

# Monoblock units for cold rooms





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# A complete range of plug-in monoblock systems suitable for commercial, semi-industrial and industrial refrigeration

Our monoblock systems line-up has been designed to cover a wide range of commercial, semi-industrial and industrial applications.

The product ranges for commercial and semi-industrial applications are available with a wide range of capacities, both for positive and negative temperatures, to satisfy the refrigeration needs of small-medium cold rooms.

The product ranges for industrial applications, in addition to the ranges for positive and negative temperatures, are also available in the multi-temperature and freezing versions, suitable for medium-large-large cold rooms and for freezing tunnels.

Each of our monoblock systems is a complete plug-in system that can be installed, set up and put into operation mode in just a few simple steps.



## SB

### Ceiling-mounting monoblock units

- › Quick installation on the cold room roof
- › The ceiling installation leaves the space inside the cold room completely free
- › The white color of the evaporator blends discreetly with the walls of the cold room
- › Extremely quick to install, reducing times and costs of installation
- › Best surface-capacity ratio
- › Remote electronic control panel with user-friendly interface



## Units easy to be installed and to be managed

The models of the SB range are monoblock units characterized by great versatility of use and accessible to anyone looking for a type of ceiling installation.

Suitable for small rooms, the SB range is composed by 2 lines: the MSB for medium temperatures (max 57 m<sup>3</sup> at Tc= +0°C, Tamb= +30°C) and the BSB for low temperatures (max 68 m<sup>3</sup> at Tc= -20°C, Tamb= +30°C).

Pursuing the objectives of robustness and efficiency, the body of the condensing unit is made of sheet steel like the evaporator contained in a thermally insulated compartment and connected directly to the condenser part.

The reciprocating hermetic compressor and the programmed automatic hot gas defrosting, with cycle frequency, make the SB a stand-alone machine without the need for recurring maintenance.

The installation of the unit on the ceiling is very easy, the mounting consists of a single hole in which the evaporating part will be inserted, which does not require other connections.

The condensing water elimination system is automatic. The electrical panel of the SB has an electronic

control unit whose operating parameters are already programmed.

The electronic control unit manages the SB and allows the signalling of any anomalies.

The type of installation and the machine control, simple and intuitive thanks to the remote electronic control panel to be installed on the wall to set the desired temperature and visualize possible alarms, make the SB unit easy to be managed.

This range of monoblocs, characterized by remarkable compactness, allows to optimize the useful space inside the cold room, guaranteeing excellent performance, reliability and efficiency.

## Standard configuration

- › Hermetic compressor
- › Power supply 220-230/1N~/50 or 380-400/3N~/50
- › Air + Axial Fan
- › Crankcase heater + Pressure controlled condenser fan speed regulator + Double solenoid valve for defrosting (only units MSB530, BSB545, BSB550)
- › Remote electronic control panel
- › Expansion through capillary tube
- › Liquid line filter
- › Coldroom light with bulb
- › Door micro switch cable
- › Door heater cable for low temperature units
- › Condensate water evaporation drip tray
- › Ceiling mounted configuration
- › High and low pressure switches
- › Cables length 5m
- › Hot gas defrost
- › Refrigerant charge



## Personalization options and accessories

### Power supply:

- › 220-230/1N~/50 (standard MSB005÷210 and BSB010-117 units)
- › 380-400/3N~/50 (standard MSB212÷530 and BSB220÷550 units)
- › 220-230/1N~/60
- › 220-230/3~/50
- › 220-230/3~/60
- › 440/3~/60
- › 380-400/3N~/60
- › 110-115/1N~/60
- › 460/3~/60

### Condensation type:

- › Air + Centrifugal fan (no MSB005, BSB010 units)
- › City water with pressure valve

### Winter Kit, low ambient temperature accessories:

- › Crankcase heater + Condenser fan pressure switch + Double solenoid valve for defrosting (only MSB005, MSB106, MSB107, MSB210, MSB212, BSB010, BSB117, BSB220 units)
- › Crankcase heater + Pressure controlled condenser fan speed regulator + Double solenoid valve for defrosting (only MSB315, MSB320, MSB425, BSB330, BSB440 units)

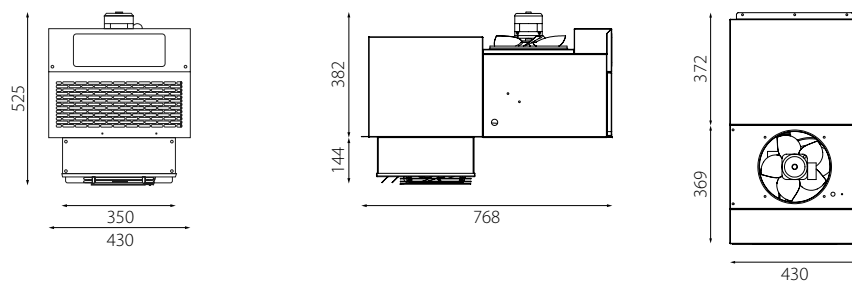
### Accessories kit:

- › Audible and visual alarm
- › Remote control panel for 2-3-4 units
- › Prearrangement for supervision system
- › Remote control panel for 2 units with alternating operation

