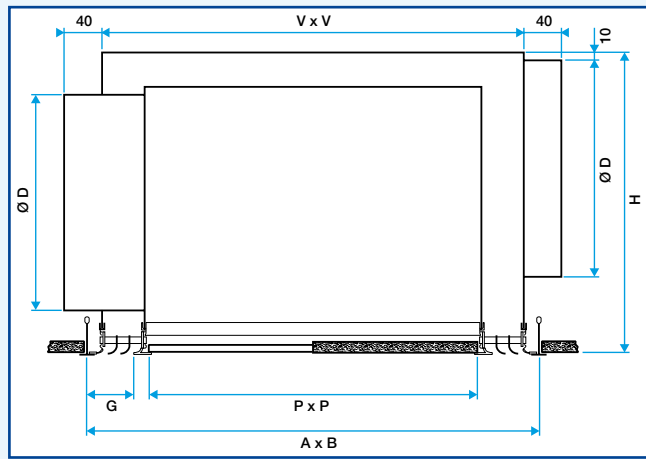
### STANDARD DIMENSIONS

- See table opposite.
- For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See Mixing Capacity (MC) at the end of the 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 tile dimensions.

# Square multi-slot diffusers

## Series ALD 610 K - Combined ALD 610 K

### Range with choice of options ALD 610 K

Dimensions	No. of slots	Diffuser ALD 610 K Code	Side mounted connection plenum RE610 Code	Top mounted connection plenum RT610 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	11003336
675 x 675	2	11002867	11003329	11003339
675 x 675	3	11002868	11003329	11003339
675 x 675	4	11002869	11003329	11003339

### Options available

Diffuser	Finish	Plenum
<ul style="list-style-type: none"> <li>• With or without full central sheet.</li> <li>• Opening core with filter.</li> </ul>	<ul style="list-style-type: none"> <li>• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>• Additional mounted connection.</li> <li>• Insulation on 2 or 5 sides.</li> <li>• Filter holder.</li> <li>• Damper on mounted connection (not fitted with filter holder option.)</li> </ul>

### Range with choice of options Combined ALD 610 K

Dimensions	No. of slots	Combined Diffuser ALD 610 K Code	Double plenum R-RE 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

### Options available

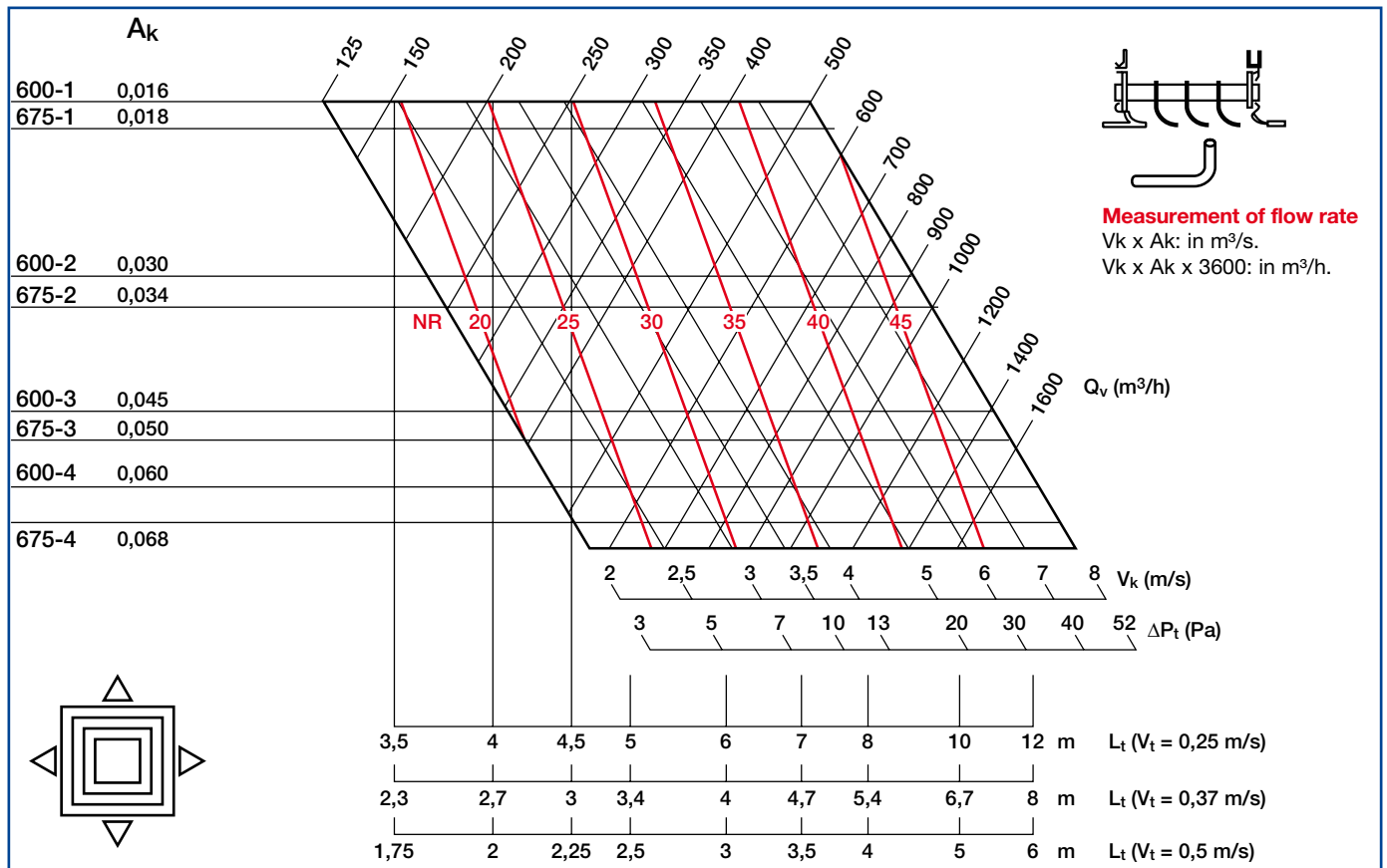
Diffuser	Finish	Plenum
<ul style="list-style-type: none"> <li>• Opening core with filter.</li> </ul>	<ul style="list-style-type: none"> <li>• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>• Mounted connection positioned at 90°.</li> <li>• Insulation on 5 sides.</li> <li>• Filter holder.</li> </ul>





# Square multi-slot diffusers

## Series ALD 610 K - air supply with ceiling effect



The values L<sub>w</sub> (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

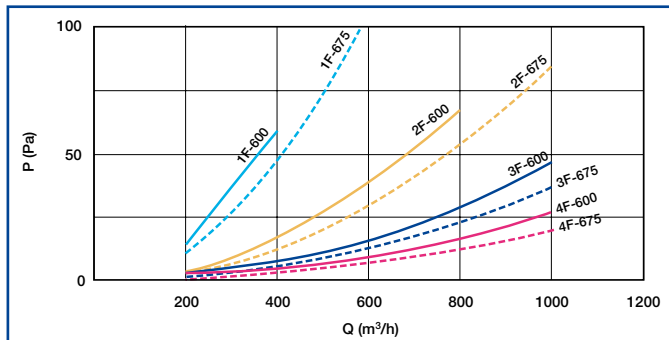
### CORRECTIONS FOR OTHER V<sub>t</sub>

V <sub>t</sub> (m/s)	0.25	0.375	0.5	0.625
L <sub>t</sub>	x 1	x 0.67	x 0.5	x 0.4

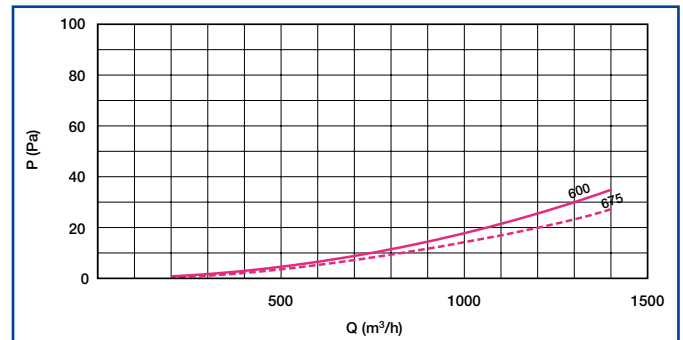
### CORRECTIONS FOR AIR EXHAUST

L <sub>w</sub> (NR)	- 5
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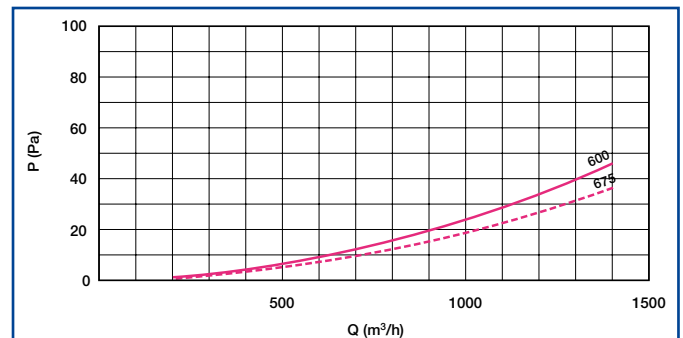
### AIR EXHAUST PART PRESSURE DROP - WITHOUT FILTER



### PRESSURE DROP FILTER ONLY - G2

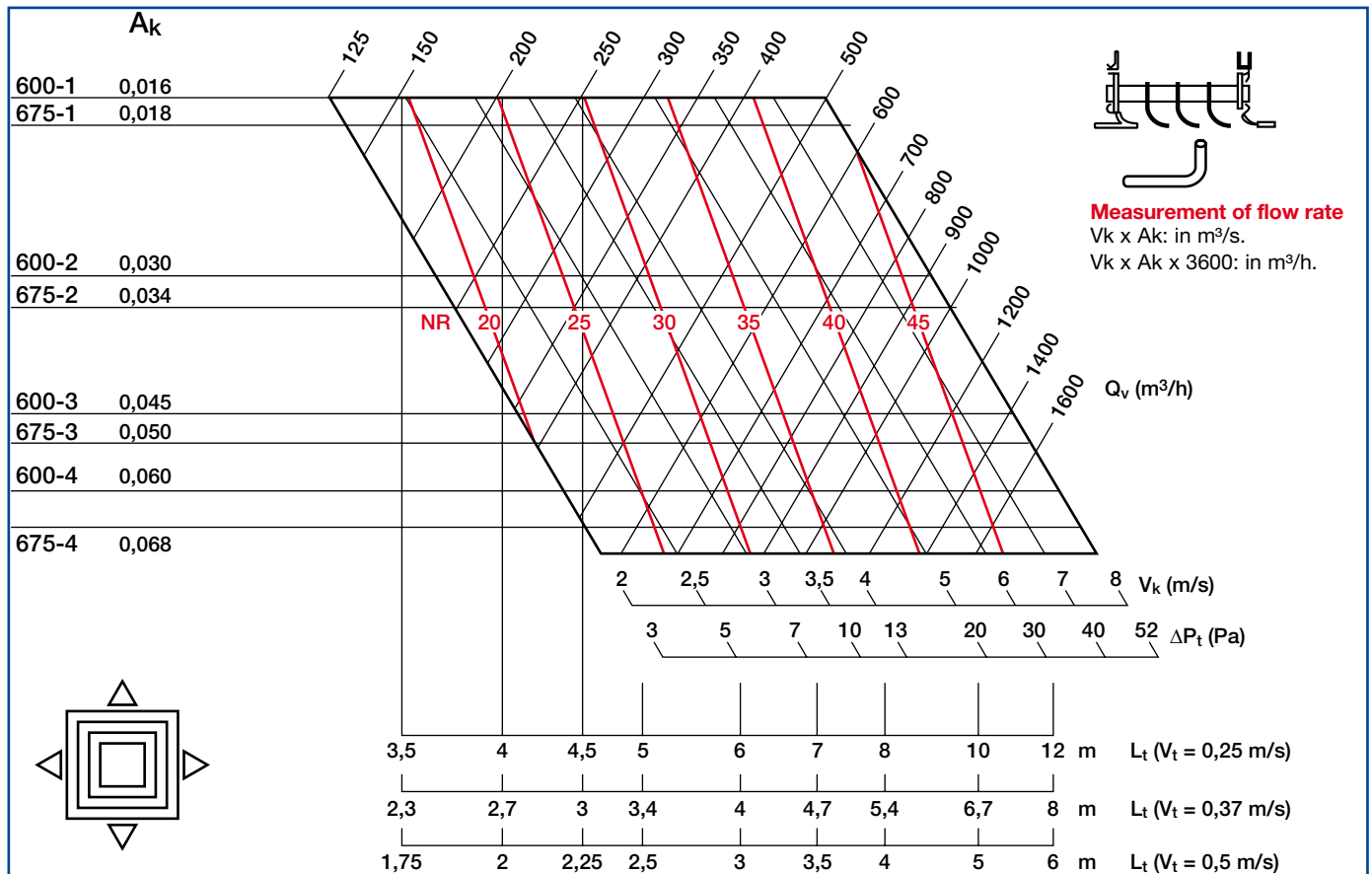


### PRESSURE DROP FILTER ONLY - G3



# Square multi-slot diffusers

## Combined Series ALD 610 K - air supply with ceiling effect

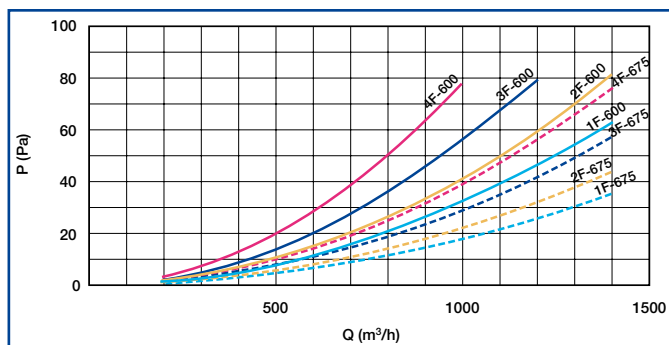


The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

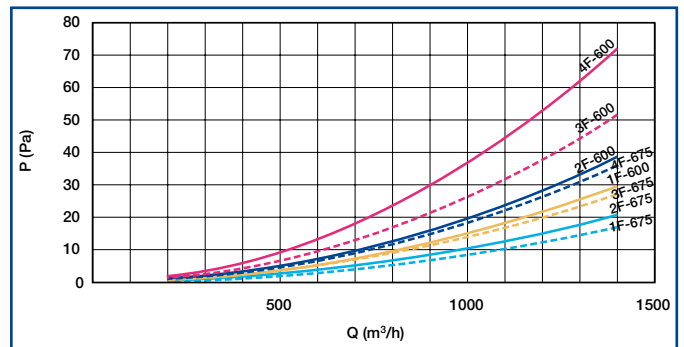
### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.67	x 0.5	x 0.4

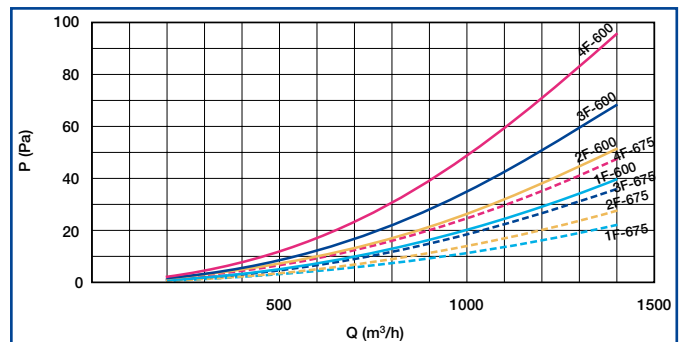
### AIR EXHAUST PART PRESSURE DROP - WITHOUT FILTER



### PRESSURE DROP FILTER ONLY - G2



### PRESSURE DROP FILTER ONLY - G3





# Ceiling diffusers

## Mounting in suspended and suspension ceilings

### Ceiling mounting

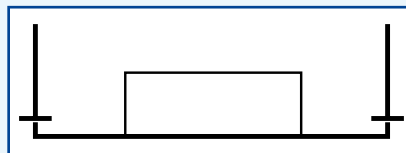
#### POSSIBLE MOUNTING

The ceiling diffusers can be incorporated in suspended ceiling in a number of ways.

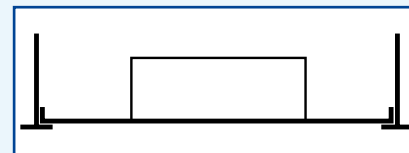
- Mounted on the under-side.
- Mounted on Tbar framework.
- Mounted on Fine-Line framework (or Microlook from the Armstrong® range).

In all cases the diffuser + plenum assembly must be properly attached to the building structure. Its weight must not be borne by the suspended ceiling framework. You can, for example, use the quick suspension cables shown below.

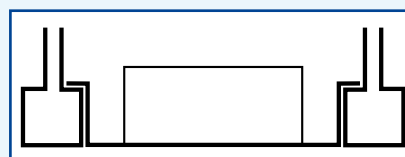
#### MONTAGE EN PLAFOND



Mounted on the under-side.



Mounted on Tbar framework.



Mounted on Fine-Line or MicroLook framework

### Suspension



Quick suspension cables

#### APPLICATION

- Suspension and securing of plenums + diffusers.

#### DESCRIPTION

- Flexible galvanised steel cables with a loop at one end. The other end slides into the locking system, so the object is supported in position during and after installation.
- HK hook:
  - dowel-less attachment hook for solid or cellular concrete tiles, slabs...
  - stainless-steel hook fitting in an M8 hole,
  - operating load: 78 kg.

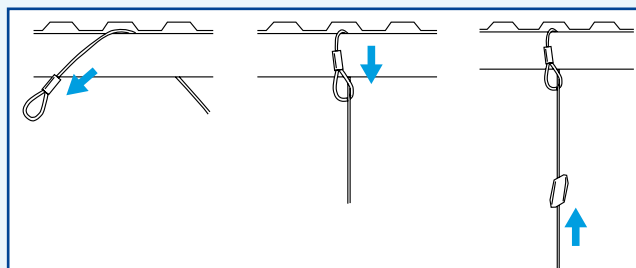
#### RANGE

Name	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
<b>Conditioned in 10-piece bags</b>	
100 dowel-less concrete fixing-hook bag	11091095

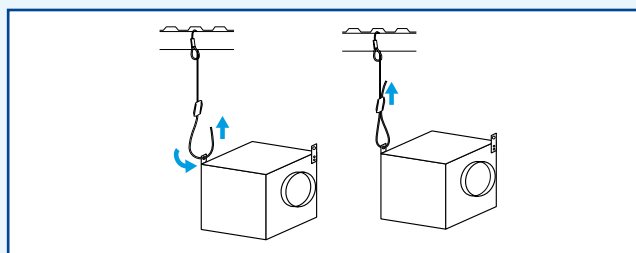
#### USAGE

- Installation
  - 1) Slide the cable around the element of the building framework then through the loop.
  - 2) Put the cable in the locking system groove.
  - 3) Slide the cable around the duct then into the other locking system groove.
- Tool provided for unblocking and for height adjustments.

#### CÂBLE DE SUSPENSION RAPIDE



Attachment to the structure



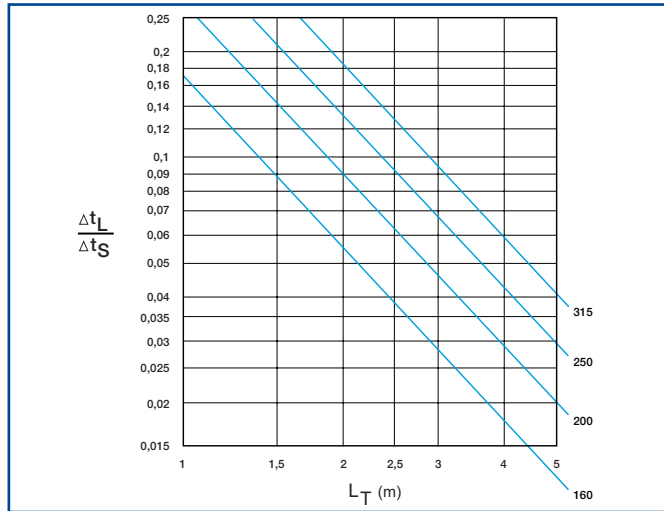
Hooking to the plenum

Cable	Diameter	Admissible load
N°1	1 mm	0 - 10 kg
N°2	2 mm	10 - 45 kg

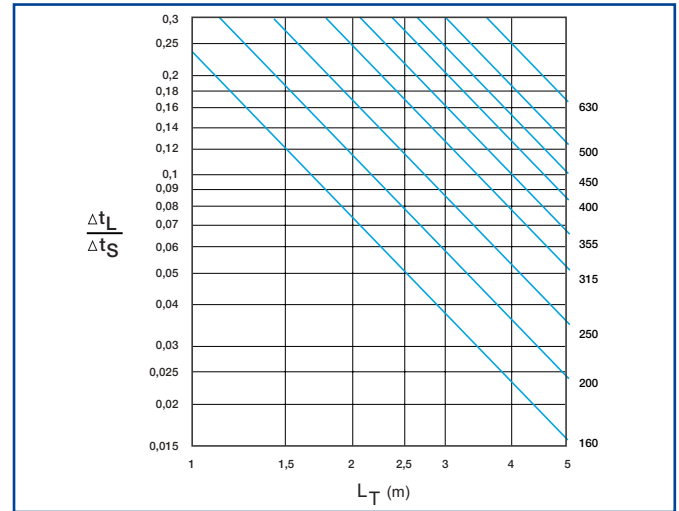
# Ceiling diffusers

## Mixing rates (MR)

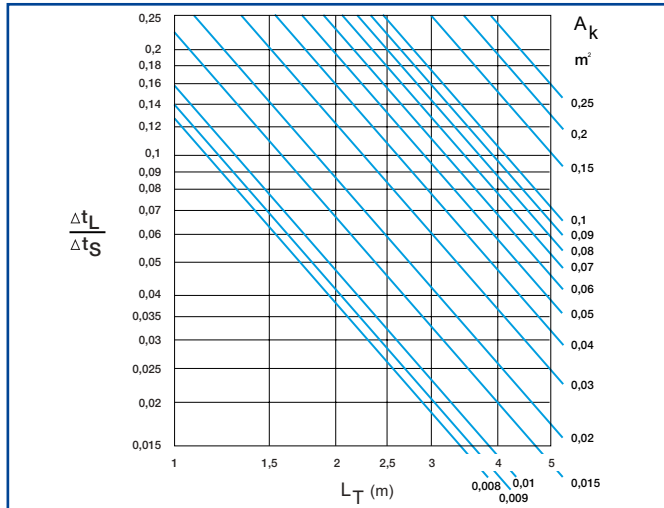
MR for diffuser series 831



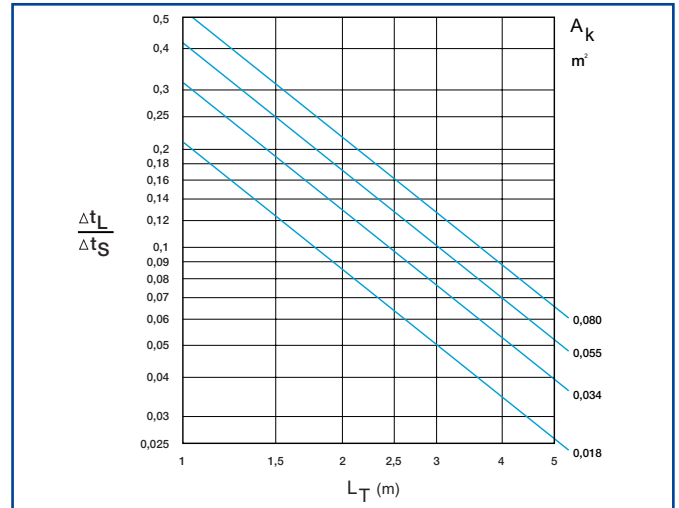
MR for diffuser series 842



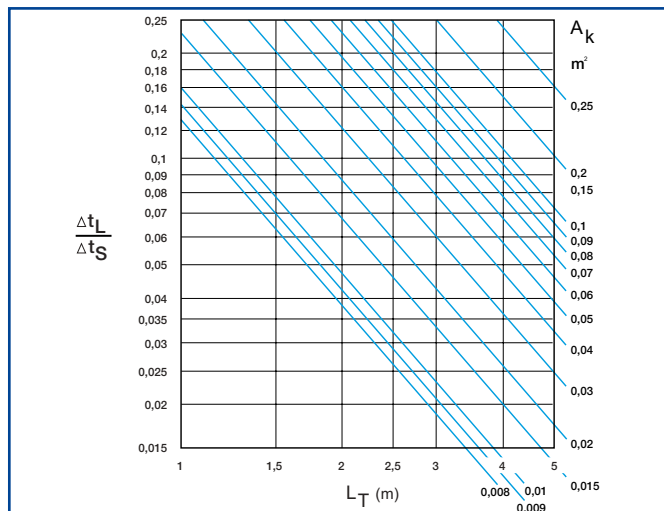
MR for diffuser series 500



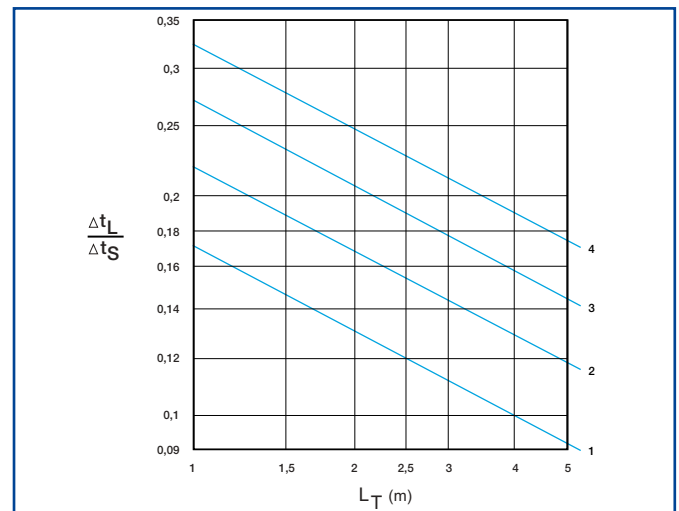
MR for diffuser series 300



MR for diffuser series 700



MR for diffuser series ALD 610 K



### Symbols

$L_t$ (m)	Throw in m
$\Delta t_L$ (°C)	Difference between the end of throw temperature and room temperature (in °C)
$\Delta t_S$ (°C)	Difference between the air supply temperature and room temperature (in °C)
$MR = \Delta t_L / \Delta t_S$	Ratio of temperature differences. This value is indicative of the capacity of the terminal to 'rapidly' mix the air taken in at room temperature.
Example with air supply at 15°C and room temperature at 25°C	The temperature in the air jet at X (m) of the terminal = 25 - 10 x MR (°C)

# Slot diffusers

Adjustable slot diffusers (aluminium) - p 146



Diffuseurs for Armstrong® Tech Zone - p 160



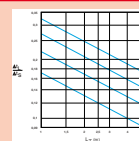
Fixed slot diffusers - p 166



Small flow-rate fixed slot diffusers - p 172



Slot diffusers mixing rate - p 174



# Adjustable aluminium slot diffusers

Series AG 270 - 280 - 290 and AN 270 - 280 - 290 - aluminium



AG 282 BDE

## APPLICATION

- Air supply or air exhaust.
- Adjustable diffusion using two directional deflectors on each slot, vertical air supply possible.
- Ceiling mounted.
- Linear strips version possible.

## DESCRIPTION

- Extruded aluminium body and deflectors.
- Model AG : frame width 28.5 mm.
- Model AN : frame width 20 mm.
- Type 270 D : slot width 12.5 mm.
- Type 280 D : slot width 20 mm.
- Type 290 D : slot width 25 mm.

Comment : types 270, 280 and 290 : diffusers not equipped with deflectors to be used for air exhaust only.

## FINISH

- Anodised aluminium body, natural glossy tone.
- Aluminium deflectors painted RAL9005 black.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

## FIXING

- S2 : hidden screw fixing, accessible via the diffuser sides.
- S3 : hidden screw fixing and clips, accessible via the bottom of the diffuser.

For more information refer to p. 152

## ACCESSORIES

- White deflectors (D types only).
  - B : slide damper, in black galvanized sheet steel. Adjustable from the diffuser front. Delivered installed on the diffuser.
  - Galvanized steel connection plenum with side connection casing. Simple or insulated version.
- For more information see p. 151

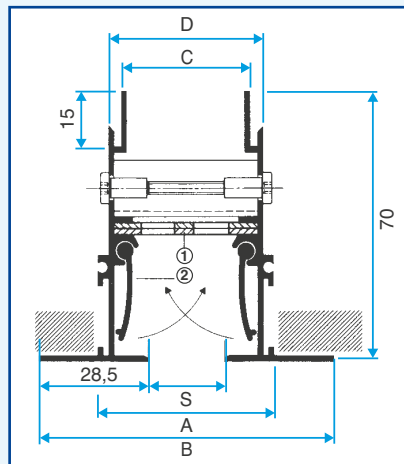
## STANDARD DIMENSIONS

- Available from one to eight slots.
  - Length from 200 to 2000 mm in steps of 5 mm.
- Above the grille is made up from pieces of 2000 mm in the middle and 2 end pieces of same length always between 1000 mm and 2000 mm.
- For more information see p. 150 and the RANGE pages hereafter.

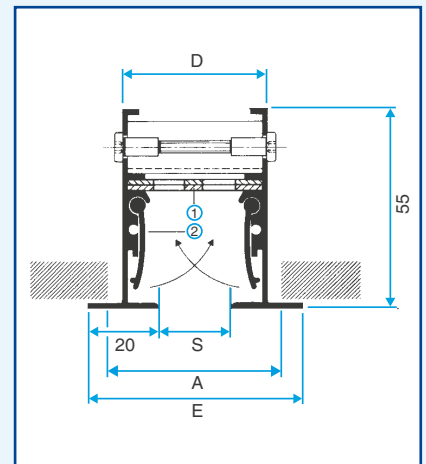
## TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- See mixing rates at the end of the chapter.

## DIMENSIONS



Frame type AG with width of 28.5 mm fixing S2



Frame type AN with width of 20 mm fixing S3  
1 : slide damper  
2 : deflectors

## DIMENSIONS AG AND AN 270 : S = 12.5 mm

Number of slots	A (mm)	B (AG) (mm)	C (mm)	D (mm)	E (AN) (mm)
1	40	69	26	33	52
2	70	100	56	63	83
3	101	131	87	94	114
4	132	162	118	125	145
5	163	193	149	156	176
6	194	224	180	187	207
7	225	255	210	218	238
8	256	286	241	249	269

## DIMENSIONS AG AND AN 280 : S = 20 mm

Number of slots	A (mm)	B (AG) (mm)	C (mm)	D (mm)	E (AN) (mm)
1	47	77	33	40	60
2	85	115	71	78	98
3	124	154	109	117	137
4	162	192	148	155	175
5	200	231	186	193	214
6	239	269	224	232	252
7	277	308	262	270	291
8	315	346	301	309	329

## DIMENSIONS AG AND AN 290 : S = 25 mm

Number of slots	A (mm)	B (AG) (mm)	C (mm)	D (mm)	E (AN) (mm)
1	52	82	38	45	65
2	95	125	81	88	108
3	139	169	124	132	152
4	182	212	168	175	195
5	225	256	211	218	239
6	269	299	254	262	282
7	312	343	297	305	326
8	356	386	341	349	369

# Adjustable aluminium slot diffusers

## Series AO 280 - AO 290 - aluminium



Diffuser AO 282 BDE



### APPLICATION

- Air supply or air exhaust.
- Adjustable diffusion using two directional deflectors on each slot, possibility of vertical air supply.
- Diffuser designed without frame for perfect integration in metallic ceilings.

### DESCRIPTION

- Extruded aluminium body and deflectors.
  - Model AO : no frame around diffuser.
  - Type 280 D : slot width 20 mm.
  - Type 290 D : slot width 25 mm.
- Comment : types 280 and 290 : diffusers not equipped with deflectors to be used in air exhaust only.

### FINISH

- Body in white aluminium RAL9010.
- Aluminium deflectors painted RAL9005 black.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- S2 : diffuser attached to plenum by hidden screw, accessible via the diffuser sides.
- Assembly attached to the concrete slab using legs located on the plenum.

For more information see p. 152

### ACCESSORIES

- White deflectors (D types only).
- B : slide damper, in black galvanized sheet steel. Adjustable from the diffuser front. Delivered installed on the diffuser.
- Galvanized steel connection plenum with side connection casing. Simple or insulated version.

For more information see p. 151

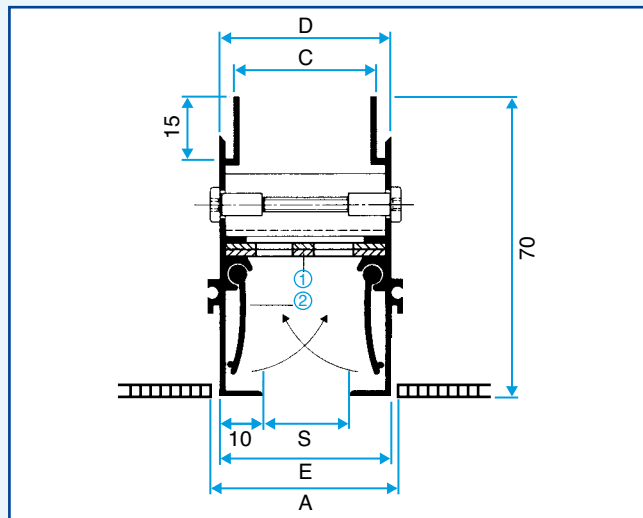
### STANDARD DIMENSIONS

- Available from one to eight slots.
  - Length from 200 à 2000 mm in steps of 5 mm.
- Above the grille is made up from pieces of 2000 mm in the middle and 2 end pieces of same length always between 1000 mm and 2000 mm.
- For more information see p. 150 and the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- See mixing rates at the end of the chapter.

### DIMENSIONS



Frame type AO fixing S2  
1 : slide damper  
2 : deflectors

### DIMENSIONS AO 280 : S = 20 mm

Number of slots	A (mm)	C (mm)	D ou E (mm)
1	47	33	40
2	85	71	78
3	124	109	117
4	162	148	155
5	200	186	193
6	239	224	232
7	277	262	270
8	315	301	309

### DIMENSIONS AO 290 : S = 25 mm

Number of slots	A (mm)	C (mm)	D ou E (mm)
1	52	38	45
2	95	81	88
3	139	124	132
4	182	168	175
5	225	211	218
6	269	254	262
7	312	297	305
8	356	341	349

# Adjustable aluminium slot diffusers

## Series AG / AN 280 - 290 - opening with filter - aluminium



Diffuser AG 284 with plenum and filter  
- closed position



Diffuser AG 284 with plenum and filter  
- open position

### APPLICATION

- Air exhaust only.
- Specially adapted to most fan coil units connected to ducts on the market.
- Ceiling mounted.
- Integrated filter in replacement of the fan coil unit filter.
- Core opening for easy access to the filter located in the plenum.

### DESCRIPTION

- Body in extruded aluminium.
- Model AG : frame width 28.5 mm.
- Model AN : frame width 20 mm.
- Type 280 : slot width 20 mm.
- Type 290 : slot width 25 mm.
- Core opening mounted on hinges.
- Opening / closing by push-push system.

### FINISH

- Anodised aluminium body, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- S2 : hidden screw fixing, accessible via the diffuser sides.
- S7 : hidden screw fixing and bridge guides, accessible via the bottom of the diffuser.
- Assembly attached to the concrete slab using legs located on the plenum.

For more information see p. 152

### ACCESSORIES

- 1/2 B : aesthetic casing in black galvanized steel to mask the inside of the slots. Delivered installed on the diffuser.
- Galvanized steel connection plenum with side connection casing. Simple or insulated version.
- Filter G3 for the air exhaust (fire rating M1).

For more information see p. 151

### STANDARD DIMENSIONS

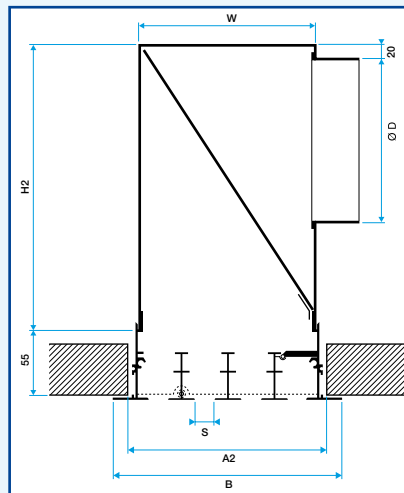
- Available with 4 to 8 slots.
- Length from 400 to 1350 mm in steps of 5 mm.
- No possibility of linear bars.

For more information refer to RANGE pages hereafter.

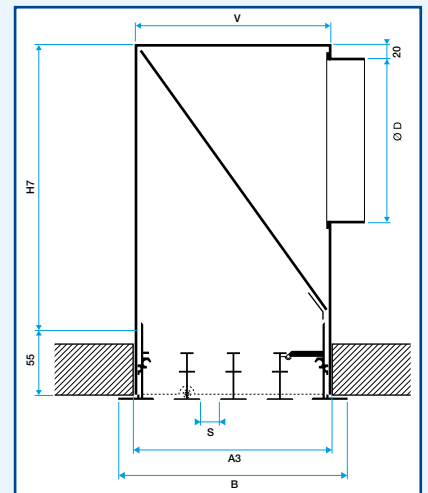
### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.

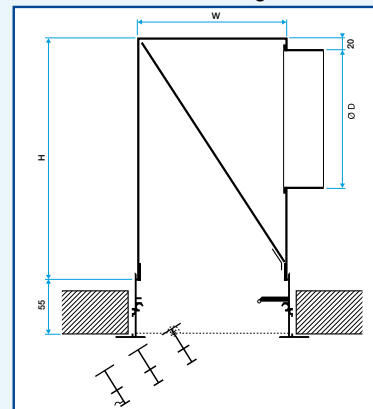
### DIMENSIONS



Diffuser with plenum and filter.  
Fixing S2



Diffuser with plenum and filter.  
Fixing S7.



Diffuser in open position. Fixing S2.

### DIMENSIONS AG AND AN 280 + O : S = 20 mm

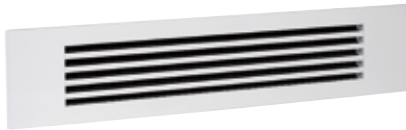
Number of slots	A2 (mm)	A3 (mm)	B (AG) (mm)	B (AN) (mm)	V (mm)	W (mm)	H7 (mm)	H2 (mm)	Ø D (mm)
4	162	180	192	175	175	149	295	310	250
5	200	218	231	214	213	187	295	310	250
6	239	257	269	252	252	225	360	310	250
7	277	295	308	291	290	263	360	375	315
8	315	333	346	329	328	302	360	375	315

### DIMENSIONS AG AND AN 290 + O : S = 25 mm

Number of slots	A2 (mm)	A3 (mm)	B (AG) (mm)	B (AN) (mm)	V (mm)	W (mm)	H7 (mm)	H2 (mm)	Ø D (mm)
4	182	200	212	195	195	169	295	310	250
5	225	243	256	239	238	212	295	310	250
6	269	287	299	282	282	255	360	375	315
7	312	330	343	326	325	298	360	375	315
8	355	373	386	369	368	342	360	375	315

# Adjustable aluminium slot diffusers

## Series AN 280 TP - AN 290 TP - aluminium



Diffuser AN 285 D TP 1200 x 300



Diffuser AN 294 TP 600 x 600

### APPLICATION

- Air supply or air exhaust.
- Adjustable diffusion using two directional deflectors on each slot, possibility of vertical air supply.
- Opening air exhaust models with filter in replacement of the filter of the fan coil units connected to ducts (see previous page).
- Diffusers planned to replace a standard suspended ceiling tile of type 'Tbar' or 'fine-line'.

### DESCRIPTION

- Extruded aluminium body and deflectors.
- Ceiling compensation plate in galvanized steel.
- Type 280 D TP : slot width 20 mm.
- Type 290 D TP : slot width 25 mm.

Comment : types 280 TP and 290 TP, diffusers not equipped with deflectors to be used in air exhaust only. Exist in opening models with filter with core mounted on hinges and push-push closing (see previous page).

### FINISH

- Epoxy paint, RAL9010 white.
- Aluminium deflectors painted RAL9005 black.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- S2 : hidden screw fixing, accessible via the diffuser sides.

For more information see p. 152

### ACCESSORIES

- White deflectors (D types only).
  - B : slide damper, in black galvanized steel. Adjustable from the diffuser front. Delivered installed on the diffuser (Not available on opening models).
  - 1/2 B : attractive casing in black galvanized steel to mask the inside of the slots. Delivered installed on the diffuser (opening models only).
  - Galvanized steel plenum with side mounted connection. Simple or insulated version.
  - Filter G3 for the air exhaust (fire rating M1).
- For more information see p. 151

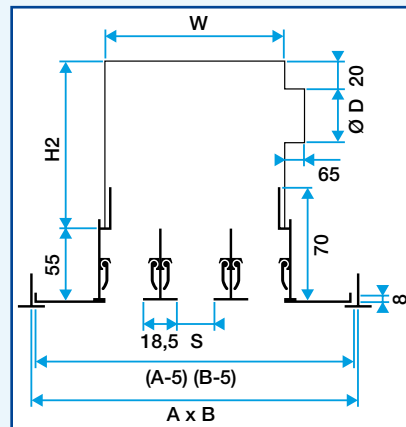
### STANDARD DIMENSIONS

- Width from 1 to 8 slots (4 to 8 on opening models).
  - Adapted to ceilings from 600x300 to 1350x675 mm.
  - Length of slots (L) adjustable on request (L standard is the maximum possible in the ceiling plate).
- For more information refer to RANGE pages hereafter.

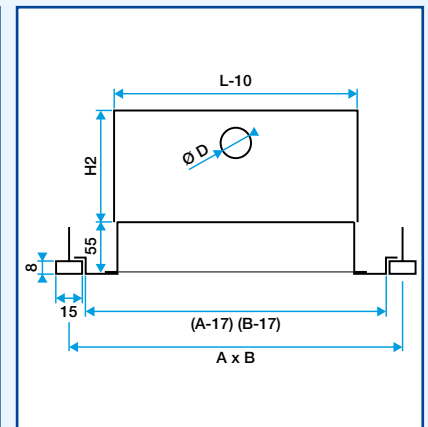
### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- See mixing rates at the end of the chapter.

### DIMENSIONS



Mounted on ceiling with Tbar frame



Mounted on ceiling with fine-line frame

### DIMENSIONS AN 280 TP: S = 20 mm

Number of slots	W (mm)	H2 (mm)	H2 + filtre (mm)	Ø D (mm)
1	34	175	185	125
2	72	210	220	160
3	110	250	260	200
4	149	300	310	250
5	187	300	310	250
6	225	300	310	250
7	263	365	375	315
8	302	365	375	315

### DIMENSIONS AN 290 TP: S = 25 mm

Number of slots	W (mm)	H2 (mm)	H2 + filtre (mm)	Ø D (mm)
1	39	210	220	160
2	82	250	260	200
3	125	250	260	200
4	169	300	310	250
5	212	300	310	250
6	255	365	375	315
7	298	365	375	315
8	342	365	375	315

### AVAILABLE SIZES TILES

A x B (mm)*	Max number of slots				(L) maxi (mm)	
	AN 280 TP		AN 290 TP		Tbar	Fine line
	Tbar	Fine line	Tbar	Fine line		
600 x 300	6	6	6	5	570	558
900 x 300	6	6	6	5	870	858
1200 x 300	6	6	6	5	1170	1158
1350 x 300	6	6	6	5	1320	1308
600 x 600	8	8	8	8	570	558
1200 x 600	8	8	8	8	1170	1158
675 x 675	8	8	8	8	645	633
1350 x 675	8	8	8	8	1320	1308

\* Dimension of the tile

# Adjustable aluminium slot diffusers

## Series AG/AN/AO 270 - 280 - 290 - assembling



Corner piece at 90°

### LINEAR BARS

- Linear bars possible (alignment profiles provided) or continuous arrangements with aesthetic corner pieces (non-diffusing).

For a complete linear bar order :

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

For a separate components order :

- Overall median component =  $L_m$
- Overall left or right component =  $L_{gd} + a/2$

Note :

Profile AG :  $a=40$

Profil AN :  $a=20$

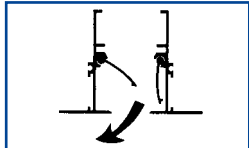
AO profile :  $a=0$  and overall =  $L-17$

$L_m \leq 2000$  mm

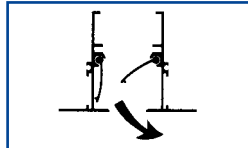
$1000 \leq L_{gd} \leq 2000$

### AIR SUPPLY DIRECTIONS

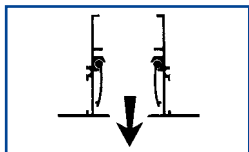
- Each slot has two deflectors to adjust air flow direction.



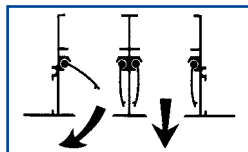
Left horizontal



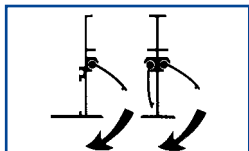
Right horizontal



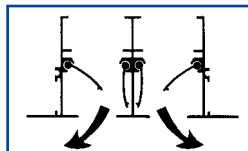
Vertical



Vertical and left horizontal

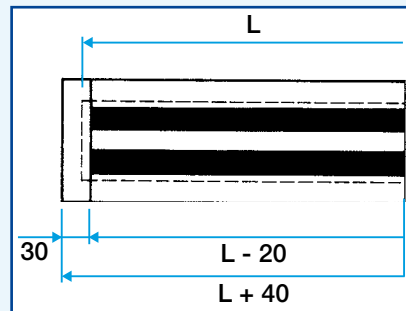


Left horizontal (x 2)

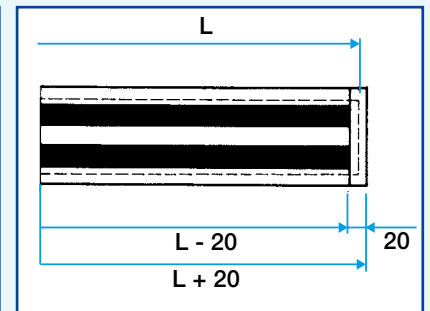


Left and right horizontal

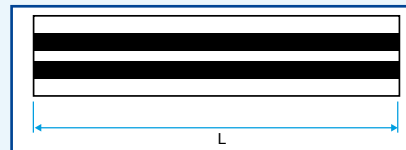
### DIMENSIONS



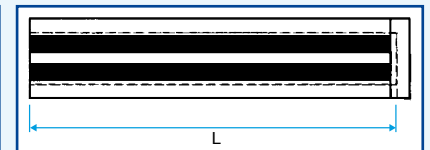
Profile type AG  
L nominal dimension



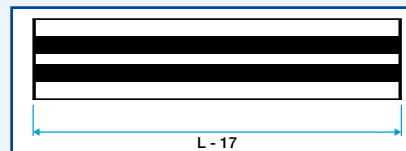
Profile type AN  
L nominal dimension



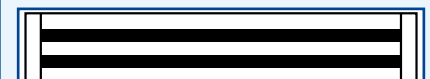
Median component without end pieces  
L nominal dimension



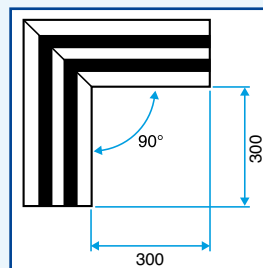
Component with end piece (right or left)  
L nominal dimension



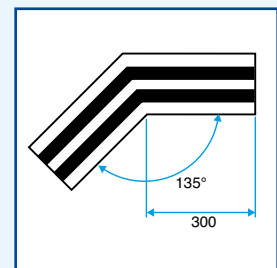
Type AO  
L nominal dimension



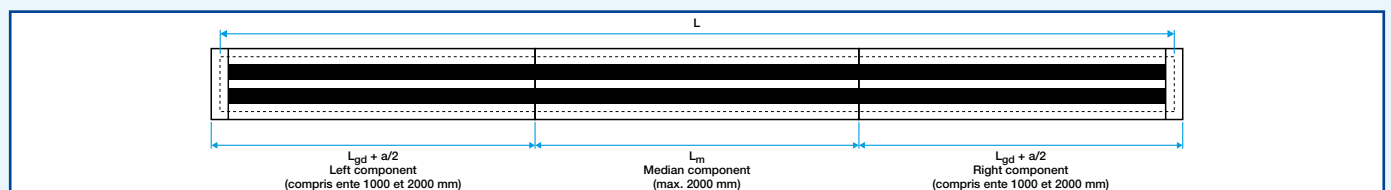
Entire component



Corner piece at 90°



Corner piece at 135°



Whole linear bar



# Adjustable aluminium slot diffusers

## Series P 200 - connection plenums - steel



Plenum P

### APPLICATION

- Plenums for series 200 slot diffusers.
- Air supply or air exhaust.
- Ceiling mounted.
- Possibility of linear bars (bands).

### DESCRIPTION

- Description in galvanized sheet steel.
- One spigot 600 to 1600 mm in length
- Two spigots connections 1605 to 2000 mm in length

### FIXING

- S2 : hidden fixing of diffuser to plenum by screws, accessible via the sides of the diffuser.

Note : this fixing is not compatible with staff or BA13 ceilings.

- S3 : hidden fixing of diffuser to plenum by screws and clips, accessible via the bottom of the diffuser.
- Assembly attached to the concrete slab using legs located on the plenum.

NB : the weight of the diffuser must not be borne by the ceiling frame.

### OPTIONS

- Special height H.
- Special diameter of mounted connection.
- Additional mounted connections (1 or 2 in addition to the standard by section).
- Filter efficiency G3 for the air exhaust (fire rating M1). Positioned diagonally in the plenum for maximum filtering area. Fixing by latches.
- Additional mounted connection for fresh air management.
- Possibility to mount diffusers longer than the plenum to create linear bars with inactive diffusion zones (for aesthetic reasons).
- Interior insulation on two or five sides. Fiberglass insulation thickness 15 mm (M0) or 5mm polyurethane foam (M1).

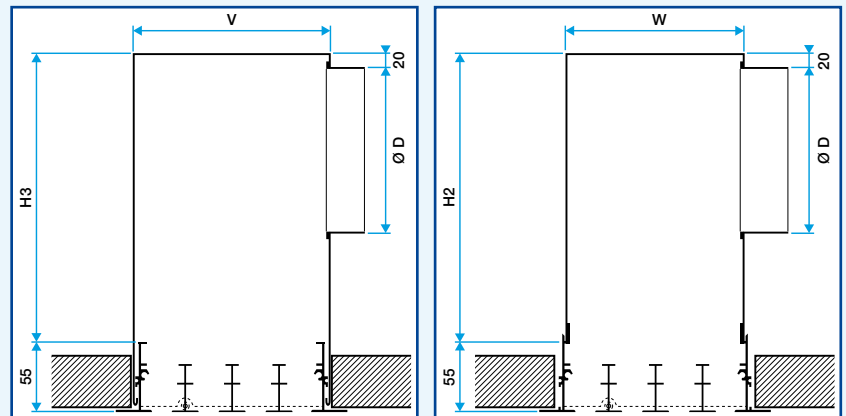
### STANDARD DIMENSIONS

- Available from one to eight slots.
- Length from 200 to 2000 mm in steps of 5 mm.

Above the grille is made up from pieces of 2000 mm in the middle and 2 end pieces of same length always between 1000 mm and 2000 mm.

- Number of standard spigots: 2 by median element and 1 by end piece (2 if it exceeds 1600 mm).

### DIMENSIONS



Plenum P for fixing S3 or S7

Plenum P for fixing S2

### PLENUM P270

No. slots	H3 (mm)	H2 (mm)	H3+filtre (mm)	H2+filter (mm)	V (S3) (mm)	V (S7) (mm)	W (mm)	Ø D (mm)
1	160	175	170	185	49	44	29	125
2	195	210	205	220	80	75	60	160
3	235	250	245	260	111	106	91	200
4	235	250	245	260	142	137	122	200
5	235	250	245	260	173	168	153	200
6	285	300	295	310	204	199	184	250
7	285	300	295	310	215	210	215	250
8	285	300	295	310	266	261	246	250

### PLENUM P280

No. slots	H3 (mm)	H2 (mm)	H3+filtre (mm)	H2+filter (mm)	V (S3) (mm)	V (S7) (mm)	W (mm)	Ø D (mm)
1	160	175	170	185	60	55	34	125
2	195	210	205	220	98	93	72	160
3	235	250	245	260	137	132	110	200
4	285	300	295	310	175	170	149	250
5	285	300	295	310	213	208	187	250
6	285	300	295	310	252	247	225	250
7	350	365	360	375	290	285	263	315
8	350	365	360	375	328	323	302	315

### PLENUM P290

No. slots	H3 (mm)	H2 (mm)	H3+filtre (mm)	H2+filter (mm)	V (S3) (mm)	V (S7) (mm)	W (mm)	Ø D (mm)
1	195	210	205	220	65	60	39	160
2	235	250	245	260	108	103	82	200
3	235	250	245	260	152	147	125	200
4	285	300	295	310	195	190	169	250
5	285	300	295	310	238	233	212	250
6	350	365	360	375	282	277	255	315
7	350	365	360	375	325	320	298	315
8	350	365	360	375	368	363	342	315

# Adjustable aluminium slot diffusers

Series AG 200 - AN 200 - AO 200 - fixing



Diffuser AG282

## FIXING SYSTEMS

Three fixing systems are available.

### FIXING S2

- S2 : hidden fixing by screws in the plenum.
- Available for the models AG, AN, AO, AN200TP and TechLined.

Note : this fixing is recommended for suspended ceilings and incompatible with staff or BA13 non-removable ceilings.

### FIXING S3

- Hidden fixing by screws and clips.
- Fixing clips are planned for plenums mounted against the ceiling or slightly offset.
- Available for models AG and AN (except opening with filter use the fixing S7 below).
- Not available for models AO.
- Not available for models adapted to ceiling tiles (AN200TP and TechLined).

