



# CRIO.V

NEW UNIT RANGE of PROPANE Medium Temperature CHILLERS





# Agenda

①

EXISTING UNIT RANGE for  
Medium Temperature

②

MAIN ASPECTS of NEW  
CRIO.V

③

TECHNICAL DETAILS

④

CATALOGUE'S  
INFORMATION

# Existing unit range for MT applications

Air-Cooled Liquid Chillers for Medium Temperature applications

# CRIO



Refrigerant  
R290 | GWP=3



SEPR



Semi-hermetic  
piston compressor



Axial EC fans



Brazen plate  
heat exchanger

Nominal Cooling Capacity: 7 – 185 kW (50Hz)

# Existing unit range for MT applications

NEW Extension for Air-Cooled Liquid Chillers for Medium Temperature applications

# CRIO.V



Refrigerant  
R290 | GWP=3



Eco Design Ready



SEPR

Nominal Cooling Capacity: 218 – 860 kW (60Hz)

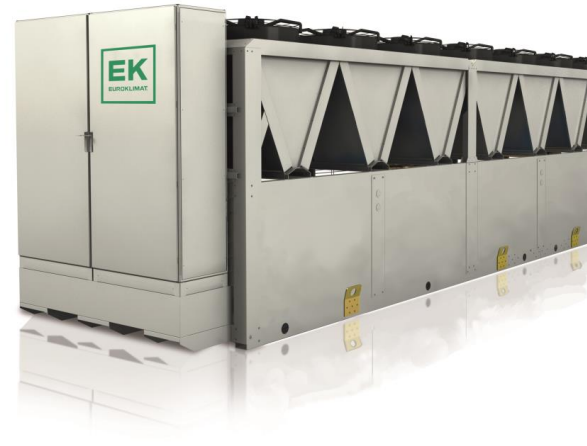
# Existing unit range for MT applications

NEW Extension for Air-Cooled Liquid Chillers for Medium Temperature applications



CRIO

(50Hz) 7 kW



CRIO.V

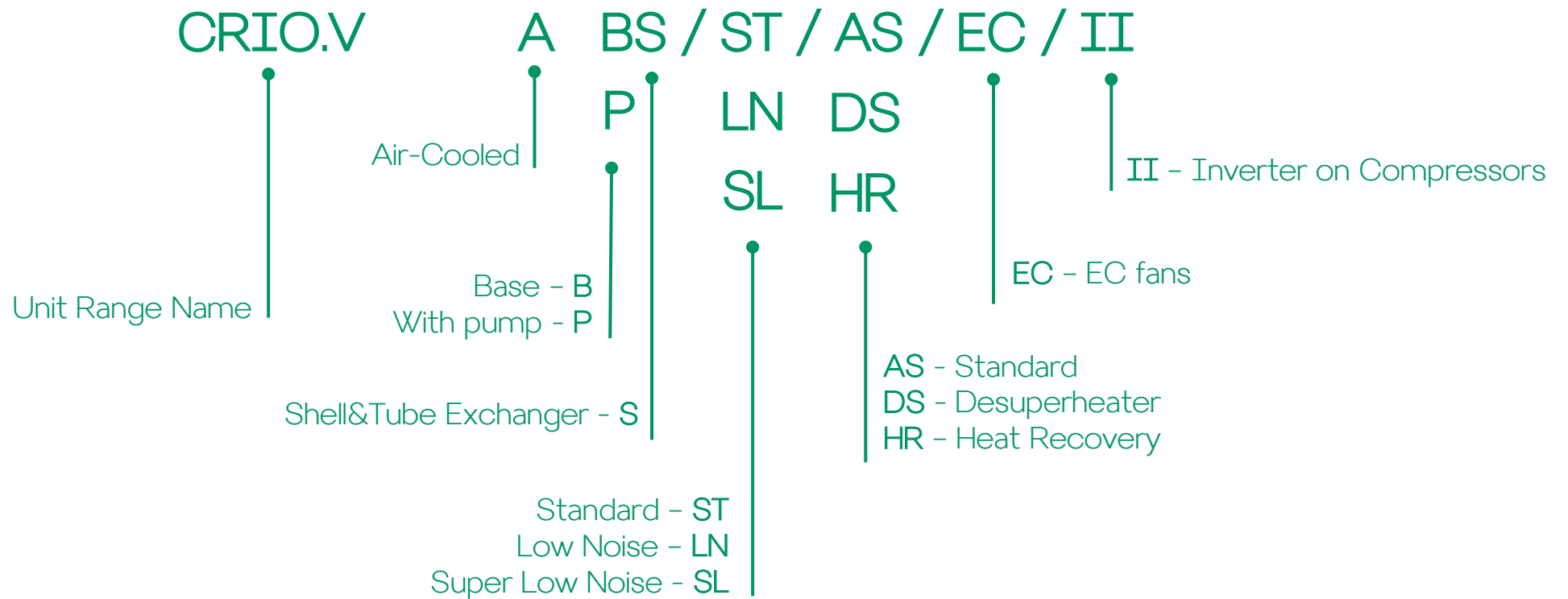
860 kW (60Hz)

