Difair

Serie M_IR



iZONE/AIRROOM
MOVABLE-BLADE GRILLE
FOR HVAC

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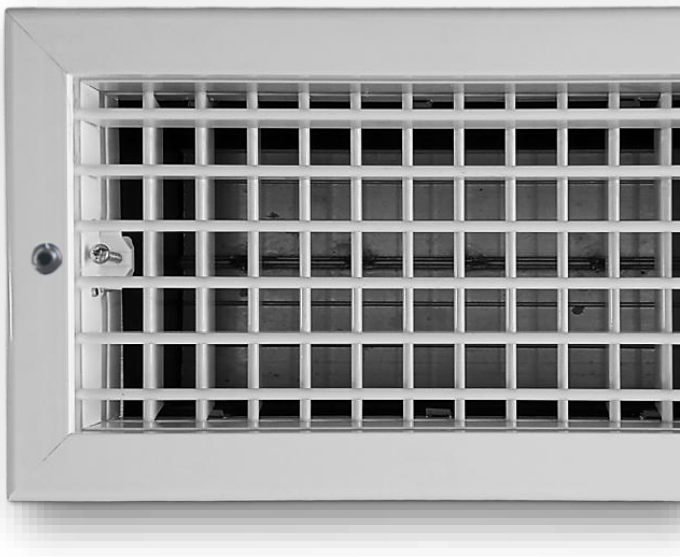
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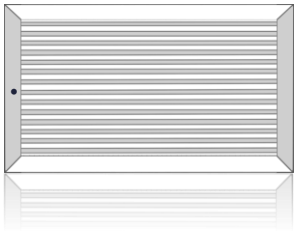
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28703 San Sebastián de los Reyes, Madrid.

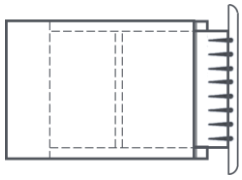
iZONE MOVABLE-BLADE GRILLE FOR HVAC
SERIES M_IR



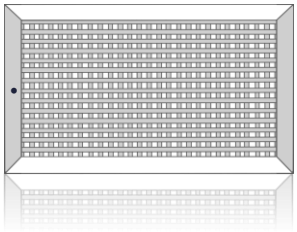


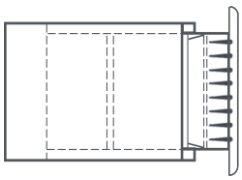
MODELS





M10IR
Single-deflection movable-blade grille for HVAC. Horizontal blades.





M20IR
Double-deflection movable-blade grille for HVAC. Horizontal external blades and vertical internal blades.

DESCRIPTION

DIFAIR's exclusive **M_IR** grilles can be integrated into any existing control system on the market, since all they require to operate is a **230 V** power supply to open them. This system can range from a simple switch to the most complex home automation system on the market.

Single- or double-deflection grille made of anodized or lacquered aluminum, with motorized damper consisting of a frame made of aluminum or sheet steel lacquered with black epoxy paint. A single natural aluminum blade with built-in rubber gaskets to ensure optimal airtightness in this type of installation. Highly durable brass bushings.

It incorporates a low-power, thermosilicon-coated electrical device. This valve control mechanism is an exclusive **DIFAIR** design that makes no noise when activated (only the sound of air flowing through it can be heard).

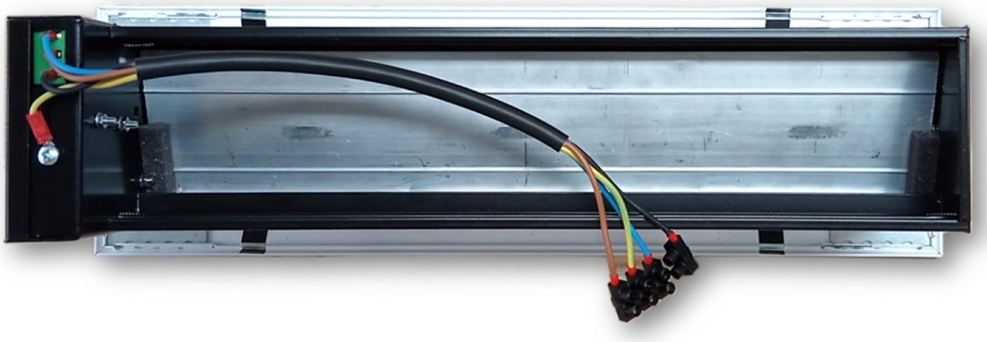
CLIMATIZACION UNIZONA iZONE

The new **iZONE** single-zone smart climate control system is the ideal product for climate control in a single room (bedroom, office, living room, etc.) when the air conditioning system is ducted, optimizing climate control and significantly increasing comfort in that controlled room.

