

# CRIO BS

7-1-1 PE ↔ 173-2-2 PE

R290

Refrigerant  
R290 | GWP=3



Brazen plate  
heat exchanger



Semi-hermetic  
piston compressor



Axial fan



Cu/Al  
condensing coils



SEPR

## Air to water chillers for medium temperature applications

Standard efficiency



### Solution

B - Base  
I - Integrata

### Version

ST - Standard  
LN - Low Noise  
SL - Super Low Noise

### Equipment

AS - Standard equipment  
DS - Desuperheater  
HR - Total modulating Heat Recovery

Cooling capacity 7 - 173 kW

#### Safety system

To ensure high-safety-level the unit is equipped with an **ATEX certified gas detector** and an **EC centrifugal extraction fan**. The sensor, with external dedicated power supply and Modbus output signal, has an alarm threshold set at 10% of the lower flammable limit (LFL). The Propane alarm causes the immediate shutdown of the machine and the centrifugal extraction fan is switched on, which allows the ventilation of the compressor compartment and the dilution of the R290 concentration to values below the lower flammability limit.

#### Structure

Structure specifically designed and built to guarantee total resistance to atmospheric agents and corrosion. Basement and panels made of galvanized steel sheet, oven-painted with polyurethane powders. Frame made of anodized aluminium profiles, with aluminium alloy corner joints that guarantee excellent mechanical resistance and low weight. LN (Low Noise) version: the panels are internally lined with sound-absorbing material. SL (Super Low Noise) version: the panels are sandwich and insulated with rock wool.

#### Compressor

Reciprocating semi-hermetic type compressor equipped with: electronic control module and protection of the electric motor (installed inside the electrical panel); oil charge; oil level sight glass and oil crankcase heater; anti-vibration rubber supports; anti-vibration pipes (suction and discharge); suction and discharge valves. The compressor can be supplied with one or more RSH capacity control heads to guarantee an adaptation of the cooling capacity in case of thermal load's reduction: please see the list of accessories for further information.

#### EC Fan

Premium-Axial-Fans with bionic shaped blades and high-efficient EC (Electronically Commutated) external rotor motors, sealed in protection IP54 and thermal class THCL 155. The motor efficiency class complies with IE4.

#### Air heat exchanger

Finned coil made with copper pipes arranged on staggered rows, mechanically expanded inside a pack of aluminium fins offering a high exchange surface area.

#### Water heat exchanger

Brazen plate-type heat exchanger, stainless steel AISI 316 made, complete with water differential pressure switch, air vent valve and thermally insulated with closed-cell neoprene anti-condensate material. The heat exchanger design provides high thermal exchange and high performance results, furthermore it guarantees small dimensions and easy installation and maintenance.

#### Electrical board

Each unit is equipped with electric panel, built, wired and fully tested at the factory. Wiring numeration and optimized layout facilitate troubleshooting. The installed components are identified by nameplates to better identify the application and the type of action. Switchboard is made according to standards IEC 204-1/EN60204-1 and it is complete with the following main components: - Main isolator switch - Door interlock safety device - Contactor and protection for compressor and fans - Cabinet minimum protection rating IP54.

To ensure higher level of security, the cabinet is outside the machine and positioned on one side of the unit. The propane sensor is equipped with separate power supply: this power supply must always be guaranteed in order to ensure the monitoring of any leakage.

#### Control

The microprocessor controls the unit capacity by timing the compressors and checks the operating alarms with the possibility to connect to BMS.

#### Refrigerant circuit

Filter drier, moisture-liquid sight glass, electronic expansion valve, high & low pressure gauge, high and low pressure transducers, high pressure switch, safety high pressure valve (when required by EN 378-2016 standard).

#### Water circuit (Integrata)

**Base version:** as interface to the plant, includes the water fittings of the evaporator only.

**Integrated version:** Water storage tank, water pressure gauge, safety valve, water discharge valve, centrifugal pump(s) suitable for glycol solutions up to 40%, manual by-pass valve, manual air venting valve. 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.

#### ACCESSORI PRINCIPALI

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter
- Air heat exchanger with various coatings treatment
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Open / Closed expansion vessel with automatic filling unit
- RSH Capacity Control head / Inverter driven compressor
- Advanced control c.pCo

» For the complete list of accessories please see pages 54-55-56-57

# CRIO BS

## Technical data

CRIO BS R290 range		7-1-1 PE	9-1-1 PE	12-1-1 PE	17-1-1 PE	19-1-1 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>						
Cooling capacity <sup>(1)</sup>	[kW]	6,9	8,8	12,3	17,1	19,4
Total power input <sup>(1)</sup>	[kW]	3,7	4,4	6	7,8	9,5
EER - Energy Efficiency Ratio	-	1,88	2,01	2,02	2,19	2,04
Saved CO2 equivalent Ton <sup>(*)</sup>	[CO <sub>2</sub> Ton]	3,4	5,4	6	10,2	11,3
"Ecodesign" compliance for process application (SEPR)	-	2,85	3,16	2,96	3,26	3,18

<b>REFRIGERANT CIRCUIT</b>						
Refrigerant	-	R290				
GWP	-	3				
Charge of refrigerant - Base unit	[kg]	0,9	1,4	1,6	2,6	2,9
Independent gas circuits	[n°]	1	1	1	1	1
Compressors type	-	Semi-hermetic pistons				
Compressors quantity	[n°]	1	1	1	1	1
Steps of capacity for each compressor (std)	-	1 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)
Condensing coils type	-	Cu/Al				
Fans type	-	Axial EC				
Fans quantity	[n°]	1	1	1	1	1
Fans power input <sup>(1)</sup> (total)	[kW]	0,5	0,5	0,5	0,7	0,8
Total air flow	[m <sup>3</sup> /h]	4.300	6.300	6.300	11.900	12.500
Expansion valve type	-	Electronic				
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	1,7	2,1	3,0	4,1	4,7
Evaporator pressure drop <sup>(1)</sup>	[kPa]	28	22	23	27	26

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	1,7	2	2,8	3,6	4,3
Water flow	[m <sup>3</sup> /h]	0,30	0,34	0,48	0,61	0,74
Pressure drop (water side)	[kPa]	5,2	5,2	5,3	5,2	5,3

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	10,5	13,1	18,4	24,2	28,9
Water flow	[m <sup>3</sup> /h]	1,8	2,3	3,2	4,2	5,0
Pressure drop (water side)	[kPa]	17,9	13,8	24,8	25,7	25,6

<b>Electrical data</b>						
Power supply	-	400/3/50				
Emergency power supply	-	230/1/50				
Maximum power input without pump	[kW]	7,0	8,7	12,5	14,1	16,6
Locked rotor current – LRA without pump	[A]	52,9	64,1	88,3	104,2	119,0
Maximum absorbed current - FLA without pump	[A]	12,7	14,8	21,6	23,5	30,6

<b>HYDRONIC KIT (option)</b>						
Buffer tank capacity	[L]	30	30	30	60	60
Pump type	-	Centrifugal				

<b>Standard pump - 150 kPa useful head</b>						
Motor Efficiency	-	-	-	-	-	-
Pump motor nominal power	[kW]	0,37	0,37	0,37	0,55	0,55
Pump motor nominal current	[A]	1,4	1,4	1,4	1,9	1,9

<b>Standard pump - 250 kPa useful head</b>						
Motor Efficiency	-	-	-	IE3	IE3	IE3
Pump motor nominal power	[kW]	0,55	0,55	0,75	0,9	0,9
Pump motor nominal current	[A]	2	2	1,9	2,5	2,5

<b>Water connections</b>						
Dimension (nominal external diameter)	[inch/DN]	1/2" (DN15)	1/2" (DN15)	1" (DN 25)	1" (DN 25)	1" (DN 25)

<b>Noise levels <sup>(3)</sup></b>						
Total sound power (ST version)	[db(A)]	82	79	79	82	83
Total sound pressure (ST version) - at 1 m distance	[db(A)]	67	63	63	65	66
Total sound pressure (ST version) - at 10 m distance	[db(A)]	51	48	48	51	52
Total sound power (LN version)	[db(A)]	79	76	76	79	80
Total sound pressure (LN version) - at 1 m distance	[db(A)]	64	60	60	62	63
Total sound pressure (LN version) - at 10 m distance	[db(A)]	48	45	45	48	49
Total sound power (SL version)	[db(A)]	77	74	74	77	78
Total sound pressure (SL version) - at 1 m distance	[db(A)]	62	58	58	60	61
Total sound pressure (SL version) - at 10 m distance	[db(A)]	46	43	43	46	47

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethilene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethilene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO BS

## Technical data

CRIO BS R290 range		23-1-1 PE	28-1-1 PE	33-1-1 PE	39-1-1 PE	48-1-1 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>						
Cooling capacity <sup>(1)</sup>	[kW]	23,4	28	32,6	39,1	48,3
Total power input <sup>(1)</sup>	[kW]	9,9	12,7	15,4	18,3	22,1
EER - Energy Efficiency Ratio	-	2,36	2,20	2,11	2,14	2,18
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	13,3	14,2	17,7	19,9	25,3
"Ecodesign" compliance for process application (SEPR)	-	3,31	3,23	3,35	3,09	3,32

<b>REFRIGERANT CIRCUIT</b>						
Refrigerant	-	R290				
GWP	-	3				
Charge of refrigerant - Base unit	[kg]	3,5	3,7	4,6	5,2	6,6
Independent gas circuits	[n°]	1	1	1	1	1
Compressors type	-	Semi-hermetic pistons				
Compressors quantity	[n°]	1	1	1	1	1
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (83%); 2 (67%); 3 (50%)	
Condensing coils type	-	Cu/Al				
Fans type	-	Axial EC				
Fans quantity	[n°]	1	1	2	2	2
Fans power input <sup>(1)</sup> (total)	[kW]	0,7	0,8	1,7	1,7	3
Total air flow	[m <sup>3</sup> /h]	11.100	11.800	23.500	23.500	36.100
Expansion valve type	-	Electronic				
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	5,7	6,8	7,9	9,5	11,7
Evaporator pressure drop <sup>(1)</sup>	[kPa]	28	31	34	23	26

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	4,2	5,5	6,1	7,7	8,6
Water flow	[m <sup>3</sup> /h]	0,74	0,97	1,05	1,34	1,48
Pressure drop (water side)	[kPa]	5,3	5,3	5,4	5,5	5,5

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	33	40,8	47,3	57	68,3
Water flow	[m <sup>3</sup> /h]	5,7	7,0	8,1	9,8	11,7
Pressure drop (water side)	[kPa]	25,4	30,6	34,2	42,3	28,3

<b>Electrical data</b>						
Power supply	-	400/3/50				
Emergency power supply	-	230/1/50				
Maximum power input without pump	[kW]	19,1	21,4	27,5	34,1	42,6
Locked rotor current - LRA without pump	[A]	138,1	204,6	228,2	243,0	282,3
Maximum absorbed current - FLA without pump	[A]	37,8	38,8	47,8	57,7	70,3

<b>HYDRONIC KIT (option)</b>						
Buffer tank capacity	[L]	60	60	160	160	290
Pump type	-	Centrifugal				

<b>Standard pump - 150 kPa useful head</b>						
Motor Efficiency	-	-	IE3			
Pump motor nominal power	[kW]	0,55	0,9	0,9	0,9	1,1
Pump motor nominal current	[A]	1,9	2,5	2,5	2,5	3,3

<b>Standard pump - 250 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	1,5	1,5	1,5	1,5	2,2
Pump motor nominal current	[A]	4,1	4,1	4,1	4,1	4,7

<b>Water connections</b>						
Dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)

<b>Noise levels <sup>(3)</sup></b>						
Total sound power (ST version)	[db(A)]	84	84	87	88	87
Total sound pressure (ST version) - at 1 m distance	[db(A)]	67	67	70	71	69
Total sound pressure (ST version) - at 10 m distance	[db(A)]	53	53	56	57	56
Total sound power (LN version)	[db(A)]	81	81	84	85	84
Total sound pressure (LN version) - at 1 m distance	[db(A)]	64	64	67	68	66
Total sound pressure (LN version) - at 10 m distance	[db(A)]	50	50	53	54	53
Total sound power (SL version)	[db(A)]	79	79	82	83	82
Total sound pressure (SL version) - at 1 m distance	[db(A)]	62	62	65	66	64
Total sound pressure (SL version) - at 10 m distance	[db(A)]	48	48	51	52	51

