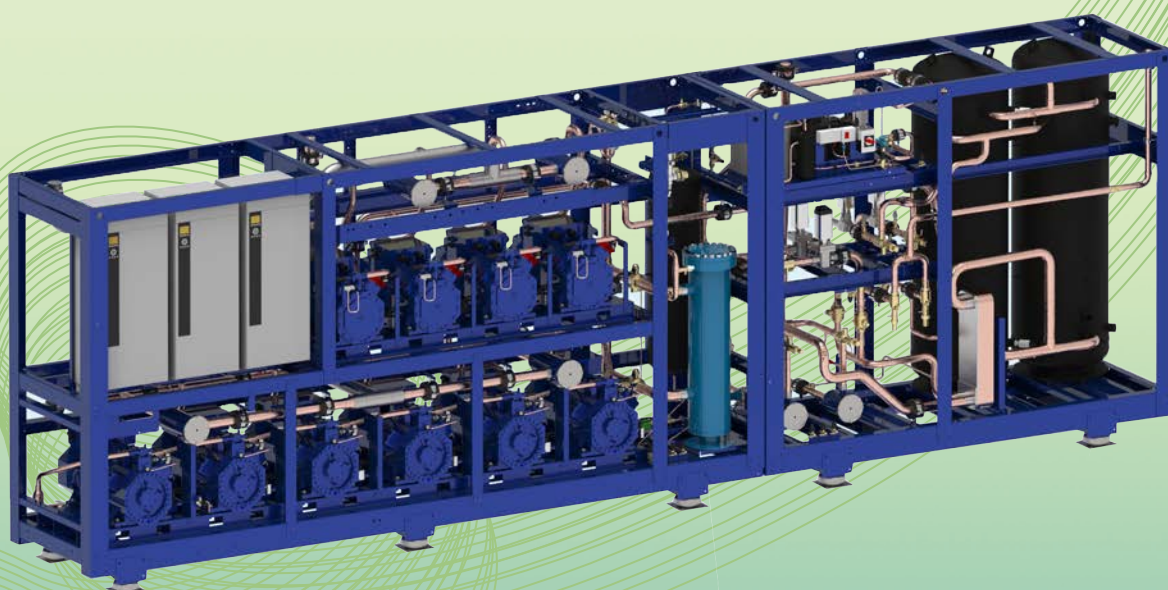


PROFROID

froztec

MaxiCOOL₂ compact

TRANSCRITICAL CO₂ BOOSTER RACK



www.profroid.com

Cooling capacity LT: from 0 to 360 kW
Cooling capacity MT: from 200 to 550 kW

MaxiCO₂OL compact Refrigeration Rack Transcritical CO₂ booster

A DESIGN BASED ON ENVIRONMENTAL EFFICIENCY:

The new range of MaxiCO₂OL[®] compact refrigeration racks uses repurposed carbon dioxide (CO₂) emitting no additional greenhouse gasses from refrigerant use, to provide a durable and energy efficient refrigeration solution. Specifically designed for supermarkets and warehouses, the MaxiCO₂OL compact system covers a wide range of cooling capacities. In mild climates, the MaxiCO₂OL compact demonstrates up to 10% energy savings compared with traditional HFC refrigeration systems, resulting in lower life cycle costs and a shorter return on investment. CO₂ is a neutral refrigerant with a Global Warming Potential (GWP) of one and zero Ozone Depletion Potential (ODP), and is not affected by the EU F-Gas Regulation.

TECHNICAL CONCEPT:

- Medium and low temperature racks stacked together on a single frame
- From 3 to 6 MT compressors : 200 to 550 kW
- From 0 to 4 LT compressors : 0 to 360 kW
- Pressure design: 30, 45, 45, 120 Bar (Optional 52, 60 or 80 Bar for the receiver pressure)
- Active oil separation system
- Multiple vertical high capacity liquid receivers
- Integrated electrical cabinet including the control and protection of the Gas cooler
- Dedicated controller, with open protocol
- Frequency inverter on MT & LT lead compressors
- Auxiliary condensing unit, factory mounted (option)
- Heat recovery module integrated (option)

PRODUCT BENEFITS:

Performance

- Large receiver
- Capacity range from 15% to 100%

Modularity

- 3 modules
- Easy access
- Easy maintenance

Security

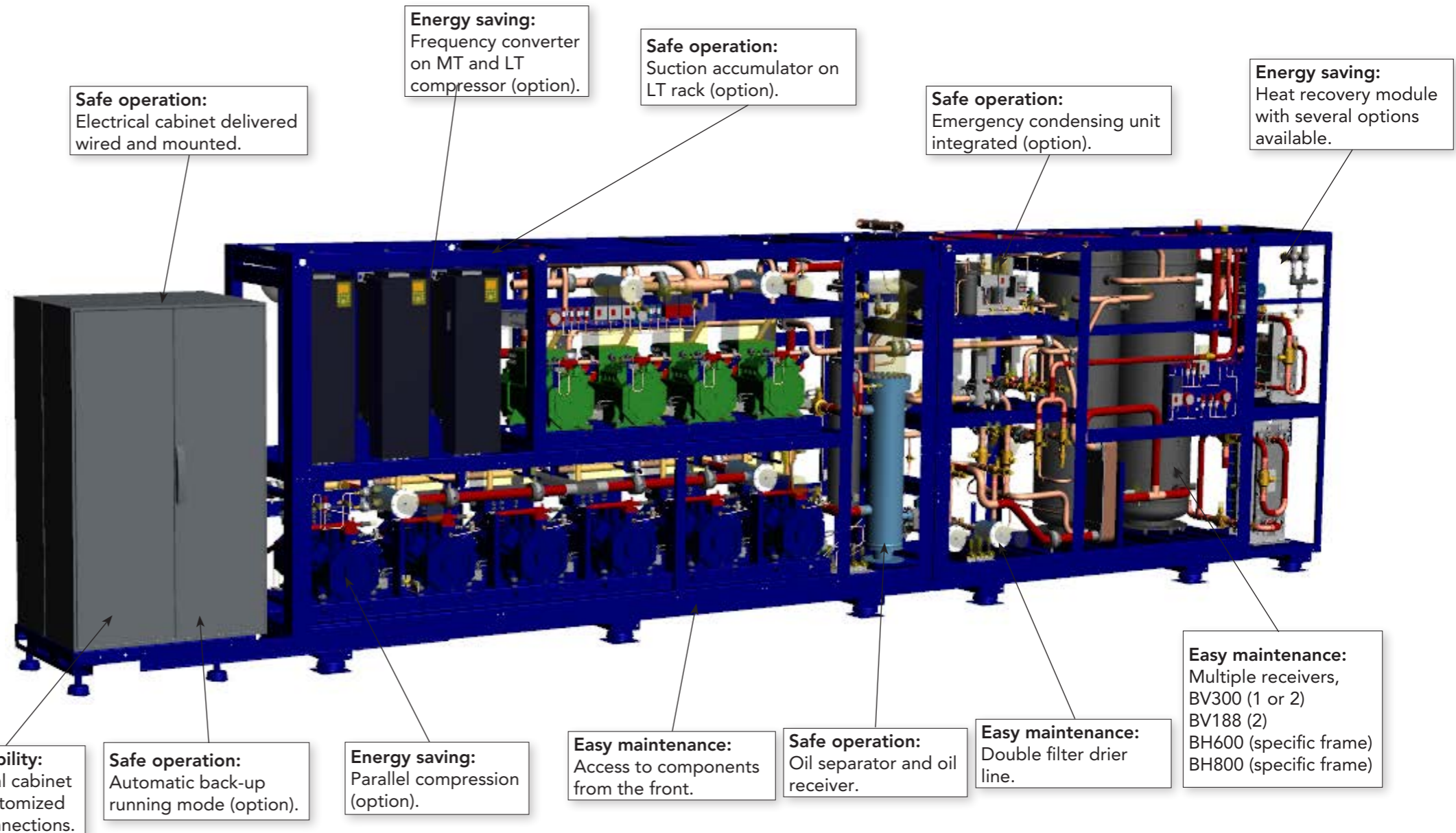
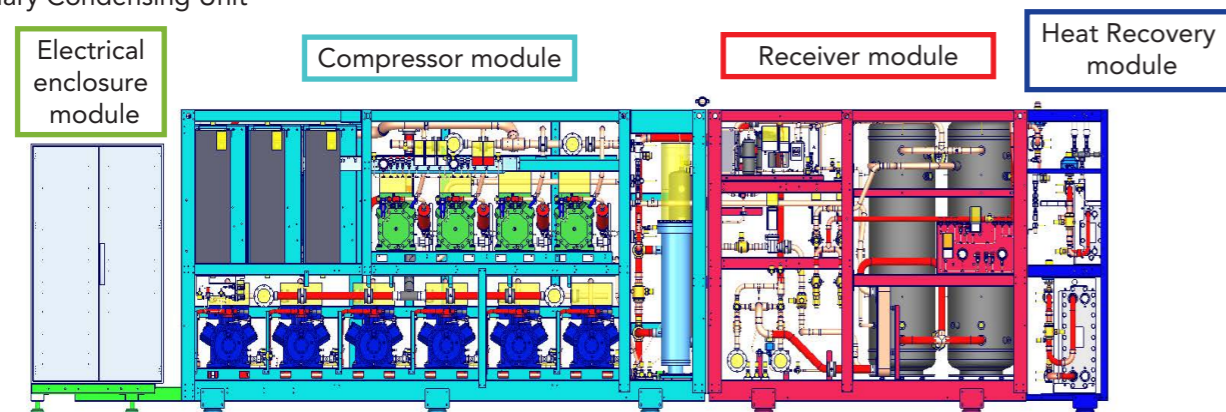
- Valve back-up supply
- 24V high capacity battery
- Active oil management
- Suction line accumulator
- Control redundancy
- Auxiliary Condensing Unit

