

Datasheet

HYDRA

R290



Water to Water Heat Pump for high and medium temperature applications

Nominal heating capacity: 18-270 kW

Nominal cooling capacity: 16-215 kW



EK

EUROKLIMAT®
Cooling System Solutions

HYDRA

15-1-1 ↔ 220-2-2



Refrigerant
R290 | GWP=3



Brazen plate
heat exchanger



Semi-hermetic
piston compressor



Reversible
heat pump



SCOP

Water to water heat pumps for high and medium temperature applications (up to 60 °C)



Solution

B - Base

Version

ST - Standard

LN - Low Noise

SL - Super Low Noise

Equipment

AS - Standard equipment

DS - Desuperheater

Heating capacity 18 - 253 kW

Cooling capacity 16 - 208 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.

Refrigerant charge

Maximum allowable charge of Refrigerating systems and heat pumps should be evaluated according to EN378:2016. EN378:2016 is a safety and environmental standard published by CEN that provides guidance for Design, Construction, Installation, Operation and Maintenance of Refrigerating systems and heat pumps. To ensure an high level of security for indoor installation, according to EN378:2016, the maximum charge of refrigerant for circuit is always under 5 kg.

Structure

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

Compressor

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

Water heat exchanger

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

Electrical board

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

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

Control

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

Refrigerant circuit

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

Water circuit

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

MAIN ACCESSORIES

- Anti-vibration rubber/bell mounts
- Low/High pressure switch
- Low/High pressure safety valve
- Low/High pressure gauge
- Double safety valve

- RSH Capacity Control head / Inverter driven compressor
- Compressor suction and discharge valve
- Advanced control c.pCo
- Differential pressure switch hydraulic circuit
- Gas detector with separate electrical supply

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Technical data

HYDRA R290 range		15-1-1	25-1-1	35-1-1	45-1-1	55-1-1
P BP/**/AS/BP/*S version						
Heating capacity ⁽¹⁾	[kW]	18,3	29,6	36,6	53,5	63,6
Total power input ⁽¹⁾	[kW]	4,53	7,50	9,49	13,4	15,7
COP - Coefficient Of Performance ⁽¹⁾	[-]	4,04	3,95	3,86	3,99	4,05
Condenser water flow ⁽¹⁾	[m ³ /h]	3,17	5,13	6,32	9,26	11,00
Condenser circuit pressure drop ⁽¹⁾	[kPa]	40,4	47,8	49,6	30,0	40,3
Evaporator water flow ⁽¹⁾	[m ³ /h]	4,00	6,42	7,83	11,60	13,80
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	47,5	55,3	47,6	57,7	46,9
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	5,794	5,938	5,651	5,706	5,759
η _{s,h}	[%]	223,8	229,5	218,0	220,2	222,4
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,546	4,537	4,393	4,468	4,543
η _{s,h}	[%]	173,9	173,5	167,7	170,7	173,7
Cooling capacity ⁽²⁾	[kW]	15,9	25,0	30,4	45,0	54,4
Total power input ⁽²⁾	[kW]	3,97	6,34	8,15	11,7	13,8
EER - Energy Efficiency Ratio ⁽²⁾	[-]	4,01	3,94	3,73	3,85	3,94
Condenser water flow ⁽²⁾	[m ³ /h]	3,41	5,39	6,63	9,77	11,70
Condenser circuit pressure drop ⁽²⁾	[kPa]	47,8	54,5	56,2	34,3	47,0
Evaporator water flow ⁽²⁾	[m ³ /h]	2,73	4,31	5,24	7,75	9,36
Evaporator circuit pressure drop ⁽²⁾	[kPa]	23,9	27	23,1	27,9	23,3
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	1,1	1,4	1,7	2,5	3,8
Independent refrigerant circuits	[n°]	1				
Compressors type / quantity	-	Semi-hermetic pistons / 1				
Steps of capacity for each compressor (std)	-	2 (75 - 50%)	2 (75 - 50%)	2 (75 - 50%)	2 (75 - 50%)	2 (75 - 50%)
Expansion valve type	-	Electronic				
DESUPERHEATER (option) - A BP/**/DS/BP/*S						
Heating capacity ⁽³⁾	[kW]	1,96	2,99	3,82	5,89	6,97
Water flow	[m ³ /h]	0,34	0,52	0,66	1,02	1,20
User circuit pressure drop	[kPa]	2,6	2,4	2,3	2,6	2,4
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	6,2	10,9	12,9	16,3	20,2
Maximum absorbed current - MRA without pump	[A]	10,8	18,9	21,6	30,2	42,0
Locked rotor current – LRA without pump	[A]	63,1	74,6	59,1	107	125
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" (DN 25)	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)
Evaporator dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" (DN 25)	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)
DIMENSIONS AND WEIGHTS - Standard unit						
Lenght	[mm]	1155	1155	1155	1155	1905
Width	[mm]	800	800	800	800	800
Height	[mm]	1420	1420	1420	1420	1420
Shipping weight	[kg]	460	470	515	535	710
Operating weight	[kg]	465	475	520	540	717
Noise levels						
Total sound power (ST version)	[db(A)]	69	74	74	78	78
Total sound pressure (ST version) - at 1 m distance	[db(A)]	61	66	66	70	70
Total sound pressure (ST version) - at 10 m distance	[db(A)]	41	46	46	50	50
Total sound power (LN version)	[db(A)]	67	72	72	76	76
Total sound pressure (LN version) - at 1 m distance	[db(A)]	59	64	64	68	68
Total sound pressure (LN version) - at 10 m distance	[db(A)]	39	44	44	48	48
Total sound power (SL version)	[db(A)]	65	70	70	74	74
Total sound pressure (SL version) - at 1 m distance	[db(A)]	57	62	62	66	66
Total sound pressure (SL version) - at 10 m distance	[db(A)]	37	42	42	46	46