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethilene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethilene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO BS

## Technical data

CRIO BS R290 range		55-1-1 PE	38-2-2 PE	49-2-2 PE	58-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>					
Cooling capacity <sup>(1)</sup>	[kW]	55,3	38,4	48,9	58
Total power input <sup>(1)</sup>	[kW]	27,5	18,8	22,8	27,5
EER - Energy Efficiency Ratio	-	2,01	2,04	2,15	2,11
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	26,1	20,4	26,3	28,3
"Ecodesign" compliance for process application (SEPR)	-	3,12	2,95	3,45	3,37

<b>REFRIGERANT CIRCUIT</b>					
Refrigerant	-	R290			
GWP	-	3			
Charge of refrigerant - Base unit	[kg]	6,8	5,3	6,8	7,4
Independent gas circuits	[n°]	1	2	2	2
Compressors type	-	Semi-hermetic pistons			
Compressors quantity	[n°]	1	2	2	2
Steps of capacity for each compressor (std)	-	1 (83%); 2 (67%); 3 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)
Condensing coils type	-	Cu/Al			
Fans type	-	Axial Ec			
Fans quantity	[n°]	2	2	2	2
Fans power input <sup>(3)</sup> (total)	[kW]	3,8	1,6	3,3	4,2
Total air flow	[m <sup>3</sup> /h]	39.000	24.100	36.200	39.800
Expansion valve type	-	Electronic			
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	13,4	9,3	11,9	14,1
Evaporator pressure drop <sup>(1)</sup>	[kPa]	28	24	25	24

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	11,4	9,6	8,5	10,6
Water flow	[m <sup>3</sup> /h]	1,99	1,65	1,47	1,83
Pressure drop (water side)	[kPa]	5,7	5,3	5,3	5,3

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	80,4	56,7	68,3	81,9
Water flow	[m <sup>3</sup> /h]	13,8	9,8	11,7	14,1
Pressure drop (water side)	[kPa]	29,4	19,4	26,9	36,9

<b>Electrical data</b>					
Power supply	-	400/3/50			
Emergency power supply	-	230/1/50			
Maximum power input without pump	[kW]	50,2	33,1	38,6	46,4
Locked rotor current – LRA without pump	[A]	330,7	149,6	220,0	248,9
Maximum absorbed current - FLA without pump	[A]	83,9	61,2	69,7	83,1

<b>HYDRONIC KIT (option)</b>					
Buffer tank capacity	[L]	290	160	160	160
Pump type	-	Centrifugal			

<b>Standard pump - 150 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	1,1	0,9	1,1	1,1
Pump motor nominal current	[A]	3,3	2,5	3,3	3,3

<b>Standard pump - 250 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	2,2	1,5	2,2	2,2
Pump motor nominal current	[A]	4,7	4,1	4,7	4,7

<b>Water connections</b>					
Dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	2" (DN 50)

<b>Noise levels<sup>(3)</sup></b>					
Total sound power (ST version)	[db(A)]	87	87	86	86
Total sound pressure (ST version) - at 1 m distance	[db(A)]	69	70	69	69
Total sound pressure (ST version) - at 10 m distance	[db(A)]	56	56	56	56
Total sound power (LN version)	[db(A)]	84	84	83	83
Total sound pressure (LN version) - at 1 m distance	[db(A)]	66	67	66	66
Total sound pressure (LN version) - at 10 m distance	[db(A)]	53	53	53	53
Total sound power (SL version)	[db(A)]	82	82	81	81
Total sound pressure (SL version) - at 1 m distance	[db(A)]	64	65	64	64
Total sound pressure (SL version) - at 10 m distance	[db(A)]	51	51	51	51

#### Reference conditions:

- (1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models  
(2) Plate heat exchanger water temp. IN/OUT = 40/45°C - Condenser air intake temperature = 35°C - Evaporator water temperature = -4/-8°C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models  
(1) - (2) The declared cooling capacity are not taking into account the pump motor power input (where provided).  
(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.  
(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO BS

## Technical data

CRIO BS R290 range		68-2-2 PE	79-2-2 PE	95-2-2 PE	108-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>					
Cooling capacity <sup>(1)</sup>	[kW]	68,1	79,2	94,8	108
Total power input <sup>(1)</sup>	[kW]	30,6	38,8	45,2	55,2
EER - Energy Efficiency Ratio	-	2,23	2,04	2,10	1,96
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	36,3	38,1	47,8	49,6
"Ecodesign" compliance for process application (SEPR)	-	3,37	3,16	3,18	3,00

<b>REFRIGERANT CIRCUIT</b>					
Refrigerant	-	R290			
GWP	-	3			
Charge of refrigerant - Base unit	[kg]	9,4	9,9	12,4	12,9
Independent gas circuits	[n°]	2	2	2	2
Compressors type	-	Semi-hermetic pistons			
Compressors quantity	[n°]	2	2	2	2
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)	1 (83%); 2 (67%); 3 (50%)		
Condensing coils type	-	Cu/Al			
Fans type	-	Axial Ec			
Fans quantity	[n°]	2	3	3	3
Fans power input <sup>(3)</sup> (total)	[kW]	4,1	5,9	5,8	6,5
Total air flow	[m <sup>3</sup> /h]	36.500	57.800	52.700	55.400
Expansion valve type	-	Electronic			
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	16,5	19,2	23,0	26,2
Evaporator pressure drop <sup>(1)</sup>	[kPa]	25	33	36	39

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	11,7	15	17,7	24,3
Water flow	[m <sup>3</sup> /h]	2,03	2,60	3,14	4,19
Pressure drop (water side)	[kPa]	5,4	5,4	5,5	5,8

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	95,9	114	137	161
Water flow	[m <sup>3</sup> /h]	16,5	19,6	23,6	27,7
Pressure drop (water side)	[kPa]	31,3	29,4	32,9	36,1

<b>Electrical data</b>					
Power supply	-	400/3/50			
Emergency power supply	-	230/1/50			
Maximum power input without pump	[kW]	56,4	72,6	82,2	97,4
Locked rotor current – LRA without pump	[A]	277,7	307,1	348,0	410,0
Maximum absorbed current - FLA without pump	[A]	97,3	121,8	136,0	163,2

<b>HYDRONIC KIT (option)</b>					
Buffer tank capacity	[L]	160	290	290	290
Pump type	-	Centrifugal			

<b>Standard pump - 150 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	2,2	2,2	2,2	2,2
Pump motor nominal current	[A]	4,7	4,7	4,7	4,7

<b>Standard pump - 250 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	2,2	3	3	4
Pump motor nominal current	[A]	4,7	6,4	6,4	8,7

<b>Water connections</b>					
Dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2"1/2 (DN 65)	2"1/2 (DN 65)

<b>Noise levels <sup>(3)</sup></b>					
Total sound power (ST version)	[dB(A)]	88	89	91	91
Total sound pressure (ST version) - at 1 m distance	[dB(A)]	70	71	73	73
Total sound pressure (ST version) - at 10 m distance	[dB(A)]	57	57	59	59
Total sound power (LN version)	[dB(A)]	85	86	88	88
Total sound pressure (LN version) - at 1 m distance	[dB(A)]	67	68	70	70
Total sound pressure (LN version) - at 10 m distance	[dB(A)]	54	54	56	56
Total sound power (SL version)	[dB(A)]	83	84	86	86
Total sound pressure (SL version) - at 1 m distance	[dB(A)]	65	66	68	68
Total sound pressure (SL version) - at 10 m distance	[dB(A)]	52	52	54	54

#### Reference conditions:

- (1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models  
(2) Plate heat exchanger water temp. IN/OUT = 40/45°C - Condenser air intake temperature = 35°C - Evaporator water temperature = -4/-8°C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models  
(1) - (2) The declared cooling capacity are not taking into account the pump motor power input (where provided).  
(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.  
(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO BS

## Technical data

CRIO BS R290 range		126-2-2 PE	137-2-2 PE	157-2-2 PE	173-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>					
Cooling capacity <sup>(1)</sup>	[kW]	126	137	157	173
Total power input <sup>(1)</sup>	[kW]	63,8	70,3	74,6	82,1
EER - Energy Efficiency Ratio	-	1,97	1,95	2,11	2,11
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	70,8	73,5	98,2	101,8
"Ecodesign" compliance for process application (SEPR)	-	2,70	2,68	2,83	2,80

<b>REFRIGERANT CIRCUIT</b>					
Refrigerant	-	R290			
GWP	-	3			
Charge of refrigerant - Base unit	[kg]	18,4	19,1	25,5	26,5
Independent gas circuits	[n°]	2	2	2	2
Compressors type	-	Semi-hermetic pistons			
Compressors quantity	[n°]	2	2	2	2
Steps of capacity for each compressor (std)	-	2 (75%); 3 (62,5%); 4 (50%)			
Condensing coils type	-	Cu/Al			
Fans type	-	Axial EC			
Fans quantity	[n°]	3	3	4	4
Fans power input <sup>(3)</sup> (total)	[kW]	5,3	5,7	5,4	6,1
Total air flow	[m <sup>3</sup> /h]	66.600	68.400	77.500	81.200
Expansion valve type	-	Electronic			
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	30,5	33,2	38,1	41,9
Evaporator pressure drop <sup>(1)</sup>	[kPa]	43	45	42	37

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	29,1	32,6	33,1	37
Water flow	[m <sup>3</sup> /h]	5,04	5,61	5,75	6,40
Pressure drop (water side)	[kPa]	6,0	6,2	15,0	16,0

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	186	205	228	250
Water flow	[m <sup>3</sup> /h]	32,0	35,3	39,2	43,0
Pressure drop (water side)	[kPa]	40	47,5	50,5	53,7

<b>Electrical data</b>					
Power supply	-	400/3/50			
Emergency power supply	-	230/1/50			
Maximum power input without pump	[kW]	92,0	111,2	113,5	119,1
Locked rotor current – LRA without pump	[A]	385,7	468,3	559,0	660,8
Maximum absorbed current - FLA without pump	[A]	161,4	188,6	189,4	207,0

<b>HYDRONIC KIT (option)</b>					
Buffer tank capacity	[L]	500	500	470	470
Pump type	-	Centrifugal			

<b>Standard pump - 150 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	3	3	3	3
Pump motor nominal current	[A]	6,4	6,4	6,4	6,4

<b>Standard pump - 250 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	4	4	5,5	5,5
Pump motor nominal current	[A]	8,7	8,7	10,6	10,6

<b>Water connections</b>					
Dimension (nominal external diameter)	[inch/DN]	3" (DN 80)	3" (DN 80)	3" (DN 80)	3" (DN 80)

<b>Noise levels<sup>(3)</sup></b>					
Total sound power (ST version)	[dB(A)]	90	94	95	95
Total sound pressure (ST version) - at 1 m distance	[dB(A)]	71	75	76	76
Total sound pressure (ST version) - at 10 m distance	[dB(A)]	58	62	63	63
Total sound power (LN version)	[dB(A)]	87	91	92	92
Total sound pressure (LN version) - at 1 m distance	[dB(A)]	68	72	73	73
Total sound pressure (LN version) - at 10 m distance	[dB(A)]	55	59	60	60
Total sound power (SL version)	[dB(A)]	85	89	90	90
Total sound pressure (SL version) - at 1 m distance	[dB(A)]	66	70	71	71
Total sound pressure (SL version) - at 10 m distance	[dB(A)]	53	57	58	58

#### Reference conditions:

- (1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models  
(2) Plate heat exchanger water temp. IN/OUT = 40/45°C - Condenser air intake temperature = 35°C - Evaporator water temperature = -4/-8°C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models  
(1) - (2) The declared cooling capacity are not taking into account the pump motor power input (where provided).  
(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.  
(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO BS



Refrigerant  
R290 | GWP=3



Brazen plate  
heat exchanger



Semi-hermetic  
piston compressor



Axial fan



Microchannel  
condensing coils



158-2-2 PV ↔ 182-2-2 PV

**Air to water chillers for medium temperature applications**  
Standard efficiency



## Solution

B - Base  
I - Integrata

## Version

ST - Standard  
LN - Low Noise  
SL - Super Low Noise

## Equipment

AS - Standard equipment  
DS - Desuperheater  
HR - Total modulating Heat Recovery