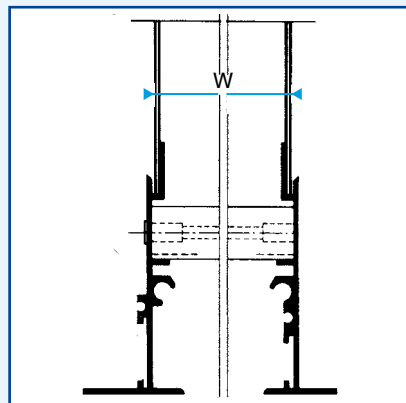
Note : this fixing is recommended for staff or BA13 non-removable ceilings.

### FIXING S7

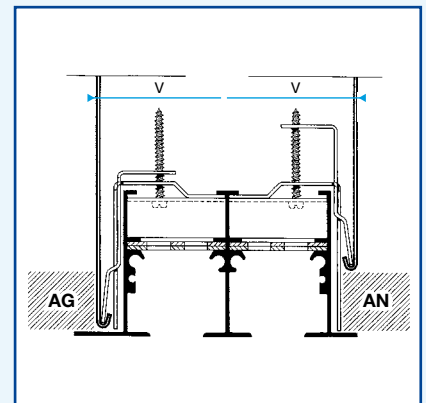
- Hidden fixing by screws and bridge guides.
- Available for models AG and AN opening with filter.
- Not available for models AO.
- Not available for models adapted to ceiling tiles (AN200TP and TechLined).

Note : this fixing is recommended for non-removable ceilings (staff or BA13) with opening diffusers with filter for which the fixing S3 is not compatible.

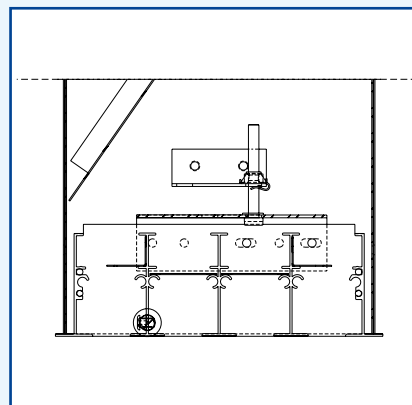
## DIMENSIONS



Fixing S2



Fixing S3



Fixing S7

# Adjustable aluminium slot diffusers

## Series 270 - 280 - 290

### Standard range - AG 280 BD

Description	N° slots	556 Code	856 Code	1156 Code	1456 Code	1756 Code
Alum finish diffuser	1	11051798	11051799	11051800	11051801	11051802
Alum finish diffuser	2	11051803	11051804	11051805	11051806	11051807
Alum finish diffuser	3	11051808	11051809	11051810	11051811	11051812
Alum finish diffuser	4	11051813	11051814	11051815	11051816	11051817
White finish diffuser	1	11051200	11051201	11051202	11051203	11051204
White finish diffuser	2	11051205	11051206	11051207	11051208	11051209
White finish diffuser	3	11051210	11051211	11051212	11051213	11051214
White finish diffuser	4	11051215	11051216	11051217	11051218	11051219
Plenum insulated 2 sides	1	11053326	11053327	11053328	11053329	11053330
Plenum insulated 2 sides	2	11053331	11053332	11053333	11053334	11053335
Plenum insulated 2 sides	3	11053336	11053337	11053338	11053339	11053340
Plenum insulated 2 sides	4	11053341	11053342	11053343	11053344	11053345
Single plenum	1	11053128	11053129	11053130	11053131	11053132
Single plenum	2	11053133	11053134	11053135	11053136	11053137
Single plenum	3	11053148	11053149	11053150	11053151	11053152
Single plenum	4	11053153	11053154	11053155	11053156	11053157

Fixing	Finish
<ul style="list-style-type: none"> <li>S3 : hidden by mounting clips accessible beneath the diffuser.</li> </ul>	<ul style="list-style-type: none"> <li>Anodised aluminium natural glossy tone or RAL9010 epoxy paint. RAL 9005 black deflectors.</li> </ul>

### Range with choice of options - models AG / AN / AO

Model slot width 12.5 mm	Code	Model slot width 20 mm	Code	Model slot width 25 mm	Code
AG 270	11002081	AG 280	11002082	AG 290	11002083
AN 270	11002084	AN 280	11002085	AN 290	11002086
-	-	AO 280	11002112	AO 290	11002113
AG 270 D	11002087	AG 280 D	11002088	AG 290 D	11002089
AN 270 D	11002090	AN 280 D	11002091	AN 290 D	11002092
-	-	AO 280 D	11002115	AO 290 D	11002116
AG 270 B	11002093	AG 280 B	11002094	AG 290 B	11002095
AN 270 B	11002096	AN 280 B	11002097	AN 290 B	11002098
-	-	AO 280 B	11002118	AO 290 B	11002119
AG 270 BD	11002099	AG 280 BD	11002100	AG 290 BD	11002101
AN 270 BD	11002102	AN 280 BD	11002103	AN 290 BD	11002104
AG 270 K	11002105	AG 280 K	11002106	AG 290 K	11002107
AN 270 K	11002108	AN 280 K	11002109	AN 290 K	11002110
Plenum P270	11002121	Plenum P280	11002122	Plenum P290	11002123

### Standard dimensions

N / L (mm)	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
1	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
2	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
3	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
4	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
5	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
6	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
7	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
8	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

### Options available

Fixing	Finish	Diffuser	Plenum
<ul style="list-style-type: none"> <li>S2 : hidden by screws in the plenum.</li> <li>S3 : hidden by screws and mounting clips.</li> </ul>	<ul style="list-style-type: none"> <li>Natural glossy anodisation (not available on AO type).</li> <li>Black or white deflectors.</li> <li>Epoxy paint in accordance with RAL color (all models). Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>Entire component.</li> <li>Matched end pair.</li> <li>Left or right end.</li> <li>Median component.</li> </ul>	<ul style="list-style-type: none"> <li>Special depth.</li> <li>Additional spigot.</li> <li>Special spigot diameter.</li> <li>Fresh air spigot.</li> <li>Insulation 2 or 5 sides.</li> <li>Plenum for linear bar at inactive zones.</li> </ul>

# Adjustable aluminium slot diffusers

## Series 270 - 280 - 290

Range with choice of options - opening models and TP

Model slot width 20 mm	Code	Model slot width 25 mm	Code
AG 280 opening	11002194	AG 290 opening	11002196
AN 280 opening	11002193	AN 290 opening	11002195
AN 280 TP	11002173	AN 290 TP	11002175
AN 280 D TP	11002174	AN 290 D TP	11002176
AN 280 TP opening	11002177	AN 290 TP opening	11002178
W3 280 replacement filter	11003251	W3 290 replacement filter	11003252
Plenum 280	11002122	Plenum 290	11002123

### Standard dimensions for opening models

N / L (mm)	400	500	600	700	800	900	1000	1100	1200
4	✗	✗	✗	✗	✗	✗	✗	✗	✗
5	✗	✗	✗	✗	✗	✗	✗	✗	✗
6	✗	✗	✗	✗	✗	✗	✗	✗	✗
7	✗	✗	✗	✗	✗	✗	✗	✗	✗
8	✗	✗	✗	✗	✗	✗	✗	✗	✗

### Standard dimensions for TP models (Tbar ceiling)

A x B N / L	600 x 300 570	900 x 300 870	1200 x 300 1170	1350 x 300 1320	600 x 600 570	1200 x 600 1170	675 x 675 645	1350 x 675 645
1*	✗	✗	✗	✗	✗	✗	✗	✗
2*	✗	✗	✗	✗	✗	✗	✗	✗
3*	✗	✗	✗	✗	✗	✗	✗	✗
4	✗	✗	✗	✗	✗	✗	✗	✗
5	✗	✗	✗	✗	✗	✗	✗	✗
6	✗	✗	✗	✗	✗	✗	✗	✗
7					✗	✗	✗	✗
8					✗	✗	✗	✗

(\* ) Not available in opening model.

### Options available

Fixing	Finish	Diffuser	Plenum
<ul style="list-style-type: none"> <li>S2 : hidden by screws in the plenum.</li> <li>S7 : hidden by screws and bridge guides (not available on TP models).</li> </ul>	<ul style="list-style-type: none"> <li>Natural glossy anodisation (not available on TP models).</li> <li>Black or white deflectors.</li> <li>Epoxy paint in accordance with RAL color (all models). Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>Slide damper B (not available on opening models).</li> <li>Aesthetic casing 1/2 B.</li> <li>For Tbars or Fine-Line suspended ceilings (TP models).</li> <li>Protective film (TP models).</li> </ul>	<ul style="list-style-type: none"> <li>Special depth.</li> <li>Additional spigot</li> <li>Special spigot diameter.</li> <li>Fresh air spigot.</li> <li>Insulation 2 or 5 sides.</li> <li>Integrated filter.</li> </ul>

# Adjustable aluminium slot diffusers

## Series 270 - 280 - 290

### SELECTION - AIR SUPPLY TYPE 270 WITH CEILING EFFECT - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)													
		60		100		150		200		250		300		400	
0.005	1	22	2,4	33	3,7									Lw	Lt
		2,6	6,8	5,7	30									Vk	Pa
0.010	2			18	2,7	26	4	35	5,4						
				2,9	7,8	4,3	16	5,5	30						
0.015	3					-	3,1	26	4,2	33	5,4	37	6,4		
						2,7	8	3,9	14	4,9	20	5,9	30		
0.020	4	Lw	Lt					20	3,7	25	4,7	30	5,5	37	7,4
		Vk	Pa					2,9	7	3,5	10	4,1	15	5,8	30

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

### SELECTION - AIR SUPPLY TYPE 280 WITH CEILING EFFECT - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)																	
		60		100		150		200		250		300		400		500		600	
0,007	1	-	1,9	24	3,1	35	4,7											Lw	Lt
		2,4	5,1	4,0	14	6,0	32											Vk	Pa
0,014	2			-		2,2	20	3,3	27	4,4	33	5,5	38	6,6					
						2,0	3,5	3,0	8,0	4,0	14	5,0	22	6,0	32				
0,021	3							2,7	18	3,6	24	4,5	29	5,4	37	7,2			
						2,0	3,5	2,6	6,3	3,3	10	4,0	14	5,3	25				
0,028	4	Lw	Lt					-	3,1	18	3,9	23	4,7	30	6,2	36	7,8	41	9,3
		Vk	Pa					2,0	3,5	2,5	5,5	3,0	8,0	4,0	14	5,0	22	6,0	32

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

### SELECTION - AIR SUPPLY TYPE 290 WITH CEILING EFFECT - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)																	
		60		100		150		200		250		300		400		500		600	
0.009	1	-	1,6	0	2,7	30	4											Lw	Lt
		1,9	4	3	8	4,9	20											Vk	Pa
0.018	2					-	3	21	3,7	28	4,7	33	6						
						2,4	5	3,1	9	4	14	4,8	20						
0.027	3							-	3	-	4	23	4,7	30	6	35	7,7		
								2	4	2,5	6	3	8	4	14	5	22		
0.036	4	Lw	Lt							-	3,4	-	4	24	5,4	30	6,7	33	8
		Vk	Pa							1,8	3	2,3	6	3	8	3,9	14	4,5	20

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

# Adjustable aluminium slot diffusers

## Series 280 - 290

### SELECTION - AIR EXHAUST TYPE 280 - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)																		
		60		100		150		200		250		300		400		500		600		
0,016	1	-	-	-	-	25	-												Lw	Pa2
		1,1	3,3	1,8	9,1	2,7	20,8												Vk	Pa
0,031	2			-	-	-	-	-	-	23	-	28	-							
				0,9	2,3	1,4	5,2	1,8	9,1	2,3	14,3	2,7	20,8							
0,047	3					-	-	-	-	-	-	-	-	27	-					
						0,9	2,3	1,2	4,1	1,5	6,5	1,8	9,1	2,4	16,3					
0,062	4							-	3,0	-	4,7	-	6,8	20	12,0	26	18,8	31	27,3	
								0,9	2,3	1,1	3,6	1,4	5,2	1,8	9,1	2,3	14,3	2,7	20,8	
0,078	5									-	3,7		5,2		8,2	22	13,6	27	19,5	
										0,9	2,6	1,1	3,6	1,40	5,3	1,8	9,1	2,2	13,0	
0,093	6	Lw	Pa2										-	4,2	-	7,1	-	11,7	-	15,6
		Vk	Pa										0,9	2,6	1,2	4,2	1,5	7,2	1,8	9,1

The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.  
Pa2 = with G3 filter included.

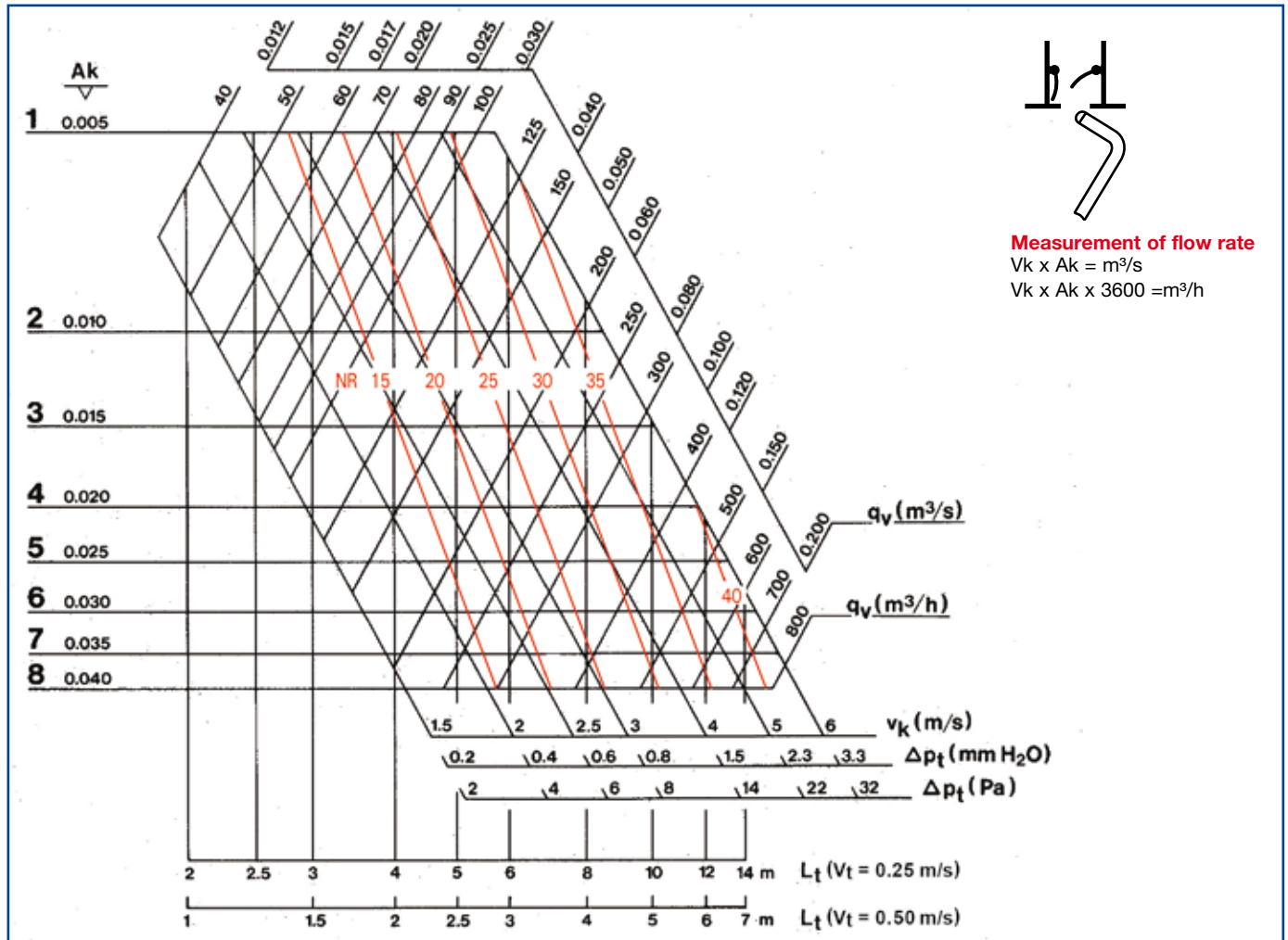
### SELECTION - AIR EXHAUST TYPE 290 - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)																		
		60		100		150		200		250		300		400		500		600		
0,02	1	-	-	-	-	20	-												Lw	Pa2
		0,9	2,6	1,4	5,2	2,2	13,0												Vk	Pa
0,04	2					-	-	-	-	20	-	23	-							
						1,1	3,3	1,40	5,9	1,8	9,1	2,2	13,0							
0,06	3							-	-	-	-	-	-	20	-	25	-			
								0,9	2,6	1,1	3,9	1,4	5,2	1,8	9,1	2,3	14,3			
0,08	4									-	3,1	-	5,5		8,1	20	13,6	23	19,5	
										0,8	2,0	1	3,9	1,4	5,2	1,8	9,1	2	13,0	
0,10	5												3,9		6,7		9,7	20	14,3	
													0,8	2,3	1,1	3,8	1,4	5,2	1,7	7,8
0,12	6	Lw	Pa2											-	5,5	-	8,4	-	11,7	
		Vk	Pa											0,9	2,6	1,1	3,9	1,4	5,2	

The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.  
Pa2 = with G3 filter included.

# Adjustable aluminium slot diffusers

Series 270 - air supply with ceiling effect - length 1 m



The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

## CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.67	x 0.5	x 0.4

## CORRECTIONS FOR AIR EXHAUST WITHOUT DEFLECTORS

$V_k$ (m/s)	x 0.45
$\Delta P_t$ (Pa)	x 0.65
$L_w$ (NR)	- 10

## CORRECTIONS FOR VERTICAL AIR SUPPLY

$\Delta T^\circ$ (°C)	- 10	0	+ 15
$L_t$ with wall effect	x 0.8	x 0.5	x 0.3
$L_t$ without wall effect	x 0.55	x 0.35	x 0.2
$V_k$	x 0.45		
$\Delta P_t$	x 0.8		
$L_w$	- 3		

## CORRECTIONS FOR OTHER LENGTHS

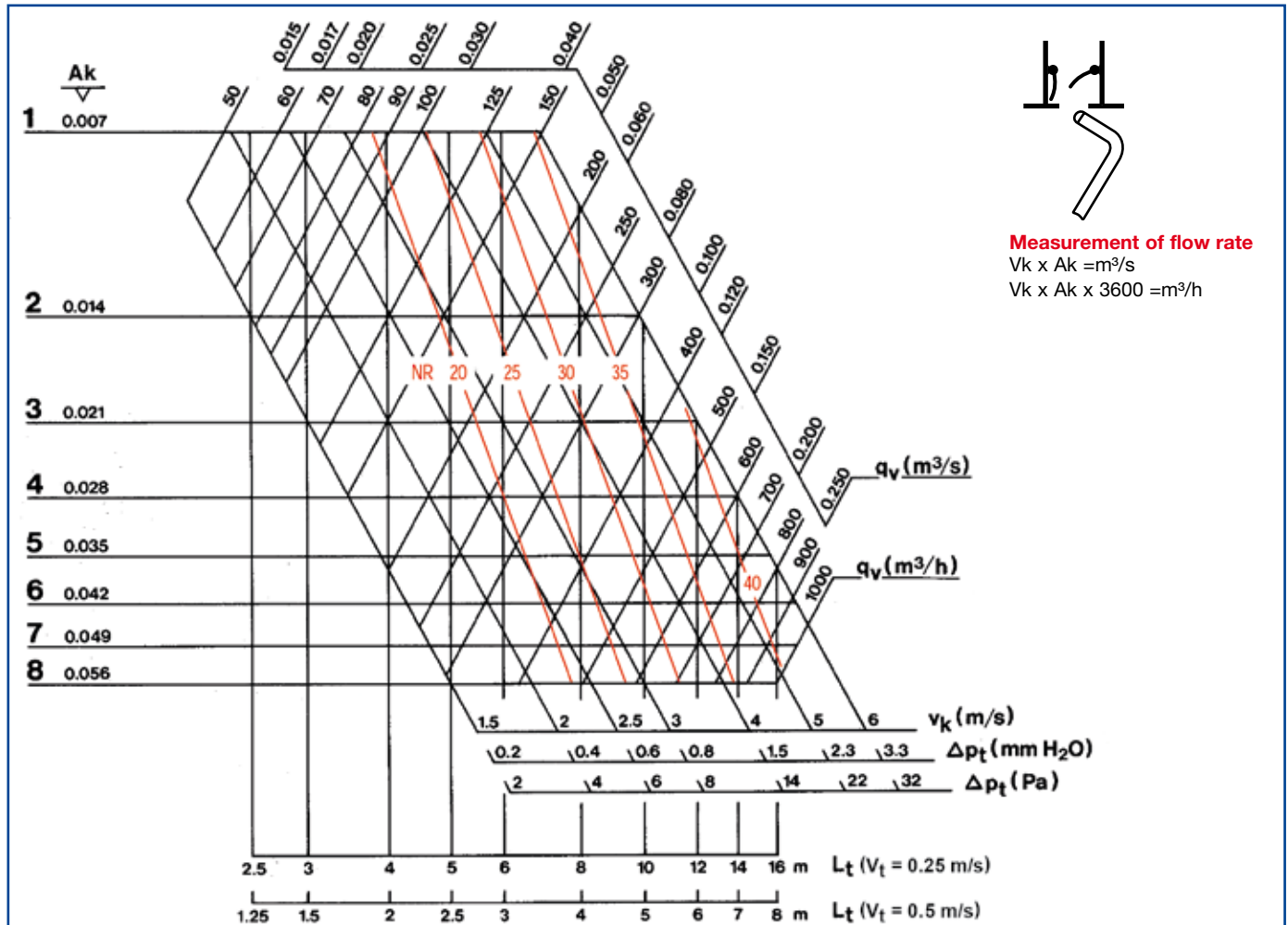
$L$ (m)	1	1.5	2	2.5	3	4	5	6	8	10
$L_t$ (m)	x 1	x 1.05	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.15	x 1.15
$L_w$ (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10

## CORRECTIONS FOR DAMPER OR WITHOUT PLENUM

No damper	Damper 100% open	Damper 50% open	Damper 25% open	Diffuser without plenum
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.50$	$\Delta P_t \times 3.38$	$\Delta P_t \times 8.85$	$\Delta P_t \times 0.6$
$L_w + 0$	$L_w + 5$	$L_w + 15$	$L_w + 25$	$L_w - 5$

# Adjustable aluminium slot diffusers

Series 280 - air supply with ceiling effect - length 1 m



The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

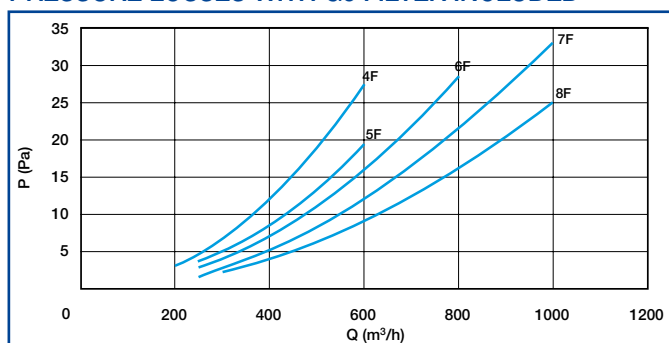
## CORRECTIONS FOR OTHER Vt

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 AIR EXHAUST WITHOUT DEFLECTORS

Vk (m/s)	x 0.45
ΔPt (Pa)	x 0.65
Lw (NR)	- 10

## PRESSURE LOSSES WITH G3 FILTER INCLUDED



## CORRECTIONS FOR OTHER LENGTHS

L (m)	1	1.5	2	2.5	3	4	5	6	8	10
Lt (m)	x 1	x 1.05	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.15	x 1.15
Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10

## CORRECTIONS FOR DAMPER OR WITHOUT PLENUM

No damper	Damper 100% open	Damper 50% open	Damper 25% open	Diffuser without plenum
ΔPt x 1.00	ΔPt x 1.50	ΔPt x 3.38	ΔPt x 8.85	ΔPt x 0.6
Lw + 0	Lw + 5	Lw + 15	Lw + 25	Lw - 5

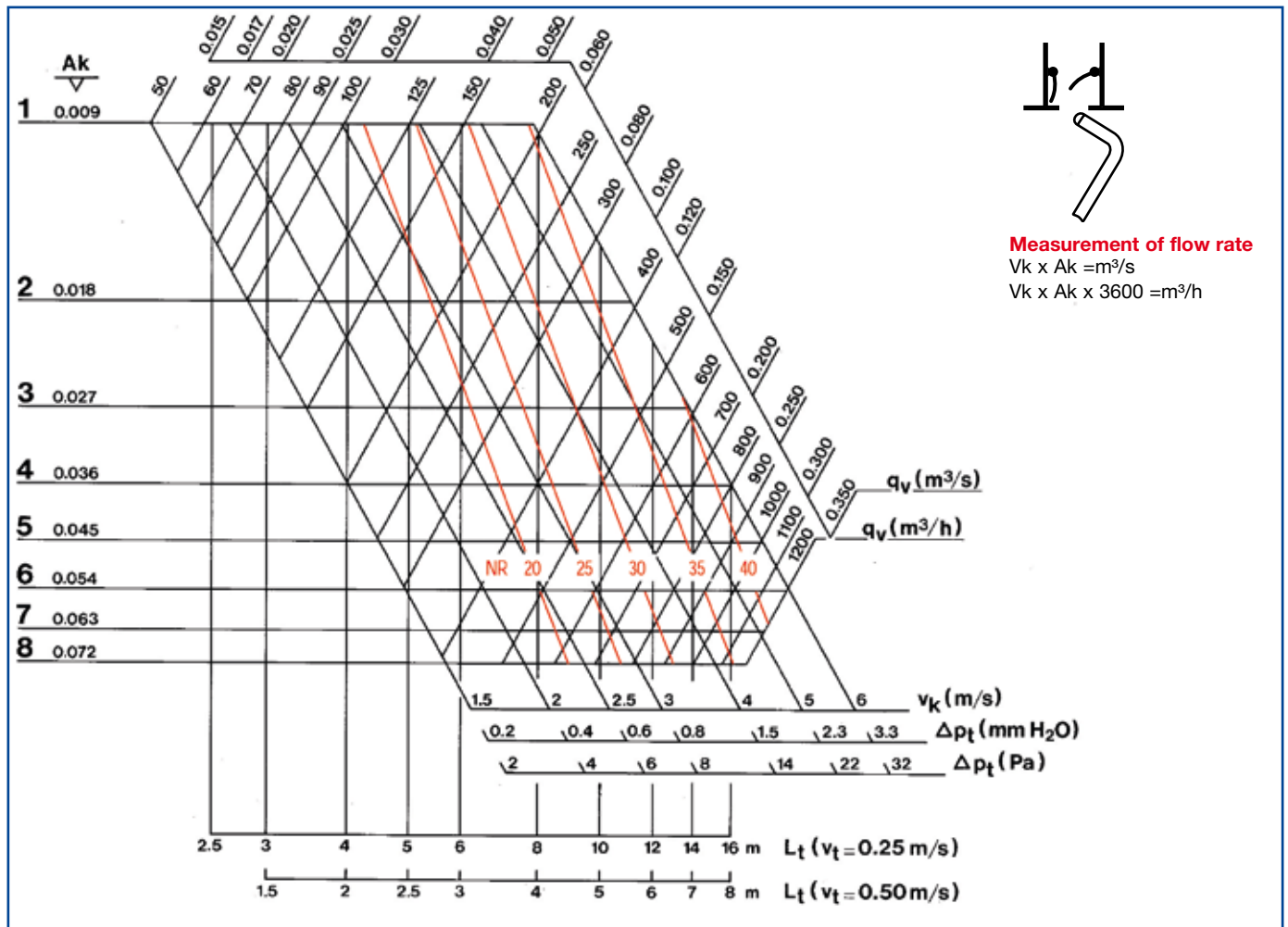
## CORRECTIONS FOR VERTICAL AIR SUPPLY

ΔT° (°C)	- 10	0	+ 15
Lt with wall effect	x 0.8	x 0.5	x 0.3
Lt without wall effect	x 0.55	x 0.35	x 0.2
Vk	x 0.45		
ΔPt	x 0.8		
Lw	- 3		



# Adjustable aluminium slot diffusers

Series 290 - air supply with ceiling effect - length 1 m



The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

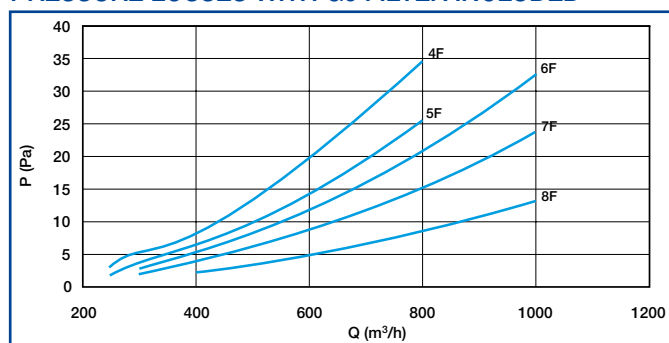
## CORRECTIONS FOR OTHER Vt

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 AIR EXHAUST WITHOUT DEFLECTORS

Vk (m/s)	x 0.45
ΔPt (Pa)	x 0.65
Lw (NR)	- 10

## PRESSURE LOSSES WITH G3 FILTER INCLUDED



## CORRECTIONS FOR OTHER LENGTHS

L (m)	1	1.5	2	2.5	3	4	5	6	8	10
Lt (m)	x 1	x 1.05	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.10	x 1.15	x 1.15
Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10

## CORRECTIONS FOR DAMPER OR WITHOUT PLENUM

No damper	Damper 100% open	Damper 50% open	Damper 25% open	Diffuser without plenum
ΔPt x 1.00	ΔPt x 1.50	ΔPt x 3.38	ΔPt x 8.85	ΔPt x 0.6
Lw + 0	Lw + 5	Lw + 15	Lw + 25	Lw - 5

## CORRECTIONS FOR VERTICAL AIR SUPPLY

ΔT° (°C)	- 10	0	+ 15
Lt with wall effect	x 0.8	x 0.5	x 0.3
Lt without wall effect	x 0.55	x 0.35	x 0.2
Vk	x 0.45		
ΔPt	x 0.8		
Lw	- 3		

# Diffusers for Armstrong® Tech Zone

## Series TechLined 280 - TechLined 290 - aluminium



TechLined diffuser width 150 mm

### APPLICATION

- Diffusers specially developed for perfect integration in Armstrong Tech Zone suspended ceilings.
- Installation in place of the Armstrong ceiling tile in the 'technical zone' of the ceiling, in alignment with the other equipment such as, for example, lights or sprinklers.
- Air supply or air exhaust.
- Adjustable diffusion using two directional deflectors on each slot, possibility of vertical air supply.
- Opening air exhaust models with filter in replacement of the filter of the fan coil units connected to ducts (not available in width 150 mm).

### DESCRIPTION

- Extruded aluminium body and deflectors.
- Ceiling compensation plate in galvanized steel.
- Type TechLined 280 D : slot width 20 mm.
- Type TechLined 290 D : slot width 25 mm.

Comment : types TechLined 280 and Techlined 290, diffusers not equipped with deflectors to be used in air exhaust only. Exist in opening filter models with core mounted on hinges and push-push closing.

### FINISH

- 'Global White' 20 % matte epoxy paint, identical to Armstrong Tech Zone tile and frame finish.
- Aluminium deflectors painted RAL9005 black.
- Finish RAL9010 20 % matte epoxy paint available in option.

### FIXING

- S2 : Hidden attachment by screws, accessible via the sides of the diffuser.

For more information refer to p.152.

### ACCESSORIES

- White deflectors.
  - B : slide damper (not available on opening models).
  - 1/2 B : aesthetic casing (opening models only).
- For more information see p. 148
- Galvanized steel plenum with side connection. Single or insulated version.
- For more information see p. 151
- Filter G3 for the air exhaust (fire rating M1). Not available in width 150 mm.

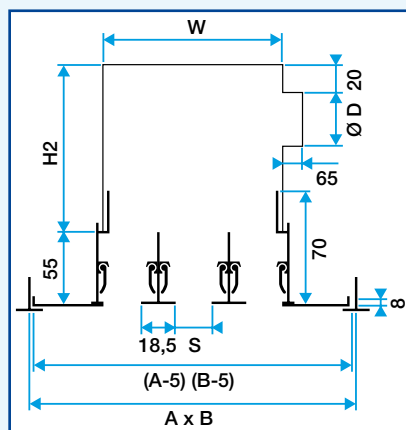
### STANDARD DIMENSIONS

- Adapted to Armstrong Tech Zone ceilings widths 150 mm and 300 mm.
- Possibility of 1 to 6 slots depending on the ceiling width.

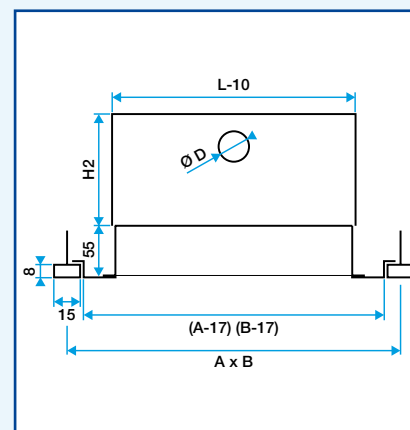
### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- See Mixing Rates (MR) at the end of the chapter.

### DIMENSIONS



Mounted on ceiling with BOARD T24 frame



Mounted on ceiling with Microlook Silhouette frame

### DIMENSIONS TECHLINED 280: S = 20 mm

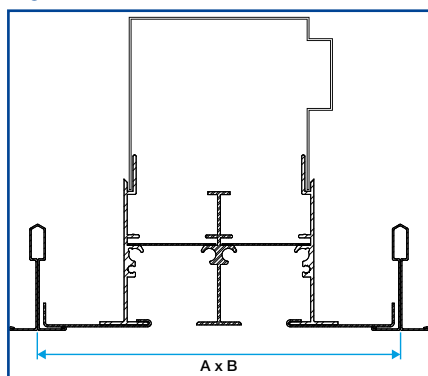
Number of slots	W (mm)	H2 (mm)	H2 + filter (mm)	Ø D (mm)
1	34	175	185	125
2	72	210	220	160
3	110	250	260	200
4	149	300	310	250
5	187	300	310	250
6	225	300	310	250

### DIMENSIONS TECHLINED 290: S = 25 mm

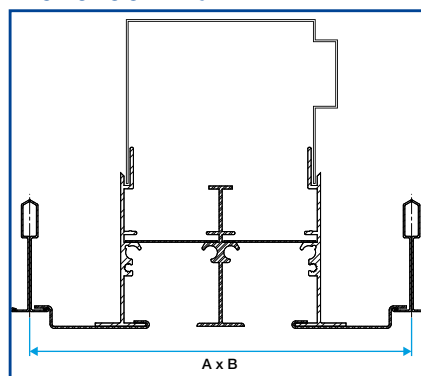
Number of slots	W (mm)	H2 (mm)	H2 + filter (mm)	Ø D (mm)
1	39	210	220	160
2	82	250	260	200
3	125	250	260	200
4	169	300	310	250
5	212	300	310	250
6	255	365	375	315

# Diffusers for Armstrong® Tech Zone

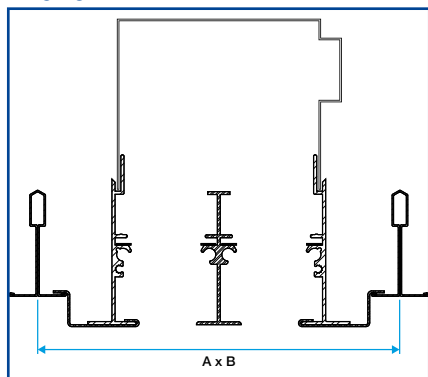
**BOARD T24**



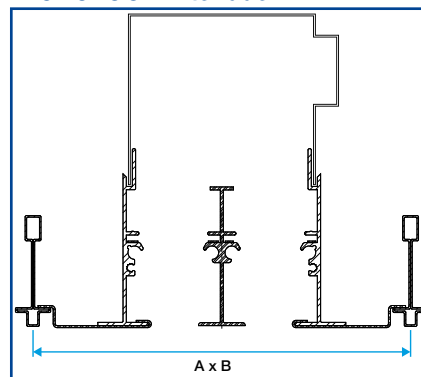
**MICROLOOK T15**



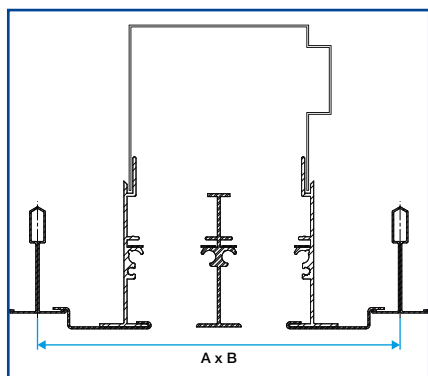
**VECTOR T24**



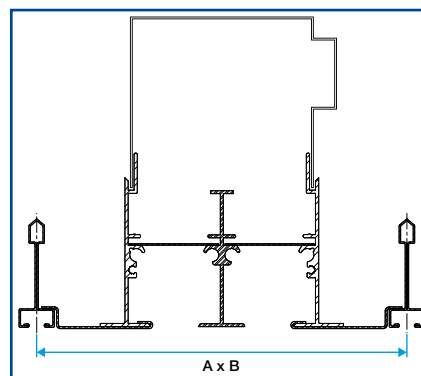
**MICROLOOK Interlude**



**TEGULAR 8 or SL2 T24**



**MICROLOOK Silhouette**



## MAXIMUM NUMBER OF SLOTS BY TYPE OF CEILING

Type of ceiling	TechLined 280		TechLined 290	
	Maximum number of slots		Maximum number of slots	
	Width (B) 150 mm	Width (B) 300 mm	Width (B) 150 mm	Width (B) 300 mm
BOARD T24	3	6	2	6
VECTOR T24	2	6	2	5
TEGULAR 8 ou SL2 T24	2	6	2	5
MICROLOOK T15	3	6	2	6
MICROLOOK Interlude	3	6	2	5
MICROLOOK Silhouette	3	6	2	5

## CEILING LENGTHS (A) AND SLOT LENGTHS (L) AVAILABLE

A (mm)	BOARD T24 L (mm)	VECTOR T24 L (mm)	TEGULAR 8 or SL2 T24 L (mm)	MICROLOOK T15 L (mm)	MICROLOOK Interlude L (mm)	MICROLOOK Silhouette (mm)
1200	1170	1150	1150	1159	1159	1159
1350	1320	1300	1300	1309	1309	1309
1500	1470	1450	1450	1459	1459	1459
1800	1770	1750	1750	1759	1759	1759

# Diffusers for Armstrong® Tech Zone

## Series TechLined 280 - TechLined 290

Range with choice of options

Model slot width 20 mm	Code	Model slot width 25 mm	Code
TechLined 280 D	11002305	TechLined 290 D	11002306
TechLined 280	11002301	TechLined 290	11002302
TechLined 280 opening*	11002303	TechLined 290 opening*	11002304
Plenum 280	11002122	Plenum 290	11002123

\* Width 300 mm only.

### TechLined 280 dimensions range (BOARD ceiling with T24)

A x B N / L	1200 x 150 1170	1350 x 150 1320	1500 x 150 1470	1800 x 150 1770	1200 x 300 1170	1350 x 300 1320	1500 x 300 1470	1800 x 300 1770
1	✗	✗	✗	✗	✗	✗	✗	✗
2	✗	✗	✗	✗	✗	✗	✗	✗
3	✗	✗	✗	✗	✗	✗	✗	✗
4					✗	✗	✗	✗
5					✗	✗	✗	✗
6					✗	✗	✗	✗

### TechLined 290 dimensions range (BOARD ceiling with T24)

A x B N / L	1200 x 150 1170	1350 x 150 1320	1500 x 150 1470	1800 x 150 1770	1200 x 300 1170	1350 x 300 1320	1500 x 300 1470	1800 x 300 1770
1	✗	✗	✗	✗	✗	✗	✗	✗
2	✗	✗	✗	✗	✗	✗	✗	✗
3					✗	✗	✗	✗
4					✗	✗	✗	✗
5					✗	✗	✗	✗
6					✗	✗	✗	✗

### Options available

Fixing	Finish	Diffuser	Plenum
<ul style="list-style-type: none"> <li>S2 : hidden by screws.</li> </ul>	<ul style="list-style-type: none"> <li>Global White 20 % sheen.</li> <li>RAL9010 20 % sheen.</li> <li>Black or white deflectors (types D only).</li> </ul>	<ul style="list-style-type: none"> <li>Ceiling type.</li> <li>Slide damper B.</li> <li>Aesthetic casing 1/2B.</li> <li>Protective film.</li> </ul>	<ul style="list-style-type: none"> <li>Special depth.</li> <li>Additional spigots.</li> <li>Special spigots diameter.</li> <li>Fresh air spigots.</li> <li>Insulation 2 or 5 sides.</li> <li>Integrated filter.</li> </ul>

# Diffusers for Armstrong® Tech Zone

## Series 280 - 290

### SELECTION - AIR SUPPLY TYPE 280 WITH CEILING EFFECT - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)												Lw	Lt						
		60		100		150		200		250		300				400		500		600	
0,007	1	-	1,9	24	3,1	35	4,7														
		2,4	5,1	4,0	14	6,0	32													Vk	Pa
0,014	2	-	-	2,2	20	3,3	27	4,4	33	5,5	38	6,6									
				2,0	3,5	3,0	8,0	4,0	14	5,0	22	6,0	32								
0,021	3	-	-			2,7	18	3,6	24	4,5	29	5,4	37	7,2							
						2,0	3,5	2,6	6,3	3,3	10	4,0	14	5,3	25						
0,028	4	Lw	Lt					-	3,1	18	3,9	23	4,7	30	6,2	36	7,8	41	9,3		
		Vk	Pa					2,0	3,5	2,5	5,5	3,0	8,0	4,0	14	5,0	22	6,0	32		

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

### SELECTION - AIR SUPPLY TYPE 290 WITH CEILING EFFECT - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)												Lw	Lt						
		60		100		150		200		250		300				400		500		600	
0,009	1	-	1,6	0	2,7	30	4														
		1,9	4	3	8	4,9	20													Vk	Pa
0,018	2					-	3	21	3,7	28	4,7	33	6								
						2,4	5	3,1	9	4	14	4,8	20								
0,027	3							-	3	-	4	23	4,7	30	6	35	7,7				
								2	4	2,5	6	3	8	4	14	5	22				
0,036	4	Lw	Lt							-	3,4	-	4	24	5,4	30	6,7	33	8		
		Vk	Pa							1,8	3	2,3	6	3	8	3,9	14	4,5	20		

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

### SELECTION - AIR EXHAUST TYPE 280 - LENGTH 1 M

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)												Lw	Pa2						
		60		100		150		200		250		300				400		500		600	
0,016	1	-	-	-	-	25	-													Lw	Pa2
		1,1	3,3	1,8	9,1	2,7	20,8													Vk	Pa
0,031	2									23	-	28	-								
				0,9	2,3	1,4	5,2	1,8	9,1	2,3	14,3	2,7	20,8								
0,047	3													27	-						
				0,9	2,3	1,2	4,1	1,5	6,5	1,8	9,1	2,4	16,3								
0,062	4																				
								0,9	2,3	1,1	3,6	1,4	5,2	1,8	9,1	2,3	14,3	2,7	20,8		
0,078	5																				
								0,9	2,6	1,1	3,6	1,40	5,3	1,8	9,1	2,2	13,0				
0,093	6	Lw	Pa2																		
		Vk	Pa							0,9	2,6	1,2	4,2	1,5	7,2	1,8	9,1				

The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

Pa2 = with G3 filter included.

### SELECTION - AIR EXHAUST TYPE 290 - LENGTH 1 M

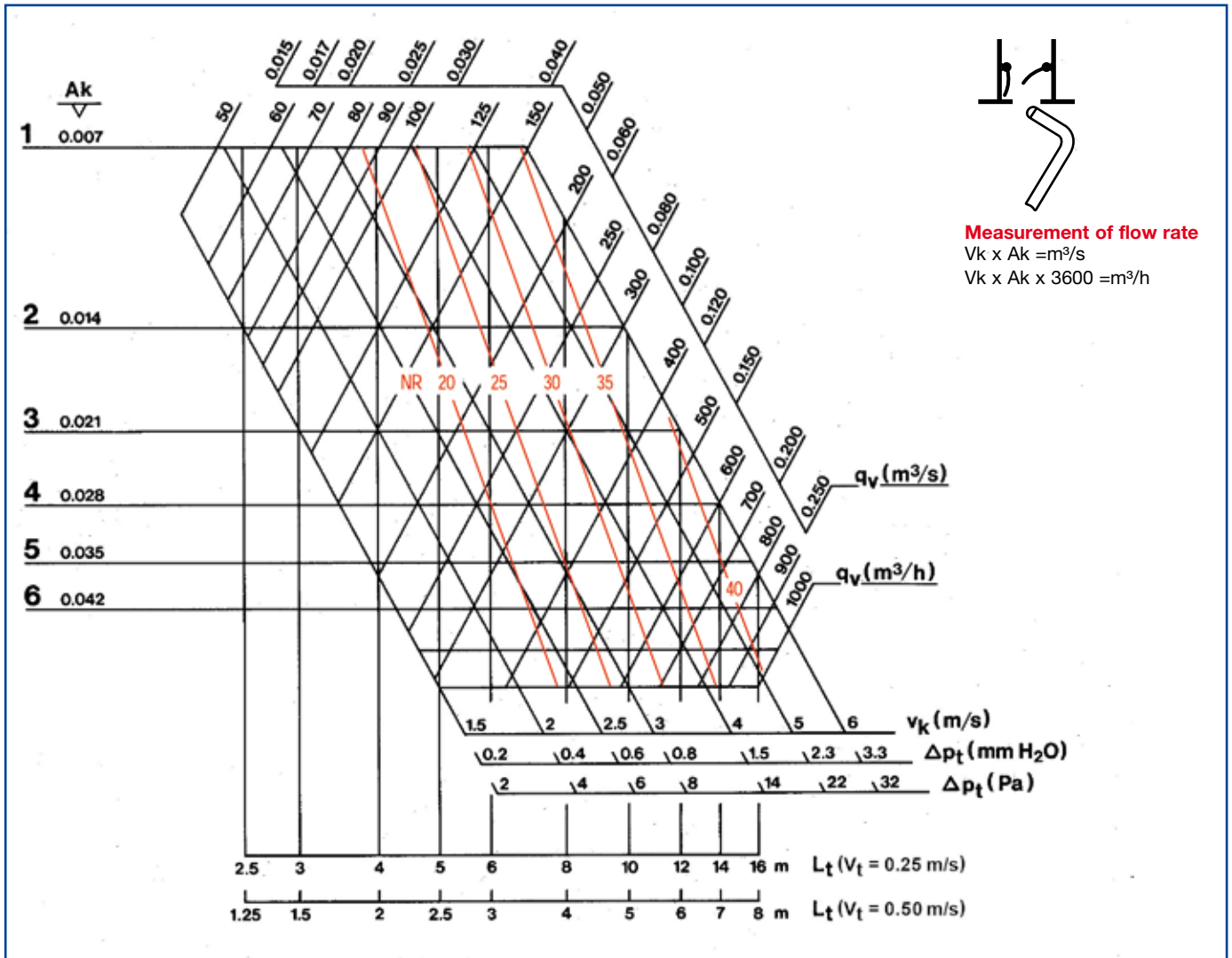
Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)												Lw	Pa2						
		60		100		150		200		250		300				400		500		600	
0,02	1	-	-	-	-	20	-													Lw	Pa2
		0,9	2,6	1,4	5,2	2,2	13,0													Vk	Pa
0,04	2									20	-	23	-								
						1,1	3,3	1,40	5,9	1,8	9,1	2,2	13,0								
0,06	3													20	-	25	-				
								0,9	2,6	1,1	3,9	1,4	5,2	1,8	9,1	2,3	14,3				
0,08	4																				
								0,8	2,0	1	3,9	1,4	5,2	1,8	9,1	2	13,0				
0,10	5											3,9		6,7		9,7		20	14,3		
								0,8	2,3	1,1	3,8	1,4	5,2	1,7	7,8						
0,12	6	Lw	Pa2																		
		Vk	Pa							0,9	2,6	1,1	3,9	1,4	5,2						

The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

Pa2 = with G3 filter included.

# Diffusers for Armstrong® Tech Zone

Series 280 - air supply with ceiling effect - length 1 m



The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

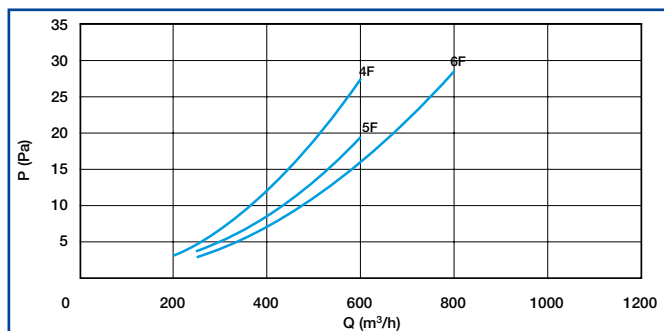
## CORRECTIONS FOR OTHER V<sub>t</sub>

V <sub>t</sub> (m/s)	0.25	0.375	0.5	0.625
L <sub>t</sub>	x 1	x 0.67	x 0.5	x 0.4

## CORRECTIONS FOR AIR EXHAUST WITHOUT DEFLECTORS

V <sub>k</sub> (m/s)	x 0.45
ΔPt (Pa)	x 0.65
L <sub>w</sub> (NR)	- 10

## PRESSURE LOSSES WITH G3 FILTER INCLUDED



## CORRECTIONS FOR DAMPER OR WITHOUT PLENUM

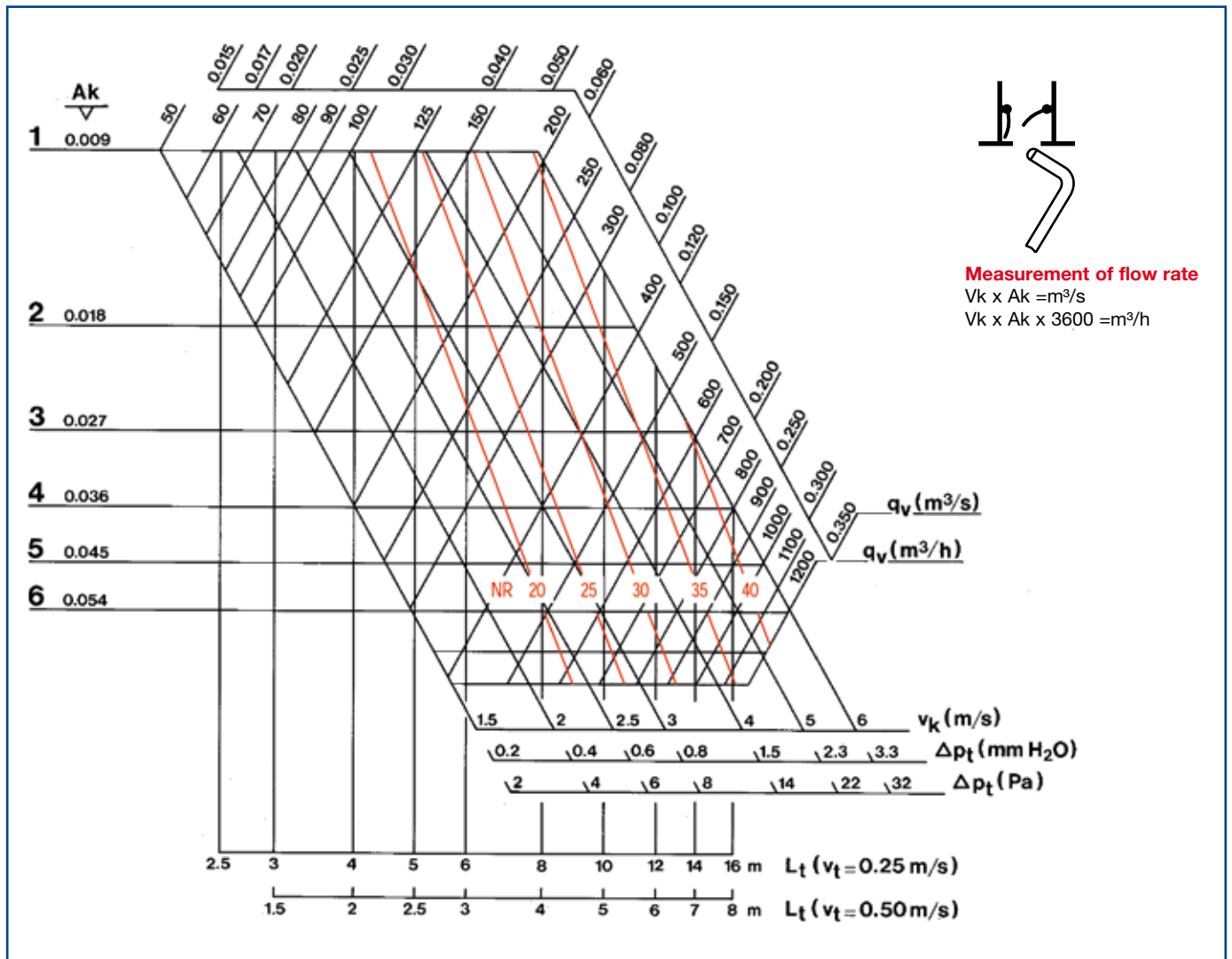
No damper	Damper 100% open	Damper 50% open	Damper 25% open	Diffuser without plenum
ΔPt x 1.00	ΔPt x 1.50	ΔPt x 3.38	ΔPt x 8.85	ΔPt x 0.6
L <sub>w</sub> + 0	L <sub>w</sub> + 5	L <sub>w</sub> + 15	L <sub>w</sub> + 25	L <sub>w</sub> - 5

## CORRECTIONS FOR VERTICAL AIR SUPPLY

ΔT° (°C)	- 10	0	+ 15
L <sub>t</sub> with wall effect	x 0.8	x 0.5	x 0.3
L <sub>t</sub> without wall effect	x 0.55	x 0.35	x 0.2
V <sub>k</sub>	x 0.45		
ΔPt	x 0.8		
L <sub>w</sub>	- 3		

# Diffusers for Armstrong® Tech Zone

Series TechLined 290 - air supply with ceiling effect - length 1 m



The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

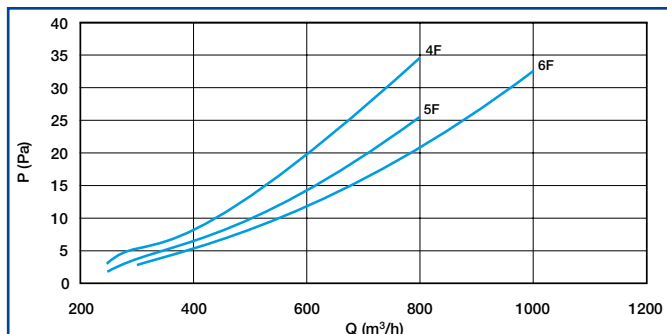
## CORRECTIONS FOR OTHER Vt

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 AIR EXHAUST WITHOUT DEFLECTORS

Vk (m/s)	x 0.45
ΔPt (Pa)	x 0.65
Lw (NR)	- 10

## PRESSURE LOSSES WITH G3 FILTER INCLUDED



## CORRECTIONS FOR DAMPER OR WITHOUT PLENUM

No damper	Damper 100% open	Damper 50% open	Damper 25% open	Diffuser without plenum
ΔPt x 1.00	ΔPt x 1.50	ΔPt x 3.38	ΔPt x 8.85	ΔPt x 0.6
Lw + 0	Lw + 5	Lw + 15	Lw + 25	Lw - 5

## CORRECTIONS FOR VERTICAL AIR SUPPLY

ΔT° (°C)	- 10	0	+ 15
Lt with wall effect	x 0.8	x 0.5	x 0.3
Lt without wall effect	x 0.55	x 0.35	x 0.2
Vk	x 0.45		
ΔPt	x 0.8		
Lw	- 3		

# Fixed slot diffusers

## Series ALD 610 - ALD 620 - aluminium



Diffuser ALD 613

### APPLICATION

- Air supply or air exhaust.
- Possibility of air supply to the right or left depending on the model.
- Ceiling mounted.