The **iZONE** control system is a very simple product, as it consists only of a wireless remote control and a smart diffuser, with both components communicating via wireless technology.

The **iZONE** control is essentially a standalone smart diffusion element.





APPLICATIONS

In ducted HVAC systems, in most cases, there is a room where temperature control is essential. Furthermore, the ideal temperature for each room is determined independently of the others based on its geographic orientation, its intended use, and, of course, whether it is occupied at any given time. For this reason, iZONE allows for independent temperature control in different rooms within the same home, retail space, or office.

In summary, the iZONE smart control system allows you to adjust the temperature of a specific room independently of the others, or simply shut off the heating element, without the other rooms having to sacrifice the comfort of climate control.

This control does not affect the air conditioner.

OPERATION

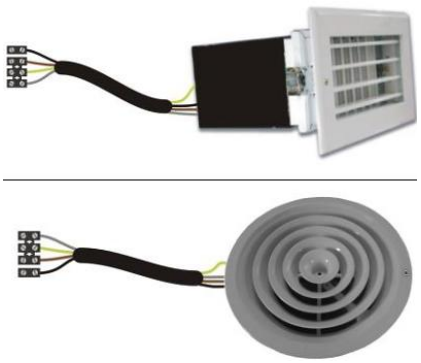
The operation of the smart diffusion element is based on maintaining the user-selected setpoint temperature in the conditioned room.

Important: The air conditioning unit's control panel acts as the master control; you must use it to select the system's operating mode.

DIFFUSION ELEMENTS: SMART AND SLAVE

The distribution elements can consist of several DR_IR diffusers (one master and several slaves) or a single DR_IR diffuser combined with other compatible models (one master and several slaves). The system offers a wide range of motorized air distribution options. The grilles and diffusers are standard sizes, and both components can be supplied in different sizes depending on the installation requirements.

To facilitate installation, the smart diffusion elements are supplied with 30 centimeters of hose, and the connection terminals are accessible at one end so that the smart diffusion element does not need to be handled.



Grille types:
- Double deflection movable blade grilles(Serie M).
- 0º fixed-blade linear grilles (Serie L).
- Curved movable blade grilles(Serie C).

Diffuser types:
Not all diffusers may include smart controls.
- Circular diffusers (Serie DR).



The motor built into the diffusion elements is unique and operates silently.

The diffusers are equipped with an infrared receiver to receive data transmitted by the remote control, as well as a temperature sensor to measure the ambient temperature of the zone to be heated or cooled. This feature means that the zone system does not require any additional installation of a wall-mounted thermostat or similar device, since the diffuser unit itself acts as a thermostat and can thus be controlled using a remote control that requires no installation whatsoever.





A green LED indicator is incorporated into each light-emitting element to indicate whether the unit is on or off.

MULTI-PULSE ZONE. MASTER SMART DIFFUSION ELEMENTS AND SLAVE DIFFUSION ELEMENTS. GRILLES AND DIFFUSERS

In multi-outlet zones—that is, zones with more than one air outlet—it is possible to install a master smart diffuser in one of the air outlets and connect slave diffusers to it.

The slave diffusion elements do not include electronic controls or a temperature sensor (nor do they include an LED indicator), since they are controlled by the smart diffusion elements to which they are connected, meaning that the opening or closing of the slave diffuser's motorized damper occurs in tandem with the opening or closing of the motorized damper of the smart diffuser to which it is connected.

The multi-pulse zone consists of:

- Master smart duffusion element.
- Slave diffusion element.