2

MAIN ASPECTS of NEW CRIO.V

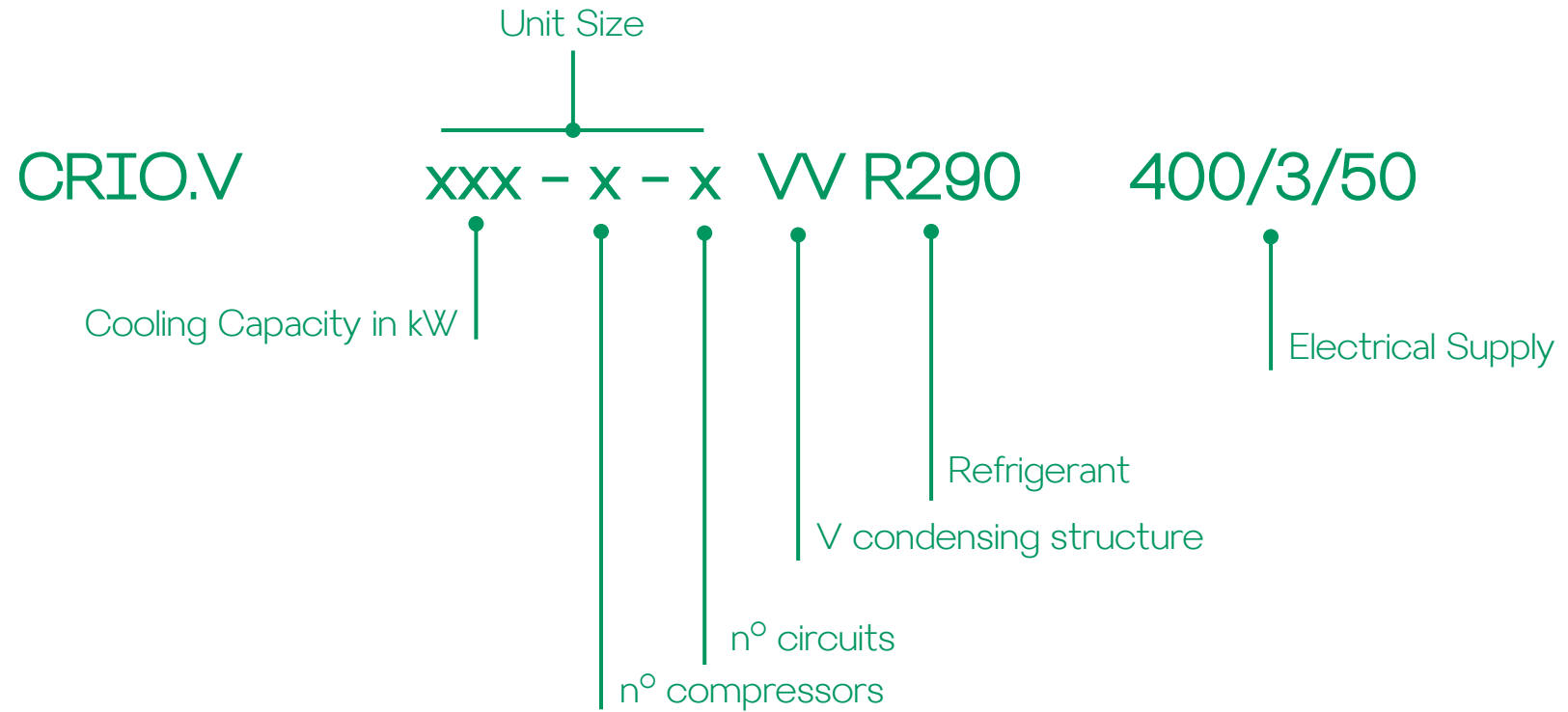


# Main combination of the CRIO.V



The above legend allows you to easily select the proper configuration of CRIO.V units