### DESCRIPTION

- Body in extruded aluminium.
- Extruded aluminium deflectors.
- Slide damper integrated in the diffuser
- Cadre width 25 mm.

### FINISH

- Body and deflectors in natural glossy tone or RAL9010 epoxy paint white anodised aluminium.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Hidden fixing by screws and bridge guides, accessible via the bottom of the diffuser.

Note : this fixing is compatible with all ceiling types.

- Assembly attached to the concrete slab using legs located on the plenum.

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

### ACCESSORIES

- Galvanized steel plenum with side connection. Single or insulated version.

### STANDARD DIMENSIONS

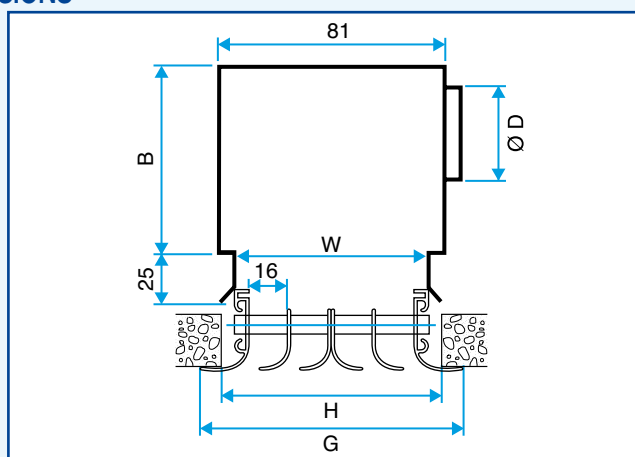
- Available from one to four slots.
- Manufactured in lengths 550 mm, 900 mm, 1150 mm and 1500 mm.

For more information refer to RANGE pages hereafter.

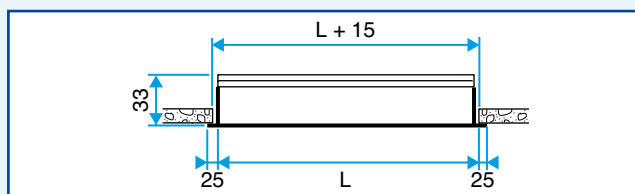
### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- See Mixing Rate (MR) at the end of the chapter.

### DIMENSIONS



Diffuser ALD 620



Diffuser ALD 610 or ALD 620

### STANDARD DIMENSIONS

Name	B (mm)	Ø D (mm)	G (mm)	H (mm)	W (mm)
ALD 611	155	125	50	35	28
ALD 612	155	125	67	50	46
ALD 622	155	125	74	55	46
ALD 613	190	160	84	70	63
ALD 623	190	160	91	70	63
ALD 614	190	160	101	85	80
ALD 624	190	160	108	85	80

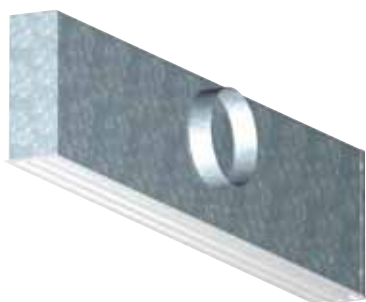
### AIR SUPPLY DIRECTIONS

Model	ALD 611	ALD 612	ALD 622	ALD 613	ALD 623	ALD 614	ALD 624
Direction of diffusion							



# Fixed slot diffusers

## Series SN 260 - steel



Diffuser SN 263 with plenum



Diffuser 264 with plenum

### APPLICATION

- Air supply or air exhaust.
- Possibility of air supply to the right or left depending on the model.
- Ceiling mounted.

### DESCRIPTION

- Body and blades in profiled galvanized sheet steel.

### FINISH

- RAL 9010 white epoxy paint steel.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- S0 : hidden screw fixing, accessible by the sides of the diffuser.

Note : this fixing is recommended for suspended ceilings and incompatible with staff or BA13 type ceilings.

- S7 : hidden fixing by screws and bridge guides, accessible via the bottom of the diffuser.

Note : this fixing is recommended for staff or BA13 type ceilings.

- Assembly attached to the concrete slab using legs located on the plenum.

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

### ACCESSORIES

- Galvanized steel plenum with side connection. Single or insulated version.

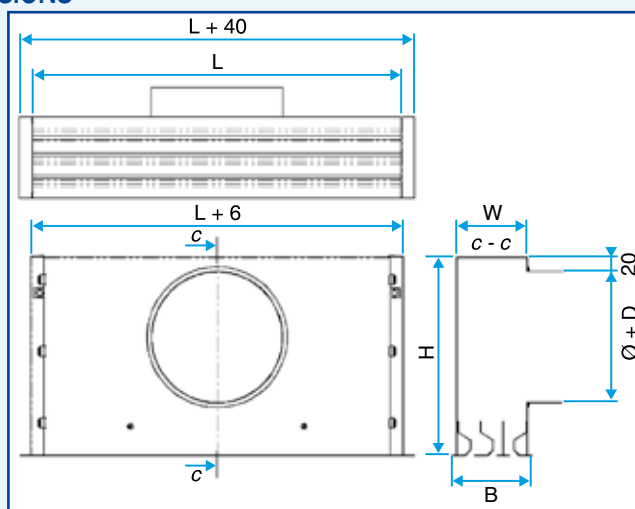
### STANDARD DIMENSIONS

- Available from one to eight slots.
  - Length from 200 mm to 1200 in steps of 5 mm.
- For more information refer to RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- See Mixing Rare (MR) at the end of the chapter.

### DIMENSIONS



Diffuser SN 260 with plenum

### STANDARD DIMENSIONS

Number of slots	W (mm)	B (mm)	H (mm)	D (mm)
1	42	54	220	160
2	76	88	260	200
3	110	122	260	200
4	144	156	310	250
5	178	190	310	250
6	212	224	375	315
7	246	258	375	315
8	280	292	375	315

### AIR SUPPLY DIRECTIONS

Number of slots	1	2	3	4
Model	SN 261	SN 262	SN 263	SN 264
Direction of diffusion	↙ ↘	↙ ↘ ↙ ↘	↙ ↘ ↙ ↘ ↙ ↘	↙ ↘ ↙ ↘ ↙ ↘ ↙ ↘

### TWO AIR SUPPLY DIRECTIONS

Number of slots	2	3	4	4
Model	SN 262-1	263-1	264-1	264-2
Direction of diffusion	↙ ↘ ↙ ↘	↙ ↘ ↙ ↘ ↙ ↘	↙ ↘ ↙ ↘ ↙ ↘ ↙ ↘	↙ ↘ ↙ ↘ ↙ ↘ ↙ ↘

# Fixed slot diffusers

## Series ALD 600 - SN 260

### Standard range ALD 600

Description	N°. slots	550* Code	900 Code	1150* Code	1500 Code
ALD 611 alum finish	1	11051750	11051751	11051752	11051753
ALD 611 white finish	1	11051850	11051851	11051852	11051853
ALD 612 alum finish	2	11051754	11051755	11051756	11051757
ALD 612 white finish	2	11051854	11051855	11051856	11051857
ALD 613 alum finish	3	11051762	11051763	11051764	11051765
ALD 613 white finish	3	11051862	11051863	11051864	11051865
ALD 614 alum finish	4	11051770	11051771	11051772	11051773
ALD 614 white finish	4	11051870	11051871	11051872	11051873
ALD 622 alum finish	2	11051758	11051759	11051760	11051761
ALD 622 white finish	2	11051858	11051859	11051860	11051861
ALD 623 alum finish	3	11051766	11051767	11051768	11051769
ALD 623 white finish	3	11051866	11051867	11051868	11051869
ALD 624 alum finish	4	11051774	11051775	11051776	11051777
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

Fixing	Finish
<ul style="list-style-type: none"> <li>• Hidden fixing by screws and bridge guide.</li> </ul>	<ul style="list-style-type: none"> <li>• Anodised aluminium, natural glossy tone or aluminium RAL9010 epoxy paint.</li> </ul>

\* Dimensions for standard 600 mm or 1200 mm tiles.

### Standard range SN 260

Description	Number slots	L 556* Diffuser code	L 556* Plenum code	L 1156* Diffuser code	L 1156* Plenum code
SN 262 One direction air supply	2	11051251	11053291	-	-
SN 264 One direction air supply	4	-	-	11051255	11053295

Fixing	Finish
<ul style="list-style-type: none"> <li>• S0 : hidden by screws.</li> </ul>	<ul style="list-style-type: none"> <li>• RAL9010 epoxy paint.</li> </ul>

\* Dimensions for standard 600 mm or 1200 mm tiles.

### Range with choice of options SN 260

Diffuser	Code	Plenum	Code
SN 260	11002078	P 260	11002139

### Range dimensions

N / L (mm)	400	500	600	800	900	1000	1200
1	✗	✗	✗	✗	✗	✗	✗
2	✗	✗	✗	✗	✗	✗	✗
3	✗	✗	✗	✗	✗	✗	✗
4	✗	✗	✗	✗	✗	✗	✗
5	✗	✗	✗	✗	✗	✗	✗
6	✗	✗	✗	✗	✗	✗	✗
7		✗	✗	✗	✗	✗	✗
8			✗	✗	✗	✗	✗

### Options available

Fixing	Finish	Slot layout	Plenum
<ul style="list-style-type: none"> <li>• S0 : hidden by screws.</li> <li>• S7 : hidden by screws and bridge guide.</li> </ul>	<ul style="list-style-type: none"> <li>• RAL9010 epoxy paint steel.</li> <li>• Epoxy paint in accordance with the RAL color chart. Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>• One direction.</li> <li>• Two directions : 2-1 3-1 4-1 and 4-2 5-1 and 5-2 6-1 and 6-3 7-1 and 7-3 8-1 and 8-4</li> </ul>	<ul style="list-style-type: none"> <li>• Special depth.</li> <li>• Additional mounted connection.</li> <li>• Special mounted connection diameter.</li> <li>• Insulation 2 or 5 sides.</li> </ul>

Slot diffusers

# Fixed slot diffusers

## Series 610 - 620 - 260

### SELECTION - AIR SUPPLY TYPE 610 - 620 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Number slots	Length (mm)	qv (m <sup>3</sup> /h)												Lw	Lt				
			60	100	200	300	350	400	450	500	600	800	1000							
0,0050	1	550	23	2,8	38	4,2														
			3,5	10	5,8	25														
0,0073	1	900	–	1,5	23	2,8	43	5,2												
			2	3	3,5	10	7	40												
0,0104	1	1150			–	2,2	38	4,4												
					2,9	7	5,9	28												
0,0135	1	1500					30	3,4	39	4,5										
							4,4	17	6,3	36										
0,0100	2	550		22	3,1	42	6,2													
				3	7	6	30													
0,0146	2	900		27	3,8	37	7,5	44	6,9	48	7,9									
				3,5	10	5,1	20	6,5	35	7,4	45									
0,0208	2	1150		22	3,1	32	4,5	36	5,1	40	5,9	43	6,5	47	7,8					
				3	7	4,1	13	5	20	5,5	25	6,2	33	7	40					
0,0270	2	1500		–	2,4	25	3,5	27	3,9	32	4,5	34	5	38	5,5	45	9,5			
				2,2	5	3,5	9	3,5	10	4,1	15	4,7	18	5,1	20	6,8	40			
0,0150	3	550		32	5	44	7,6													
				4	13	6	30													
0,0219	3	900		–	3	28	4,6	35	5,3	42	6,2	45	7							
				2,3	5	3,6	10	4,5	22	5,7	28	6,5	35							
0,0312	3	1150					23	3,6	27	4,2	32	4,9	35	5,6	38	6,2	42	7,4		
							2,7	7	3,3	10	3,9	13	4,2	15	4,9	20	5,5	25		
0,0405	3	1500											26	5,8	30	6,2	35	6,9		
														3,4	13	3,9	15	4,4	17	
0,0200	4	550		23	4,2	35	6,2	42	7,3											
				2,8	7	4	13	3,1	20											
0,0292	4	900		20	3,9	23	4,5	27	5,1	33	6									
				2,5	5	3,1	7	3,5	10	3,8	12									
0,0416	4	1150										26	4,6	29	5,4	34	6,1	42	8,1	
														3	7	3,5	10	4	13	5,1
0,0540	4	1500	Lw	Lt																
			Vk	Pa																

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

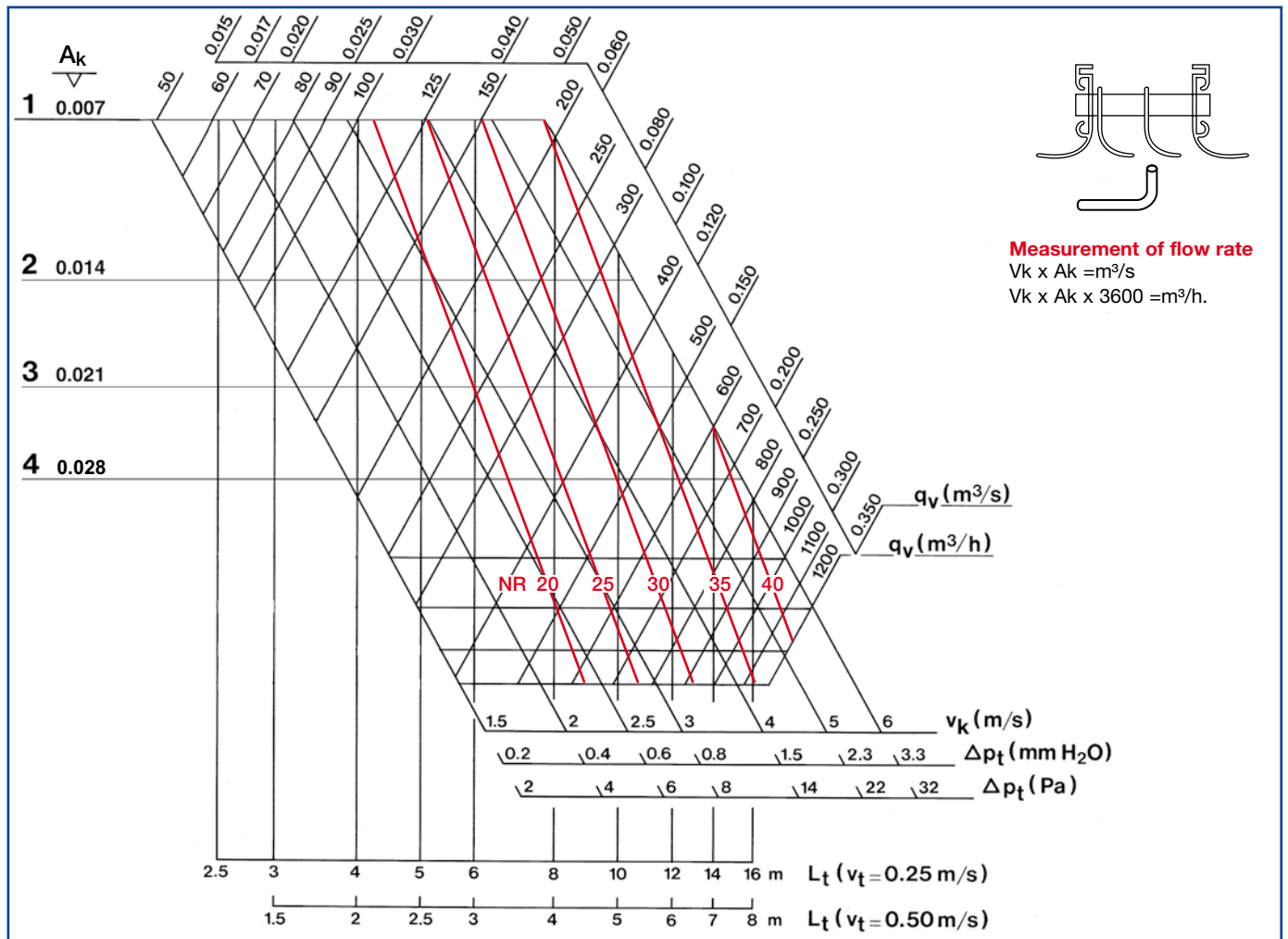
### SELECTION - AIR SUPPLY TYPE 260 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Number slots	qv (m <sup>3</sup> /h)												Lw	Lt					
		150	200	250	300	400	550	700	800											
0,018	2	15	2,9	21	3,6	27	4,9	32	5,9	37	6,4									
		2,4	5	3	8	4	14	5	22	6	32									
0,036	4									23	5,3	31	7,3	3,7	9,3	41	10,6			
										3	8	4	17	5	30	6	32			
0,018	4	3								23	5,2	31	6,0	37	8,0	41	9,3			
											3	8	4	17	5	30	6	32		
0,009 + 0,027	1									–	2,7	–	4,0	–	4,9	–	5,3			
											3	–	4	–	5	–	6	–		
0,036	4	2								23	3,6	31	5,3	37	6,7	41	7,7			
											3	8	4	17	5	30	6	32		
0,018 + 0,018	2	2	Lw	Lt																
			Vk	Pa																

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

# Fixed slot diffusers

Series ALD 600 - air supply with ceiling effect - length 1 m



The values Lw (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

## CORRECTIONS FOR OTHER $V_t$

0.25	0.375	0.5	0.625
x 1	x 0.67	x 0.5	x 0.4

## CORRECTIONS FOR DIFFUSERS WITHOUT PLENUM

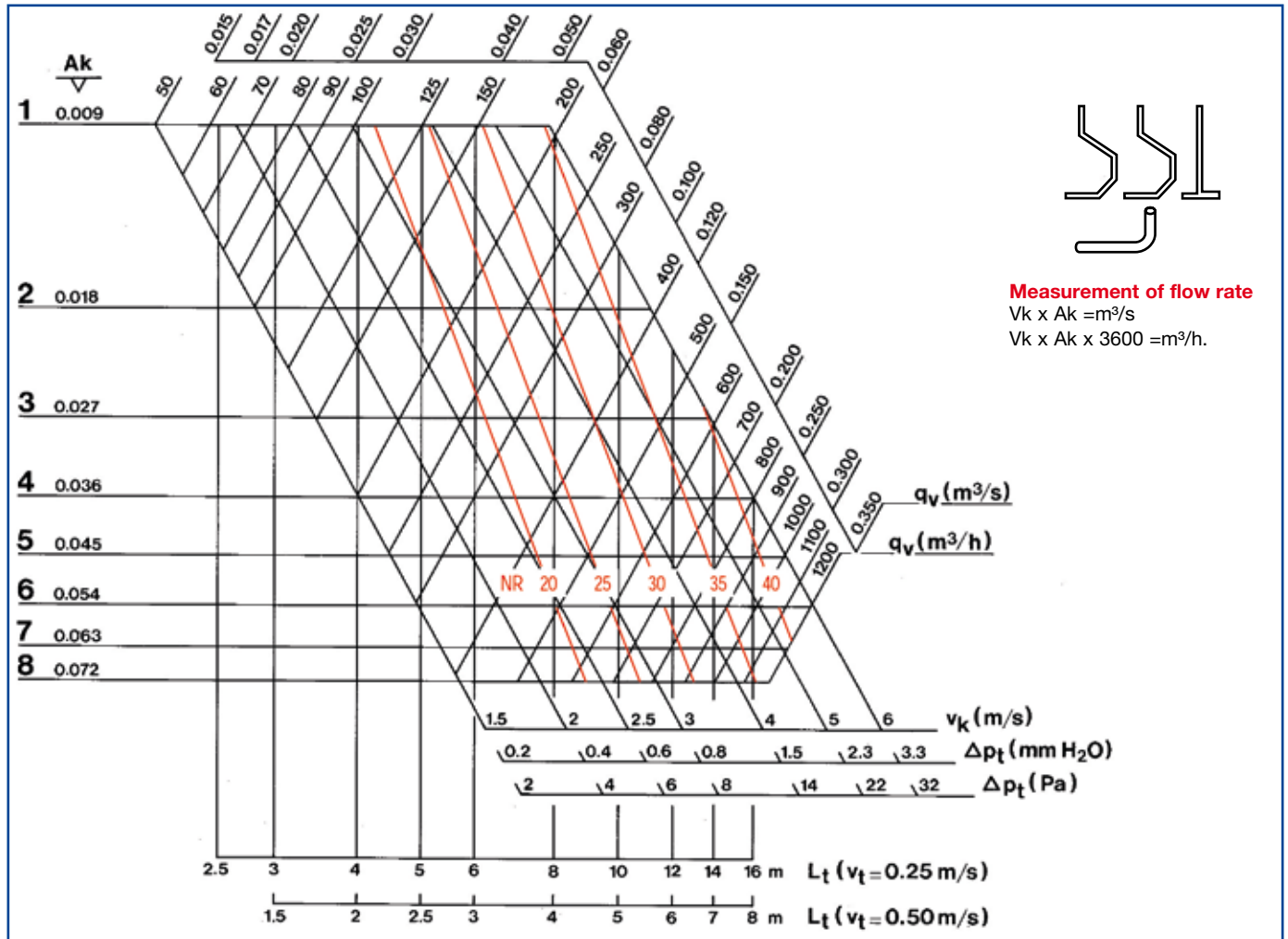
$\Delta P_t$	x 0.6
Lw	- 5

## CORRECTIONS FOR DAMPERS

Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 10	Lw + 20

# Fixed slot diffusers

Series 260 - air supply with ceiling effect - length 1 m



The values  $L_w$  (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

## CORRECTIONS FOR OTHER $v_t$

0.25	0.375	0.5	0.625
x 1	x 0.67	x 0.5	x 0.4

## CORRECTIONS FOR DIFFUSERS WITHOUT PLENUM

$\Delta p_t$	x 0.6
$L_w$	- 5

# Small flow rate fixed slot diffusers

## Series SN 221 - SN 231 - steel



Diffuser SN 231

### APPLICATION

- Slot diffuser application for small flow rate air supply or air exhaust.
- Fixed horizontal diffusion via a single slot.
- Diffuser for mounting against the ceiling between T profiles (metal frame of suspended ceilings).
- Possibility of air supply to the right R or left L, or air exhaust E (without deflection) depending on the model.
- Plenum integrated with circular connection.

### DESCRIPTION

- Diffuser and frame in profiled sheet steel.
- Type 221 : Slot width 20 mm.
- Type 231 : Slot width 25 mm.
- Version R : direction of air supply on the side of the power mounted connection.
- Version L : direction of air supply on the opposite side the power mounted connection.
- Version E : no deflection, used in air exhaust terminal.

### FINISH

- Finish galvanized steel, RAL9005 black on the deflector.

### FIXING

- Hidden by screws accessible on the sides of the diffuser.
- Assembly attached to the concrete slab using legs located on the plenum.

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

### ACCESSORIES

- Plenum side connection in galvanized sheet steel.
- External insulation of the provided plenum on request.

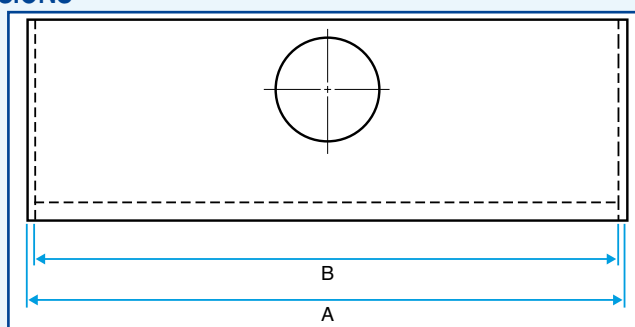
### STANDARD DIMENSIONS

- Available in one slot only.
- Available in preferential lengths 600, 900 and 1200 mm adapted for suspended-ceiling tiles.
- Length between 300 and 1500 mm in steps of 10 mm.

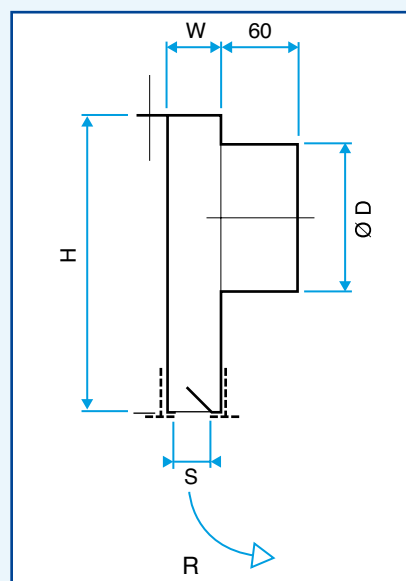
### TECHNICAL CHARACTERISTICS

- See selection tables and charts on the following pages.
- Mixing Rates (MR) at the end of the chapter.

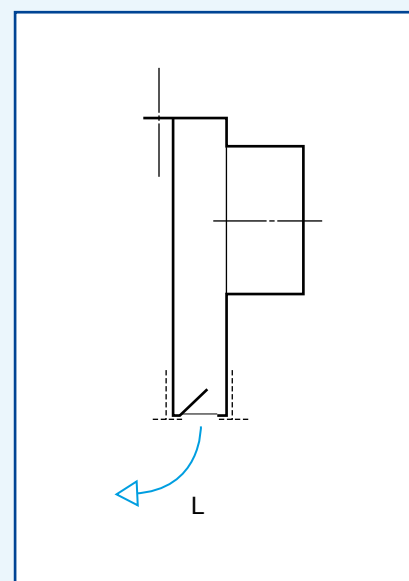
### DIMENSIONS



Diffuser SN 231



Air supply to the right R



Air supply to the left L

### STANDARD DIMENSIONS

Model	A (mm)	L (mm)	D (mm)	H (mm)	SN 221		SN 231	
					S (mm)	W (mm)	S (mm)	W (mm)
600	596	582	100	240	20	45	25	50
900	896	882	160	240	20	45	25	50
1200	1196	1182	160	240	20	45	25	50

# Small flow rate fixed slot diffusers

## Series 221 and 231

### Standard range

Dimensions	SN 231 L Left air supply Code	SN 231 R Right air supply Code	SN 231 E Air exhaust Code
596*	11051691	11051688	11051694
896	11051692	11051689	11051695
1196*	11051693	11051690	11051696
Fixing		Finish	
• Hidden by screws.		• RAL9005 black epoxy paint on the deflector.	

\* Dimensions for standard 600 mm or 1200 mm tiles.

### Range with choice of options

Model slot width 20 mm	Code	Model slot width 25 mm	Code
SN 221	21081001	SN 231	21081003

### Range dimensions

N / L	300	600	900	1200	1500
1	✗	✗	✗	✗	✗

### Options available

Finish	Diffuser	Plenum
<ul style="list-style-type: none"> <li>• RAL9005 epoxy paint steel.</li> <li>• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>• Air supply to the left or right.</li> <li>• Air exhaust (without deflector).</li> </ul>	<ul style="list-style-type: none"> <li>• Special depth.</li> <li>• Additional spigot.</li> <li>• Special mounted connection diameter.</li> <li>• Exterior insulation 5 sides.</li> </ul>

## Series 221 - 231

### SELECTION - AIR SUPPLY TYPE 221 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Longueur (mm)	50 (m <sup>3</sup> /h)		75 (m <sup>3</sup> /h)		90 (m <sup>3</sup> /h)		100 (m <sup>3</sup> /h)		125 (m <sup>3</sup> /h)		150 (m <sup>3</sup> /h)		175 (m <sup>3</sup> /h)		200 (m <sup>3</sup> /h)		
		Lw	Lt	Vk	Pa	Lw	Lt	Vk	Pa	Lw	Lt	Vk	Pa	Lw	Lt	Vk	Pa	
0,0042	600	25	2,6	30	3,9	35	4,7										Lw	Lt
		3,3	10	4,9	22,0	6	32										Vk	Pa
0,0063	900					25	3,7	26	4,1									
						4	14	4,4	17									
0,0084	1200					-	1,7	22	3,1	28	3,9	32	4,7	38	5,4			
						3	8	3,3	10	4,1	16	4,9	23	5,7	32			
0,0105	1500	Lw	Lt							22	3,1	26	3,7	31	4,3	37	4,9	
		Vk	Pa							3,3	10	4	14	4,7	19	5,4	25	

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

### SELECTION - AIR SUPPLY TYPE 231 WITH CEILING EFFECT

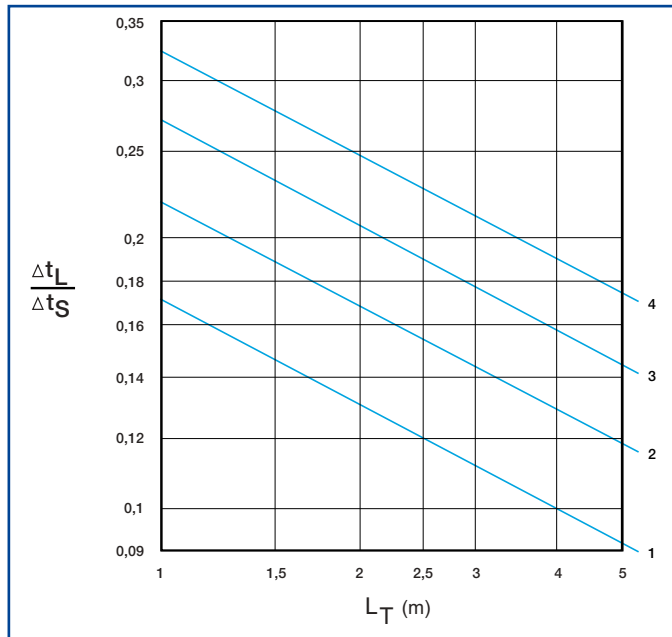
Ak (m <sup>2</sup> )	Longueur (mm)	qv (m <sup>3</sup> /h)																
		75		90		100		125		150		175		200		240		
		Lw	Lt	Vk	Pa	Lw	Lt	Vk	Pa	Lw	Lt	Vk	Pa	Lw	Lt	Vk	Pa	
0,0054	600	30	3,2	36	3,9												Lw	Lt
		3,9	14	4,6	19												Vk	Pa
0,0081	900			22	3,0	27	3,4	36	4,4									
				3,1	6,5	3,4	7,6	4,3	11									
0,0108	1200					18	2,6	23	3,4	28	4,3	34	5,2					
						2,6	3,4	3,2	5,5	3,8	6,2	4,5	11,6					
0,0135	1500					-	2,5	18	3,2	21	3,6	24	4,2					
						2,6	1,8	3,1	2,8	3,6	4,0	4,1	5,2					
0,0162	1800	Lw	Lt							-	2,5	15	3,0	17	3,5	20	4,4	
		Vk	Pa							2,5	1,2	2,9	2,0	3,4	2,8	4,0	3,8	

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

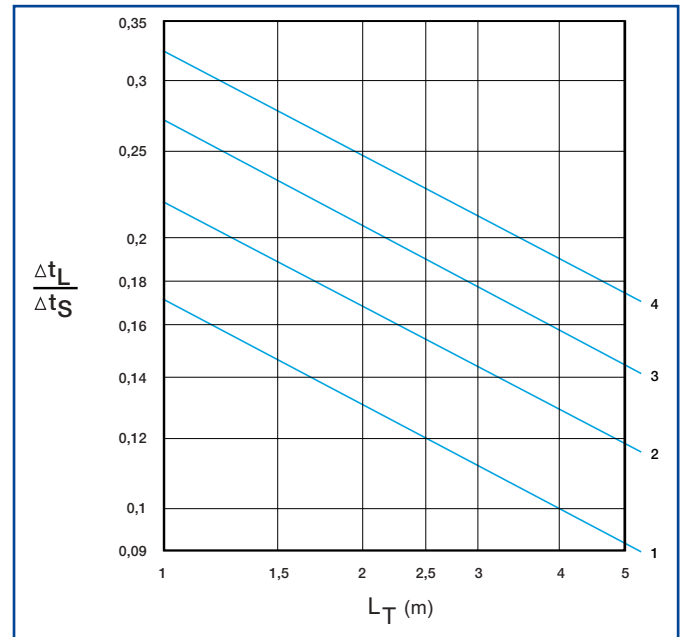
# Slot diffusers

## Mixing Rates (MR)

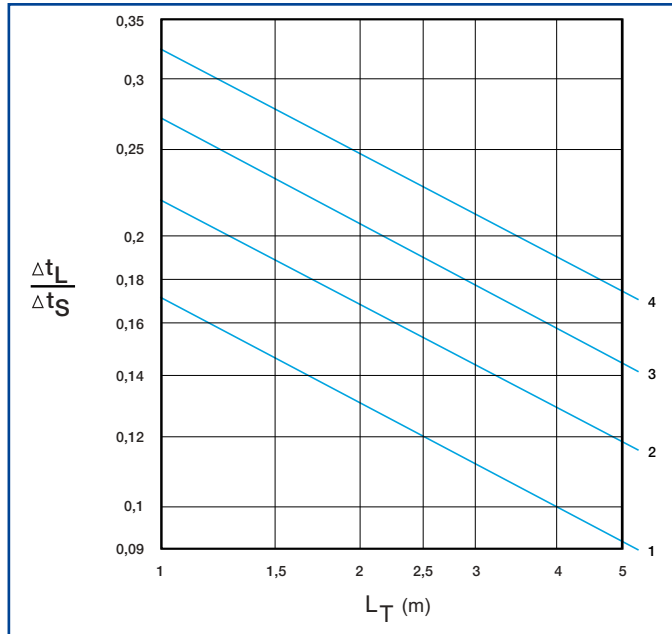
MR for diffuser series 270 - 280 - 290



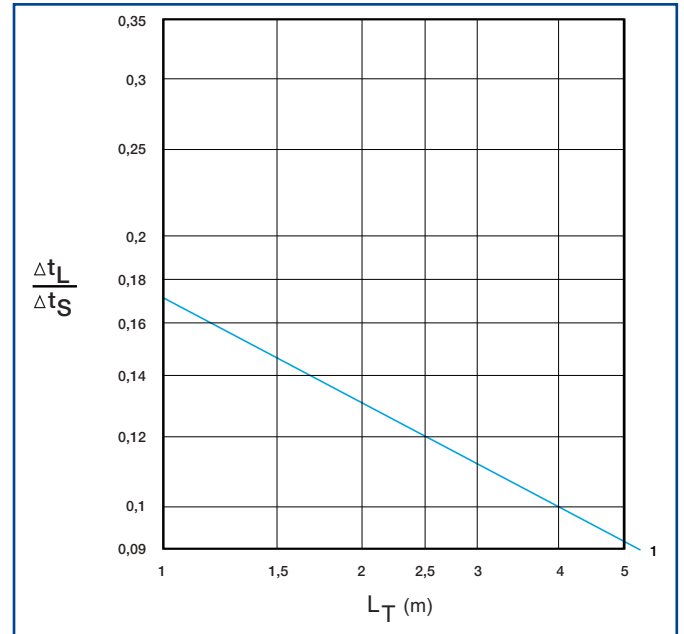
MR for diffuser series 610 - 620



MR for diffuser series 260



MR for diffuser series 221 - 231



## SYMBOLS

$L_t$ (m)	Throw in m
$\Delta T_L$ (°C)	Difference between the end of throw temperature and room temperature (in °C)
$\Delta T_S$ (°C)	Difference between the air supply temperature and room temperature (in °C)
$MR = \Delta T_L / \Delta T_S$	Ratio between the temperature differences. This value is proportional to the capacity of the diffuser to 'quickly' mix the air taken in room temperature.
Example with air supply at 15°C and room temperature at 25°C	The temperature in the air jet at X (m) of the diffuser = 25 - 10 x MR (°C)



# Swirl diffusers

Twisted swirl diffusers - p 176



Adjustable square swirl diffusers - p 181



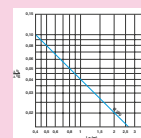
Ajustable circular swirl diffusers - p 189



Fixed swirl diffusers - p 194



Mixing rates - p 199

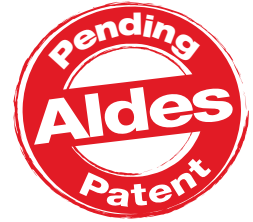


# Twisted swirl diffusers

## Series Twisted 850 - steel



TWISTED 850 air supply diffuser



### APPLICATION

- Air supply or air exhaust, high induction swirl jet fixed diffusion.
- Wide flow rate range in a single diffuser dimension.
- High mixing rate installations.
- Ideal for cold and hot air supply (air conditioning) with significant temperature differences and low ceilings.
- Ideal for variable flow rate installations (fan coil unit connected to ducts).
- Ceiling diffuser planned to replace a 600x600 mm or 675x675 mm suspended ceiling tile.
- Adapted to Tbars and Fine-Line frames.

### DESCRIPTION

- Painted steel diffusion cone and central disk.
- Steel compensation plate adapted to 600x600 mm or 675x675 mm ceiling tiles, with 'Tbar' or 'Fine-Line' type frames.
- Air supply model with fixed central disk acting as a deflector.
- Air exhaust model with removable central disk and an elliptical filter. Access to the filter by simply and rapidly opening the central disk.
- Galvanized steel cylindrical plenum for direct connection to the 200 mm diameter circular duct.
- Model without plenum available for free exhaust or directly on flexible duct  $\varnothing 200$  or  $\varnothing 250$ . Not opening diffuser only.

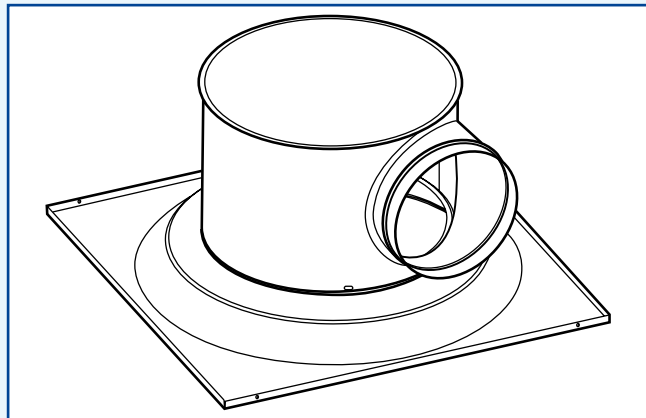
### DESIGN

- High induction air diffusion by rotating the air jet inside the plenum.

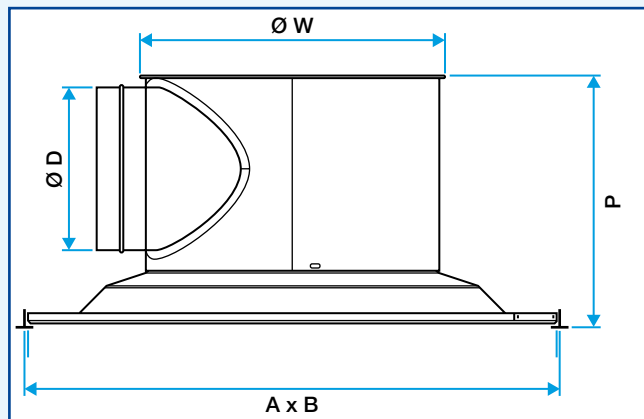
The diffusion cone, by maintaining a sufficient ejection speed, ensures a perfect Coanda effect (ceiling effect) and a swirling air jet. This swirl (or swirling jet) moves the room air, and thus mixes the air taken to guarantee a high degree of temperature uniformity in the zone of occupation.

- Aldes patent.

### DIMENSIONS



Diffuser Twisted 850



TWISTED 850 air supply diffuser with integrated plenum

### STANDARD DIMENSIONS

Dimensions A x B* (mm)	$\varnothing W$ (mm)	$\varnothing D$ (mm)	P (mm)
600 x 600	366	200	298
675 x 675	366	200	298

\* Tile dimensions

# Twisted swirl diffusers

## Series Twisted 850 - steel



TWISTED 850 W air exhaust diffuser

### FINISH

- RAL9010 matt epoxy paint finish 30 % brightness.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixing to the concrete tile using legs located on the plenum.
- NB: the weight of the diffuser must not be borne by the frame of the suspended ceiling.

### ACCESSORIES

- G2 efficiency elliptical filter provided with the air exhaust diffuser. M1 fire rating.
- Sound insulation (15mm thick M1 melamine foam inside the plenum).
- Thermal insulation (5mm thick M1 polyurethane foam outside the plenum).

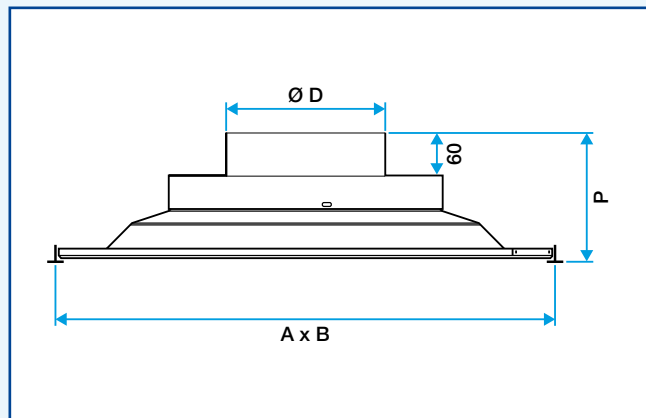
### STANDARD DIMENSIONS

- Dimensions adapted to standard 600x600 and 675x675 mm suspended ceiling tiles.
- 200 mm diameter circular connection.
- For more information refer to the Range pages hereafter.

### TECHNICAL CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the chapter.

### DIMENSIONS



Exhaust diffuser without plenum

### STANDARD DIMENSIONS

Dimensions A x B* (mm)	Ø D (mm)	P (mm)
600 x 600	200 or 250	170
675 x 675	200 or 250	170

\* Tile dimensions

# Twisted swirl diffusers

## Series Twisted 850

### Standard range

Dimensions	Air supply diffuser Twisted 850 600 x 600 Code	Opening air exhaust diffuser with filter Twisted 850 W 600 x 600 Code	Spare filter W 850 Code
200	11051161	11051162	11053949
Fixing		Finish	
• Hidden by fixing legs to the concrete tile.		• RAL9010 matt white epoxy painted steel 30 % brightness.	

### Range with choice of options

Dimensions (mm)	Air supply diffuser Twisted 850 Code	Opening air exhaust diffuser with filter Twisted 850 W Code	Exhaust diffuser without plenum Twisted 850 Code
600 x 600 / 200	11003361	11003362	11003366
675 x 675 / 200	11003363	11003364	11003368

### Options available

Type of ceiling frame	Finish	Plenum	Without plenum
<ul style="list-style-type: none"> <li>Tbar frame.</li> <li>Fine Line frame.</li> </ul>	<ul style="list-style-type: none"> <li>Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> <li>Version without central logo.</li> </ul>	<ul style="list-style-type: none"> <li>Acoustic or thermic + acoustic insulation.</li> </ul>	<ul style="list-style-type: none"> <li>No connection.</li> <li>Circular connection ø 200</li> <li>Circular connection ø 250</li> </ul>

### PROPOSED ACCESSORIES

- G2 replacement filter (M1 fire rating).

## Series Twisted 850

### SELECTION - AIR SUPPLY WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Dimensions	qv (m <sup>3</sup> /h)																							
		150		200		250		300		350		400		450		500		550		600		650			
0,022	Ø 200	19	0,30	20	0,39	21	0,52	23	0,59	24	0,65	26	0,71	30	0,85	32	0,91	34	0,96	35	1,02	38	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																			Lw	Lt		
		Vk	Pa																			Vk	Pa		

The Lw values (NR) do not include attenuation of the premises. Vt = 0.37 m/s. Tests performed with the standard plenum.

### SELECTION - AIR EXHAUST WITHOUT FILTER

Ak (m <sup>2</sup> )	Dimensions	qv (m <sup>3</sup> /h)																							
		150		200		250		300		350		400		450		500		550		600		650			
0,029	Ø 250	19	-	19	-	20	-	21	-	22	-	25	-	28	-	31	-	33	-	35	-	37	-		
		1,4	2	1,9	3	2,4	5	2,9	7	3,3	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	-																			Lw	-		
		Vk	Pa																			Vk	Pa		

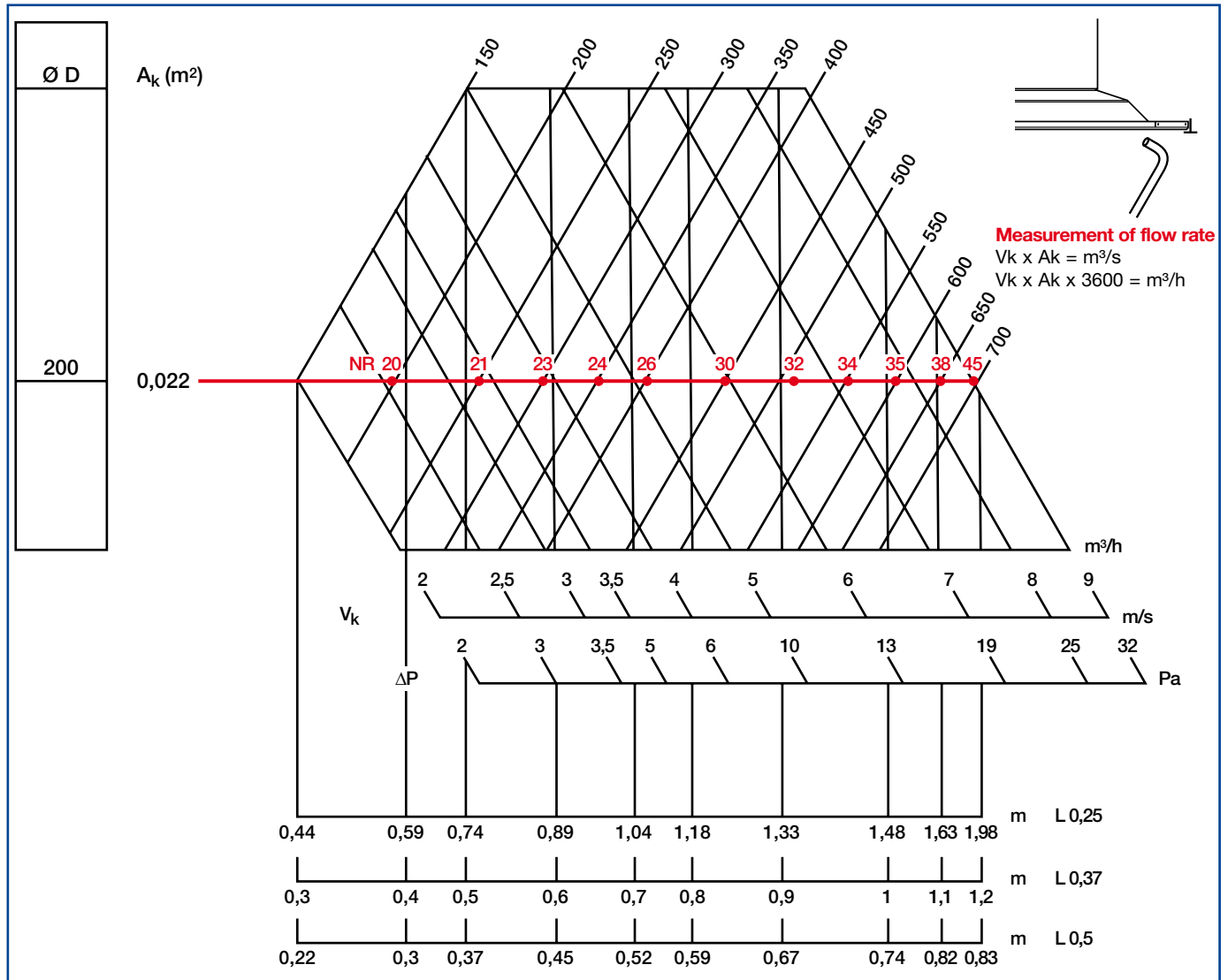
The Lw values (NR) do not include attenuation of the premises. Tests performed without plenum and with the standard plenum (Pa2).

### SELECTION - AIR EXHAUST - G2 FILTER ALONE

Ak (m <sup>2</sup> )	Dimensions	qv (m <sup>3</sup> /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 swirl diffusers

## Series TWISTED 850 - air supply with ceiling effect



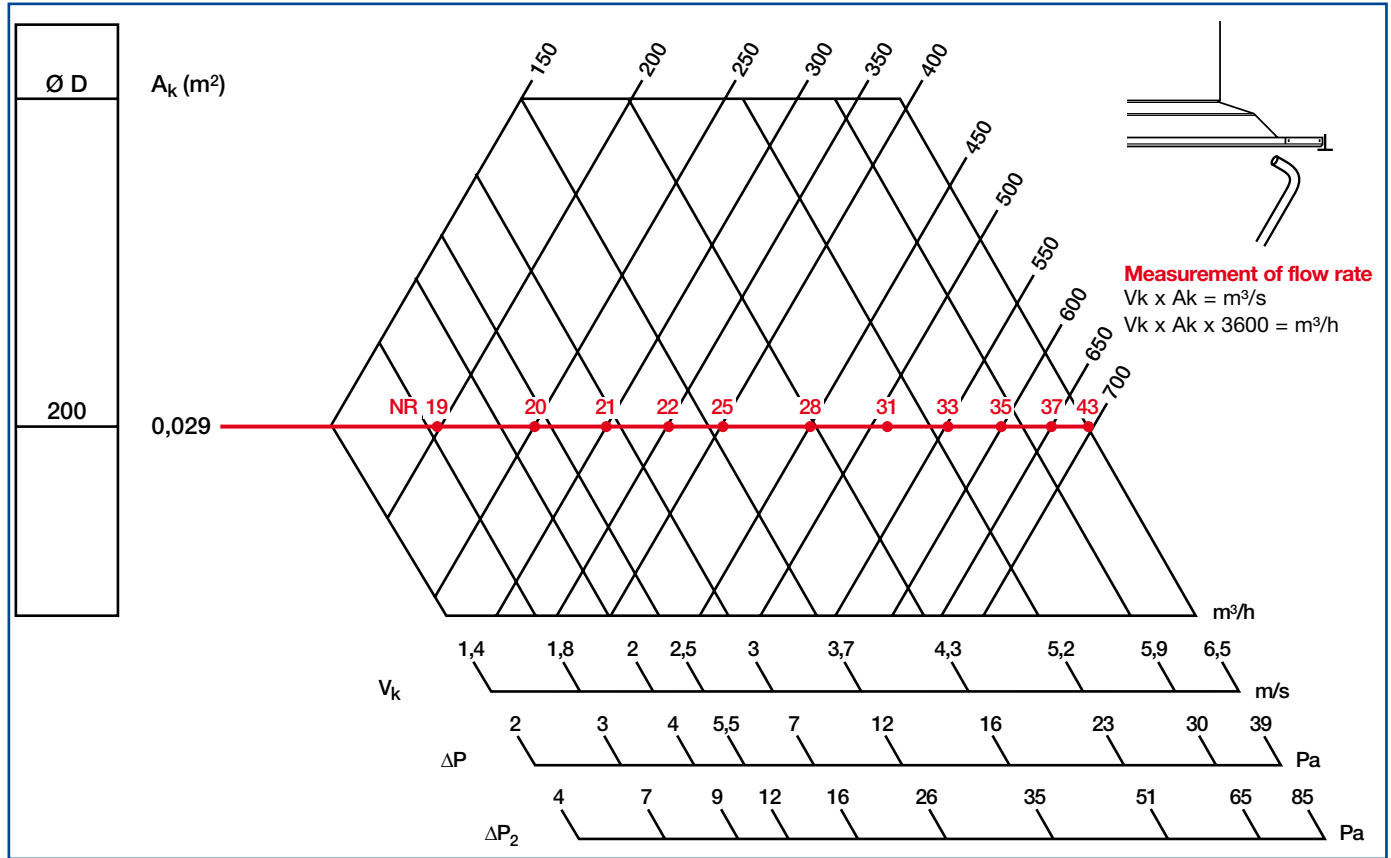
The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

### CORRECTIONS FOR OTHER V<sub>t</sub>

V <sub>t</sub> (m/s)	0.25	0.375	0.5	0.625
L <sub>t</sub>	x 1	x 0.67	x 0.5	x 0.4

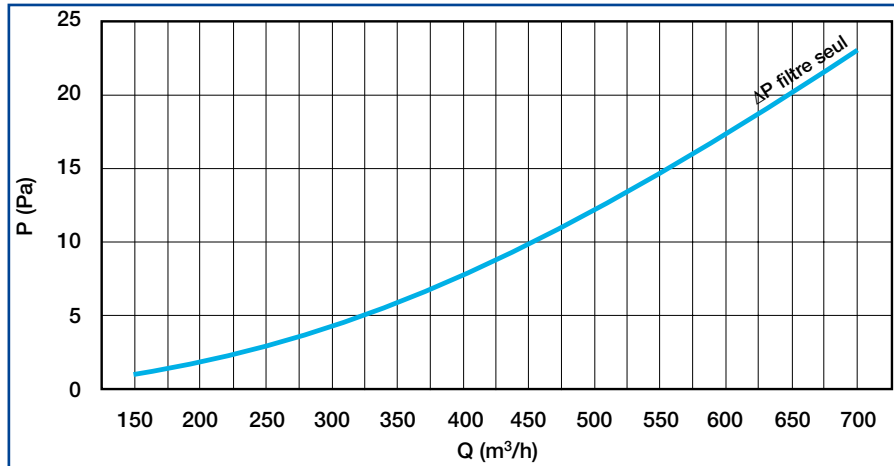
# Twisted swirl diffusers

## Series TWISTED 850 - air exhaust



The Lw values (NR) do not include attenuation of the premises. Tests performed without plenum and with the standard plenum (Pa2).