ZONE TEMPERATURE CONTROL

Smart diffusers are the ones that determine the temperature of the zone thanks to the unique sensor built into them.

REMOTE CONTROL

In multi-outlet zones—that is, zones with more than one air outlet—it is possible to install a master smart diffuser in one of the air outlets and connect slave diffusers to it.

WIRELESS REMOTE CONTROL

The slave diffuser elements do not include electronic controls or a temperature sensor (nor do they include an LED indicator), since they are controlled by the smart diffuser elements to which they are connected, meaning that the opening or closing of the slave diffuser's motorized damper occurs in tandem with the opening or closing of the motorized damper of the smart diffuser to which it is connected.

Each motorized diffusion element is controlled by a wireless remote control, allowing the user to select individual settings for each zone. The following options are available:

- on/off status
- cool/heat operating mode
- setpoint temperature, selectable from 10°C to 30°C

The remote control is powered by two 1.5V **AAA** batteries.

Important: The air conditioning unit's control panel acts as the master control; you must use it to select the system's operating mode.

Every time the smart diffuser receives a signal, the built-in buzzer emits 1 or 2 beeps, depending on whether the command is to start or stop, respectively.

In the event of a temperature sensor failure, the diffusion element closes, and an alarm is signaled by the LED indicator and four beeps from the horn whenever a command is sent from the remote control.

Since the remote control is not the device responsible for measuring the ambient temperature in the area, it can be placed anywhere.



SCHEDULE FOR EACH ZONE

The remote control allows you to set 24-hour start and stop schedules for each zone.

Scheduled Start: If the timers are enabled, the motorized diffuser in the programmed zone begins operating according to the data transmitted from the remote control starting at the time set as the scheduled start time.

Scheduled Start: If the timers are enabled, the motorized diffuser in the programmed zone begins operating according to the data transmitted from the remote control starting at the time set as the scheduled start time.

BYPASS GATE/DAMPER. PRESSURE IN THE DUCT

To maintain constant pressure inside the air duct, it is necessary to install an overpressure damper—provided that one is not already installed—so that when a motorized diffuser closes or opens, and a pressure change occurs in the duct, this damper self-regulates, readjusting the pressure inside the duct and thereby preventing overpressure in the duct and any resulting noise that could become bothersome.



A zone-based HVAC system must be equipped with a pressure compensator. Physically, this compensator is a single-blade bypass damper.

When a damper is closed, the dynamic pressure in the duct increases, and this pressure is converted into static pressure on the duct walls. This increase in static pressure is compensated for by opening the bypass damper, which reduces the static pressure and, consequently, the dynamic pressure. In this way, the air velocity inside the duct is controlled.





IN THE EVENT OF A POWER OUTAGE

If power is lost, the diffuser starts up in "off" mode, requiring you to reselect both the operating mode and the setpoint temperature, as well as the schedule, if one is active.

RELAY CONTACT OUTPUT

The smart diffusion element includes a relay contact output that signals whether the motorized damper is open or closed.

OPERATING VOLTAGE

The iZONE smart diffuser must be connected to a 230 VAC, 50/60 Hz power supply to operate properly using only 3 wires.

NOTE: The grounding terminal is included in the diffuser to provide, when connected, greater safety for the installation.

INSTALLATION

This control is very easy to install, greatly reducing installation and commissioning time; it is also a fully automatic, self-installing device, as it does not require any configuration by the user.

Installation is very simple: all you have to do is run the power cord to the smart diffuser element.

To use the iZONE single-zone climate control system, all you need is a ducted HVAC system; simply remove the air diffuser in the selected room and replace it with the iZONE smart motorized diffuser. Once installed, you're all set to control the temperature in that room.