# Main combination of the CRIO.V



The above legend allows you to easily select the proper configuration of CRIO.V units



# Main combination of the CRIO.V

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CRIO.V A BS / ST / AS / EC / II    xxx - x - x VV    R290    400/3/50

↑  
Complete Unit Codification

The above legend allows you to easily select the proper configuration of CRIO.V units

# Main combination of the CRIO.V

## CRIO.V

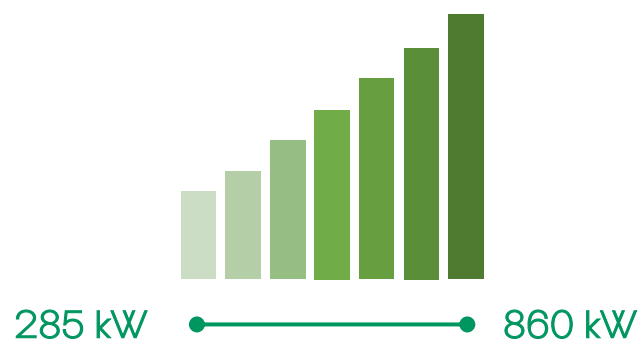
CRIO.V / BS

CRIO.V / HE

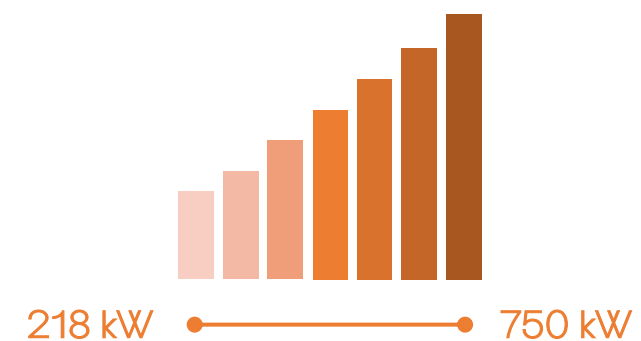
BUSINESS Configuration  
DT°\_cond of 13K

HIGH EFFICIENCY Configuration  
DT°\_cond of 11K

13 Sizes



15 Sizes



3

TECHNICAL DETAILS of NEW CRIO.V



# Technical details of the CRIO.V

## CRIO.V



Refrigerant  
R290 | GWP=3



Eco Design Ready



Shell & Tube  
exchanger



Inverter controlled



Screw  
Compressors



Single Circuit



Microchannel  
condensing coils



Axial EC fans



Double circuit

# Technical details of the CRIO.V



High efficiency EC fans, electronically commutated, useful to reduce energy power consumption

Axial EC fans



Inverter controlled

Improved system quality by maintaining a constant leaving water temperature  
 Increased power by increasing the speed of the variable speed compressor  
 Energy saving  
 Longer compressor lifetime  
 Better possibilities of providing monitoring, remote setting and diagnostics

All extremely efficient with low refrigerant charge and very stable operating performance due to excellent refrigerant distribution, thermally insulated by vapour-proof closed cell.



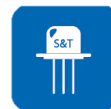
Microchannel condensing coils

Microchannel technology increases the primary to secondary surface area ratio and reduces the tube's air shadow to provide maximum heat exchange through our condensers.



Screw Compressors

Compressors configured for maximum efficiency with a high compression ratio and sophisticated three-stage oil separation system minimises oil dragging towards the system.



Shell & Tube exchanger

# Technical details of the CRIO.V



Eco Design Ready

SEPR (seasonal energy performance ratio) for chillers in industrial process applications.



SEPR

European Directive 2009/125/EU - Ecodesign Regulations for energy-related products



Extractor Fan

ATEX certified gas detector installed inside the compressor's box, ensures the activation of the adequate safety measures in case of R290 leakage.



Gas Detector

Thanks to the emergency fan, in case of leakages air is pushed into the compressor box, allowing the dilution of propane.



R290

# Technical details of the CRIO.V

CRIO.V A BS / ST / **DS** / EC / II

## DESUPERHEATER

Captures heat from superheated refrigerant, exploiting the hot discharge gas.

Only small quantity of heat is available since only superheat is removed from the refrigerant (depending on the temperature requirement for hot water is possible to recover up to 20% of the total condensing heat).

Hot water temperatures up to 55°C can be achieved



## TOTAL MODULATING HEAT RECOVERY

Captures heat from refrigerant condensing process.