### PRESSURE DROPS FILTER ALONE



# Ajustable square swirl diffusers

## Series SF 785 - steel



Diffuser SF 785

### APPLICATION

- Air supply.
- Adjustable diffusion for a swirl air jet.
- Rapid temperature uniformity.
- Designed for installations with a high mixing rate and low ceilings.
- Ceiling mounted.
- Dimension 600x600 adapted to standard suspended ceiling.

### DESCRIPTION

- Punched steel sheet body.
- Adjustable polypropylene deflectors.

### FINISH

- RAL9010 white epoxy paint front.
- RAL9005 black deflectors.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden screw fixing to the diffuser sides.  
Note: this fixing is recommended for suspended ceilings and is incompatible with staff or BA13 type ceilings.
  - F7: visible fixing by central screw and bridge guide.  
Note: this fixing is recommended for staff or BA13 type ceilings.
  - Assembly attached to the concrete tile using legs located on the plenum.
- The weight of the diffuser must not be borne by the ceiling structure.

### ACCESSORIES

- RE plenum with side mounted connection.
- RT plenum with top mounted connection.
- Integrated flow divider.
- Available in single or insulated versions 2 or 5 sides.

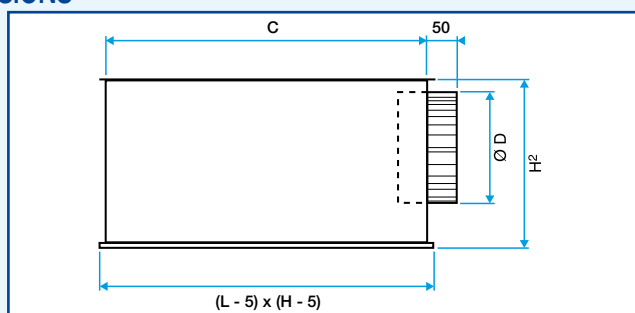
### STANDARD DIMENSIONS

- 400x400 to 825x825 mm dimension range.
- Special 600x600 mm suspended ceiling tile dimension.
- For more information refer to the Range pages hereafter.

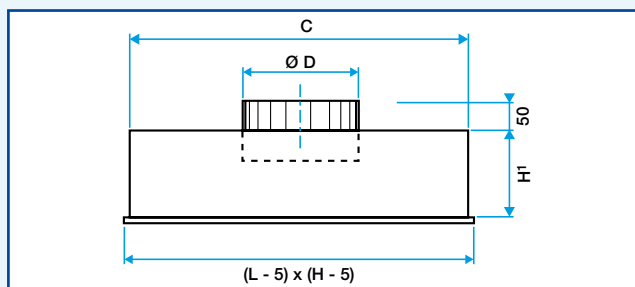
### TECHNICAL CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the chapter.

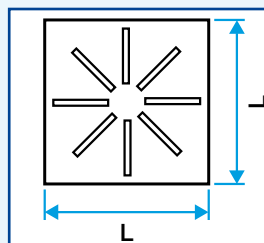
### DIMENSIONS



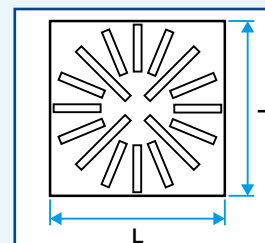
SF 785 diffuser with RE plenum



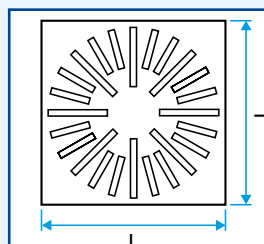
SF 785 diffuser with RT plenum



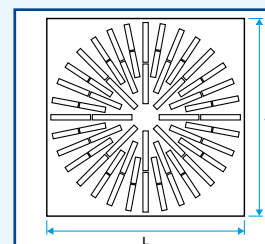
Dimension 400 x 400



Dimension 500 x 500



Dimension 600 x 600



Dimension 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	360	200	200	290
500 x 500	24	460	200	200	290
600 x 600*	32	560	250	200	340
825 x 825	64	785	315	200	405

\* Special suspended ceiling tile dimension.

# Ajustable square swirl diffusers

## Series SF 775 - steel



Diffuser SF 775

### APPLICATION

- Air supply.
- Adjustable diffusion for a swirl air jet.
- Rapid temperature uniformity.
- Designed for installations with a high mixing rate and low ceilings.
- Ceiling mounted.
- Dimension 600x600 adapted to standard suspended ceiling.

### DESCRIPTION

- Punched steel sheet body.
- Adjustable polypropylene deflectors.

### FINISH

- RAL9010 white epoxy paint front.
- RAL9005 black deflectors.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden screw fixing to the diffuser sides.

Note: this fixing is recommended for suspended ceilings and is incompatible with staff or BA13 type ceilings.

- F7: visible fixing by central screw and bridge guide.
- Note: this fixing is recommended for staff or BA13 type ceilings.
- Assembly attached to the concrete tile using legs located on the plenum.

The weight of the diffuser must not be borne by the ceiling structure.

### ACCESSORIES

- RE plenum with side mounted connection.
- RT plenum with top mounted connection.
- Integrated flow divider.
- Available in single or insulated versions 2 or 5 sides.

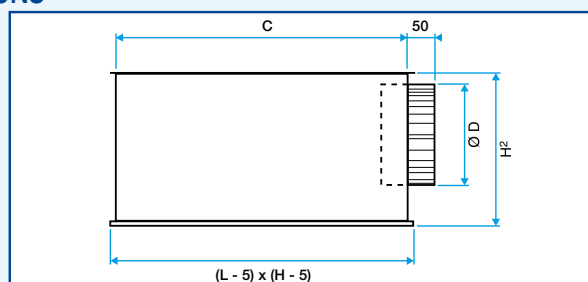
### STANDARD DIMENSIONS

- 400x400 to 825x825 mm dimension range.
- Special 600x600 mm suspended ceiling tile dimension.
- For more information refer to the Range pages hereafter.

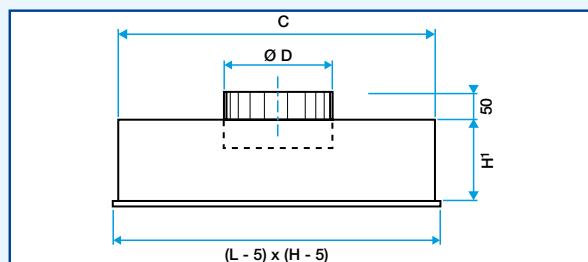
### TECHNICAL CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the chapter.

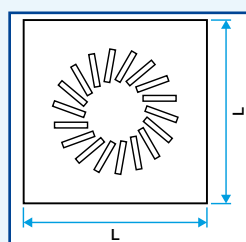
### DIMENSIONS



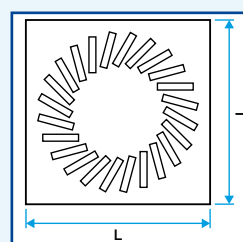
SF 775 diffuser with RE plenum



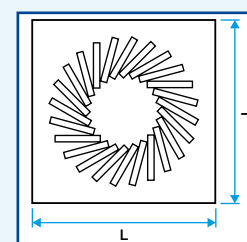
SF 775 diffuser with RT plenum



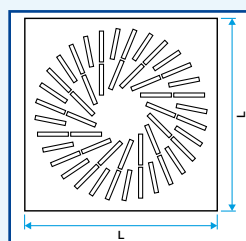
Dimension 400 / 500 / 600 x 16



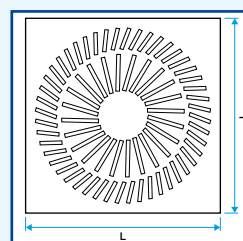
Dimension 500 x 24



Dimension 600 x 24



Dimension 600 x 48



Dimension 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	360	200	200	290
500 x 500	16	460	200	200	290
500 x 500	24	460	200	200	290
600 x 600*	16	560	200	200	290
600 x 600*	24	560	200	200	290
600 x 600*	48	560	250	200	340
825 x 825	72	785	315	200	405

\* Special suspended ceiling tile dimension.



# Ajustable square swirl diffusers

## Series SF 786 - steel



Diffuser SF 786

### APPLICATION

- Air supply.
- Fixed swirl diffusion.
- Rapid temperature uniformity.
- Designed for installations with a high mixing rate and low ceilings.
- Ceiling mounted.
- Dimension adapted to suspended ceiling 600x600 standard.

### DESCRIPTION

- Punched steel sheet front.

### FINISH

- Epoxy paint steel, RAL9010 white.

### FIXING

- F7: visible fixing by central screw and bridge guide.
- Note: this fixing is compatible with staff or BA13 type ceilings.
- Assembly attached to the concrete tile using legs located on the plenum.
- The weight of the diffuser must not be borne by the ceiling structure.

### ACCESSORIES

- RE plenum with side mounted connection.
- RT plenum with top mounted connection.
- Integrated flow divider.
- Available in single or insulated versions 2 or 5 sides.

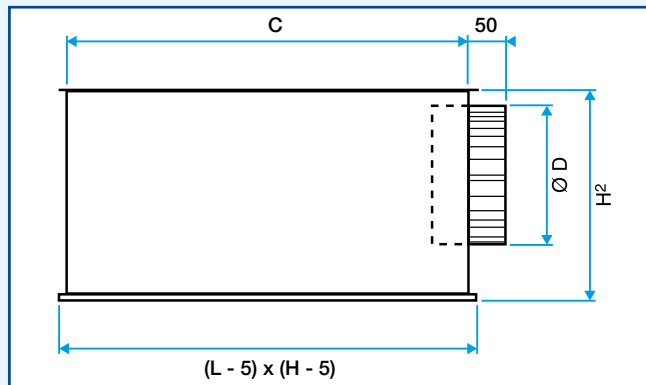
### STANDARD DIMENSIONS

- One dimension available: 600x600 mm (adapted to standard ceiling tiles).
- For more information refer to the Range pages hereafter.

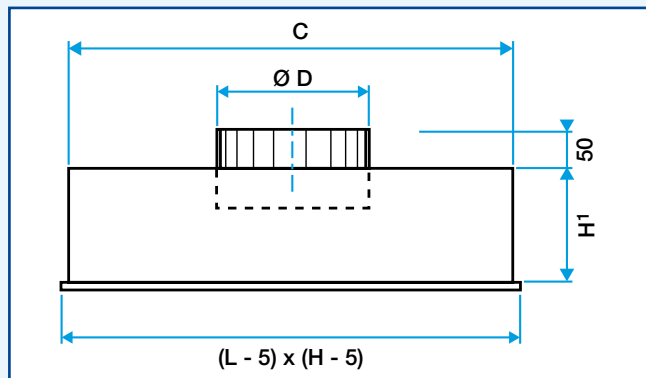
### TECHNICAL CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the chapter.

### DIMENSIONS



SF 786 diffuser with RE plenum



SF 785 diffuser with RT plenum

### STANDARD DIMENSIONS

Dimensions L x H (mm)	C (mm)	Ø D (mm)	H1 (mm)	H2 (mm)
600 x 600	560	250	200	340

# Ajustable square swirl diffusers

## Series 785 - 775 - 786

### Standard range

Dimensions	Diffuser SF 785 F7 Code	Diffuser SF 786 F7 Code
400 x 400	11051130	
500 x 500	11051131	
600 x 600	11051132	11051133
Fixing	Finish	
• Central screw and bridge guide.	• Epoxy paint steel, RAL9010 white.	

### Range with choice of options

L x H / fentes (mm)	Code SF 785 diffuser	Code SF 775 diffuser	Code RE plenum	Code RT plenum
400 x 400 / 16 fentes	11002941	11002921	11002950	11002980
500 x 500 / 16 fentes	-	11002922	11002950	11002980
500 x 500 / 24 fentes	11002943	11002923	11002950	11002980
600 x 600 / 16 fentes	-	11002924	11002950	11002980
600 x 600 / 24 fentes	-	11002925	11002950	11002980
600 x 600 / 32 fentes	11002946	-	11002950	11002980
600 x 600 / 48 fentes	-	11002926	11002950	11002980
825 x 825 / 64 fentes	11002947	-	11002950	11002980
825 x 825 / 72 fentes	-	11002927	11002950	11002980

### Options available

Fixing	Finish	Plenum
<ul style="list-style-type: none"> <li>F0: hidden screw fixing to the sides.</li> <li>F7: visible fixing by central screw and bridge guide.</li> </ul>	<ul style="list-style-type: none"> <li>Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>F0 or F7 fixing.</li> <li>Special depth.</li> <li>Special mounted connections.</li> <li>2 or 5 side insulation.</li> </ul>

### PROPOSED ACCESSORIES

- RE and RT plenums.

# Ajustable square swirl diffusers

## Series 785 - 775 - 786

### SELECTION - AIR SUPPLY TYPE 785 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	150 (m <sup>3</sup> /h)		200 (m <sup>3</sup> /h)		300 (m <sup>3</sup> /h)		400 (m <sup>3</sup> /h)		500 (m <sup>3</sup> /h)		600 (m <sup>3</sup> /h)		800 (m <sup>3</sup> /h)	
0,0248	400 x 400	-	1,2	-	1,5	26	2,4	35	3,2					Lw	Lt
		1,6	2,5	2,1	4,5	3,2	10,0	4,5	20,0					Vk	Pa
0,0392	500 x 500			-	1,3	-	2,0	25	2,5	30	3,2				
				1,4	1,9	2	4,0	2,8	8,0	3,5	13,0				
0,0565	600 x 600					-	1,6	-	2,3	25	2,8	28	3,2		
						1,6	2,2	2	4,0	2,7	7,0	3,1	10,0		
0,0938	825 x 825	Lw	Lt							-	2,3	20	2,8	28	3,6
		Vk	Pa							1,7	3,0	2	4,0	3	8,0

The Lw values (NR) do not include attenuation of the premises. Vt = 0.37 m/s.  
Tests performed with the standard plenum.

### SELECTION - AIR SUPPLY TYPE 775 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H x fentes (mm)	150 (m <sup>3</sup> /h)		200 (m <sup>3</sup> /h)		300 (m <sup>3</sup> /h)		400 (m <sup>3</sup> /h)		500 (m <sup>3</sup> /h)		600 (m <sup>3</sup> /h)		800 (m <sup>3</sup> /h)		1200 (m <sup>3</sup> /h)	
0,0189	400 / 500 / 600 x 16	-	1,3	21	1,8	32	2,6									Lw	Lt
		1,8	3,7	2,6	7,0	4	16,0									Vk	Pa
0,0284	500 x 500 x 24			-	1,5	25	2,3	33	3,0								
				2	4,0	3	9,0	4	16,0								
0,0449	600 x 600 x 24					-	1,8	23	2,4	28	3,0	33	3,6				
						1,8	3,5	2,5	6,0	3,1	10,0	3,9	15,0				
0,0568	600 x 600 x 48							-	2,2	25	2,8	29	33,0	37	4,8		
								2	4,0	2,7	7,0	3,1	10,0	4,4	20,0		
0,1017	825 x 825 x 72	Lw	Lt							-	2,6	25	3,4	32	4,5		
		Vk	Pa							1,8	3,1	2,6	6,0	3,4	11,0		

The Lw values (NR) do not include attenuation of the premises. Vt = 0.37 m/s.  
Tests performed with the standard plenum.

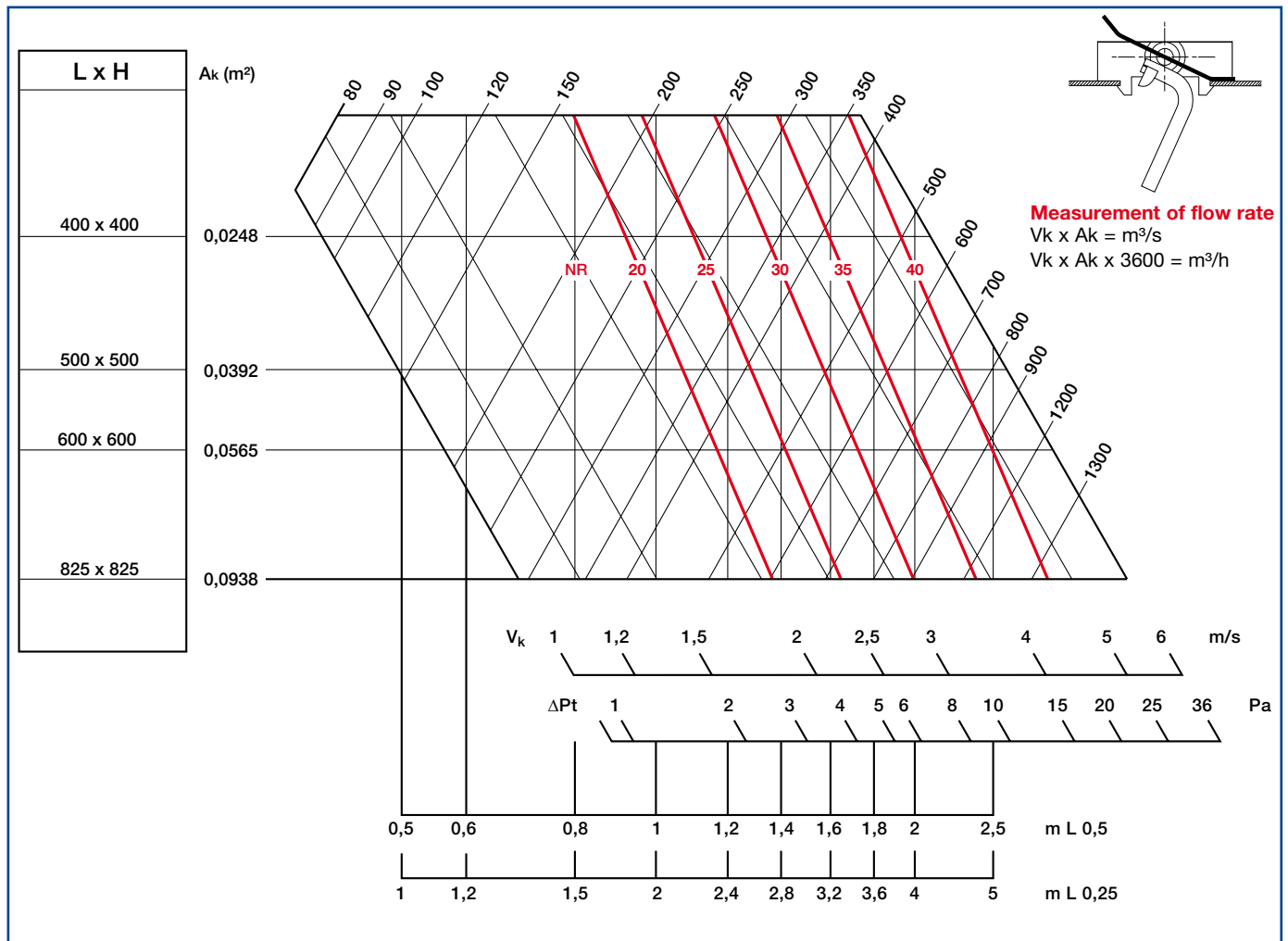
### SELECTION - AIR SUPPLY TYPE 786 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	L x H (mm)	150 (m <sup>3</sup> /h)		200 (m <sup>3</sup> /h)		300 (m <sup>3</sup> /h)		400 (m <sup>3</sup> /h)		500 (m <sup>3</sup> /h)		600 (m <sup>3</sup> /h)		800 (m <sup>3</sup> /h)	
0,0478	600 x 600	Lw	Lt			-	1,8	23	2,4	28	3,0	33	3,5		
		Vk	Pa			1,8	9,0	2,5	18,0	3	26,0	3,9	40,0		

The Lw values (NR) do not include attenuation of the premises. Vt = 0.37 m/s.  
Tests performed with the standard plenum.

# Ajustable square swirl diffusers

## Series 785 - air supply with ceiling effect



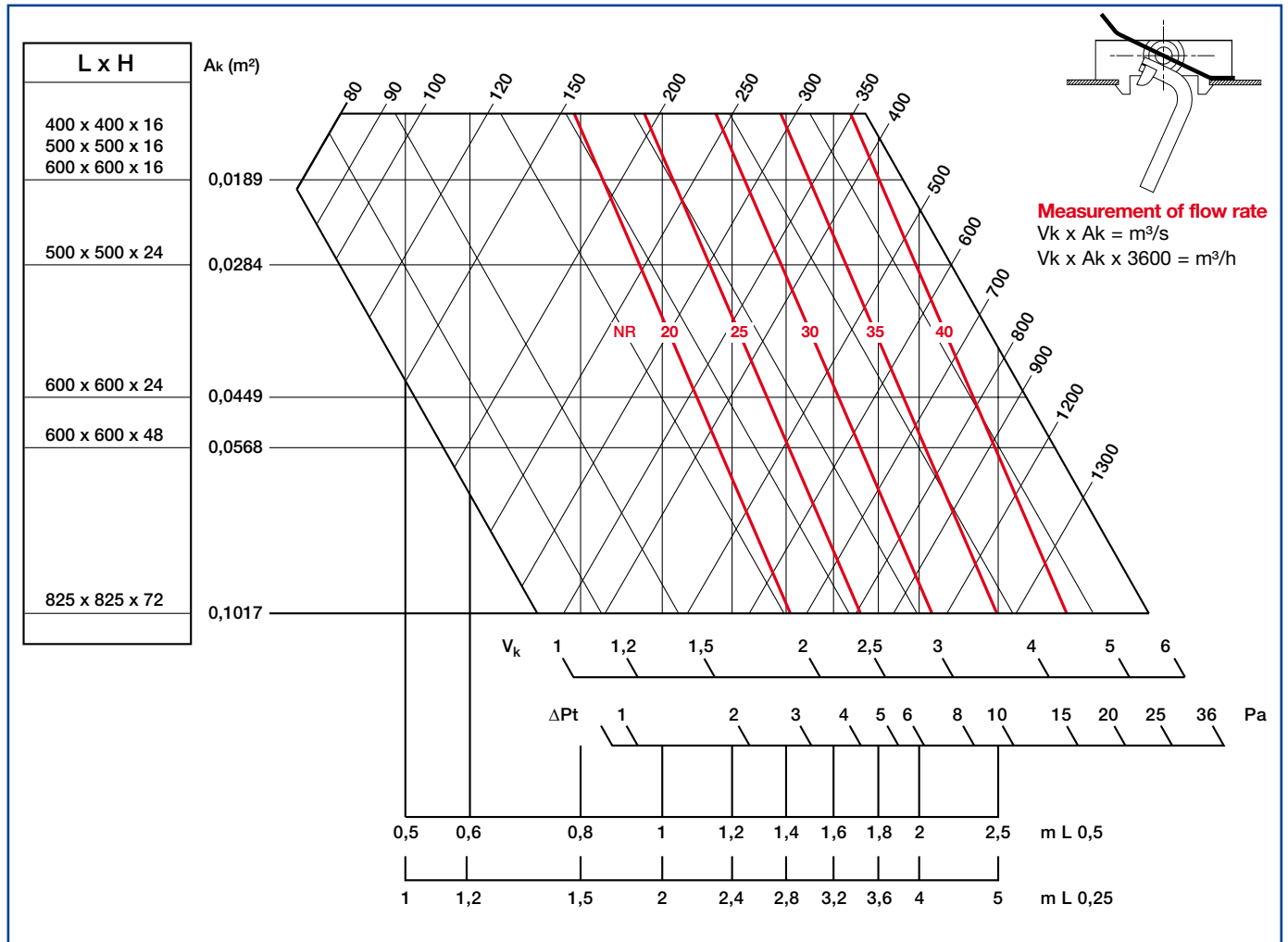
The L<sub>w</sub> values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

### CORRECTIONS FOR OTHER V<sub>t</sub>

V <sub>t</sub> (m/s)	0.25	0.375	0.5	0.625
L <sub>t</sub>	x 1	x 0.67	x 0.5	x 0.4

# Ajustable square swirl diffusers

## Series 775 - air supply with ceiling effect



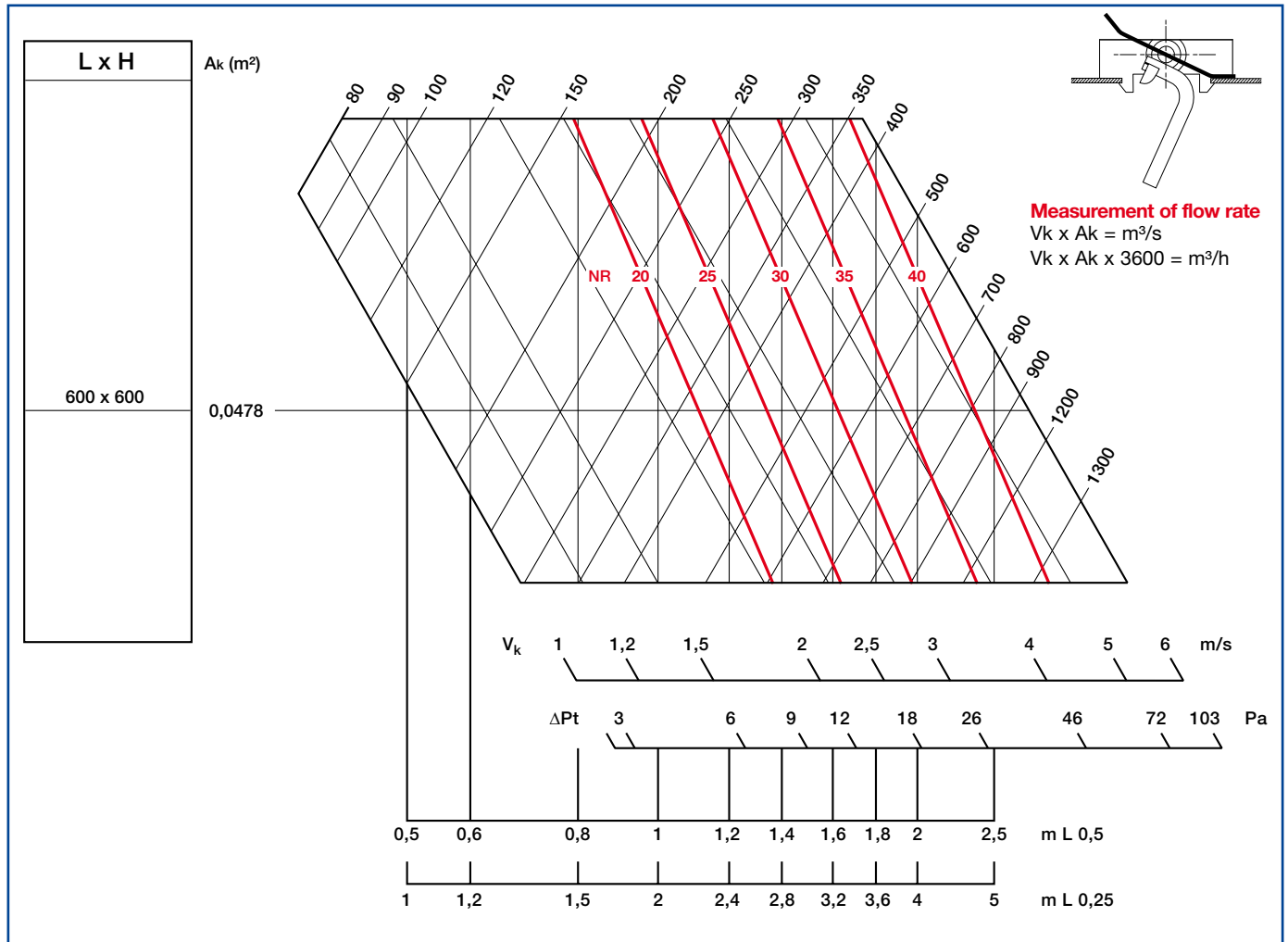
The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.67	x 0.5	x 0.4

# Ajustable square swirl diffusers

## Series 786 - air supply with ceiling effect



The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.25	0.375	0.5	0.625
Lt	x 1	x 0.67	x 0.5	x 0.4

# Ajustable circular swirl diffusers

## Series AR 883 - aluminium



Diffuser AR 883

### APPLICATION

- Air supply: adjustable swirling diffusion.
- High mixing capacity for rapid temperature uniformity.
- Ideal for large temperature difference and high ceiling air conditioning installations.
- Adjustable diffusion with motor option for optimum operation in both winter and summer.
- Ceiling mounted.

### DESCRIPTION

- Aluminium blades and body.
- Blades mounted on gear that can be oriented through 90°.

### FINISH

- RAL 9010 white epoxy paint steel finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: Hidden lateral screw fixing in the collar.
- Connected to circular duct.

### ACCESSORIES

- LRE: galvanized steel plenum (side mounted connection).
- ON/OFF or proportional motors (24 V or 230 V) for direction blades.

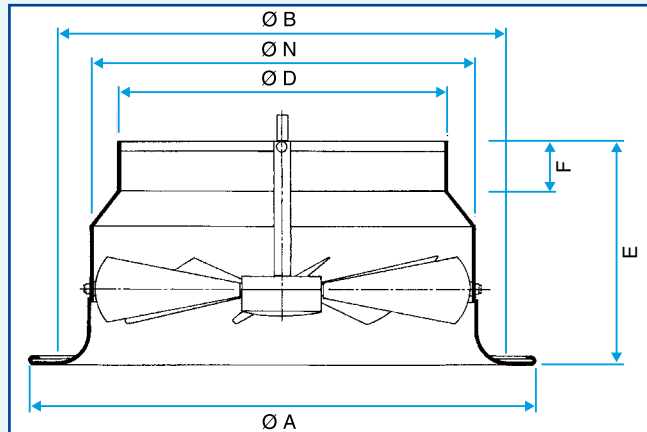
### STANDARD DIMENSIONS

- 250 to 630 mm diameters.

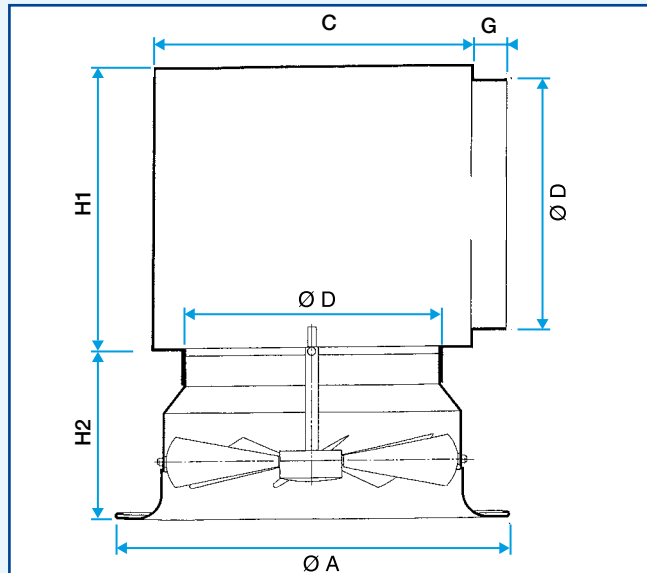
### TECHNICAL CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the 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	315	50	50	300	225
315	400	500	460	375	50	50	365	240
400	470	615	575	460	60	60	450	280
500	630	850	810	560	60	70	550	320
630	800	1070	1030	690	80	70	680	410

# Ajustable circular swirl diffusers

## Series AR 883

### Standard range

Dimensions	AR 883 M1 motorised Code	Plenum LRE Side connection Code
Ø 250	11051095	11053313
Ø 315	11051096	11053314
Ø 400	11051097	11053316
Ø 500	11051098	11053318
Ø 630	11051099	

Fixing	Finish	Plenum	Motor
• Hidden by lateral screws in the collar.	• Epoxy paint aluminium, RAL9010 white.	• Non-insulated LRE plenum.	• M1: 230 v on-off motor.

### Range with choice of options

Dimensions (mm)	Code Diffuser AR 883	Code LRE Plenum
Ø 250	11002361	11003263
Ø 315	11002362	11003264
Ø 400	11002363	11003266
Ø 500	11002364	11003268
Ø 630	11002365	11003269

### Options available

Fixing	Finish	Plenum	Motorisation
• Hidden by lateral screws in the collar.	• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.	• Special depth. • Special mounted connections. • 2 or 5 side insulation.	• M1: 230v on-off motor. • M2: 24v on-off motor. • M3: proportional 24v motor.

### PROPOSED ACCESSORIES

- LRE Plenums



# Ajustable circular swirl diffusers

## Series 883

### SELECTION - COLD MODE AIR SUPPLY WITH CEILING EFFECT - $\Delta T^\circ - 10^\circ$ AND ANGLE $30^\circ$

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)																Lw	Lt						
		200		300		400		500		600		800		1000		1400				1800		2000		2500	
0,01705	250	20	0,62	30	0,9	37	1,25	42	1,5																
		3,4	8,1	5,0	16,5	7,0	30	8,7	44															Vk	Pa
0,03090	315			18	0,7	25	0,87	30	1,15	35	1,35	42	1,8	47	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							26	1,0	31	1,25	38	1,65	43	2	52	2,8								
								3,6	8,7	4,5	14	6	23	7,5	35	10,5	65								
0,06700	500											26	1,2	32	1,5	38	2,1	46	2,8	48	3,1				
												3,2	7,4	4,0	11	5,7	20	7,5	35	8,1	40				
0,07720	630	Lw	Lt									28	1,4	37	1,9	43	2,5	45	2,7	51	3,5				
		Vk	Pa									3,4	8,0	4,8	16	6,3	25	7,0	35	9,0	48				

The Lw values (NR) do not include attenuation of the premises. Vt = 0.25 m/s. Tests performed with the standard plenum.

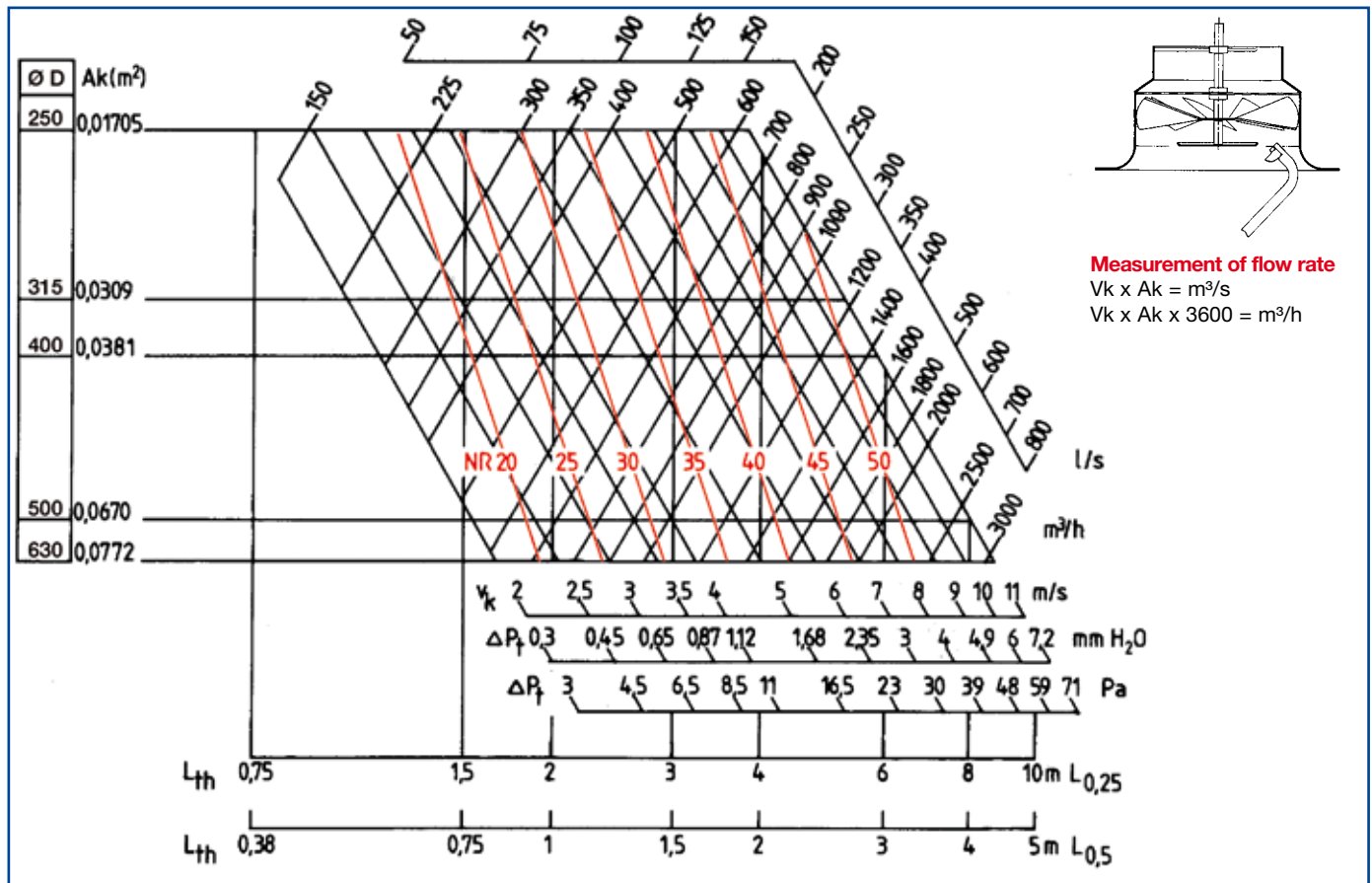
### SELECTION - HOT MODE AIR SUPPLY WITHOUT WALL EFFECT - $\Delta T^\circ + 10^\circ$ AND ANGLE $90^\circ$

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)																Lw	Lt						
		500		750		1000		1200		1600		2000		3000		4000				5000		6500		8000	
0,03665	250	38	5,9	48	9,0																				
		3,8	27	5,8	63																			Vk	Pa
0,07355	315			27	4,5	37	6,5	41	7,6	49	10,3														
				2,7	14	3,8	27	4,4	35	6,4	76														
0,10970	400							29	5,2	37	7,3	43	9,0												
								2,9	15,8	4,0	29	5,2	47												
0,16293	500									25	5,1	31	6,3	42	10	50	14								
										2,5	11,4	3,3	19,5	5	45	6,9	86								
0,30157	630	Lw	Lt									25	5,8	37	7,8	37	10	44	12,7	52	16				
		Vk	Pa									2,5	11,4	3,5	23	4,6	37	5,8	64	7,3	99				

The Lw values (NR) do not include attenuation of the premises. Vt = 0.25 m/s. Tests performed with the standard plenum.

# Ajustable circular swirl diffusers

## Series 883 - cold mode air supply with ceiling effect



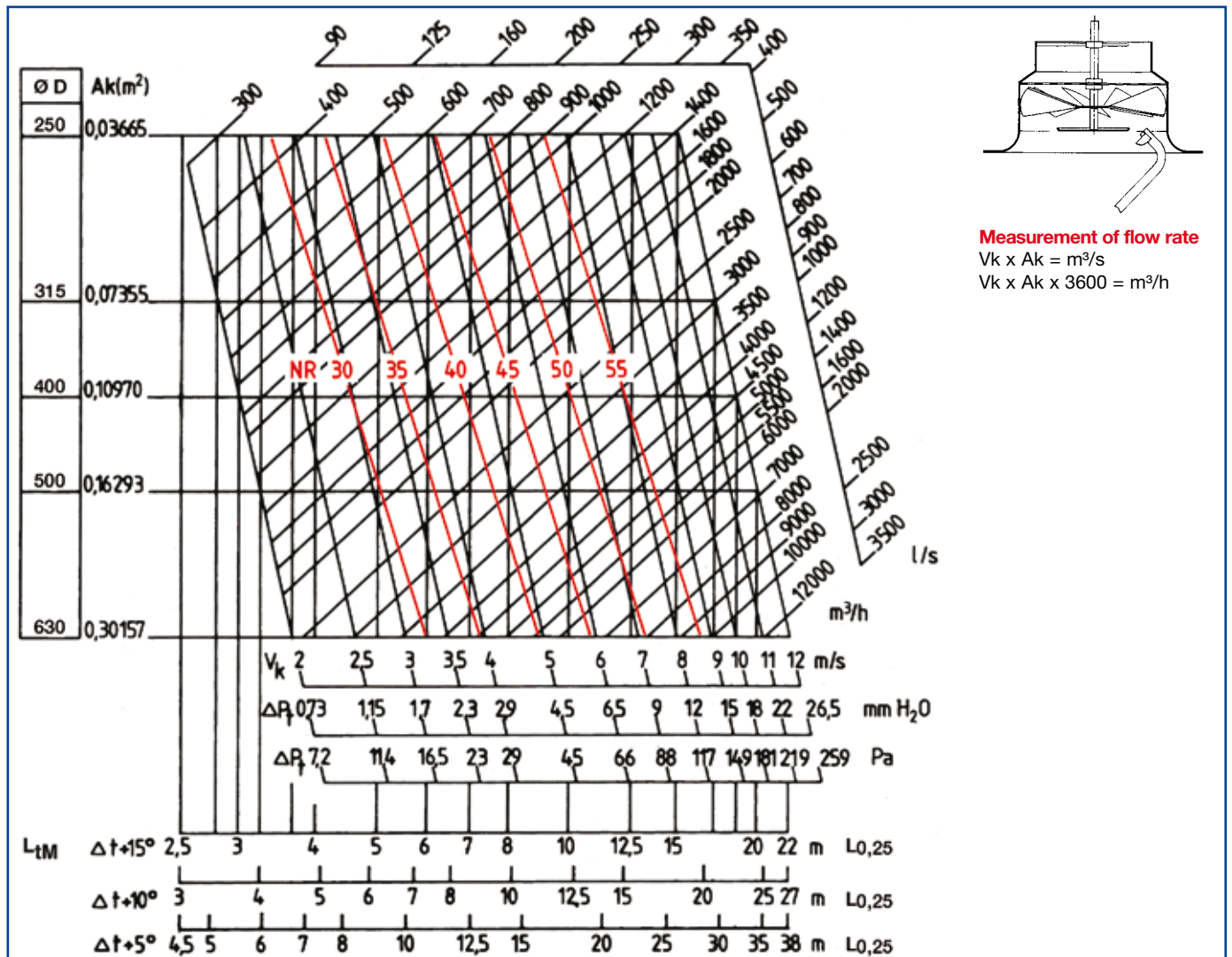
The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.  
 Valid for a temperature difference of -10°C and a blade angle of 30°.

### 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

# Ajustable circular swirl diffusers

## Series 883 - hot mode air supply without wall effect



The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.  
 Valid for a 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

# Fixed swirl diffusers

## Series SR 861 - SF 861 - steel



Diffuser SR 861



Diffuser SF 861

### APPLICATION

- Air supply ceiling diffuser.
- Fixed swirl diffusion.
- High mixing capacity for rapid temperature uniformity.
- Ideal for air conditioning installations with high temperature difference and low ceilings.
- Ceiling mounted.

### DESCRIPTION

- SR 861: circular diffuser with circular connection.
- SF 861: square diffuser with circular connection.
- Steel diffusion blades and body.

### FINISH

- RAL 9010 epoxy paint steel finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden screw fixing on the sides of the diffuser. Note: this fixing is recommended for suspended ceilings and is incompatible with staff or BA13 type ceilings.
  - F7: visible fixing by central screw and bridge guide. Note: this fixing is recommended for staff or BA13 type ceilings.
  - Assembly attached to the concrete tile using legs located on the plenum.
- The weight of the diffuser must not be borne by the ceiling structure.

### ACCESSORIES

- BR: butterfly type damper with 2 V-blades. Made of steel.
- Screw regulated via the diffuser.  
NB: the BR damper is incompatible with the fixing F7.
- LRE plenum with side mounted connection.
  - Optional flow divider.
  - Available in single or insulated versions 2 or 5 sides.

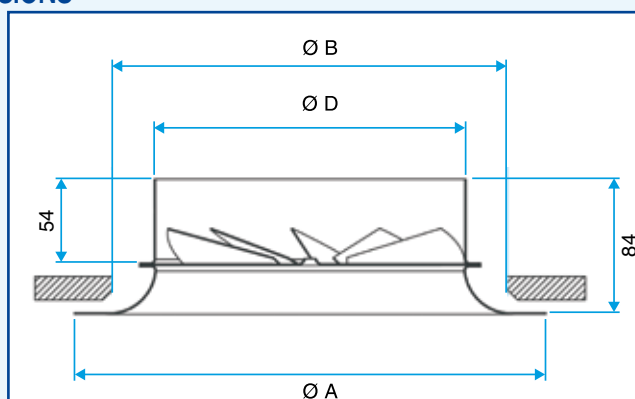
### STANDARD DIMENSIONS

- 125 mm to 315 mm diameters.

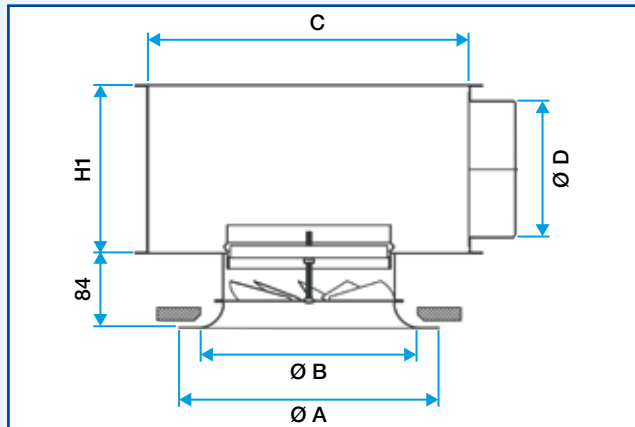
### CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the chapter.

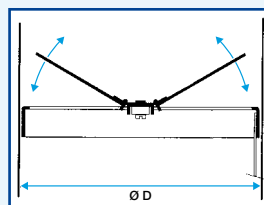
### DIMENSIONS



Diffuser SR 861 - SF 861



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	175
160	250	210	220	210
200	300	250	265	250
250	350	300	315	300
315	415	360	375	365

# Fixed swirl diffusers

## Series SF 861 T - steel



Diffuser SF 861 T



Diffuser SF 861 T rear view

### APPLICATION

- Air supply ceiling diffuser.
- Fixed swirl diffusion.
- High mixing capacity for a rapid temperature uniformity.
- Ideal for air conditioning installations with high temperature difference and low ceilings.
- Mounted in place of a standard 600x600 mm ceiling tile.

### DESCRIPTION

- Circular connection.
- Steel diffusion blades and body.
- Steel ceiling compensation plate.

### FINISH

- RAL 9010 epoxy paint steel finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0: hidden screw fixing on the sides of the diffuser.
- Assembly attached to the concrete tile using legs located on the plenum.

The weight of the diffuser must not be borne by the ceiling structure.

### ACCESSORIES

- BR: butterfly type damper with 2 V-blades. Made of steel.
- Screw regulated via the diffuser.
- LRE plenum with side mounted connection.
  - Optional flow divider.
  - Available in single or insulated versions 2 or 5 sides.

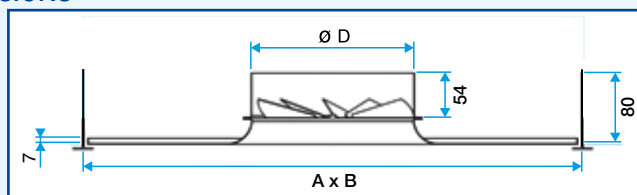
### STANDARD DIMENSIONS

- 125 mm to 315 mm diameters.

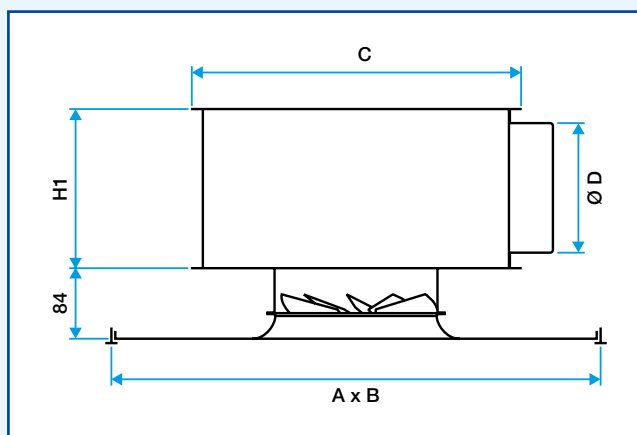
### CHARACTERISTICS

- See the following selection tables and charts pages.
- See mixing rates (MR) at the end of the chapter.

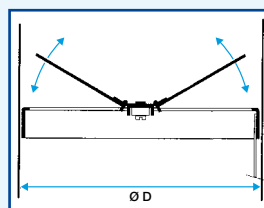
### DIMENSIONS



Diffuser SF 861 T



SF 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	175
160	600 x 600	220	210
200	600 x 600	265	250
250	600 x 600	315	300
315	600 x 600	375	365

\* Nominal tile dimension.

# Fixed swirl diffusers

## Series SF 864 - SR 864 - steel



Diffuser SR 864



Diffuser SF 864

### APPLICATION

- Ceiling air exhaust diffuser.

### DESCRIPTION

- SR 864: circular diffuser with circular connection.
- SF 864: square diffuser with circular connection.
- Steel blades and body.

### FINISH

- RAL 9010 epoxy paint steel finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Hidden fixing by screws in the diffuser collar.

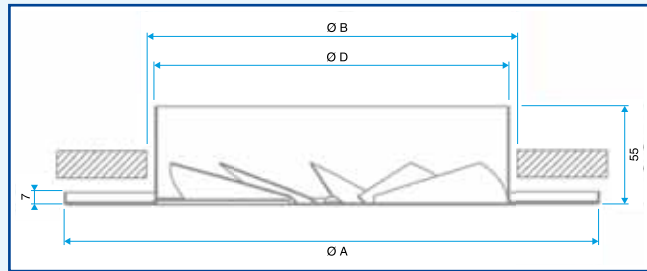
### STANDARD DIMENSIONS

- 125 mm to 315 mm diameters.

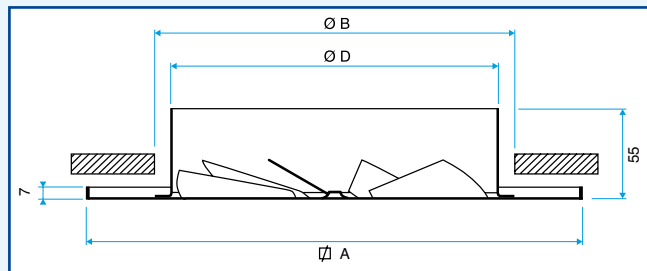
### CHARACTERISTICS

- See selection tables on the following pages.

### DIMENSIONS



Diffuser SR 864



Diffuser SF 864

### STANDARD DIMENSIONS

Ø D (mm)	Ø A (mm)	Ø B (mm)
125	225	175
160	250	210
200	300	250
250	350	300
315	400	365

# Fixed swirl diffusers

## Series SF/SR 861 - SF 861 T - SF/SR 864

### Standard range

Dimensions	Diffuser SF 861	Diffuser SR 861	Diffuser SF 861 T	Plenum LRE Side mounted connection	Damper BR
	Code	Code	Code	Code	Code
Ø 125	11051121	11051105			
Ø 160	11051122	11051106	11051081	11053311	11053220
Ø 200	11051123	11051107	11051082	11053312	11053221
Ø 250	11051124	11051108	11051083	11053313	11053222

**Fixing**  
 • Hidden by screw in the diffuser collar.

**Finish**  
 • Epoxy paint steel, RAL9010 white.

### Range with choice of options

Dimensions (mm)	Code Diffuser SF 861	Code Diffuser SR 861	Code Diffuser SF 861 T	Code Diffuser SF 864	Code Diffuser SR 864	Code LRE Plenum
Ø 125	11002371	11002381	11002391	11002411	11002421	11003311
Ø 160	11002372	11002382	11002392	11002412	11002422	11003312
Ø 200	11002373	11002383	11002393	11002413	11002423	11003313
Ø 250	11002374	11002384	11002394	11002414	11002424	11003314
Ø 315	11002375	11002385	11002395	11002415	11002425	11003315

### Options available

Fixing	Finish	Plenum (for series 861 only)
<ul style="list-style-type: none"> <li>F0: hidden screw fixing on the collar.</li> <li>F7: visible fixing by central screw and bridge guide.</li> </ul>	<ul style="list-style-type: none"> <li>Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>	<ul style="list-style-type: none"> <li>F0 or F7 fixing.</li> <li>Special depth.</li> <li>Special mounted connections.</li> <li>2 or 5 side insulation.</li> <li>Flow divider.</li> </ul>

### PROPOSED ACCESSORIES

- BR Dampers
- LRE Plenums

## Series 861 - 864

### SELECTION - AIR SUPPLY TYPE 861 WITH CEILING EFFECT

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)																
		50		70		100		150		250		350		500		600		
0.0039	125	-	1	26	1,8	33											Lw	Lt
		2,5	4,5	5	17	8,5	45										Vk	Pa
0.0071	160			-	1,4	24	2,3	33	3,2	42	4,0							
				2,6	5	4,5	13	6,5	26	8,5	45							
0.0124	200					-	19	24	2,9	35	3,6	42	5,0					
						3,6	9	5,1	17	6,8	28	9,0	48					
0.0199	250							-	2	27	2,7	35	3,6	42	5,0	46	6,0	
								2,7	5	3,5	9	4,9	16	6,5	26	8,5	45	
0.0358	315	Lw	Lt							-	2,5	26	3,2	33	4,5	37	5,5	
		Vk	Pa							3,0	7,0	4,0	11	5,5	20	7,0	30	

The Lw values (NR) do not include attenuation of the premises. Vt = 0.25 m/s.  
 Tests performed with the standard plenum.