**Cooling capacity 158 - 182 kW**

<b>Safety system</b>	To ensure high-safety-level the unit is equipped with an <b>ATEX certified gas detector</b> and an <b>EC centrifugal extraction fan</b> . The sensor, with external dedicated power supply and Modbus output signal, has an alarm threshold set at 10% of the lower flammable limit (LFL). The Propane alarm causes the immediate shutdown of the machine and the centrifugal extraction fan is switched on, which allows the ventilation of the compressor compartment and the dilution of the R290 concentration to values below the lower flammability limit.
<b>Structure</b>	Structure specifically designed and built to guarantee total resistance to atmospheric agents and corrosion. Basement and panels made of galvanized steel sheet, oven-painted with polyurethane powders. Frame made of anodized aluminium profiles, with aluminium alloy corner joints that guarantee excellent mechanical resistance and low weight. LN (Low Noise) version: the panels are internally lined with sound-absorbing material. SL (Super Low Noise) version: the panels are sandwich and insulated with rock wool.
<b>Compressor</b>	Reciprocating semi-hermetic type compressor equipped with: electronic control module and protection of the electric motor (installed inside the electrical panel); oil charge; oil level sight glass and oil crankcase heater; anti-vibration rubber supports; anti-vibration pipes (suction and discharge); suction and discharge valves. The compressor can be supplied with one or more RSH capacity control heads to guarantee an adaptation of the cooling capacity in case of thermal load's reduction: please see the list of accessories for further information.
<b>EC Fan</b>	Premium-Axial-Fans with bionic shaped blades and high-efficient EC (Electronically Commutated) external rotor motors, sealed in protection IP54 and thermal class THCL 155. The motor efficiency class complies with IE4.
<b>Air heat exchanger</b>	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.
<b>Water heat exchanger</b>	Brazen plate-type heat exchanger, stainless steel AISI 316 made, complete with water differential pressure switch, air vent valve and thermally insulated with closed-cell neoprene anti-condensate material. The heat exchanger design provides high thermal exchange and high performance results, furthermore it guarantees small dimensions and easy installation and maintenance.
<b>Electrical board</b>	Each unit is equipped with electric panel, built, wired and fully tested at the factory. Wiring numeration and optimized layout facilitate troubleshooting. The installed components are identified by nameplates to better identify the application and the type of action. Switchboard is made according to standards IEC 204-1/EN60204-1 and it is complete with the following main components: - Main isolator switch - Door interlock safety device - Contactor and protection for compressor and fans - Cabinet minimum protection rating IP54. To ensure higher level of security, the cabinet is outside the machine and positioned on one side of the unit. The propane sensor is equipped with separate power supply: this power supply must always be guaranteed in order to ensure the monitoring of any leakage.
<b>Control</b>	The microprocessor controls the unit capacity by timing the compressors and checks the operating alarms with the possibility to connect to BMS.
<b>Refrigerant circuit</b>	Filter drier, moisture-liquid sight glass, electronic expansion valve, high & low pressure gauge, high and low pressure transducers, high pressure switch, safety high pressure valve (when required by EN 378-2016 standard).
<b>Water circuit (Integrata)</b>	<b>Base version:</b> as interface to the plant, includes the water fittings of the evaporator only. <b>Integrated version:</b> Water storage tank, water pressure gauge, safety valve, water discharge valve, centrifugal pump(s) suitable for glycol solutions up to 40%, manual by-pass valve, manual air venting valve. 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.

## ACCESSORI PRINCIPALI

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter
- Air heat exchanger with various coatings treatment
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Open / Closed expansion vessel with automatic filling unit
- RSH Capacity Control head / Inverter driven compressor
- Advanced control c.pCo

» For the complete list of accessories please see pages 54-55-56-57

# CRIO BS

## Technical data

CRIO BS R290 range		158-2-2 PV	174-2-2 PV	182-2-2 PV
<b>COOLING - A BP/ST/AS/EC/*S version</b>				
Cooling capacity <sup>(1)</sup>	[kW]	158	174	182
Total power input <sup>(1)</sup>	[kW]	74,6	81,9	85,7
EER - Energy Efficiency Ratio	-	2,12	2,12	2,12
Saved CO2 equivalent Ton (*)	[CO2 Ton]	64,6	69,5	69,5
"Ecodesign" compliance for process application (SEPR)	-	2,82	2,80	2,79

<b>REFRIGERANT CIRCUIT</b>				
Refrigerant	-	R290		
GWP	-	3		
Charge of refrigerant - Base unit	[kg]	16,8	18,1	18,1
Independent gas circuits	[n°]	2	2	2
Compressors type	-	Semi-hermetic pistons		
Compressors quantity	[n°]	2	2	2
Steps of capacity for each compressor (std)	-	2 (75%); 3 (62,5%); 4 (50%)		
Condensing coils type	-	Microchannel		
Fans type	-	Axial EC		
Fans quantity	[n°]	4	4	4
Fans power input <sup>(1)</sup> (total)	[kW]	4,9	5,4	5,7
Total air flow	[m <sup>3</sup> /h]	77.100	80.100	81.900
Expansion valve type	-	Electronic		
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	38,3	42,2	44,1
Evaporator pressure drop <sup>(1)</sup>	[kPa]	42	38	41

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>				
Heating capacity <sup>(2)</sup>	[kW]	32,7	36,1	38,4
Water flow	[m <sup>3</sup> /h]	5,66	6,24	6,66
Pressure drop (water side)	[kPa]	14,7	15,4	15,8

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>				
Heating capacity <sup>(2)</sup>	[kW]	228	250	263
Water flow	[m <sup>3</sup> /h]	39,2	43,0	45,2
Pressure drop (water side)	[kPa]	50,5	53,7	58,6

<b>Electrical data</b>				
Power supply	-	400/3/50		
Emergency power supply	-	230/1/50		
Maximum power input without pump	[kW]	113,5	119,1	127,3
Locked rotor current – LRA without pump	[A]	559,0	660,8	704,4
Maximum absorbed current - FLA without pump	[A]	189,4	207,0	222,2

<b>HYDRONIC KIT (option)</b>				
Buffer tank capacity	[L]	290	290	290
Pump type	-	Centrifugal		

<b>Standard pump - 150 kPa useful head</b>				
Motor Efficiency	-	IE3		
Pump motor nominal power	[kW]	3	3	3
Pump motor nominal current	[A]	6,4	6,4	6,4

<b>Standard pump - 250 kPa useful head</b>				
Motor Efficiency	-	IE3		
Pump motor nominal power	[kW]	5,5	5,5	5,5
Pump motor nominal current	[A]	10,6	10,6	10,6

<b>Water connections</b>				
Dimension (nominal external diameter)	[inch/DN]	3" (DN 80)	3" (DN 80)	3" (DN 80)

<b>Noise levels <sup>(3)</sup></b>				
Total sound power (ST version)	[db(A)]	95	95	97
Total sound pressure (ST version) - at 1 m distance	[db(A)]	76	76	78
Total sound pressure (ST version) - at 10 m distance	[db(A)]	63	63	65
Total sound power (LN version)	[db(A)]	92	92	94
Total sound pressure (LN version) - at 1 m distance	[db(A)]	73	73	75
Total sound pressure (LN version) - at 10 m distance	[db(A)]	60	60	62
Total sound power (SL version)	[db(A)]	90	90	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	71	71	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	58	58	60

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethylene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant



# CRIO BS

## Dimensions and weights

CRIO BS R290 range		7-1-1 PE	9-1-1 PE	12-1-1 PE	17-1-1 PE	19-1-1 PE	23-1-1 PE
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>							
Lenght	[mm]	1230	1380	1380	1680	1680	1680
Width	[mm]	685	835	835	1025	1025	1025
Height (ST - LN)	[mm]	1405	1820	1820	2121	2121	2121
Height (SL)	[mm]	-	-	-	2208	2208	2208
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	190	300	300	410	420	440
Operating weight (A BP/ST/AS/EC/** version)	[kg]	195	305	305	415	425	445

<b>DIMENSIONS - Large unit</b>							
Lenght	[mm]	1730	1980	1980	2330	2330	2330
Width	[mm]	685	835	835	1025	1025	1025
Height (ST - LN)	[mm]	1405	1820	1820	2221	2221	2221
Height (SL)	[mm]	-	-	-	2308	2308	2308

<b>Unit dimensions with hydronic kit</b>							
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Large	Large	Large	Large	Large	Large
Integrata LP 1-1 OO	-	Large	Large	Large	Large	Large	Large
Integrata LP 1-1 OO and HR equipment	-	Large	Large	Large	Large	Large	Large
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Large	Large	Large	Large	Large	Large
Integrata MP 1-1 OO	-	Large	Large	Large	Large	Large	Large
Integrata MP 1-1 OO and HR equipment	-	Large	Large	Large	Large	Large	Large
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Large	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Large	Large	Large	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Large	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Large	Large	Large	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Large	Large	Large	Large	Large	Large

CRIO BS R290 range		28-1-1 PE	33-1-1 PE	39-1-1 PE	48-1-1 PE	55-1-1 PE	38-2-2 PE
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>							
Lenght	[mm]	1680	2330	2330	2980	2980	2330
Width	[mm]	1025	1025	1025	1025	1025	1025
Height (ST - LN)	[mm]	2121	2221	2221	2300	2300	2221
Height (SL)	[mm]	2208	2308	2308	2360	2360	2308
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	510	660	630	830	840	700
Operating weight (A BP/ST/AS/EC/** version)	[kg]	515	665	635	837	847	705

<b>DIMENSIONS - Large unit</b>							
Lenght	[mm]	2330	2980	2980	3920	3920	2980
Width	[mm]	1025	1025	1025	1025	1025	1025
Height (ST - LN)	[mm]	2221	2221	2221	2360	2360	2221
Height (SL)	[mm]	2308	2308	2308	2420	2420	2308

<b>Unit dimensions with hydronic kit</b>							
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Large	Large	Large	Standard	Standard	Large
Integrata LP 1-1 OO	-	Large	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-1 OO and HR equipment	-	Large	Large	Large	Large	Large	Large
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Large	Large	Large	Standard	Standard	Large
Integrata MP 1-1 OO	-	Large	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-1 OO and HR equipment	-	Large	Large	Large	Large	Large	Large
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Large	Standard	Standard	Standard	Standard	Standard

# CRIO BS

## Dimensions and weights

CRIO BS R290 range		49-2-2 PE	58-2-2 PE	68-2-2 PE	79-2-2 PE	95-2-2 PE	108-2-2 PE
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>							
Lenght	[mm]	2980	2980	2980	3920	3920	3920
Width	[mm]	1025	1025	1025	1025	1025	1025
Height (ST - LN)	[mm]	2300	2300	2300	2360	2360	2360
Height (SL)	[mm]	2360	2360	2360	2420	2420	2420
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	940	970	1000	1200	1260	1280
Operating weight (A BP/ST/AS/EC/** version)	[kg]	947	977	1007	1208	1268	1288

<b>DIMENSIONS - Large unit</b>							
Lenght	[mm]	3920	3920	3920	-	-	-
Width	[mm]	1025	1025	1025	-	-	-
Height (ST - LN)	[mm]	2360	2360	2360	-	-	-
Height (SL)	[mm]	2420	2420	2420	-	-	-

<b>Unit dimensions with hydronic kit</b>							
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-1 OO and HR equipment	-	Large	Large	Large	Standard	Standard	Standard
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-1 OO and HR equipment	-	Large	Large	Large	Standard	Standard	Standard
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard

CRIO BS R290 range		126-2-2 PE	137-2-2 PE	157-2-2 PE	173-2-2 PE	158-2-2 PV	174 & 182-2-2 PV
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>							
Lenght	[mm]	4200	4200	5500	5500	2895	2895
Width	[mm]	1185	1185	1535	1535	2280	2280
Height (ST - LN)	[mm]	2320	2320	2350	2350	2535	2535
Height (SL)	[mm]	2380	2380	2410	2410	2560	2560
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	1630	1670	1700	1920	1925	1940
Operating weight (A BP/ST/AS/EC/** version)	[kg]	1640	1680	1710	1930	1940	1955

