

HERA

R290

Refrigerant
R290 | GWP=3



Reversible
heat pump



Inverter



Axial fan



Semi-hermetic
piston compressor



Brazen plate
heat exchanger

035-1-1 ↔ 095-1-1



SCOP

Air-to-Water reversible Heat Pump for outdoor installation



Solution

- B - Base
- I - Hydronic kit

Version

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

Equipment

- AS - Standard equipment
- DS - Desuperheater

Heating capacity 33,5 - 93,7 kW
Cooling capacity 29,1 - 82,1 kW

Safety system	To ensure high-safety-level the unit is equipped with a special gas detector for flammable gases, explosion-proof ATEX certified, with external dedicated power supply and Modbus output signal. The sensor is provided with an alarm level set at 10% of Lower Flammability Limit (LFL). This alarm activates a red LED status indicator on the control panel and is managed by microprocessor to activate a series of emergency provisions which ensure the highest possible safety level. Ex-rated centrifugal fan, which ensures emergency ventilation inside the compressor's box in case of unlikely R290 leakage.
Structure	Structure specifically designed for outdoor installation. Basement and frame in galvanized shaped sheet steel with a suitable thickness. All parts are polyester-powder painted to assure total weather resistance. For SL and XL versions, the panels are sandwich and insulated with rock wool.
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 hydrophilic fins offering a high exchange surface area.
Water heat exchanger Desuperheater (option)	Brazen plate-type heat exchanger, stainless steel AISI 316 made. The heat exchanger design provides high thermal exchange and high-performance results, furthermore it guarantees small dimensions and easy installation and maintenance. Heat exchangers are thermally insulated with closed-cell neoprene anti-condensate material. Air vent valve included.
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, 4-way reversing valve, liquid receiver, liquid separator, shut-off valve on the liquid line, electronic expansion valve, safety high pressure high, high & low pressure gauges. Some components are ATEX certified.
Water circuit (Hydronic Kit – optional)	Water storage tank, material: carbon steel - Treatment: internal and external hot-dip galvanization. Insulation is made with high density rigid polyurethane foam - 30 mm. max. pressure: 6 bar. Water pressure gauge, safety valve, centrifugal pump(s) suitable for glycol solutions up to 20%, manual air venting valve. Variable speed and twin pumps are available as option.

MAIN ACCESSORIES

- Anti-vibration rubber/spring mounts
- Air heat exchanger protection panel or filter (aluminium mesh)
- Air heat exchanger with various coatings treatment
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard pressure
- Open expansion tank
- Closed expansion vessel with automatic filling unit
- Master / Slave controller for multi-installation