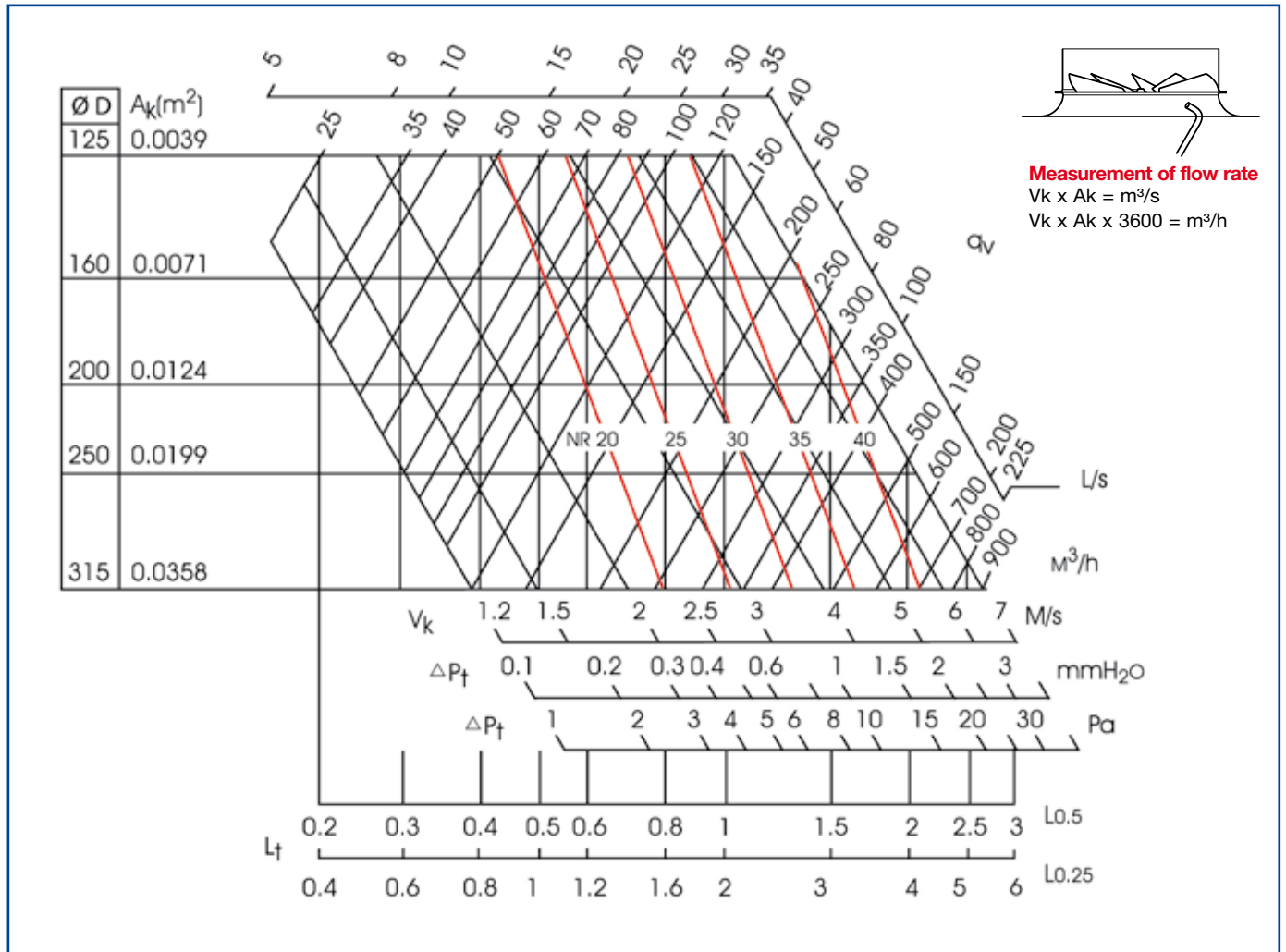
### SELECTION - AIR EXHAUST TYPE 864

Ak (m <sup>2</sup> )	Ø D (mm)	50 (m <sup>3</sup> /h)		100 (m <sup>3</sup> /h)		150 (m <sup>3</sup> /h)		200 (m <sup>3</sup> /h)		250 (m <sup>3</sup> /h)		300 (m <sup>3</sup> /h)		400 (m <sup>3</sup> /h)		500 (m <sup>3</sup> /h)		600 (m <sup>3</sup> /h)	
0,0033	125	23	-	41	-													Lw	-
		3,5	11,1	6,9	38,9													Vk	Pa
0,0060	160			28	-	36	-												
				4,1	13,9	5,9	27,8												
0,0105	200			20	-	28	-	33	-	38	-	41	-						
				2,6	5,6	3,6	11,1	4,8	20,8	5,9	27,8	7,1	41,7						
0,0169	250					21	1,2	27	-	31	-	35	-	40	-				
						2,7	5,6	3,5	11,1	4,5	13,9	4,8	20,8	6,1	34,7				
0,0304	315	Lw	-							23	16	27	-	32	-	37	-	40	-
		Vk	Pa							2,7	5,6	3,1	7,6	4,1	13,9	4,8	20,8	5,6	26,4

The Lw values (NR) do not include attenuation of the premises.

# Fixed swirl diffusers

## Series 861 - air supply with ceiling effect



The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

### CORRECTIONS FOR OTHER V<sub>t</sub>

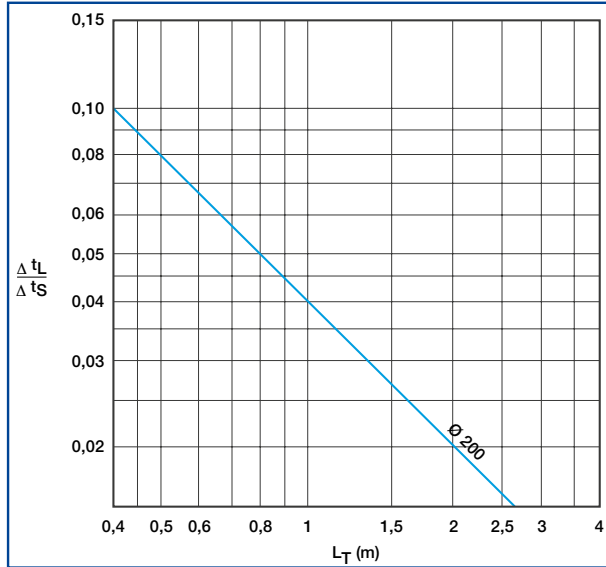
V <sub>t</sub> (m/s)	0.25	0.375	0.5	0.625
L <sub>t</sub>	x 1	x 0.67	x 0.5	x 0.4



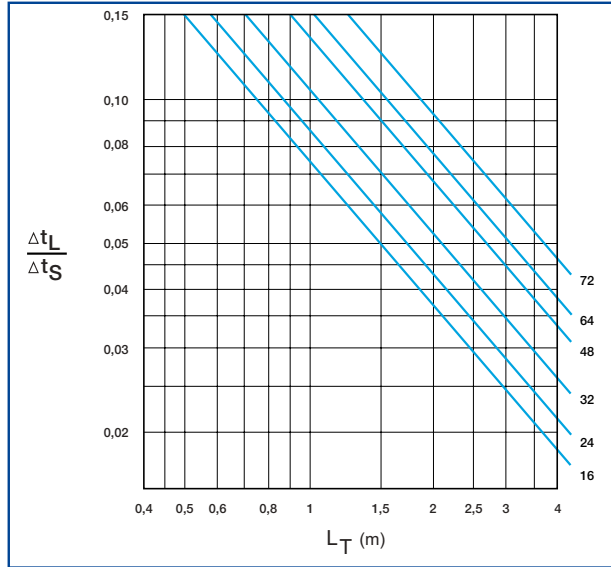
# Swirl diffusers

## Mixing rates (MR)

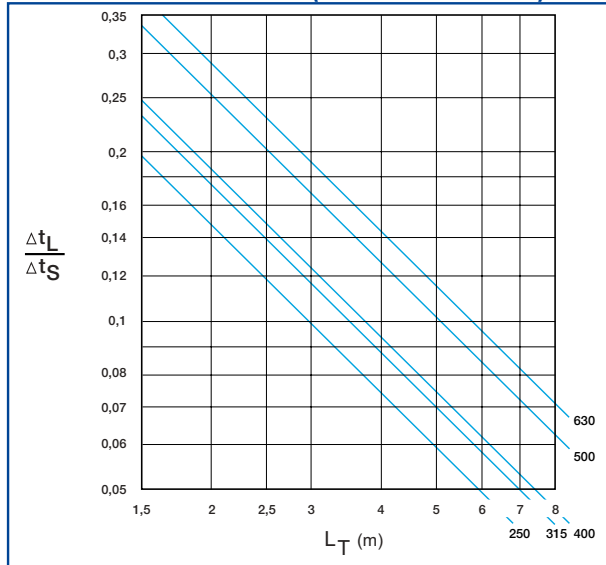
MR for diffuser series TWISTED 850



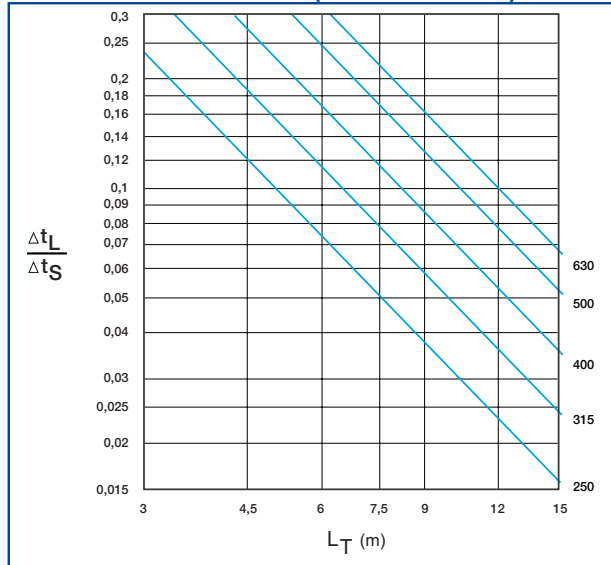
MR for diffuser series 785 - 775 - 786



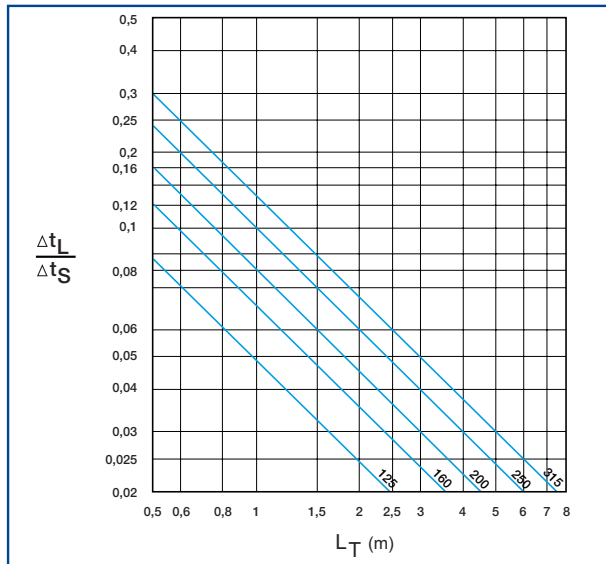
MR for diffuser series 883 (horizontal diffusion)



MR for diffuser series 883 (vertical diffusion)



MR for diffuser series 860



## SYMBOLS

$L_t$ (m)	Blow in m
$\Delta T_L$ (°C)	Difference between the end of blow temperature and room temperature (in °C)
$\Delta T_S$ (°C)	Difference between the air supply temperature and room temperature (in °C)
$MR = \Delta T_L / \Delta T_S$	Ratio of temperature differences. This value is proportional to the capacity of the diffuser to 'quickly' mix the air taken in at room temperature.
Example with air supply temperature at 15°C and room temperature at 25°C	The temperature in the air jet at X (m) from the diffuser = 25 - 10 x MR (°C)



# Special diffusers

Air displacement diffusers - p 202



Diffusers with rotating nozzle - p 215



Alum jet diffusers - p 221



Steel jet diffusers - p 225



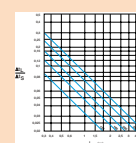
Flexible diffusers - p 228



Square diffusers for risers - p 232



Mixing rates - p 234



# Air Displacement Diffusers

## Series SP 391 - steel



SP 391 R diffuser

### APPLICATION

- Low speed air supply over 180°.
- Cooling and air conditioning in commercial and industrial premises, generally with very high ceilings.
- Wall mounted in the zone of occupation.

### DESCRIPTION

- Galvanized steel chassis.
- Circular connection mounted connection on the top or bottom (with F base only).
- Perforated galvanized steel sheet diffusion area.
- Air distribution by internal deflectors.
- Type 'R' models have a rounded appearance.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixed to floor.

### ACCESSORIES

- A: silencer.
- B: air flow rate regulator and measurement.
- C: duct cladding.
- F: floor base.

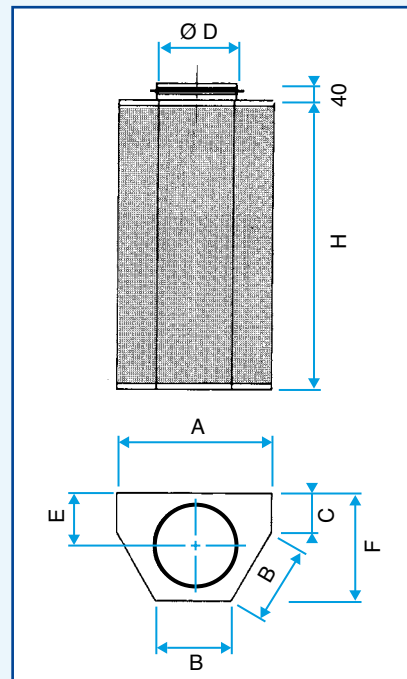
### STANDARD DIMENSIONS

- Available in 9 different sizes, from D100 mm to D630 mm.
- From 200 to 950 mm wide.
- From 400 to 1800 mm high.

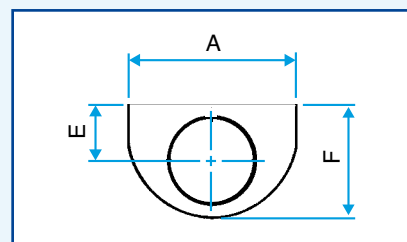
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

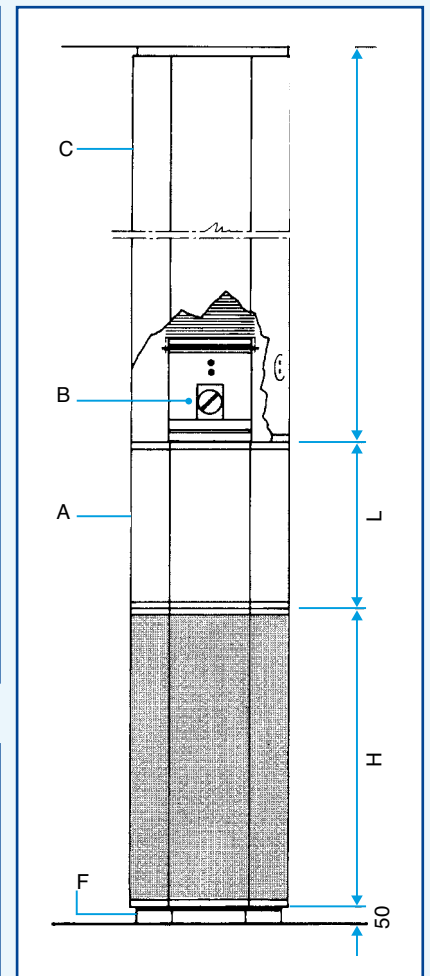
### DIMENSIONS



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 the acoustic casing

# Air Displacement Diffusers

## Series SP 392 - steel



SP 392 diffuser

### APPLICATION

- Low speed air supply over 90°.
- Cooling and air conditioning in commercial and industrial premises, generally with very high ceilings.
- Wall mounted in the zone of occupation.

### DESCRIPTION

- Galvanized steel chassis.
- Connection mounted connection on the top or bottom (with F base only).
- Perforated galvanized steel sheet diffusion area.
- Air distribution by internal deflectors.
- Type 'R' models have a rounded appearance.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixed to floor.

### ACCESSORIES

- A: silencer.
- B: air flow rate regulator and measurement.
- C: duct cladding.
- F: floor base.

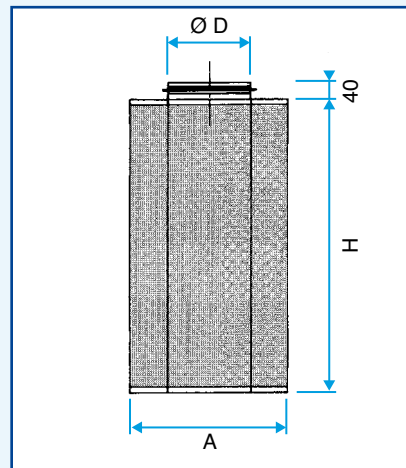
### STANDARD DIMENSIONS

- Available in 8 different sizes, from D100 mm to D500 mm.
- From 240 to 902 mm wide.
- from 400 to 1500 mm high.

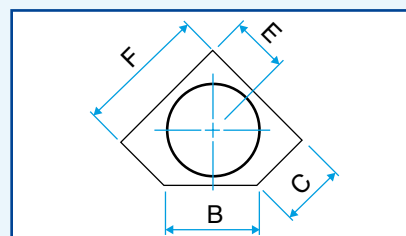
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See Mixing Capacity (MC) at the end of the chapter.

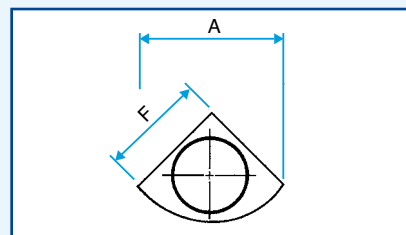
### DIMENSIONS



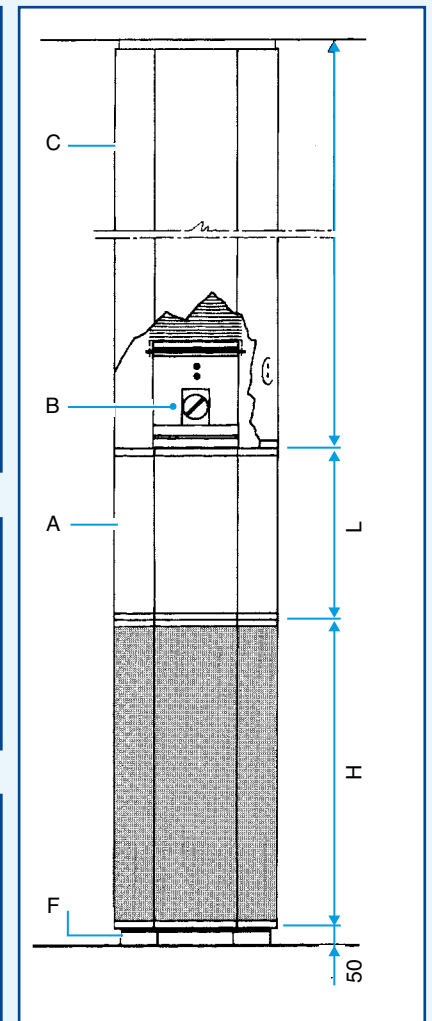
SP 392 diffuser



SP 392 diffuser



SP 392 R diffuser



SP 392 and accessories

### 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	64	1500	800

\* L: height of the acoustic casing

# Air Displacement Diffusers

## Series SP 393 - steel



SP 393 diffuser

### APPLICATION

- Low speed plane air supply, can be embedded.
- Cooling and air conditioning in commercial and industrial premises.
- Wall mounted in the zone of occupation.

### DESCRIPTION

- Galvanized steel chassis.
- Connection mounted connection on the top or bottom (with F base only).
- Perforated galvanized steel sheet diffusion area.
- Air distribution by internal deflectors.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixed to floor.

### ACCESSORIES

- A: silencer.
- B: air flow rate regulator and measurement.
- C: duct cladding.
- F: floor base.

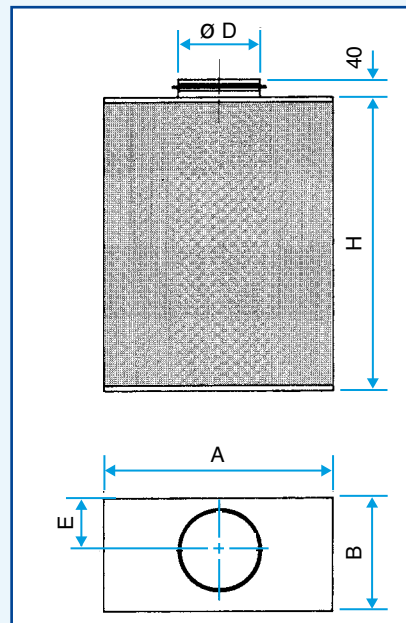
### STANDARD DIMENSIONS

- Available in 8 different sizes, from D100 to D500 mm.
- From 350 to 1200 mm wide.
- from 400 to 1500 mm high.

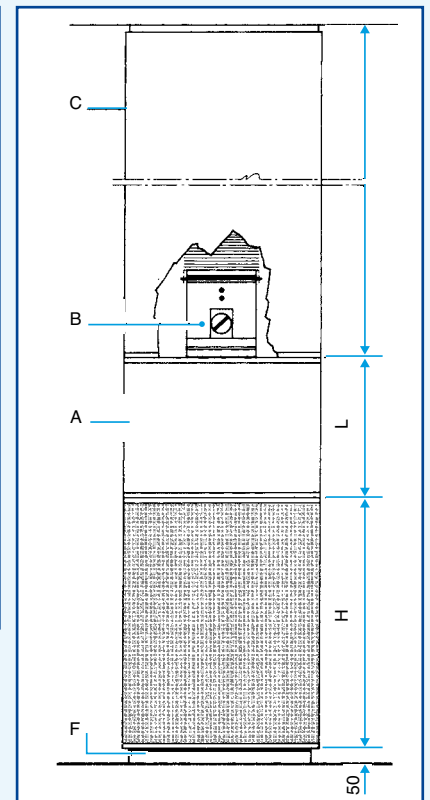
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See Mixing Capacity (MC) at the end of the chapter.

### 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 the acoustic casing

# Air Displacement Diffusers

## Series SP 394 - steel



SP 394 diffuser

### APPLICATION

- Low speed air supply over 360°.
- Cooling and air conditioning in commercial and industrial premises, generally with very high ceilings.
- Installation in the zone of occupation.

### DESCRIPTION

- Galvanized steel chassis.
- Connection mounted connection on the top or bottom (with F base only).
- Perforated galvanized steel sheet diffusion area.
- Air distribution by internal deflectors.
- Type 'R' models have a rounded appearance.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixed to floor.

### ACCESSORIES

- A: silencer.
- B: air flow rate regulator and measurement.
- C: duct cladding.
- F: floor base.

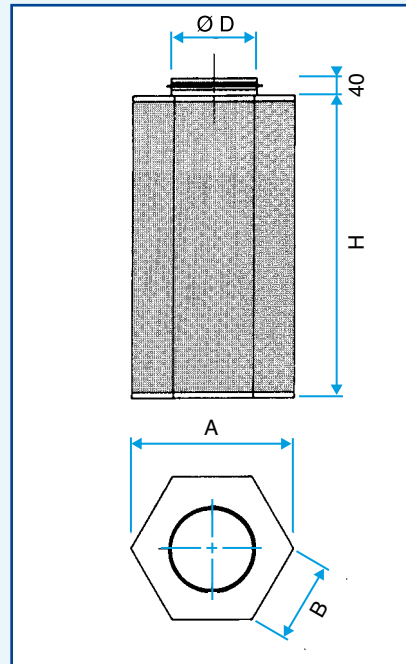
### STANDARD DIMENSIONS

- Available in 4 different sizes, from D315 to D630 mm.
- From 600 to 950 mm wide.
- from 1000 to 1800 mm high.

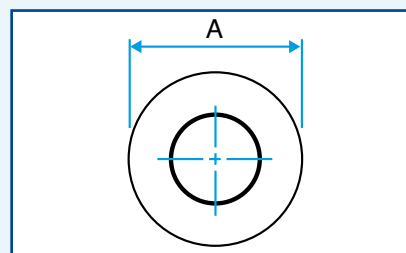
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

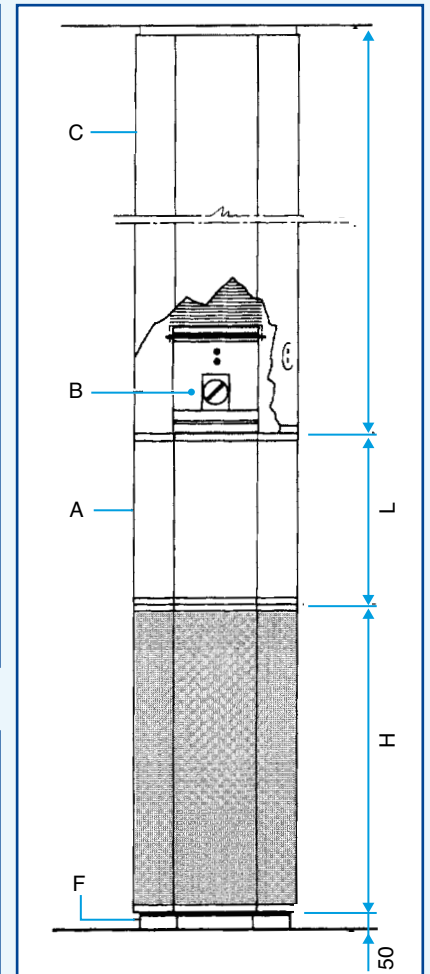
### DIMENSIONS



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 the acoustic casing

# Air Displacement Diffusers

## Series SP 395 - steel



SP 395 diffuser

### APPLICATION

- Low speed plane air supply.
- Rectangular diffuser and duct (on request) designed to be embedded in light partitions with wood or metal frames.
- Cooling and air conditioning in commercial and industrial premises, generally with very high ceilings.
- Installation in the zone of occupation.

### DESCRIPTION

- Galvanized steel chassis.
- Perforated galvanized steel sheet diffusion area.
- Air distribution by internal deflectors.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixed to floor.
- Front grille mounted on counter frame and friction clips.

### ACCESSORIES

- WD: Wall duct with maximum length 2000 mm.
- Counter frame for mounting.

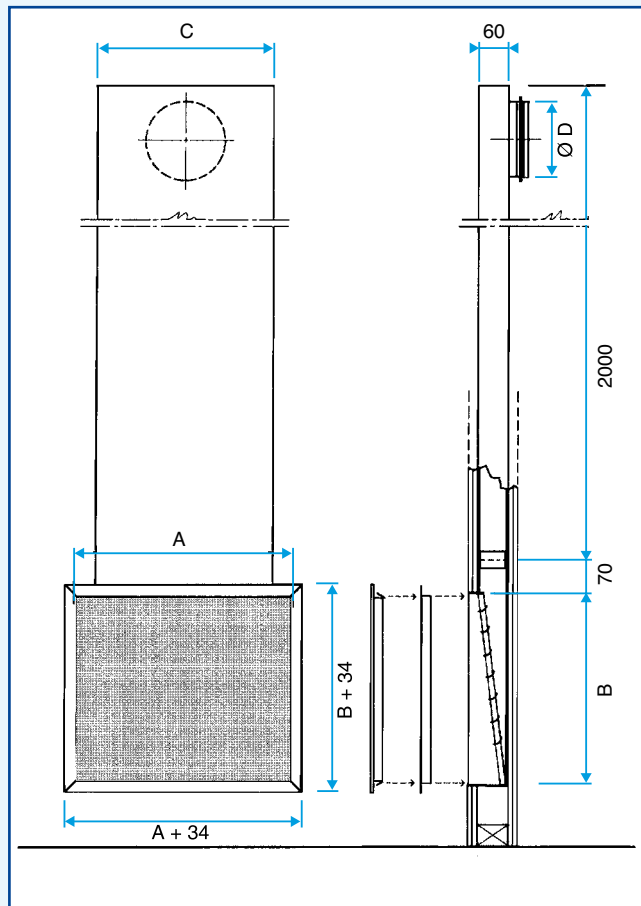
### STANDARD DIMENSIONS

- Available in 6 different sizes, from D100 mm to D250 mm.
- 500 or 550 mm wide.
- from 300 to 900 mm high.

### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.

### DIMENSIONS



SP 395 diffuser

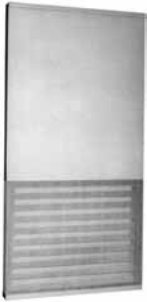
### DIMENSIONS STANDARD

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



# Air Displacement Diffusers

## Series SP 396 - steel



SP 396 diffuser

### APPLICATION

- Low speed plane air supply.
- Cooling and air conditioning in commercial and industrial premises, generally with very high ceilings.
- Installation in the zone of occupation.

### DESCRIPTION

- Air supply duct and zone in the same section.
- Galvanized steel chassis.
- Perforated galvanized steel sheet diffusion area.
- Air distribution by internal deflectors.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Fixed to wall.

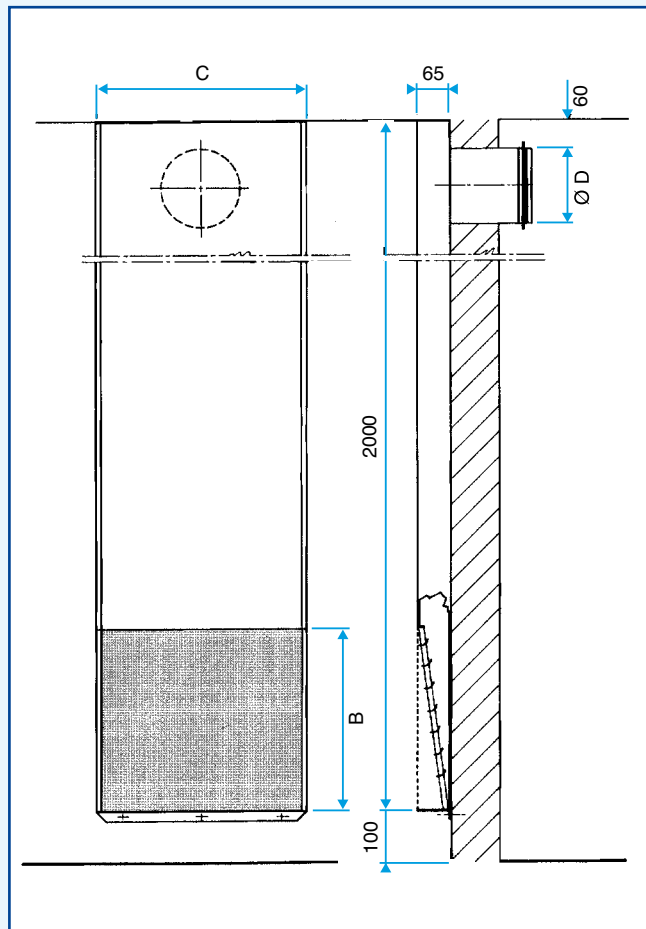
### STANDARD DIMENSIONS

- Available in 4 different sizes, from D125 mm to D200 mm.
- 500 or 550 mm wide.
- From 300 to 600mm high.

### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the 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

# Air Displacement Diffusers

## Series SP 390

Range with choice of options

Diameter (mm)	Code SP 391	Code SP 392	Code SP 391R	Code SP 392R	Code SP 393	Code SP 394	Code SP 394 R	Code SP 395	Code SP 396
Ø 100	11003121	11003131	11003141	11003151	11003161	-	-	-	-
Ø 125	11003122	11003132	11003142	11003152	11003162	-	-	-	-
Ø 160	11003123	11003133	11003143	11003153	11003163	-	-	-	-
Ø 200	11003124	11003134	11003144	11003154	11003164	-	-	-	-
Ø 250	11003125	11003135	11003145	11003155	11003165	-	-	-	-
Ø 315	11003126	11003136	11003146	11003156	11003166	11003176	11003186	-	-
Ø 400	11003127	11003137	11003147	11003157	11003167	11003177	11003187	-	-
Ø 500	11003128	11003138	11003148	11003158	11003168	11003178	11003188	-	-
Ø 630	11003129	11003139	11003149	11003159	-	11003179	11003189	-	-
500 x 300	-	-	-	-	-	-	-	11003181	11003191
500 x 400	-	-	-	-	-	-	-	11003182	11003192
500 x 500	-	-	-	-	-	-	-	11003183	11003193
550 x 600	-	-	-	-	-	-	-	11003184	11003194

### Options available

Power supply	Finish
<ul style="list-style-type: none"> <li>• Power supply from the top (standard).</li> <li>• Power supply from the ground.</li> </ul>	<ul style="list-style-type: none"> <li>• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.</li> </ul>

### PROPOSED ACCESSORIES

- A: silencer.
- B: regulator.
- C and WD: duct cladding.
- F: floor base.

## Series 390

### SELECTION - AIR SUPPLY - TYPE 391

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)																					
		150		200		300		500		800		1000		2000		4000		6000		8000		10000	
-	100	22	0,8	28	0,95	36	1,5															Lw	Lt
		-	20	-	35	-	60															-	Pa
-	125			20	0,8	28	1,0																
				-	15	-	30																
-	160					20	0,85	30	1,3	37	0,9												
						-	15	-	35	-	60												
-	200							21	0,9	28	1	33	1,6										
								-	12	-	30	-	40										
-	250									20	0,95	25	1,2										
										-	10	-	18										
-	315											31	1,7										
												-	25										
-	400											22	1,2	35	2,5								
												-	8	-	30								
-	500											27	1,7	35	2,5								
												-	12	-	25								
-	630	Lw	Lt											-	1,1	27	1,7	30	2,05	35	2,5		
		-	Pa											-	4	-	10	-	13	-	20		

The values Lw (NR) do not include attenuation of the premises. Vt = 0.2 m/s.

# Air Displacement Diffusers

## Series 390

### SELECTION - AIR SUPPLY - TYPE 392

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)										Lw	Lt								
		80	100	150	200	300	600	1000	1500	2000	4000										
-	100	-	0,6	25	0,9	33	1,4														
		-	10	-	6	-	30														
-	125			-	0,65	22	0,9	30	1,3												
				-	5	-	12	-	20												
-	160					-	0,7	20	0,85	29	1,4										
						-	5	-	8	-	20										
-	200							-	0,7	20	0,95	35	1,9								
								-	3	-	7	-	30								
-	250									-	0,7	24	1,3	33	1,8						
										-	3	-	10	-	20						
-	315											23	1,4	34	2,1						
												-	8	-	20						
-	400													-	0,95	23	1,5	29	2,0		
															-	2	-	6	-	11	
-	500	Lw	Lt													-	1,0	-	1,4	31	2,2
		-	-	Pa											-	1	-	4	-	10	

The values Lw (NR) do not include attenuation of the premises. Vt = 0.2 m/s.

### SELECTION - AIR SUPPLY - TYPE 393

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)										Lw	Lt								
		80	100	150	200	300	600	1000	1500	2000	4000										
-	100	20	0,7	25	0,9	35	1,4														
		-	10	-	5	-	11														
-	125			-	0,7	23	0,9	30	1,2												
				-	5	-	12	-	20												
-	160					-	0,7	22	0,9	30	1,3										
						-	5	-	8	-	18										
-	200							-	0,6	21	0,95	36	1,7								
								-	3	-	7	-	30								
-	250									-	0,6	26	1,3	35	1,8						
										-	3	-	10	-	20						
-	315											-	0,9	24	1,4	36	2,2				
													-	3	-	7	-	18			
-	400													-	0,95	25	1,5	31	1,9		
															-	2	-	3	-	10	
-	500	Lw	Lt													-	1,1	21	1,4	34	2,4
		-	-	Pa											-	2	-	4	-	12	

The values Lw (NR) do not include attenuation of the premises. Vt = 0.2 m/s.

### SELECTION - AIR SUPPLY - TYPE 394

Ak (m <sup>2</sup> )	Ø D (mm)	qv (m <sup>3</sup> /h)								Lw	Lt				
		1000	1500	2000	3000	4000	6000	8000							
-	315	-	0,7	27	0,9	33	1,3								
		-	5	-	10	-	18								
-	400			-	0,7	23	0,9	31	1,3	37	1,7				
				-	4	-	7	-	18	-	28				
-	500					-	0,6	20	0,9	26	1,2	35	1,7		
						-	2	-	5	-	8	-	19		
-	630	Lw	Lt												
		-	-	Pa						-	2	-	3	-	6

The values Lw (NR) do not include attenuation of the premises. Vt = 0.2 m/s.

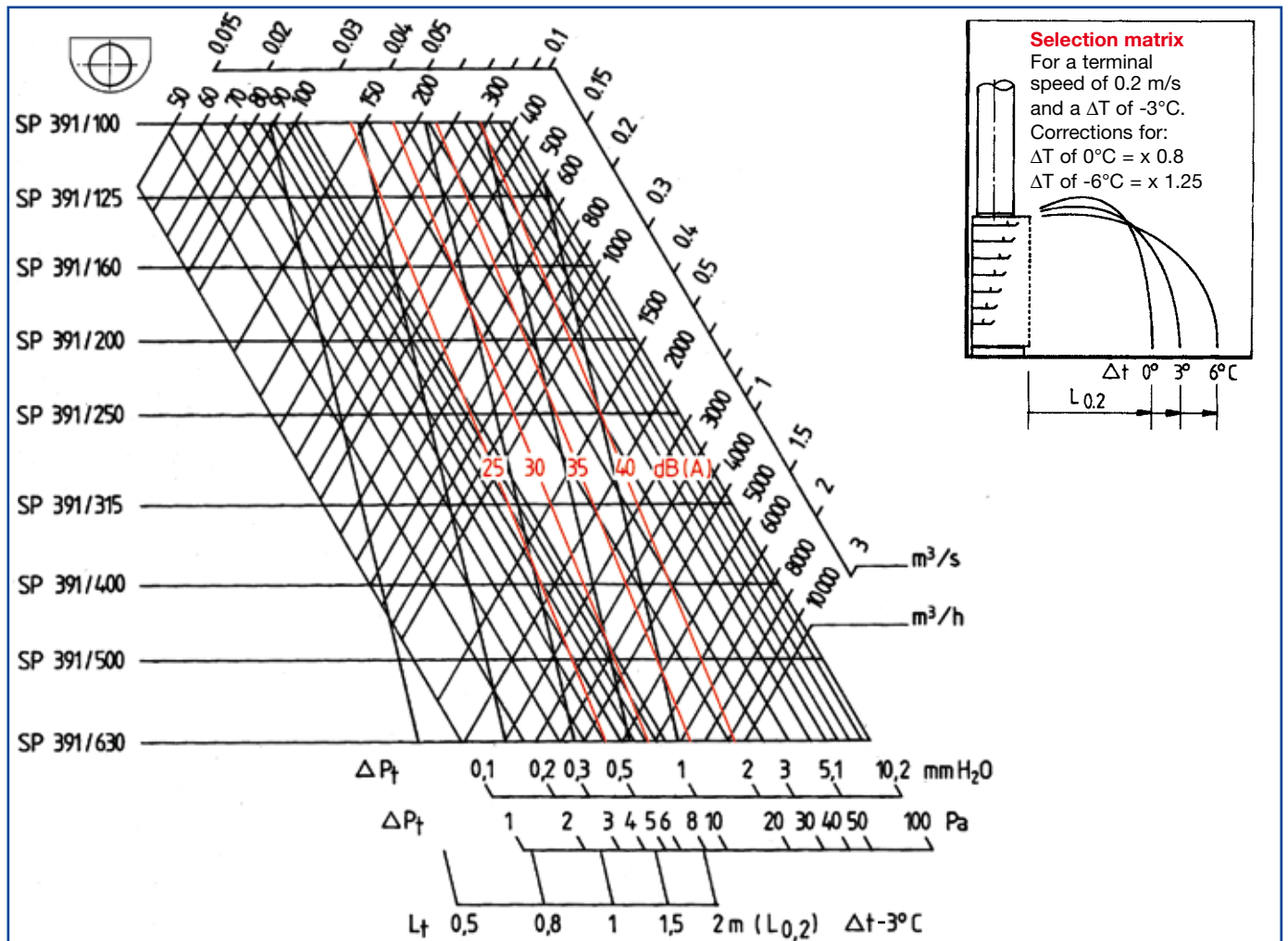
### SELECTION - AIR SUPPLY - TYPE 395 - 396

Ak (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)								Lw	Lt				
		80	100	150	200	300	400	600							
-	500 x 300	-	0,3	-	0,35	-	0,6	20	0,85						
		-	5	-	8	-	19	-	30						
-	500 x 400			-	0,3	-	0,4	-	0,7	26	0,95	28	1,4		
				-	4	-	9	-	18	-	35	-	60		
-	500 x 500					-	0,4	23	0,6	24	0,85	31	1,3		
						-	7	-	11	-	28	-	45		
-	550 x 600	Lw	Lt							20	0,8	26	1,1	35	1,6
		-	-	Pa						-	20	-	32	-	60

The values Lw (NR) do not include attenuation of the premises. Vt = 0.2 m/s.

# Air Displacement Diffusers

## Series 391 - air supply



The values  $L_w$  (NR) do not include attenuation of the premises.

### ACOUSTIC POWER LEVEL (dB)

Dimensions	Octave bands (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) by octave bands (Hz)

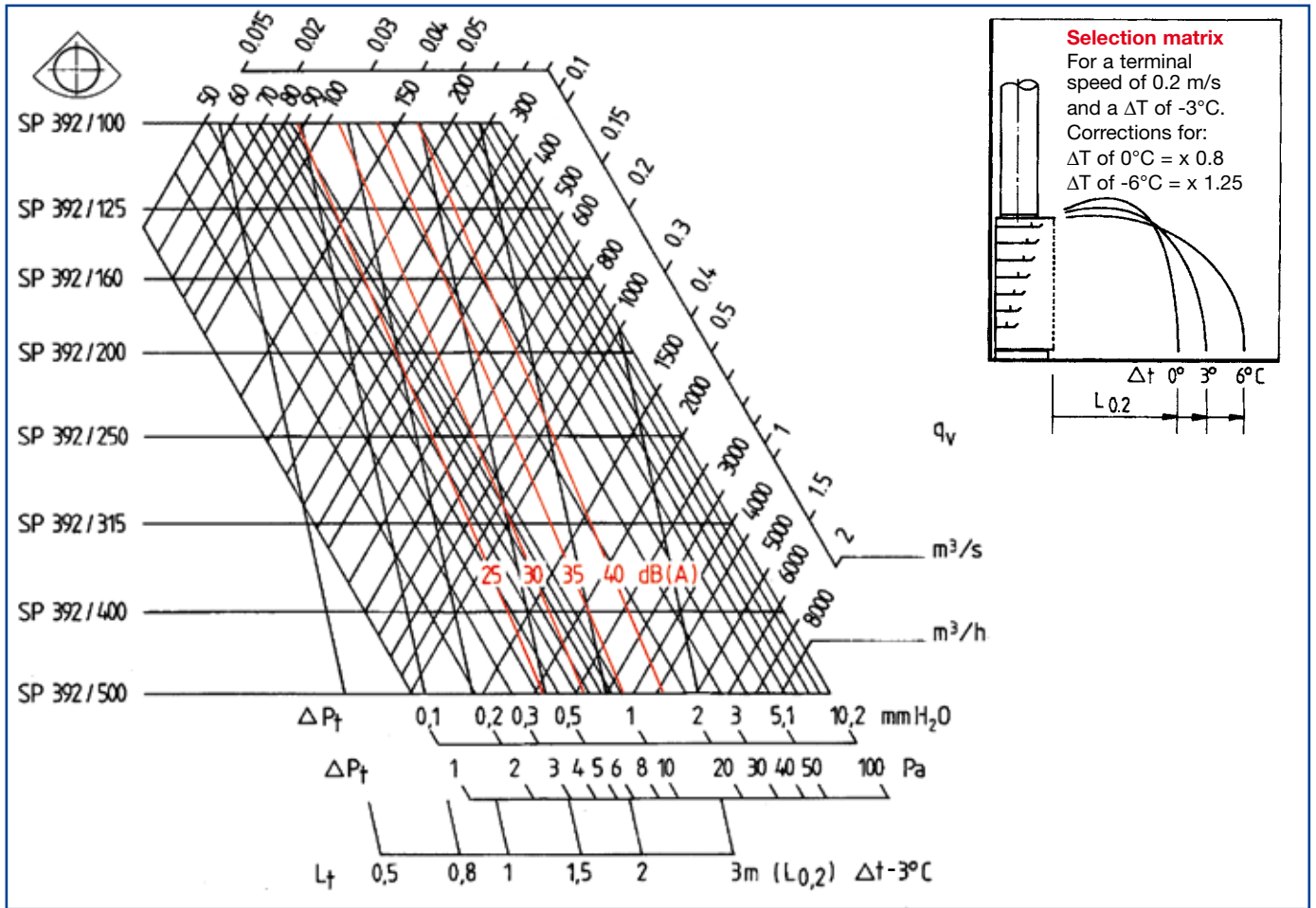
### SOUND ATTENUATION BY ADDITION OF SILENCER (A)

Dimensions	Octave bands (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) by octave bands (Hz)

# Air Displacement Diffusers

## Series 392 - air supply



The values  $L_w$  (NR) do not include attenuation of the premises.

### ACOUSTIC POWER LEVEL (dB)

Dimensions	Octave bands (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) by octave bands (Hz)

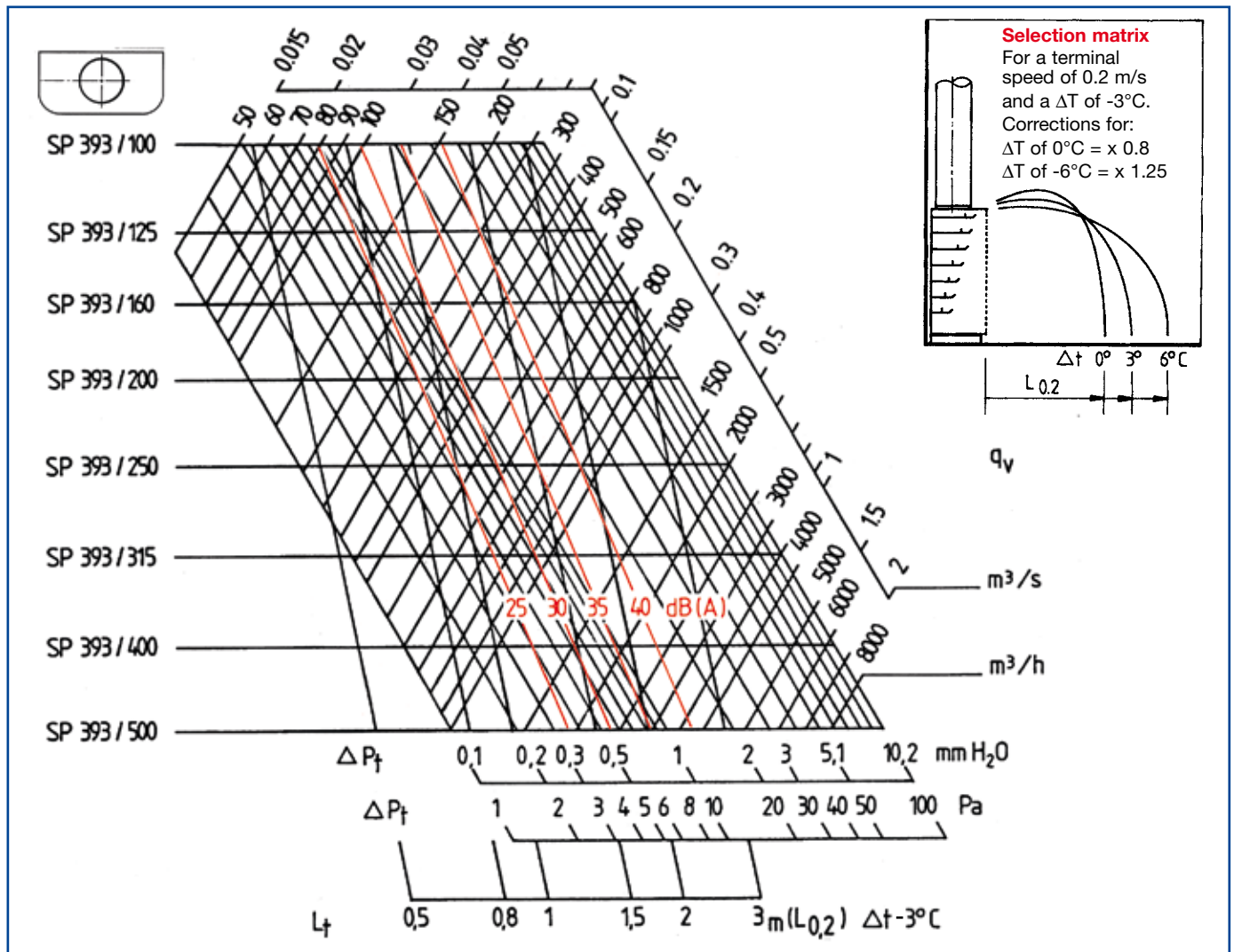
### SOUND ATTENUATION BY ADDITION OF SILENCER (A)

Dimensions	Octave bands (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) by octave bands (Hz)

# Air Displacement Diffusers

## Series 393 - air supply



The values  $L_w$  (NR) do not include attenuation of the premises.

### ACOUSTIC POWER LEVEL (dB)

Dimensions	Octave bands (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) by octave bands (Hz)

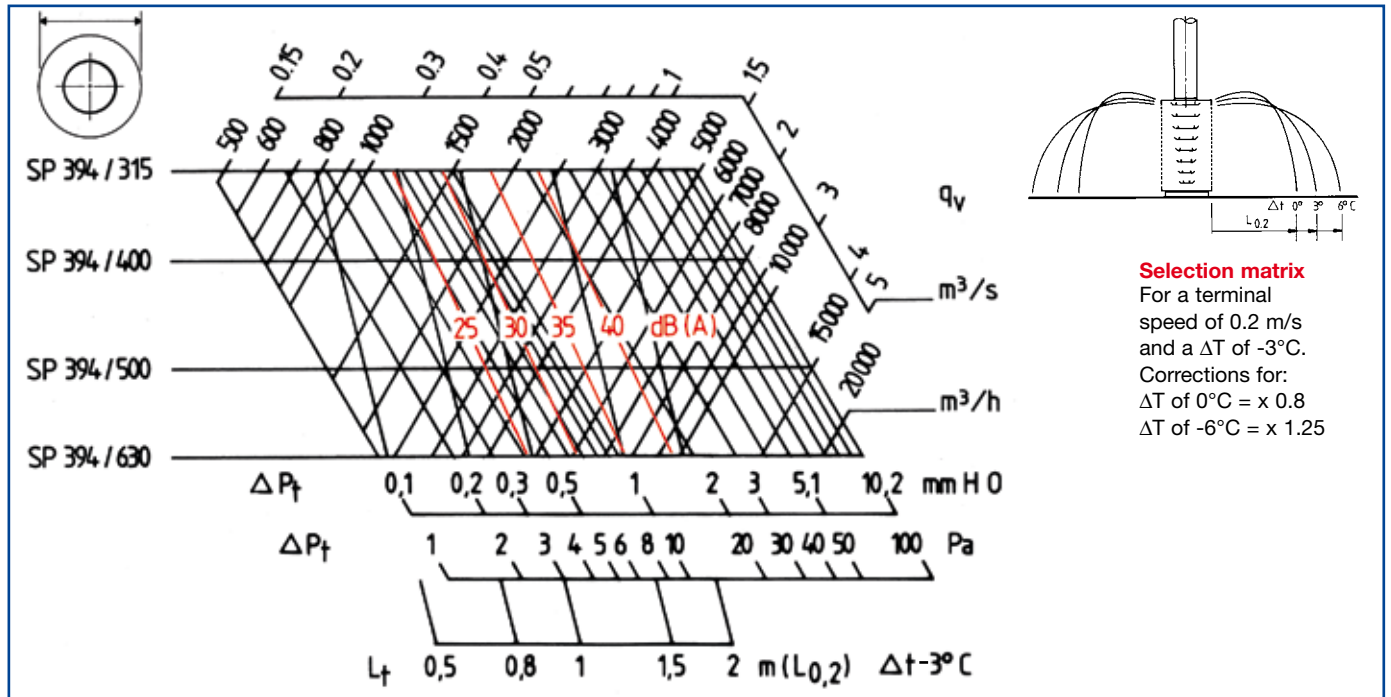
### SOUND ATTENUATION BY ADDITION OF SILENCER (A)

Dimensions	Octave bands (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) by octave bands (Hz)

# Air Displacement Diffusers

## Series 394 - air supply



The values  $L_w$  (NR) do not include attenuation of the premises.