A larger quantity of heat is available compared to desuperheater: if necessary, the full condensing process may be used to produce hot water.

CRIO.V A BS / ST / **HR** / EC / II

# Technical details of the CRIO.V

## BASIC CONFIGURATION WITHOUT PUMP

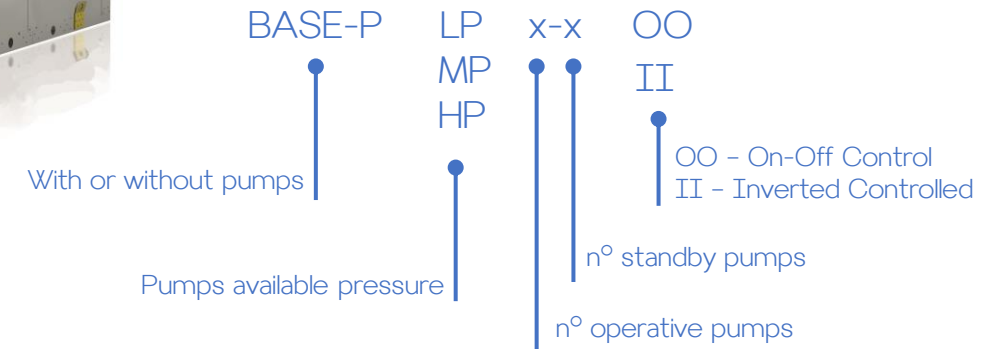
As interface to the plant, includes the water fittings of the evaporator only.



## CONFIGURATION WITH PUMPS (OPTIONAL)

- LP – 1,5 bar available pressure
- MP – 3,0 bar available pressure
- HP – 5,0 bar available pressure

The pump control equipment is fitted inside the electrical board of the unit and the microprocessor control manages the pump starting, timing and all the safety devices of the whole system.



For the complete list of accessories please refer to the catalogue or your reference commercial



# Technical details of the CRIO.V



PUMPS



SCREW COMPRESSORS



SHELL & TUBE EXCHANGER



EC AXIAL FANS



ELECTRONIC EXPANSION VALVE



PLATE-TYPE EXCHANGERS (DS & HR)

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CATALOGUE'S INFORMATION of NEW CRIO.V