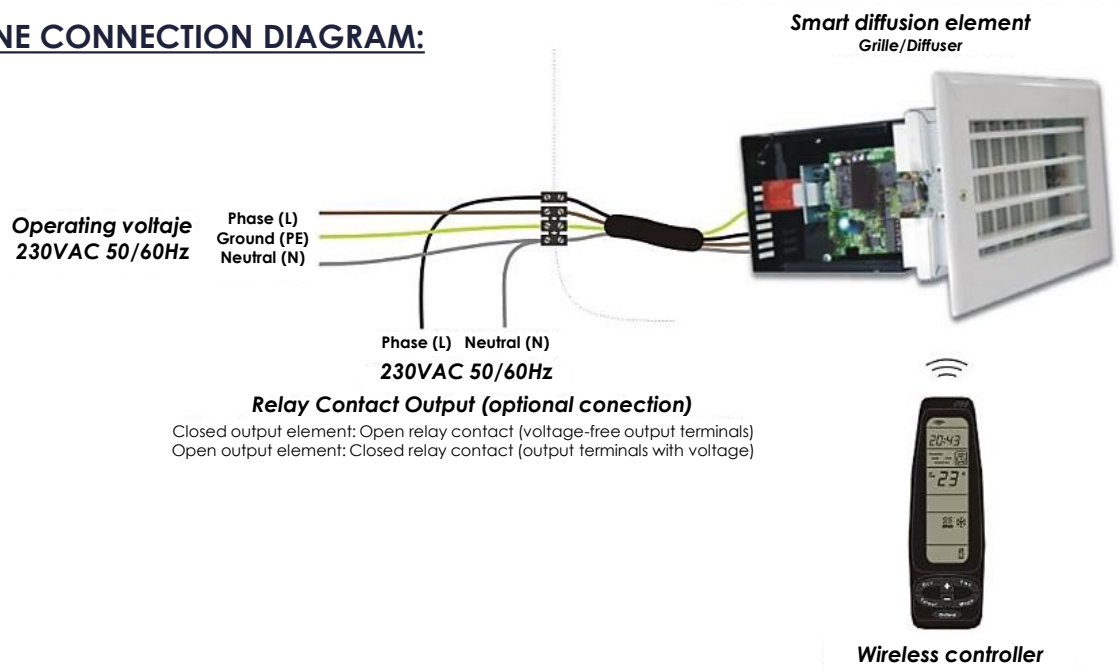
OPERATING VOLTAGE

IMPORTANT: Using more than one iZONE control in the same installation without the necessary preparation could cause problems or even malfunctions in the installation. Consult an authorized installer.

iZONE TECHNICAL DATA

Power Supply Voltage	230 VAC 50/60 Hz
Output	Via a voltage-activated relay contact max. voltage 250VAC max. Intensity 3ª
Operating temperature	0ºC to 50ºC
Operating humidity	max. 95% h.r. no condensation

iZONE CONNECTION DIAGRAM:



NOTE: The wire colors shown in this wiring diagram follow a standard color code, but may vary depending on the hose used.

ACCESSORIES

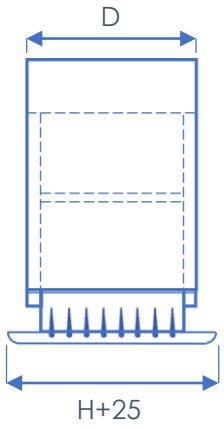
- **PLENUM BOX** (View the **PLENUM SERIES** technical data sheet).

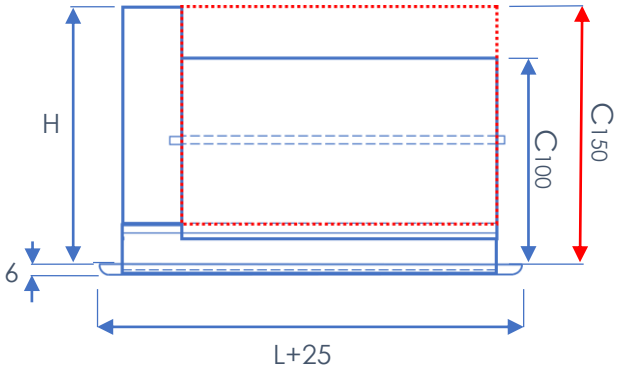
FINISH

- **White-Lacquered** Diffuser.
- **ANODIZED ALUMINUM** Diffuser.
- On request, it can be manufactured in other colors from the **RAL** color chart.