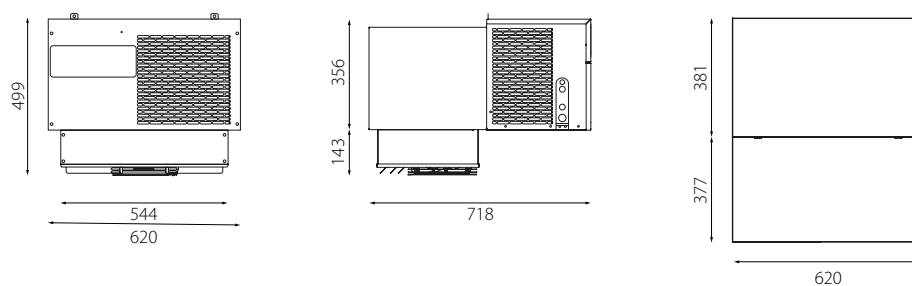
# How and where to install the unit

## Dimensions

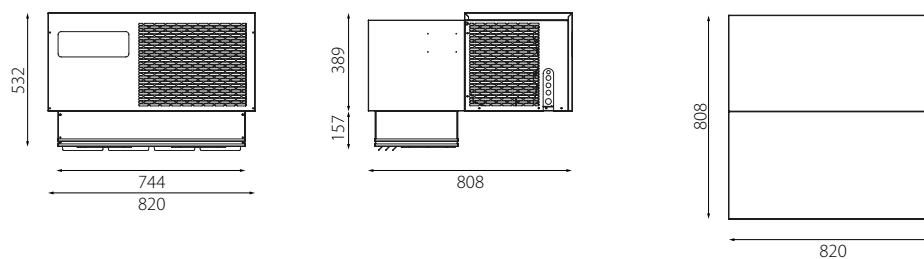
Constructive frame 0



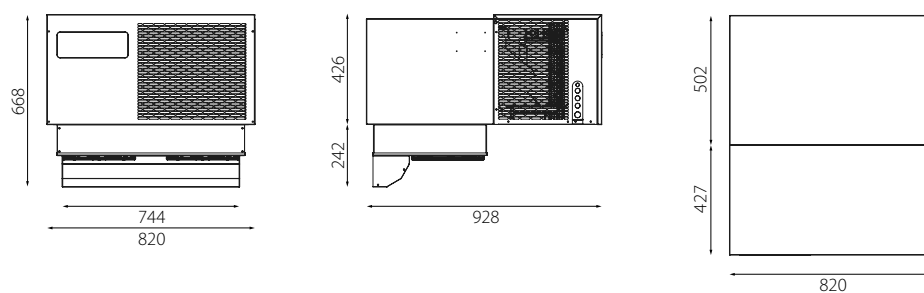
Constructive frame 1



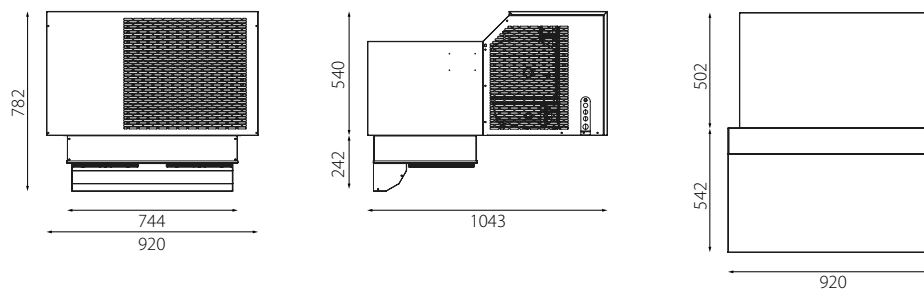
Constructive frame 2



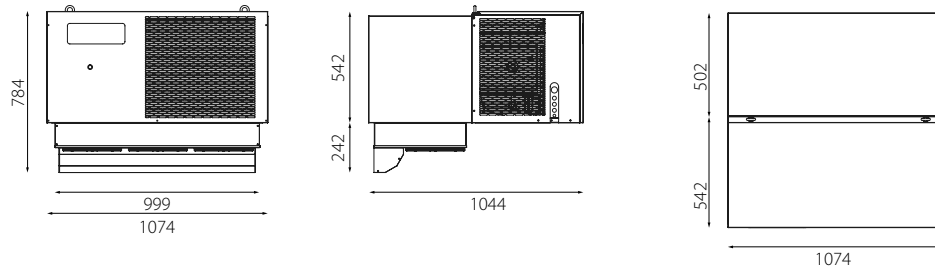
Constructive frame 3



Constructive frame 4



Constructive frame 5



## Air flow

The air flow of the SB units is composed by the flow of the condensing part and the one of the evaporating part.

In the condensing part, the air is sucked from the front grille through the condenser axial fan (the diameter changes according to the constructive frame) and is discharged from the upper part in the frame 0 and from the side in the other frames.

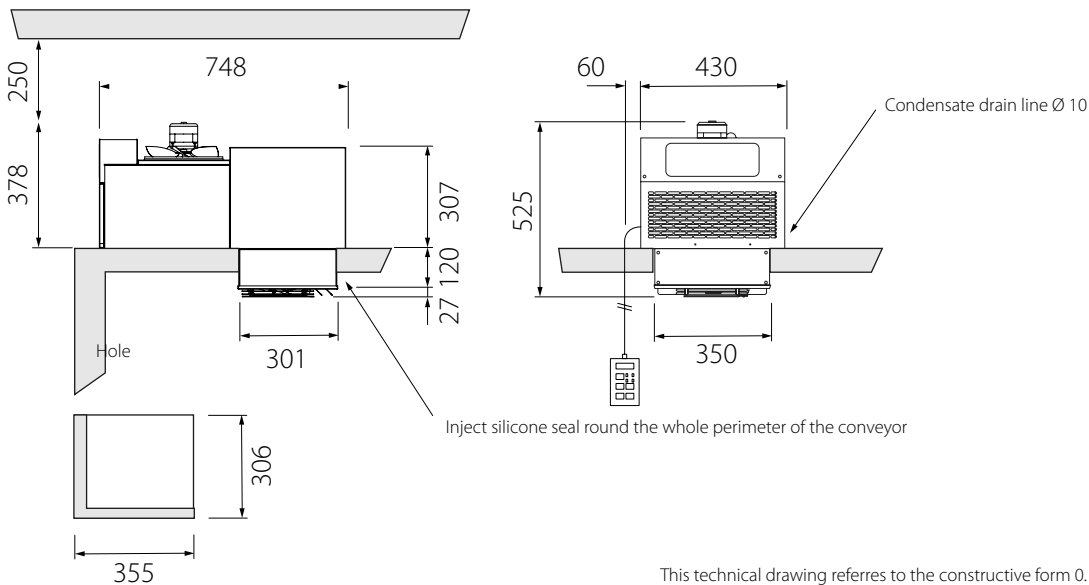
The condensing part equipped with centrifugal fan (not available for the frame type 0), thanks to the blades positioned differently compared to axial fan version, can direct the air flow by means of a duct towards a specific

direction to avoid excessive heating of the surrounding environment.

Inside the room, in the evaporating part, the air is sucked from bottom to top by the fans and then expelled from the front by the air conveyor of the evaporator.



## Installation method



The installation of the SB units is on the roof of the cold room.

The body of the evaporator part has been designed to reduce as much as possible the occupied space inside the cold room. It is designed to be placed in the hole created in the roof of the cold room.

The condensing part lays on the top of the cold room.

The unit must be positioned in an environment with good air circulation, away from high heat sources and away from obstacles that could limit the possibility of good suction and equally good discharge of the treated air.

# Units details



# A wide range of applications

Cold storage



Food retail



Industry



Butchers



Fishery



Restaurants



# Technical data



## Medium temperature units

Code	MSB005EA11XX	MSB106EA11XX	MSB107EA11XX	MSB210EA11XX	MSB212EB11XX	MSB315EB11XX	MSB320EB11XX	MSB425EB11XX	MSB530EB13XX
Refrigerant	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Power supply [V/Ph~/Hz]	220- 230/1N~/50	220- 230/1N~/50	220- 230/1N~/50	220- 230/1N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
HP compressor	5/8	3/4	1	1,2	2,3	3	3,5	4	5
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	0	0	0	0	0	0	0	0	1
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5
Cooling capacity [Watt] [TC=0°C   TA=30°C]	857	1.120	1.338	1.799	2.022	3.282	3.550	3.774	4.871

## Low temperature units

Code	BSB010DA11XX	BSB117DA11XX	BSB220DB11XX	BSB330DB11XX	BSB440DB11XX	BSB545DB13XX	BSB550DB13XX
Refrigerant	R452A	R452A	R452A	R452A	R452A	R452A	R452A
Power supply [V/Ph~/Hz]	220- 230/1N~/50	220- 230/1N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
HP compressor	3/4	1,7	2	3	3,5	4	5
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	0	0	0	0	2	2	2
Working temperature [°C]	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25
Cooling capacity [Watt] [TC=-20°C   TA=30°C]	628	1.162	1.699	2.596	3.097	3.890	4.849



## SB-V

Wall-mounting  
monoblock units

- › Quick installation on the cold room wall
- › A smaller footprint in the cold room
- › Extremely quick to install, reducing times and costs of installation
- › The white color of the evaporator blends discreetly with the walls of the cold room
- › Remote electronic control panel with user-friendly interface
- › Very compact and very efficient



# Wall mounting units, easy to be installed and to be managed

The models of the SB-V range are monoblock units characterized by great versatility of use and accessible to anyone looking for a type of ceiling installation.