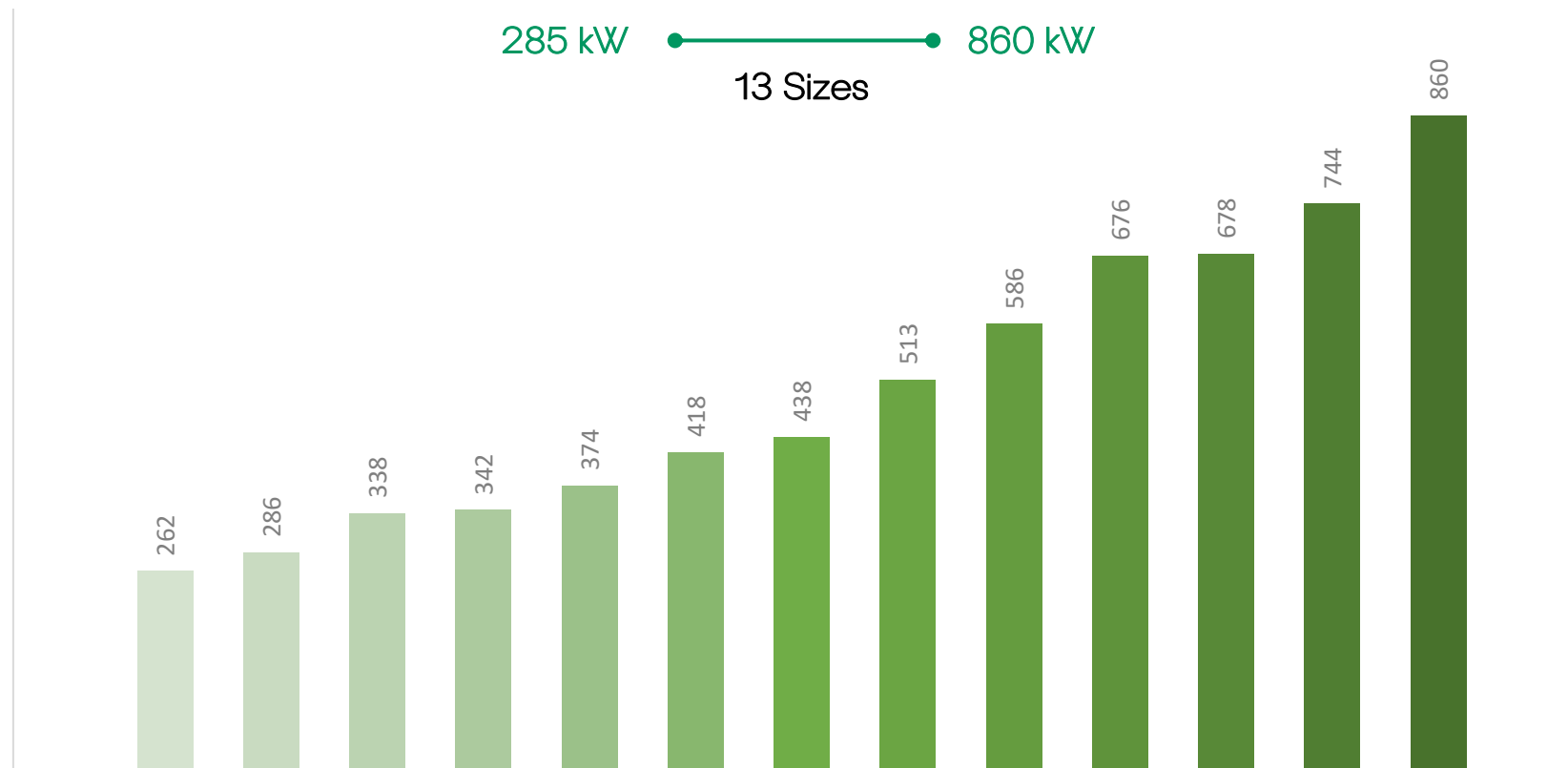


# Catalogue's information of the CRIO.V

## CRIO.V / BS

BUSINESS Configuration

DT°\_cond of 13K

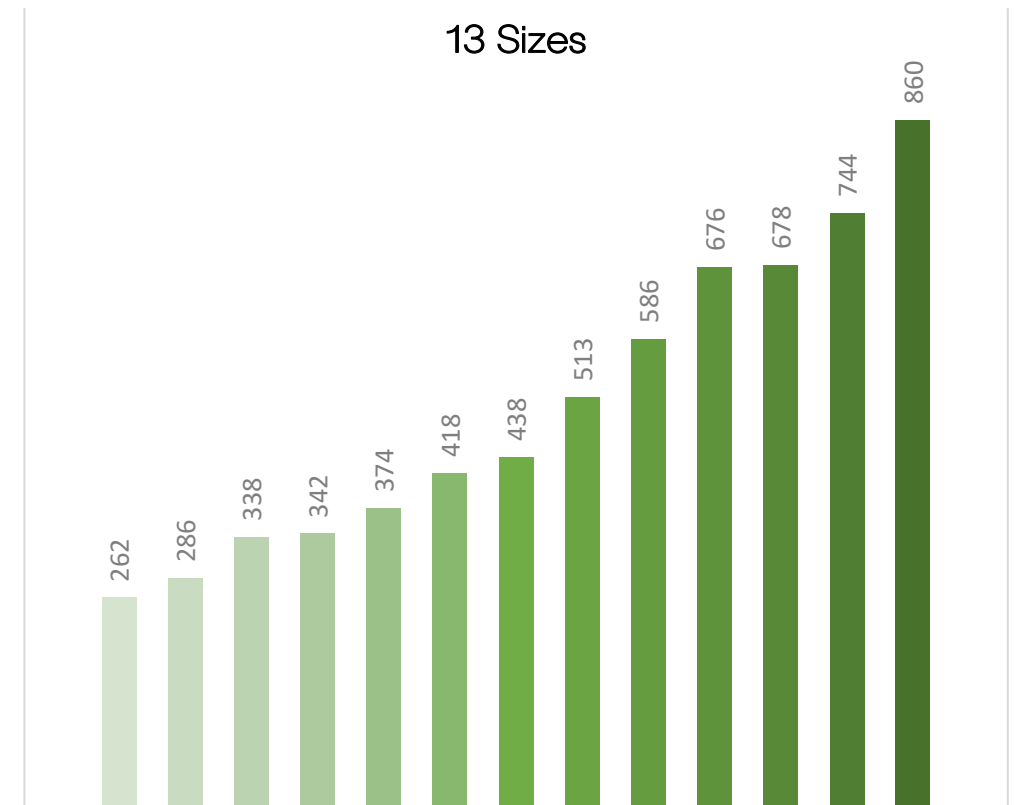


# Catalogue's information of the CRIO.V

## CRIO.V / BS

BUSINESS Configuration DT°\_cond of 13K

Cooling Capacity	285 kW	●————●	860 kW
Refrigerant Circuit number	1	●————●	4
Water flow range	59 m <sup>3</sup> /h	●————●	194 m <sup>3</sup> /h
GWP	3		
Power supply (main)	400/3/50		
DS capacity (optional)	73 kW	●————●	240 kW
HR capacity (optional)	xxx kW	●————●	xxx kW