### ACOUSTIC POWER LEVEL (dB)

Dimensions	Octave bands (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) by octave bands (Hz)

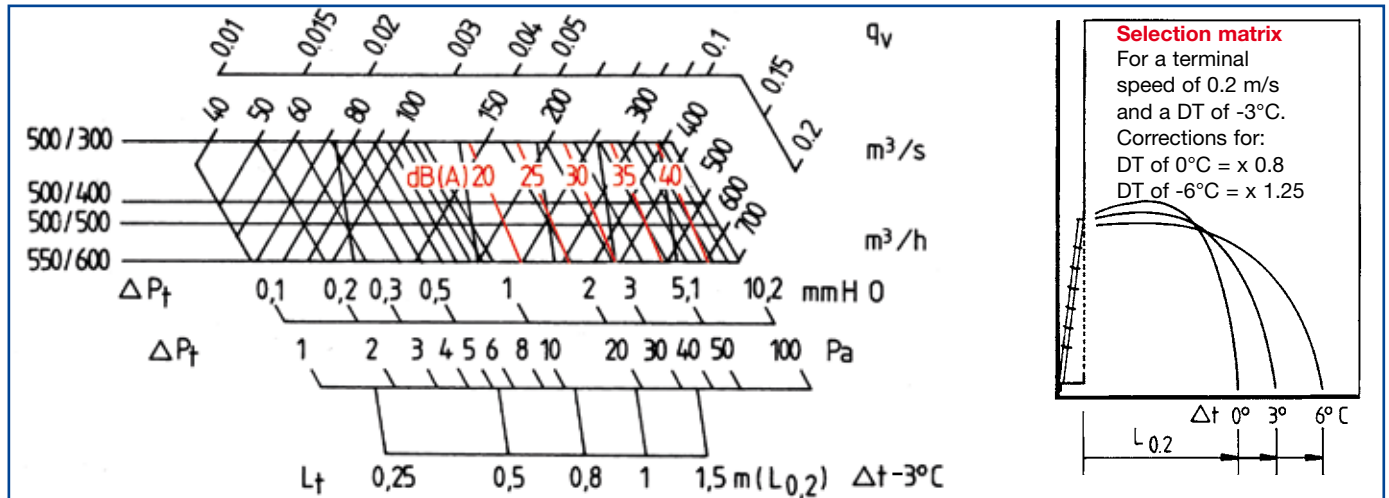
### SOUND ATTENUATION BY ADDITION OF SILENCER (A)

Dimensions	Octave bands (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) by octave bands (Hz)

# Air Displacement Diffusers

## Series 395 - 396 - air supply



The values  $L_w$  (NR) do not include attenuation of the premises.

### ACOUSTIC POWER LEVEL (dB)

Dimensions	Octave bands (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) by octave bands (Hz)



# Diffusers with rotating nozzle

## Series SC 984 - steel



SC 984 diffuser



LREI plenum (5)

### APPLICATION

- Adjustable air supply for a swirl or multi-direction jet (one, two, three or four channels).
- High mixing rate and rapid temperature uniformity.
- Ideal for low ceiling installations.
- Ceiling mounted.
- Version adapted to 600 x 600 suspended ceiling tiles (SC 984 T).

### DESCRIPTION

- Punched steel sheet front.
- Plastic rotating nozzles.

### FINISH

- Epoxy paint steel, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Hidden fixing by side screws in the diffuser collar.

### ACCESSORIES

- LREI plenum (5) insulated on 5 sides (provided).
- Damper with control plate delivered mounted on the plenum mounted connection (provided).

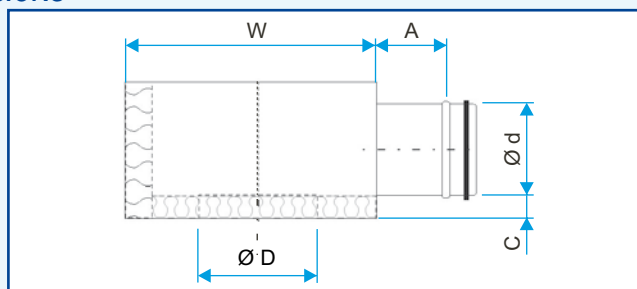
### STANDARD DIMENSIONS

- Available in 5 different sizes, from D125 to D315.
- Dimension 600 x 600 for replacing a standard suspended ceiling tile (SC 984 T).

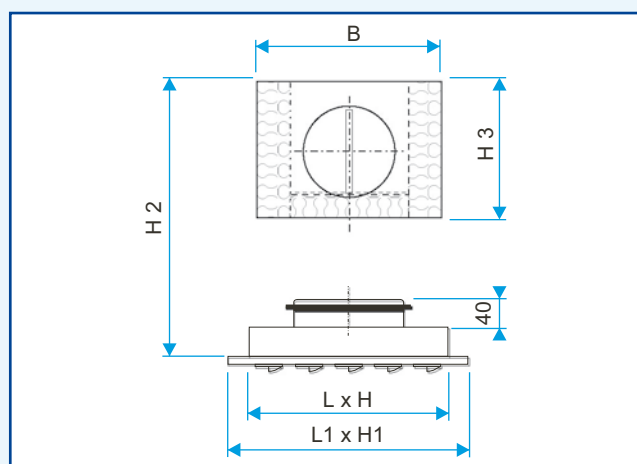
### TECHNICAL CHARACTERISTICS

- See selection matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

### DIMENSIONS



LREI plenum (5)



SC 984 diffuser

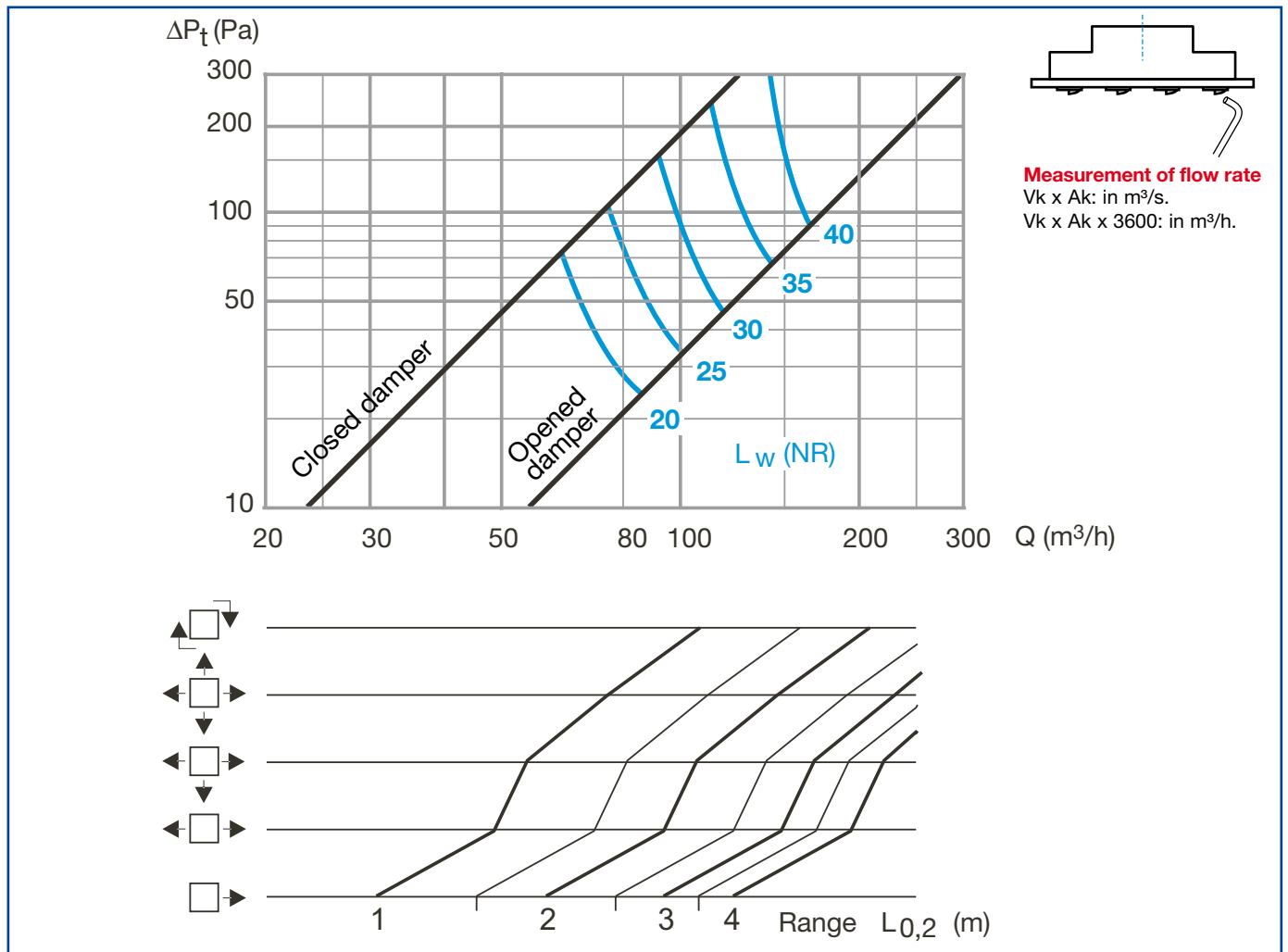
### STANDARD DIMENSIONS

Model	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 ou 594*	125	100	185	155	250	320	296	81	30
160	333	389 ou 594*	160	125	210	180	300	380	346	91	40
200	415	472 ou 594*	200	160	260	215	370	440	398	103	35
250	554	594*	250	200	315	255	465	520	473	123	30
315	554	594*	315	250	360	300	550	580	519	144	25

\* Model SC 984 T

# Diffusers with rotating nozzle

## Series 984 - Model 125 - air supply with ceiling effect



The  $L_w$  values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

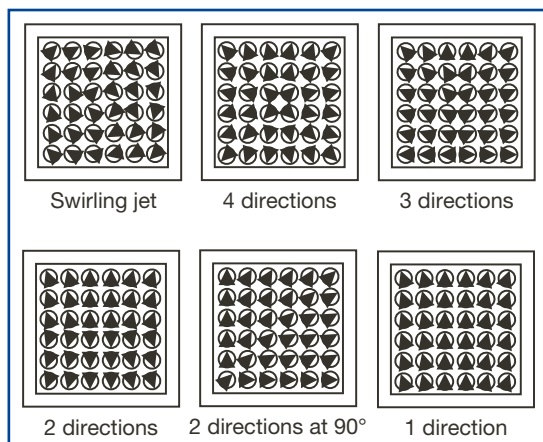
### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.2	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.8	x 0.53	x 0.4	x 0.32

### ACOUSTIC POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+9	+7	+3	-2	-12	-24

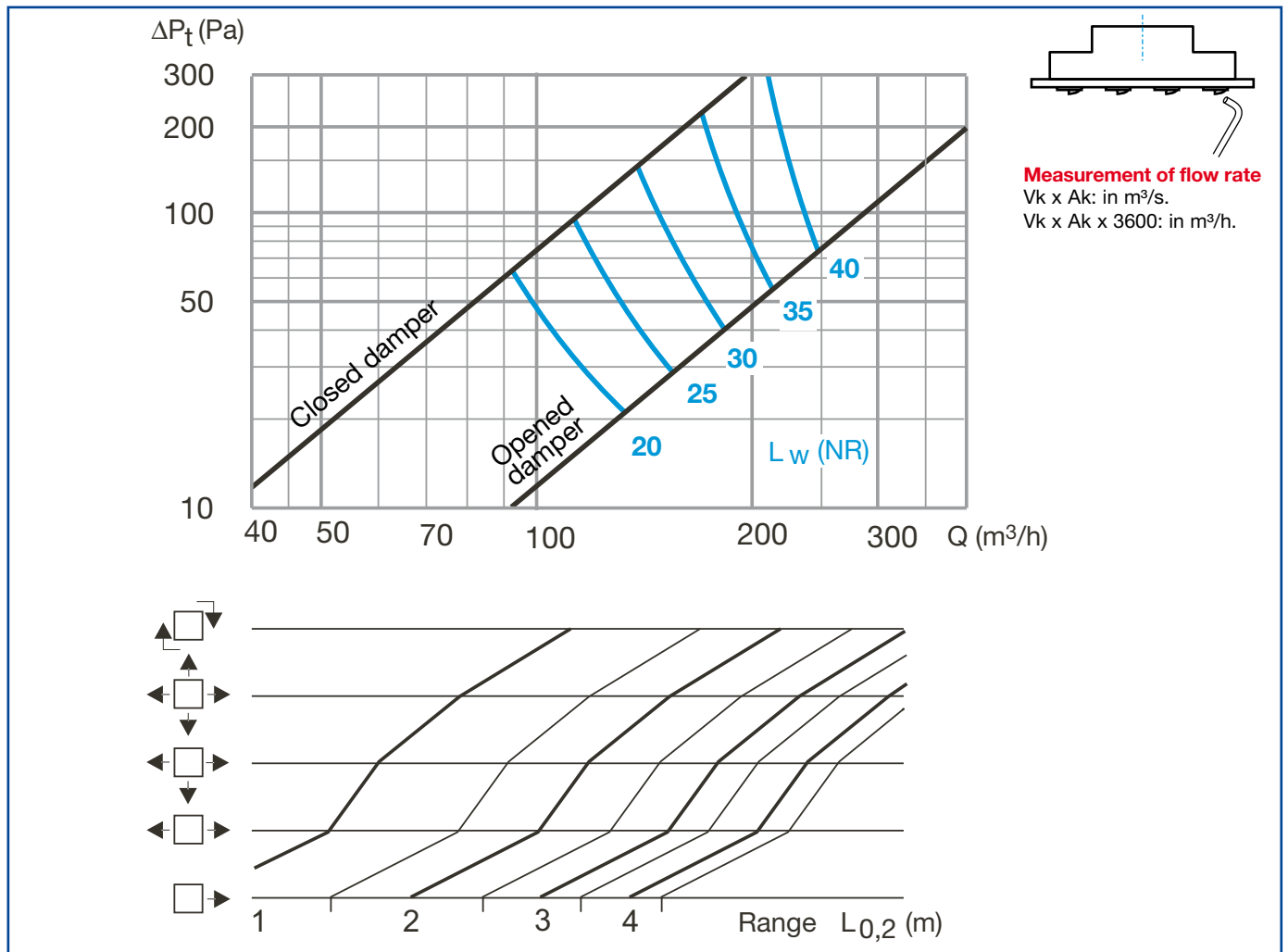
Correction factors (dB) by octave bands (Hz)



The range  $L_{0,2}$  is given for the nozzle configurations below.

# Diffusers with rotating nozzle

## Series 984 - Model 160 - air supply with ceiling effect



The  $L_w$  values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

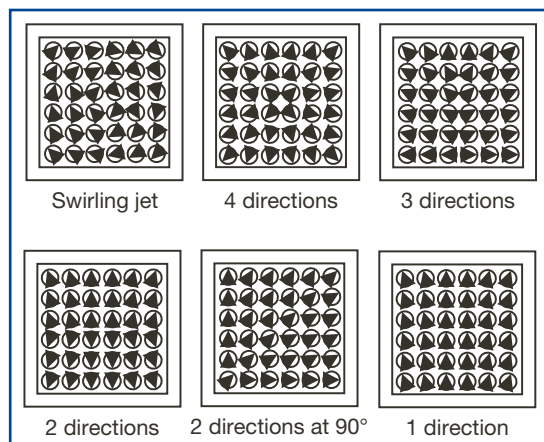
### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.2	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.8	x 0.53	x 0.4	x 0.32

### ACOUSTIC POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 8	+ 5	+ 1	0	- 10	- 24

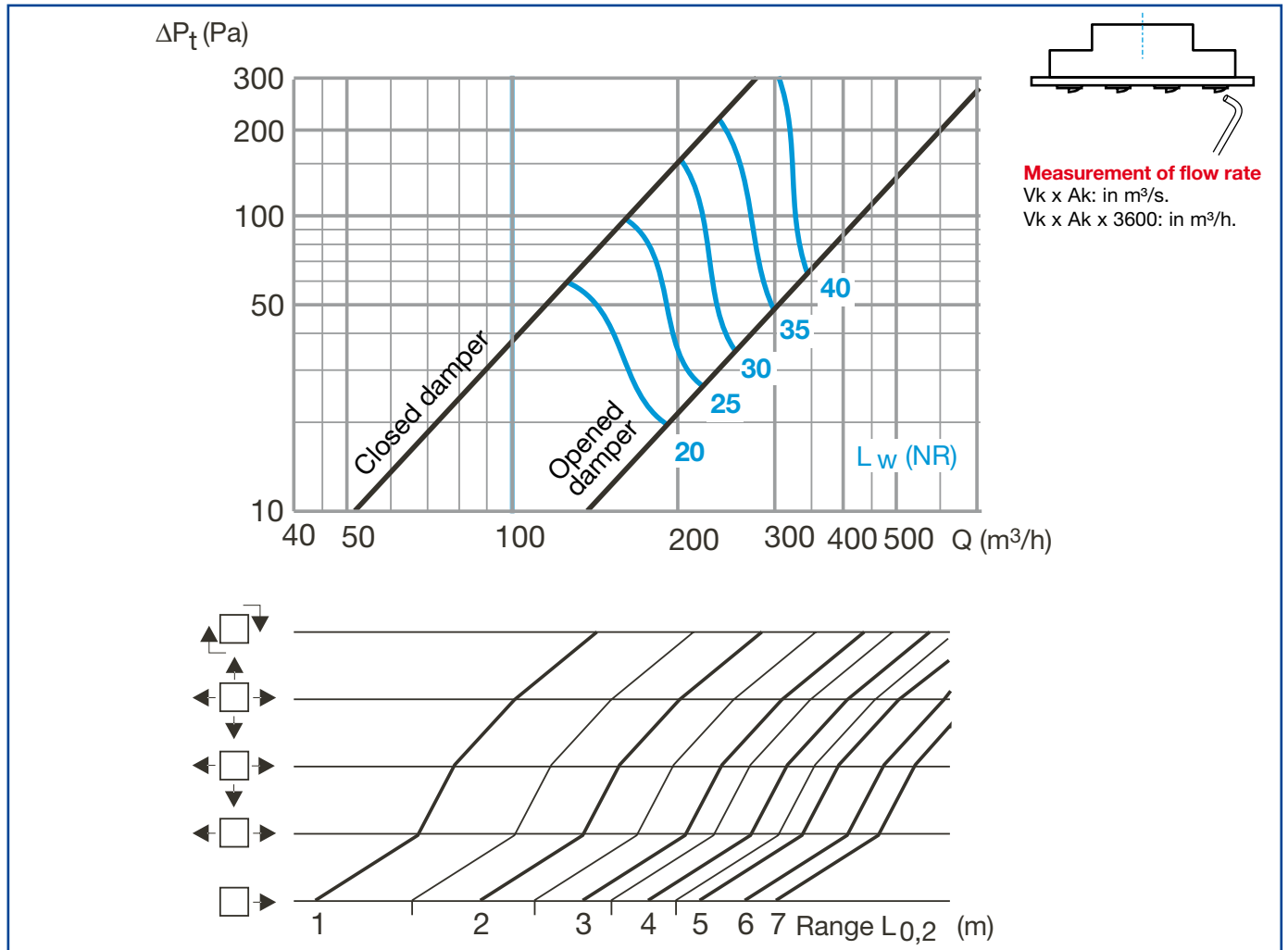
Correction factors (dB) by octave bands (Hz)



The range  $L_{0,2}$  is given for the nozzle configurations below.

# Diffusers with rotating nozzle

## Series 984 - Model 200 - air supply with ceiling effect



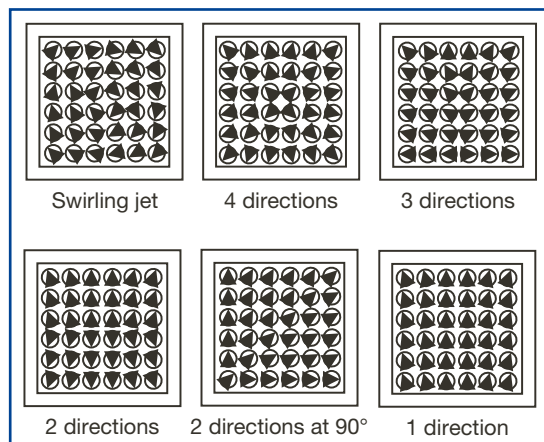
The Lw values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

### 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

### ACOUSTIC POWER LEVEL (dB)

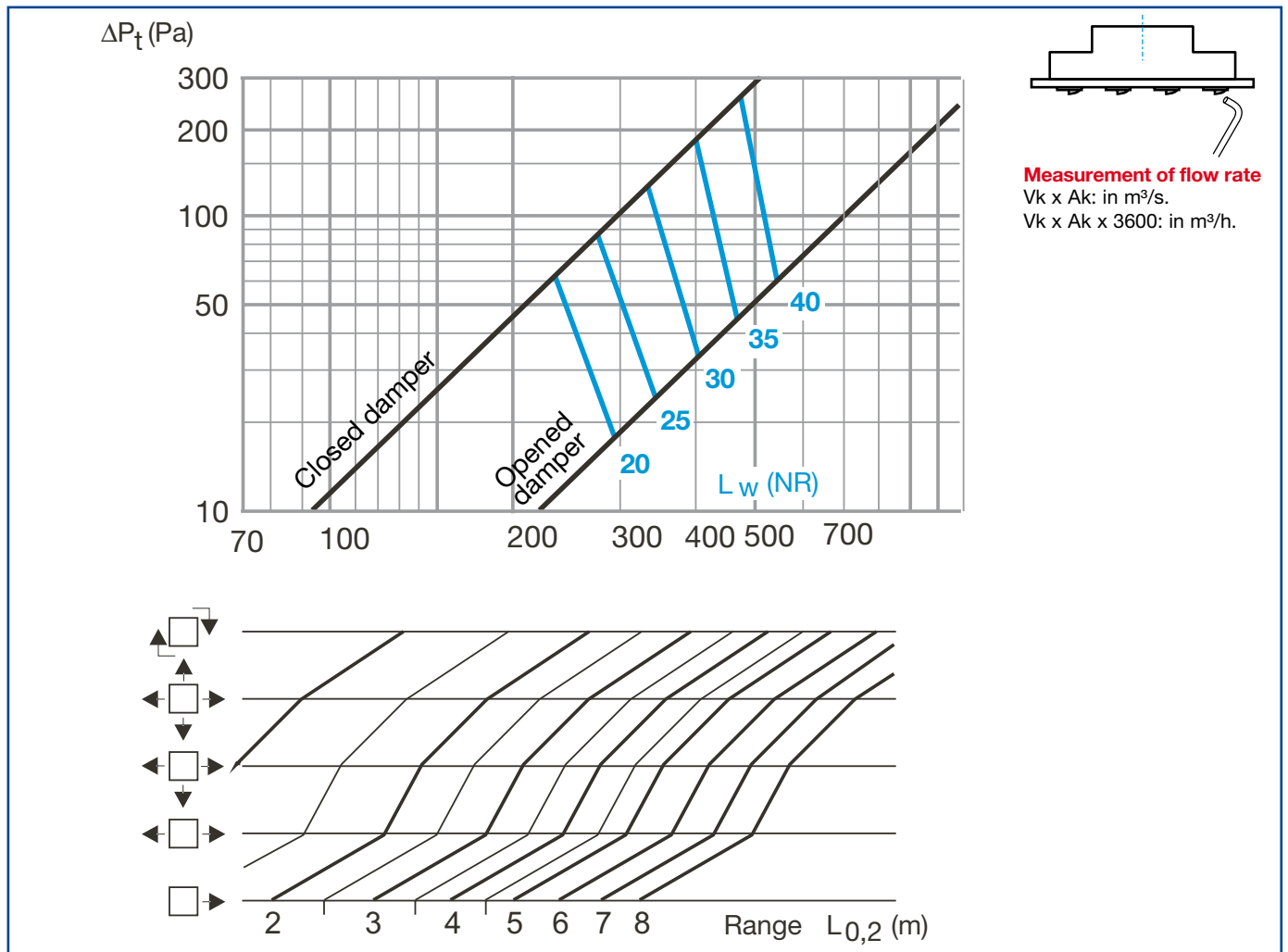
Hz	125	250	500	1000	2000	4000
K (dB)	+ 8	+ 4	+ 2	- 1	- 9	- 20
Correction factors (dB) by octave bands (Hz)						



The range L0.2 is given for the nozzle configurations below.

# Diffusers with rotating nozzle

## Series 984 - Model 250 - air supply with ceiling effect



The  $L_w$  values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

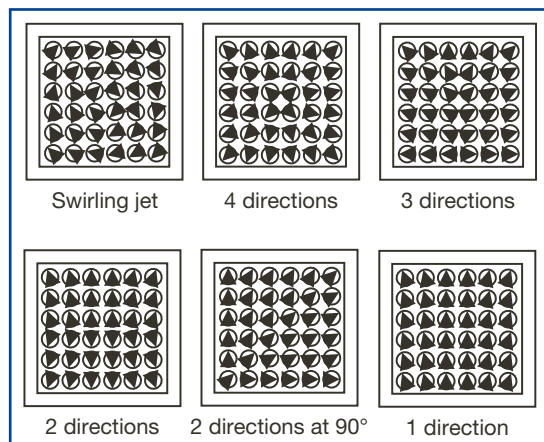
### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.2	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.8	x 0.53	x 0.4	x 0.32

### ACOUSTIC POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 9	+ 5	+ 3	- 1	- 10	- 21

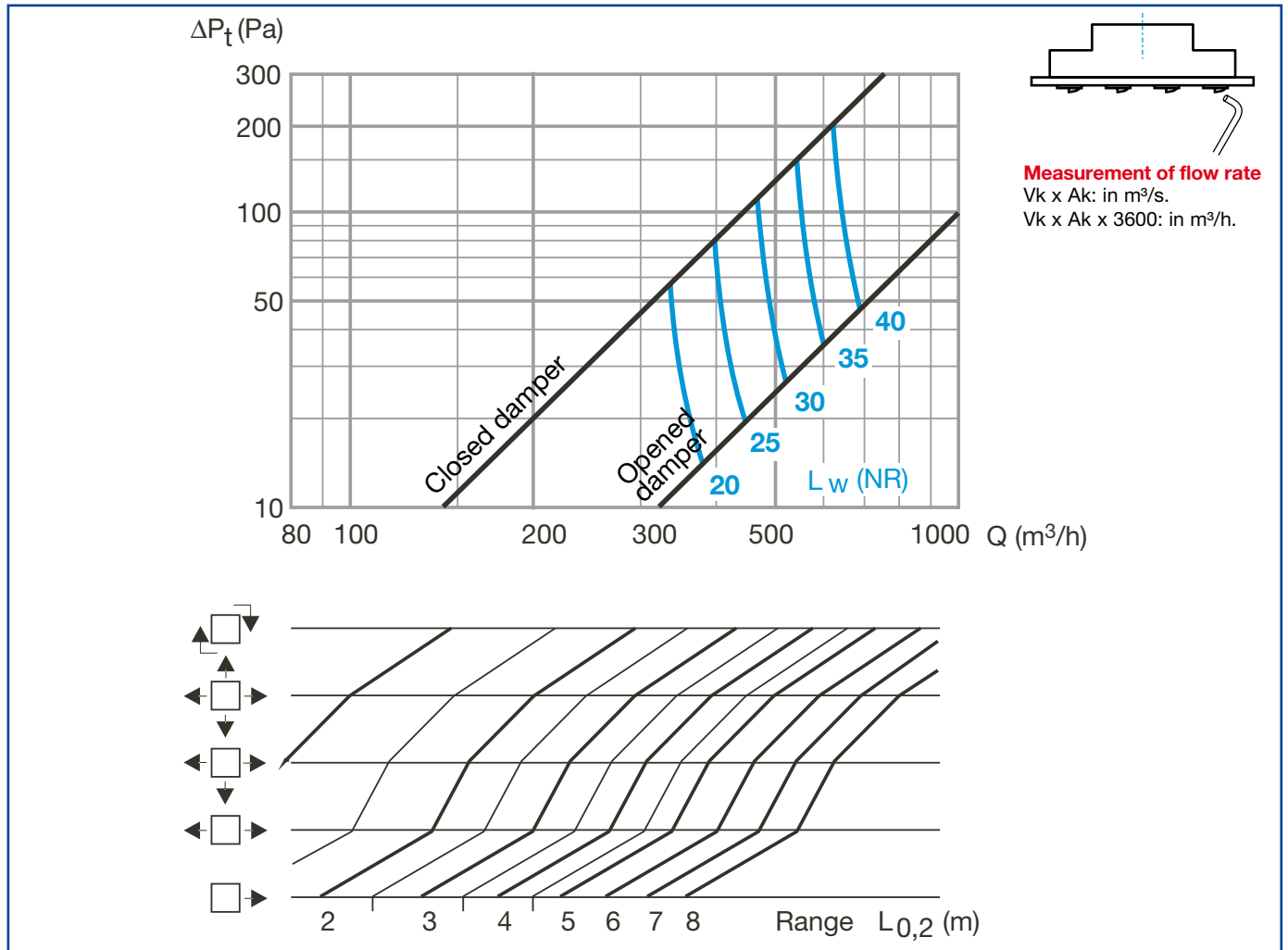
Correction factors (dB) by octave bands (Hz)



The range  $L_{0,2}$  is given for the nozzle configurations below.

# Diffusers with rotating nozzle

## Series 984 - Model 315 - air supply with ceiling effect



The  $L_w$  values (NR) do not include attenuation of the premises. Tests performed with the standard plenum.

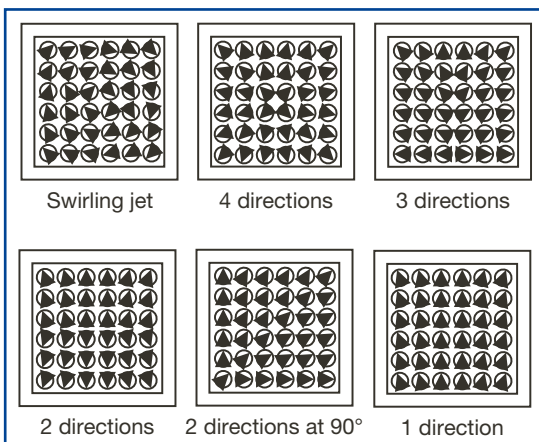
### CORRECTIONS FOR OTHER $V_t$

$V_t$ (m/s)	0.2	0.25	0.375	0.5	0.625
$L_t$	x 1	x 0.8	x 0.53	x 0.4	x 0.32

### ACOUSTIC POWER LEVEL (dB)

Hz	125	250	500	1000	2000	4000
K (dB)	+ 7	+ 3	+ 3	0	- 11	- 23

Correction factors (dB) by octave bands (Hz)



The range  $L_{0,2}$  is given for the nozzle configurations below.

# Alum jet diffusers

## Series DGH - aluminium



DGHB jet diffuser

### APPLICATION

- Air supply for premises with high ceilings such as airports and exhibition halls.
- Long blow diffusion to send air to the zone of occupation, ideal for avoiding heating stratification.
- Orientable diffusion, tilt angle up to 30°.
- Wall or ceiling mounted, or on a ground sill.

### DESCRIPTION

- Pressed aluminium diffuser.

### FINISH

- Epoxy paint steel finish, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- DGH and DGHB : visible screw fixing to rectangular duct.
- DGH-C and DGHB-C: fixed directly to the circular supply duct.

### ACCESSOIRES

- DGH-C: delivered with circular connecting sleeve.
- DGHB: delivered with integrated damper manoeuvrable from the outside.
- DGHB-C: delivered with circular connecting sleeve and integrated damper.

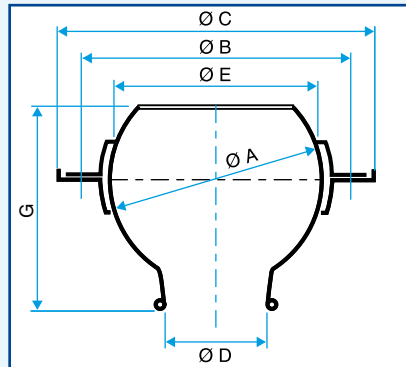
### STANDARD DIMENSIONS

- Available from Ø 100 to Ø 400.

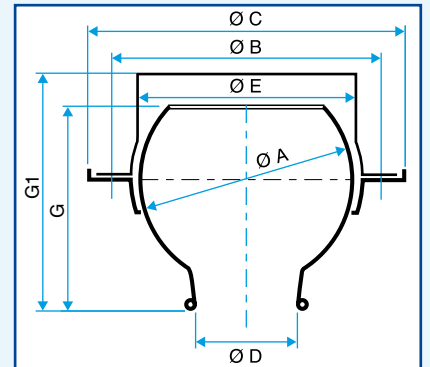
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

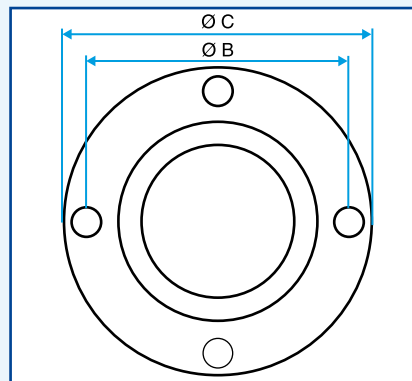
### DIMENSIONS



DGH jet diffuser



DGH-C jet diffuser



### STANDARD DIMENSIONS

Model	Reservation (mm)	Ø A (mm)	Ø B (mm)	Ø C (mm)	Ø D (mm)	Ø E (mm)	G (mm)	G1 (mm)
100	105	95	120	140	45	100	90	98
150	165	155	180	200	70	150	140	150
200	215	205	240	260	95	200	180	188
315	325	315	350	370	160	315	265	305
400	425	415	455	480	225	400	355	395

# Alum jet diffusers

## Series DGH2 - aluminium



DGH2 jet diffuser



DGH2-C jet diffuser with connecting sleeve

### APPLICATION

- Air supply for premises with high ceilings such as airports and exhibition halls.
- Long blow diffusion to send air to the zone of occupation, ideal for avoiding heating stratification.
- Orientable diffusion, tilt angle up to 30°.
- Wall or ceiling mounted, or on a ground sill.

### DESCRIPTION

- Pressed aluminium diffuser.

### FINISH

- Epoxy paint steel finish, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- DGH2 : visible screw fixing to rectangular duct.
- DGH-C : fixed directly to the circular supply duct.

### ACCESSOIRES

- DGH-C : delivered with circular connecting sleeve.

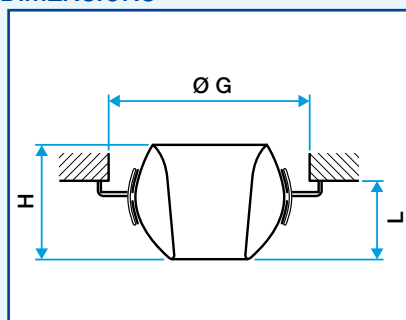
### STANDARD DIMENSIONS

- Available from Ø 100 to Ø 315.

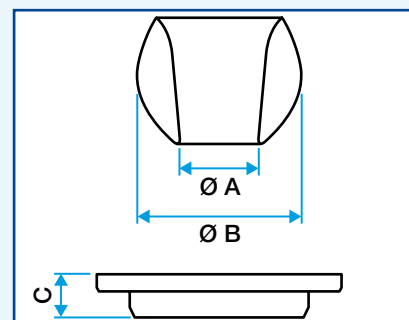
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See mixing rates (MR) at the end of the chapter.

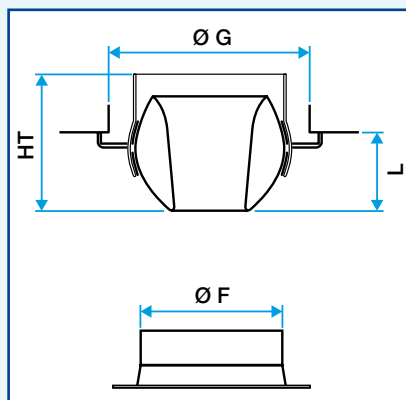
### DIMENSIONS



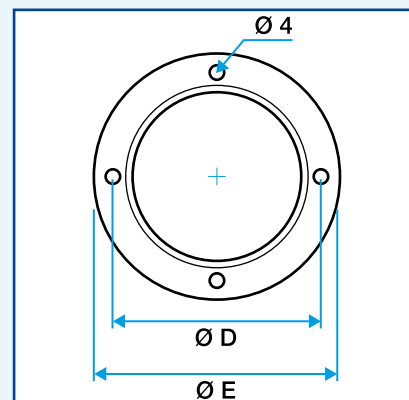
DGH2 jet diffuser



DGH2 jet diffuser



DGH2-C jet diffuser



Fixing clip

### STANDARD DIMENSIONS

Model	Ø A (mm)	Ø B (mm)	Ø D (mm)	Ø E (mm)	Ø F (mm)	Ø G (mm)	C (mm)	H (mm)	HT (mm)	L (mm)
100	45	95	120	140	100	105	25	75	85	50
160	70	155	180	200	160	165	25	120	130	80
200	95	205	240	260	200	215	30	150	155	100
315	160	315	350	370	313	325	35	215	230	145



# Alum jet diffusers

## Series DGH

### Standard range

Dimensions	DGH Code	DGH2 Code	DGH-C (with sleeve) Code	DGH2-C (with sleeve) Code	DGHB (with damper) Code	DGHB-C (damper + sleeve) Code
100	11051681	11051281	11051220	11051271	11051225	11051230
150	11051682		11051221		11051226	11051231
160		11051282		11051272		
200	11051683	11051283	11051222	11051273	11051227	11051232
315	11051684	11051284	11051223	11051274	11051228	11051233
400	11051685		11051224		11051229	11051234
<b>Fixing</b>			<b>Finish</b>			
<ul style="list-style-type: none"> <li>DGH and DGH-B : visible screw fixing to rectangular duct.</li> <li>DGH-C and DGHB-C : fixed directly to the circular duct.</li> </ul>			<ul style="list-style-type: none"> <li>Epoxy paint aluminium, RAL9010 white.</li> </ul>			

## Series DGH - DGH2

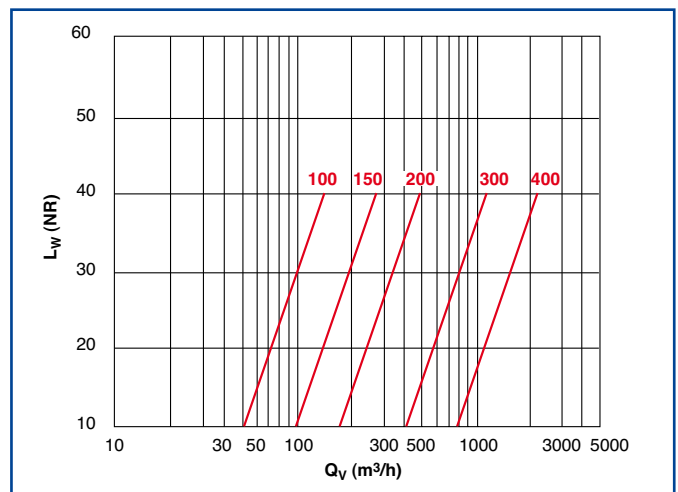
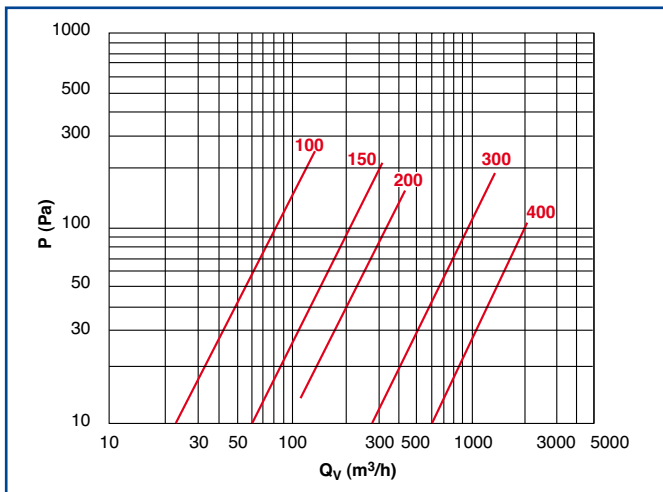
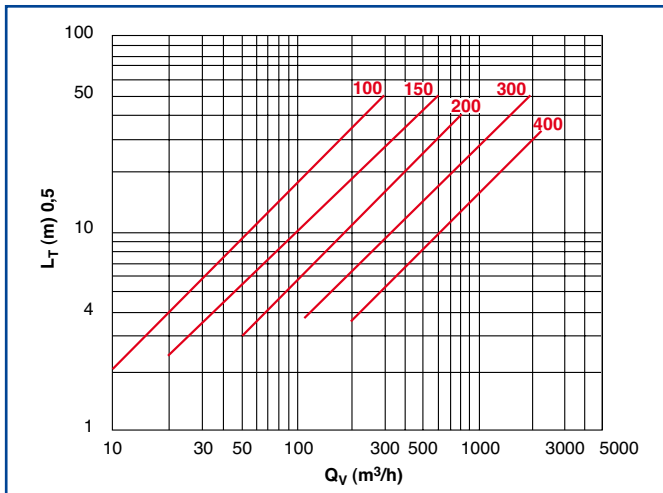
### SELECTION - AIR SUPPLY WITHOUT CEILING EFFECT

Ak (m <sup>2</sup> )	Dimensions (mm)	50 (m <sup>3</sup> /h)		100 (m <sup>3</sup> /h)		200 (m <sup>3</sup> /h)		300 (m <sup>3</sup> /h)		500 (m <sup>3</sup> /h)		800 (m <sup>3</sup> /h)		1000 (m <sup>3</sup> /h)		1500 (m <sup>3</sup> /h)		2000 (m <sup>3</sup> /h)		
		Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	
0,002	Ø 100	16	9,0	30	18,0														Lw	Lt
		-	42,0	-	160,0														-	Pa
0,004	Ø 150 Ø 160			10	10,0	31	18,0	44	28,0											
				-	28,0	-	90,0	-	200,0											
0,007	Ø 200					15	11,0	28	15,0	40	25,0									
						-	40,0	-	90,0	-	200,0									
0,020	Ø 300									17	15,0	30	22,0	38	28,0					
										-	30,0	-	70,0	-	110,0					
0,039	Ø 400	Lw	Lt									10	14,0	18,0	17,0	29	22,0	38	30,0	
		-	Pa									-	18,0	-	29,0	-	55,0	-	100,0	

The values Lw (NR) do not include attenuation of the premises. Vt = 0.5 m/s.

# Alum jet diffusers

## Series DGH - DGH2 - air supply without ceiling effect



### 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 DAMPER

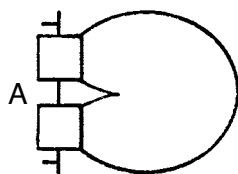
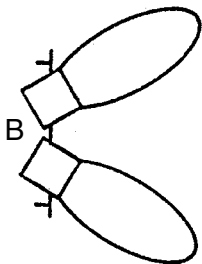
No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta Pt \times 1.00$	$\Delta Pt \times 1.00$	$\Delta Pt \times 2.25$	$\Delta Pt \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

### CORRECTIONS FOR CONCENTRATED JET

Number of jet 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 VERTICAL AIR SUPPLY ACCORDING TO TEMPERATURE

$\Delta T$ (°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



# Steel jet diffusers

## Series SR 150 - steel



SR 153 jet diffuser



SR 151 S jet diffuser

### APPLICATION

- Air supply for premises with industrial-type high ceilings.
- Long blow diffusion to send air to the zone of occupation, ideal for avoiding heating stratification.
- Orientable diffusion, tilt angle up to 30°.
- Wall or ceiling mounted.

### DESCRIPTION

- Galvanized sheet steel body and deflectors.

### FINISH

- Epoxy paint steel finish, RAL9010 white.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Directly fixed to the circular supply duct (SR 151S).
- Diffusers mounted in battery for installation on rectangular section ducts or plenums (models SR 151 to SR 154).

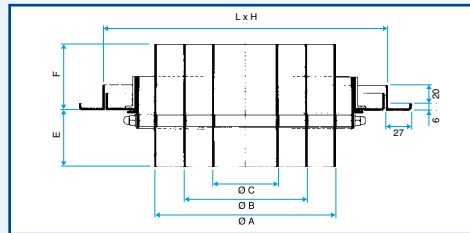
### STANDARD DIMENSIONS

- Available from 200 to 350.
- One to four unit batteries.

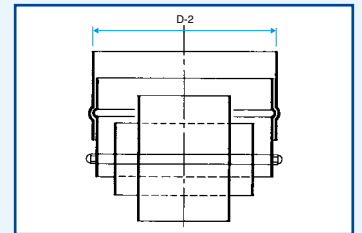
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See Mixing Rates (MR) at the end of the chapter.

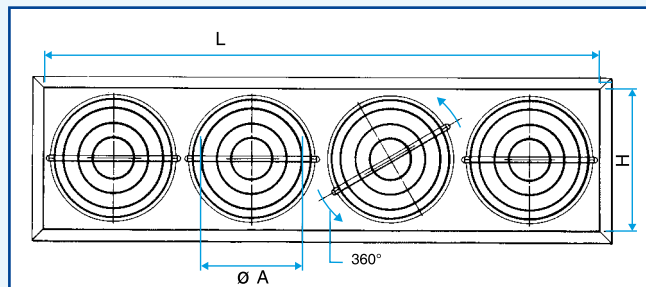
### DIMENSIONS



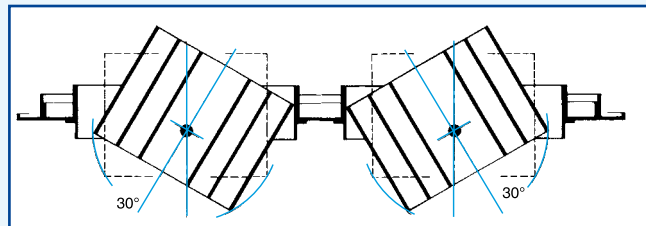
SR 151 plate mounted for installation on rectangular section ducts or plenums.



SR 151 S jet diffuser for direct installation on circular duct.



SR 154 jet diffuser : 4 aligned elements



Maximum angle of deflection.

### STANDARD DIMENSIONS

Ø A nominal (mm)	Model (mm)	Number of elements	L (mm)	H (mm)	Ø B (mm)	Ø C (mm)	E (mm)	F (mm)
	reference							
200	SR 151	1	300	300	150	100	60	70
	SR 152	2	600					
	SR 153	3	900					
	SR 154	4	1200					
250	SR 151	1	350	350	175	100	60	70
	SR 152	2	700					
	SR 153	3	1050					
	SR 154	4	1400					
300	SR 151	1	400	400	200	100	70	90
	SR 152	2	800					
	SR 153	3	1200					
	SR 154	4	1600					
350	SR 151	1	450	450	225	100	70	90
	SR 152	2	900					
	SR 153	3	1350					
	SR 154	4	1800					

# Steel jet diffusers

## Series SR 150

### Standard range

Dimensions	SR 151 S Code
200	11051676
250	11051677
315	11051678
400	11051679

Fixing	Finish
• Directly to the circular duct.	• Epoxy paint steel, RAL9010 white.

### Range with choice of options

Dimensions (mm)	SR 151	SR 152	SR 153	SR 154
200	11003101	11003105	11003109	11003113
250	11003102	11003106	11003110	11003114
300	11003103	11003107	11003111	11003115
350	11003104	11003108	11003112	11003116

### Options available

Finish
• Epoxy paint in accordance with RAL color. Consult the list of available colours in the appendix.

## Series 150

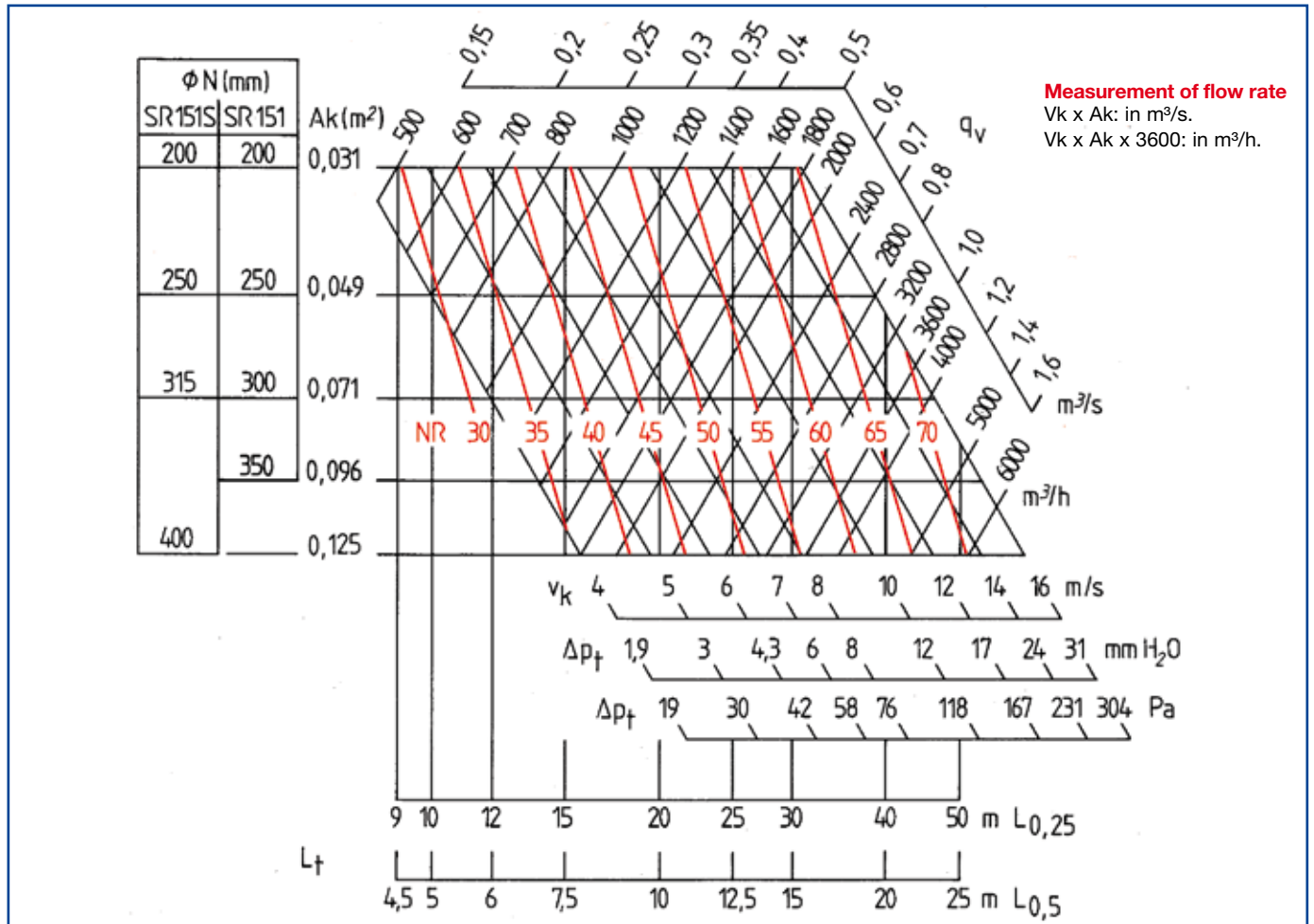
### SELECTION - AIR SUPPLY WITHOUT CEILING EFFECT

Ak (m <sup>2</sup> )	Ø N (mm)	qv (m <sup>3</sup> /h)																			
		500		750		1000		1500		2000		2500		3000		3500		4000		5000	
0,031	200	30	7,0	42	10															Lw	Lt
		4,5	25	7,0	58															Vk	Pa
0,049	250			32	8	38	10	51	16	58	21										
				4,2	23	5,8	40	8,5	40	11,5	150										
0,071	315					31	9	43	13	51	17	57	21	63	26						
						3,9	17	6,0	42	8,0	76	9,8	110	12	167						
0,096	350							36	9	45	15	50	17	56	22	61	26	65	30		
								4,2	23	5,9	41	7,2	60	8,5	90	10,2	130	12	165		
0,125	400	Lw	Lt					38	12	45	15	50	17	55	20	58	24	65	28		
		Vk	Pa					4,5	25	5,5	37	6,8	52	7,8	70	9,3	100	11,3	150		

The values Lw (NR) do not include attenuation of the premises. Vt = 0.37 m/s.  
With ceiling effect : multiply the range by 1.4.

# Steel jet diffusers

## Series 150 - air supply without ceiling effect



The Lw values (NR) do not include attenuation of the premises.

### 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 DAMPER

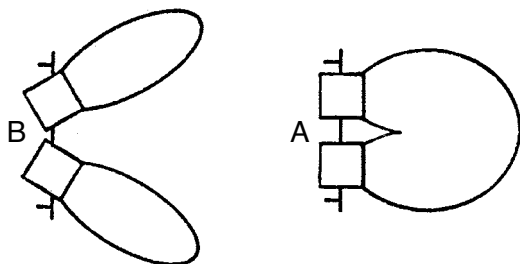
No damper	Damper 100% open	Damper 50% open	Damper 25% open
$\Delta P_t \times 1.00$	$\Delta P_t \times 1.00$	$\Delta P_t \times 2.25$	$\Delta P_t \times 5.90$
Lw + 0	Lw + 0	Lw + 10	Lw + 20

### CORRECTIONS FOR CONCENTRATED JET

Number of jet 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 VERTICAL AIR SUPPLY ACCORDING TO 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



# Flexible diffusers

## Series CSI - CSF - CSP - textile



CSI diffuseur 1/2 circular



CSF diffuser



CSP diffuseur 1/2 circular

### APPLICATION

#### CSI diffusers

- Air conditioning hot and cold for buildings with large volume, for sales purposes or the general public.
- Heating and/or cooling of industrial storage premises with high ceilings.
- Climate control of sensitive production of industrial premises.

#### CSF diffusers

- Agri-food industry cold
- Climate control for wine cellars and bottle storage depots
- Climate control for industrial premises with average height ceilings (H<5m)
- Heating for large volume industrial premises with high ceilings (H<8m).

#### CSP diffusers

- Agri-food industry cold.
- Clean rooms.
- Tight control for the agro-food industry.
- Climate control for industrial premises.
- Air conditioning for commercial or industrial premises with low ceilings (H<4m).

### DESCRIPTION

#### CSI diffusers

- Operating principle based on the physical phenomenon of induction. This effect is obtained with the CSI using a textile duct appropriately pierced along the entire length.
- Each hole acts as an air supply nozzle and the diffused air exits at high speed (between 7 and 15 m/s), creating a zone of depression around the duct that moves the air mass.
- The system provides improved temperature uniformity in the volume without creating uncomfortable drafts.
- The material is available in 4 versions:
  - M0 fibreglass (non combustible - mandatory in buildings receiving the general public).
  - PVC M1 (non-flammable).
  - Polyester M1 (non-flammable) 80 g/m<sup>2</sup>.
  - Polyester M1 (non-flammable) 160 g/m<sup>2</sup>.