<b>DIMENSIONS - Large unit</b>							
Lenght	[mm]	5000	5000	Contact EK	Contact EK	4015	4015
Width	[mm]	1185	1185	Contact EK	Contact EK	2280	2280
Height (ST - LN)	[mm]	2320	2320	Contact EK	Contact EK	2535	2535
Height (SL)	[mm]	2380	2380	Contact EK	Contact EK	2560	2560

<b>Unit dimensions with hydronic kit</b>							
Integrata LP 1-0 OO	-	Large	Large	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Large	Large	Contact EK	Contact EK	Large	Large
Integrata LP 1-1 OO	-	Large	Large	Standard	Standard	Large	Large
Integrata LP 1-1 OO and HR equipment	-	Large	Large	Contact EK	Contact EK	Large	Large
Integrata MP 1-0 OO	-	Large	Large	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Large	Large	Contact EK	Contact EK	Large	Large
Integrata MP 1-1 OO	-	Large	Large	Standard	Standard	Large	Large
Integrata MP 1-1 OO and HR equipment	-	Large	Large	Contact EK	Contact EK	Large	Large
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Large	Large	Contact EK	Contact EK	Large	Large

# CRIO HE

10-1-1 PE ↔ 116-2-2 PE



Refrigerant  
R290 | GWP=3



Brazed plate  
heat exchanger



Semi-hermetic  
piston compressor



Axial fan



Cu/Al  
condensing coils



SEPR

**Air to water chillers for medium temperature applications**  
High efficiency



## Solution

B - Base  
I - Integrata

## Version

ST - Standard  
LN - Low Noise  
SL - Super Low Noise

## Equipment

AS - Standard equipment  
DS - Desuperheater  
HR - Total modulating Heat Recovery

**Cooling capacity 10 - 116 kW**

### Safety system

To ensure high-safety-level the unit is equipped with an **ATEX certified gas detector** and an **EC centrifugal extraction fan**. The sensor, with external dedicated power supply and Modbus output signal, has an alarm threshold set at 10% of the lower flammable limit (LFL). The Propane alarm causes the immediate shutdown of the machine and the centrifugal extraction fan is switched on, which allows the ventilation of the compressor compartment and the dilution of the R290 concentration to values below the lower flammability limit.

### Structure

Structure specifically designed and built to guarantee total resistance to atmospheric agents and corrosion. Basement and panels made of galvanized steel sheet, oven-painted with polyurethane powders. Frame made of anodized aluminium profiles, with aluminium alloy corner joints that guarantee excellent mechanical resistance and low weight. LN (Low Noise) version: the panels are internally lined with sound-absorbing material. SL (Super Low Noise) version: the panels are sandwich and insulated with rock wool.

### Compressor

Reciprocating semi-hermetic type compressor equipped with: electronic control module and protection of the electric motor (installed inside the electrical panel); oil charge; oil level sight glass and oil crankcase heater; anti-vibration rubber supports; anti-vibration pipes (suction and discharge); suction and discharge valves. The compressor can be supplied with one or more RSH capacity control heads to guarantee an adaptation of the cooling capacity in case of thermal load's reduction: please see the list of accessories for further information.

### EC Fan

Premium-Axial-Fans with bionic shaped blades and high-efficient EC (Electronically Commutated) external rotor motors, sealed in protection IP54 and thermal class THCL 155. The motor efficiency class complies with IE4.

### Air heat exchanger

Finned coil made with copper pipes arranged on staggered rows, mechanically expanded inside a pack of aluminium fins offering a high exchange surface area.

### Water heat exchanger

Brazed plate-type heat exchanger, stainless steel AISI 316 made, complete with water differential pressure switch, air vent valve and thermally insulated with closed-cell neoprene anti-condensate material. The heat exchanger design provides high thermal exchange and high performance results, furthermore it guarantees small dimensions and easy installation and maintenance.

### Electrical board

Each unit is equipped with electric panel, built, wired and fully tested at the factory. Wiring numeration and optimized layout facilitate troubleshooting. The installed components are identified by nameplates to better identify the application and the type of action. Switchboard is made according to standards IEC 204-1/EN60204-1 and it is complete with the following main components: - Main isolator switch - Door interlock safety device - Contactor and protection for compressor and fans - Cabinet minimum protection rating IP54.

To ensure higher level of security, the cabinet is outside the machine and positioned on one side of the unit. The propane sensor is equipped with separate power supply: this power supply must always be guaranteed in order to ensure the monitoring of any leakage.

### Control

The microprocessor controls the unit capacity by timing the compressors and checks the operating alarms with the possibility to connect to BMS.

### Refrigerant circuit

Filter drier, moisture-liquid sight glass, electronic expansion valve, high & low pressure gauge, high and low pressure transducers, high pressure switch, safety high pressure valve (when required by EN 378-2016 standard).

### Water circuit

(Integrata)

**Base version:** as interface to the plant, includes the water fittings of the evaporator only.

**Integrated version:** Water storage tank, water pressure gauge, safety valve, water discharge valve, centrifugal pump(s) suitable for glycol solutions up to 40%, manual by-pass valve, manual air venting valve. 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.

### ACCESSORI PRINCIPALI

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter
- Air heat exchanger with various coatings treatment
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Open / Closed expansion vessel with automatic filling unit
- RSH Capacity Control head / Inverter driven compressor
- Advanced control c.pCo

» For the complete list of accessories please see pages 54-55-56-57

# CRIO HE

## Technical data

CRIO HE R290 range		10-1-1 PE	14-1-1 PE	17-1-1 PE	20-1-1 PE	24-1-1 PE	30-1-1 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>							
Cooling capacity <sup>(1)</sup>	[kW]	9,6	13,8	17,3	20,4	24,1	30,2
Total power input <sup>(1)</sup>	[kW]	4,2	5,9	7,6	9,9	10,4	12,4
EER - Energy Efficiency Ratio	-	2,30	2,36	2,28	2,06	2,31	2,44
Saved CO2 equivalent Ton <sup>(*)</sup>	[CO <sub>2</sub> Ton]	8,3	10,7	11,5	15,5	15,5	20,4
"Ecodesign" compliance for process application (SEPR)	-	3,59	3,41	3,60	3,49	3,61	3,91

<b>REFRIGERANT CIRCUIT</b>							
Refrigerant	-	R290					
GWP	-	3					
Charge of refrigerant - Base unit	[kg]	2,2	2,8	3,0	4,0	4,0	5,3
Independent gas circuits	[n°]	1	1	1	1	1	1
Compressors type	-	Semi-hermetic pistons					
Compressors quantity	[n°]	1	1	1	1	1	1
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)					
Condensing coils type	-	Cu/Al					
Fans type	-	Axial EC					
Fans quantity	[n°]	1	1	1	2	2	2
Fans power input <sup>(1)</sup> (total)	[kW]	0,2	0,3	0,7	1,4	1	0,9
Total air flow	[m <sup>3</sup> /h]	6.900	7.400	10.900	21.500	18.600	21.200
Expansion valve type	-	Electronic					
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	2,3	3,3	4,2	4,9	5,8	7,3
Evaporator pressure drop <sup>(1)</sup>	[kPa]	24	27	29	29	29	35

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>							
Heating capacity <sup>(2)</sup>	[kW]	1,8	2,35	3,13	3,65	3,84	4,54
Water flow	[m <sup>3</sup> /h]	0,31	0,40	0,54	0,63	0,66	0,78
Pressure drop (water side)	[kPa]	5,1	5,2	5,2	5,2	5,2	5,2

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>							
Heating capacity <sup>(2)</sup>	[kW]	13	18,2	23,8	28,6	32,6	40,3
Water flow	[m <sup>3</sup> /h]	2,2	3,1	4,1	4,9	5,6	6,9
Pressure drop (water side)	[kPa]	13,5	24,3	25,1	25,1	24,8	30

<b>Electrical data</b>							
Power supply	-	400/3/50					
Emergency power supply	-	230/1/50					
Maximum power input without pump	[kW]	9,3	13,1	14,1	17,7	20,2	22,5
Locked rotor current - LRA without pump	[A]	65,0	89,2	104,2	120,9	140,0	206,5
Maximum absorbed current - FLA without pump	[A]	15,7	22,5	23,5	32,5	39,7	40,7

<b>HYDRONIC KIT (option)</b>							
Buffer tank capacity	[L]	60	60	60	160	160	290
Pump type	-	Centrifugal					

<b>Standard pump - 150 kPa useful head</b>							
Motor Efficiency	-	-	-	-	-	-	IE3
Pump motor nominal power	[kW]	0,37	0,37	0,55	0,55	0,55	0,9
Pump motor nominal current	[A]	1,4	1,4	1,9	1,9	1,9	2,5

<b>Standard pump - 250 kPa useful head</b>							
Motor Efficiency	-	-	IE3	IE3	IE3	IE3	IE3
Pump motor nominal power	[kW]	0,55	0,75	0,9	0,9	1,5	1,5
Pump motor nominal current	[A]	2	1,9	2,5	2,5	4,1	4,1

<b>Water connections</b>							
Dimension (nominal external diameter)	[inch/DN]	1/2" (DN15)	1" (DN 25)	1" (DN 25)	1" (DN 25)	1" (DN 25)	1" 1/2 (DN 40)

<b>Noise levels <sup>(3)</sup></b>							
Total sound power (ST version)	[dB(A)]	73	76	79	82	82	81
Total sound pressure (ST version) - at 1 m distance	[dB(A)]	56	59	62	65	65	63
Total sound pressure (ST version) - at 10 m distance	[dB(A)]	43	45	48	51	51	50
Total sound power (LN version)	[dB(A)]	70	73	76	79	79	78
Total sound pressure (LN version) - at 1 m distance	[dB(A)]	53	56	59	62	62	60
Total sound pressure (LN version) - at 10 m distance	[dB(A)]	40	42	45	48	48	47
Total sound power (SL version)	[dB(A)]	68	71	74	77	77	76
Total sound pressure (SL version) - at 1 m distance	[dB(A)]	51	54	57	60	60	58
Total sound pressure (SL version) - at 10 m distance	[dB(A)]	38	40	43	46	46	45

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethylene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO HE

## Technical data

CRIO HE R290 range		35-1-1 PE	41-1-1 PE	48-1-1 PE	56-1-1 PE	41-2-2 PE	48-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>							
Cooling capacity <sup>(1)</sup>	[kW]	34,8	41,3	48,4	56,4	41,1	48
Total power input <sup>(1)</sup>	[kW]	14,2	19,8	22,7	25	17,9	19,5
EER - Energy Efficiency Ratio	-	2,46	2,08	2,13	2,25	2,30	2,46
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	23,5	24,5	29,4	39	32,9	39,4
"Ecodesign" compliance for process application (SEPR)	-	3,81	3,40	3,50	3,61	3,69	3,74

<b>REFRIGERANT CIRCUIT</b>							
Refrigerant	-	R290					
GWP	-	3					
Charge of refrigerant - Base unit	[kg]	6,1	6,3	7,6	10,1	8,5	10,2
Independent gas circuits	[n°]	1	1	1	1	2	2
Compressors type	-	Semi-hermetic pistons					
Compressors quantity	[n°]	1	1	1	1	2	2
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)		1 (83%); 2 (67%); 3 (50%)		1 (75%); 2 (50%)	
Condensing coils type	-	Cu/Al					
Fans type	-	Axial EC					
Fans quantity	[n°]	2	2	2	3	3	3
Fans power input <sup>(1)</sup> (total)	[kW]	1,6	4,2	3,8	2,4	1,3	1,1
Total air flow	[m <sup>3</sup> /h]	26.200	40.150	35.500	36.000	30.900	27.150
Expansion valve type	-	Electronic					
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	8,4	10,0	11,7	13,7	10,0	11,6
Evaporator pressure drop <sup>(1)</sup>	[kPa]	18	20	26	29	19	25

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>							
Heating capacity <sup>(2)</sup>	[kW]	5,02	6,6	8,1	10,1	7,27	7,61
Water flow	[m <sup>3</sup> /h]	0,86	1,14	1,39	1,74	1,25	1,31
Pressure drop (water side)	[kPa]	5,3	5,3	5,4	5,6	5,2	5,2

