Technical Catalogue

HERA

R290

Air to water reversible Heat Pumps for outdoor installations

Nominal heating capacity: 159-710 kW

Nominal cooling capacity: 139-630 kW

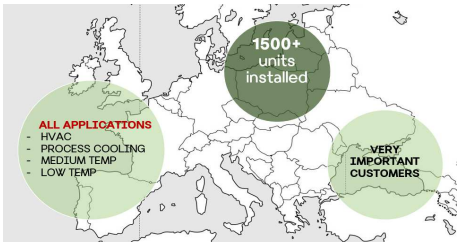
EUROKLIMAT®
Cooling System Solutions

HERA Advantages

HERA Air to water reversible heat pumps offer you optimized natural solutions combining many advantages in a compact package.

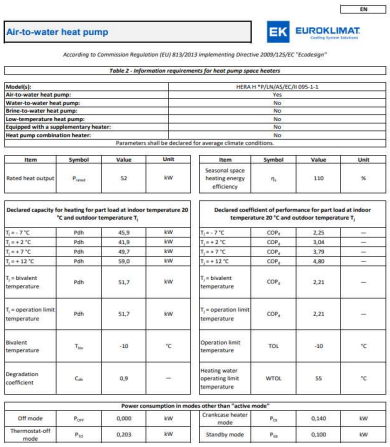
RELIABILITY

Propane's refrigerating properties has been well known since the early twentieth century.
Its low density and its thermodynamic characteristics allow a reduction in charge and relatively low working pressures.
Moreover it offers a very **wide range of applications**, so it can be used in refrigeration as well as in conditioning or heating of buildings.
Euroklimat has more than 12 years' experience with R290 chillers and more than 500 units installed throughout Europe for all applications



EFFICIENCY

Extremely **high-efficiency** inverter compressor technology.
Inverter compressor technology offers new opportunities for air conditioning systems, first of all in terms of energy efficient buildings, reduced energy consumption and lower running costs.
Continuous adaptation to heating or cooling demand provides higherenergy savings and accurate temperature control. All Models of the HERA product range are **Eco- Design Ready**.
The EU Ecodesign Directive adopted in 2009 provides rules for improving the environmental performance of products by setting out minimum energy efficiency mandatory requirements for specific product groups.


EN

Air-to-water heat pump

EK EUROKLIMAT

According to Commission Regulation (EU) 813/2013 implementing Directive 2009/125/EC "Ecodesign"

Table 2 - Information requirements for heat pump space heaters

Model(s):	HERA H *P/1/A/43/EC/II 095-1-1
Air-to-water heat pump:	Yes
Water-to-water heat pump:	No
Brine-to-water heat pump:	No
Low-temperature heat pump:	No
Equipped with a supplementary heater:	No
Heat pump combination heater:	No

Parameters shall be declared for average climate conditions

Item	Symbol	Value	Unit
Rated heat output	P_{rated}	52	kW

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	110	%

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	Pdh	45,9	kW
T_j = 2 °C	Pdh	41,9	kW
T_j = 7 °C	Pdh	45,7	kW
T_j = 12 °C	Pdh	59,0	kW
T_j = bivalent temperature	Pdh	51,7	kW
T_j = operation limit temperature	Pdh	51,7	kW
Bivalent temperature	T_{biv}	-10	°C
Degradation coefficient	C_{dh}	0,9	—

Declared coefficient of performance for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	COP_j	2,25	—
T_j = 2 °C	COP_j	3,04	—
T_j = 7 °C	COP_j	3,79	—
T_j = 12 °C	COP_j	4,80	—
T_j = bivalent temperature	COP_j	2,21	—
T_j = operation limit temperature	COP_j	2,21	—
Operation limit temperature	TOL	-10	°C
Heating water operating limit temperature	WTOL	55	°C

Power consumption in modes other than "active mode"						
Off mode	P_{OFF}	0,000	kW	Crankcase heater mode	P_{CK}	0,140	kW
Thermostat-off mode	P_{TO}	0,203	kW	Standby mode	P_{SB}	0,100	kW

HERA Advantages

GREEN TECHNOLOGY

Hydrocarbons like propane, and natural refrigerants in general, are particularly suitable for installation in European countries, where the attention to environmental issues and the commitment to reduce CO2 emissions are constantly growing.

R290 is a long-term solution: thanks to its very Low GWP (GWP R290 = 3) it's suitable to be used up to 2030 without any restriction connected to F-Gas Regulation.

HIGH SAFETY

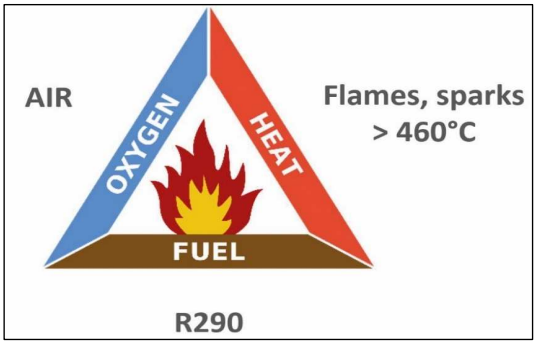
R290 (propane) is a nontoxic flammable refrigerant.

To ensure the **maximum level of safety**, an **Ex-rated Gas detector** is installed as a standard on all units. All AURA models are designed and manufactured with the aim to ensure the containment of propane. In case of **R290 leakage the emergency fan** is activated, allowing the dilution of propane and conveying the air/propane mixture towards the air outlet, which can be obviously conveyed if necessary. Also the safety valve(s),when fitted, is (are) conveyed outside the unit. Additionally, the separate compartment of the electrical panel ensures very high safety levels.

Natural refrigerant Propane & flammability

Interest and application of hydrocarbon (HC) refrigerants is growing, especially now that the global warming impact of refrigerants is becoming an increasingly important aspect for the refrigeration and air conditioning industry.

It is widely known that HCs are excellent refrigerants in terms of performance and because of their negligible environmental impact aspects. However, it is generally acknowledged that their main hindrance is related to their flammability.



If you control these components, fire can be avoided

To achieve this, Euroklimat has considered three general guidelines:

Containment of the substance (propane – R290)

- HERA units have leak-tight refrigerant circuits, sufficiently robust throughout the unit's lifetime.
- Pipework is designed to have as few pipe joints as possible.
- All the materials are fully compatible with the HC refrigerant.

Avoidance of ignition sources

- All electrically powered components are switched off in case of leakage, exception made for the gas detector and the emergency fan.
- Electrical panel is fitted in a separate compartment.
- Cable glands are at least IP65 and units have a double-barrier.

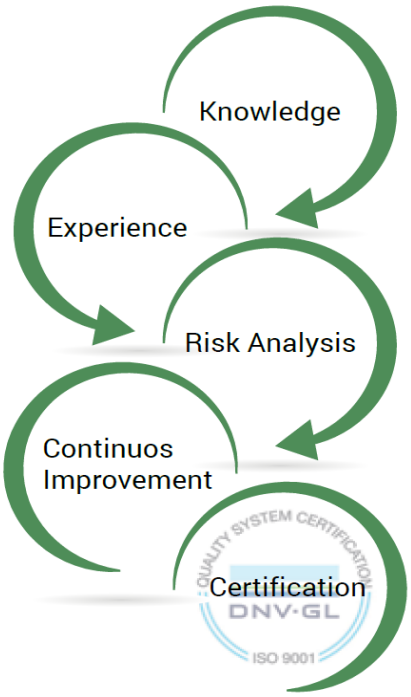
Use of leak detector & ventilation system

- Every unit is equipped with a stand-alone gas detection system.
- The sensor is ATEX Certified and is pre-calibrated at the factory. The sensor must be calibrated at least once a year.
- The fan is automatically activated in case of unlikely leak of propane.

Protection of workers that may come into contact with flammable atmospheres in the workplace.

This may be achieved through leak-tight design, ventilation and appropriate protective systems (for example portable leak detectors).
Where a flammable atmosphere can arise, people responsible for the positioning and/or installation of the equipment must ensure that a detailed risk assessment of the installation area has be done.

Safety



Euroklimat Approach

➤ In-depth knowledge of the basic principles for the safe use of flammable HC refrigerants.
➤ Study of the safe design of refrigeration circuits using flammable refrigerants.
➤ More than 12 years-experience on R290 applications in several countries.

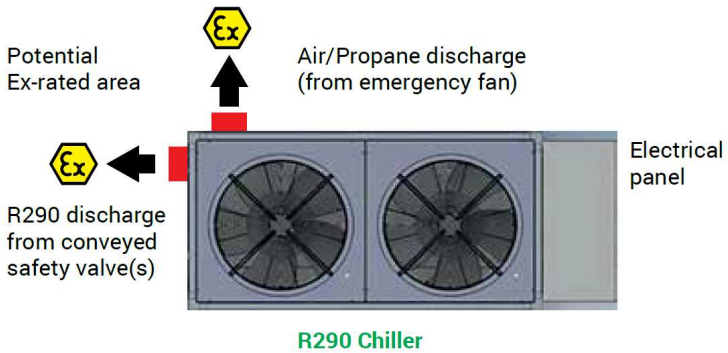
Constant improvement of the risk analysis to:
➤ Ensure that a detailed safety evaluation has been carried out.
➤ Enable the identification of ways and means to improve the level of safety of the systems and equipment, by way of detailed investigations of all of the factors that affect the risk.

ISO 9001 Quality certification in order to:
➤ Ensure the customer a certification path
➤ Run the validation process of the project pre-market

Containment of **R290**

With the aim of further improving the safety level of the units and ensuring a simpler evaluation of the installation, Euroklimat developed the new AURA range with a basic safety principle based on the containment of the flammable substance.
Containment of the substance is obtained by:
➤ Closed box in which all the refrigerant-containing components (with the obvious exception of the condensing coils) are fitted
➤ Gas detector – ATEX certified detection system
➤ Extraction fan – EC type
➤ Conveyed safety valve(s), made in such a way that in case of valve(s) opening, the extractor fan is activated.
In case of leakage, the above-mentioned components allow the ventilation of the closed box and the dilution of propane below the Lower Flammable Limit.

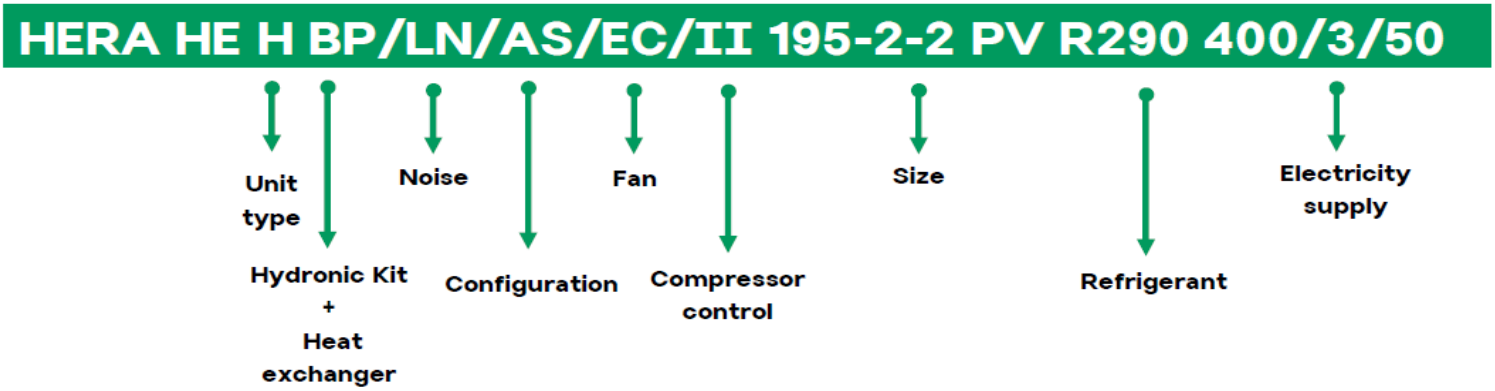
This system ensures an **easier risk assessment of the unit's installation area.**
Potential Ex-rated area may be generated at the discharge of safety valve(s) and at the discharge of the emergency fan (see picture below): if necessary, the installer can easily convey these two elements towards a safe area.



R290 Chiller

HERA configurations

The below diagram allows you to easily select the proper configuration of HERA heat pumps.