DIMENSIONS

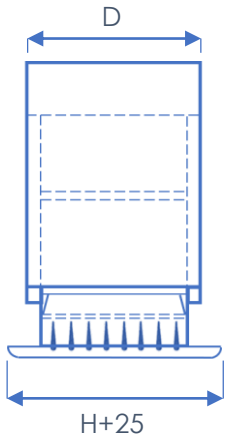
M10IR

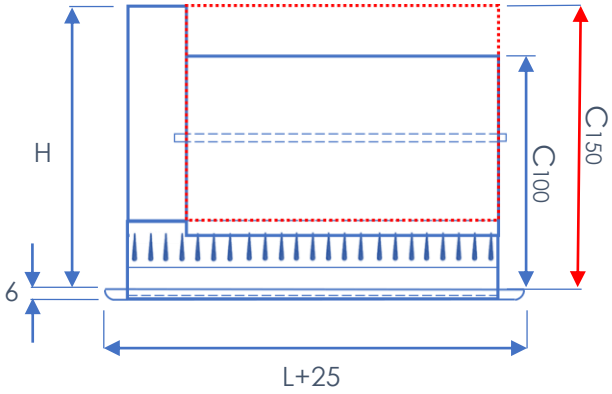




	Size	H (mm)	C (mm)	D (mm)
M10IR	L x 100 L x 200	134	C_{100} = 106	C_{100} = 87
M10IR	L x 150	154	C_{150} = 154	C_{150} = 135

M20IR





	Size	H (mm)	C (mm)	D (mm)
M20IR	L x 100 L x 200	156	C_{100} = 126	C_{100} = 87
M20IR	L x 150	176	C_{150} = 176	C_{150} = 135

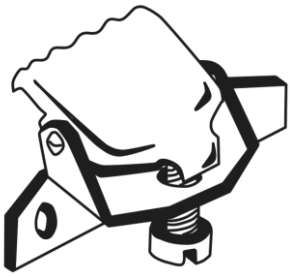
L X H → Nominal Size = Hole Size

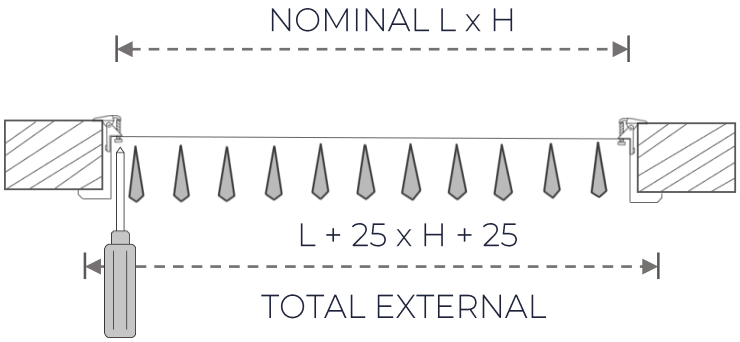
Dimensions may be specified as L x H, with a maximum of 1000 x 300 and a minimum of 200 x 100 (including the mounting frame).

FIXING SYSTEM

GRILLE ASSEMBLY WITH CONCEALED FIXING

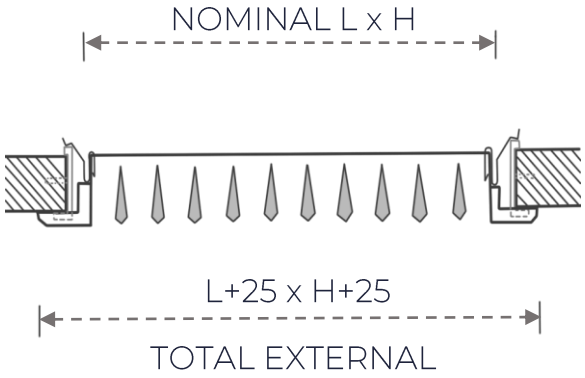
This type of fixing is the standard system for this series. Using a screwdriver to drive the indicated screw, the tongue is pressed onto the mounting frame, thus holding the grille firmly in place. To remove the grille, simply loosen the screw and the steel spring returns the claw to its horizontal position.