\*All technical data are set with nominal condition design

(1) Outdoor air temperature = 35°C - Evaporator water temperature IN/OUT = -4/-8°C - Fluid: ethylene glycol 35%- Condensing coil: Microchannel

(2) Plate heat exchanger water temp. IN/OUT = 40/45°C - Condenser air intake temperature = 35°C - Evaporator water temperature IN/OUT = -4/-8°C - Fluid: Water - Condensing coil: Microchannel

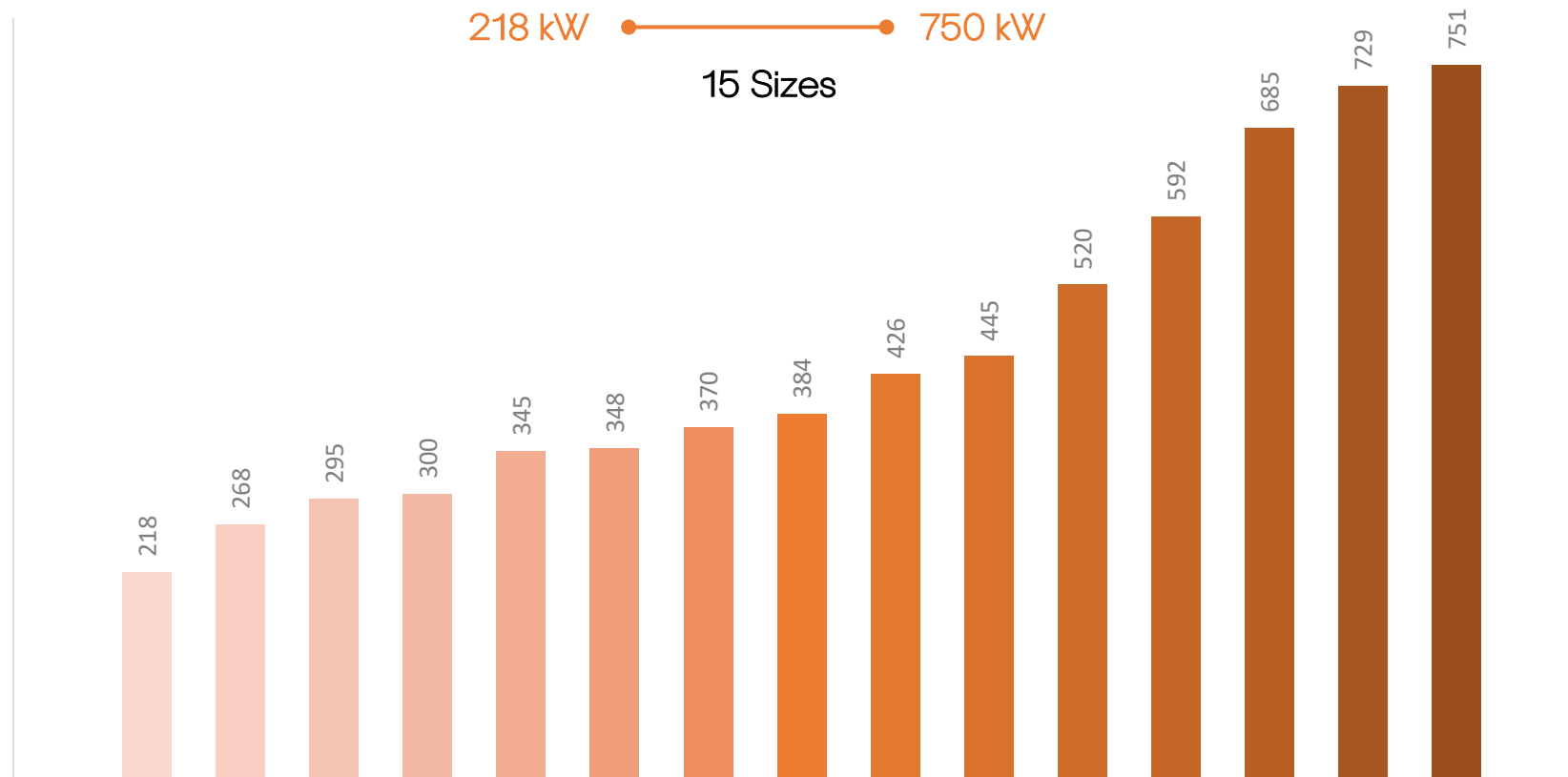
(1) (2) The declared cooling capacity are not taking into account the pump motor power input (where provided).