Unit type:
H = Air/Water Heat Pump

Configuration:
AS = Standard equipment
DS = Desuperheater
SP = Special configuration

Size:
195-2-2 PV
...
710-4-4 PV

Hydronic Kit + Heat exchanger:
B = Base
P = Base with pump

P = Plates

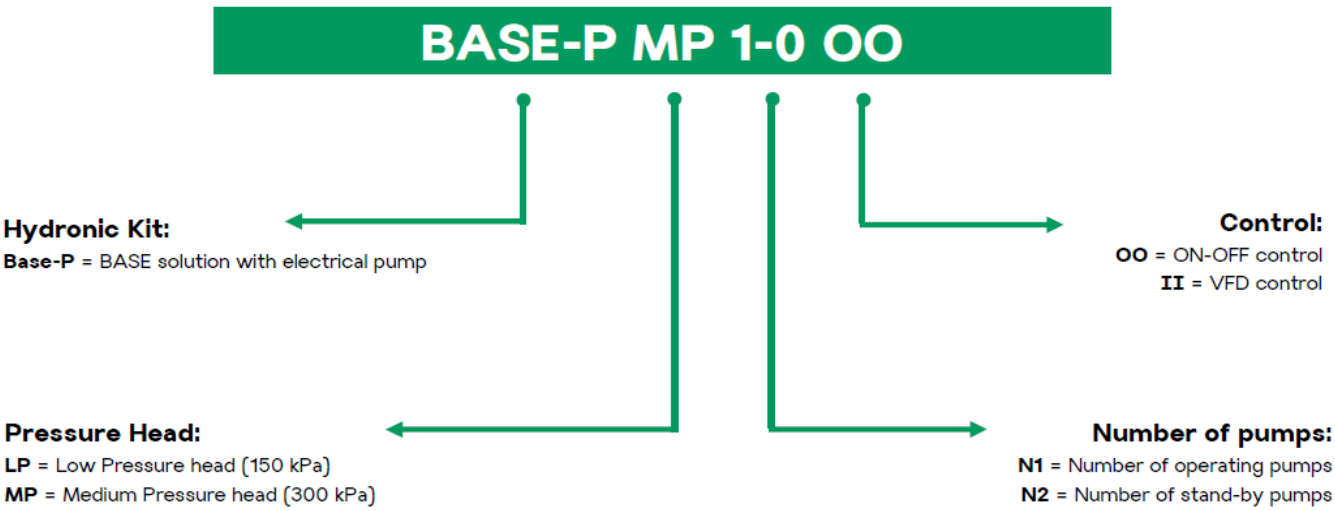
Fan:
EC = EC Fan

Refrigerant:
R290 = Propane

Noise:
LN = Low Noise
SL = Super Low Noise
XL = Extra Low Noise

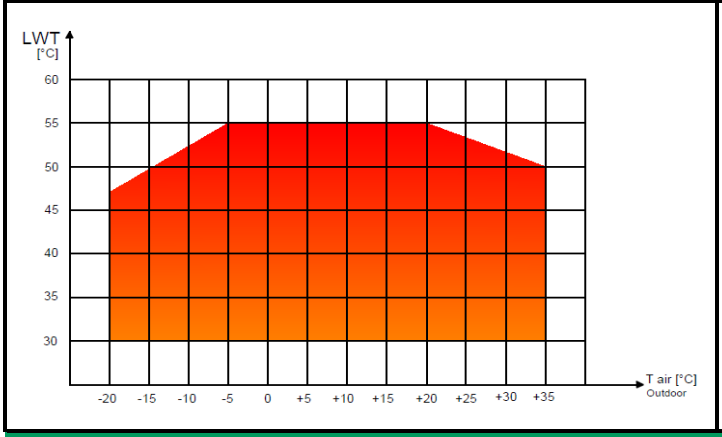
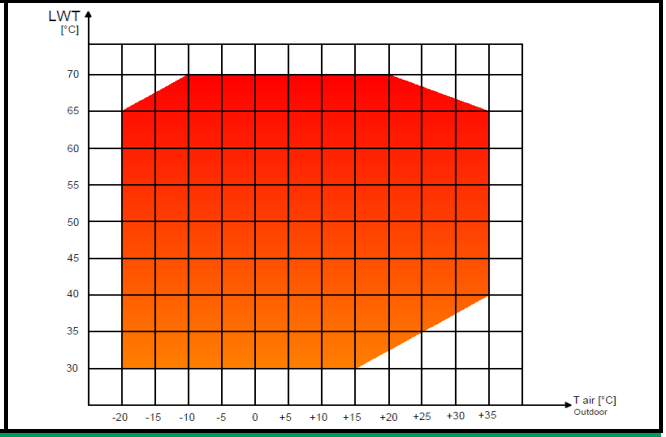
Compressor control:
II = VFD Compressor

Electricity supply:
400/3N/50
400/3/50

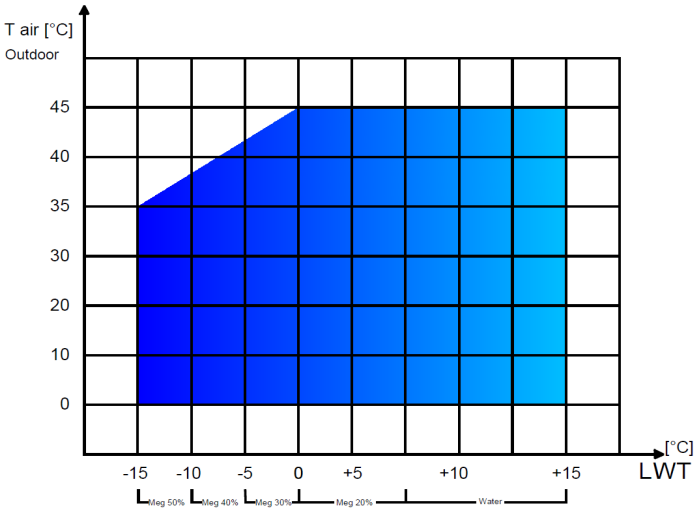


HERA operating limits

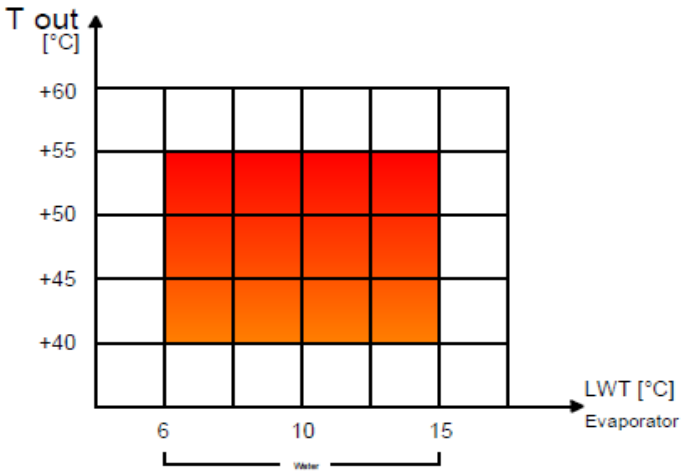
HERA - Heating mode

BS, HE and HE+ versions	HT version
	

HERA - Cooling mode



HERA - Desuperheater



HERA BS

200-2-2 PV ⟷ 380-2-2 PV

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

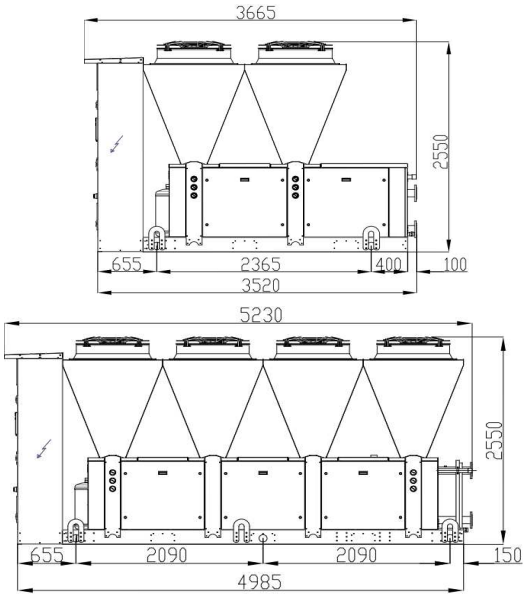
Semi-hermetic
piston compressor

Inverter

Axial fan

Brazed plate
heat exchanger

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 197 - 377 kW
Cooling capacity 182 - 326 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA BS

Technical data

HERA BS R290		200-2-2 PV	240-2-2 PV	305-2-2 PV	335-2-2 PV	380-2-2 PV
Heating Capacity [1] (LN/SL versions)	[kW]	**201**	**239**	**297**	**333**	**377**
Total power input [1]	[kW]	69,9	84,1	96,2	108,0	126
COP	[-]	2,88	2,84	3,09	3,08	2,99
Heating Capacity [1] (XL versions)	[kW]	**197**	**236**	**293**	**329**	**375**
Total power input [1]	[kW]	68,8	82,9	95,2	106,0	125
COP	[-]	2,86	2,85	3,08	3,10	3,00
Water flow [1]	[m^3/h]	34,9	41,5	51,5	57,8	65,4
Water pressure drop [1] - Base version	[kPa]	45,6	54,9	47,5	42,0	46,0
Min / Max water flow (heat exchanger, user side)	[m^3/h]	33,2 / 41,9	39,4 / 49,8	48,9 / 61,8	54,9 / 69,4	62,1 / 78,5
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,417 - 3,443	3,384 - 3,386	3,512 - 3,558	3,535 - 3,344	3,201 - 3,234
$\eta_{s,h}$ (LN/SL - XL)	[%]	133,7 - 134,7	132,3 - 132.5	137,5 - 139,3	138,4 - 130,8	125 - 126,4
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,053 - 2,849	2,824 - 2,83	2,976 - 3,011	2,996 - 3,032	2,928 - 2,939
$\eta_{s,h}$ (LN/SL - XL)	[%]	119,1 - 111	110 - 110,2	116,1 - 117,4	116,9 - 118,3	114,1 - 114,5
Cooling Capacity [2] (LN/SL versions)	[kW]	**183**	**214**	**260**	**290**	**326**
Total power input [2]	[kW]	75,1	90,4	106	118	137
EER	[-]	2,44	2,37	2,45	2,46	2,38
Cooling Capacity [2] (XL versions)	[kW]	**182**	**214**	**258**	**291**	**324**
Total power input [2]	[kW]	73,8	89,5	102	115	134
EER	[-]	2,47	2,39	2,53	2,53	2,42
Water flow [2]	[m^3/h]	31,4	36,8	44,7	49,9	56,0
Water pressure drop [2] - Base version	[kPa]	39,8	46,5	39,7	37,3	37,4
Min / Max water flow (heat exchanger, user side)	[m^3/h]	25,1 / 37,7	29,4 / 44,2	35,8 / 53,6	39,9 / 59,9	44,8 / 67,2
Technical data						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant	[Kg]	> 12				
Number of refrigerant circuits	N°	2				
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 2				
Expansion valve type	-	Electronic				
Fans quantity / type	-	4 / Axial EC		8 / Axial EC		
Fans power input [1] (total)	[kW]	1,54	1,67	2,28	2,45	2,62
Total air flow [1]	[m^3/h]	50.050	51.600	89.800	92.150	94.400
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum absorbed power	[kW]	87,9	97,9	138	141	151
Locked rotor current - LRA	[A]	153	168	238	245	261
Maximum absorbed current (full load)	[A]	153	168	238	245	261
Solution BASE-P - with Hydronic Kit						
Pump type	-	Centrifugal				
Standard pump (1,5 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	3,0	3,0	4,0	5,5	5,5
Pump motor nominal absorbed current	[A]	6,4	6,4	8,7	10,6	10,6
Increased pump (3,0 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	5,5	7,5	7,5	9,2	9,2
Pump motor nominal absorbed current	[A]	10,6	13,6	13,6	17,2	17,2
Water connections						
Size (nominal external diameter)	[inch]	3" (DN 80)	3" (DN 80)	4" (DN 100)	4" (DN 100)	4" (DN 100)
Noise levels [3]						
Total sound power (LN version)	[db(A)]	86	87	91	92	93
Total sound pressure (LN version) - at 1 m distance	[db(A)]	67	68	71	72	73
Total sound pressure (LN version) - at 10 m distance	[db(A)]	54	55	59	60	61
Total sound power (SL version)	[db(A)]	85	86	90	91	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	66	67	70	71	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	53	54	58	59	60
Total sound power (XL version)	[db(A)]	83	84	88	89	90
Total sound pressure (XL version) - at 1 m distance	[db(A)]	64	65	68	69	70
Total sound pressure (XL version) - at 10 m distance	[db(A)]	51	52	56	57	58
Dimensions and weights - unit						
Lenght	[mm]	3.665	3.665	5.230	5.230	5.230
Width	[mm]	2.280	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	2.800	2.840	3.970	3.990	4.180
Shipment weight - BP/SL/AS/EC/II version	[Kg]	2.900	2.940	4.070	4.090	4.280
Shipment weight - BP/XL/AS/EC/II version	[Kg]	2.930	2.970	4.130	4.150	4.340

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA BS

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

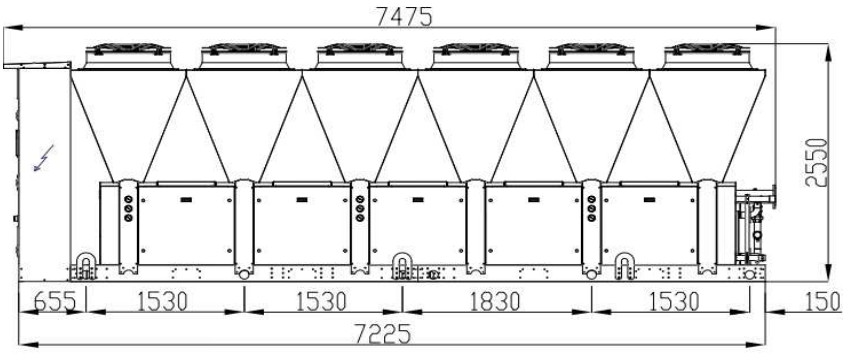
Inverter

Axial fan

Brazed plate
heat exchanger

455-3-3 PV ⟷ 565-3-3 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 445 - 566 kW
Cooling capacity 389 - 486 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA BS