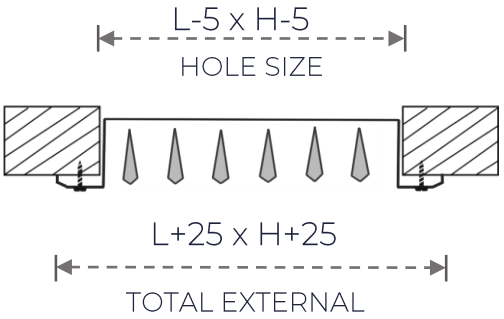




FIXING BY MEANS OF PRESSURE CLIPS

Once the mounting frame has been received, place the grille in the resulting recess and press until the grille is attached to the wall. The pressure that the clips exert on the mounting frame prevents the grille from slipping out of the mounting frame.





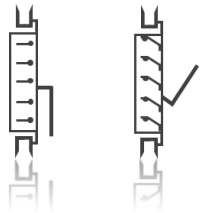
SCREWS FIXING

The grille is supplied with countersunk holes. Screws not included.

NOMINAL= L X H

FLOW MEASUREMENT

$m^3/h = m/s \times m^2 \times 3.600$



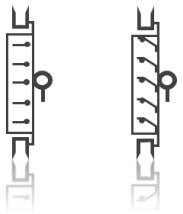
By Pitot tube:

Measurements must be taken at several points on the grille, the arithmetic measurement of all of them allows us to determine the effective suction velocity.

By anemometer:

The entire surface of the grille must be traversed with it to obtain the suction velocity.

$m^3/h = m/s \times m^2 \times 3.600$



EFFECTIVE SECTION (m^2)

MOD. M20IR

H \ L	200	250	300	350	400	450	500	600	700	800	900	1.000
100	0.00506	0.00680	0.00878	0.01052	0.01250	0.01424	0.01622	0.01832	0.02204	0.02576	0.02971	0.03320
150	0.01107	0.01441	0.01815	0.02149	0.02523	0.02857	0.03231	0.03776	0.04484	0.05192	0.05941	0.06608
200	0.01488	0.01966	0.02500	0.02978	0.03512	0.03990	0.04524	0.05211	0.06223	0.07235	0.08302	0.09259

TABLA DE SELECCIÓN RÁPIDA

ALTO		LARGO									
200				200	250	300	400	500	600	800	1000
150		150	200	300	350	450	550	650	800	1000	
100		200	300	400	500	600	800	1000			
m³/h											
100	Alc dB(A) Δ P	3 9 0,3									
200	Alc DB(A) Δ P	6 10 1,2	5 12 0,6	4,5 8 0,3							
300	Alc dB(A) Δ P	9,5 32 2,8	8 21 1,3	6,5 15 0,7	5,5 11 0,5	5 8 0,3					
400	Alc dB(A) Δ P	12 39 5	10 30 2,1	9 25 1,2	7,2 16 0,7	7 12 0,6	6,2 11 0,5				
500	Alc dB(A) Δ P		13 37 3,6	11 29 1,9	10 25 1,1	8 20 0,9	7,6 15 0,5	7 6 0,4	6,5 5 0,3		
600	Alc dB(A) Δ P		15 40 5	14 36 2,9	12 30 1,7	11 25 1,1	9,5 20 0,6	7,8 8 0,5	7,6 7 0,3	6,6 4 0,2	
700	Alc dB(A) Δ P			15 38 2,3	14 33 2,1	13 30 1,8	11 26 0,9	9,5 17 0,65	8 14 0,4	7,2 9 0,2	
800	Alc dB(A) Δ P			17 43 4,9	16 37 2,9	14 33 2	13 28 1,1	12 19 0,8	10 15 0,6	9,3 10 0,3	8 7 0,17
900	Alc dB(A) Δ P				17 40 3,7	16 37 3,3	14 29 1,4	13 23 0,9	12 19 07	10 12 0,4	9 9 0,25
1.000	Alc dB(A) Δ P				20 43 5	18 38 3,4	16 32 1,9	14 27 1,3	13 21 0,8	12 15 0,25	10 12 0,30
1.200	Alc dB(A) Δ P					21 44 5	19 37 3	17 31 1,7	15 28 1,2	13 22 0,7	12 14 0,45
1.400	Alc dB(A) Δ P						21 41 4	20 34 2,2	18 33 1,8	15 26 0,9	14 18 0,6
1.600	Alc dB(A) Δ P						29 45 5	23 40 3,2	20 35 2	18 29 1,2	16 21 0,8
1.800	Alc dB(A) Δ P							28 42 3,9	23 39 3	20 30 1,5	18 25 0,9
2.000	Alc dB(A) Δ P							34 43 4,8	28 42 3,7	22 36 3	20 29 1,2
2.200	Alc dB(A) Δ P								33 44 4	28 38 2,1	22 31 1,5
2.400	Alc dB(A) Δ P								35 45 4,2	30 39 2,6	25 32 1,6
2.600	Alc dB(A) Δ P									35 41 3,4	30 36 2,2
2.800	Alc DB(A) Δ P									40 44 4	33 38 2,7
3.000	Alc dB(A) Δ P										35 40 3
3.500	Alc dB(A) Δ P										45 44 4