Suitable for small rooms, the SB-V range is composed by two units: the MSBV05E with R134a refrigerant, suitable for medium temperature cold rooms with max 5 m<sup>3</sup> (cold room at Tc= +0°C, Tamb= +30°C) and the MSBV05D with R452A refrigerant, suitable for medium temperatures cold rooms with max 6 m<sup>3</sup> (cold room at Tc= -20°C, Tamb= +30°C).

Pursuing the objectives of robustness and efficiency, the body of the condensing unit is made of sheet steel like the evaporator contained in a thermally insulated compartment and connected directly to the condenser part.

The reciprocating hermetic compressor and the programmed automatic hot gas defrosting, with cycle frequency, make the SB-V a stand-alone machine without the need for recurring maintenance.

The installation of the unit on the wall is very easy, the mounting consists of a single hole in which the evaporating part will be inserted, which does not require other connections.

The condensing water elimination system is automatic.

The electrical panel of the SB-V has an electronic control unit whose operating parameters are already programmed and the electronic control unit manages the SB-V and allows the signalling of any anomalies.

The type of installation and the machine control, simple and intuitive thanks to the remote electronic control panel to be installed on the wall to set the desired temperature and visualize possible alarms, make the SB-V unit easy to be managed.

This range of monoblocs, characterized by remarkable compactness, allows to optimize the useful space inside the cold room, guaranteeing excellent performance, reliability and efficiency.

## Standard configuration

- › Hermetic compressor
- › Power supply 220-230/1N~/50
- › Air + Axial fan
- › Remote electronic control panel
- › Expansion through capillary tube
- › Liquid line filter
- › Coldroom light with bulb
- › Door micro switch cable
- › Door heater cable for low temperature units
- › Condensate water evaporation drip tray
- › Wall-mounting
- › High and low pressure switches
- › Cables length 5m
- › Hot gas defrost
- › Refrigerant charge



## Personalization options and accessories

### Accessories kit:

- › Audible and visual alarm
- › Remote control panel for 2-3-4 units
- › Prearrangement for supervision system
- › Remote control panel for 2 units with alternating operation

# Technical data



## Medium temperature units

Code	MSBV05EA11XX	MSBV05DA11XX
Refrigerant	R134a	R452A
Power supply [V/Ph~/Hz]	220- 230/1N~/50	220- 230/1N~/50
HP compressor	5/8	5/8
Defrost	Hot gas	Hot gas
PED category	0	0
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5
Cooling capacity [Watt] [TC=0°C   TA=30°C]	857	976



# SB R290

Ceiling-mounting  
propane monoblock units

- › Use of natural and efficient refrigerant R290 (GWP 3)
- › Low R290 refrigerant charge <150 g per circuit
- › Multiple circuits for bigger models
- › Medium and low temperature range
- › Hermetic piston compressors
- › Hot gas defrost
- › Air or water condensation (for water: plate exchanger and water solenoid valve)
- › Expansion by capillary tube for air condensation and thermostatic valve for water condensation
- › Dixell electronic controller
- › Serial output for connection to monitoring system
- › Different voltage available
- › Single circuit models: available with remote keyboard
- › Multicircuits models: available in master stand-alone version with remote keyboard and dedicated kit and slave version
- › The F-gas regulations do not apply to systems that contain only natural refrigerants such as propane (R-290)



## Units easy to be installed and to be managed

The models of the SB R290 range are monoblock units characterized by great versatility of use and accessible to anyone looking for a type of ceiling installation.

The refrigerant charge per circuit is low (<150g) and the refrigerant R290 has a low GWP index.

The smaller models have a single refrigerant circuit and they are available with a remote keyboard. The bigger models have a multiple refrigerant circuits and they are available in master stand-alone version with remote keyboard and dedicated kit and slave version.

Suitable for small rooms, the SB R290 range is composed by 2 lines: the MSB for medium temperatures (max 72 m<sup>3</sup> at Tc= +0°C, Tamb= +30°C) and the BSB for low temperatures (max 26 m<sup>3</sup> at Tc= -20°C, Tamb= +30°C).

It is possible to have the unit with air or water condensation (for water: plate heat exchanger and water solenoid valve).

Pursuing the objectives of robustness and efficiency, the body of the condensing unit is made of sheet steel like the evaporator contained in a thermally insulated compartment and connected directly to the condenser part.

The reciprocating hermetic compressor and the programmed automatic hot gas defrosting, with cycle frequency, make the SB R290 a

stand-alone machine without the need for recurring maintenance.

The installation of the unit on the ceiling is very easy, the mounting consists of a single hole in which the evaporating part will be inserted, which does not require other connections.

The condensing water elimination system is automatic.

The electrical panel of the SB has an electronic control unit whose operating parameters are already programmed.

The electronic control unit manages the SB and allows the signalling of any anomalies.

The type of installation and the machine control, simple and intuitive thanks to the remote electronic control panel to be installed on the wall to set the desired temperature and visualize possible alarms, make the SB unit easy to be managed.

This range of monoblocs, characterized by remarkable compactness, allows to optimize the useful space inside the cold room, guaranteeing excellent performance, reliability and efficiency.

## Standard configuration

- › Hermetic compressor
- › Power supply 220-230/1N~/50 or 380-400/3N~/50
- › Air condensation
- › Frame and panels in prepainted galvanized steel
- › Ceiling installation for covered areas - air cooled condenser (capillary tube) Tmin 20°C - Tmax 45°C
- › Ceiling installation for covered areas - water cooled condenser (thermal expansion valve) Tmin 10°C - Tmax 48°C
- › Max refrigerant charge 150 g for circuit
- › Air or water condensation (plates condenser and water solenoid valve)
- › Expansion type by capillary for air condensation and thermostatic for water condensation
- › Electronic controller Dixell XM670K with sealed contacts of relays
- › Serial output RS485
- › Electric fast connections by plug connectors
- › HP and LP pressure switches with sealed contacts
- › Atex power relays for compressors
- › Fans with thermal protection
- › Without condensate water evaporation drip tray - direct drain line
- › Hot gas defrost
- › Available in master stand-alone or slave version



## Personalization options and accessories

### Condensation options:

- › Water condensation

### Power supply:

- › 220-230/1N~/50 (standard MSB1310-2180-3370 and BSB0870-1710 units)
- › 380-400/3N~/50 (standard MSB5820 and BSB2650 units)
- › 220-230/1N~/60

### Accessories kit:

- › Audible and visual alarm
- › Cable kit for transformation MT models "only slave" into master stand-alone
- › Cable kit for transformation LT models "only slave" into master stand-alone

# Technical data



SB R290

Code	MEDIUM TEMPERATURE UNITS								LOW TEMPERATURE UNITS					
	MSB1310Y1AAA	MSB2180Y1AAA	MSB3370Y2AAA	MSB5820Y3ABA	MSB1310Y1WAA	MSB2180Y1WAA	MSB3370Y2WAA	MSB5820Y3WBA	BSB0870Y1AAA	BSB1710Y2AAA	BSB2650Y3ABA	BSB0870Y1WAA	BSB1710Y2WAA	BSB2650Y3WBA
Condensation	Air	Air	Air	Air	Water	Water	Water	Water	Air	Air	Air	Water	Water	Water
Refrigerant	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290
Power supply [V/Ph~/Hz]	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	380-400/3N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	380-400/3N~/50	220-230/1N~/50	220-230/1N~/50	380-400/3N~/50	220-230/1N~/50	220-230/1N~/50	380-400/3N~/50
HP compressor	0,56	0,9	2 x 0,56	3 x 0,9	0,56	0,9	2 x 0,56	3 x 0,9	0,9	2 x 0,9	3 x 0,9	0,9	2 x 0,9	3 x 0,9
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25
Cooling capacity [Watt] Air: [TC=0°C   TA=30°C] Water: [TC=0°C   TW=30°C]	1.309	2.179	3.367	5.821	1.385	2.293	3.651	6.123	-	-	-	-	-	-
Cooling capacity [Watt] Air: [TC=-20°C   TA=30°C] Water: [TC=-20°C   TW=30°C]	-	-	-	-	-	-	-	-	873	1.713	2.653	901	1.791	2.925