Technical data

HERA BS R290		455-3-3 PV	500-3-3 PV	535-3-3 PV	565-3-3 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**446**	**499**	**533**	**566**
Total power input (1)	[kW]	144	162	172	189
COP	[-]	3,10	3,08	3,10	2,99
Heating Capacity (1) (XL versions)	[kW]	**445**	**492**	**528**	**562**
Total power input (1)	[kW]	142	160	171	188
COP	[-]	3,13	3,08	3,09	2,99
Water flow (1)	[m^3/h]	77,3	86,5	92,4	98,2
Water pressure drop (1) - Base version	[kPa]	38,7	47,2	39,9	44,5
Min / Max water flow (heat exchanger, user side)	[m^3/h]	73,4 / 92,8	82,2 / 104	87,8 / 111	93,3 / 118
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate					
SCOP (LN/SL - XL)	[W/W]	3,558 - 3,617	3,515 - 3,371	3,375 - 3,407	3,203 - 3,25
$\eta_{s,h}$ (LN/SL - XL)	[%]	139,3 - 141,7	137,6 - 131,8	132 - 133,3	125,1 - 127
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate					
SCOP (LN/SL - XL)	[W/W]	2,986 - 3,03	3,001 - 3,022	3,03 - 3,055	2,93 - 2,94
$\eta_{s,h}$ (LN/SL - XL)	[%]	116,5 - 118,2	117 - 117,9	118,2 - 119,2	114,2 - 114,6
Cooling Capacity (2) (LN/SL versions)	[kW]	**391**	**434**	**467**	**486**
Total power input (2)	[kW]	159	176	189	205
EER	[-]	2,5	2,5	2,5	2,5
Cooling Capacity (2) (XL versions)	[kW]	**389**	**430**	**467**	**484**
Total power input (2)	[kW]	154	171	185	200
EER	[-]	2,5	2,5	2,5	2,4
Water flow (2)	[m^3/h]	67,2	74,6	80,3	83,6
Water pressure drop (2) - Base version	[kPa]	31,6	38,0	32,6	35,0
Min / Max water flow (heat exchanger, user side)	[m^3/h]	53,8 / 80,6	59,7 / 89,5	64,2 / 96,4	66,9 / 100
Technical data					
Refrigerant / GWP	-	R290 / 3			
Charge of refrigerant	[Kg]	> 12			
Number of refrigerant circuits	N°	3			
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 3			
Expansion valve type	-	Electronic			
Fans quantity / type	-	12 / Axial EC			
Fans power input (1) (total)	[kW]	3,43	3,68	3,89	3,93
Total air flow (1)	[m^3/h]	134.800	138.300	141.100	141.700
Electrical data					
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50			
Maximum absorbed power	[kW]	207	211	217	227
Locked rotor current - LRA	[A]	357	368	381	391
Maximum absorbed current (full load)	[A]	357	368	381	391
Solution BASE-P - with Hydronic Kit					
Pump type	-	Centrifugal			
Standard pump (1,5 bar)					
Motor efficiency	-	IE3			
Pump motor nominal power input	[kW]	5,5	5,5	7,5	7,5
Pump motor nominal absorbed current	[A]	10,6	10,6	13,6	13,6
Increased pump (3,0 bar)					
Motor efficiency	-	IE3			
Pump motor nominal power input	[kW]	9,2	11,0	11,0	11,0
Pump motor nominal absorbed current	[A]	17,2	21,3	21,3	21,3
Water connections					
Size (nominal external diameter)	[inch]	5" (DN 125)	5" (DN 125)	5" (DN 125)	6" (DN 150)
Noise levels (3)					
Total sound power (LN version)	[db(A)]	93	93	93	95
Total sound pressure (LN version) - at 1 m distance	[db(A)]	72	72	72	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	60	60	60	62
Total sound power (SL version)	[db(A)]	92	92	92	94
Total sound pressure (SL version) - at 1 m distance	[db(A)]	71	71	71	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	59	59	59	61
Total sound power (XL version)	[db(A)]	90	90	90	92
Total sound pressure (XL version) - at 1 m distance	[db(A)]	69	69	69	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	57	57	57	59
Dimensions and weights - unit					
Lenght	[mm]	7.475	7.475	7.475	7.475
Width	[mm]	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	5.960	5.960	6.250	6.290
Shipment weight - BP/SL/AS/EC/II version	[Kg]	6.060	6.060	6.350	6.390
Shipment weight - BP/XL/AS/EC/II version	[Kg]	6.150	6.150	6.440	6.480

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ….) are published on our website

HERA BS

665-4-4 PV ⟷ 720-4-4 PV

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

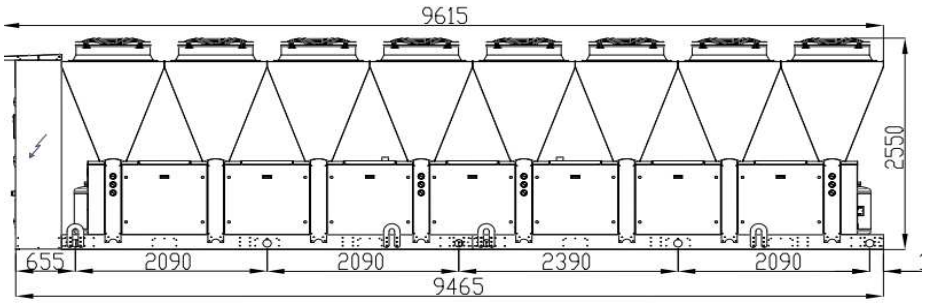
Semi-hermetic
piston compressor

Inverter

Axial fan

Brazed plate
heat exchanger

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 658 - 710 kW
Cooling capacity 581 - 630 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA BS

Technical data

HERA BS R290		665-4-4 PV	720-4-4 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**666**	**710**
Total power input (1)	[kW]	215	230
COP	[-]	3,10	3,09
Heating Capacity (1) (XL versions)	[kW]	**658**	**670**
Total power input (1)	[kW]	213	229
COP	[-]	3,09	2,93
Water flow (1)	[m^3/h]	116	123
Water pressure drop (1) - Base version	[kPa]	42,0	41,3
Min / Max water flow (heat exchanger, user side)	[m^3/h]	110 / 139	117 / 148
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate			
SCOP (LN/SL - XL)	[W/W]	3,576 - 3,374	3,396 - 3,429
$\eta_{s,h}$ (LN/SL - XL)	[%]	140 -132	132,8 - 134,2
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate			
SCOP (LN/SL - XL)	[W/W]	3,029 - 3,064	3,057 - 3,081
$\eta_{s,h}$ (LN/SL - XL)	[%]	118,2 - 119,6	119,3 - 120,3
Cooling Capacity (2) (LN/SL versions)	[kW]	**581**	**630**
Total power input (2)	[kW]	235	253
EER	[-]	2,53	2,51
Cooling Capacity (2) (XL versions)	[kW]	**581**	**624**
Total power input (2)	[kW]	229	247
EER	[-]	2,54	2,53
Water flow (2)	[m^3/h]	99,9	108
Water pressure drop (2) - Base version	[kPa]	37,3	35,3
Min / Max water flow (heat exchanger, user side)	[m^3/h]	79,9 / 120	86,4 / 130
Technical data			
Refrigerant / GWP	-	R290 / 3	
Charge of refrigerant	[Kg]	> 12	
Number of refrigerant circuits	N°	4	
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 4	
Expansion valve type	-	Electronic	
Fans quantity / type	-	16 / Axial EC	
Fans power input (1) (total)	[kW]	4,90	5,17
Total air flow (1)	[m^3/h]	184.300	187.900
Electrical data			
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50	
Maximum absorbed power	[kW]	281	289
Locked rotor current - LRA	[A]	490	508
Maximum absorbed current (full load)	[A]	490	508
Solution BASE-P - with Hydronic Kit			
Pump type	-	Centrifugal	
Standard pump (1,5 bar)			
Motor efficiency	-	IE3	
Pump motor nominal power input	[kW]	11	11
Pump motor nominal absorbed current	[A]	21,3	21,3
Increased pump (3,0 bar)			
Motor efficiency	-	IE3	
Pump motor nominal power input	[kW]	15,0	15,0
Pump motor nominal absorbed current	[A]	27,7	27,7
Water connections			
Size (nominal external diameter)	[inch]	6" (DN 150)	6" (DN 150)
Noise levels (3)			
Total sound power (LN version)	[db(A)]	95	96
Total sound pressure (LN version) - at 1 m distance	[db(A)]	74	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	62	63
Total sound power (SL version)	[db(A)]	94	95
Total sound pressure (SL version) - at 1 m distance	[db(A)]	73	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	61	62
Total sound power (XL version)	[db(A)]	92	93
Total sound pressure (XL version) - at 1 m distance	[db(A)]	71	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	59	60
Dimensions and weights - unit			
Lenght	[mm]	9.615	9.615
Width	[mm]	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550
Height (XL)	[mm]	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	7.880	8.340
Shipment weight - BP/SL/AS/EC/II version	[Kg]	7.980	8.440
Shipment weight - BP/XL/AS/EC/II version	[Kg]	8.100	8.560

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

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

(4) 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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HE

195-2-2 PV ⟷ 355-2-2 PV

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

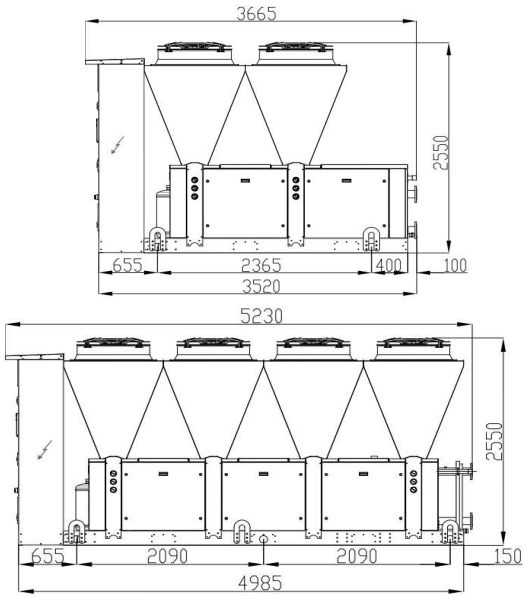
Semi-hermetic
piston compressor

Inverter

Axial fan

Brazed plate
heat exchanger

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 167 - 300 kW
Cooling capacity 150 - 267 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HE

Technical data

HERA HE R290		195-2-2 PV	230-2-2 PV	270-2-2 PV	300-2-2 PV	355-2-2 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**167**	**202**	**250**	**272**	**300**
Total power input (1)	[kW]	52,5	63,8	78,9	85,6	96
COP	[-]	3,18	3,17	3,17	3,18	3,14
Heating Capacity (1) (XL versions)	[kW]	**165**	**189**	**249**	**270**	**300**
Total power input (1)	[kW]	52,0	63,1	78,3	84,9	95
COP	[-]	3,17	3,00	3,18	3,18	3,16
Water flow (1)	[m^3/h]	28,9	35,0	43,4	47,1	52,0
Water pressure drop (1) - Base version	[kPa]	32,5	40,5	35,0	29,1	30,6
Min / Max water flow (heat exchanger, user side)	[m^3/h]	27,5 / 34,7	33,3 / 42	41,2 / 52,1	44,7 / 56,5	49,4 / 62,4
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,729 - 3,523	3,614 - 3,521	3,735 - 3,796	3,777 - 3,834	3,682 - 3,692
$\eta_{s,h}$ (LN/SL - XL)	[%]	146,1 - 137,9	141,5 - 137,8	146,4 - 148,9	148,1 - 150,3	144,3 - 144,7
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,101 - 3,134	3,118 - 3,141	3,08 - 3,118	3,088 - 3,133	3,08 - 3,078
$\eta_{s,h}$ (LN/SL - XL)	[%]	121 - 122,3	121,7 - 122,6	120,2 - 121,7	120,5 - 122,3	120,2 - 120,1
Cooling Capacity (2) (LN/SL versions)	[kW]	**150**	**176**	**218**	**237**	**267**
Total power input (2)	[kW]	57,9	69,8	85,9	93,4	106
EER	[-]	2,59	2,52	2,54	2,54	2,52
Cooling Capacity (2) (XL versions)	[kW]	**150**	**175**	**216**	**237**	**267**
Total power input (2)	[kW]	56,3	68,5	82,9	89,9	104
EER	[-]	2,66	2,55	2,61	2,64	2,57
Water flow (2)	[m^3/h]	25,8	30,4	37,5	40,8	45,9
Water pressure drop (2) - Base version	[kPa]	28,0	33,0	29,0	26,0	26,2
Min / Max water flow (heat exchanger, user side)	[m^3/h]	20,6 / 31	24,3 / 36,5	30 / 45	32,6 / 49	36,7 / 55,1
Technical data						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant	[Kg]	> 12				
Number of refrigerant circuits	N°	2				
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 2				
Expansion valve type	-	Electronic				
Fans quantity / type	-	4 / Axial EC		8 / Axial EC		
Fans power input (1) (total)	[kW]	1,27	1,37	2,00	2,10	2,21
Total air flow (1)	[m^3/h]	45.800	47.100	84.500	85.900	87.500
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum absorbed power	[kW]	76,2	85,6	110	110	138
Locked rotor current - LRA	[A]	127	141	188	188	238
Maximum absorbed current (full load)	[A]	127	141	188	188	238
Solution BASE-P - with Hydronic Kit						
Pump type	-	Centrifugal				
Standard pump (1,5 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	2,2	3	3	3	4
Pump motor nominal absorbed current	[A]	4,7	6,4	6,4	6,4	8,7
Increased pump (3,0 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	4	5,5	7,5	7,5	7,5
Pump motor nominal absorbed current	[A]	8,7	10,6	13,6	13,6	13,6
Water connections						
Size (nominal external diameter)	[inch]	3" (DN 80)	3" (DN 80)	3" (DN 80)	4" (DN 100)	4" (DN 100)
Noise levels (3)						
Total sound power (LN version)	[db(A)]	86	87	91	92	93
Total sound pressure (LN version) - at 1 m distance	[db(A)]	67	68	71	72	73
Total sound pressure (LN version) - at 10 m distance	[db(A)]	54	55	59	60	61
Total sound power (SL version)	[db(A)]	85	86	90	91	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	66	67	70	71	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	53	54	58	59	60
Total sound power (XL version)	[db(A)]	83	84	88	89	90
Total sound pressure (XL version) - at 1 m distance	[db(A)]	64	65	68	69	70
Total sound pressure (XL version) - at 10 m distance	[db(A)]	51	52	56	57	58
Dimensions and weights - unit						
Lenght	[mm]	3.665	3.665	5.230	5.230	5.230
Width	[mm]	2.280	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	2.800	2.840	3.970	3.990	4.180
Shipment weight - BP/SL/AS/EC/II version	[Kg]	2.900	2.940	4.070	4.090	4.280
Shipment weight - BP/XL/AS/EC/II version	[Kg]	2.930	2.970	4.130	4.150	4.340