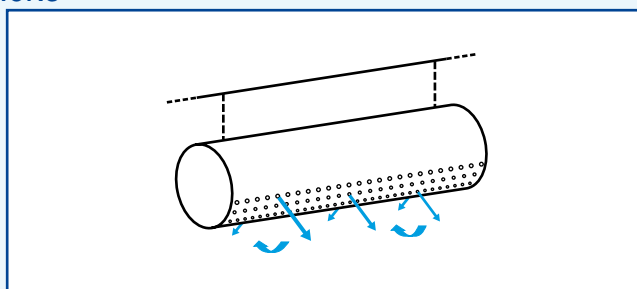
#### CSF diffusers

- Operation based on the principle of mixing the air diffused through the slots (primary air) and the air present in the premises (secondary air) by induction.
- The material is available in 3 versions:
  - PVC M1 (non-flammable).
  - Polyester M1 (non-flammable) 80 g/m<sup>2</sup>.
  - Polyester M1 (non-flammable) 160 g/m<sup>2</sup>.

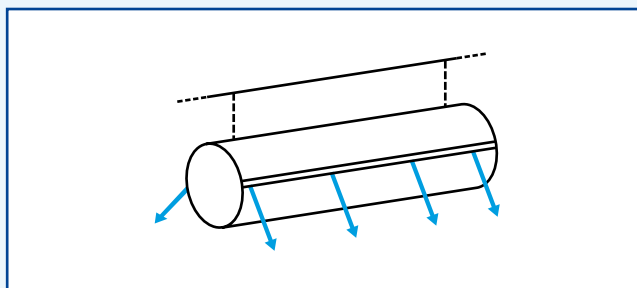
#### CSP diffusers

- Operating principle based on the phenomenon of air flow displacement according to temperature differences. Mainly used in cooling, the air diffused through the material (colder than the room air) naturally descends and progressively fills the zone being treated.
- The material is available in 2 versions:
  - Micro-perforated polyester M1 (non-flammable) 80 g/m<sup>2</sup>.
  - micro-perforated polyester M1 (non-flammable) 160 g/m<sup>2</sup>.

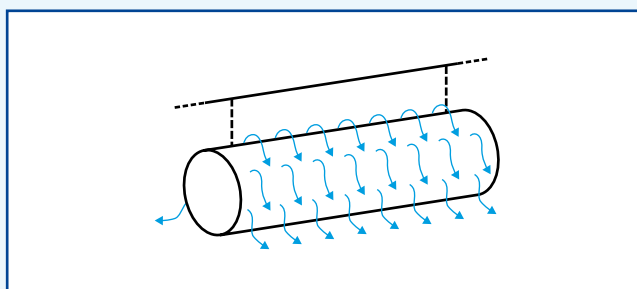
### DIMENSIONS



CSI : Very high induction diffusion by rows of perforations.



CSF : Induction diffusion by diffusing bands



CSP : total or partial diffusion by porosity of the material

# Flexible diffusers

## Serie CSI - CSF - CSP - Textile



CSI diffuseur 1/2 circular



CSF diffuser



CSP diffuseur 1/2 circular

### FINISH

- The M1 material is available in several colours (consult us).
- The M0 material (non-flammable) is available only in alum grey, black or white.

### FIXING

- Several fixing systems are available for duct suspension (cables, rails with or without mobile carts) : see the following pages.

### STANDARD DIMENSIONS

- All lengths in diameters 250 to 1600mm.
- Other dimensions consult us.

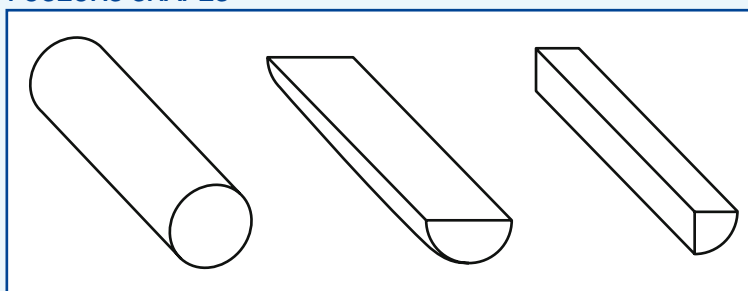
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- For each project we will carry out a design study (consult us).

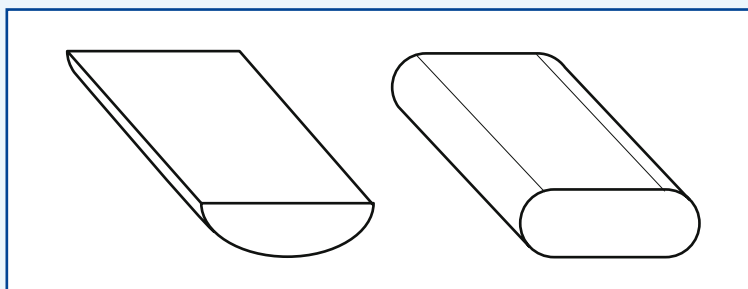
### DIFFUSERS GEOMETRY

- The use of textile allows a large flexibility in the diffusers geometry. It is thereby easy to integrate in a specific architecture.

### DIFFUSEURS SHAPES

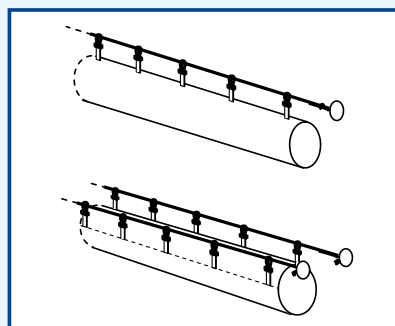


Circular shape, 1/2 or 1/4 circular

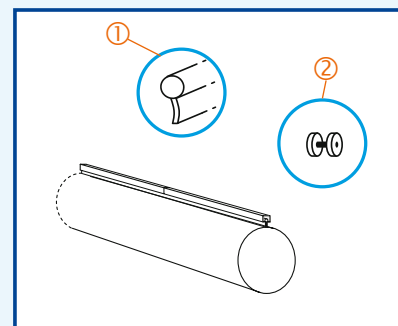


Bow-string shape or oblong

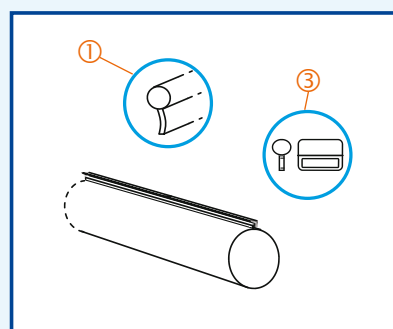
### FIXING



Single or double cable suspension



Suspension for aluminium rails



Suspension for PVC profile

- ① Retaining ring
- ② Sliding carriage

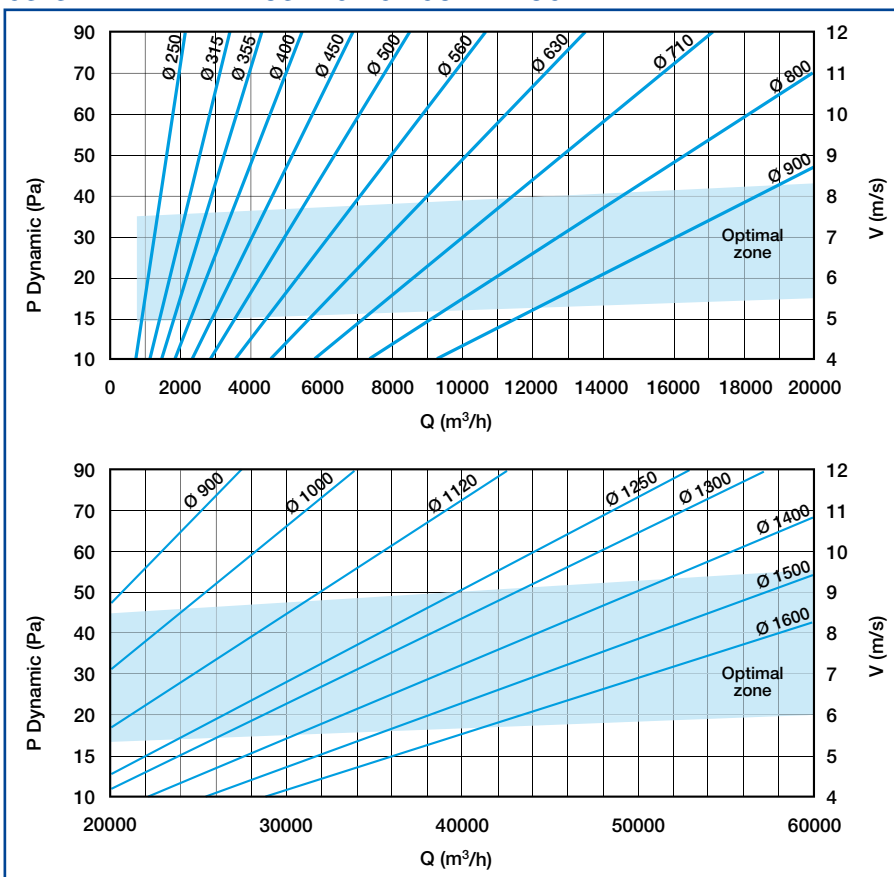
# Flexible diffusers

## CSI - CSF - CSP - Textile series

### QUICK SELECTION

		Heating only			Cooling only			Heating + Cooling		
		Range < 3 m	3 m < Range < 7 m	Range > 7 m	Range < 3 m	3 m < Range < 7 m	Range > 7 m	Range < 3 m	3 m < Range < 7 m	Range > 7 m
Public buildings	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-controlled areas	H < 4 m	CSP	CSF		CSP	CSF		CSP	CSF	
	4 m < H < 8 m									
	H > 8 m									
Commercial and industrial premises	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									
Manufacturing and storage areas	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 SERIE - AIR EXHAUST FOR CIRCULAR DUCT

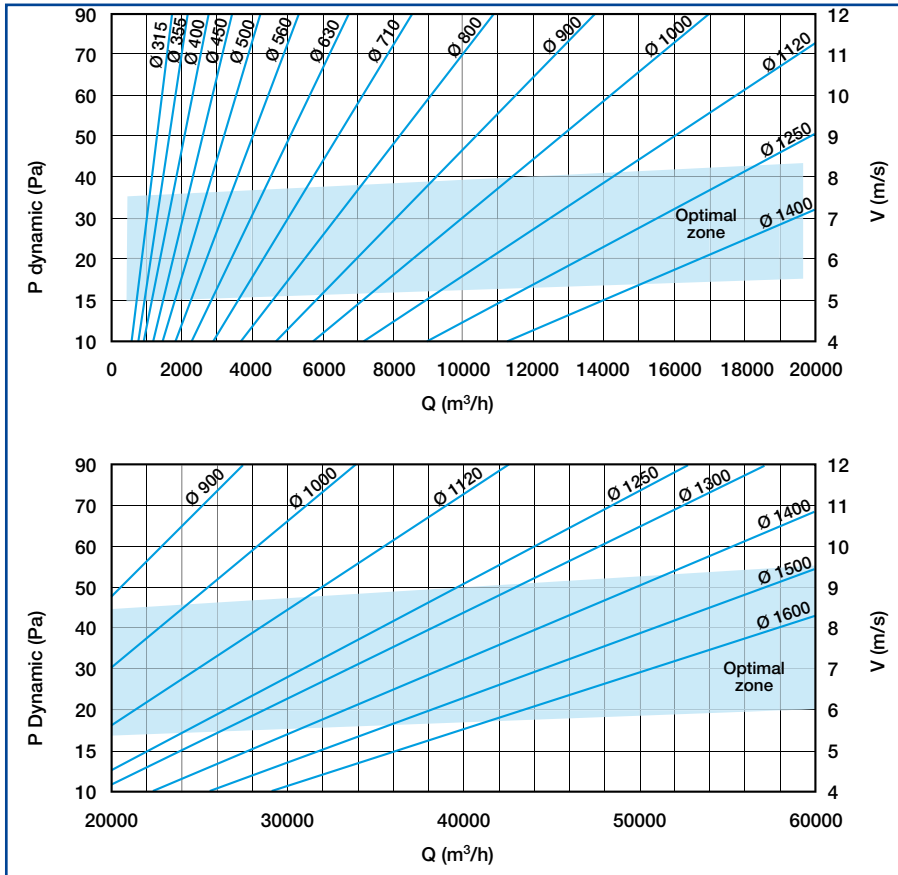




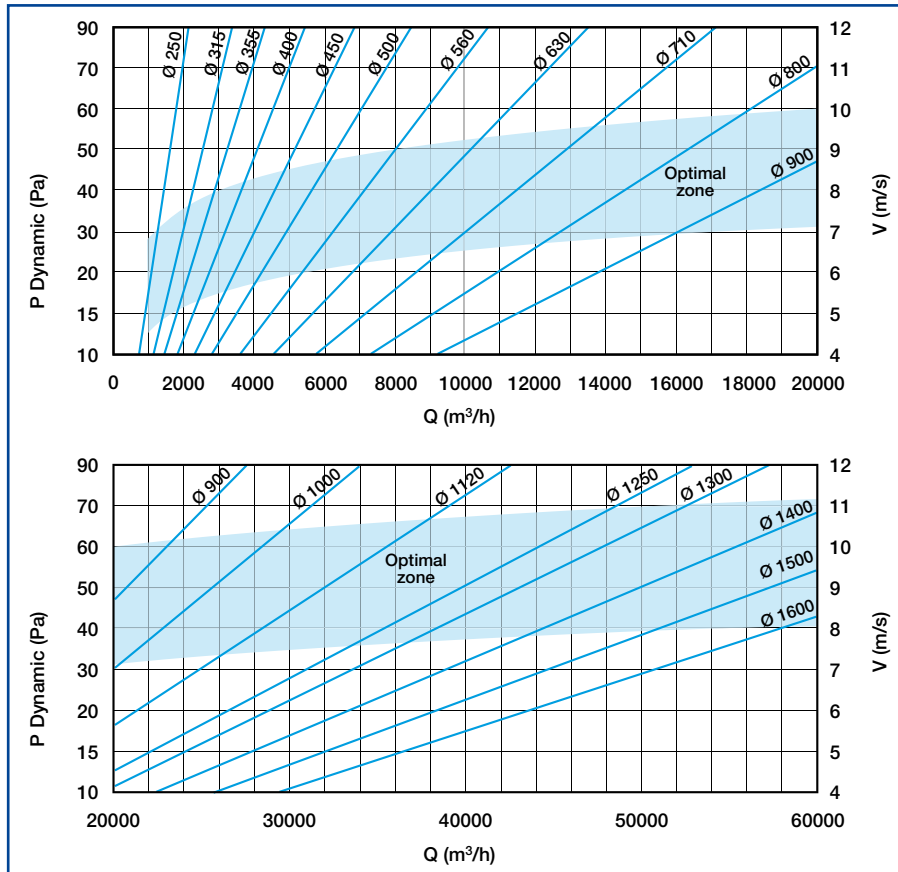
# Flexible diffusers

## Serie CSI - CSF - CSP - Textile

### CSF SERIE - AIR EXHAUST FOR CIRCULAR DUCT

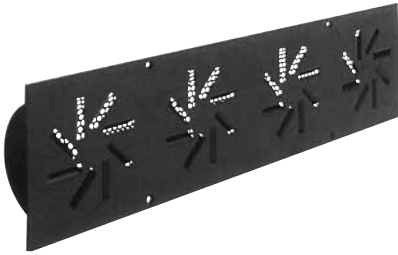


### SERIE CSP - AIR EXHAUST FOR CIRCULAR DUCT



# Square diffusers for risers

## Series Mini AWT - steel



Mini-AWT 4x8 diffuser



Mini-AWT 8 diffuser

### APPLICATION

- Diffuser adapted to amphitheatre or auditorium-type premises.
- Installation in risers behind chairs or on the ground.
- Diffusion by swirl jet for good temperature uniformity.

### DESCRIPTION

- Made of galvanized steel sheet.

### FINISH

- Epoxy paint steel finish, RAL9005 black.

### FIXING

- Visible screw fixing.

### ACCESSORIES

- Semi-cylindrical distribution sheet delivered as standard.

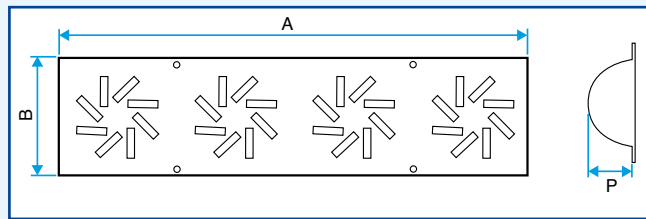
### STANDARD DIMENSIONS

- From 130 to 498 mm long.
- From 130 to 210 mm high.

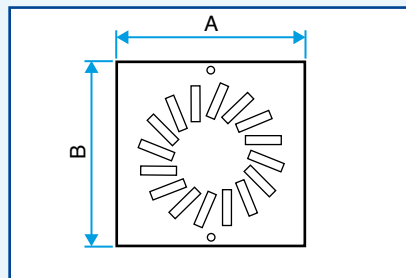
### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

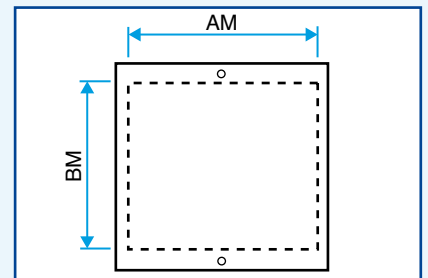
### DIMENSIONS



Mini-AWT 4x8 diffuser



Mini-AWT 16 diffuser



### STANDARD DIMENSIONS

AM x BM (mm)	Number of slots	A x B (mm)	P (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

# Square diffusers for risers

## Series Mini-AWT

### Standard range

Dimensions	Mini - AWT diffuser Code
105 x 95	11051190
130 x 120	11051191
150 x 140	11051192
185 x 175	11051193
475 x 95	11051194
Fixing	Finish
• Visible by screws on the face of the diffuser.	• Epoxy paint steel, RAL9005 black.

### PROPOSED ACCESSORIES

- Semi-cylindrical distribution sheet delivered as standard.

## Series Mini-AWT

### SELECTION - AIR SUPPLY WITH WALL EFFECT

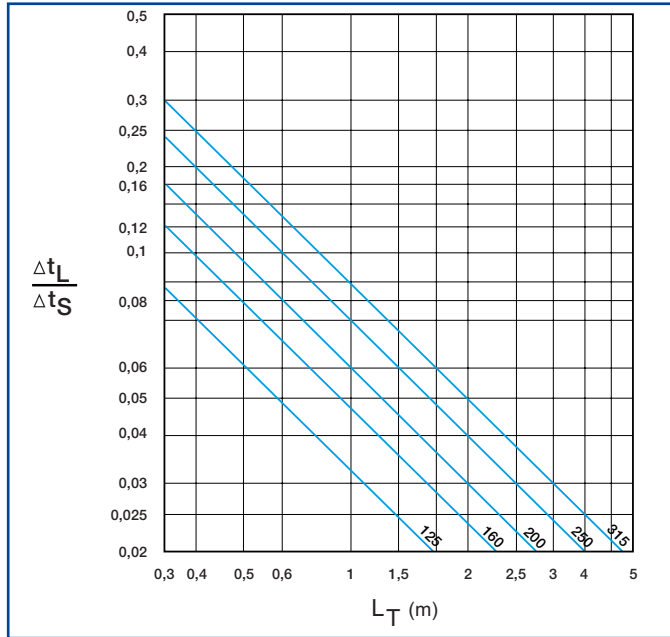
Ak (m <sup>2</sup> )	AM x BM (mm)	Nbre de fentes	10 (m <sup>3</sup> /h)		20 (m <sup>3</sup> /h)		30 (m <sup>3</sup> /h)		50 (m <sup>3</sup> /h)		60 (m <sup>3</sup> /h)		80 (m <sup>3</sup> /h)		100 (m <sup>3</sup> /h)		120 (m <sup>3</sup> /h)	
			Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt	Lw	Lt
0,0010	105 x 95	8	-	0,06	-	0,12	16	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	21	0,25	25	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	18	0,21	21	0,12	27	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	16	0,09	22	0,12	26	0,15	30	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 values Lw (NR) do not include attenuation of the premises. Vt = 0.2 m/s

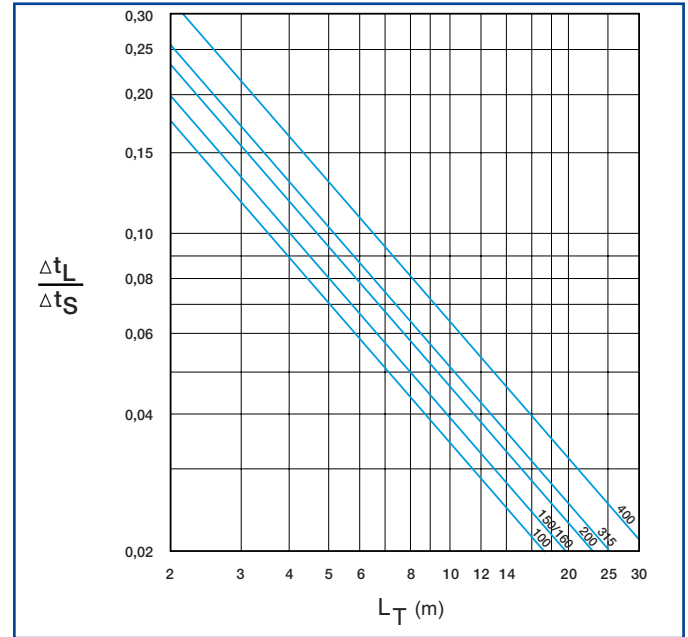
# Special diffusers

## Mixing rates (MR)

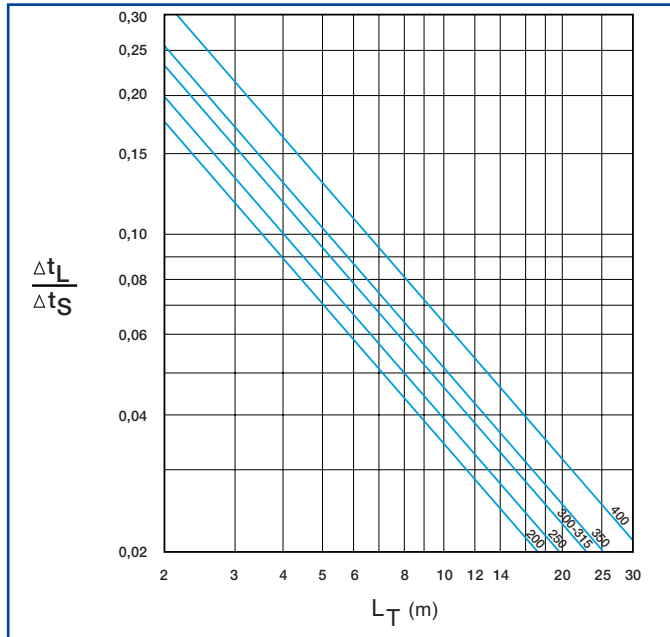
MC for diffuser series 984



TM for diffuser series DGH - DGH2



MC for diffuser series 150



## SYMBOLS

Lt (m)	Blow in m
ΔTL (°C)	Difference between the end of blow temperature and room temperature (in °C)
ΔTS (°C)	Difference between the air supply temperature and room temperature (in °C)
MR = ΔTL / ΔTS	Ratio of temperature differences. This value is proportional to the capacity of the diffuser to 'quickly' mix the air taken in at room temperature.
Example with air supply temperature at 15°C and room temperature at 25°C	The temperature in the air jet at X (m) from the diffuser = 25 - 10 x MR (°C)

# External louvres

Overpressure shutters - p 236



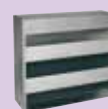
External louvres - p 239



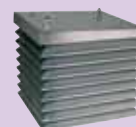
External louvres with mobile blades - p 248



Acoustic external louvres - p 250



Roof openings - p 253



Circular external louvres - p 255



Sand traps - p 257

# Overpressure shutters

## Series AVF 75 - ANF 75 - ATO 75 - aluminium



AVF 75 shutter



ATO 75 shutter

### APPLICATION

- Anti-return shutters. Overpressure or depression of premises.
- Wall mounted inside the premises (AVF 75 - ANF 75).
- Mounted in duct in a network (ATO 75).

### DESCRIPTION

- Extruded aluminium frame and blades.

### FINISH

- Blades : primary aluminium finish.
- Frame : glossy anodised alum standard finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Visible fixing, by screw into frame.

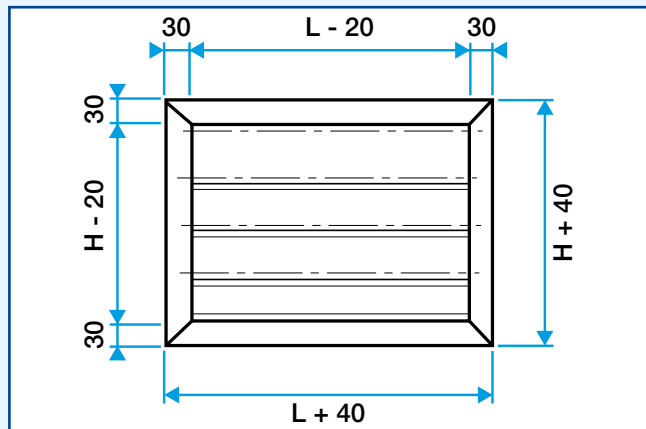
### STANDARD DIMENSIONS

- Range dimensions up to 1000 x 500 mm.
- For more information refer to the RANGE pages hereafter.

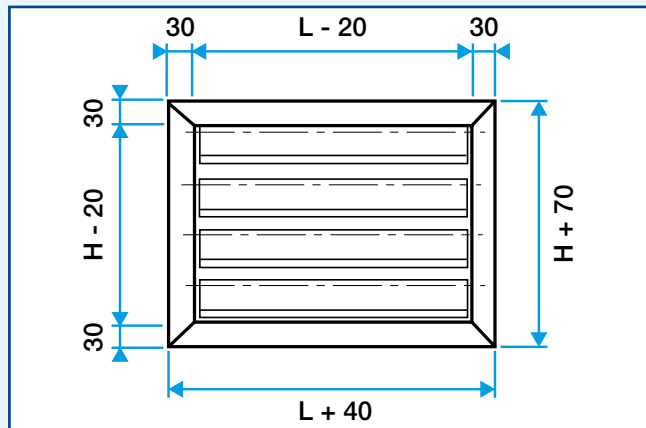
### TECHNICAL CHARACTERISTICS

- See selection tables on the following pages.

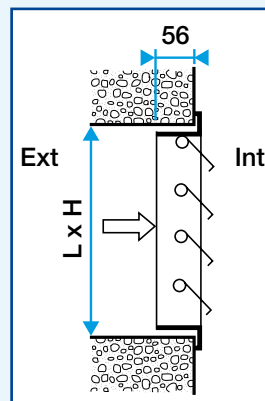
### DIMENSIONS



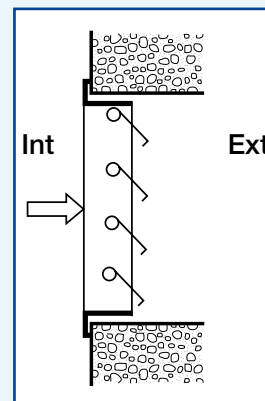
ATO 75 shutter



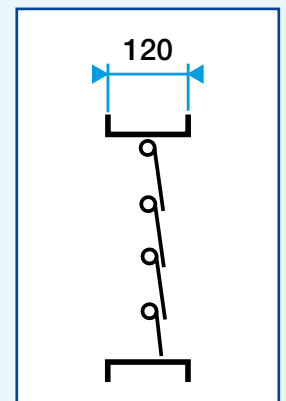
AVF 75 shutter



AVF 75 depression shutter



ANF 75 overpressure shutter



ATO 75 overpressure or depression shutter for duct

# Overpressure shutters

Series AU 661 - AG 662 - AG 663 - aluminium



AG 662 shutter

## APPLICATION

- Anti-return shutters. Overpressure or depression of premises.
- Wall mounted outside the premises (AG 662 - AG 663).
- Mounted in duct in a network (AU 661).

## DESCRIPTION

- Profiled aluminium mobile blades, with a sealing band on the inside edge.
- Blades mounted on nylon nozzles and connected by linkages.
- AU 661 : U-shape profiled galvanized steel sheet frame.
- AG 662 and 663 : Extruded aluminium frame.

## FINISH

- Standard primary aluminium finish.
- Epoxy paint finish in accordance with RAL color. Consult the list of available colours in the appendix.

## FIXING

- F0 : none.
- F1 : by screws visible in the frame.

## ACCESSORIES

- F11 : steel mounting frame.
- F12 : rear mounted using fixing brackets for AU frame.
- K1 : counter-weight for low pressures. Adjusting K1 makes opening the shutters easier.
- K2 : counter-weight for high pressures. Adjusting K2 makes closing the shutters easier.
- K1 + K2 : double counter-weight for use when horizontally mounting shutters.

## STANDARD DIMENSIONS

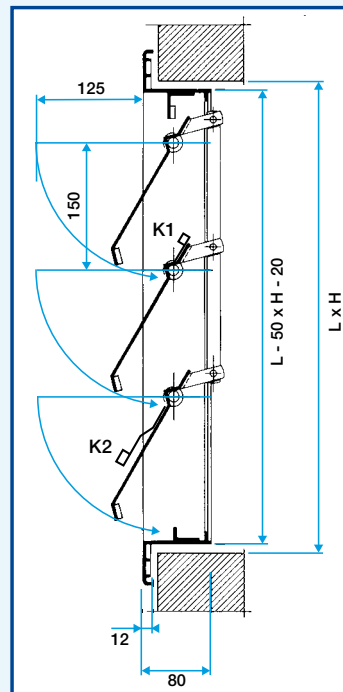
- 200x200 to 1600x2000 range dimensions mm in 25 mm steps in L and 150 mm in H.

For more information refer to the RANGE pages hereafter.

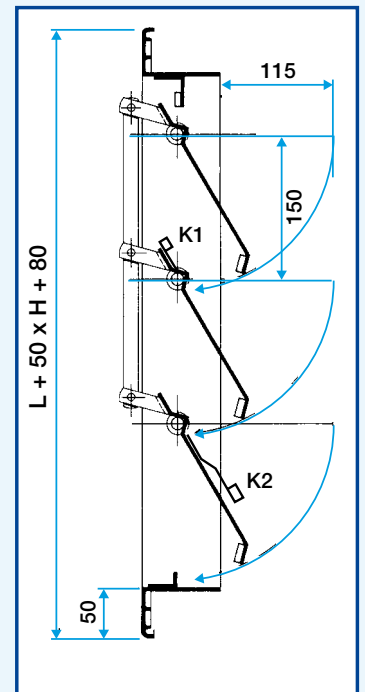
## TECHNICAL CHARACTERISTICS

- See attached diagram and following selection tables.

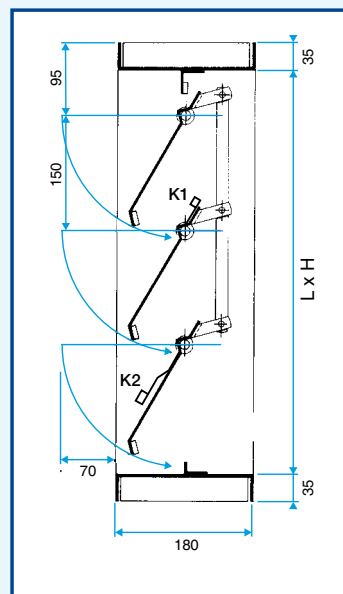
## DIMENSIONS



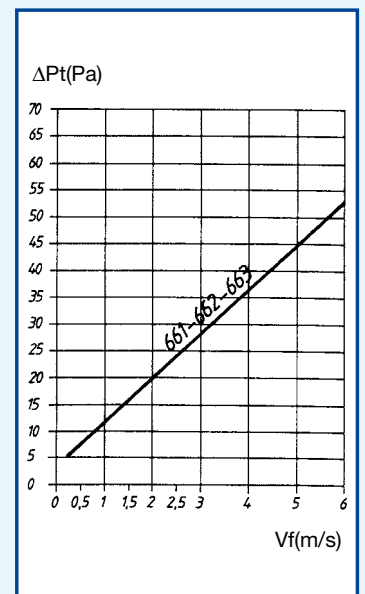
AG 663 - overpressure shutter



AG 662 - depression shutter



AU 661 - duct shutter



Pressure drops according to the frontal speed Vf



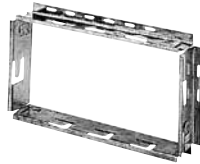


# External louvres

## Series AWA 251 - aluminium



Grille AWA 251



Mounting frame F4

### APPLICATION

- Fresh air supply or exhaust of polluted air.
- Wall mounted.

### DESCRIPTION

- Frame in extruded aluminium, horizontal rain-wood type fins in extruded aluminium.
- Center distance of 25 mm between the vanes.
- Lower part includes a 12 x 12 mm square mesh anti-debris protective screen  $\varnothing$  1.2 mm in galvanized steel.
- Last bottom blade positioned for 'water outfall.'

### FINISH

- Anodised aluminium, natural satin finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- Visible fixing, by screwing into the frame.

### ACCESSORIES

- F4 : galvanised steel sheet mounting frame.
- Galvanized steel sheet connection plenum with MT F3 rear mounted connection.

For more information refer to ACCESSORIES and PLENUMS pages at the end of the chapter "Interior Grilles".

### STANDARD DIMENSIONS

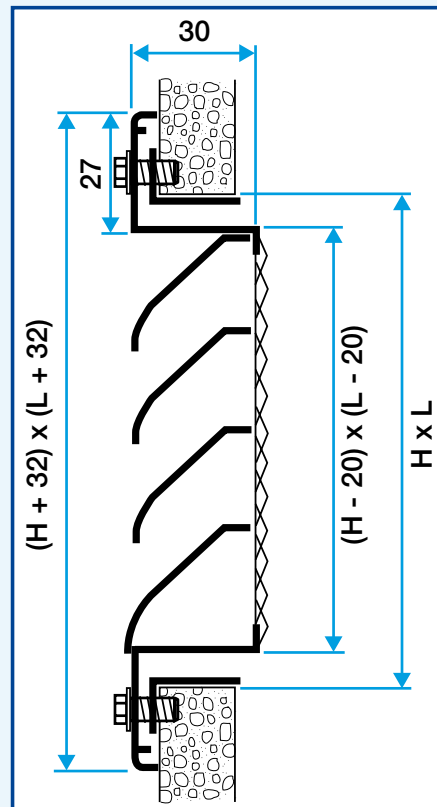
- 200x75 to 1200x1200 mm range dimensions in 25 mm steps in L and H.

For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

- See following selection tables.
- See frontal areas  $A_f$  at the end of the chapter.

### DIMENSIONS



Grille AWA 251 with mounting frame F4

# External louvres

## Series AG 638 - aluminium



Grille AG 638

### APPLICATION

- Fresh air supply or exhaust of polluted air.
- Wall mounted.

### DESCRIPTION

- Frame in extruded aluminium, horizontal rain-wood type fins in extruded aluminium.
- Center distance of 40 mm between the vanes.
- Lower part includes a 12 x 12 mm square mesh anti-debris protective screen Ø 1.2mm in galvanized steel.
- Last bottom blade positioned for "water outfall."

### FINISH

- Primary aluminium.
- Anodised aluminium, natural tone on request.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0 : none.
- F1 : visible fixing, by screwing into the frame.

### ACCESSORIES

- F10 : galvanized steel sheet mounting frame with sealing legs.
- Anti-insect galvanized steel screen (1 x 1 x Ø 0.4 mm).
- Anti-debris stainless steel screen (5 x 5 x Ø 0.7 mm).
- Last blade without "water outfall" in the event of indoor use.

### STANDARD DIMENSIONS

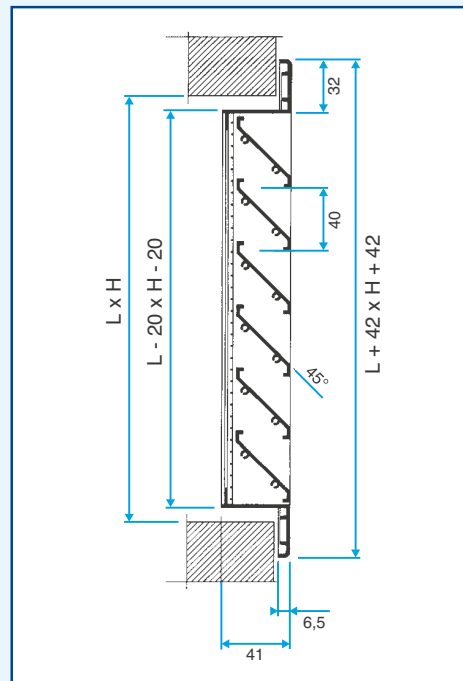
- 75x100 to 200x2000 range dimensions mm in 25 mm steps in L and 50 mm in H.

For more information refer to the RANGE pages hereafter.

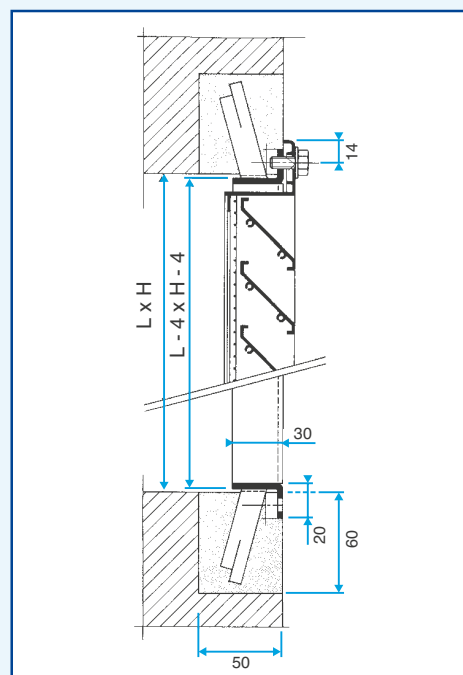
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See frontal areas Af at the end of the chapter.

### DIMENSIONS



Grille AG 638



Grille AG 638 with mounting frame F10

# External louvres

## Series AG 639 - SG 639 - aluminium or steel



Grille SG 639



Grille SG 639 inside with anti-debris screen

### APPLICATION

- Fresh air supply or exhaust of polluted air.
- Wall mounted.
- Rain-barrier function.
- Specially designed "non-irruption" grilles.

### DESCRIPTION

- AG 639 : frame in extruded aluminium, rain-wood type fins.
- SG 639 : galvanized steel rain-barrier blades and frame.
- Center distance of 75 mm between the vanes.
- Starting from 1200 mm in length, these grilles have a stiffening section to prevent vibrations and maintain rigidity.
- Lower part includes a 12 x 12 mm square mesh anti-debris protective screen Ø 1.2 mm in galvanized steel.
- Last bottom blade positioned for "water outfall."

### FINISH

- AG 639 : primary aluminium finish (natural tone anodised aluminium).
- SG 639 : raw galvanized steel finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0 : none.
- F1 : visible fixing, by screwing into the frame.

### ACCESSORIES

- F11 : galvanized steel sheet mounting frame, with sealing legs.
- F13 : rear attached for linear assembly with continuous blade effect.

Note : the upper and lower anchoring points of the F13 fixing are enough to a height of 1200 mm. Beyond this, one or two intermediate fixing points are required for installation of the steel stiffening section.

- Anti-insect galvanized steel screen (1 x 1 x Ø 0.4 mm).
- Anti-debris stainless steel screen (5 x 5 x Ø 0.7 mm).

### STANDARD DIMENSIONS

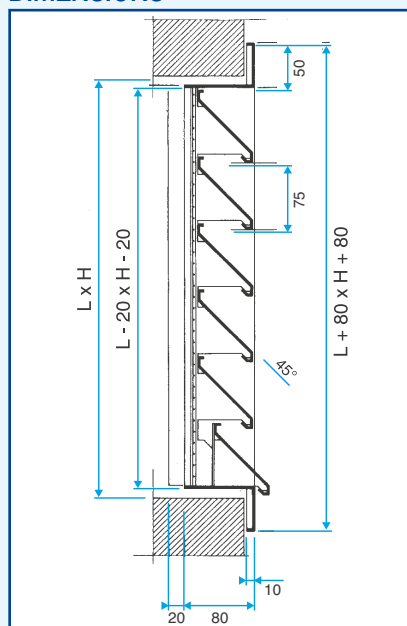
- 100x200 to 2000x2000 mm range dimensions in steps of 10 mm in L and H.
- All larger dimensions can be manufactured in multiple sections for on-site assembly.
- Large lengths and linear assembly possible (max element length 2000 mm).

For more information refer to the RANGE pages hereafter.

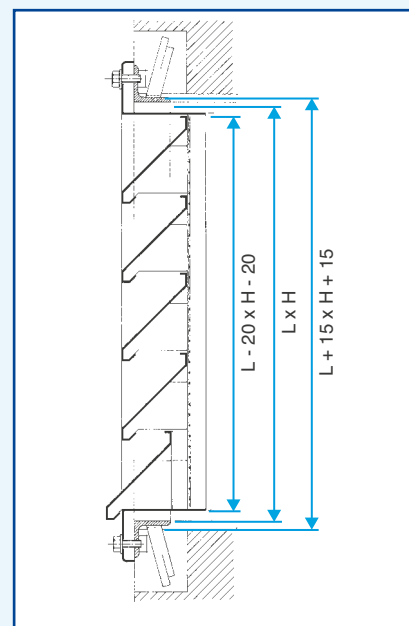
### TECHNICAL CHARACTERISTICS

- See selection tables and matrices on the following pages.
- See frontal areas Af at the end of the chapter.

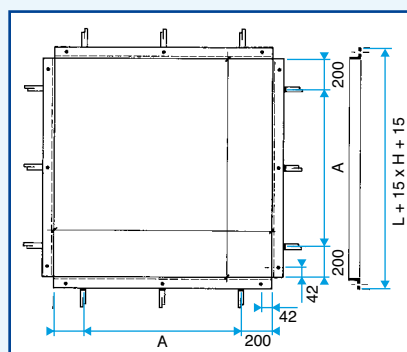
### DIMENSIONS



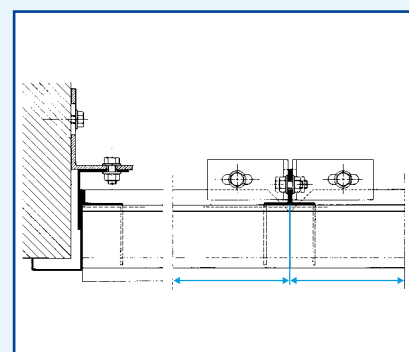
Grille AG 639 - SG 639



Grille AG 639 - SG 639 with mounting frame F11



F11 : position of sealing legs



F13 : mounting bracket with screws provided (except anchoring screws).

### NUMBER OF SEALING LEGS

L (mm)	Legs	H (mm)	Legs
300	1	300	1
400	1	400	1
500	1	500	1
600	1	600	1
800	2	800	1
1000	2	1000	2
1200	3	1200	2
1400	3	1400	2
1600	3	1600	3
1800	3	1800	3
2000	3	2000	3

# External louvres

## Series AWA 251 - AG 638

### Standard range

H	L 200 Code	L 250 Code	L 300 Code	L 350 Code	L 400 Code	L 450 Code
100	11152023	11052069	11052024	11052070	11152025	11052071
150	11052027	11052077	11052028	11052078	11052029	11052079
200	11052032	11052084	11052033	11052085	11052034	11052086
250	11052089	11052090	11052091	11052092	11052093	11052094
300	11052126	11052127	11052039	11052128	11052040	11052129
350	11052132	11052133	11052134	11052135	11052136	11052137
400	11052144	11052145	11052146	11052147	11052045	11052148
450	11052149	11052150	11052151	11052152	11052153	11052154
H	L 500 Code	L 600 Code	L 700 Code	L 800 Code	L 900 Code	L 1000 Code
100	11052026	11052072	11052073	11052074	11052075	11052076
150	11052030	11052031	11052080	11052081	11052082	11052083
200	11052035	11052036	11052037	11052038	11052087	11052088
250	11052095	11052096	11052097	11052098	11052099	11052125
300	11052041	11052042	11052043	11052044	11052130	11052131
350	11052138	11052139	11052140	11052141	11052142	11052143
400	11052046	11052047	11052048	11052049	11052050	11052051
450	11052155	11052156	11052157	11052158	11052159	11052160
500	11052052	11052064	11052065	11052066	11052067	11052068
600		11052167	11052168	11052169	11052170	11052171
700		11052172	11052173	11052174	11052175	11052176
800		11052177	11052178	11052179	11052180	11052181

### Range with choice of options

Grille	Code	Mounting frame	Code
AWA 251	11002504	F4	11003001
AG 638	11002054	F10	11002513

### Standard dimensions

H / L	200	250	300	350	400	450	500	600	700	800	900	1000
100	●	●	●	●	●	●	●	●	●	●	●	●
150	●	●	●	●	●	●	●	●	●	●	●	●
200	●	●	●	●	●	●	●	●	●	●	●	●
250	●	●	●	●	●	●	●	●	●	●	●	●
300	●	●	●	●	●	●	●	●	●	●	●	●
350	●	●	●	●	●	●	●	●	●	●	●	●
400	●	●	●	●	●	●	●	●	●	●	●	●
450	●	●	●	●	●	●	●	●	●	●	●	●
500	×	×	×	×	×	×	●	●	●	●	●	●
600	×	×	×	×	×	×	×	●	●	●	●	●
700	×	×	×	×	×	×	×	●	●	●	●	●
800	×	×	×	×	×	×	×	●	●	●	●	●

● Standard range dimensions.

### Options available

Fixing	Screen	Water outfall	Finish
<ul style="list-style-type: none"> <li>F0 : none</li> <li>F1 : fixing by screws, visible in the frame (pre-pierced).</li> </ul>	<ul style="list-style-type: none"> <li>Galvanized steel anti-debris screen (standard).</li> <li>Stainless steel anti-debris screen.</li> <li>Galvanized steel anti-insect screen.</li> </ul>	<ul style="list-style-type: none"> <li>Last blade without "water outfall" in the event of indoor use (AG 638 only).</li> </ul>	<ul style="list-style-type: none"> <li>Natural glossy anodisation (standard on AWA 251).</li> <li>Finish with RAL color paint. Consult the list of available colours in the appendix.</li> </ul>

### ACCESSORIES

- Mounting frame type F4 or F10.

# External louvres

## Series 639

### Standard range

Dimensions	Steel grille SG 639 F1 Code	Alum grille AG 639 F1 Code	Mounting frame F11 Code
300 x 300	11052124		11053464
400 x 400	11052110		11053450
600 x 400	11052112		11053463
600 x 600	11052113	11052053	11053452
800 x 600	11052115	11052055	11053454
800 x 800	11052116	11052056	11053455
1000 x 1000	11052118	11052058	11053457
1200 x 1200	11052119	11052059	11053458
1400 x 1400	11052120	11052060	11053459
1600 x 1600	11052121	11052061	11053460
1800 x 1800	11052122	11052062	11053461
2000 x 2000	11052123	11052063	11053462
Fixation	Finition		
<ul style="list-style-type: none"> <li>Visible by screw in frame (pre-pierced) and mounting frame F11.</li> </ul>	<ul style="list-style-type: none"> <li>AG model : primary aluminium.</li> <li>SG model : raw galvanized steel.</li> </ul>		

### Range with choice of options

Aluminium grille	Code	Steel grille	Code	Mounting frame	Code
AG 639	11002481	SG 639	11002486	F 11	11002514
AO 639	11002485	SO 639	11002487		

### Standard dimensions

H / L (mm)	300	400	500	600	800	1000	1200	1400	1600	1800	2000
300	●	×	×	×	×	×	×	×	×	×	×
400	×	●	×	●	×	×	×	×	×	×	×
500	×	×	×	●	●	×	×	×	×	×	×
600	×	×	●	●	●	×	×	×	×	×	×
800	×	×	×	×	●	×	×	×	×	×	×
1000	×	×	×	×	×	●	×	×	×	×	×
1200	×	×	×	×	×	×	●	×	×	×	×
1400	×	×	×	×	×	×	×	●	×	×	×
1600	×	×	×	×	×	×	×	×	●	×	×
1800	×	×	×	×	×	×	×	×	×	●	×
2000	×	×	×	×	×	×	×	×	×	×	●

● Standard range dimensions.

### Options available

Fixing	Screen	Finish
<ul style="list-style-type: none"> <li>F0 : none</li> <li>F1 : fixing by screws, visible in the frame (pre-pierced).</li> </ul>	<ul style="list-style-type: none"> <li>Galvanized steel anti-debris screen (standard).</li> <li>Stainless steel anti-debris screen.</li> <li>Galvanized steel anti-insect screen.</li> </ul>	<ul style="list-style-type: none"> <li>Natural glossy anodisation (alum models).</li> <li>Epoxy paint in accordance with RAL color (all models). Consult the list of available colours in the appendix.</li> </ul>

### ACCESSORIES

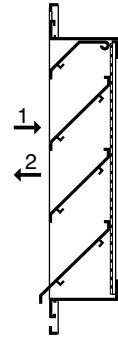
- Mounting frame type F11.

# External louvres

## Series 251

### SELECTION - AIR INTAKE AND DISCHARGE

Af (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)														Lw Pa1	Vf Pa2	
		250	500	750	1000	1500	2000	2500	3000	3500	4000	5000	6000	7000	8000			
0.010	200 x 100	33	88															
		7	68															
0.015	300 x 100	20	36	44	156													
0.017	200 x 150	4,6	30	9,2	120													
0.020	400 x 100	–	22	35	80													
	200 x 200	3,5	17	6,9	60													
0.025	500 x 100	–	14	26	51	42	115											
	300 x 150	2,8	11	5,5	38	8,3	86											
0,033	400 x 150	–	10	21	39	37	90											
	300 x 200	2,4	8	4,6	29	7,1	70											
0,040	500 x 150	–	22	26	51	38	91											
	400 x 200	3,5	16	5,3	39	7,1	69											
0,050	600 x 150 - 500 x 200	–	13	–	34	33	65	44	120									
	300 x 300	2,7	10	4,3	25	6	50	8,1	90									
0,070	600 x 200	–	19	25	37	36	68											
	400 x 300	3,2	14	4,5	28	6,1	51											
0,080	700 x 200	–	13	–	26	33	55	43	118									
		2,7	18	3,7	20	5,6	43	7,5	89									
0,090	800 x 200 - 500 x 300	20	10	–	20	29	42	39	80	46	125	52	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	27	33	36	63	45	98	49	126							
		2,8	12	4,4	26	5,9	47	7,4	73	8,4	102							
0,120	500 x 400	–	10	23	27	33	51	39	80	45	102							
		2,6	8	3,9	21	5,3	38	6,6	59	7,6	83							
0,125	700 x 300	22	24	30	46	38	72	44	93									
		3,7	19	5	35	6,3	55	7,3	76									
0,140	600 x 400	–	16	23	29	30	45	37	65	41	89	46	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	22	27	29	42	34	60	39	82	44	107					
		2,9	11	3,8	20	4,8	31	5,5	40	6,4	54	7,3	71					
0,160	700 x 400	21	16	25	25	31	48	36	65	39	85							
		3,4	14	4,3	22	4,9	32	5,7	44	6,5	58							
0,180	600 x 500	21	14	24	22	29	42	34	57	38	74	48	116					
		3,2	12	4	19	4,6	28	5,4	38	6,2	50	7,8	78					
0,190	800 x 400	–	12	23	17	27	32	31	44	37	58	44	91					
		3	11	3,8	15	4,3	21	5	29	5,7	38	7,1	59					
0,210	900 x 400	–	11	–	16	24	26	30	35	34	46	42	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	25	26	27	30	27	33	34	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	27	31	33	41	41	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	25	30	33	40	41	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	24	25	30	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	25	28	37	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	35	46	43	72									
		2,8	10	3,3	14	5,1	34	6,3	53									
0,340	700 x 800 - 800 x 700	–	11	–	16	–	20	35	35	39	45	42	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	31	30	35	40	39	56					
		2,4	9	2,7	10	3,2	14	4	23	4,8	31	5,7	43					
0,390	900 x 700	–	15	27	22	33	35	38	45									
	800 x 800	2,9	8	3,5	17	4,4	27	5	35									
0,440	1000 x 700	–	13	23	20	30	30	34	36	37	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															
		Vf	Pa2															



The values Lw (NR) do not take the attenuation of the premises into account.

Pa1 (Pa) = pressure loss on air intake.

Pa2 (Pa) = pressure loss on exhaust discharge.

Af (m<sup>2</sup>) = front surface.

Vf (m/s) = front velocity.

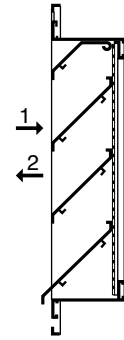


# External louvres

## Series 639

### SELECTION - AIR INTAKE AND DISCHARGE

Af (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)												Lw	Pa1			
		1000	1500	2000	3000	5000	7000	9000	12000	15000	18000	20000	25000					
0,11	400 x 400	33	23															
		2,6	1,8															
0,17	600 x 400	23	10	36	23													
		1,8	0,8	2,6	1,8													
0,29	600 x 600			22	8	32	13											
				1,6	0,6	2,1	1,0											
0,39	800 x 600			23	7	35	18											
				1,6	0,5	2,3	1,4											
0,48	1000 x 600					29	12											
						1,9	0,9											
0,54	800 x 800					26	9	42	23									
						1,6	0,7	2,6	1,8									
0,68	1000 x 800							37	17									
								2,2	1,3									
0,82	1200 x 800							32	12	42	22							
								1,9	0,9	2,6	1,7							
0,88	1000 x 1000							29	10	40	19							
								1,7	0,8	2,4	1,5							
0,96	1400 x 800							27	7	38	17							
								1,6	0,5	2,2	1,3							
1,05	1200 x 1000							36	14	43	22							
								2,1	1,1	2,6	1,7							
1,23	1400 x 1000							32	10	39	18							
								1,7	0,8	2,2	1,4							
1,29	1200 x 1200							38	14									
								2,1	1,1									
1,41	1600 x 1000							35	13	44	22							
								1,9	1,0	2,6	1,7							
1,73	1600 x 1200							31	9	39	14	46	23					
								1,6	0,7	2,1	1,1	2,6	1,8					
1,78	1400 x 1400							38	13	44	20							
								2,9	1,0	2,3	1,6							
2,30	1800 x 1400							33	9	38	13	44	19					
								1,7	0,7	2,1	1,0	2,6	1,5					
2,36	1600 x 1600							36	11	42	17	46	20					
								1,8	0,8	2,3	1,3	2,5	1,6					
3,01	1800 x 1800							32	8	38	12	41	14	47	21			
								1,5	0,6	1,9	0,9	2,1	1,1	2,5	1,6			
3,75	2000 x 2000	Lw	Pa1															
		Vf	Pa2															



The values Lw (NR) do not take the attenuation of the premises into account.