# GM

Efficient and reliable monoblock units  
with avantgarde management technology

- › Quick straddle wall installation ideal for new applications or through wall installation ideal for renovations
- › Condensing part body with metallic gray finishing
- › The white color of the evaporator blends discreetly with the walls of the cold room
- › Compressor compartment is ready to be insulated with suitable sound-absorbing material to reduce noise levels
- › Micro-channel condensers are available on the smallest frame (GM1) to reduce the refrigerant charge as much as possible and ensure higher energy efficiency
- › Units equipped with a new generation control panel with an easy-to-use interface suitable to be connected to monitoring and remote management systems



## A versatile range with low running costs

The models of the GM range are monoblock units characterized by compactness, suitable and accessible to anyone looking for a type of wall installation.

Suitable for small rooms, the GM range is composed by 2 lines: the MGM for medium temperatures (max 38 m<sup>3</sup> at Tc= +0°C, Tamb= +32°C) and the BGM for low temperatures (max 39 m<sup>3</sup> at Tc= -20°C, Tamb= +32°C).

This range of monoblocs, characterized by remarkable compactness, allows to optimize the useful space inside the cold room, guaranteeing excellent performance and reliability.

The robustness, simplicity of installation and extreme ease of use represent the strong points of these units range, as well as guaranteeing high efficiency in heterogeneous working conditions.

The reciprocating hermetic compressor and the programmed automatic hot gas defrosting, with cycle frequency, make the GM a stand-alone and reliable machine, without the need for recurring maintenance.

The condensation water elimination system is automatic and does not require external connections allowing a clean and autonomous operation thanks to the

condensate water evaporation tray available in the standard configuration of the unit.

The electrical panel of the GM has an electronic control unit whose operating parameters are already programmed.

The electronic control unit manages the GM and allows the signalling of any anomalies.

## Standard configuration

- › Hermetic compressor
- › Power supply 220-230/1N~/50 or 380-400/3N~/50
- › Air + Axial Fan
- › 100mm legs
- › Electronic control panel
- › Expansion through capillary tube
- › Liquid line filter
- › Coldroom light with bulb
- › Door micro switch cable
- › Door heater cable for low temperature units
- › Condensate water evaporation drip tray
- › Drain heater BT
- › Straddle mounting or through wall configuration
- › High and low pressure switches
- › Cables length 5m
- › Hot gas defrost
- › Refrigerant charge



The range has three main construction frames: GM1, GM2 and GM3. Thanks to this, there is a unit suitable for each of the most common applications.

## Personalization options and accessories

### Power supply:

- › 220-230/1N~/50 (standard MGM103÷211 and BGM110÷218 units)
- › 380-400/3N~/50 (standard MGM212÷320 and BGM220÷340 units)
- › 220-230/1N~/60
- › 220-230/3~/50
- › 220-230/3~/60
- › 440/3~/60
- › 380-400/3N~/60
- › 110-115/1N~/60
- › 460/3~/60

- › GM3 (BGM340) panel kit | 100mm
- › GM1 panel kit | 150mm
- › GM2 panel kit | 150mm
- › GM3 panel kit | 150mm
- › GM3 (BGM340) panel kit | 150mm
- › Audible and visual alarm
- › Remote control panel for 2-3-4 units
- › Remote control panel for 1 unit
- › Prearrangement for supervision system
- › Remote control panel for 2 units with alternating operation

### Condensation type:

- › Air + Centrifugal fan
- › City water with pressure valve

### Winter Kit, low ambient temperature accessories:

- › Crankcase heater + Condenser fan pressure switch + Double solenoid valve for defrosting
- › Crankcase heater + Pressure controlled condenser fan speed regulator + Double solenoid valve for defrosting

### Soundproofing options:

- › 100mm legs + Panel kit
- › 150mm legs + Simple noise insulation
- › 150mm legs + Simple noise insulation + Panel kit

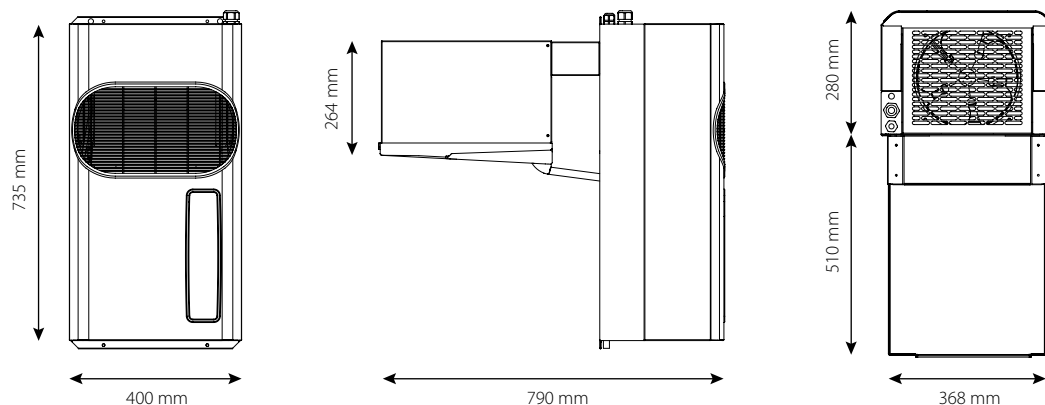
### Accessories kit:

- › GM1 panel kit | 100mm
- › GM2 panel kit | 100mm
- › GM3 panel kit | 100mm

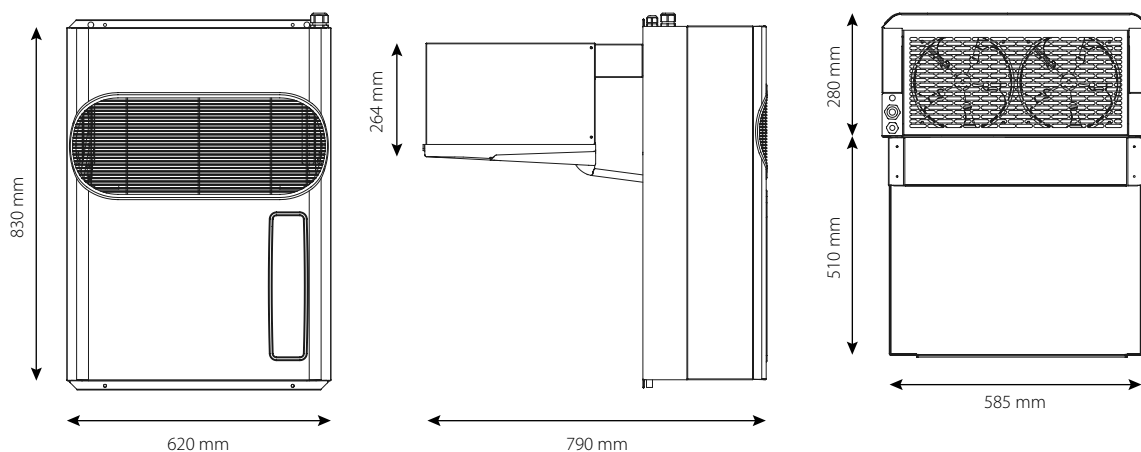
# How and where to install the units

## Dimensions

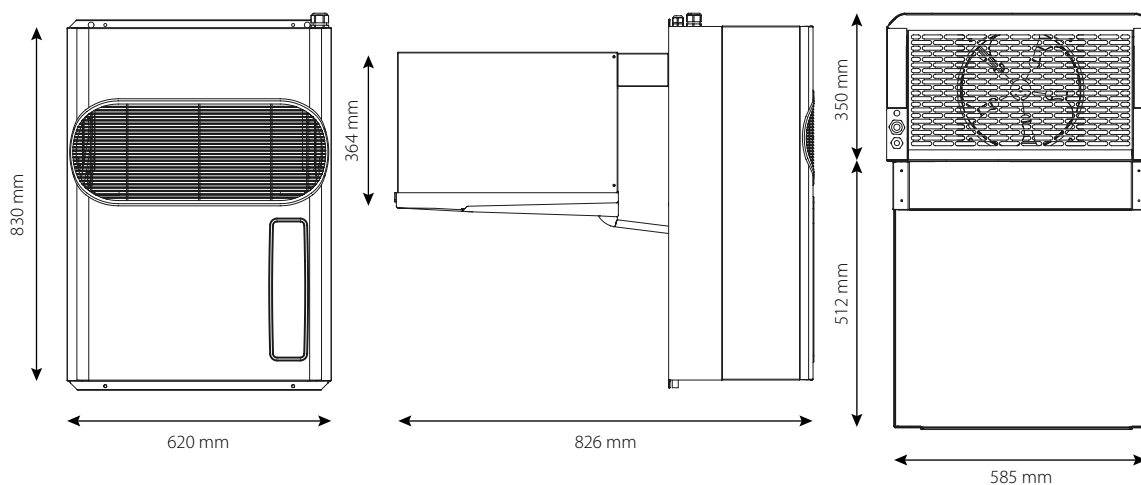
Constructive frame 1



Constructive frame 2



Constructive frame 3



By choosing the centrifugal fan option, the height of the unit varies: the frame 1 becomes 853 mm tall and the frame 2 and 3 become 1006 mm tall.

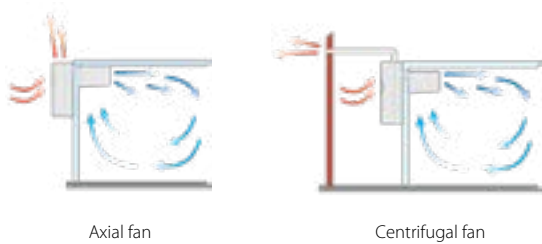
Air flow

The air flow of the GM units is composed by the flow of the condensing part and the one of the evaporating part.

In the condensing part, the air is sucked from the front grille through 1 or more condenser/axial fans (the quantity changes according to the constructive frame) and is then expelled from the upper part.

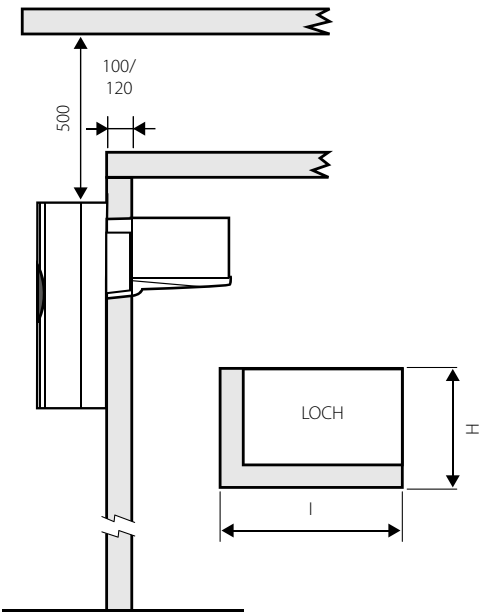
The condensing part equipped with centrifugal fan, thanks to the blades positioned differently compared to axial fan version, can direct the air flow by means of a duct towards a specific direction to avoid excessive heating of the surrounding environment.

Inside the refrigerated room, in the evaporating part, the air is sucked in from the lower part of the evaporator and then expelled from the front.

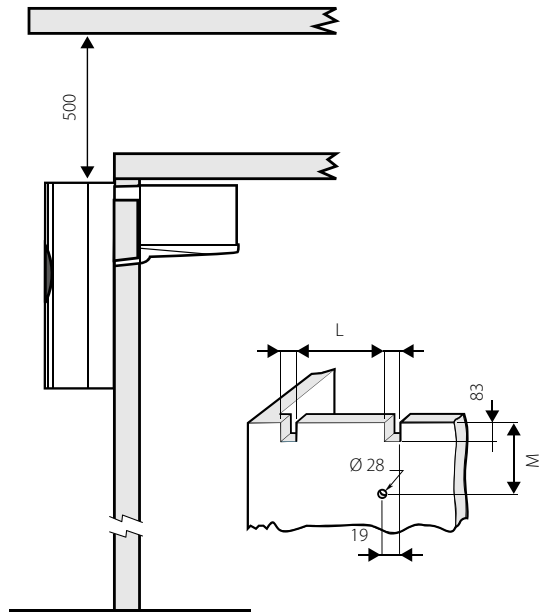


Installation method

THROUGH-THE-WALL



STRADDLE-TYPE



	FRAME 1	FRAME 2	FRAME 3
H	335 mm	335 mm	440 mm
I	375 mm	590 mm	590 mm
L	288 mm	503 mm	503 mm
M	316 mm	316 mm	425 mm

The body of the condensing part has been designed to reduce as much as possible the occupied space outside the cold room. The units are ideally designed for straddle wall installation, which is simple and minimally invasive.

The version for through wall installation is also available, in which a hole is executed through the cold room wall, recreating, thanks to an insulating panel installed on the machine, the thickness of the insulating panel that has been removed.

# Units details



# A wide range of applications

Cold storage



Food retail



Industry



Butchers



Fishery



Restaurants



# Technical data



GM

## Medium temperature units

Code	MGM103EA11XA	MGM105EA11XA	MGM106EA11XA	MGM107EA11XA	MGM110EA11XA	MGM211EA11XA	MGM212EB11XA	MGM315EB11XA	MGM320EB11XA
Refrigerant	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Power supply [V/Ph~/Hz]	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	380-400/3N~/50	380-400/3N~/50	380-400/3N~/50
HP compressor	1/2	5/8	3/4	1	1,2	1,2	2,3	3	3,5
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	0	0	0	0	0	0	0	0	0
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5
Cooling capacity [Watt] [TC=0°C   TA=30°C]	855	978	1.120	1.315	1.351	1.806	2.034	3.079	3.351

## Low temperature units

Code	BGM110DA11XA	BGM112DA11XA	BGM117DA11XA	BGM218DA11XA	BGM220DB11XA	BGM320DB11XA	BGM330DB11XA	BGM340DB11XA
Refrigerant	R452A	R452A	R452A	R452A	R452A	R452A	R452A	R452A
Power supply [V/Ph~/Hz]	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	380-400/3N~/50	380-400/3N~/50	380-400/3N~/50	380-400/3N~/50
HP compressor	1	1,2	1,7	1,7	2	2	3	4
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	0	0	0	0	0	0	0	2
Working temperature [°C]	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25
Cooling capacity [Watt] [TC=-20°C   TA=30°C]	679	889	1.155	1.429	1.688	2.491	2.701	3.160



# GM R290

Propane monoblock units  
with avantgarde management technology

- › Use of natural and efficient refrigerant R290 (GWP 3)
- › Low refrigerant charge <150g
- › Medium and low temperature range
- › Hermetic piston compressors
- › Hot gas defrost
- › Air or water condensation (for water: plate exchanger and water solenoid valve)
- › Expansion by capillary tube for air condensation and thermostatic valve for water condensation
- › Eliwell electronic controller
- › Serial output for connection to monitoring system
- › Different voltage available
- › The F-gas regulations do not apply to systems that contain only natural refrigerants such as propane (R-290)



## A versatile units' range with low running costs

The models of the GM R290 range are monoblock units characterized by compactness, suitable and accessible to anyone looking for a type of wall installation.