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>							
Heating capacity <sup>(2)</sup>	[kW]	47,2	56,8	67,3	79,3	57,3	64,7
Water flow	[m <sup>3</sup> /h]	8,1	9,8	11,6	13,6	9,9	11,1
Pressure drop (water side)	[kPa]	34,1	42,1	27,6	28,7	19,8	24,4

<b>Electrical data</b>							
Power supply	-	400/3/50					
Emergency power supply	-	230/1/50					
Maximum power input without pump	[kW]	27,5	37,8	42,6	47,7	34,3	39,3
Locked rotor current - LRA without pump	[A]	228,2	248,5	282,3	327,1	151,5	177,8
Maximum absorbed current - FLA without pump	[A]	47,8	63,2	70,3	80,3	63,1	77,5

<b>HYDRONIC KIT (option)</b>							
Buffer tank capacity	[L]	290	290	290	290	290	290
Pump type	-	Centrifugal					

<b>Standard pump - 150 kPa useful head</b>							
Motor Efficiency	-	IE3					
Pump motor nominal power	[kW]	0,9	0,9	1,1	1,1	1,1	1,1
Pump motor nominal current	[A]	2,5	2,5	3,3	3,3	3,3	3,3

<b>Standard pump - 250 kPa useful head</b>							
Motor Efficiency	-	IE3					
Pump motor nominal power	[kW]	1,5	1,5	2,2	2,2	1,5	2,2
Pump motor nominal current	[A]	4,1	4,1	4,7	4,7	4,1	4,7

<b>Water connections</b>							
Dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	2" (DN 50)	1" 1/2 (DN 40)	1" 1/2 (DN 40)

<b>Noise levels <sup>(3)</sup></b>							
Total sound power (ST version)	[dB(A)]	84	86	87	86	83	84
Total sound pressure (ST version) - at 1 m distance	[dB(A)]	66	68	69	68	65	66
Total sound pressure (ST version) - at 10 m distance	[dB(A)]	53	55	56	54	51	52
Total sound power (LN version)	[dB(A)]	81	83	84	83	80	81
Total sound pressure (LN version) - at 1 m distance	[dB(A)]	63	65	66	65	62	63
Total sound pressure (LN version) - at 10 m distance	[dB(A)]	50	52	53	51	48	49
Total sound power (SL version)	[dB(A)]	79	81	82	81	78	79
Total sound pressure (SL version) - at 1 m distance	[dB(A)]	61	63	64	63	60	61
Total sound pressure (SL version) - at 10 m distance	[dB(A)]	48	50	51	49	46	47

### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethylene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO HE

## Technical data

CRIO HE R290 range		60-2-2 PE	70-2-2 PE	83-2-2 PE	97-2-2 PE	116-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>						
Cooling capacity <sup>(1)</sup>	[kW]	60,1	70,4	83,2	97,2	116
Total power input <sup>(1)</sup>	[kW]	24,9	31,4	35,3	43,5	49,5
EER - Energy Efficiency Ratio	-	2,42	2,24	2,36	2,24	2,34
Saved CO2 equivalent Ton <sup>(*)</sup>	[CO <sub>2</sub> Ton]	41,6	45,2	65,5	67,5	87,6
"Ecodesign" compliance for process application (SEPR)	-	3,94	3,65	3,58	3,56	3,70

<b>REFRIGERANT CIRCUIT</b>						
Refrigerant	-	R290				
GWP	-	3				
Charge of refrigerant - Base unit	[kg]	10,8	11,7	17,0	17,5	22,8
Independent gas circuits	[n°]	2	2	2	2	2
Compressors type	-	Semi-hermetic pistons				
Compressors quantity	[n°]	2	2	2	2	2
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (83%); 2 (67%); 3 (50%)		
Condensing coils type	-	Cu/Al				
Fans type	-	Axial EC				
Fans quantity	[n°]	3	3	3	3	4
Fans power input <sup>(1)</sup> (total)	[kW]	2,5	5,6	3,3	5,8	3,2
Total air flow	[m <sup>3</sup> /h]	36.800	51.500	55.550	68.400	63.800
Expansion valve type	-	Electronic				
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	14,6	17,1	20,2	23,6	28,1
Evaporator pressure drop <sup>(1)</sup>	[kPa]	26	26	29	32	37

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	8,99	10,1	13,3	16,2	20,5
Water flow	[m <sup>3</sup> /h]	1,55	1,74	2,29	2,79	3,53
Pressure drop (water side)	[kPa]	5,2	5,3	5,3	5,4	5,6

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	81	94,5	114	136	160
Water flow	[m <sup>3</sup> /h]	13,9	16,3	19,6	23,4	27,5
Pressure drop (water side)	[kPa]	36,1	30,5	29,2	27,2	35,7

<b>Electrical data</b>						
Power supply	-	400/3/50				
Emergency power supply	-	230/1/50				
Maximum power input without pump	[kW]	43,9	59,4	72,6	82,2	100,5
Locked rotor current – LRA without pump	[A]	245,3	282,4	307,1	348,0	414,6
Maximum absorbed current - FLA without pump	[A]	79,5	102,0	121,8	136,0	167,8

<b>HYDRONIC KIT (option)</b>						
Buffer tank capacity	[L]	290	290	500	500	470
Pump type	-	Centrifugal				

<b>Standard pump - 150 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	1,1	2,2	2,2	2,2	2,2
Pump motor nominal current	[A]	3,3	4,7	4,7	4,7	4,7

<b>Standard pump - 250 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	2,2	3	3	4	4
Pump motor nominal current	[A]	4,7	6,4	6,4	8,7	8,7

<b>Water connections</b>						
Dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2" (DN 50)	2"1/2 (DN 65)	2"1/2 (DN 65)

<b>Noise levels <sup>(3)</sup></b>						
Total sound power (ST version)	[db(A)]	85	88	88	90	89
Total sound pressure (ST version) - at 1 m distance	[db(A)]	67	70	69	71	70
Total sound pressure (ST version) - at 10 m distance	[db(A)]	53	56	56	58	57
Total sound power (LN version)	[db(A)]	82	85	85	87	86
Total sound pressure (LN version) - at 1 m distance	[db(A)]	64	67	66	68	67
Total sound pressure (LN version) - at 10 m distance	[db(A)]	50	53	53	55	54
Total sound power (SL version)	[db(A)]	80	83	83	85	84
Total sound pressure (SL version) - at 1 m distance	[db(A)]	62	65	64	66	65
Total sound pressure (SL version) - at 10 m distance	[db(A)]	48	51	51	53	52

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethilene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethilene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO HE

130-2-2 PV ↔ 185-2-2 PV



Refrigerant  
R290 | GWP=3



Brazen plate  
heat exchanger



Semi-hermetic  
piston compressor



Axial fan



Microchannel  
condensing coils



**Air to water chillers for medium temperature applications**  
High efficiency



## Solution

B - Base  
I - Integrata

## Version

ST - Standard  
LN - Low Noise  
SL - Super Low Noise

## Equipment

AS - Standard equipment  
DS - Desuperheater  
HR - Total modulating Heat Recovery

**Cooling capacity 130 - 185 kW**

<b>Safety system</b>	To ensure high-safety-level the unit is equipped with an <b>ATEX certified gas detector</b> and an <b>EC centrifugal extraction fan</b> . The sensor, with external dedicated power supply and Modbus output signal, has an alarm threshold set at 10% of the lower flammable limit (LFL). The Propane alarm causes the immediate shutdown of the machine and the centrifugal extraction fan is switched on, which allows the ventilation of the compressor compartment and the dilution of the R290 concentration to values below the lower flammability limit.
<b>Structure</b>	Structure specifically designed and built to guarantee total resistance to atmospheric agents and corrosion. Basement and panels made of galvanized steel sheet, oven-painted with polyurethane powders. Frame made of anodized aluminium profiles, with aluminium alloy corner joints that guarantee excellent mechanical resistance and low weight. LN (Low Noise) version: the panels are internally lined with sound-absorbing material. SL (Super Low Noise) version: the panels are sandwich and insulated with rock wool.
<b>Compressor</b>	Reciprocating semi-hermetic type compressor equipped with: electronic control module and protection of the electric motor (installed inside the electrical panel); oil charge; oil level sight glass and oil crankcase heater; anti-vibration rubber supports; anti-vibration pipes (suction and discharge); suction and discharge valves. The compressor can be supplied with one or more RSH capacity control heads to guarantee an adaptation of the cooling capacity in case of thermal load's reduction: please see the list of accessories for further information.
<b>EC Fan</b>	Premium-Axial-Fans with bionic shaped blades and high-efficient EC (Electronically Commutated) external rotor motors, sealed in protection IP54 and thermal class THCL 155. The motor efficiency class complies with IE4.
<b>Air heat exchanger</b>	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.
<b>Water heat exchanger</b>	Brazen plate-type heat exchanger, stainless steel AISI 316 made, complete with water differential pressure switch, air vent valve and thermally insulated with closed-cell neoprene anti-condensate material. The heat exchanger design provides high thermal exchange and high performance results, furthermore it guarantees small dimensions and easy installation and maintenance.
<b>Electrical board</b>	Each unit is equipped with electric panel, built, wired and fully tested at the factory. Wiring numeration and optimized layout facilitate troubleshooting. The installed components are identified by nameplates to better identify the application and the type of action. Switchboard is made according to standards IEC 204-1/EN60204-1 and it is complete with the following main components: - Main isolator switch - Door interlock safety device - Contactor and protection for compressor and fans - Cabinet minimum protection rating IP54. To ensure higher level of security, the cabinet is outside the machine and positioned on one side of the unit. The propane sensor is equipped with separate power supply: this power supply must always be guaranteed in order to ensure the monitoring of any leakage.
<b>Control</b>	The microprocessor controls the unit capacity by timing the compressors and checks the operating alarms with the possibility to connect to BMS.
<b>Refrigerant circuit</b>	Filter drier, moisture-liquid sight glass, electronic expansion valve, high & low pressure gauge, high and low pressure transducers, high pressure switch, safety high pressure valve (when required by EN 378-2016 standard).
<b>Water circuit (Integrata)</b>	<b>Base version:</b> as interface to the plant, includes the water fittings of the evaporator only. <b>Integrated version:</b> Water storage tank, water pressure gauge, safety valve, water discharge valve, centrifugal pump(s) suitable for glycol solutions up to 40%, manual by-pass valve, manual air venting valve. 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.

