

**FRIGA-BOHN**

# eCO<sub>2</sub>Boost L

Transcritical CO<sub>2</sub> booster rack



CO<sub>2</sub>



|||| MT 50 - 460 kW  
|||| LT 15 - 230 kW



- # **Modular:** A truly customizable product that will perfectly meet your needs.
- # **Easy installation & maintenance:** A compact and ready-to-use design, created to make your work easier.
- # **Energy efficiency:** The use of CO<sub>2</sub>, a highly efficient refrigerant, and the integration of advanced technologies offer real energy savings.

## OIL RETURN SYSTEM

- # Removable coalescing oil separator with oil level controller and oil return solenoid valve.
- # Oil receiver with high and low indicator and shut-off valves.
- # Return with filter and oil indicator
- # Electronic oil level controller per compressor.
- # Copper oil collector with flexible connection for each compressor.

### OPTION

Oil separator bypass.

## LIQUID STATION

- # Vertical liquid receiver with shut-off valves. **CUSTOMIZABLE**
- # Double safety shut-off valve with inverter switch.
- # Removable cartridge dryer with bypass valves.
- # Gas cooler pressure control valve connected upstream of the liquid receiver.
- # Liquid receiver pressure controlled by means of a flash-gas valve connected between liquid receiver and the high temperature rack suction.
- # Liquid subcooler with plate heat exchanger, equipped with an electronic expansion valve.

### OPTIONS

Gas cooler pressure valve doubling.  
Liquid receiver pressure control doubling.

## FRAME

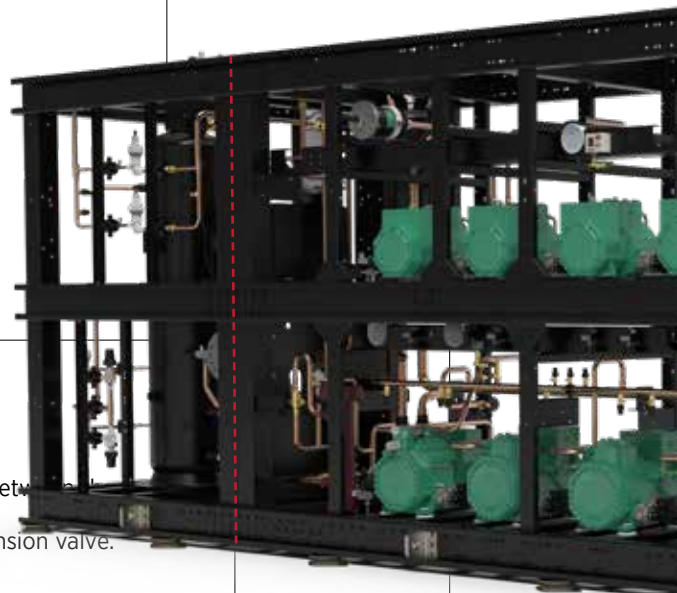
- # Thick folded sheet steel monoblock.
- # Painted frame.
- # Designed for easy handling by forklift or crane (lifting rings as standard).
- # Frame divisible in 2 parts (- - -) to meet dimensional or access constraints.

## MANIFOLD | PIPING

- # Thermal insulation of the entire refrigeration circuit with the exception of delivery and oil lines.
- # A general filter unit on low temperature and high temperature rack suction.
- # Copper or stainless steel manifold and piping depending on the diameters.
- # Safety valve on:
  - low temperature rack suction manifold.
  - high temperature rack suction manifold.
  - high temperature rack delivery manifold.

### OPTION

Double safety valve.



Do you have a specific request?

Contact us to design the unit  
that meets your needs.



## CONTROL AND SAFETY DEVICES

- # Per compressor:
  - 1 HP pressure switch connected to the cylinder head with automatic reset.
  - INT safety thermistor box.
- # For a low temperature rack:
  - LP general safety pressure switch.
  - LP ratiometric pressure sensor (-1/34 B) for normal operation.
  - LP pressure gage diameter 100 mm class 1.
  - Variable frequency drive for the 1<sup>st</sup> compressor of the low temperature rack.
- # For a high temperature rack:
  - LP general safety pressure switch.
  - HP ratiometric pressure sensor (-1/159 B) for normal operation.
  - LP ratiometric pressure sensor (-1/59 B) for normal operation.
  - LP and HP pressure gages diameter 100 mm class 1.
  - Variable frequency drive for the 1<sup>st</sup> compressor of the high temperature rack.



## OPERATING PRESSURE

Option	45	60	90
HP circuit	<b>120 bar</b>	120 bar	120 bar
Liquid receiver	<b>45 bar</b>	60 bar	90 bar
Liquid line	<b>45 bar</b>	60 bar	60 bar
High temperature rack suction	<b>45 bar</b>	52 bar	52 bar
Low temperature rack suction	<b>30 bar</b>	30 bar	30 bar

## ELECTRICAL CABINET

- # Electrical cabinet mounted and electrically connected to the rack frame.
- # It houses rack power and control (outputs for cooling stations not included)
- # Control can be achieved via Carel or Danfoss PLCs.