The refrigerant charge is low (<150g) and the refrigerant R290 has a low GWP index.

Suitable for small rooms, this range is composed by 2 lines: the MGM for medium temperatures (max 22m<sup>3</sup> at Tc= +0°C, Tamb= +30°C) and the BGM for low temperatures (max 5m<sup>3</sup> at Tc= -20°C, Tamb= +30°C).

It is possible to have the unit with air or water condensation (for water: plate heat exchanger and water solenoid valve).

This range of monoblocks, characterized by remarkable compactness, allows to optimize the useful space inside the cold room, guaranteeing excellent performance and reliability.

The robustness, simplicity of installation and extreme easiness of use represent the strong points of these units range, as well as guaranteeing high efficiency in heterogeneous working conditions.

The reciprocating hermetic compressor and the programmed automatic hot gas defrosting, with cycle frequency, make the GM R290 a stand-alone and reliable machine, without the need for recurring maintenance.

The condensation water elimination system is automatic and does not require external connections allowing a clean and autonomous operation thanks to the condensate water evaporation tray available in the standard configuration of the unit.

The electrical panel of the unit has an electronic control unit whose operating parameters are already programmed, it manages the GM R290 and allows the signalling of any anomalies.

## Standard configuration

- › Hermetic compressor
- › Power supply 220-230/1N~/50
- › Air condensation
- › 100mm legs
- › Hermetic compressor
- › Ceiling installation for covered areas - air cooled condenser (capillary tube) Tmin 20°C - Tmax 45°C
- › Ceiling installation for covered areas - water cooled condenser (thermal expansion valve) Tmin 10°C - Tmax 48°C
- › Electronic control panel
- › Expansion through capillary tube
- › Liquid line filter
- › Door micro switch cable
- › Cable for door switch heater on low temperature units
- › Condensate water evaporation drip tray
- › Drain heater BT
- › Straddle mounting or through wall configuration
- › High and low pressure switches
- › Cables length 5m
- › Electronic controller Eliwell IWP750 with sealed contacts of relays
- › Serial output RS485
- › Atex power relays for compressors
- › Fans with thermal protection
- › Max refrigerant charge 150g for circuit
- › Air or water condensation (plates condenser and water solenoid valve)
- › Hot gas defrost



## Personalization options and accessories

### Condensation options:

- › Water condensation

### Power supply:

- › 220-230/1N~/60

### Evaporator:

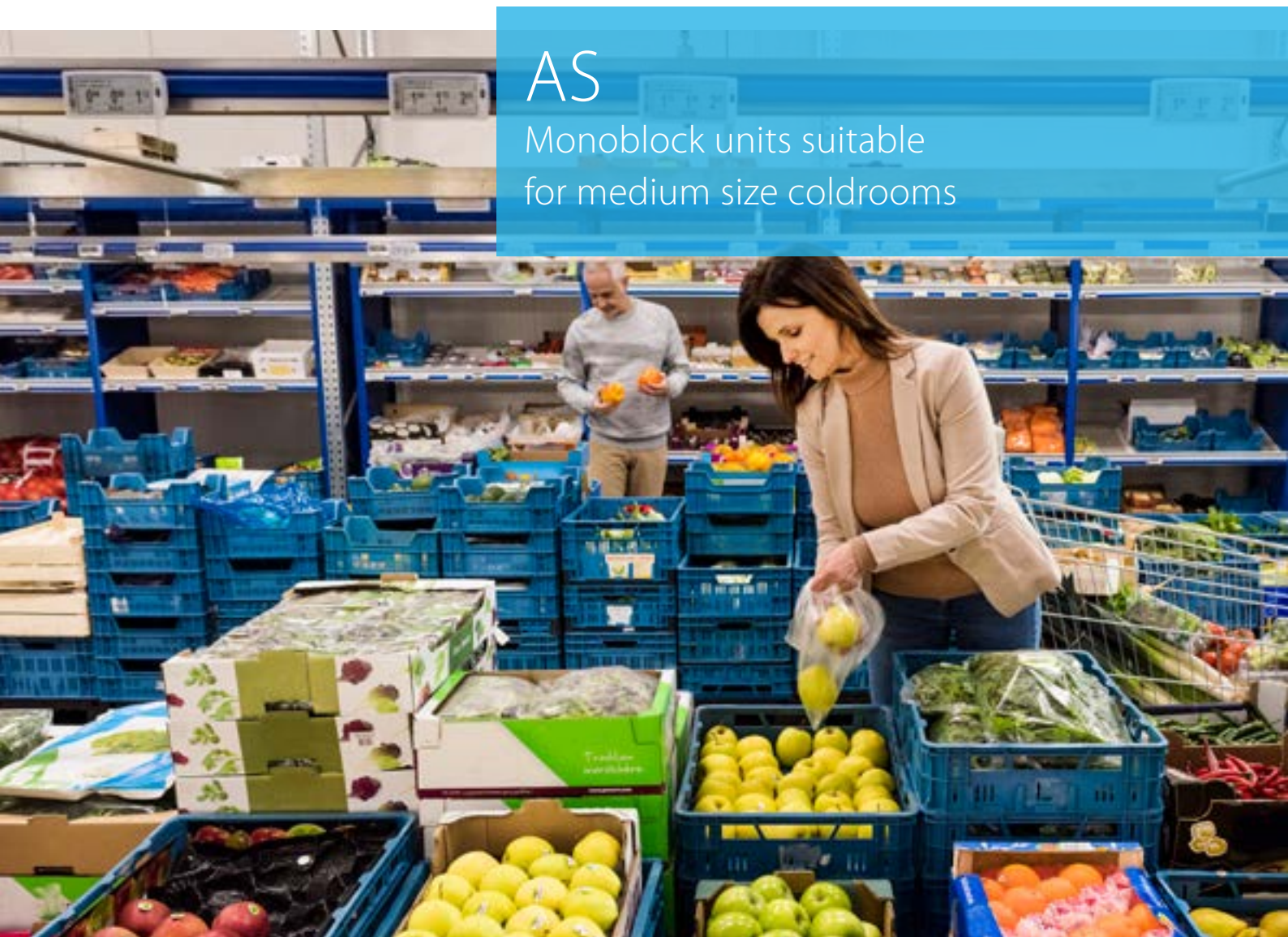
- › 100mm legs + Kit pan
- › Audible and visual alarm
- › Remote control panel for 2 units with alternating operation