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HE

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

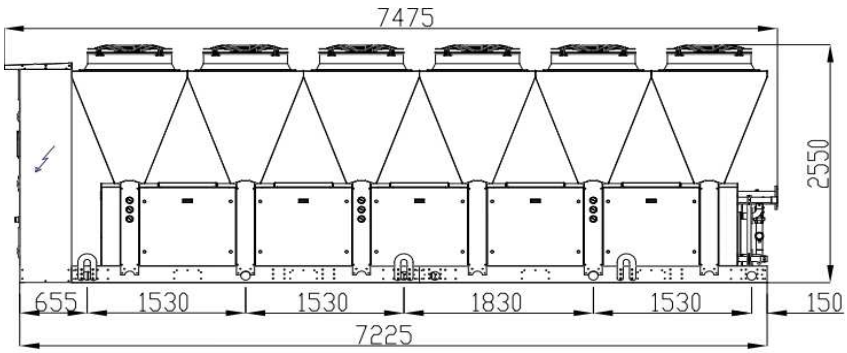
Inverter

Axial fan

Brazed plate
heat exchanger

405-3-3 PV ⟷ 530-3-3 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 376 - 500 kW
Cooling capacity 326 - 440 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HE

Technical data

HERA HE R290		405-3-3 PV	450-3-3 PV	505-3-3 PV	530-3-3 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**376**	**407**	**450**	**500**
Total power input (1)	[kW]	118	129	143	161
COP	[-]	3,19	3,16	3,15	3,11
Heating Capacity (1) (XL versions)	[kW]	**374**	**401**	**444**	**496**
Total power input (1)	[kW]	117	127	141	159
COP	[-]	3,20	3,16	3,15	3,12
Water flow (1)	[m^3/h]	65,1	70,6	78,1	86,7
Water pressure drop (1) - Base version	[kPa]	28,5	32,8	29,6	35,6
Min / Max water flow (heat exchanger, user side)	[m^3/h]	61,8 / 78,1	67,1 / 84,7	74,2 / 93,7	82,4 / 104
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate					
SCOP (LN/SL - XL)	[W/W]	3,76 - 3,818	3,763 - 3,8	3,684 - 3,71	3,665 - 3,67
$\eta_{s,h}$ (LN/SL - XL)	[%]	147,4 - 149,7	147,5 - 149	144,4 - 145,4	143,6 - 143,8
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate					
SCOP (LN/SL - XL)	[W/W]	3,082 - 3,117	3,078 - 3,108	3,08 - 3,078	3,075 - 3,078
$\eta_{s,h}$ (LN/SL - XL)	[%]	120,3 - 121,7	120,1 - 121,3	120,2 - 120,1	120 - 120,1
Cooling Capacity (2) (LN/SL versions)	[kW]	**326**	**352**	**398**	**440**
Total power input (2)	[kW]	129	139	159	177
EER	[-]	2,53	2,53	2,50	2,49
Cooling Capacity (2) (XL versions)	[kW]	**325**	**350**	**396**	**441**
Total power input (2)	[kW]	124	135	154	172
EER	[-]	2,62	2,59	2,57	2,56
Water flow (2)	[m^3/h]	56,1	60,5	68,4	75,7
Water pressure drop (2) - Base version	[kPa]	22,9	26,2	24,5	29,3
Min / Max water flow (heat exchanger, user side)	[m^3/h]	44,9 / 67,3	48,4 / 72,6	54,7 / 82,1	60,6 / 90,8
Technical data					
Refrigerant / GWP	-	R290 / 3			
Charge of refrigerant	[Kg]	> 12			
Number of refrigerant circuits	N°	3			
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 3			
Expansion valve type	-	Electronic			
Fans quantity / type	-	12 / Axial EC			
Fans power input (1) (total)	[kW]	3,01	3,15	3,33	3,70
Total air flow (1)	[m^3/h]	126.800	128.800	131.200	136.300
Electrical data					
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50			
Maximum absorbed power	[kW]	165	165	207	211
Locked rotor current - LRA	[A]	281	281	357	368
Maximum absorbed current (full load)	[A]	281	281	357	368
Solution BASE-P - with Hydronic Kit					
Pump type	-	Centrifugal			
Standard pump (1,5 bar)					
Motor efficiency	-	IE3			
Pump motor nominal power input	[kW]	5,5	5,5	5,5	5,5
Pump motor nominal absorbed current	[A]	10,6	10,6	10,6	10,6
Increased pump (3,0 bar)					
Motor efficiency	-	IE3			
Pump motor nominal power input	[kW]	9,2	9,2	9,2	11,0
Pump motor nominal absorbed current	[A]	17,2	17,2	17,2	21,3
Water connections					
Size (nominal external diameter)	[inch]	4" (DN 100)	4" (DN 100)	5" (DN 125)	5" (DN 125)
Noise levels (3)					
Total sound power (LN version)	[db(A)]	93	93	93	95
Total sound pressure (LN version) - at 1 m distance	[db(A)]	72	72	72	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	60	60	60	62
Total sound power (SL version)	[db(A)]	92	92	92	94
Total sound pressure (SL version) - at 1 m distance	[db(A)]	71	71	71	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	59	59	59	61
Total sound power (XL version)	[db(A)]	90	90	90	92
Total sound pressure (XL version) - at 1 m distance	[db(A)]	69	69	69	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	57	57	57	59
Dimensions and weights - unit					
Lenght	[mm]	7.475	7.475	7.475	7.475
Width	[mm]	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	5.960	5.960	6.250	6.290
Shipment weight - BP/SL/AS/EC/II version	[Kg]	6.060	6.060	6.350	6.390
Shipment weight - BP/XL/AS/EC/II version	[Kg]	6.150	6.150	6.440	6.480

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ….) are published on our website

HERA HE

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

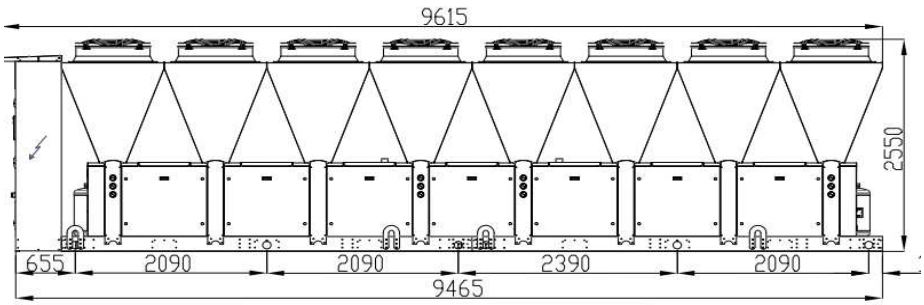
Inverter

Axial fan

Brazed plate
heat exchanger

600-4-4 PV ⟷ 710-4-4 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 540 - 666 kW
Cooling capacity 474 - 596 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HE

Technical data

HERA HE R290		600-4-4 PV	675-4-4 PV	710-4-4 PV
Heating Capacity [1] (LN/SL versions)	[kW]	**543**	**600**	**666**
Total power input [1]	[kW]	171	191	213
COP	[-]	3,18	3,14	3,13
Heating Capacity [1] (XL versions)	[kW]	**540**	**591**	**656**
Total power input [1]	[kW]	170	189	211
COP	[-]	3,18	3,13	3,11
Water flow [1]	[m^3/h]	94	104	115
Water pressure drop [1] - Base version	[kPa]	29,1	30,6	31,3
Min / Max water flow (heat exchanger, user side)	[m^3/h]	89,5 / 113	98,8 / 125	109 / 138
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate				
SCOP (LN/SL - XL)	[W/W]	3,81 - 3,869	3,67 - 3,687	3,663 - 3,699
$\eta_{s,h}$ (LN/SL - XL)	[%]	149,4 - 151,8	143,8 - 144,5	143,5 - 145
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate				
SCOP (LN/SL - XL)	[W/W]	3,116 - 3,158	3,079 - 3,085	3,081 - 3,095
$\eta_{s,h}$ (LN/SL - XL)	[%]	121,7 - 123,3	120,2 - 120,4	120,2 - 120,8
Cooling Capacity [2] (LN/SL versions)	[kW]	**474**	**534**	**596**
Total power input [2]	[kW]	187	213	237
EER	[-]	2,53	2,51	2,51
Cooling Capacity [2] (XL versions)	[kW]	**474**	**530**	**591**
Total power input [2]	[kW]	179	206	231
EER	[-]	2,65	2,57	2,56
Water flow [2]	[m^3/h]	81,6	91,8	102
Water pressure drop [2] - Base version	[kPa]	26	26	27
Min / Max water flow (heat exchanger, user side)	[m^3/h]	65,3 / 97,9	73,4 / 110	81,6 / 122
Technical data				
Refrigerant / GWP	-	R290 / 3		
Charge of refrigerant	[Kg]	> 12		
Number of refrigerant circuits	N°	4		
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 4		
Expansion valve type	-	Electronic		
Fans quantity / type	-	16 / Axial EC		
Fans power input [1] (total)	[kW]	4,21	4,43	5,01
Total air flow [1]	[m^3/h]	171.800	174.900	182.700
Electrical data				
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50		
Maximum absorbed power	[kW]	220	276	281
Locked rotor current - LRA	[A]	375	476	490
Maximum absorbed current (full load)	[A]	375	476	490
Solution BASE-P - with Hydronic Kit				
Pump type	-	Centrifugal		
Standard pump (1,5 bar)				
Motor efficiency	-	IE3		
Pump motor nominal power input	[kW]	7,5	7,5	11
Pump motor nominal absorbed current	[A]	13,6	13,6	21,3
Increased pump (3,0 bar)				
Motor efficiency	-	IE3		
Pump motor nominal power input	[kW]	11,0	15,0	15,0
Pump motor nominal absorbed current	[A]	21,3	27,7	27,7
Water connections				
Size (nominal external diameter)	[inch]	5" (DN 125)	5" (DN 125)	6" (DN 150)
Noise levels [3]				
Total sound power (LN version)	[db(A)]	95	95	96
Total sound pressure (LN version) - at 1 m distance	[db(A)]	74	74	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	62	62	63
Total sound power (SL version)	[db(A)]	94	94	95
Total sound pressure (SL version) - at 1 m distance	[db(A)]	73	73	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	61	61	62
Total sound power (XL version)	[db(A)]	92	92	93
Total sound pressure (XL version) - at 1 m distance	[db(A)]	71	71	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	59	59	60
Dimensions and weights - unit				
Lenght	[mm]	9.615	9.615	9.615
Width	[mm]	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	7.880	8.250	8.340
Shipment weight - BP/SL/AS/EC/II version	[Kg]	7.980	8.350	8.440
Shipment weight - BP/XL/AS/EC/II version	[Kg]	8.100	8.470	8.560

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

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

(4) 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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HE+

160-2-2 PV ⟷ 270-2-2 PV

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

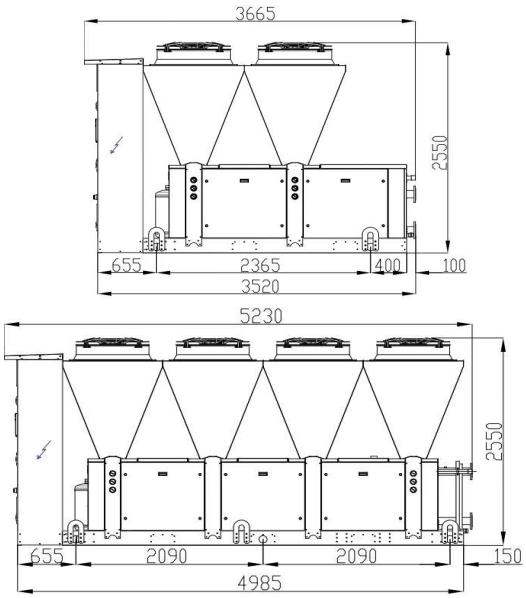
Semi-hermetic
piston compressor

Inverter

Axial fan

Brazed plate
heat exchanger

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 159 - 269 kW
Cooling capacity 139 - 241 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HE+