# Catalogue's information of the CRIO.V

## CRIO.V / HE

HIGH EFFICIENCY Configuration

DT°\_cond of 11K



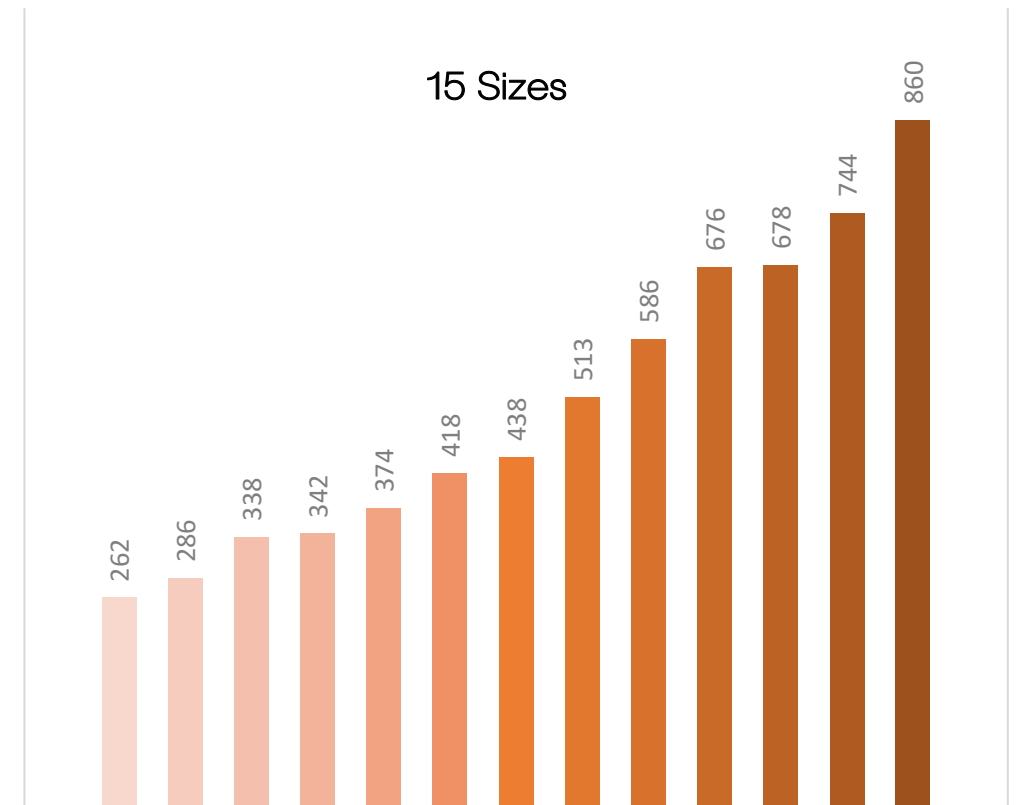
# Catalogue's information of the CRIO.V

## CRIO.V / HE

HIGH EFFICIENCY Configuration

DT°\_cond of 11K

Cooling Capacity	218 kW	●—————●	750 kW
Refrigerant Circuit number	1	●————●	4
Water flow range	48 m <sup>3</sup> /h	●—————●	169 m <sup>3</sup> /h
GWP	3		
Power supply (main)	400/3/50		
DS capacity (optional)	65 kW	●—————●	215 kW
HR capacity (optional)	xxx kW	●—————●	xxx kW