➤ For the complete list of accessories please see pages 32-33

Technical data

035-1-1 ↔ 095-1-1

		035-1-1	055-1-1	065-1-1	080-1-1	095-1-1
Heating Capacity ⁽¹⁾	[kW]	33,5	53,4	68,0	82,3	93,7
Total power input ⁽¹⁾	[kW]	10,3	16,8	22,1	25,7	30,2
COP	[-]	3,25	3,17	3,08	3,20	3,10
Water flow ⁽¹⁾	[m ³ /h]	5,8	9,2	11,8	14,3	16,2
Water pressure drop ⁽¹⁾ - Base version	[kPa]	35	53	67	33	34
Min / Max water flow (heat exchanger, user side)	[m ³ /h]	5,48 / 6,92	8,73 / 11,03	11,10 / 14,02	13,44 / 16,98	15,31 / 19,34
Performance in average climatic conditions according to Regulation EU no. 813/2013 - Pdesignh ≤ 400kW (low temperature)						
SCOP	[W/W]	3,457	3,426	3,466	3,556	3,436
ηsh	[%]	135,3	134	135,7	139,3	134,4
Performance in average climatic conditions according to Regulation EU no. 813/2013 - Pdesignh ≤ 400kW (medium temperature)						
SCOP	[W/W]	2,858	2,848	2,936	2,936	2,834
ηsh	[%]	111,3	110,9	114,4	114,4	110,3
Energy efficiency class according to Regulation EU no. 811/2013 - heat pump space heaters ≤ 70kW						
Seasonal space heating energy efficiency class	-	A+	A+	A+	#	#
Cooling Capacity ⁽²⁾	[kW]	29,1	46,8	57,8	71,3	82,1
Total power input ⁽²⁾	[kW]	10,9	17,2	23,6	26,8	32,8
EER	[-]	2,67	2,72	2,45	2,66	2,50
Water flow ⁽²⁾	[m ³ /h]	5,0	8,1	10,0	12,3	14,1
Water pressure drop ⁽²⁾ - Base version	[kPa]	26	35	42	27	28
Min / Max water flow (heat exchanger, user side)	[m ³ /h]	4,00 / 6,00	6,43 / 9,65	7,95 / 11,93	9,81 / 14,71	11,29 / 16,94
Refrigerant / GWP	-	-	-	R290 / 3	-	-
Charge of refrigerant	[Kg]	3,0	4,5	4,7	6,4	6,8
Refrigerant circuit	N°	-	-	1	-	-
Compressor type / quantity	-/N°	-	-	Semihhermetic reciprocating with VFD (Variable Frequency Drive) / 1		
Expansion valve type	-	-	-	Electronic		
Fans type / quantity	-/N°	Axial EC / 1	Axial EC / 2	Axial EC / 2	Axial EC / 3	Axial EC / 3
Fans power input ⁽¹⁾ (total)	[kW]	0,84	1,75	1,75	2,65	2,65
Total air flow	[m ³ /h]	14.000	26.500	26.500	39.300	39.300
Electrical data						
Power supply (main - gas detector)	-	-	-	400/3+N/50 - 230/1/50		
Maximum absorbed power	[kW]	13,2	21,3	27,3	31,5	38,5
Locked rotor current - LRA	[A]	-	-	< 10	-	-
Maximum absorbed current (full load)	[A]	21,8	37	47,8	56,9	67,8
Solution INTEGRATA - with Hydronic Kit						
Buffer tank capacity	[L]	-	-	300		
Pump type	-	-	-	Centrifugal		
Standard pump (1,5 bar)						
Motor efficiency	-	-	-	IE3		
Pump motor nominal power input	[kW]	0,55	1,1	1,1	1,5	1,5
Pump motor nominal absorbed current	[A]	1,85	3,3	3,3	3,8	3,8
Increased pump (3,0 bar)						
Motor efficiency	-	-	-	IE3		
Pump motor nominal power input	[kW]	1,5	2,2	2,2	3	3
Pump motor nominal absorbed current	[A]	4,1	4,7	4,7	6,4	6,4
Water connections						
Size (nominal external diameter)	[inch]	1"	1" ¼	1" ¼	1" ½	1" ½
Noise levels ⁽³⁾						
Total sound power (LN version)	[db(A)]	82,2	85,5	85,5	87,1	88,6
Total sound pressure (LN version) - at 1 m distance	[db(A)]	74,2	77,5	77,5	79,1	80,6
Total sound pressure (LN version) - at 10 m distance	[db(A)]	54,2	57,5	57,5	59,1	60,6
Total sound power (SL version)	[db(A)]	78,7	82,0	82,0	83,6	85,1
Total sound pressure (SL version) - at 1 m distance	[db(A)]	70,7	74,0	74,0	75,6	77,1
Total sound pressure (SL version) - at 10 m distance	[db(A)]	50,7	54,0	54,0	55,6	57,1
Total sound power (XL version)	[db(A)]	76,7	80,0	80,0	82,1	83,6
Total sound pressure (XL version) - at 1 m distance	[db(A)]	68,7	72,0	72,0	74,1	75,6
Total sound pressure (XL version) - at 10 m distance	[db(A)]	48,7	52,0	52,0	54,1	55,6
Dimensions and weights - Solution B (BASE) unit						
Length - B/LN-SL-XL/AS version	[mm]	1.775	2.365	2.365	3.325	3.325
Width - B/LN-SL-XL/AS version	[mm]	1.050	1.050	1.050	1.050	1.050
Height - B/LN-SL/AS version	[mm]	1.900	1.900	1.900	1.900	1.900
Height - B/XL/AS version	[mm]	1.985	1.985	1.985	1.985	1.985
Shipping weight - B/LN/AS version	[Kg]	360	495	560	730	740
Shipping weight - B/SL/AS version	[Kg]	440	600	680	890	900
Shipping weight - B/XL/AS version	[Kg]	440	600	680	890	900
Dimensions of the Hydronic kit						
Length	[mm]	1050	1050	1050	1050	1050
Width	[mm]	900	900	900	900	900
Height	[mm]	1670	1670	1670	1670	1670

Reference conditions:

- Outdoor ambient air = +7°C / 87% r.h. - Condenser water temperature IN/OUT = 40/45°C - Fluid: water
- Condenser air intake temperature = 35°C - Evaporator water temperature IN/OUT = 12/7°C - Fluid: water
- The declared cooling capacity are not taking into account the pump motor power input (where provided).
- The sound pressure level (average value) is calculated considering the unit as a point source with hemispherical emission with the presence of the support plane with hypotheses of complete reflectivity (non-binding value obtained from the sound power level).

Compliance with "Eco-Design"

The units comply with the European Directive 2009/125/EC and the Commission Regulation (EU) 813/2013 and with the Harmonized Directives. The relevant information related to each model are published on our website www.euroklimat.it