## ACCESSORI PRINCIPALI

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter
- Air heat exchanger with various coatings treatment
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Open / Closed expansion vessel with automatic filling unit
- RSH Capacity Control head / Inverter driven compressor
- Advanced control c.pCo

» For the complete list of accessories please see pages 54-55-56-57

# CRIO HE

## Technical data

CRIO HE R290 range		130-2-2 PV	142-2-2 PV	161-2-2 PV	175-2-2 PV	185-2-2 PV
<b>COOLING - A BP/ST/AS/EC/*S version</b>						
Cooling capacity <sup>(1)</sup>	[kW]	130	142	161	175	185
Total power input <sup>(1)</sup>	[kW]	61,8	67,7	73,3	80,5	85
EER - Energy Efficiency Ratio	-	2,10	2,10	2,20	2,17	2,18
Saved CO2 equivalent Ton <sup>(*)</sup>	[CO <sub>2</sub> Ton]	55,8	61,1	77	77,9	81,4
"Ecodesign" compliance for process application (SEPR)	-	2,99	3,02	3,08	3,05	3,07

<b>REFRIGERANT CIRCUIT</b>						
Refrigerant	-	R290				
GWP	-	3				
Charge of refrigerant - Base unit	[kg]	14,5	15,9	20,0	20,2	21,2
Independent gas circuits	[n°]	2	2	2	2	2
Compressors type	-	Semi-hermetic pistons				
Compressors quantity	[n°]	2	2	2	2	2
Steps of capacity for each compressor (std)	-	2 (75%); 3 (62,5%); 4 (50%)				
Condensing coils type	-	Microchannel				
Fans type	-	Axial EC				
Fans quantity	[n°]	4	4	6	6	6
Fans power input <sup>(1)</sup> (total)	[kW]	4,3	5,9	3,3	4,3	5,3
Total air flow	[m <sup>3</sup> /h]	72.600	82.700	83.400	93.000	101.100
Expansion valve type	-	Electronic				
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	31,5	34,4	39,0	42,4	44,8
Evaporator pressure drop <sup>(1)</sup>	[kPa]	41	35	33	38	34

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	26,8	28,3	33	35,5	37,4
Water flow	[m <sup>3</sup> /h]	4,61	4,87	5,68	6,11	6,43
Pressure drop (water side)	[kPa]	5,8	6,0	14,7	15,0	15,1

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	185	204	228	247	262
Water flow	[m <sup>3</sup> /h]	31,8	35,1	39,2	42,5	45,1
Pressure drop (water side)	[kPa]	39,5	47,1	50,4	52,3	38,4

<b>Electrical data</b>						
Power supply	-	400/3/50				
Emergency power supply	-	230/1/50				
Maximum power input without pump	[kW]	95,1	114,3	119,5	125,1	133,3
Locked rotor current - LRA without pump	[A]	390,3	472,9	568,3	670,1	713,7
Maximum absorbed current - FLA without pump	[A]	166,0	193,2	198,7	216,3	231,5

<b>HYDRONIC KIT (option)</b>						
Buffer tank capacity	[L]	290	290	290	290	290
Pump type	-	Centrifugal				

<b>Standard pump - 150 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	3	3	3	3	3
Pump motor nominal current	[A]	6,4	6,4	6,4	6,4	6,4

<b>Standard pump - 250 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	4	4	5,5	5,5	5,5
Pump motor nominal current	[A]	8,7	8,7	10,6	10,6	10,6

<b>Water connections</b>						
Dimension (nominal external diameter)	[inch/DN]	3" (DN 80)	3" (DN 80)	3" (DN 80)	3" (DN 80)	3" (DN 80)

<b>Noise levels <sup>(3)</sup></b>						
Total sound power (ST version)	[db(A)]	90	94	95	95	97
Total sound pressure (ST version) - at 1 m distance	[db(A)]	71	75	75	75	77
Total sound pressure (ST version) - at 10 m distance	[db(A)]	58	62	63	63	65
Total sound power (LN version)	[db(A)]	87	91	92	92	94
Total sound pressure (LN version) - at 1 m distance	[db(A)]	68	72	72	72	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	55	59	60	60	62
Total sound power (SL version)	[db(A)]	85	89	90	90	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	66	70	70	70	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	53	57	58	58	60

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethilene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethilene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant





# CRIO HE

## Dimensions and weights

CRIO HE R290 range		60-2-2 PE	70-2-2 PE	83-2-2 PE	97-2-2 PE	116-2-2 PE	130-2-2 PV
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>							
Lenght	[mm]	3920	3920	4200	4200	5500	2895
Width	[mm]	1025	1025	1185	1185	1535	2280
Height (ST - LN)	[mm]	2281	2360	2320	2320	2350	2535
Height (SL)	[mm]	2368	2420	2380	2380	2410	2560
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	1080	1150	1460	1510	1710	1855
Operating weight (A BP/ST/AS/EC/** version)	[kg]	1088	1158	1470	1520	1720	1870

<b>DIMENSIONS - Large unit</b>							
Lenght	[mm]	-	-	5000	5000	Contact EK	4015
Width	[mm]	-	-	1185	1185	Contact EK	2280
Height (ST - LN)	[mm]	-	-	2320	2320	Contact EK	2535
Height (SL)	[mm]	-	-	2380	2380	Contact EK	2560

<b>Unit dimensions with hydronic kit</b>							
Integrata LP 1-0 OO	-	Standard	Standard	Large	Large	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Standard	Standard	Large	Large	Contact EK	Large
Integrata LP 1-1 OO	-	Standard	Standard	Large	Large	Standard	Large
Integrata LP 1-1 OO and HR equipment	-	Standard	Standard	Large	Large	Contact EK	Large
Integrata MP 1-0 OO	-	Standard	Standard	Large	Large	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Standard	Standard	Large	Large	Contact EK	Large
Integrata MP 1-1 OO	-	Standard	Standard	Large	Large	Standard	Large
Integrata MP 1-1 OO and HR equipment	-	Standard	Standard	Large	Large	Contact EK	Large
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Standard	Standard	Large	Large	Contact EK	Large

CRIO HE R290 range		142-2-2 PV	161-2-2 PV	175-2-2 PV	185-2-2 PV
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>					
Lenght	[mm]	2895	4015	4015	4015
Width	[mm]	2280	2280	2280	2280
Height (ST - LN)	[mm]	2535	2535	2535	2535
Height (SL)	[mm]	2560	2560	2560	2560
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	1900	2560	2575	2590
Operating weight (A BP/ST/AS/EC/** version)	[kg]	1915	2578	2593	2608

<b>DIMENSIONS - Large unit</b>					
Lenght	[mm]	4015	-	-	-
Width	[mm]	2280	-	-	-
Height (ST - LN)	[mm]	2535	-	-	-
Height (SL)	[mm]	2560	-	-	-

<b>Unit dimensions with hydronic kit</b>					
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Large	Standard	Standard	Standard
Integrata LP 1-1 OO	-	Large	Standard	Standard	Standard
Integrata LP 1-1 OO and HR equipment	-	Large	Standard	Standard	Standard
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Large	Standard	Standard	Standard
Integrata MP 1-1 OO	-	Large	Standard	Standard	Standard
Integrata MP 1-1 OO and HR equipment	-	Large	Standard	Standard	Standard
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Large	Standard	Standard	Standard

# CRIO HE+

10-1-1 PE ↔ 116-2-2 PE

R290

Refrigerant  
R290 | GWP=3



Brazen plate  
heat exchanger



Semi-hermetic  
piston compressor



Axial fan



Cu/Al  
condensing coils



EIA ready



SEPR

**Air to water chillers for medium temperature applications**  
High efficiency plus



## Solution

B - Base  
I - Integrata

## Version

ST - Standard  
LN - Low Noise  
SL - Super Low Noise

## Equipment

AS - Standard equipment  
DS - Desuperheater  
HR - Total modulating Heat Recovery

**Cooling capacity 10 - 116 kW**

### Safety system

To ensure high-safety-level the unit is equipped with an **ATEX certified gas detector** and an **EC centrifugal extraction fan**. The sensor, with external dedicated power supply and Modbus output signal, has an alarm threshold set at 10% of the lower flammable limit (LFL). The Propane alarm causes the immediate shutdown of the machine and the centrifugal extraction fan is switched on, which allows the ventilation of the compressor compartment and the dilution of the R290 concentration to values below the lower flammability limit.

### Structure

Structure specifically designed and built to guarantee total resistance to atmospheric agents and corrosion. Basement and panels made of galvanized steel sheet, oven-painted with polyurethane powders. Frame made of anodized aluminium profiles, with aluminium alloy corner joints that guarantee excellent mechanical resistance and low weight. LN (Low Noise) version: the panels are internally lined with sound-absorbing material. SL (Super Low Noise) version: the panels are sandwich and insulated with rock wool.

### Compressor

Reciprocating semi-hermetic type compressor equipped with: electronic control module and protection of the electric motor (installed inside the electrical panel); oil charge; oil level sight glass and oil crankcase heater; anti-vibration rubber supports; anti-vibration pipes (suction and discharge); suction and discharge valves. The compressor can be supplied with one or more RSH capacity control heads to guarantee an adaptation of the cooling capacity in case of thermal load's reduction: please see the list of accessories for further information.

### EC Fan

Premium-Axial-Fans with bionic shaped blades and high-efficient EC (Electronically Commutated) external rotor motors, sealed in protection IP54 and thermal class THCL 155. The motor efficiency class complies with IE4.

### Air heat exchanger

Finned coil made with copper pipes arranged on staggered rows, mechanically expanded inside a pack of aluminium fins offering a high exchange surface area.

### Water heat exchanger

Brazen plate-type heat exchanger, stainless steel AISI 316 made, complete with water differential pressure switch, air vent valve and thermally insulated with closed-cell neoprene anti-condensate material. The heat exchanger design provides high thermal exchange and high performance results, furthermore it guarantees small dimensions and easy installation and maintenance.

### Electrical board

Each unit is equipped with electric panel, built, wired and fully tested at the factory. Wiring numeration and optimized layout facilitate troubleshooting. The installed components are identified by nameplates to better identify the application and the type of action. Switchboard is made according to standards IEC 204-1/EN60204-1 and it is complete with the following main components: - Main isolator switch - Door interlock safety device - Contactor and protection for compressor and fans - Cabinet minimum protection rating IP54.

To ensure higher level of security, the cabinet is outside the machine and positioned on one side of the unit. The propane sensor is equipped with separate power supply: this power supply must always be guaranteed in order to ensure the monitoring of any leakage.

### Control

The microprocessor controls the unit capacity by timing the compressors and checks the operating alarms with the possibility to connect to BMS.

### Refrigerant circuit

Filter drier, moisture-liquid sight glass, electronic expansion valve, high & low pressure gauge, high and low pressure transducers, high pressure switch, safety high pressure valve (when required by EN 378-2016 standard).

### Water circuit

(Integrata)

**Base version:** as interface to the plant, includes the water fittings of the evaporator only.

**Integrated version:** Water storage tank, water pressure gauge, safety valve, water discharge valve, centrifugal pump(s) suitable for glycol solutions up to 40%, manual by-pass valve, manual air venting valve. 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.

### ACCESSORI PRINCIPALI

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter
- Air heat exchanger with various coatings treatment
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Open / Closed expansion vessel with automatic filling unit
- RSH Capacity Control head / Inverter driven compressor
- Advanced control c.pCo

» For the complete list of accessories please see pages 54-55-56-57

# CRIO HE+

## Technical data

CRIO HE+ R290 range		10-1-1 PE	14-1-1 PE	17-1-1 PE	21-1-1 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>					
Cooling capacity <sup>(1)</sup>	[kW]	9,6	13,8	17,3	21,1
Total power input <sup>(1)</sup>	[kW]	4,2	5,9	7,6	9,2
EER - Energy Efficiency Ratio	-	2,30	2,36	2,28	2,28
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	8,3	10,7	11,5	15,1
"Ecodesign" compliance for process application (SEPR)	-	3,59	3,41	3,60	3,40

<b>REFRIGERANT CIRCUIT</b>					
Refrigerant	-	R290			
GWP	-	3			
Charge of refrigerant - Base unit	[kg]	2,2	2,8	3,0	3,9
Independent gas circuits	[n°]	1	1	1	1
Compressors type	-	Semi-hermetic pistons			
Compressors quantity	[n°]	1	1	1	1
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (75%); 2 (50%)
Condensing coils type	-	Cu/Al			
Fans type	-	Axial EC			
Fans quantity	[n°]	1	1	1	2
Fans power input <sup>(1)</sup> (total)	[kW]	0,2	0,3	0,7	0,4
Total air flow	[m <sup>3</sup> /h]	6.900	7.400	10.900	13.800
Expansion valve type	-	Electronic			
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	2,3	3,3	4,2	5,1
Evaporator pressure drop <sup>(1)</sup>	[kPa]	24	27	29	28

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	1,8	2,35	3,13	3,72
Water flow	[m <sup>3</sup> /h]	0,31	0,40	0,54	0,64
Pressure drop (water side)	[kPa]	5,1	5,2	5,2	0,2

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	13	18,2	23,8	28,2
Water flow	[m <sup>3</sup> /h]	2,2	3,1	4,1	4,9
Pressure drop (water side)	[kPa]	13,5	24,3	25,1	24,6

<b>Electrical data</b>					
Power supply	-	400/3/50			
Emergency power supply	-	230/1/50			
Maximum power input without pump	[kW]	9,3	13,1	14,1	17,7
Locked rotor current – LRA without pump	[A]	65,0	89,2	104,2	120,9
Maximum absorbed current - FLA without pump	[A]	15,7	22,5	23,5	32,5

<b>HYDRONIC KIT (option)</b>					
Buffer tank capacity	[L]	60	60	60	160
Pump type	-	Centrifugal			

<b>Standard pump - 150 kPa useful head</b>					
Motor Efficiency	-	-	-	-	-
Pump motor nominal power	[kW]	0,37	0,37	0,55	0,55
Pump motor nominal current	[A]	1,4	1,4	1,9	1,9