Pa1 (Pa) = pressure loss on air intake.

Pa2 (Pa) = pressure loss on exhaust discharge.

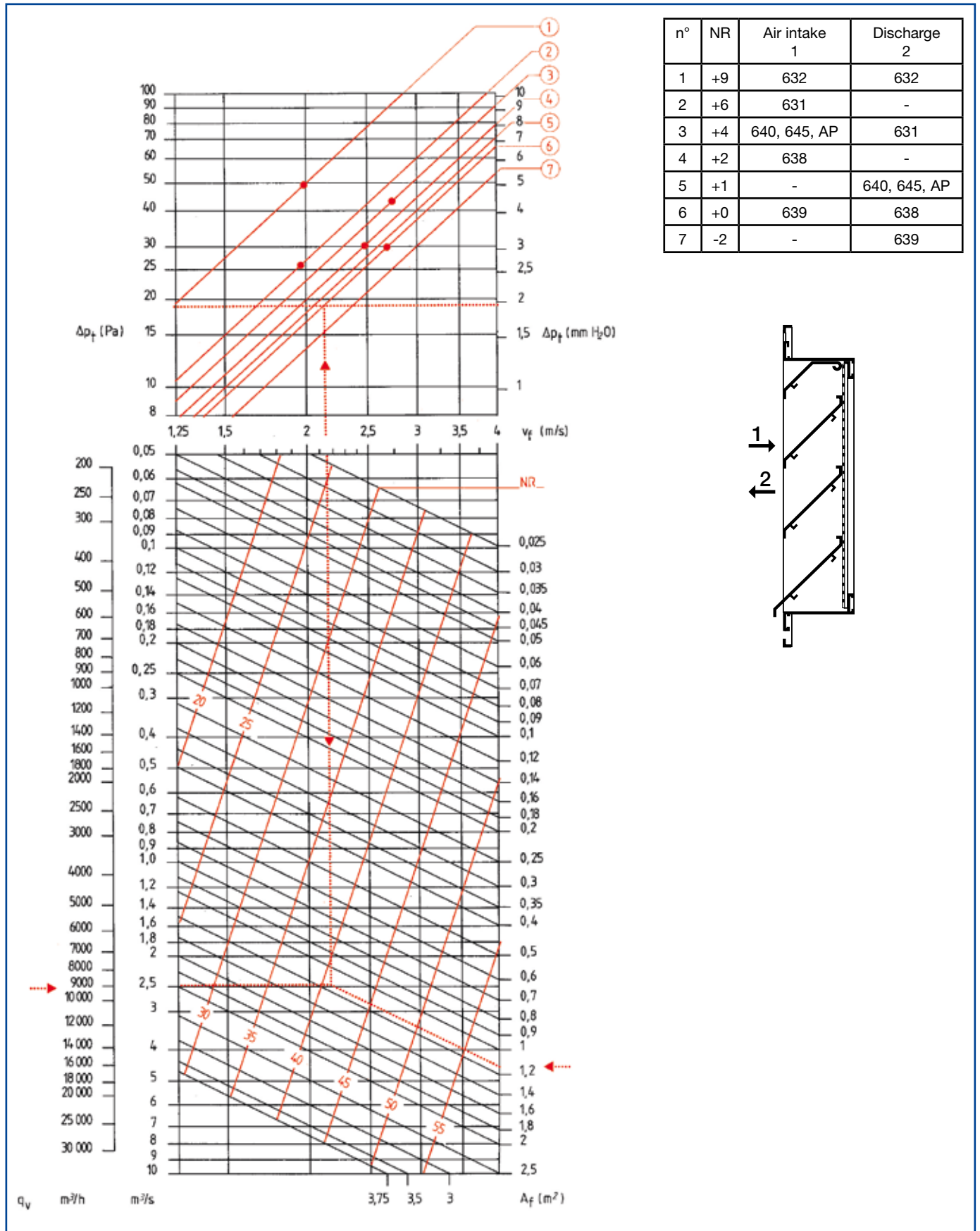
Af (m<sup>2</sup>) = front surface.

Vf (m/s) = front velocity.



# External louvres

## Series 638 - 639 - air intake and discharge



The values Lw (NR) do not take the attenuation of the premises into account.

$A_f$  (m<sup>2</sup>) = front surface.

$v_f$  (m/s) = front velocity.

# External louvres with mobile blades

## Series AG 645 - AU 645 - aluminium



Grille AG 645



Grille AG 645 with manual control

### APPLICATION

- Fresh air supply or exhaust of polluted air.
- Wall mounted.
- Rain-barrier function.
- Can be closed.

### DESCRIPTION

- AG 645 : Frame in extruded aluminium, horizontal rain-wood type fins in extruded aluminium.
- AU 645 : U-shape extruded aluminium frame, extruded aluminium rain-barrier type horizontal blades.
- Center distance of 100 mm between the vanes.
- The blades with cadmium plated steel axes are mounted on nylon nozzles and coupled by exterior rods to allow the total closing of the grille.
- Anti-debris galvanized steel screen (12 x 12 x Ø 1.2 mm).

### FINISH

- AG and AU 640 : primary aluminium finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- F0 : none.
- F1 : visible fixing, by screwing into the frame. (AG model only).

### ACCESSORIES

- Manual lever closing control.
- Motorised closing control (all-or-nothing 24V or 230 V).
- F11-645 : galvanized steel mounting frame, with sealing legs (for AG model only).
- Anti-insect galvanized steel screen (1 x 1 x Ø 0.4 mm).
- Stainless steel anti-debris screen (5 x 5 x Ø 0.7 mm).

### STANDARD DIMENSIONS

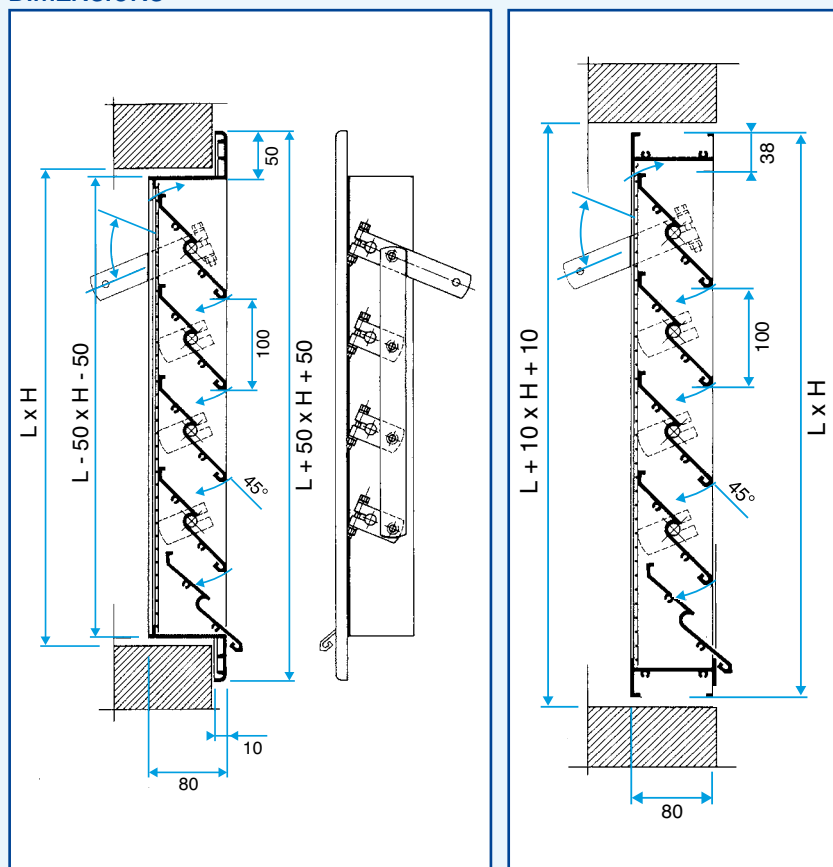
- 200x200 to 1600x2000 range dimensions mm in 25 mm steps in L and 100 mm in H.

For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

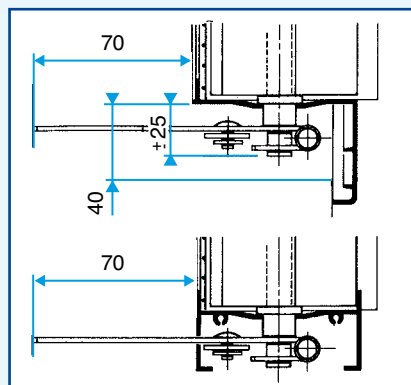
- See following selection tables.
- See selection matrices p.247.
- See frontal areas Af at the end of the chapter.

### DIMENSIONS



Grille AG 645

Grille AU 645



Manual control handle

# External louvres with mobile blades

## Series 645

Range with choice of options

Grille frame AG	Code	Grille frame AU	Code	Mounting frame	Code
AG 645	11002483	AU 645	11002489	F11 - 645	11002520

### Standard dimensions

H / L (mm)	400	500	600	800	1000	1200
400	✗	✗	✗	✗	✗	✗
500	✗	✗	✗	✗	✗	✗
600	✗	✗	✗	✗	✗	✗
800	✗	✗	✗	✗	✗	✗
1000	✗	✗	✗	✗	✗	✗
1200	✗	✗	✗	✗	✗	✗
1400	✗	✗	✗	✗	✗	✗
1600	✗	✗	✗	✗	✗	✗
1800	✗	✗	✗	✗	✗	✗
2000	✗	✗	✗	✗	✗	✗

### Options available

Fixing	Screen	Closing control	Finish
<ul style="list-style-type: none"> <li>F0 : none</li> <li>F1 : fixing by screws, visible in the frame (frame AG only).</li> </ul>	<ul style="list-style-type: none"> <li>Galvanized steel anti-debris screen (standard).</li> <li>Stainless steel anti-debris screen.</li> <li>Galvanized steel anti-insect screen.</li> </ul>	<ul style="list-style-type: none"> <li>Manual control handle.</li> <li>Installed all-or-nothing 230 V motor.</li> <li>Installed all-or-nothing 24 V motor.</li> </ul>	<ul style="list-style-type: none"> <li>Finish with RAL color paint. Consult the list of available colours in the appendix.</li> </ul>

\* Delivered with motor installed : specify the position (to left or right in front of the grille).

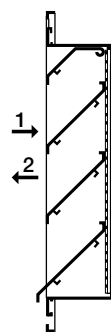
### ACCESSORIES

- Mounting frame type F11-645.

## Serie 645

### SELECTION - AIR INTAKE AND DISCHARGE

Af (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)																	
		1000		1500		2000		3000		5000		7000		9000		12000		15000	
0,10	400 x 400	41	46															Lw	Pa1
		2,8	35															Vf	Pa2
0,16	600 x 400	30	17	42	39														
		1,7	13	2,6	30														
0,27	600 x 600			29	13	37	26												
				1,5	10	2,1	20												
0,37	800 x 600			29	13	41	31												
				1,5	10	2,3	24												
0,46	1000 x 600					36	19												
						1,8	14												
0,53	800 x 800					35	15	47	39										
						1,6	11	2,6	30										
0,66	1000 x 800					42	26												
						2,1	20												
0,80	1200 x 800					37	17	47	33										
						1,7	13	2,4	26										
0,86	1000 x 1000					35	15	45	31										
						1,6	11	2,3	24										
0,93	1400 x 800					33	11	43	26										
						1,4	8	2,1	19										
1,03	1200 x 1000					40	21	48	33										
						1,9	16	2,4	26										
1,21	1400 x 1000					37	15	44	26										
						1,6	11	2,1	20										
1,27	1200 x 1200							43	23										
								2,0	18										
1,38	1600 x 1000							41	19	50	33								
								1,8	14	2,4	26								
1,70	1600 x 1200							35	11	44	23	49	42						
								1,4	9	2,0	18	2,7	33						



The values Lw (NR) do not take the attenuation of the premises into account.

Pa1 (Pa) = pressure loss on air intake.

Pa2 (Pa) = pressure loss on exhaust discharge.

Af (m<sup>2</sup>) = front surface.

Vf (m/s) = front velocity.

# Acoustic external louvres

Series AU 631 - AU 632 - SU 631 - SU 632 - aluminium or steel



Grille SU 631

## APPLICATION

- Fresh air supply or exhaust of polluted air.
- Acoustic screen between inside and outside of building.
- Wall mounted.
- Rain-barrier function.

## DESCRIPTION

- SU 631 : galvanized steel sheet rain-barrier frame and horizontal blades.
- AU 631 : aluminium sheet rain-barrier frame and horizontal blades.
- AU and SU 632 : combination of two SU and AU 631 assembled back-to-back.
- Model 631 : grille depth 305 mm.
- Model 632 : grille depth 610 mm.
- 300 mm blade spacing.
- Acoustic insulation comprised of rock wool with thickness of 150 mm protected by a perforated sheet (resists speeds up to 20 m/s).
- Anti-debris galvanized steel screen (12 x 12 x Ø 1.2 mm).
- Screw-attached to mounting frame F11-630.

## FINISH

- AU 631 and AU 632 : primary aluminium finish (natural tone anodised aluminium).
- SU 631 and SU 632 : raw galvanized steel finish.
- No paint available.

## FIXING

- Screw-attached to the mounting frame F11-630.
- Position and number of fixing points identical to mounting frame F11 (see p.241).

## ACCESSORIES

- Mounting frame F11-630 in galvanized steel, with sealing legs.

## STANDARD DIMENSIONS

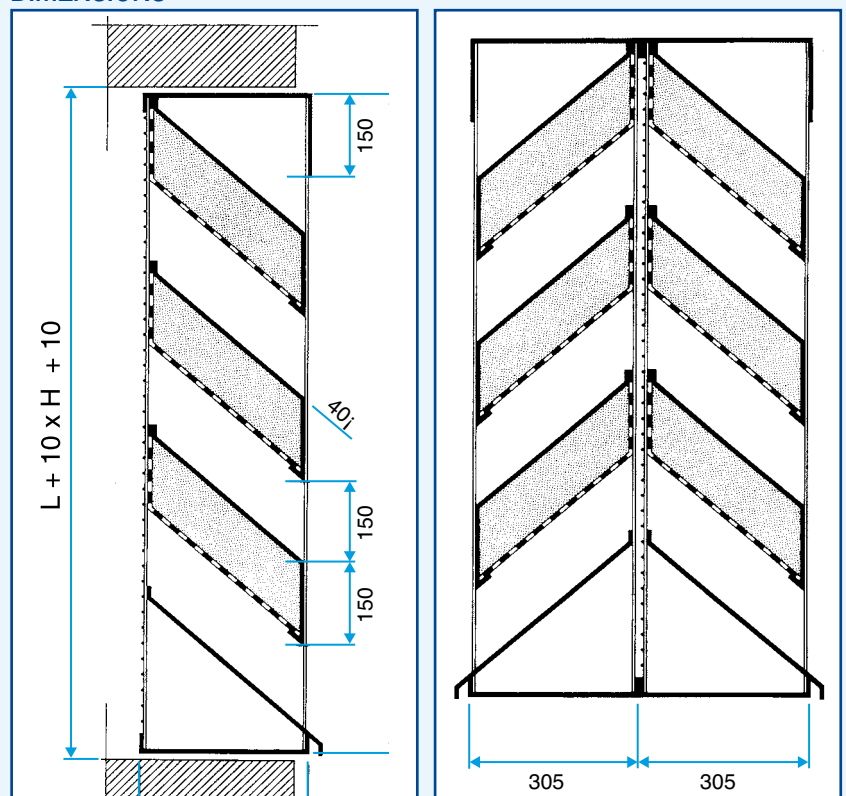
- 200x600 to 2000x2100 mm range dimensions in 25 mm steps in L and 300 mm in H.
- Large lengths and linear assembly possible (max element length 2000 mm).

For more information refer to the RANGE pages hereafter.

## TECHNICAL CHARACTERISTICS

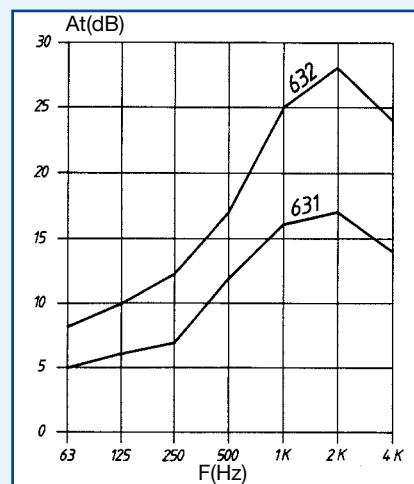
- See following selection tables.
- See selection matrices p.247
- See frontal areas  $A_f$  at the end of the chapter.

## DIMENSIONS



Grille AU - SU 631

Grille AU - SU 632



Acoustic attenuation.

# Acoustic external louvres

## Series 631- 632

Range with choice of options

Aluminium acoustic grille	Code	Steel acoustic grille	Code	Mounting frame	Code
AU 631	11002490	SU 631	11002492	F11-630	11002511
AU 632	11002491	SU 632	11002493		

## Standard dimensions

H / L (mm)	400	500	600	800	1000	1200	1400	1600	1800	2000
600	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
900	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
1200	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
1500	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
1800	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
2100	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

## Options available

Fixing	Finish
<ul style="list-style-type: none"> <li>• By screw to the mounting frame F11-630.</li> <li>• Mounting bolts for linear mounting.</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodisation (alum models only).</li> <li>• No paint available.</li> </ul>

## ACCESSORIES

- Mounting frame F11-630.

# Acoustic external louvres

## Series 631 - 632

### SELECTION - AIR INTAKE AND DISCHARGE - TYPE 631

Af (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)		1500	2000	3000	5000	7000	9000	12000	15000	18000	20000	Lw	Pa1				
		1000																	
0,11	400 x 600	41	42																
		2,5	37												Vf	Pa2			
0,18	600 x 600	29	16	41	35	49	62												
	400 x 900	1,5	14	2,3	31	3,1	54												
0,34	600 x 900			25	10	33	18	45	40										
				1,2	9	1,6	16	2,5	35										
0,59	1000 x 900					20	6	32	13	45	37								
						0,9	5	1,4	12	2,4	32								
0,69	800 x 1200					28	10	43	27	53	52								
						1,2	9	2	23	2,8	46								
0,87	1000 x 1200							37	17	47	33	54	54						
								1,6	15	2,2	29	2,9	47						
1,06	1200 x 1200							42	22	49	37								
								1,8	20	2,4	32								
1,16	1000 x 1500									47	31								
1,35	800 x 2100									2,2	27								
										43	23	52	40						
1,44	1000 x 1800									1,9	20	2,5	35						
												50	35						
1,72	1000 x 2100									2,3	31								
												46	25	52	39				
2,09	1200 x 2100									1,9	22	2,4	34						
		Lw	Pa1									41	17	48	26	53	38	56	46
		Vf	Pa2									1,6	15	2,0	23	2,4	33	2,7	41

The values Lw (NR) do not take the attenuation of the premises into account.

Pa1 (Pa) = pressure loss on air intake.

Pa2 (Pa) = pressure loss on exhaust discharge.

Af (m<sup>2</sup>) = front surface.

Vf (m/s) = front velocity.

### SELECTION - AIR INTAKE AND DISCHARGE - TYPE 632

Af (m <sup>2</sup> )	L x H (mm)	qv (m <sup>3</sup> /h)		1500	2000	3000	5000	7000	9000	12000	15000	18000	20000	Lw	Pa1				
		1000																	
0,11	400 x 600	44	76																
		2,5	76												Vf	Pa2			
0,18	600 x 600	32	29	44	63	52	110												
	400 x 900	1,5	29	2,3	63	3,1	110												
0,34	600 x 900			28	18	36	32	48	72										
				1,2	18	1,6	32	2,5	72										
0,59	1000 x 900					23	11	35	23	48	67								
						0,9	11	1,4	23	2,4	67								
0,69	800 x 1200					31	18	46	49	56	94								
						1,2	18	2	49	2,8	94								
0,87	1000 x 1200							40	31	50	59	57	97						
								1,6	31	2,2	59	2,9	97						
1,06	1200 x 1200							45	40	52	67								
								1,8	40	2,4	67								
1,16	1000 x 1500									50	56								
1,35	800 x 2100									2,2	56								
										46	41	55	72						
1,44	1000 x 1800									1,9	41	2,5	72						
												53	63						
1,72	1000 x 2100									2,3	63								
												49	45	55	70				
2,09	1200 x 2100									1,9	45	2,4	70						
		Lw	Pa1									44	31	51	47	56	68	59	83
		Vf	Pa2									1,6	32	2,0	47	2,4	68	2,7	83

The values Lw (NR) do not take the attenuation of the premises into account.

Pa1 (Pa) = pressure loss on air intake.

Pa2 (Pa) = pressure loss on exhaust discharge.

Af (m<sup>2</sup>) = front surface.

Vf (m/s) = front velocity.

# Roof openings

## Series AP 639 L - SP 639 L - aluminium or steel



Roof opening AP 639 L

### APPLICATION

- Fresh air supply or exhaust of polluted air.
- Roof mounted.
- Rain-barrier function.
- Specially designed "anti-intrusion".

### DESCRIPTION

- AP 639 L : frame and extruded aluminium rain-barrier type horizontal blades.
- SP 639 L : galvanized steel rain-barrier frame and horizontal blades.
- Anti-debris galvanized steel screen (12 x 12 x Ø 1,2 mm).
- 75 mm spaced blades.
- Last bottom blade positioned for "water outfall."
- Galvanized steel roof with hoisting ring.

### FINISH

- AP 639 L : primary aluminium finish (natural tone anodised aluminium).
- SP 639 L : raw galvanized steel finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

- By visible screws to the chassis.
- Mounted on concrete riser block. The opening base has an L-shaped frame to "shape" the metal chimney.

### ACCESSORIES

- Metal chimney for galvanized steel flat roof.
- Separation sheet : two distinct air networks can be processed.
- Anti-debris stainless steel screen (5 x 5 x Ø 0.7mm).

### STANDARD DIMENSIONS

- 400x300 to 2600x1950 mm range dimensions in 25 mm steps in L and 75 mm in H.

The nominal dimensions at the ground (L x W) correspond to the section of the duct that comes to the level of the roof.

The dimension H corresponds to the nominal height of the opening (so an overall height of H+100 or H+130 depending on the side).

For more information refer to the RANGE pages hereafter.

### TECHNICAL CHARACTERISTICS

- See selection tables and matrices in the chapter External louvres p.246 and 247 (range 639).

To select a roof opening, use the sum of the frontal areas of the 4 grilles AG 639 (or SG 639) that comprise it for frontal area Af.

For example for an AP 639 opening with dimensions :

L = 800 mm

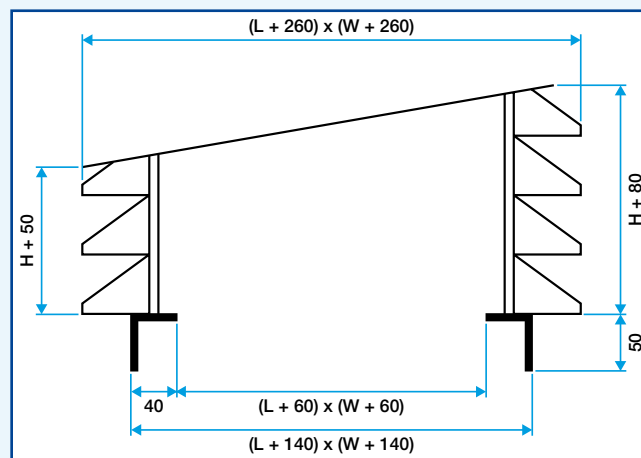
W = 600 mm

H = 600 mm

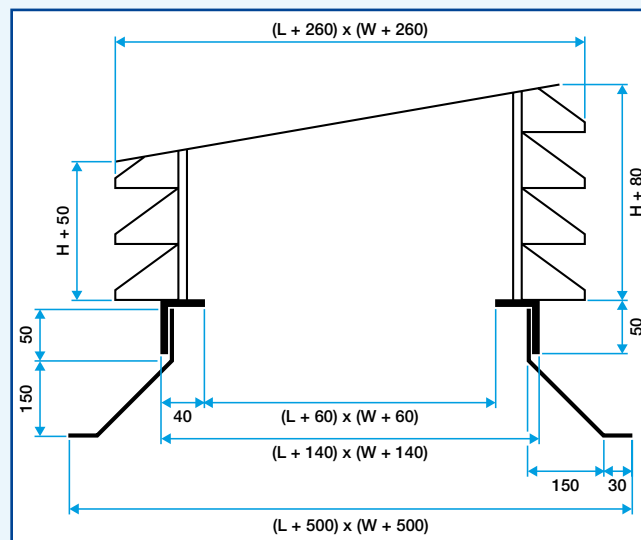
The area Af of the opening is :

$A_f = 0.39 + 0.29 + 0.39 + 0.29 = 1.36 \text{ m}^2$  (to enter in the selection matrix page 247).

### DIMENSIONS



Opening AP 639 L or SP 639 L



Opening AP 639 L or SP 639 L with metal chimney for flat roof

# Roof openings

## Series AP 639 - SP 639

Range with choice of options

Opening	Code	Base for flat roof	Code
AP 639 L	21081073	RF 639 L	21081074
SP 639 L	21081072		

### Standard dimensions

H / L (mm)	400	500	600	800	1000	1200	1400	1600	1800	2000
300	×	×	×	×	×	×	×	×	×	×
450	×	×	×	×	×	×	×	×	×	×
600	×	×	×	×	×	×	×	×	×	×
750	×	×	×	×	×	×	×	×	×	×
900	×	×	×	×	×	×	×	×	×	×
1050	×	×	×	×	×	×	×	×	×	×
1200	×	×	×	×	×	×	×	×	×	×
1350	×	×	×	×	×	×	×	×	×	×
1500	×	×	×	×	×	×	×	×	×	×
1650	×	×	×	×	×	×	×	×	×	×
1800	×	×	×	×	×	×	×	×	×	×
1950	×	×	×	×	×	×	×	×	×	×

### Options available

Fixation	Screen	Separation sheet	Finish
<ul style="list-style-type: none"> <li>By screw to bricked metal chimney.</li> <li>By screw to metal chimney for galvanized steel flat roof.</li> </ul>	<ul style="list-style-type: none"> <li>Galvanized steel anti-debris screen (standard).</li> <li>Stainless steel anti-debris screen.</li> </ul>	<ul style="list-style-type: none"> <li>Separation sheet: possibility to deal with two distinct airflows</li> </ul>	<ul style="list-style-type: none"> <li>Natural glossy anodisation (alum models).</li> <li>Epoxy paint in accordance with RAL color (all models). Consult the list of available colours in the appendix.</li> </ul>

### ACCESSORIES

- Base for flat roof.



# Circular external louvres

## Series AR 637 - aluminium



Grille AR 637 up to 315



Grille AR 637 starting from 400

### APPLICATION

- Fresh air supply or exhaust of polluted air.
- Wall mounted.

### DESCRIPTION

#### Diameters of 125 to 315 mm :

- Rain-barrier type blades, 20 mm spacing.
- Made of aluminium.

#### Diameters of 400 to 630 mm :

- Rain-barrier type blades, 50 mm spacing.
- Made of aluminium.

### FINISH

#### Diameters of 125 to 315 mm :

- Anodised aluminium finish, natural glossy tone.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

#### Diameters of 400 to 630 mm :

- Primary aluminium finish.
- Finish with RAL color paint. Consult the list of available colours in the appendix.

### FIXING

#### Diameters of 125 to 315 mm :

- Hidden screw fixing to the inside collar.

#### Diameters of 400 to 630 mm :

- Attached by screws, visible in the frame.

### ACCESSORIES

- Anti-insect galvanized steel screen (optional).

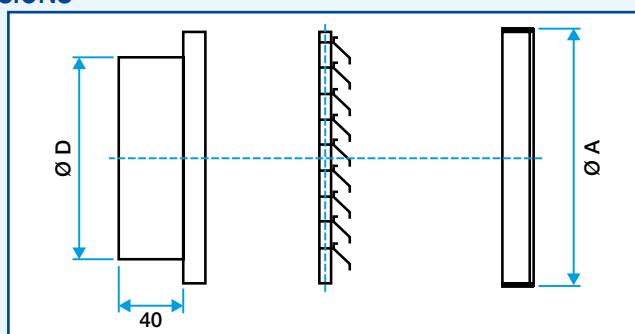
### STANDARD DIMENSIONS

- Diameters of 125 mm to 630 mm.

### TECHNICAL CHARACTERISTICS

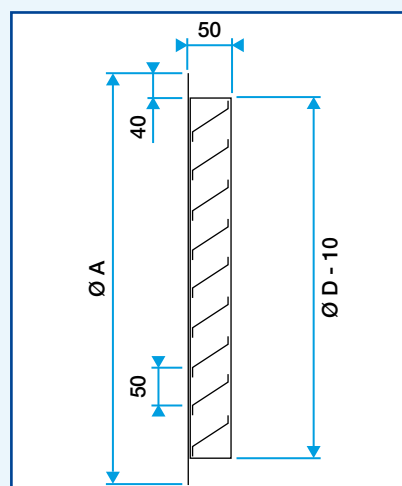
- See following selection tables.
- See frontal areas Af at the end of the chapter.

### DIMENSIONS



Grille AR 637 from 125 to 315

Ø D (mm)	Ø A (mm)
125	160
160	200
200	250
250	315
315	385



Grille AR 637 from 400 to 630

Ø D (mm)	Ø A (mm)
400	450
450	500
500	550
560	610
630	680

# Circular external louvres

## Series AR 637

### Standard range

Dimensions		Circular grille AR 637 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

Fixing	Finish
<ul style="list-style-type: none"> <li>• Hidden by screw to the inside collar (diameters of 125 to 315 mm).</li> <li>• Visible by screw in frame (diameters 400 to 630 mm)</li> </ul>	<ul style="list-style-type: none"> <li>• Natural glossy anodised aluminium (diameters of 125 to 315 mm).</li> <li>• Primary aluminium (diameters of 400 to 630 mm).</li> </ul>

### Range with choice of options

Diameter (mm)	Circular grille AR 637 Code
Ø 125	11002505
Ø 160	11002506
Ø 200	11002507
Ø 250	11002508
Ø 315	11002509

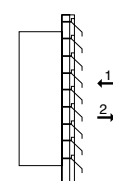
### Options available

Screen	Finish
<ul style="list-style-type: none"> <li>• Galva anti-insect screen.</li> </ul>	<ul style="list-style-type: none"> <li>• Finish with RAL color paint. Consult the list of available colours in the appendix.</li> </ul>

## Serie 637

### SELECTION - AIR INTAKE AND DISCHARGE

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	-	8	20	32	27	64																			Lw	Pa1		
		2,0	6	4,0	26	5,9	51																			Vf	Pa2		
0,012	160			-	10	-	22	21	40	36	90																		
				2,3	8	3,4	17	4,6	32	6,9	72																		
0,019	200					-	9	-	16	28	36	44	97																
						2,2	7	2,9	13	4,4	28	7,3	77																
0,029	250							-	7	-	16	22	42	44	107														
						1,9	6	2,9	13	4,7	33	7,5	86																
0,047	315									-	6	-	18	23	42	38	65												
								1,8	5	3	14	4,7	33	5,9	53														
0,070	400											-	16	22	41	28	64												
										2	13	3,2	33	4	51														
0,090	450											-	25	23	39	35	88												
										2,5	20	3,1	31	4,6	70														
0,120	500													-	21	26	47	38	83										
												2,3	17	3,5	38	4,6	67												
0,150	560															-	31	34	55	40	86								
												2,8	25	3,7	44	4,6	68												
0,200	630	Lw	Pa1																										
		Vf	Pa2																							20	31	26	48
																2,8	25	3,5	38	4,2	55								



The values Lw (NR) do not take the attenuation of the premises into account.

Pa1 (Pa) = pressure loss on air intake.

Pa2 (Pa) = pressure loss on exhaust discharge.

Af (m²) = front surface.

Vf (m/s) = front velocity.

# External louvres

## Series 251 - 638 - 639 - front surfaces Af

### Serie 251- Af in m<sup>2</sup>

H (mm)	L (mm)								
	200	300	400	500	600	700	800	900	1000
100	0,010	0,015	0,020	0,025	0,029	0,034	0,039	0,044	0,049
150	0,017	0,025	0,033	0,040	0,050	0,053	0,057	0,064	0,071
200	0,020	0,033	0,040	0,050	0,070	0,080	0,090	0,099	0,108
300	0,041	0,050	0,070	0,090	0,100	0,125	0,140	0,155	0,171
400	0,050	0,087	0,090	0,120	0,140	0,160	0,190	0,210	0,240
500	0,062	0,112	0,120	0,150	0,180	0,210	0,240	0,270	0,300
600	0,087	0,125	0,175	0,225	0,220	0,260	0,295	0,340	0,360
700	0,100	0,156	0,200	0,262	0,260	0,295	0,340	0,390	0,440
800	0,112	0,175	0,237	0,275	0,295	0,340	0,390	0,440	0,480

Air passage	Air intake	Discharge
	37 %	39 %

### Serie 638 - Af in m<sup>2</sup>

H (mm)	L (mm)							
	200	300	400	500	600	800	1000	1200
200	0,024	0,038	0,05	0,07	0,08	0,11	0,13	0,16
300	0,042	0,07	0,09	0,11	0,14	0,19	0,23	0,28
400	0,06	0,09	0,13	0,16	0,20	0,26	0,33	0,40
500	0,08	0,12	0,17	0,21	0,25	0,34	0,43	0,52
600	0,10	0,15	0,20	0,26	0,31	0,42	0,53	0,63
800	0,13	0,21	0,28	0,35	0,43	0,57	0,73	0,87
1000	0,17	0,26	0,35	0,45	0,54	0,73	0,93	1,10
1200	0,20	0,32	0,43	0,54	0,66	0,89	1,13	1,34

Air passage	Air intake	Discharge
	42 %	55 %

### Serie 639 - Af in m<sup>2</sup>

H (mm)	L (mm)									
	400	500	600	800	1000	1200	1400	1600	1800	2000
400	0,11	0,14	0,17	0,23	0,29	0,35	0,41	0,47	0,52	0,58
500	0,15	0,19	0,23	0,31	0,39	0,47	0,54	0,62	0,70	0,78
600	0,19	0,24	0,29	0,39	0,48	0,58	0,68	0,78	0,88	0,98
800	0,26	0,33	0,40	0,54	0,68	0,82	0,96	1,10	1,24	1,37
1000	0,34	0,43	0,52	0,70	0,88	1,05	1,23	1,41	1,59	1,77
1200	0,41	0,52	0,63	0,85	1,07	1,29	1,51	1,73	1,95	2,17
1400	0,49	0,62	0,75	1,01	1,27	1,53	1,78	2,04	2,30	2,56
1600	0,57	0,71	0,86	1,16	1,46	1,76	2,06	2,36	2,66	2,96
1800	0,64	0,81	0,98	1,32	1,66	2,00	2,34	2,67	3,01	3,35
2000	0,72	0,91	1,10	1,47	1,85	2,23	2,61	2,99	3,37	3,75

Air passage	Air intake	Discharge
	34 %	57 %

# External louvres

## Series 645 - 631 - 632 - AR 637 - front surfaces Af

### Serie 645 - Af in m<sup>2</sup>

H (mm)	L (mm)					
	400	500	600	800	1000	1200
400	0,10	0,13	0,16	0,21	0,27	0,32
500	0,14	0,18	0,22	0,29	0,37	0,44
600	0,18	0,23	0,27	0,37	0,46	0,56
800	0,26	0,32	0,39	0,53	0,66	0,80
1000	0,33	0,42	0,51	0,68	0,86	1,03
1200	0,41	0,51	0,62	0,84	1,05	1,27
1400	0,48	0,61	0,74	0,99	1,25	1,50
1600	0,56	0,71	0,85	1,15	1,44	1,74
1800	0,63	0,80	0,97	1,30	1,64	1,97
2000	0,71	0,90	1,08	1,46	1,83	2,21

Air passage	Air intake	Discharge
	33 %	56 %

### Serie 631 - 632 - Af in m<sup>2</sup>

H (mm)	L (mm)					
	400	500	600	800	1000	1200
600	0,11	0,15	0,18	0,24	0,31	0,38
900	0,21	0,28	0,34	0,47	0,59	0,72
1200	0,32	0,41	0,50	0,69	0,87	1,06
1500	0,42	0,54	0,66	0,91	1,16	1,40
1800	0,52	0,67	0,83	1,13	1,44	1,74
2100	0,62	0,81	0,99	1,35	1,72	2,09

Air passage	Air intake	Discharge
	27 %	27 %

### Serie AR 637 - Af in m<sup>2</sup>

Ø D (mm)	Af
125	0,007
160	0,012
200	0,019
250	0,029
315	0,047

Air passage	Air intake	Discharge
	27 %	32 %

Ø D (mm)	Af
400	0,070
450	0,090
500	0,120
560	0,150
630	0,200

Air passage	Air intake	Discharge
	37 %	51 %

# Appendices

**Colours available** - p 260

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**Alphabetical index by abbreviations** - p 262

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**Alphabetical index by description** - p 264

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**Some of our references** - p 266

# Colours available

## Colour group RAL 1

RAL	Description	Brightness
<b>9010</b>	<b>Pure white</b>	<b>std (55 % ± 5 %)</b>
9010	Pure white	mat (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	Oyster white	sat (70 % ± 5 %)
1013	Oyster white	mat (30 % ± 5 %)
1014	Ivory	sat (70 % ± 5 %)
1014	Ivory	mat (30 % ± 5 %)
1015	Light ivory	sat (70 % ± 5 %)
1015	Light ivory	mat (30 % ± 5 %)
1019	Grey beige	sat (70 % ± 5 %)
1020	Grey beige	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	mat (30 % ± 5 %)
5000	Violet blue	sat (70 % ± 5 %)
5000	Violet blue	mat (30 % ± 5 %)
5001	Green blue	sat (70 % ± 5 %)
5001	Green blue	mat (30 % ± 5 %)
5003	Sapphire blue	sat (70 % ± 5 %)
5003	Sapphire blue	mat (30 % ± 5 %)
5004	Black blue	sat (70 % ± 5 %)
5007	Brillant blue	sat (70 % ± 5 %)
5007	Brillant blue	mat (30 % ± 5 %)
5008	Grey blue	sat (70 % ± 5 %)
5008	Grey blue	mat (30 % ± 5 %)
5009	Azure blue	sat (70 % ± 5 %)
5009	Azure blue	mat (30 % ± 5 %)
5011	Steel blue	sat (70 % ± 5 %)
5012	Light blue	sat (70 % ± 5 %)
5012	Light blue	mat (30 % ± 5 %)
5014	Pigeon blue	sat (70 % ± 5 %)
5014	Pigeon blue	mat (30 % ± 5 %)
5015	Sky blue	sat (70 % ± 5 %)
5015	Sky blue	mat (30 % ± 5 %)
5017	Traffic blue	sat (70 % ± 5 %)
5018	Turquoise blue	sat (70 % ± 5 %)
5019	Capri blue	sat (70 % ± 5 %)
5019	Capri blue	mat (30 % ± 5 %)
6003	Olive green	sat (70 % ± 5 %)
6003	Olive green	mat (30 % ± 5 %)
6005	Moss green	sat (70 % ± 5 %)
6007	Bottle green	sat (70 % ± 5 %)
6007	Bottle green	mat (30 % ± 5 %)
6008	Brown green	sat (70 % ± 5 %)
6009	Fir green	sat (70 % ± 5 %)
6009	Fir green	mat (30 % ± 5 %)
6011	Reseda green	sat (70 % ± 5 %)
6011	Reseda green	mat (30 % ± 5 %)
6012	Black green	sat (70 % ± 5 %)
6013	Reed green	sat (70 % ± 5 %)
6013	Reed green	mat (30 % ± 5 %)
6014	Yellow olive	sat (70 % ± 5 %)
6015	Black olive	sat (70 % ± 5 %)
6015	Black olive	mat (30 % ± 5 %)
6019	Pastel green	sat (70 % ± 5 %)
6020	Chrome green	sat (70 % ± 5 %)
6020	Chrome green	mat (30 % ± 5 %)
6021	Pale green	sat (70 % ± 5 %)
6025	Fern green	sat (70 % ± 5 %)
6027	Light green	sat (70 % ± 5 %)
6027	Light green	mat (30 % ± 5 %)
7000	Squirrel grey	sat (70 % ± 5 %)
7000	Squirrel grey	mat (30 % ± 5 %)
7001	Silver grey	sat (70 % ± 5 %)
7003	Moss grey	sat (70 % ± 5 %)
7003	Moss grey	mat (30 % ± 5 %)
7004	Signal grey	sat (70 % ± 5 %)
7004	Signal grey	mat (30 % ± 5 %)
7005	Mouse grey	sat (70 % ± 5 %)
7006	Beige grey	sat (70 % ± 5 %)
7008	Khaki grey	sat (70 % ± 5 %)

RAL	Description	Brightness
7010	Tarpaulin grey	sat (70 % ± 5 %)
7010	Tarpaulin grey	mat (30 % ± 5 %)
7011	Iron grey	sat (70 % ± 5 %)
7011	Iron grey	mat (30 % ± 5 %)
7012	Basalt grey	sat (70 % ± 5 %)
7013	Brown grey	sat (70 % ± 5 %)
7013	Brown grey	mat (30 % ± 5 %)
7015	Slate grey	sat (70 % ± 5 %)
7015	Slate grey	mat (30 % ± 5 %)
7016	Anthracite grey	sat (70 % ± 5 %)
7016	Anthracite grey	mat (30 % ± 5 %)
7021	Black grey	sat (70 % ± 5 %)
7021	Black grey	mat (30 % ± 5 %)
7022	Umbra grey	sat (70 % ± 5 %)
7022	Umbra grey	mat (30 % ± 5 %)
7023	Concrete grey	sat (70 % ± 5 %)
7023	Concrete grey	mat (30 % ± 5 %)
7024	Graphite grey	sat (70 % ± 5 %)
7024	Graphite grey	mat (30 % ± 5 %)
7030	Stone grey	sat (70 % ± 5 %)
7030	Stone grey	mat (30 % ± 5 %)
7031	Blue grey	sat (70 % ± 5 %)
7032	Pebble grey	sat (70 % ± 5 %)
7032	Pebble grey	mat (30 % ± 5 %)
7035	Light grey	sat (70 % ± 5 %)
7035	Light grey	mat (30 % ± 5 %)
7036	Platinum grey	sat (70 % ± 5 %)
7036	Platinum grey	mat (30 % ± 5 %)
7037	Dusty grey	sat (70 % ± 5 %)
7037	Dusty grey	mat (30 % ± 5 %)
7038	Agate grey	sat (70 % ± 5 %)
7038	Agate grey	mat (30 % ± 5 %)
7039	Quartz grey	sat (70 % ± 5 %)
7039	Quartz grey	mat (30 % ± 5 %)
7042	Traffic grey A	sat (70 % ± 5 %)
7042	Traffic grey A	mat (30 % ± 5 %)
7043	Traffic grey B	sat (70 % ± 5 %)
7043	Traffic grey B	mat (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	mat (30 % ± 5 %)
8014	Sepia brown	sat (70 % ± 5 %)
8014	Sepia brown	mat (30 % ± 5 %)
8015	Chestnut brown	sat (70 % ± 5 %)
8016	Mahogany brown	sat (70 % ± 5 %)
8016	Mahogany brown	mat (30 % ± 5 %)
8017	Chocolate brown	sat (70 % ± 5 %)
8017	Chocolate brown	mat (30 % ± 5 %)
8019	Grey brown	sat (70 % ± 5 %)
8019	Grey brown	mat (30 % ± 5 %)
8022	Black brown	sat (70 % ± 5 %)
8022	Black brown	mat (30 % ± 5 %)
8024	Beige brown	sat (70 % ± 5 %)
8024	Beige brown	mat (30 % ± 5 %)
8025	Pale brown	sat (70 % ± 5 %)
8025	Pale brown	mat (30 % ± 5 %)
8077	Brown	sat (70 % ± 5 %)
9001	Pale brown	sat (70 % ± 5 %)
9001	Pale brown	mat (30 % ± 5 %)
9002	Grey white	sat (70 % ± 5 %)
9002	Grey white	mat (30 % ± 5 %)
9003	Signal white	sat (70 % ± 5 %)
9003	Signal white	mat (30 % ± 5 %)
9005	Jet black	sat (70 % ± 5 %)
9005	Jet black	mat (30 % ± 5 %)
9011	Graphite black	sat (70 % ± 5 %)
9011	Graphite black	mat (30 % ± 5 %)
9016	Traffic white	sat (70 % ± 5 %)
9016	Traffic white	mat (30 % ± 5 %)
9018	Papyrus white	sat (70 % ± 5 %)
9018	Papyrus white	mat (30 % ± 5 %)

# Colours available

## Colour group RAL 2

RAL	Description	Brightness
1000	Green beige	sat (70 % ± 5 %)
1017	Saffron yellow	sat (70 % ± 5 %)
1019	Grey beige	mat (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	mat (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	mat (30 % ± 5 %)
5002	Ultramarine blue	sat (70 % ± 5 %)
5002	Ultramarine blue	mat (30 % ± 5 %)
5004	Black blue	mat (30 % ± 5 %)
5005	Signal blue	sat (70 % ± 5 %)
5010	Gentian blue	sat (70 % ± 5 %)
5010	Gentian blue	mat (30 % ± 5 %)
5011	Steel blue	mat (30 % ± 5 %)
5013	Cobalt blue	sat (70 % ± 5 %)
5013	Cobalt blue	mat (30 % ± 5 %)
5020	Ocean blue	sat (70 % ± 5 %)
5020	Ocean blue	mat (30 % ± 5 %)
5021	Water blue	sat (70 % ± 5 %)
5022	Night blue	sat (70 % ± 5 %)
5022	Night blue	mat (30 % ± 5 %)
5023	Distant blue	sat (70 % ± 5 %)
5023	Distant blue	mat (30 % ± 5 %)
5024	Pastel blue	sat (70 % ± 5 %)
6000	Patina green	sat (70 % ± 5 %)
6000	Patina green	mat (30 % ± 5 %)
6001	Emerald green	sat (70 % ± 5 %)
6002	Leaf green	sat (70 % ± 5 %)
6002	Leaf green	mat (30 % ± 5 %)
6004	Blue green	sat (70 % ± 5 %)
6004	Blue green	mat (30 % ± 5 %)
6005	Moss green	mat (30 % ± 5 %)
6006	Grey olive	sat (70 % ± 5 %)
6006	Grey olive	mat (30 % ± 5 %)
6010	Grass green	sat (70 % ± 5 %)
6012	Black green	mat (30 % ± 5 %)
6016	Turquoise green	sat (70 % ± 5 %)
6017	May green	sat (70 % ± 5 %)
6018	Yellow green	sat (70 % ± 5 %)
6022	Olive drab	sat (70 % ± 5 %)
6024	Traffic green	sat (70 % ± 5 %)
6026	Opal green	sat (70 % ± 5 %)
6026	Opal green	mat (30 % ± 5 %)
6028	Pine green	mat (30 % ± 5 %)
6028	Pine green	sat (70 % ± 5 %)
6029	Mint green	sat (70 % ± 5 %)
6029	Mint green	mat (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	mat (30 % ± 5 %)
7005	Mouse grey	mat (30 % ± 5 %)
7009	Green grey	sat (70 % ± 5 %)
7009	Green grey	mat (30 % ± 5 %)
7012	Basalt grey	mat (30 % ± 5 %)
7026	Granite grey	sat (70 % ± 5 %)
7026	Granite grey	mat (30 % ± 5 %)
7031	Blue grey	mat (30 % ± 5 %)
7033	Cement grey	sat (70 % ± 5 %)
7033	Cement grey	mat (30 % ± 5 %)
7034	Yellow grey	sat (70 % ± 5 %)
7034	Yellow grey	mat (30 % ± 5 %)
7040	Window grey	sat (70 % ± 5 %)
7040	Window grey	mat (30 % ± 5 %)
7044	Silk grey	sat (70 % ± 5 %)
7044	Silk grey	mat (30 % ± 5 %)
7045	Telegrey 1	sat (70 % ± 5 %)
7046	Telegrey 2	sat (70 % ± 5 %)

RAL	Description	Brightness
7047	Telegrey 4	sat (70 % ± 5 %)
7047	Telegrey 4	mat (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	mat (30 % ± 5 %)
8011	Nut brown	mat (30 % ± 5 %)
8015	Chestnut brown	mat (30 % ± 5 %)
8023	Orange brown	sat (70 % ± 5 %)
8023	Orange brown	mat (30 % ± 5 %)
8027	Leather	sat (70 % ± 5 %)
8028	Terra brown	sat (70 % ± 5 %)
9004	Signal black	sat (70 % ± 5 %)
9004	Signal black	mat (30 % ± 5 %)
9017	Traffic black	sat (70 % ± 5 %)
9017	Traffic black	mat (30 % ± 5 %)
9021	Tar black	sat (70 % ± 5 %)

## Colour group RAL 3

RAL	Description	Brightness
1004	Golden yellow	sat (70 % ± 5 %)
1004	Golden yellow	mat (30 % ± 5 %)
1005	Honey yellow	sat (70 % ± 5 %)
1006	Maize yellow	sat (70 % ± 5 %)
1006	Maize yellow	mat (30 % ± 5 %)
1007	Daffodil yellow	sat (70 % ± 5 %)
1012	Lemon yellow	sat (70 % ± 5 %)
1016	Sulfur yellow	sat (70 % ± 5 %)
1018	Zinc yellow	sat (70 % ± 5 %)
1021	Rape yellow	sat (70 % ± 5 %)
1021	Rape yellow	mat (30 % ± 5 %)
1023	Traffic yellow	sat (70 % ± 5 %)
1023	Traffic yellow	mat (30 % ± 5 %)
1027	Curry	sat (70 % ± 5 %)
1028	Melon yellow	sat (70 % ± 5 %)
1032	Broom yellow	sat (70 % ± 5 %)
1032	Broom yellow	mat (30 % ± 5 %)
1034	Pastel yellow	sat (70 % ± 5 %)
1036	Pearl gold	sat (80 % ± 5 %)
2000	Yellow orange	sat (70 % ± 5 %)
2000	Yellow orange	mat (30 % ± 5 %)
2001	Red orange	sat (70 % ± 5 %)
2002	Vermilion	mat (30 % ± 5 %)
2003	Pastel orange	sat (70 % ± 5 %)
2008	Bright red orange	mat (30 % ± 5 %)
2010	Signal orange	sat (70 % ± 5 %)
3000	Flame red	sat (70 % ± 5 %)
3000	Flame red	mat (30 % ± 5 %)
3001	Signal red	sat (70 % ± 5 %)
3002	Carmine red	sat (70 % ± 5 %)
3002	Carmine red	mat (30 % ± 5 %)
3003	Ruby red	sat (70 % ± 5 %)
3003	Ruby red	mat (30 % ± 5 %)
3004	Purple red	sat (70 % ± 5 %)
3004	Purple red	mat (30 % ± 5 %)
3005	Wine red	sat (70 % ± 5 %)
3005	Wine red	mat (30 % ± 5 %)
3007	Black red	mat (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	mat (30 % ± 5 %)
3027	Raspberry red	sat (70 % ± 5 %)
3031	Orient red	sat (70 % ± 5 %)
3031	Orient red	mat (30 % ± 5 %)
4003	Heather violet	sat (70 % ± 5 %)
4010	Telemagenta	sat (70 % ± 5 %)
6018	Yellow green	mat (30 % ± 5 %)
6021	Pale green	mat (30 % ± 5 %)
6031	Bronze	sat (70 % ± 5 %)
7048	Pearl mouse grey	sat (70 % ± 5 %)
9006	White aluminium	mat (30 % ± 5 %)
9007	Grey aluminium	mat (30 % ± 5 %)

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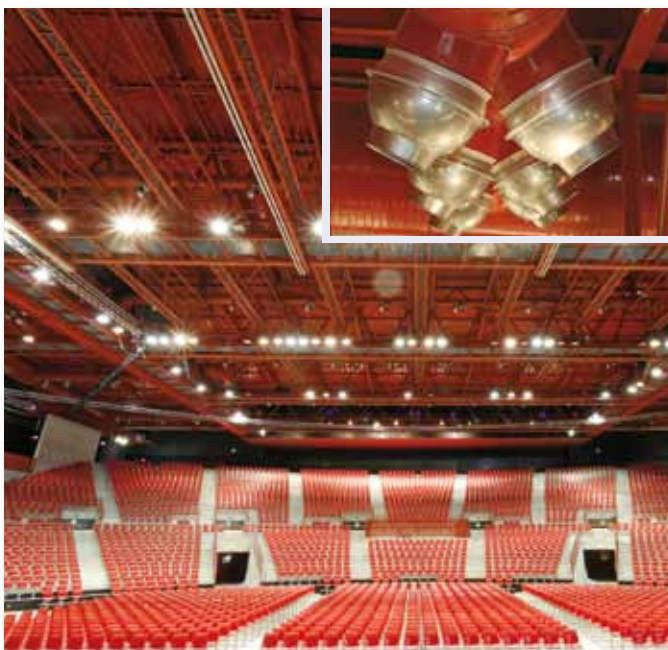
# Some of our references



**Défense Plaza - Paris**  
Slot diffusers



**European Court of Human Rights - Strasbourg**  
Square diffusers for tiles



**Zénith de Dijon**  
Jet diffusers



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