Energy saving

- High efficiency controller
- Inverter on the main MT & LT compressors
- Heat recovery
- Parallel compression

INSTALLATION SOLUTIONS:

- 100% natural fluid CO₂, compatible F-GAS
- Adaptability / Customization
- Safe operation
- Energy saving
- Easy maintenance



Safe operation:
Electrical cabinet delivered wired and mounted.

Energy saving:
Frequency converter on MT and LT compressor (option).

Safe operation:
Suction accumulator on LT rack (option).

Safe operation:
Emergency condensing unit integrated (option).

Energy saving:
Heat recovery module with several options available.

Adaptability:
Electrical cabinet with customized user connections.

Safe operation:
Automatic back-up running mode (option).

Energy saving:
Parallel compression (option).

Easy maintenance:
Access to components from the front.

Safe operation:
Oil separator and oil receiver.

Easy maintenance:
Double filter drier line.

Easy maintenance:
Multiple receivers, BV300 (1 or 2) BV188 (2) BH600 (specific frame) BH800 (specific frame)

WHY CHOOSE MAXICO₂OL COMPACT SOLUTIONS?

MaxiCO₂OL compact is one of the most flexible racks of its generation. It can be delivered in 1, 2 or 3 modules making the installation easier. The compact dimensions will make this product the ideal system for retrofits, and will allow for a machinery room size reduction during new project design.

The active oil management together with the large liquid receiver make the MaxiCO₂OL compact a safer product adapted to every configuration of installation.

To increase safety, the MaxiCO₂OL compact system can be delivered with an auxiliary condensing unit together with valves and control redundancy. A 24V high capacity battery is continuously ensuring the safety of the system by closing the HP & MP valve in case of a power failure.

The controller integrates the most efficient functionalities to increase energy savings, safety and performance. Inverters on the MT & LT main compressors significantly lightens the workload of the compressors, which results in reduced electrical consumption and increased energy savings.

MaxiCO₂OL compact

Options for better environmental efficiency.

THE ECO COMPRESSOR.

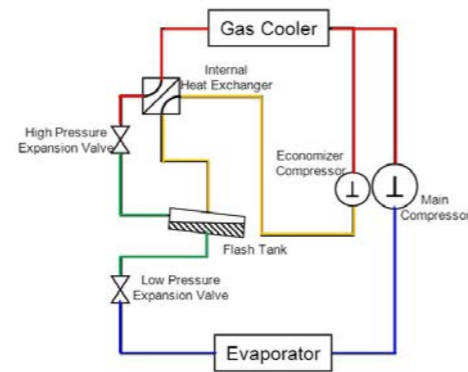
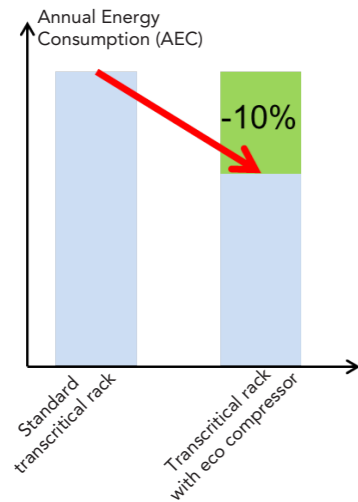
Economizer cycle:

Addition of a complementary compressor operating as an economizer

Reduction of the compressor size

Better efficiency of the gas compression in medium pressure: ~30%

AEC improvement : ~10% at the rack level and up to 7% on a complete system



HEAT RECOVERY MOUNTED AT THE RACK DISCHARGE:

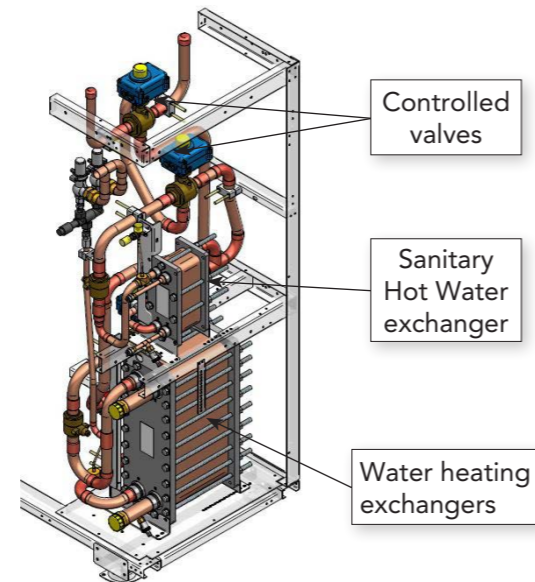
CO₂ has excellent properties, particularly with a high temperature of discharged gas, allowing for more energy recovery at higher temperatures on a regular basis.

The rack architecture designed with several heat exchangers allows for simultaneous production of hot water to be used for heating and sanitary use.

Various configurations are possible with gas cooler bypass and the systems are equipped with a set of anti-boiling bypass valves.

Directly mounted on the rack, the heat recovery module is connected to the refrigerant circuit, and electrically wired.

Possibility to add pumps and an energy meter (options).



FREQUENCY INVERTER:

The frequency inverter is wired on the MT and on the LT main compressors to allow energy optimization through precise adjustment of the refrigeration capacity based on the needs of the display cabinets and other cooling devices in the store.

The inverter guarantees flexible operation of the rack during partial load condition (winter), reducing compressor short cycles. It helps to bear the peaks demand (summer) while using a compressor of smaller size (operating in over-frequency).



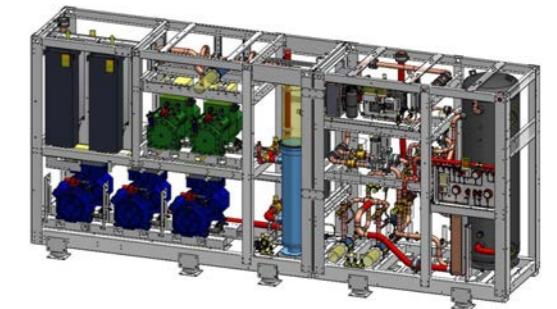
Frequency inverter
MT & LT rack

MaxiCO₂OL compact

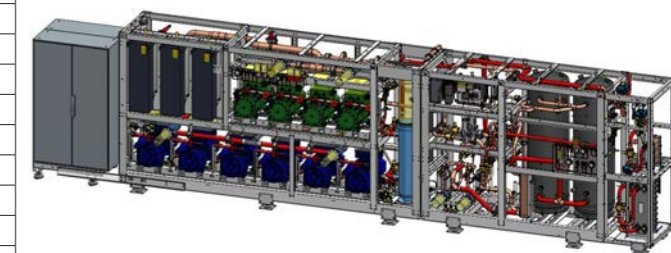
Range of Booster racks with modular design able to accommodate, on a single frame, a combination of MT racks with 3 to 6 compressors, and LT racks with 2 to 4 compressors, in predefined type formats: 3+2, 4+3, 5+3/4 and 6+3/4.