Technical data

HERA HE+ R290		160-2-2 PV	180-2-2 PV	210-2-2 PV	235-2-2 PV	270-2-2 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**159**	**178**	**210**	**234**	**269**
Total power input (1)	[kW]	52,8	63,6	69,5	75,4	87,7
COP	[-]	3,01	2,80	3,02	3,10	3,07
Heating Capacity (1) (XL versions)	[kW]	**159**	**177**	**211**	**231**	**267**
Total power input (1)	[kW]	52,6	63,1	69,1	74,7	87,1
COP	[-]	3,02	2,81	3,05	3,09	3,07
Water flow (1)	[m^3/h]	27,6	30,9	36,3	40,5	46,6
Water pressure drop (1) - Base version	[kPa]	41,4	50,7	55,2	23,4	30,0
Min / Max water flow (heat exchanger, user side)	[m^3/h]	26,2 / 33,1	29,4 / 37,1	34,5 / 43,6	38,5 / 48,6	44,3 / 55,9
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	4,033 - 4,087	3,821 - 3,73	3,876 - 3,964	4,024 - 4,122	3,964 - 4,05
$\eta_{s,h}$ (LN/SL - XL)	[%]	158,3 - 160,5	149,9 - 146,2	152 - 155,6	158 - 161,9	155,6 - 159
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,391 - 3,433	3,355 - 3,387	3,317 - 3,374	3,355 - 3,412	3,314 - 3,364
$\eta_{s,h}$ (LN/SL - XL)	[%]	132,6 - 134,3	131,2 - 132,5	129,7 - 132	131,2 - 133,5	129,6 - 131,6
Cooling Capacity (2) (LN/SL versions)	[kW]	**140**	**162**	**186**	**208**	**238**
Total power input (2)	[kW]	56,6	67,4	77,8	87,2	101
EER	[-]	2,47	2,40	2,39	2,39	2,36
Cooling Capacity (2) (XL versions)	[kW]	**139**	**161**	**185**	**207**	**241**
Total power input (2)	[kW]	55,2	65,9	74,4	83,9	98,5
EER	[-]	2,52	2,44	2,49	2,47	2,45
Water flow (2)	[m^3/h]	24,1	27,8	32,0	35,8	40,9
Water pressure drop (2) - Base version	[kPa]	34,9	45,1	47,1	20,4	26,0
Min / Max water flow (heat exchanger, user side)	[m^3/h]	19,3 / 28,9	22,2 / 33,4	25,6 / 38,4	28,6 / 43	32,7 / 49,1
Technical data						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant	[Kg]	> 12				
Number of refrigerant circuits	N°	2				
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 2				
Expansion valve type	-	Electronic				
Fans quantity / type	-	4 / Axial EC		8 / Axial EC		
Fans power input (1) (total)	[kW]	1,28	1,35	2,11	2,12	2,28
Total air flow (1)	[m^3/h]	46.800	47.700	87.000	87.300	89.700
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum absorbed power	[kW]	68,4	82,4	96,8	109	127
Locked rotor current - LRA	[A]	122	143	167	186	231
Maximum absorbed current (full load)	[A]	122	143	167	186	231
Solution BASE-P - with Hydronic Kit						
Pump type	-	Centrifugal				
Standard pump (1,5 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	2,2	2,2	3,0	3,0	3,0
Pump motor nominal absorbed current	[A]	4,7	4,7	6,4	6,4	6,4
Increased pump (3,0 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	4,0	4,0	7,5	7,5	7,5
Pump motor nominal absorbed current	[A]	8,7	8,7	13,6	13,6	13,6
Water connections						
Size (nominal external diameter)	[inch]	3" (DN 80)	3" (DN 80)	3" (DN 80)	3" (DN 80)	4" (DN 100)
Noise levels (3)						
Total sound power (LN version)	[db(A)]	86	87	91	92	93
Total sound pressure (LN version) - at 1 m distance	[db(A)]	67	68	71	72	73
Total sound pressure (LN version) - at 10 m distance	[db(A)]	54	55	59	60	61
Total sound power (SL version)	[db(A)]	85	86	90	91	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	66	67	70	71	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	53	54	58	59	60
Total sound power (XL version)	[db(A)]	83	84	88	89	90
Total sound pressure (XL version) - at 1 m distance	[db(A)]	64	65	68	69	70
Total sound pressure (XL version) - at 10 m distance	[db(A)]	51	52	56	57	58
Dimensions and weights - unit						
Lenght	[mm]	3.665	3.665	5.230	5.230	5.230
Width	[mm]	2.280	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	2.800	2.840	3.970	3.990	4.180
Shipment weight - BP/SL/AS/EC/II version	[Kg]	2.900	2.940	4.070	4.090	4.280
Shipment weight - BP/XL/AS/EC/II version	[Kg]	2.930	2.970	4.130	4.150	4.340

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HE+

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

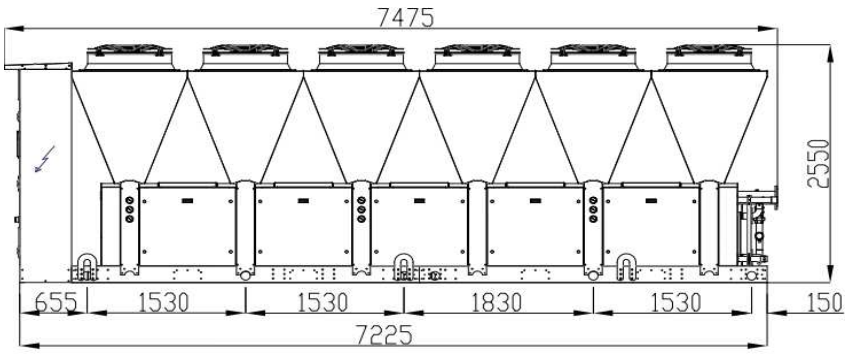
Inverter

Axial fan

Brazed plate
heat exchanger

315-3-3 PV ◄► 405-3-3 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 316 - 403 kW
Cooling capacity 279 - 366 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HE+

Technical data

HERA HE+ R290		315-3-3 PV	350-3-3 PV	405-3-3 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**316**	**351**	**403**
Total power input (1)	[kW]	104	113	132
COP	[-]	3,04	3,11	3,05
Heating Capacity (1) (XL versions)	[kW]	**316**	**348**	**400**
Total power input (1)	[kW]	103	112	131
COP	[-]	3,07	3,11	3,05
Water flow (1)	[m^3/h]	54,8	60,8	69,9
Water pressure drop (1) - Base version	[kPa]	31,4	27,9	35,9
Min / Max water flow (heat exchanger, user side)	[m^3/h]	52,1 / 65,8	57,8 / 73	66,4 / 83,9
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate				
SCOP (LN/SL - XL)	[W/W]	4,000 - 4,076	4,018 - 4,107	3,951 - 4,007
$\eta_{s,h}$ (LN/SL - XL)	[%]	157 - 160	157,7 - 161,3	155 - 157,3
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate				
SCOP (LN/SL - XL)	[W/W]	3,328 - 3,388	3,341 - 3,399	3,301 - 3,343
$\eta_{s,h}$ (LN/SL - XL)	[%]	130,1 - 132,5	130,6 - 133	129,1 - 130,7
Cooling Capacity (2) (LN/SL versions)	[kW]	**281**	**318**	**366**
Total power input (2)	[kW]	116	132	153
EER	[-]	2,42	2,41	2,39
Cooling Capacity (2) (XL versions)	[kW]	**279**	**317**	**366**
Total power input (2)	[kW]	111	127	148
EER	[-]	2,51	2,50	2,47
Water flow (2)	[m^3/h]	48,3	54,8	62,9
Water pressure drop (2) - Base version	[kPa]	25,8	23,2	29,7
Min / Max water flow (heat exchanger, user side)	[m^3/h]	38,6 / 58	43,8 / 65,8	50,3 / 75,5
Technical data				
Refrigerant / GWP	-	R290 / 3		
Charge of refrigerant	[Kg]	> 12		
Number of refrigerant circuits	N°	3		
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 3		
Expansion valve type	-	Electronic		
Fans quantity / type	-	12 / Axial EC		
Fans power input (1) (total)	[kW]	3,03	3,16	3,41
Total air flow (1)	[m^3/h]	128.700	130.800	134.400
Electrical data				
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50		
Maximum absorbed power	[kW]	145	163	190
Locked rotor current - LRA	[A]	251	279	346
Maximum absorbed current (full load)	[A]	251	279	346
Solution BASE-P - with Hydronic Kit				
Pump type	-	Centrifugal		
Standard pump (1,5 bar)				
Motor efficiency	-	IE3		
Pump motor nominal power input	[kW]	4,0	5,5	5,5
Pump motor nominal absorbed current	[A]	8,7	10,6	10,6
Increased pump (3,0 bar)				
Motor efficiency	-	IE3		
Pump motor nominal power input	[kW]	7,5	9,2	9,2
Pump motor nominal absorbed current	[A]	13,6	17,2	17,2
Water connections				
Size (nominal external diameter)	[inch]	4" (DN 100)	4" (DN 100)	4" (DN 100)
Noise levels (3)				
Total sound power (LN version)	[db(A)]	93	93	93
Total sound pressure (LN version) - at 1 m distance	[db(A)]	72	72	72
Total sound pressure (LN version) - at 10 m distance	[db(A)]	60	60	60
Total sound power (SL version)	[db(A)]	92	92	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	71	71	71
Total sound pressure (SL version) - at 10 m distance	[db(A)]	59	59	59
Total sound power (XL version)	[db(A)]	90	90	90
Total sound pressure (XL version) - at 1 m distance	[db(A)]	69	69	69
Total sound pressure (XL version) - at 10 m distance	[db(A)]	57	57	57
Dimensions and weights - unit				
Lenght	[mm]	7.475	7.475	7.475
Width	[mm]	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	5.960	5.960	6.250
Shipment weight - BP/SL/AS/EC/II version	[Kg]	6.060	6.060	6.350
Shipment weight - BP/XL/AS/EC/II version	[Kg]	6.150	6.150	6.440

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HE+

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

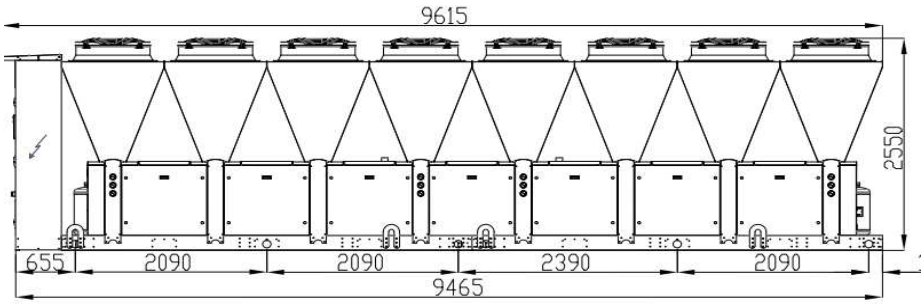
Inverter

Axial fan

Brazed plate
heat exchanger

470-4-4 PV ⟷ 540-4-4 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 462 - 538 kW
Cooling capacity 414 - 482 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HE+