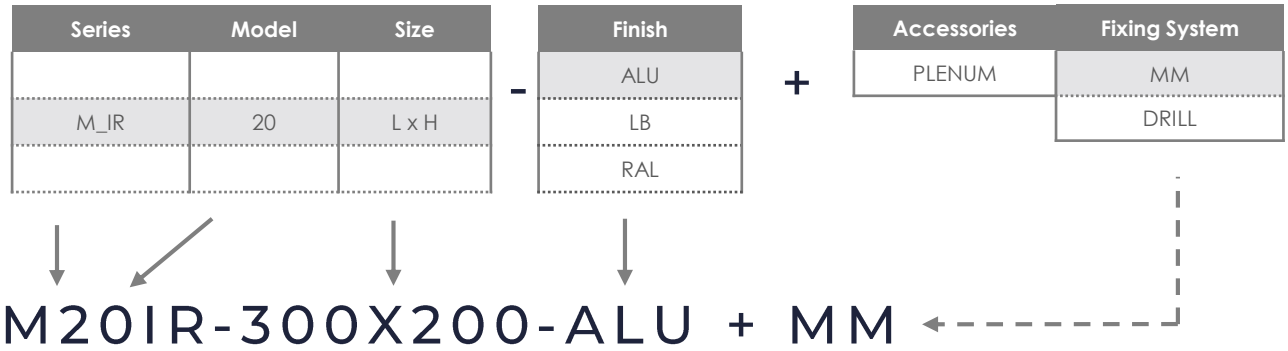
FACTORES DE CORRECCIÓN		
Ángulo de divergencia	*45º*	*90º*
Δ P = Tablas x	1,1	1,5
dB(A) = Tablas +	2	3
Alc = Tablas x	0,7	0,5

Alc = Para una velocidad residual de 0,5 m/s.

dB(A) = Nivel sonoro lamas abiertas sin regulación de caudal.

Δ P = Pérdida presión estática mm c.a.

GRAPHICAL DESCRIPTION



SERIES

- M_IR: Movable-blade grille for iZONE HVAC.

MODEL

- M20IR: Double-deflection movable-blade grille for iZONE HVAC.

SIZE (mm)

- LxH: 300 x 200 mm.

FINISH

- Alu: Anodized aluminum.

FIXING SYSTEM (optional)

- MM: 300 x 200 mm mounting frame with pressure clips.

Order example: M20IR 300x200 ALU + MM

- To order a 300x200 mm double-deflection movable-blade grille for iZONE HVAC, made of anodized aluminum with a mounting frame, you should request:

Order	Description
Grille M20IR 300x200 - Anodized aluminum	300x200 mm double-deflection movable-blade grille for iZONE HVAC, made of anodized aluminum.
Mounting frame MM 300x200	300x200 mm mounting frame and pressure clips.

Order example: M10TR 500x100+LB + DRILL

- To order a 500x100 mm double-deflection movable-blade grille for iZONE HVAC, white laquered, for installation with drill and screws (screws not included), you should request:

Order	Description
Grille M20IR 500x100 – White laquered	Rejilla de lama móvil de doble deflexión de 500x100 mm para climatización iZONE, lacado en blanco.
Fixing System DRILL	For installation with drill and screws.



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