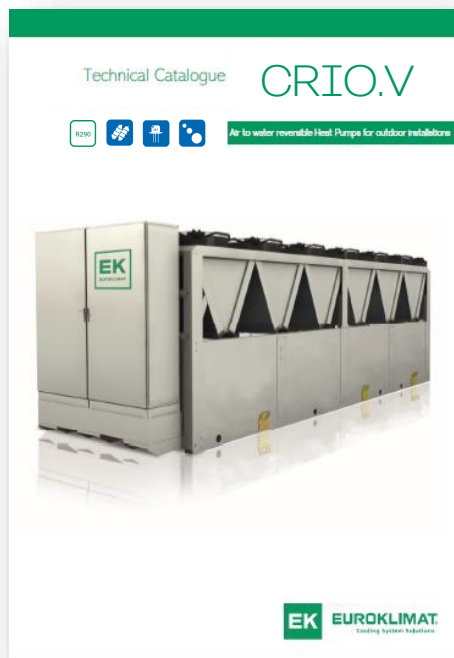


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(1) Outdoor air temperature = 35°C - Evaporator water temperature IN/OUT = -4/-8°C - Fluid: ethylene glycol 35%- Condensing coil: Microchannel

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(1) (2) The declared cooling capacity are not taking into account the pump motor power input (where provided).



## R290 reciprocating compressor with inverter

**Advantages**

When comparing with alternative control systems and technologies, a frequency converter is the optimum energy control system for controlling compressors.

- Improved system quality by maintaining a constant heating water temperature
- Wider range of operation of the heating or cooling power
- Increased power by increasing the speed of the variable speed compressor
- Energy saving
- Longer compressor lifetime
- Better possibilities of providing monitoring, remote setting and diagnostics

**Energy consumption minimized and maximizing comfort levels thanks to CRIO's INVERTER**

**Exact capacity match**

Thanks to the advanced PID control, a last-generation inverter frequency control system and electronic expansion valve management algorithm, the CRIO heat pump is able to maintain the constant outdoor temperature (ΔT) very close to the required Set point, even when the load variations required by the system (demand) are very high.

**Star/Delta Starter or Soft-starter not Required**

When larger motors are started, it is necessary in many countries to use equipment that limits the start-up current. In more traditional systems, a star/delta starter or soft-starter is widely used. Such motor starters are not required if a frequency converter is used.

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## CRIO Advanced Electronic Controller

Thanks to a Multitasking Operating System and the adoption of standard protocols, local and remote connectivity the controller used in CRIO cells is the most advanced technology available. Advanced Electronic Controller is available as accessory for CRIOHE, while it is standard for CRIOHE and CRIOHE+ units.

**NEW OPERATING SYSTEM**

New Multitasking Operating System ensures optimal system behavior usage, advanced debugging for user application (32bit floating point) normally application speed increase and independent protocol engine.

**CONNECTIVITY**

The controller has two Integrated Ethernet interfaces, three serial interfaces and two USB ports. A great choice of communication protocols & protocols Modbus: Coax, RS485, CAN, BACnet, TCP/IP (HTTP, FTP, DHCP, DNS, NTP, SNMP and many others).

**CLOUD SERVICE**

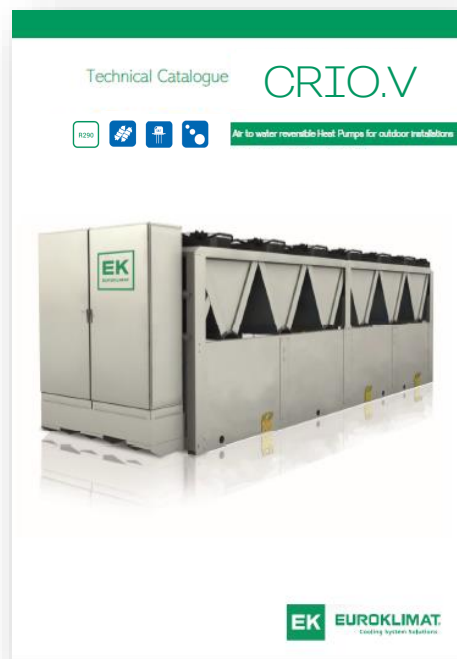
Plug & Play solution for IGA platform connection. An IGA version is available just connecting the Ethernet plug to your home or office network, without the need for an external connection box.

## CRIO/HE 180-2-2 PV ↔ 185-2-2 PV

Model	Capacity (kW)	Capacity (kW)	Capacity (kW)
CRIO/HE 180-2-2 PV	180	180	180
CRIO/HE 185-2-2 PV	185	185	185

www.euroklimat.it

For all details don't hesitate to read the CRIO.V catalogue.  
Ask to your reference commercial.



Also available on the online Selection Software **wEKool**