Technical data

HERA HE+ R290		470-4-4 PV	540-4-4 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**467**	**538**
Total power input (1)	[kW]	151	175
COP	[-]	3,09	3,07
Heating Capacity (1) (XL versions)	[kW]	**462**	**535**
Total power input (1)	[kW]	149	173
COP	[-]	3,10	3,09
Water flow (1)	[m^3/h]	81,0	93,3
Water pressure drop (1) - Base version	[kPa]	23,4	27,8
Min / Max water flow (heat exchanger, user side)	[m^3/h]	77 / 97,2	88,6 / 112
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate			
SCOP (LN/SL - XL)	[W/W]	4,083 - 4,175	4,035 - 4,089
$\eta_{s,h}$ (LN/SL - XL)	[%]	160,3 - 164	158,4 - 160,5
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate			
SCOP (LN/SL - XL)	[W/W]	3,386 - 3,44	3,355 - 3,39
$\eta_{s,h}$ (LN/SL - XL)	[%]	132,5 - 134,6	131,2 - 132,6
Cooling Capacity (2) (LN/SL versions)	[kW]	**416**	**482**
Total power input (2)	[kW]	174	202
EER	[-]	2,39	2,39
Cooling Capacity (2) (XL versions)	[kW]	**414**	**477**
Total power input (2)	[kW]	168	196
EER	[-]	2,46	2,43
Water flow (2)	[m^3/h]	71,6	82,9
Water pressure drop (2) - Base version	[kPa]	20,4	22,7
Min / Max water flow (heat exchanger, user side)	[m^3/h]	57,3 / 85,9	66,3 / 99,5
Technical data			
Refrigerant / GWP	-	R290 / 3	
Charge of refrigerant	[Kg]	> 12	
Number of refrigerant circuits	N°	4	
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 4	
Expansion valve type	-	Electronic	
Fans quantity / type	-	16 / Axial EC	
Fans power input (1) (total)	[kW]	4,24	4,56
Total air flow (1)	[m^3/h]	174.700	179.300
Electrical data			
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50	
Maximum absorbed power	[kW]	218	254
Locked rotor current - LRA	[A]	372	462
Maximum absorbed current (full load)	[A]	372	462
Solution BASE-P - with Hydronic Kit			
Pump type	-	Centrifugal	
Standard pump (1,5 bar)			
Motor efficiency	-	IE3	
Pump motor nominal power input	[kW]	5,5	7,5
Pump motor nominal absorbed current	[A]	10,6	13,6
Increased pump (3,0 bar)			
Motor efficiency	-	IE3	
Pump motor nominal power input	[kW]	9,2	11,0
Pump motor nominal absorbed current	[A]	17,2	21,3
Water connections			
Size (nominal external diameter)	[inch]	5" (DN 125)	5" (DN 125)
Noise levels (3)			
Total sound power (LN version)	[db(A)]	95	95
Total sound pressure (LN version) - at 1 m distance	[db(A)]	74	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	62	62
Total sound power (SL version)	[db(A)]	94	94
Total sound pressure (SL version) - at 1 m distance	[db(A)]	73	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	61	61
Total sound power (XL version)	[db(A)]	92	92
Total sound pressure (XL version) - at 1 m distance	[db(A)]	71	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	59	59
Dimensions and weights - unit			
Lenght	[mm]	9.615	9.615
Width	[mm]	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550
Height (XL)	[mm]	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	7.880	8.250
Shipment weight - BP/SL/AS/EC/II version	[Kg]	7.980	8.350
Shipment weight - BP/XL/AS/EC/II version	[Kg]	8.100	8.470

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:
(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:
(3) The declared cooling capacity are not taking into account the pump motor power input (where provided)
(4) 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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards
The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HT

170-2-2 PV ⟷ 310-2-2 PV

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

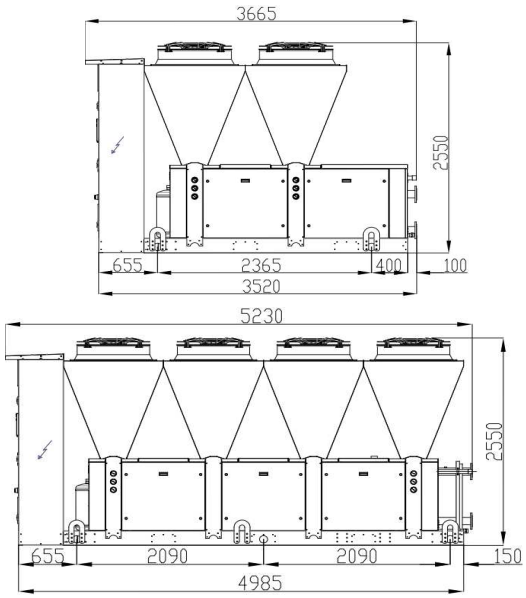
Semi-hermetic
piston compressor

Inverter

Axial fan

Brazed plate
heat exchanger

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 175 - 309 kW
Cooling capacity 155 - 276 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HT

Technical data

HERA HT R290		170-2-2 PV	205-2-2 PV	245-2-2 PV	280-2-2 PV	310-2-2 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**175**	**203**	**242**	**282**	**309**
Total power input (1)	[kW]	55,4	65,1	75,4	88,4	98
COP	[-]	3,16	3,12	3,21	3,19	3,17
Heating Capacity (1) (XL versions)	[kW]	**173**	**190**	**241**	**280**	**307**
Total power input (1)	[kW]	55,0	65,3	74,8	87,6	97
COP	[-]	3,15	2,91	3,22	3,20	3,18
Water flow (1)	[m^3/h]	30,2	35,3	41,9	48,9	53,6
Water pressure drop (1) - Base version	[kPa]	35,3	41,0	32,9	31,1	32,3
Min / Max water flow (heat exchanger, user side)	[m^3/h]	28,7 / 36,2	33,5 / 42,4	39,8 / 50,3	46,5 / 58,7	50,9 / 64,3
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,670 - 3,710	3,663 - 3,697	3,996 - 4,061	4,018 - 4,077	4,015 - 3,763
$\eta_{s,h}$ (LN/SL - XL)	[%]	143,8 - 145,4	143,5 - 144,9	156,8 - 159,4	157,7 - 160,1	157,6 - 147,5
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP (LN/SL - XL)	[W/W]	3,335 - 3,369	3,011 - 3,036	3,340 - 3,39	3,352 - 3,395	3,354 - 3,392
$\eta_{s,h}$ (LN/SL - XL)	[%]	130,4 - 131,8	117,4 - 118,4	130,6 - 132,6	131,1 - 132,8	131,1 - 132,7
Cooling Capacity (2) (LN/SL versions)	[kW]	**155**	**180**	**216**	**251**	**276**
Total power input (2)	[kW]	61,2	72	84,9	98,5	108
EER	[-]	2,53	2,50	2,54	2,55	2,56
Cooling Capacity (2) (XL versions)	[kW]	**154**	**179**	**215**	**249**	**275**
Total power input (2)	[kW]	59,7	70,6	81,6	95,3	105
EER	[-]	2,58	2,53	2,64	2,62	2,61
Water flow (2)	[m^3/h]	26,6	30,9	37,2	43,2	47,5
Water pressure drop (2) - Base version	[kPa]	29,6	34,1	28,6	28,8	27,9
Min / Max water flow (heat exchanger, user side)	[m^3/h]	21,3 / 31,9	24,7 / 37,1	29,8 / 44,6	34,6 / 51,8	38 / 57
Technical data						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant	[Kg]	> 12				
Number of refrigerant circuits	N°	2				
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 2				
Expansion valve type	-	Electronic				
Fans quantity / type	-	4 / Axial EC		8 / Axial EC		
Fans power input (1) (total)	[kW]	1,27	1,37	2,00	2,22	2,38
Total air flow (1)	[m^3/h]	46.700	48.000	85.500	88.850	91.000
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum absorbed power	[kW]	76,2	85,6	108	128	138
Locked rotor current - LRA	[A]	127	141	183	217	238
Maximum absorbed current (full load)	[A]	127	141	183	217	238
Solution BASE-P - with Hydronic Kit						
Pump type	-	Centrifugal				
Standard pump (1,5 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	2,2	3	3	3	4
Pump motor nominal absorbed current	[A]	4,7	6,4	6,4	6,4	8,7
Increased pump (3,0 bar)						
Motor efficiency	-	IE3				
Pump motor nominal power input	[kW]	4	5,5	7,5	7,5	7,5
Pump motor nominal absorbed current	[A]	8,7	10,6	13,6	13,6	13,6
Water connections						
Size (nominal external diameter)	[inch]	3" (DN 80)	3" (DN 80)	3" (DN 80)	4" (DN 100)	4" (DN 100)
Noise levels (3)						
Total sound power (LN version)	[db(A)]	86	87	91	92	93
Total sound pressure (LN version) - at 1 m distance	[db(A)]	67	68	71	72	73
Total sound pressure (LN version) - at 10 m distance	[db(A)]	54	55	59	60	61
Total sound power (SL version)	[db(A)]	85	86	90	91	92
Total sound pressure (SL version) - at 1 m distance	[db(A)]	66	67	70	71	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	53	54	58	59	60
Total sound power (XL version)	[db(A)]	83	84	88	89	90
Total sound pressure (XL version) - at 1 m distance	[db(A)]	64	65	68	69	70
Total sound pressure (XL version) - at 10 m distance	[db(A)]	51	52	56	57	58
Dimensions and weights - unit						
Lenght	[mm]	3.665	3.665	5.230	5.230	5.230
Width	[mm]	2.280	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	2.800	2.840	3.970	3.990	4.180
Shipment weight - BP/SL/AS/EC/II version	[Kg]	2.900	2.940	4.070	4.090	4.280
Shipment weight - BP/XL/AS/EC/II version	[Kg]	2.930	2.970	4.130	4.150	4.340

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ...) are published on our website

HERA HT

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

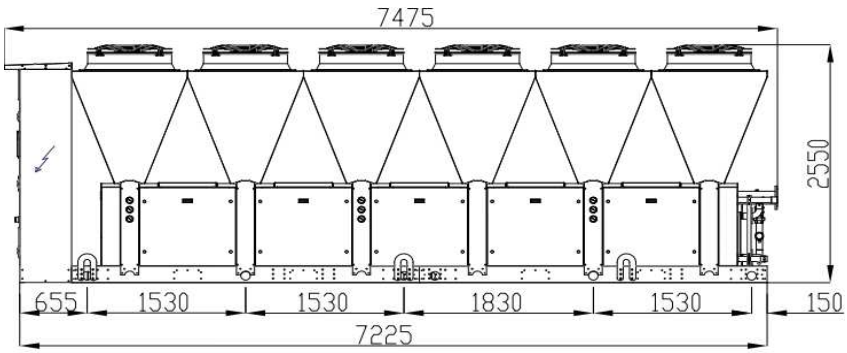
Inverter

Axial fan

Brazed plate
heat exchanger

365-3-3 PV ◄► 510-3-3 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 363 - 509 kW
Cooling capacity 361 - 506 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HT

Technical data

HERA HT R290		365-3-3 PV	425-3-3 PV	465-3-3 PV	510-3-3 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**363**	**422**	**464**	**509**
Total power input (1)	[kW]	113	133	146	161
COP	[-]	3,21	3,17	3,18	3,16
Heating Capacity (1) (XL versions)	[kW]	**361**	**419**	**461**	**506**
Total power input (1)	[kW]	112	132	145	160
COP	[-]	3,24	3,19	3,18	3,17
Water flow (1)	[m^3/h]	63,0	73,2	80,5	88,3
Water pressure drop (1) - Base version	[kPa]	26,8	35,1	31,2	36,8
Min / Max water flow (heat exchanger, user side)	[m^3/h]	59,9 / 75,6	69,5 / 87,8	76,5 / 96,6	83,9 / 106
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate					
SCOP (LN/SL - XL)	[W/W]	4,065 - 4,133	4,019 - 4,077	4,051 - 3,768	3,707 - 3,757
$\eta_{s,h}$ (LN/SL - XL)	[%]	159,6 - 162,3	157,8 - 160,1	159 - 147,7	145,3 - 147,3
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate					
SCOP (LN/SL - XL)	[W/W]	3,354 - 3,399	3,342 - 3,385	3,357 - 3,394	3,356 - 3,39
$\eta_{s,h}$ (LN/SL - XL)	[%]	131,1 - 133,0	130,7 - 132,4	131,3 - 132,7	131,2 - 132,6
Cooling Capacity (2) (LN/SL versions)	[kW]	**325**	**374**	**411**	**452**
Total power input (2)	[kW]	127	147	162	178
EER	[-]	2,56	2,54	2,54	2,49
Cooling Capacity (2) (XL versions)	[kW]	**323**	**373**	**410**	**449**
Total power input (2)	[kW]	122	142	157	173
EER	[-]	2,64	2,62	2,61	2,60
Water flow (2)	[m^3/h]	55,9	64,2	70,7	77,7
Water pressure drop (2) - Base version	[kPa]	22,7	29,1	25,9	30,7
Min / Max water flow (heat exchanger, user side)	[m^3/h]	44,7 / 67,1	51,4 / 77	56,6 / 84,8	62,2 / 93,2
Technical data					
Refrigerant / GWP	-	R290 / 3			
Charge of refrigerant	[Kg]	> 12			
Number of refrigerant circuits	N°	3			
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 3			
Expansion valve type	-	Electronic			
Fans quantity / type	-	12 / Axial EC			
Fans power input (1) (total)	[kW]	3,01	3,31	3,57	3,69
Total air flow (1)	[m^3/h]	128.500	133.000	136.600	138.400
Electrical data					
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50			
Maximum absorbed power	[kW]	162	191	207	211
Locked rotor current - LRA	[A]	275	326	357	368
Maximum absorbed current (full load)	[A]	275	326	357	368
Solution BASE-P - with Hydronic Kit					
Pump type	-	Centrifugal			
Standard pump (1,5 bar)					
Motor efficiency	-	IE3			
Pump motor nominal power input	[kW]	5,5	5,5	5,5	5,5
Pump motor nominal absorbed current	[A]	10,6	10,6	10,6	10,6
Increased pump (3,0 bar)					
Motor efficiency	-	IE3			
Pump motor nominal power input	[kW]	9,2	9,2	9,2	11,0
Pump motor nominal absorbed current	[A]	17,2	17,2	17,2	21,3
Water connections					
Size (nominal external diameter)	[inch]	4" (DN 100)	4" (DN 100)	5" (DN 125)	5" (DN 125)
Noise levels (3)					
Total sound power (LN version)	[db(A)]	93	93	93	95
Total sound pressure (LN version) - at 1 m distance	[db(A)]	72	72	72	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	60	60	60	62
Total sound power (SL version)	[db(A)]	92	92	92	94
Total sound pressure (SL version) - at 1 m distance	[db(A)]	71	71	71	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	59	59	59	61
Total sound power (XL version)	[db(A)]	90	90	90	92
Total sound pressure (XL version) - at 1 m distance	[db(A)]	69	69	69	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	57	57	57	59
Dimensions and weights - unit					
Lenght	[mm]	7.475	7.475	7.475	7.475
Width	[mm]	2.280	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	5.960	5.960	6.250	6.290
Shipment weight - BP/SL/AS/EC/II version	[Kg]	6.060	6.060	6.350	6.390
Shipment weight - BP/XL/AS/EC/II version	[Kg]	6.150	6.150	6.440	6.480