Below are combination examples with minimum and maximum capacities:

		3 + 2	
		Mini combination	Maxi combination
Number of negative compressors		2	2
Type of negative compressors	BITZER	2KSL1KB	4PSL25K
Capacity of negative compressors ⁽¹⁾	kW	12	198
Number of positive compressors		3	3
Type of positive compressors	BITZER	4C + 2 x 6F	6D + 2 x 6C
Total capacity of positive compressors ⁽²⁾	kW	202	274
Gas cooler heat rejection capacity	kW	312	420
Suction diameter negative rack	inch	"7/8	2"1/8
Suction diameter positive rack	inch	1"5/8	2"1/8
Gas cooler outlet diameter	inch	1"1/8	1"3/8
Liquid line outlet diameter	inch	1"5/8	1"5/8
Receiver volume	dm3	300	300
Sound level	dB(A)	61	62
LT compressor intensity	lmax	9,6	132
MT compressor intensity	lmax	192	273
Pressure		30/45/45/120	
Length	(mm)	4490	
Length (with option heat recovery)	(mm)	+ 300	+ 600
Width	(mm)	850	
Height	(mm)	2050 (1950 without feet)	



		6+3/4	
		Mini combination	Maxi combination
Number of negative compressors		3	4
Type of negative compressors	BITZER	2JSL2KB	4NSL30K
Capacity of negative compressors ⁽¹⁾	kW	22	416
Number of positive compressors		6	6
Type of positive compressors	BITZER	4C + 5 x 6F	6D + 5 x 6C
Total capacity of positive compressors ⁽²⁾	kW	377	545
Gas cooler heat rejection capacity	kW	586	840
Suction diameter negative rack	inch/mm	"7/8	76,1 mm (DN65)
Suction diameter positive rack	inch	2"1/8	2"1/8
Gas cooler outlet diameter	inch	1"3/8	1"3/8
Liquid line outlet diameter	inch	1"5/8	2"1/8
Receiver volume	dm3	2x300	2x300
Sound level	dB(A)	64	65
LT compressor intensity	lmax	17,3	263
MT compressor intensity	lmax	387	570
Pressure		25 (30 PFI)/45/45/120	
Length	(mm)	6410	
Length (with option heat recovery)	(mm)	+ 600	+ 900
Width	(mm)	850	
Height	(mm)	2050 (1950 without feet)	



⁽¹⁾ -32°C / -10°C.

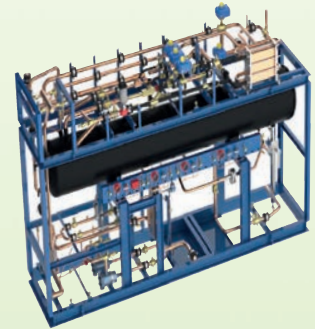
⁽²⁾ -10°C / +36°C outside (negative heat rejection not deducted)

Useful Innovation

A CO₂ range serving you safely

CO₂OLtec® EVO

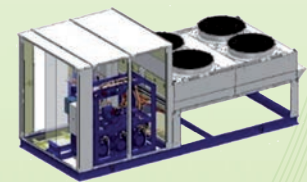
- High-efficiency CO₂ solution for all climates
- Includes advanced modulating vapor ejector technology
- Designed for small to large store formats, for indoor installation
- Single or dual temperature range
- Integrated electrical control panel incorporating controls for rack, high-efficiency module and gas cooler



MaxiCO₂OL outdoor with casing

CO₂ transcritical housed condensing unit

- Monobloc unit
- No high pressure connection (120 Bar) to be made on site
- Full test of the machine completed at the factory
- Machine delivered with electrical cabinet, controls, sensors and probes mounted, all the electrical connections are factory tested



QuietCO₂OL

CO₂ transcritical outdoor condensing unit

- Cooling capacity from 0 to 9 kW (MT), and from 0 to 6 kW (LT)
- Application for small and medium size cold rooms



GasCO₂OL

A range of CO₂ gas coolers from 10 to 1000 kW, with the GasCO₂OL Soprano, Alto, and Tenor

- Environmental efficiency: EC fans as standard
- Safety: unit factory tested at 130 bar
- Robustness: K65 headers and pipes



Profroid CO₂ range of evaporators

Industrial and commercial

- Cooling capacity from 0 to 110 kW (LT), and from 0 to 16 kW (MT)
- PS 80 Bar (MT and LT commercial)
- PS 30 Bar (LT industrial)
- Application for cold rooms and preparation rooms



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