# Technical data



GM R290

Code	MEDIUM TEMPERATURE UNITS				LOW TEMPERATURE UNITS	
	MGM1280Y1AAA	MGM2210Y1AAA	MGM1280Y1WAA	MGM2210Y1WAA	BGM0870Y1AAA	BGM0870Y1WAA
Condensation	Air	Air	Water	Water	Air	Water
Refrigerant	R290	R290	R290	R290	R290	R290
Power supply [V/Ph~/Hz]	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50	220-230/1N~/50
HP compressor	0,56	0,9	0,56	0,9	0,9	0,9
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	0	0	0	0	0	0
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	-15 ÷ -25	-15 ÷ -25
Cooling capacity [Watt] Air: [TC=0°C   TA=30°C] Water: [TC=0°C   TW=30°C]	1.281	2.206	1.373	2.329	-	-
Cooling capacity [Watt] Air: [TC=-20°C   TA=30°C] Water: [TC=-20°C   TW=30°C]	-	-	-	-	871	903



# AS

Monoblock units suitable  
for medium size coldrooms

- › Quick installation on the cold room wall
- › Extremely quick to install, reducing times and costs of installation
- › The white color of the evaporator blends discreetly with the walls of the cold room
- › Very compact and very efficient
- › Electronic control unit with easy-to-use user interface that can be programmed according to the different needs of the system



## Two ranges of units suitable for medium size coldrooms

The AS series models are monoblock units characterized by extreme versatility of use.

Suitable for medium rooms, the AS products are divided into two ranges: the MAS for medium temperatures (max 157 m<sup>3</sup> at Tc= +0°C, Tamb= +30°C) and the BAS for low temperatures (max 175 m<sup>3</sup> at Tc= -20°C, Tamb= +30°C).

The compressor supplied is reciprocating hermetic and is contained, together with the evaporating and condensing unit, in a single epoxy powder-coated steel body making the machine compact, sturdy and easy to handle.

The hot gas defrosting with double solenoid valve is automatically programmed with cycle frequency, making the AS a stand-alone and reliable machine, without the need for recurring maintenance.

The condensation water evacuation pipe must be installed and linked to the drain located in the lower part of the the condensing part.

Crankcase heater and the speed variator for the condenser fans are available as standard, making the unit suitable to operate at low ambient temperatures.

The AS unit is managed through a programmed electronic control unit positioned on the electrical panel with a user interface that allows to set the desired temperature and operating parameters.

The through wall installation is easy and fast given the compactness of the machine and consists of one hole on the room wall to install the machine.

The AS range represents a refrigerating machine that responds to the requirements of commercial and semi-industrial use.

## Standard configuration

- › Hermetic compressor
- › Power supply 380-400/3N~/50
- › Air condensation with axial fan
- › Condenser fan speed regulator with pressure control
- › Crankcase heater
- › Double defrost solenoid valve
- › 120mm panel
- › Filter on the liquid line
- › Four-pole condenser fan
- › Expansion through capillary tube
- › Separator/accumulator on suction line
- › Hot gas defrost
- › Refrigerant charge
- › Electronic control board
- › Switchboard with protection fuses
- › Adjustable Hp switch with automatic reset
- › Adjustable Lp switch with automatic reset
- › Condenser fan speed regulator with pressure control
- › Crankcase heater
- › Double defrost solenoid valve
- › 3m cable for power supply
- › 1m cold room light cable
- › 3m door micro switch cable



## Personalization options and accessories

### Power supply:

- › 220-230/1N~/50
- › 220-230/1N~/60
- › 220-230/3~/50
- › 220-230/3~/60
- › 440/3~/60
- › 380-400/3N~/60
- › 110-115/1N~/60
- › 460/3~/60

### Accessories kit:

- › Audible and visual alarm
- › Remote control panel
- › Remote control panel for 2-3-4 units
- › Prearrangement for supervision system
- › Remote control panel for 2 units with alternating operation

# Technical data



Code	MEDIUM TEMPERATURE UNITS				LOW TEMPERATURE UNITS		
	MAS430EB13XX	MAS535EB13XX	MAS545EB13XX	MAS660EB13XX	BAS450DB13XX	BAS560DB13XX	BAS680DB13XX
Refrigerant	R134a	R134a	R134a	R134a	R452A	R452A	R452A
Power supply [V/Ph~/Hz]	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
HP compressor	5	6,5	8,5	10	5	7,5	10
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	1	2	2	2	2	2	2
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25
Cooling capacity [Watt] [TC=0°C   TA=30°C]	4.981	6.988	8.290	10.424	-	-	-
Cooling capacity [Watt] [TC=-20°C   TA=30°C]	-	-	-	-	4.541	6.689	8.663



# RS

Monoblock units suitable for medium-large size cold rooms and freezing tunnels

- › Extreme versatility of use, low-medium temperatures, polyvalent temperatures and freezing tunnels
- › Suitable for different types of applications
- › Compact and highly resistant to any environmental condition
- › Solenoid valve and thermostatic valve for high efficiency
- › Control panel with electromechanical instrumentation for controlling all the functionalities of the machine



# Extreme versatility of use, suitable for freezing tunnels

The RS series models are monoblock units characterized by extreme versatility of use, ideal for medium-large rooms.

The series is composed by four ranges: MRS for positive temperature rooms (max 969 m<sup>3</sup> at Tc= +0°C, Tamb= +30°C), BRS for negative temperature rooms (max 1.229 m<sup>3</sup> at Tc= -20°C, Tamb= +30°C), PRS for polyvalent rooms utilized either in medium or in low temperature (max 700 m<sup>3</sup> at Tc= -20°C, Tamb= +30°C) and CRS for freezing tunnel.

It is a range that responds to different types of applications.

All models consist of two units connected together to form a single structure: a condensing unit with a steel body and an evaporating unit, equipped with aluminium sheets that make the product compact and highly resistant.

The solenoid and thermostatic valves for the expansion of the refrigerant are components supplied as standard that allow the optimization of the efficiency of the unit.

The fully automatic hot gas defrosting and the compressor crankcase heater guarantee optimized performance and safety.

A control panel with electromechanical instrumentation manages all the elements of the machine making it easy for the user to adjust all the parameters.

Maintenance is facilitated by the presence of front panels that can be opened for direct and safely access to the refrigeration system.

The installation is through wall type with cold room panel.

The condensing unit is suitable for outdoor installation.

A remote control panel allows the simultaneous management of one or more units installed inside the same room.

All these features make the RS unit a powerful, reliable and versatile machine mainly for industrial applications.