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

(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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ….) are published on our website

HERA HT

R290
Refrigerant
R290 | GWP=3

SCOP
Reversible
heat pump

Semi-hermetic
piston compressor

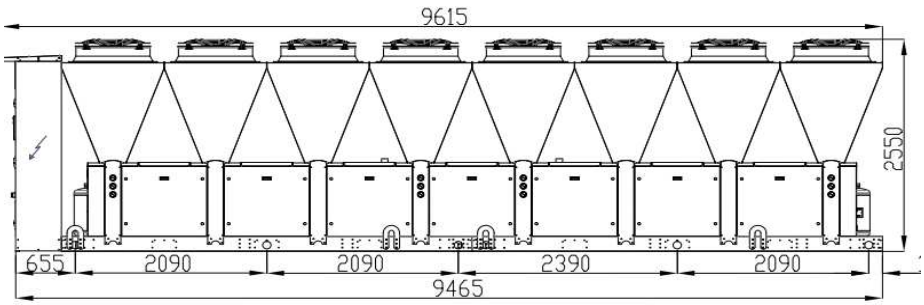
Inverter

Axial fan

Brazed plate
heat exchanger

560-4-4 PV ⟷ 680-4-4 PV

Air to water heat pumps for comfort applications



Solution

B - Base
P - Base with Pump

Version

LN - Low Noise
SL - Super Low Noise
XL - Extra Low Noise

Equipment

AS - Standard equipment
DS - Desuperheater

Heating capacity 564 - 680 kW
Cooling capacity 502 - 608 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 for outdoor installation. Basement and frame in galvanised shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance (RAL 7035 standard colour, others on request). 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. XL (Extra Low Noise) version: the panels are sandwich and insulated with rock wool. Fans are ZAplus
Compressor with inverter	Reciprocating semi-hermetic type, fixed on anti-vibration system and complete with pressure lubrication system; oil crankcase heater; integral electronic protection and inlet plus outlet valves; flexible joints on suction and discharge. A VFD (Variable Frequency Drive) is provided in order to adapt the cooling capacity of the reciprocating compressor to the heating or cooling demand. The compressor is mechanically optimized for use with Hydrocarbons. Some components are ATEX certified.
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).

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Low pressure switch
- Low pressure safety valve
- Double safety valve
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard/ High pressure
- Inverter driven compressor
- Advanced control c.pCo

HERA HT

Technical data

HERA HT R290		560-4-4 PV	620-4-4 PV	680-4-4 PV
Heating Capacity (1) (LN/SL versions)	[kW]	**564**	**618**	**680**
Total power input (1)	[kW]	177	195	214
COP	[-]	3,19	3,17	3,18
Heating Capacity (1) (XL versions)	[kW]	**560**	**615**	**675**
Total power input (1)	[kW]	175	193	213
COP	[-]	3,20	3,18	3,18
Water flow (1)	[m^3/h]	98	107	118
Water pressure drop (1) - Base version	[kPa]	31,1	32,3	32,5
Min / Max water flow (heat exchanger, user side)	[m^3/h]	93,9 / 117,4	101,7 / 128,4	112,1 / 141,6
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate				
SCOP (LN/SL - XL)	[W/W]	4,051 4,109	4,046 - 3,808	3,77 - 3,818
$\eta_{s,h}$ (LN/SL - XL)	[%]	159,0 - 161,4	158,9 - 149,3	147,8 - 149,7
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate				
SCOP (LN/SL - XL)	[W/W]	3,388 - 3,431	3,390 - 3,428	3,399 - 3,437
$\eta_{s,h}$ (LN/SL - XL)	[%]	132,5 - 134,2	132,6 - 134,1	133,0 - 134,5
Cooling Capacity (2) (LN/SL versions)	[kW]	**502**	**552**	**608**
Total power input (2)	[kW]	197	216	238
EER	[-]	2,53	2,51	2,51
Cooling Capacity (2) (XL versions)	[kW]	**499**	**550**	**605**
Total power input (2)	[kW]	190	210	232
EER	[-]	2,62	2,62	2,61
Water flow (2)	[m^3/h]	86,4	95,0	105
Water pressure drop (2) - Base version	[kPa]	29	28	28
Min / Max water flow (heat exchanger, user side)	[m^3/h]	69,1 / 103,7	76 / 114	84 /126
Technical data				
Refrigerant / GWP	-	R290 / 3		
Charge of refrigerant	[Kg]	> 12		
Number of refrigerant circuits	N°	4		
Compressor type / quantity	-/N°	Semihermetic reciprocating with VFD (Variable Frequency Drive) / 4		
Expansion valve type	-	Electronic		
Fans quantity / type	-	16 / Axial EC		
Fans power input (1) (total)	[kW]	4,44	4,76	4,93
Total air flow (1)	[m^3/h]	177.700	182.200	184.800
Electrical data				
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50		
Maximum absorbed power	[kW]	255	276	281
Locked rotor current - LRA	[A]	434	476	490
Maximum absorbed current (full load)	[A]	434	476	490
Solution BASE-P - with Hydronic Kit				
Pump type	-	Centrifugal		
Standard pump (1,5 bar)				
Motor efficiency	-	IE3		
Pump motor nominal power input	[kW]	7,5	7,5	11
Pump motor nominal absorbed current	[A]	13,6	13,6	21,3
Increased pump (3,0 bar)				
Motor efficiency	-	IE3		
Pump motor nominal power input	[kW]	11,0	15,0	15,0
Pump motor nominal absorbed current	[A]	21,3	27,7	27,7
Water connections				
Size (nominal external diameter)	[inch]	5" (DN 125)	5" (DN 125)	6" (DN 150)
Noise levels (3)				
Total sound power (LN version)	[db(A)]	95	95	96
Total sound pressure (LN version) - at 1 m distance	[db(A)]	74	74	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	62	62	63
Total sound power (SL version)	[db(A)]	94	94	95
Total sound pressure (SL version) - at 1 m distance	[db(A)]	73	73	73
Total sound pressure (SL version) - at 10 m distance	[db(A)]	61	61	62
Total sound power (XL version)	[db(A)]	92	92	93
Total sound pressure (XL version) - at 1 m distance	[db(A)]	71	71	71
Total sound pressure (XL version) - at 10 m distance	[db(A)]	59	59	60
Dimensions and weights - unit				
Lenght	[mm]	9.615	9.615	9.615
Width	[mm]	2.280	2.280	2.280
Height (LN, SL)	[mm]	2.550	2.550	2.550
Height (XL)	[mm]	2.610	2.610	2.610
Shipment weight - BP/LN/AS/EC/II version	[Kg]	7.880	8.250	8.340
Shipment weight - BP/SL/AS/EC/II version	[Kg]	7.980	8.350	8.440
Shipment weight - BP/XL/AS/EC/II version	[Kg]	8.100	8.470	8.560

Reference conditions:

(1) Outdoor ambient air = +7 °C / 87% r.h. - Condenser water temperature IN/OUT = 40/45 °C - Fluid: water - Results according to UNI EN 14511-202:

(2) Condenser air intake temperature = 35 °C - Evaporator water temperature IN/OUT = 12/7 °C - Fluid: water - Results according to UNI EN 14511-202:

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

(4) 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 leve

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EU, the Commission Regulation (EU) No 811/2013, No 813/2011 and with the Harmonized Standards

The relevant information related to each model (eg.: SCOP, Seasonal Space Heating Energy Efficiency, Annual electricity consumption, ….) are published on our website

HERA

Standard equipment and Accessories

General

Optional accessories

Anti-vibration spring mounts (supplied separately)

Spring vibration isolation mounting (Kit). The system prevent the transmission of vibrations to the structure where the unit is located.

Condensing coil protection panel

Metal protection anti-intrusion grid for condensing coil against accidental impacts.

Panels insulated with polyurethane foam sheets

Painted galvanized sheet panels, insulated with polyurethane foam sheets, polyester based, anthracite colour, selfextinguishing non dripping. **Standard for LN version.**

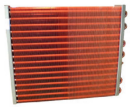
Sandwich soundproofing galvanized sheet panels

Sandwich soundproofing galvanized sheet panels, painted outside and isolated with high- density rock wool (100 Kg/m^3).
Standard for SL and XL version

Condensing section

Optional accessory

Cu/Cu condensing coil



Finned pack heat exchanger consisting of copper pipes and fins. This solution allows to increase the heat exchange efficiency and the machine performance.

HERA

Standard equipment and Accessories

Refrigerant circuit section

Standard accessories

High & Low pressure manometers

Gauges for the control of low and high refrigerant pressures, embedded in glycerine.

Suction and discharge compressor's valves

Intercepting valves on compressor's suction and discharge sides to facilitate maintenance activities.

Pressure switch-HP side

Pressure switch installed on HP side according to EN-378:2016 standard to protect the circuit against high-pressure risk.

Compressor crankcase oil heater

Crankcase oil heater directly installed on the compressor in order to increase compressor reliability and ensure adequate oil temperature.

Electronic expansion valve

Electronic expansion valve for the accurate and timely control of the superheater level, after evaporation and many others operative functions.

Safety valve – HP side

Safety valve(s) installed on HP side according to EN-378:2016 standard to protect the circuit against highpressure risk. The safety valve(s) is (are) standard for some models only, according to EN-378:2016 requirements. See accessories Table for more details. All safety valves are conveyed outside the unit.

Optional accessories

Pressure switch - LP side

Pressure switch installed on LP side to prevent risks related to excessively low evaporating temperatures.

Double Safety valve with changeover valve

Double safety vale with changeover valve installed to ensure easy maintenance. This solution is available both for HP and LP side. All safety valves are conveyed outside the unit.

Safety valve – LP side

Safety valve(s) installed on LP side to protect refrigeraton circuit against low pressure risk. All safety vals are conveyed outside the unit.

Gauges

Gauges for the control of oil pressure, embedded in glycerine.

HERA

Standard equipment and Accessories

Electrical cabinet section

Standard accessories

Electrical panel installed outside the unit

To ensure higher security level, the cabinet is mounted outside the machine.The propane sensor is equipped with separate power supply.
Standard power supply: 400V/3ph/50hz.
Emergency power supply: 230V/1ph/50hz

Double- barrier

The cable entry plates consist of a robust hard frame made of plastic which ensure the tightness of the electrical panel.

Optional accessories

Phase monitoring sequence relay

Sequence phases relay mounted directly inside the electrical box and with the function of stopping the unit in the case where the phase sequence is not correct.

Min./Max. voltage relay

Min and max power supply relays mounted directly inside the electrical box and with the function of stopping the unit in case the power supply voltage is outside the tolerance range.

Anti-condensation heater with thermostat

System ables to ensure, inside the enclosure, temperature value properely above the dew point.

Power factor correction capacitors for compressors

Power factor compressor capacitor to keep the value of the cosϕ higher than 0,9.

Emergency power electronic expansion valve (Ultracap module)

Ultracap is a emergency power supply device for systems that use electronic expansion valves: this device ensures complete closing of the valves even when there are sudden mains power failures.

Device for measuring the electric energy consumed (Energy meter)

Measuring instrument dedicated to the detection of the main electrical parameters and the consumption of the connected loads.Energy meter records consumption and allows for a complete and detailed analysis.

Inverter

Inverter driven compressor allows to increase drastically the efficiency at part loads.
Standard for all version.

Control section

Otpional accessories

Remote control panel

Remote user terminal can be used to get all the readings and duplicate commands on a second display located at a distance and in more accessible site compared to the microprocessor on board the machine.

Connectivity

Modbus LonWorks TCP/IP ASHRAE BACnet

HERA

Standard equipment and Accessories

Water circuit section

Standard accessories

Differential pressure switch

Differential pressure switch with function to control the failure or reduced water flow.

Air vent valve (manual)

Manual air vent valve for discharging air from water circuit.

Electromechanical water flow switch (supplied separately)

Electromechanical flow switch with function to control the failure or reduced water flow.

Increased thermal insulation – 19 mm

Closed-cell thermal insulation with special thickness of 19 mm, which ensures an adequate protection against moisture from condensation. For Integrated version adequate insulation is provided also for the pump.

Optional accessories

Pressure relief valve (4,5 bar setting)

Pressure relief valve for hydraulic circuit.
Default setting: 4.5 Bar

Automatic overpressure by-pass valve

Water circuit automatic overpressure by-pass valve.

Sacrificial anode installed inside the unit

Sacrificial anode installed inside the unit prevents the evaporator corrosion by means cathodic protection.

High pressure water pump (increased pump pressure)

Pumping group consisting of high head centrifugal electric pump (peripheral for models 21 and 31), suitable for water circuits with high pressure drops.

Open expansion tank

Open expansion vessel for the containment of pressure variations in the water circuit. The fluid is in direct contact with the atmosphere.

