

Low GWP monoblock units for cold rooms



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# Plug-in commercial refrigeration monoblock systems with low environmental impact

The natural refrigerant R290, thanks to its two main characteristics of having a GWP equal to 3 and an ODP equal to 0, allows us to lower both indirect and direct emissions while maintaining the focus on environmental sustainability.

This natural refrigerant also has multiple applications within the stationary commercial refrigeration and thanks to its thermodynamic characteristics such as a high refrigerating power, we decided to use it to develop a new version of our main plug-in commercial refrigeration monoblock systems: our SB units and GM units with low GWP.



# 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

- › 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
- › Hermetic piston compressor
- › Multicircuit for bigger sizes
- › Max refrigerant charge 150 g per circuit
- › Air condensation
- › Expansion by capillary tube for air condensation and thermostatic valve for water condensation
- › Electronic controller Dixell XM670K with sealed contacts of relays
- › Serial output
- › Electric fast connections by plug connectors
- › HP and LP pressure switches with sealed contacts
- › Atex power relays to drive the compressors
- › Fans with sealed thermocontact
- › Without evaporating water tray -> direct drain over the cold room
- › Hot gas defrost
- › No lamp
- › Available in master stand-alone version or slave
- › Separator panel between evaporator fans
- › Several electric supply available
- › Power supply 220-230/1N~/50 or 380-400/3N~/50



## 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
<b>Condensation</b>	Air	Air	Air	Air	Water	Water	Water	Water	Air	Air	Air	Water	Water	Water
<b>Refrigerant</b>	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290
<b>Power supply [V/Ph~/Hz]</b>	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
<b>HP compressor</b>	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
<b>Defrost</b>	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
<b>PED category</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Working temperature [°C]</b>	+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
<b>Cooling capacity [Watt] Air: [TC=0°C   TA=30°C] Water: [TC=0°C   TW=30°C]</b>	1.309	2.179	3.367	5.821	1.385	2.293	3.651	6.123	-	-	-	-	-	-
<b>Cooling capacity [Watt] Air: [TC=-20°C   TA=30°C] Water: [TC=-20°C   TW=30°C]</b>	-	-	-	-	-	-	-	-	873	1.713	2.653	901	1.791	2.925





# 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
- › 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
- › Air condensation
- › 100mm legs
- › Electronic control panel
- › Expansion through capillary tube for air condensation and thermostatic valve for water condensation
- › Filter on the liquid line
- › Cable for door micro switch
- › Cable for door switch heater on low temperature units
- › Condensate water evaporation tray
- › Drain heater LT
- › Straddle mounting
- › High and low pressure switches
- › Cables length 5m



## Personalization options and accessories

### Condensation options:

- › Water condensation

### Power supply:

- › 220-230/1N~/60

### Evaporator:

- › 100mm legs + Kit pan

# Technical data



GM R290

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

# Units details

SB R290



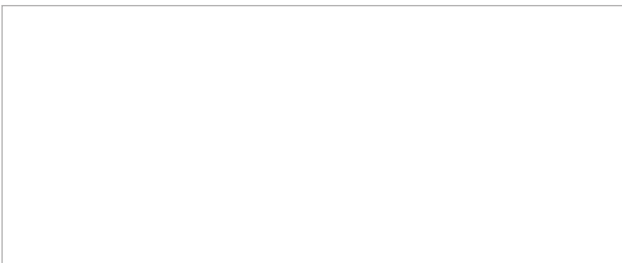
GM R290







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