## Standard configuration

- › Bitzer semi-hermetic compressor
- › Power supply 380-400/3N~/50
- › Air + axial fan
- › Crankcase heater
- › Cooling
- › Remote control panel with serial output
- › Insulating panel 240mm
- › Pressure gauges LP/HP (630mm)
- › Fan cowl heaters on B - P - C temperature range (low temperature, dual-temperature, freezing)
- › Hot gas defrost
- › Cataphoresis to the condenser coil
- › Circuit breacher + Magnetothermic Switches
- › Voltage monitor
- › Cumulative alarm relay in the main switchboard => Signal to DI of XLH360 remote control panel
- › Packing in wooden box
- › Filter dryer
- › Four-pole condenser fan
- › Thermostatic valve expansion
- › Liquid receiver
- › Pressure controlled condenser fan speed regulator
- › Liquid separator / exchanger
- › Pump-down stop system
- › Refrigerant charge
- › Switchboard with automatic switches
- › Thermal overload protection for compressor
- › Adjustable calibration Hp switch with manual reset
- › Adjustable calibration LP switch
- › 3m cable for power supply



## Personalization options and accessories

### Power supply:

- › 220-230/3~/50
- › 220-230/3~/60
- › 440/3~/60
- › 380-400/3N~/60

### Control (temperature/humidity):

- › Cooling + heating
- › Cooling + Heating + Dehumidification with heat recovery system

### Evaporator characteristics:

- › Cataphoresis to the evaporator coil

### Accessories kit:

- › Audible and visual alarm
- › Remote control panel for 2-3-4 units
- › Evaporator air streamers

# A wide range of applications

Cold storage



Pharmaceutical



Industry



Meat processing



Fishery

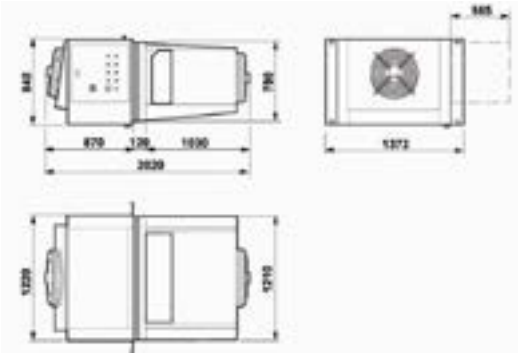


Food

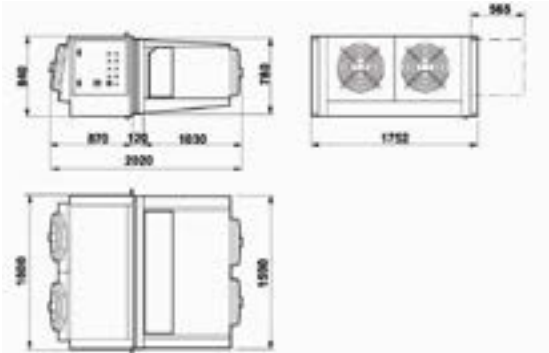


# Units dimensions

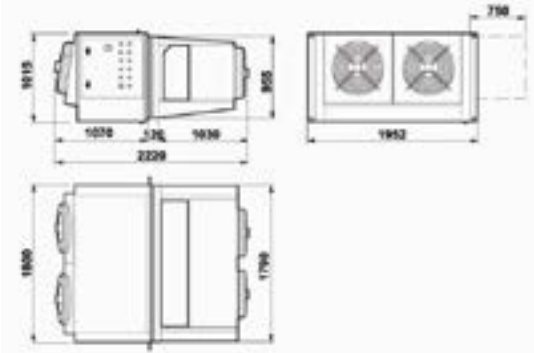
RS150



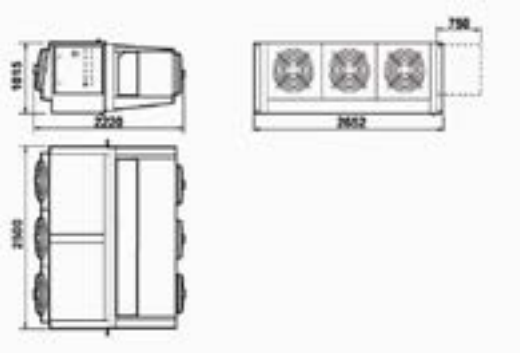
RS245



RS250  
RS251



RS351



# Technical data



## Medium temperature units

Code	MRS150TEB23GXX	MRS245NEB23GXX	MRS245TEB23GXX	MRS250NEB23GXX	MRS250TEB23GXX	MRS251TEB23GXX	MRS351NEB23GXX	MRS351TEB23GXX	MRS150TBB23GXX	MRS245NBB23GXX	MRS245TBB23GXX	MRS250NBB23GXX
Refrigerant	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R449A	R449A	R449A	R449A
Power supply [V/Ph~/Hz]	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
Compressor type	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic
HP compressor	5	5	12	12	15	25	25	30	4	5	7,5	10
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	2	2	2	2	2	2	2	2	2	2	2	2
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5
Cooling capacity [Watt] [TC=0°C   TA=30°C]	9.164	12.657	16.096	20.284	24.165	28.414	35.852	40.837	10.068	14.408	17.858	23.630

Code	MRS250TBB23GXX	MRS251TBB23GXX	MRS351NBB23GXX	MRS351TBB23GXX
Refrigerant	R449A	R449A	R449A	R449A
Power supply [V/Ph~/Hz]	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
Compressor type	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic
HP compressor	15	20	25	30
Defrost	Hot gas	Hot gas	Hot gas	Hot gas
PED category	2	2	2	2
Working temperature [°C]	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5	+10 ÷ -5
Cooling capacity [Watt] [TC=0°C   TA=30°C]	26.544	26.114	35.976	38.891

Low temperature units

Code	BRS150NBB23GXX	BRS150TBB23GXX	BRS245NBB23GXX	BRS245TBB23GXX	BRS250NBB23GXX	BRS250TBB23GXX	BRS251TBB23GXX	BRS351NBB23GXX	BRS351TBB23GXX
Refrigerant	R449A	R449A	R449A	R449A	R449A	R449A	R449A	R449A	R449A
Power supply [V/Ph~/Hz]	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
Compressor type	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic
HP compressor	7,5	10	12,5	15	20	25	30	40	50
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	2	2	2	2	2	2	2	2	2
Working temperature [°C]	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25	-15 ÷ -25
Cooling capacity [Watt] [TC=-20°C   TA=30°C]	8.191	8.670	11.102	14.423	18.531	21.344	23.648	31.599	35.030

Freezing and dual-temperature units

Code	FREEZING				DUAL-TEMPERATURE		
	CRS150NBB23GXX	CRS150TBB23GXX	CRS250NBB23GXX	CRS250TBB23GXX	PRS150TBB23GXX	PRS245TBB23GXX	PRS251TBB23GXX
Refrigerant	R449A	R449A	R449A	R449A	R449A	R449A	R449A
Power supply [V/Ph~/Hz]	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50	380- 400/3N~/50
Compressor type	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic	Semi-hermetic
HP compressor	7,5	10	15	25	10	15	30
Defrost	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas	Hot gas
PED category	2	2	2	2	2	2	2
Working temperature [°C]	-30 ÷ -50	-30 ÷ -50	-30 ÷ -50	-30 ÷ -50	+5 ÷ -5 -15 ÷ -25	+5 ÷ -5 -15 ÷ -25	+5 ÷ -5 -15 ÷ -25
Cooling capacity [Watt] Freezing [TC=30°C   TEV=-35°C] Dual-temperature [TC=-20°C   TA=30°C]	5.188	7.373	16.721	22.251	8.669	14.123	21.923



# A wide range of applications

Cold storage & industry



Food retail



Pharmaceutical



Meat processing



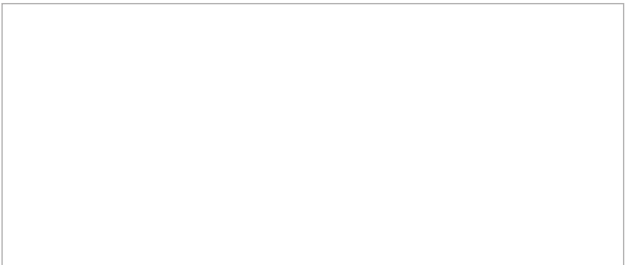
Fishery



Restaurant



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