<b>Standard pump - 250 kPa useful head</b>					
Motor Efficiency	-	-	IE3	IE3	IE3
Pump motor nominal power	[kW]	0,55	0,75	0,9	0,9
Pump motor nominal current	[A]	2	1,9	2,5	2,5

<b>Water connections</b>					
Dimension (nominal external diameter)	[inch/DN]	1/2" (DN15)	1" (DN 25)	1" (DN 25)	1" (DN 25)

<b>Noise levels <sup>(3)</sup></b>					
Total sound power (ST version)	[db(A)]	73	76	79	80
Total sound pressure (ST version) - at 1 m distance	[db(A)]	56	59	62	63
Total sound pressure (ST version) - at 10 m distance	[db(A)]	43	45	48	49
Total sound power (LN version)	[db(A)]	70	73	76	77
Total sound pressure (LN version) - at 1 m distance	[db(A)]	53	56	59	60
Total sound pressure (LN version) - at 10 m distance	[db(A)]	40	42	45	46
Total sound power (SL version)	[db(A)]	68	71	74	75
Total sound pressure (SL version) - at 1 m distance	[db(A)]	51	54	57	58
Total sound pressure (SL version) - at 10 m distance	[db(A)]	38	40	43	44

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethylene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO HE+

## Technical data

CRIO HE+ R290 range		30-1-1 PE	36-1-1 PE	56-1-1 PE	41-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>					
Cooling capacity <sup>(1)</sup>	[kW]	30,2	36	56,4	41,1
Total power input <sup>(1)</sup>	[kW]	12,4	14,1	25,1	17,9
EER - Energy Efficiency Ratio	-	2,44	2,55	2,25	2,30
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	20,4	27,9	39	32,9
"Ecodesign" compliance for process application (SEPR)	-	3,91	3,69	3,61	3,69

<b>REFRIGERANT CIRCUIT</b>					
Refrigerant	-	R290			
GWP	-	3			
Charge of refrigerant - Base unit	[kg]	5,3	7,2	10,1	8,5
Independent gas circuits	[n°]	1	1	1	2
Compressors type	-	Semi-hermetic pistons			
Compressors quantity	[n°]	1	1	1	2
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)	1 (75%); 2 (50%)	1 (83%); 2 (67%); 3 (50%)	1 (75%); 2 (50%)
Condensing coils type	-	Cu/Al			
Fans type	-	Axial EC			
Fans quantity	[n°]	2	2	3	3
Fans power input <sup>(1)</sup> (total)	[kW]	0,9	0,9	2,4	1,3
Total air flow	[m <sup>3</sup> /h]	21.200	19.700	36.000	30.900
Expansion valve type	-	Electronic			
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	7,3	8,7	13,7	10,0
Evaporator pressure drop <sup>(1)</sup>	[kPa]	35	18	29	19

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	4,54	5,09	10,1	7,27
Water flow	[m <sup>3</sup> /h]	0,78	0,88	1,74	1,25
Pressure drop (water side)	[kPa]	5,2	0,3	5,6	5,2

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	40,3	46,7	79,3	57,3
Water flow	[m <sup>3</sup> /h]	6,9	8,0	13,6	9,9
Pressure drop (water side)	[kPa]	30	8,1	28,7	19,8

<b>Electrical data</b>					
Power supply	-	400/3/50			
Emergency power supply	-	230/1/50			
Maximum power input without pump	[kW]	22,5	27,5	47,7	34,3
Locked rotor current - LRA without pump	[A]	206,5	228,2	327,1	151,5
Maximum absorbed current - FLA without pump	[A]	40,7	47,8	80,3	63,1

<b>HYDRONIC KIT (option)</b>					
Buffer tank capacity	[L]	290	290	290	290
Pump type	-	Centrifugal			

<b>Standard pump - 150 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	0,9	0,9	1,1	1,1
Pump motor nominal current	[A]	2,5	2,5	3,3	3,3

<b>Standard pump - 250 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	1,5	1,5	2,2	1,5
Pump motor nominal current	[A]	4,1	4,1	4,7	4,1

<b>Water connections</b>					
Dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	1" 1/2 (DN 40)	2" (DN 50)	1" 1/2 (DN 40)

<b>Noise levels <sup>(3)</sup></b>					
Total sound power (ST version)	[db(A)]	81	84	86	83
Total sound pressure (ST version) - at 1 m distance	[db(A)]	63	66	68	65
Total sound pressure (ST version) - at 10 m distance	[db(A)]	50	53	54	51
Total sound power (LN version)	[db(A)]	78	81	83	80
Total sound pressure (LN version) - at 1 m distance	[db(A)]	60	63	65	62
Total sound pressure (LN version) - at 10 m distance	[db(A)]	47	50	51	48
Total sound power (SL version)	[db(A)]	76	79	81	78
Total sound pressure (SL version) - at 1 m distance	[db(A)]	58	61	63	60
Total sound pressure (SL version) - at 10 m distance	[db(A)]	45	48	49	46

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethylene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO HE+

## Technical data

CRIO HE+ R290 range		48-2-2 PE	83-2-2 PE	99-2-2 PE	116-2-2 PE
<b>COOLING - A BP/ST/AS/EC/*S version</b>					
Cooling capacity <sup>(1)</sup>	[kW]	48	83,2	99,4	116
Total power input <sup>(1)</sup>	[kW]	19,5	35,3	38,1	49,5
EER - Energy Efficiency Ratio	-	2,46	2,36	2,61	2,34
Saved CO2 equivalent Ton (*)	[CO <sub>2</sub> Ton]	39,4	65,5	85,8	87,6
"Ecodesign" compliance for process application (SEPR)	-	3,74	3,58	3,62	3,70

<b>REFRIGERANT CIRCUIT</b>					
Refrigerant	-	R290			
GWP	-	3			
Charge of refrigerant - Base unit	[kg]	10,2	17,0	22,3	22,8
Independent gas circuits	[n°]	2	2	2	2
Compressors type	-	Semi-hermetic pistons			
Compressors quantity	[n°]	2	2	2	2
Steps of capacity for each compressor (std)	-	1 (75%); 2 (50%)		1 (83%); 2 (67%); 3 (50%)	
Condensing coils type	-	Cu/Al			
Fans type	-	Axial EC			
Fans quantity	[n°]	3	3	4	4
Fans power input <sup>(1)</sup> (total)	[kW]	1,1	3,3	1,8	3,2
Total air flow	[m <sup>3</sup> /h]	27.150	55.550	51.100	63.800
Expansion valve type	-	Electronic			
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	11,6	20,2	24,1	28,1
Evaporator pressure drop <sup>(1)</sup>	[kPa]	25	29	33	37

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	7,61	13,3	17,1	20,5
Water flow	[m <sup>3</sup> /h]	1,31	2,29	2,94	3,53
Pressure drop (water side)	[kPa]	5,2	5,3	0,4	5,6

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>					
Heating capacity <sup>(2)</sup>	[kW]	64,7	114	137	160
Water flow	[m <sup>3</sup> /h]	11,1	19,6	23,6	27,5
Pressure drop (water side)	[kPa]	24,4	29,2	33,1	35,7

<b>Electrical data</b>					
Power supply	-	400/3/50			
Emergency power supply	-	230/1/50			
Maximum power input without pump	[kW]	39,3	72,6	85,3	100,5
Locked rotor current - LRA without pump	[A]	177,8	307,1	352,6	414,6
Maximum absorbed current - FLA without pump	[A]	77,5	121,8	140,6	167,8

<b>HYDRONIC KIT (option)</b>					
Buffer tank capacity	[L]	290	500	470	470
Pump type	-	Centrifugal			

<b>Standard pump - 150 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	1,1	2,2	2,2	2,2
Pump motor nominal current	[A]	3,3	4,7	4,7	4,7

<b>Standard pump - 250 kPa useful head</b>					
Motor Efficiency	-	IE3			
Pump motor nominal power	[kW]	2,2	3	4	4
Pump motor nominal current	[A]	4,7	6,4	8,7	8,7

<b>Water connections</b>					
Dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	2" (DN 50)	2"1/2 (DN 65)	2"1/2 (DN 65)

<b>Noise levels <sup>(3)</sup></b>					
Total sound power (ST version)	[db(A)]	84	88	89	89
Total sound pressure (ST version) - at 1 m distance	[db(A)]	66	69	70	70
Total sound pressure (ST version) - at 10 m distance	[db(A)]	52	56	57	57
Total sound power (LN version)	[db(A)]	81	85	86	86
Total sound pressure (LN version) - at 1 m distance	[db(A)]	63	66	67	67
Total sound pressure (LN version) - at 10 m distance	[db(A)]	49	53	54	54
Total sound power (SL version)	[db(A)]	79	83	84	84
Total sound pressure (SL version) - at 1 m distance	[db(A)]	61	64	65	65
Total sound pressure (SL version) - at 10 m distance	[db(A)]	47	51	52	52

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethylene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethylene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant

# CRIO HE+

130-2-2 PV ↔ 185-2-2 PV



Refrigerant  
R290 | GWP=3



Brazen plate  
heat exchanger



Semi-hermetic  
piston compressor



Axial fan



Microchannel  
condensing coils



EIA ready



SEPR

**Air to water chillers for medium temperature applications**  
High efficiency plus



## Solution

B - Base  
I - Integrata

## Version

ST - Standard  
LN - Low Noise  
SL - Super Low Noise

## Equipment

AS - Standard equipment  
DS - Desuperheater  
HR - Total modulating Heat Recovery

**Cooling capacity 130 - 185 kW**

<b>Safety system</b>	To ensure high-safety-level the unit is equipped with an <b>ATEX certified gas detector</b> and an <b>EC centrifugal extraction fan</b> . The sensor, with external dedicated power supply and Modbus output signal, has an alarm threshold set at 10% of the lower flammable limit (LFL). The Propane alarm causes the immediate shutdown of the machine and the centrifugal extraction fan is switched on, which allows the ventilation of the compressor compartment and the dilution of the R290 concentration to values below the lower flammability limit.
<b>Structure</b>	Structure specifically designed and built to guarantee total resistance to atmospheric agents and corrosion. Basement and panels made of galvanized steel sheet, oven-painted with polyurethane powders. Frame made of anodized aluminium profiles, with aluminium alloy corner joints that guarantee excellent mechanical resistance and low weight. LN (Low Noise) version: the panels are internally lined with sound-absorbing material. SL (Super Low Noise) version: the panels are sandwich and insulated with rock wool.
<b>Compressor</b>	Reciprocating semi-hermetic type compressor equipped with: electronic control module and protection of the electric motor (installed inside the electrical panel); oil charge; oil level sight glass and oil crankcase heater; anti-vibration rubber supports; anti-vibration pipes (suction and discharge); suction and discharge valves. The compressor can be supplied with one or more RSH capacity control heads to guarantee an adaptation of the cooling capacity in case of thermal load's reduction: please see the list of accessories for further information.
<b>EC Fan</b>	Premium-Axial-Fans with bionic shaped blades and high-efficient EC (Electronically Commutated) external rotor motors, sealed in protection IP54 and thermal class THCL 155. The motor efficiency class complies with IE4.
<b>Air heat exchanger</b>	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.
<b>Water heat exchanger</b>	Brazen plate-type heat exchanger, stainless steel AISI 316 made, complete with water differential pressure switch, air vent valve and thermally insulated with closed-cell neoprene anti-condensate material. The heat exchanger design provides high thermal exchange and high performance results, furthermore it guarantees small dimensions and easy installation and maintenance.
<b>Electrical board</b>	Each unit is equipped with electric panel, built, wired and fully tested at the factory. Wiring numeration and optimized layout facilitate troubleshooting. The installed components are identified by nameplates to better identify the application and the type of action. Switchboard is made according to standards IEC 204-1/EN60204-1 and it is complete with the following main components: - Main isolator switch - Door interlock safety device - Contactor and protection for compressor and fans - Cabinet minimum protection rating IP54. To ensure higher level of security, the cabinet is outside the machine and positioned on one side of the unit. The propane sensor is equipped with separate power supply: this power supply must always be guaranteed in order to ensure the monitoring of any leakage.
<b>Control</b>	The microprocessor controls the unit capacity by timing the compressors and checks the operating alarms with the possibility to connect to BMS.
<b>Refrigerant circuit</b>	Filter drier, moisture-liquid sight glass, electronic expansion valve, high & low pressure gauge, high and low pressure transducers, high pressure switch, safety high pressure valve (when required by EN 378-2016 standard).
<b>Water circuit (Integrata)</b>	<b>Base version:</b> as interface to the plant, includes the water fittings of the evaporator only. <b>Integrated version:</b> Water storage tank, water pressure gauge, safety valve, water discharge valve, centrifugal pump(s) suitable for glycol solutions up to 40%, manual by-pass valve, manual air venting valve. 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.