Flanged connections

Flanged couplings for water connections. Available materials: carbon steel and AISI 304L steel (only for nonferrous circuits).

Electronic water flow switch (supplied separately)

Electronic flow switch with function to control the failure or reduced water flow.

Air vent valve (automatic)

Automatic air vent valve for discharging air from water circuit.

Non-ferrous water circuit

Water circuit made entirely from non-ferrous material.

Double water pump (stand-by) - Standard pressure

Pumping group consisting of two centrifugal electric pumps, one in stand-by (peripheral for model 21), with standard pressure drops.

Victoulic couplings

Victoulic couplings for water connections, which ensure easy start-up operations.

HERA

Standard equipment and Accessories

Safety section

Standard accessories

ATEX certified Gas detector

The unit is equipped with a stand-alone gas detection system. The sensor is ATEX certified and is pre-calibrated at the factory. The standard setting is set at 10% of LFL (Low Flammability Limit).

EC emergency fan

The centrifugal EC fan, managed by the microprocessor, is activated in case of R290 leakage and the ventilation lasts until the dilution of the refrigerant gas is completed. Additional accessories are available to convey the air discharge. Power supply: 230V-1ph- 50Hz

Optional accessories

Double gas detector

The redundancy of the ATEX certified gas detector allows a higher level of security to be achieved.

Flanged connection for emergency fan air outlet

Flange to convey the air discharge in rectangularsection air ducts. The flange is supplied separately.

Calibration kit

The R290 leak detector requires periodic maintenance: the calibration must be carried out according to the indications of the manual. The calibration kit, which allows calibration to be carried out quickly and easily, consists of:
- adapter;
- pressure regulator and pressure gauge;
- service tool

Emergency stop button

Safety switch for emergency stop installed on the electrical panel.

Sound alarm

The sound alarm, installed on the electrical panel, is activated in case of R290 leakage.

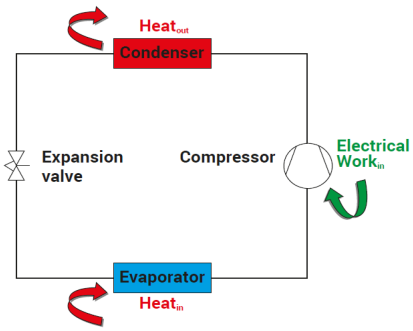
HERA - Desuperheater

Options available

Cooling mode example

What is waste heat?

All air-conditioning and refrigerating systems transfer heat from one location to another through the use of electrical work. At the evaporator heat exchanger, heat is drawn into the system to provide indoor cooling while heat leaves the system in the form of wasted heat at the condenser (see figure on the side). The amount of wasted heat is higher than the cooling that the process creates.



Benefits of Heat Recovery

The use of a recovery system to generate hot water can reduce the total energy needs of a building and/or a process and allows a significant increase of the global efficiency of the system.
The benefits of Heat recovery systems are several:

▪ **Increased efficiency**, due to the possibility to use both chilled and hot water for different purposes. To better understand this point, we can analyze the EER (Energy Efficiency Ratio) of the unit without heat recovery system and the TER (Total Efficiency Ratio) with heat recovery system. According to its definition, the EER is the ratio between Qc (cooling capacity) and the absorbed electrical power Wel. For a unit with heat recovery system, the TER is the ratio between the sum of useful effects Qc and Qrec (cooling capacity and recovered heat) and the absorbed power.

$$EER = \frac{Q_c}{W_{el}} \qquad TER = \frac{Q_c}{W_{el}} + \frac{Q_{rec}}{W_{el}} = \frac{Q_c + Q_{rec}}{W_{el}}$$

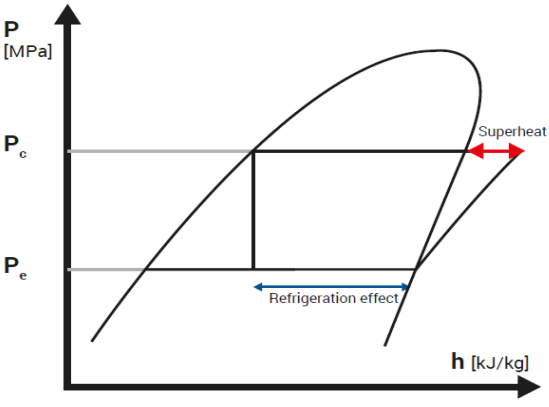
▪ **Reduction of Energy costs**, if there are simultaneous heating and cooling loads, it's possible to recover heat from heat pump instead of rejecting it to the environment. This gives a double benefit: recovered heat reduces the costs of purchased heat and also reduces the ancillary power necessary to reject the heat (for example cooling towers and/or dry coolers).
A qualitative representation of the cost benefits compared to standard heat generation methods is shown below:

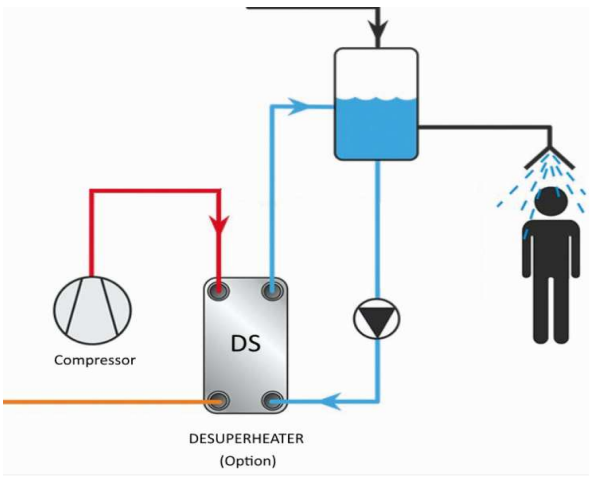
DESUPERHEATER FUNCTIONING

An additional BPHE (brazed plate heat exchanger) heat exchanger is installed between semi-hermetic piston compressor and Cu/Al Coils.

Main features:

- Captures heat from superheated refrigerant, exploiting the hot discharge gas.
- It is possible to recover only a small amount of heat (up to about 20% of the condensation heat) as this exchanger only deals with the sensible and not latent exchange. The latter takes place in the air-cooled condenser.
- Hot water temperatures up to 55°C can be achieved.





HERA

Euroklimat firmly believes that Customer Satisfaction is an indispensable factor for success. A priority objective to achieve this result is the constant improvement of our products, services and the relative production processes. For this reason, we work every day to create reliable products that can help our customers in their business. To achieve this goal, for every single unit we produce there is a lot of work. Therefore, we are pleased to tell you how Euroklimat's CRIO Medium Temperature Chillers are made.

1 Products design and development

Starting from market's needs we draft a concept which is then transformed into a product. The design involves many people of the company and results in the production of all the necessary documentation such as installation and operating manual, P&ID diagrams, wiring diagrams, 3D drawings and much more.

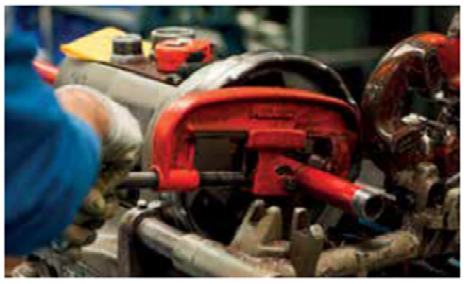
2 Supply chain

The materials procurement process is the result of a constant partnership with all our suppliers and a careful management of the timing. To do this we use modern manufacturing techniques such as MRP (Material Requirements Planning), trend analysis, which are some of the tools that feed the issuance of orders.
Euroklimat's supply chain ends with the reception of the materials and their quality check.

3 Mechanical assembly

The production of the units starts at the mechanical assembly station. Here the structures are assembled and the main components such as compressors and heat exchangers are positioned and fixed.

4 Water circuit



Then the production continues at the water circuit assembly station where all the components of this circuit are mounted.

How it is made

The whole production cycle is subjected to Euroklimat's Quality Management System, that complies with the international standard UNI EN ISO 9001:2015, ensuring quality and long-term reliability.

5 Refrigerant circuit

The next stop is at refrigerant circuit assembly station. Here the pipes of the circuit are assembled and brazed welded, which will connect the various elements of the unit, such as compressor(s), condenser(s), evaporator(s), etc. The refrigerant circuit is specifically designed in order to minimize load losses and to avoid capacity reduction. The circuit is entirely made of copper tube brazed with silver alloy and it is isolated on the suction part, in order to avoid condensation.

6 Electrical wiring

Once completed the refrigeration and water circuit, we perform the electrical wiring and the connection between electric board and compressor, fan, pump, etc. .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.

7 Running test area

The production cycle draws to a close at the running test station. Here all models are individually tested in order to check correct operation, refrigerant charge and settings of microprocessor.
Once all the checks and inspections are completed and successfully passed, the units are disconnected from the testing station and moved to the last station: the shipping area.

8 Final inspection and packaging area

The last phase of the production cycle concerns the finishing of the units and the packaging for shipping. Here all the units are subjected to a final check and prepared for the shipping. If a special packaging has not been requested the standard one is realized with heat-shrinkable plastic film that cover the whole unit and protect it from dust, water and other atmospheric agents. Polystyrol corners are also foreseen in order to protect the unit from potential damages caused during transports. The units are then ready for transportation and final installation.

R290 References

Customers who have chosen us

Nestlè	Metro	Roche Diagnostic
Coop	Waitrose	Danish Technological Institute
E.ON Kernkraft	Carrefour	Del Monte Foods
Colruyt	STEF	Clauger
John Lewis Birmingham	Cityringen Copenhagen	The Coca Cola Company

Some R290 Installations

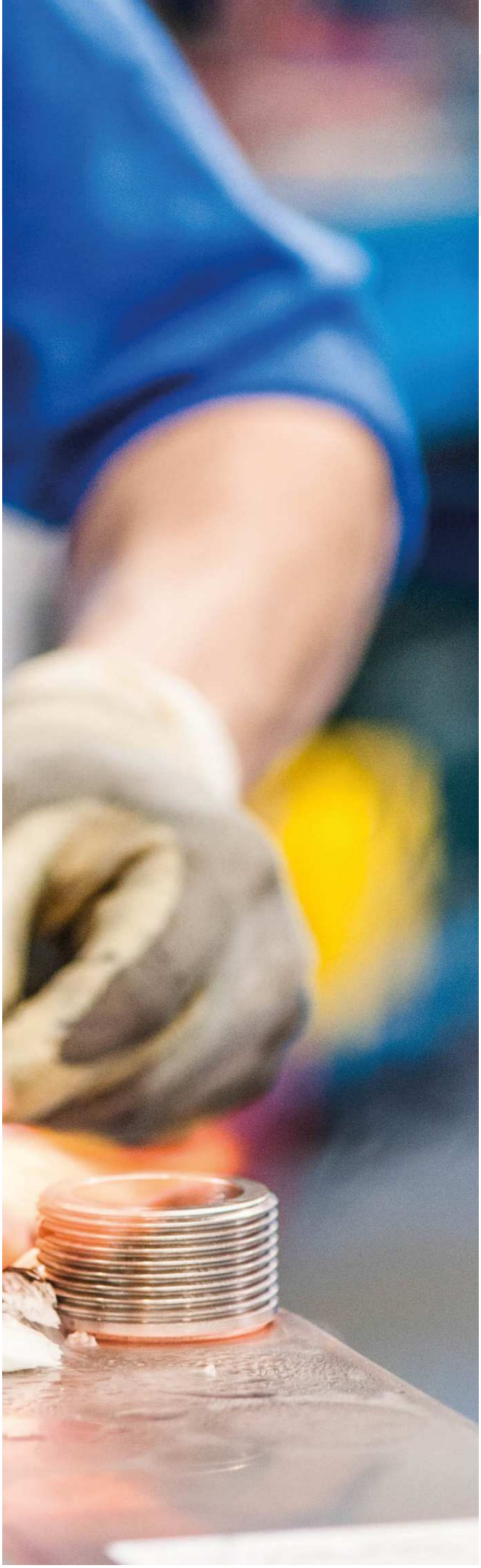








EK



Our plants and quality management

Over 50 years of business

Since we set up business in 1963, the company's head offices have always been in Italy, near Milan. Today, our aim is to be a market leader in chillers with natural refrigerant (propane): by doing this, we are helping the industry to become more efficient, preserving natural resources and protecting the environment.

Organization in Italy

At our Italian plant spread over an area of 6,000 square metres, with a work force of 60 people, Euroklimat designs and produces refrigeration units, heat pumps and precision air conditioners that can be used both in industrial processes and traditional comfort applications.

Infinite quality

Euroklimat firmly believes that Customer Satisfaction is an indispensable factor for success. A priority objective to achieve this result is the constant improvement of our products, services and the relative production processes.
This objective means involving all of the company's resources with planned, systematic activities for Quality; for this reason, our system complies with the international standard UNI EN ISO 9001:2015.

Organization in China

Our plant covers a surface of approximately 100,000 square metres, with over 1,000 people and includes a large test chamber and a sophisticated R&D laboratory, in addition to real production departments, where the performance of the units is measured before being placed on the market.

QUALITY SYSTEM CERTIFICATION
DNV·GL
ISO 9001

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

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Stabilimento Cina • Huangjiang, Dongguan, Guangdong

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green cooling initiative

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