### OPTIONS

- Automatic back-up mode.
- Remote and central pre-wired electrical cabinet.

## SAFETY UNIT

- # 1 kW refrigeration unit directly triggered by CO2 pressure via an auto-reset pressure switch and must be connected to the store's back-up power supply.
- # This unit runs on R134a and is delivered charged and ready to use.

## COMPRESSORS

- # Bitzer or Dorin compressors, with semi-hermetic reciprocating technology equipped with :
  - Crankcase heater.
  - Suction and delivery shut-off valves.
  - HP and LP pressure port with Schrader connector.
- # Multiple configurations available (from 3 to 6 in MT, from 2 to 4 in LT).

### OPTION

- Permanent magnet compressor.

## CONNECTION PACK

- # Connecting valve on the suction of each rack and the general liquid outlet.

CUSTOMIZABLE

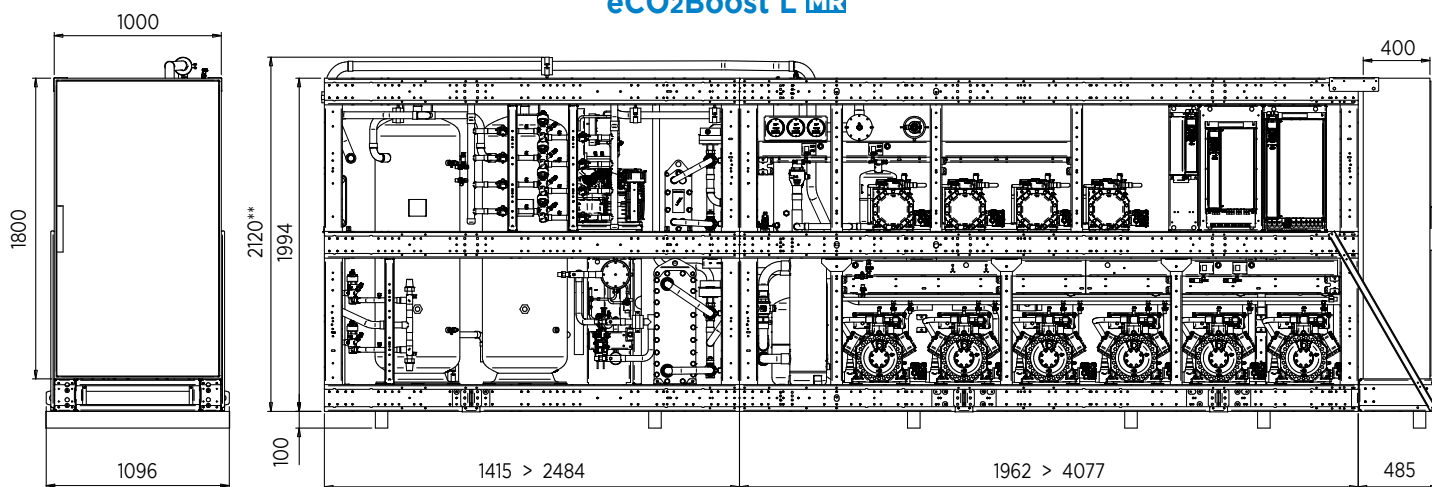
# eCO<sub>2</sub>Boost L | Technical data

	Combinations	Power ratings
<b>MT Compressors*</b>	3 > 6	50 > 350 kW
<b>LT Compressors*</b>	2 > 4	15 > 100 kW
<b>Liquid reservoir volume</b>	80 > 400 l.	

\* Available brands: Bitzer or Dorin.