## ACCESSORI PRINCIPALI

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter
- Air heat exchanger with various coatings treatment
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Open / Closed expansion vessel with automatic filling unit
- RSH Capacity Control head / Inverter driven compressor
- Advanced control c.pCo

» For the complete list of accessories please see pages 54-55-56-57

# CRIO HE+

## Technical data

CRIO HE+ R290 range		130-2-2 PV	142-2-2 PV	161-2-2 PV	175-2-2 PV	185-2-2 PV
<b>COOLING - A BP/ST/AS/EC/*S version</b>						
Cooling capacity <sup>(1)</sup>	[kW]	130	142	161	175	185
Total power input <sup>(1)</sup>	[kW]	61,8	67,8	73,3	80,5	85
EER - Energy Efficiency Ratio	-	2,10	2,10	2,20	2,17	2,18
Saved CO2 equivalent Ton <sup>(*)</sup>	[CO <sub>2</sub> Ton]	55,8	61,1	77	77,9	81,4
"Ecodesign" compliance for process application (SEPR)	-	2,99	3,02	3,08	3,05	3,07

<b>REFRIGERANT CIRCUIT</b>						
Refrigerant	-	R290				
GWP	-	3				
Charge of refrigerant - Base unit	[kg]	14,5	15,9	20,0	20,2	21,2
Independent gas circuits	[n°]	2	2	2	2	2
Compressors type	-	Semi-hermetic pistons				
Compressors quantity	[n°]	2	2	2	2	2
Steps of capacity for each compressor (std)	-	2 (75%); 3 (62,5%); 4 (50%)				
Condensing coils type	-	Microchannel				
Fans type	-	Axial EC				
Fans quantity	[n°]	4	4	6	6	6
Fans power input <sup>(1)</sup> (total)	[kW]	4,3	5,9	3,3	4,3	5,3
Total air flow	[m <sup>3</sup> /h]	72.600	82.700	83.400	93.000	101.100
Expansion valve type	-	Electronic				
Evaporator water flow <sup>(1)</sup>	[m <sup>3</sup> /h]	31,5	34,4	39,0	42,4	44,8
Evaporator pressure drop <sup>(1)</sup>	[kPa]	41	35	33	38	34

<b>DESUPERHEATER (option) - A BP/ST/DS/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	26,8	28,3	33	35,5	37,4
Water flow	[m <sup>3</sup> /h]	4,61	4,87	5,68	6,11	6,43
Pressure drop (water side)	[kPa]	5,8	6,0	14,7	15,0	15,1

<b>HEAT RECOVERY (option) - A BP/ST/HR/EC/*S</b>						
Heating capacity <sup>(2)</sup>	[kW]	185	204	228	247	262
Water flow	[m <sup>3</sup> /h]	31,8	35,1	39,2	42,5	45,1
Pressure drop (water side)	[kPa]	39,5	47,1	50,4	52,3	38,4

<b>Electrical data</b>						
Power supply	-	400/3/50				
Emergency power supply	-	230/1/50				
Maximum power input without pump	[kW]	95,1	114,3	119,5	125,1	133,3
Locked rotor current - LRA without pump	[A]	390,3	472,9	568,3	670,1	713,7
Maximum absorbed current - FLA without pump	[A]	166,0	193,2	198,7	216,3	231,5

<b>HYDRONIC KIT (option)</b>						
Buffer tank capacity	[L]	290	290	290	290	290
Pump type	-	Centrifugal				

<b>Standard pump - 150 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	3	3	3	3	3
Pump motor nominal current	[A]	6,4	6,4	6,4	6,4	6,4

<b>Standard pump - 250 kPa useful head</b>						
Motor Efficiency	-	IE3				
Pump motor nominal power	[kW]	4	4	5,5	5,5	5,5
Pump motor nominal current	[A]	8,7	8,7	10,6	10,6	10,6

<b>Water connections</b>						
Dimension (nominal external diameter)	[inch/DN]	3" (DN 80)	3" (DN 80)	3" (DN 80)	3" (DN 80)	3" (DN 80)

<b>Noise levels <sup>(3)</sup></b>						
Total sound power (ST version)	[db(A)]	90	94	95	95	97
Total sound pressure (ST version) - at 1 m distance	[db(A)]	71	75	75	75	77
Total sound pressure (ST version) - at 10 m distance	[db(A)]	58	62	63	63	65
Total sound power (LN version)	[db(A)]	87	91	92	92	94
Total sound pressure (LN version) - at 1 m distance	[db(A)]	68	72	72	72	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	55	59	60	60	62
Total sound power (SL version)	[db(A)]	85	89	90	90	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	66	70	70	70	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	53	57	58	58	60

#### Reference conditions:

(1) Condenser air intake temperature = 30 °C - Evaporator water temperature IN/OUT = -4/-8 °C - Fluid: ethilene glycol - Condensing coil: Cu/Al or microchannel according to models

(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: ethilene glycol - Condensing coil: Cu/Al or microchannel

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

(3) Sound power level in compliance with ISO 3744 - Sound pressure level (average) at 10 meter distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.

(\*) CO2 equivalent tons saved to the Environment compared to the choice of an EUROKLIMAT unit with similar cooling capacity and HFC refrigerant



# CRIO HE+

## Dimensions and weights

CRIO HE+ R290 range		10-1-1 PE	14-1-1 PE	17-1-1 PE	21-1-1 PE	30-1-1 PE
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>						
Lenght	[mm]	1680	1680	1680	2330	2980
Width	[mm]	1025	1025	1025	1025	1025
Height (ST - LN)	[mm]	2121	2121	2121	2221	2221
Height (SL)	[mm]	2208	2208	2208	2308	2308
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	350	360	410	560	720
Operating weight (A BP/ST/AS/EC/** version)	[kg]	355	365	415	565	727

<b>DIMENSIONS - Large unit</b>						
Lenght	[mm]	2330	2330	2330	2980	3920
Width	[mm]	1025	1025	1025	1025	1025
Height (ST - LN)	[mm]	2221	2221	2221	2221	2281
Height (SL)	[mm]	2308	2308	2308	2308	2368

<b>Unit dimensions with hydronic kit</b>						
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Large	Large	Large	Large	Standard
Integrata LP 1-1 OO	-	Large	Large	Large	Standard	Standard
Integrata LP 1-1 OO and HR equipment	-	Large	Large	Large	Large	Large
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Large	Large	Large	Large	Standard
Integrata MP 1-1 OO	-	Large	Large	Large	Standard	Standard
Integrata MP 1-1 OO and HR equipment	-	Large	Large	Large	Large	Large
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Large	Large	Large	Standard	Standard

CRIO HE+ R290 range		36-1-1 PE	56-1-1 PE	41-2-2 PE	48-2-2 PE	83-2-2 PE
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>						
Lenght	[mm]	2980	3920	3920	3920	4200
Width	[mm]	1025	1025	1025	1025	1185
Height (ST - LN)	[mm]	2221	2281	2281	2281	2320
Height (SL)	[mm]	2308	2368	2368	2368	2380
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	760	960	940	970	1460
Operating weight (A BP/ST/AS/EC/** version)	[kg]	767	968	948	978	1470

<b>DIMENSIONS - Large unit</b>						
Lenght	[mm]	3920	-	-	-	5000
Width	[mm]	1025	-	-	-	1185
Height (ST - LN)	[mm]	2281	-	-	-	2320
Height (SL)	[mm]	2368	-	-	-	2380

<b>Unit dimensions with hydronic kit</b>						
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard	Large
Integrata LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Large
Integrata LP 1-1 OO	-	Standard	Standard	Standard	Standard	Large
Integrata LP 1-1 OO and HR equipment	-	Large	Standard	Standard	Standard	Large
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard	Large
Integrata MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Large
Integrata MP 1-1 OO	-	Standard	Standard	Standard	Standard	Large
Integrata MP 1-1 OO and HR equipment	-	Large	Standard	Standard	Standard	Large
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Standard	Standard	Standard	Standard	Large

# CRIO HE+

## Dimensions and weights

CRIO HE+ R290 range		99-2-2 PE	116-2-2 PE	130-2-2 PV	142-2-2 PV	161-2-2 PV
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>						
Lenght	[mm]	5500	5500	2895	2895	4015
Width	[mm]	1535	1535	2280	2280	2280
Height (ST - LN)	[mm]	2350	2350	2535	2535	2535
Height (SL)	[mm]	2410	2410	2560	2560	2560
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	1690	1710	1855	1900	2560
Operating weight (A BP/ST/AS/EC/** version)	[kg]	1700	1720	1870	1915	2578

<b>DIMENSIONS - Large unit</b>						
Lenght	[mm]	Contact EK	Contact EK	4015	4015	-
Width	[mm]	Contact EK	Contact EK	2280	2280	-
Height (ST - LN)	[mm]	Contact EK	Contact EK	2535	2535	-
Height (SL)	[mm]	Contact EK	Contact EK	2560	2560	-

<b>Unit dimensions with hydronic kit</b>						
Integrata LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Contact EK	Contact EK	Large	Large	Standard
Integrata LP 1-1 OO	-	Standard	Standard	Large	Large	Standard
Integrata LP 1-1 OO and HR equipment	-	Contact EK	Contact EK	Large	Large	Standard
Integrata MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Contact EK	Contact EK	Large	Large	Standard
Integrata MP 1-1 OO	-	Standard	Standard	Large	Large	Standard
Integrata MP 1-1 OO and HR equipment	-	Contact EK	Contact EK	Large	Large	Standard
Base-P LP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard	Standard	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard	Standard	Standard	Standard
Base-T	-	Standard	Standard	Standard	Standard	Standard
Base-T and HR equipment	-	Contact EK	Contact EK	Large	Large	Standard

CRIO HE+ R290 range		142-2-2 PV	175-2-2 PV
<b>DIMENSIONS AND WEIGHTS - Standard unit</b>			
Lenght	[mm]	4015	4015
Width	[mm]	2280	2280
Height (ST - LN)	[mm]	2535	2535
Height (SL)	[mm]	2560	2560
Shipping weight (A BP/ST/AS/EC/** version)	[kg]	2575	2590
Operating weight (A BP/ST/AS/EC/** version)	[kg]	2593	2608

<b>DIMENSIONS - Large unit</b>			
Lenght	[mm]	-	-
Width	[mm]	-	-
Height (ST - LN)	[mm]	-	-
Height (SL)	[mm]	-	-

<b>Unit dimensions with hydronic kit</b>			
Integrata LP 1-0 OO	-	Standard	Standard
Integrata LP 1-0 OO and HR equipment	-	Standard	Standard
Integrata LP 1-1 OO	-	Standard	Standard
Integrata LP 1-1 OO and HR equipment	-	Standard	Standard
Integrata MP 1-0 OO	-	Standard	Standard
Integrata MP 1-0 OO and HR equipment	-	Standard	Standard
Integrata MP 1-1 OO	-	Standard	Standard
Integrata MP 1-1 OO and HR equipment	-	Standard	Standard
Base-P LP 1-0 OO	-	Standard	Standard
Base-P LP 1-0 OO and HR equipment	-	Standard	Standard
Base-P LP 1-1 OO	-	Standard	Standard
Base-P LP 1-1 OO and HR equipment	-	Standard	Standard
Base-P MP 1-0 OO	-	Standard	Standard
Base-P MP 1-0 OO and HR equipment	-	Standard	Standard
Base-P MP 1-1 OO	-	Standard	Standard
Base-P MP 1-1 OO and HR equipment	-	Standard	Standard
Base-T	-	Standard	Standard
Base-T and HR equipment	-	Standard	Standard