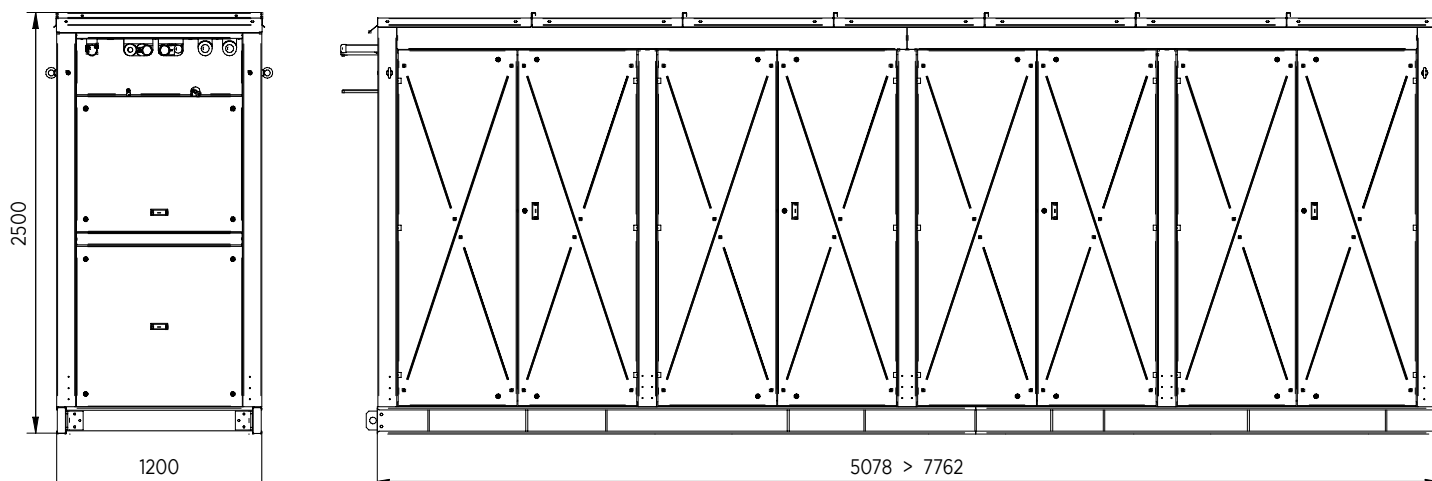


machine room version  
**eCO<sub>2</sub>Boost L MR**



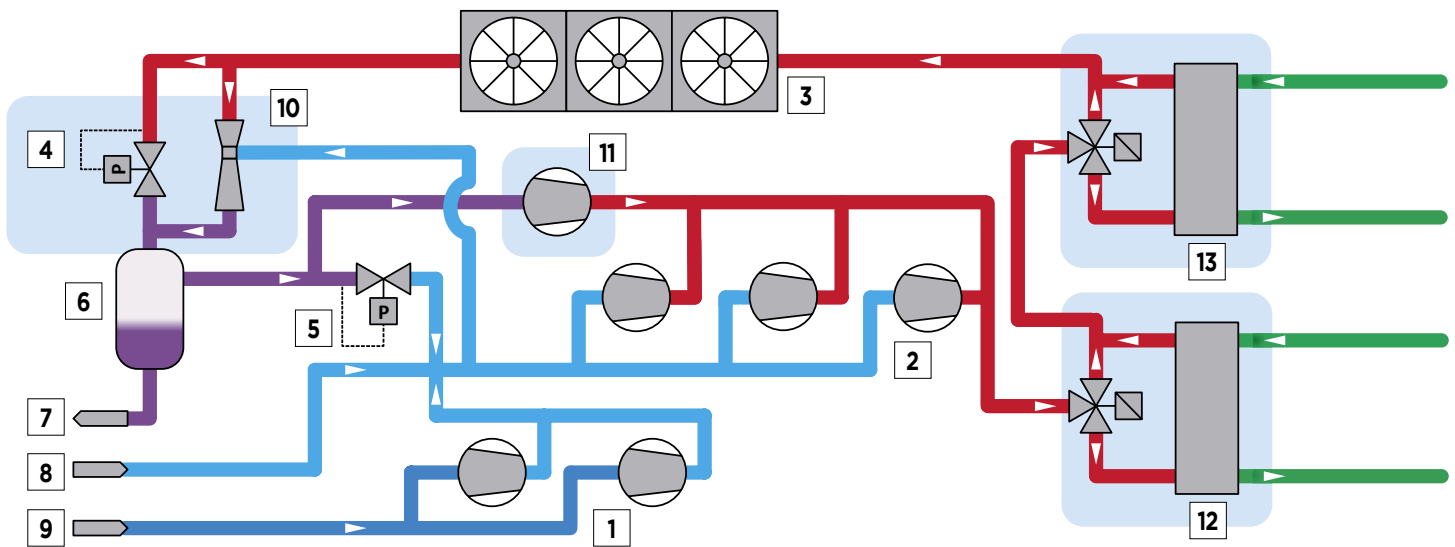
\*\* models with parallel compression

encased version  
**eCO<sub>2</sub>Boost L CO**



Choose heat recovery: the heat produced, instead of being evacuated by the gas cooler, can be used to heat the store or provide hot water.

Optimize your energy consumption during the hottest times of the year by choosing parallel compression.



- 1. Low temperature rack (LT)
- 2. Medium temperature rack (MT)
- 3. Gas cooler
- 4. High pressure control valve
- 5. Flash gas valve
- 6. Liquid receiver
- 7. Liquid line to supply display cases and units coolers
- 8. Return from MT unit coolers and display cases
- 9. Return from LT unit coolers and display cases

No.	OPTIONS	ADVANTAGES	COP
10.	<b>Ejectors</b>	To optimize system performance during the hottest times of the year, the rack can optionally be equipped with ejectors. The high pressure control valve (4) is retained and can be used as an ejector bypass to ensure operation of the rack in the event of malfunction.	<b>The COP achieved is 15% to 20% greater than the COP of a standard installation.</b>
11.	<b>Parallel compression</b>	For hotter average external temperatures, the parallel compression option is offered, which increases system performance.	<b>The COP achieved is 10% to 15% greater than the COP of a standard installation.</b>
12.	<b>Domestic hot water (DHW) heat recovery</b>	Produces the domestic hot water you need at low cost.	<b>The COP remains the same as a standard installation but savings are made on your store's DHW production.</b>
13.	<b>Heat recovery</b>	Heats the whole store economically.	<b>The COP remains the same as a standard installation but savings are made on your store's heating.</b>