Reference conditions:

(1) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-202

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Desuperheater water temperature IN/OUT = 40/45 °C - Results according to UNI EN 14511-2022

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Technical data

HYDRA R290 range		65-1-1	75-1-1	90-1-1	110-1-1	90-2-2
P BP/**/AS/BP/*S version						
Heating capacity ⁽¹⁾	[kW]	80,2	90,4	106,0	126	108,0
Total power input ⁽¹⁾	[kW]	20,6	22,5	27,7	32,7	26,9
COP - Coefficient Of Performance ⁽¹⁾	[-]	3,89	4,02	3,83	3,85	4,01
Condenser water flow ⁽¹⁾	[m³/h]	13,9	15,7	18,4	21,8	18,7
Condenser circuit pressure drop ⁽¹⁾	[kPa]	41,8	39,2	51,7	45,1	39,2
Evaporator water flow ⁽¹⁾	[m³/h]	17,30	19,6	22,8	26,9	23,5
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	51,1	50,7	64,7	59,9	50,0
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	5,593	5,721	5,468	5,497	6,020
η _{s,h}	[%]	215,7	220,9	210,7	211,9	232,8
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,397	4,422	4,306	4,323	4,734
η _{s,h}	[%]	167,9	168,9	164,2	164,9	181,4
Cooling capacity ⁽²⁾	[kW]	65,5	77,6	87	103	91,3
Total power input ⁽²⁾	[kW]	17,6	19,8	23,9	28,1	23,6
EER - Energy Efficiency Ratio ⁽²⁾	[-]	3,72	3,92	3,64	3,67	3,87
Condenser water flow ⁽²⁾	[m³/h]	14,3	16,8	19,1	22,6	19,8
Condenser circuit pressure drop ⁽²⁾	[kPa]	45,7	46,2	57,3	50,1	45,0
Evaporator water flow ⁽²⁾	[m³/h]	11,3	13,4	15,0	17,8	15,7
Evaporator circuit pressure drop ⁽²⁾	[kPa]	23,7	25,5	30,4	28,3	24,3
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	4,3	4,5	5,8	7,1	4,2 (x2)
Independent refrigerant circuits	[n°]	1				2
Compressors type / quantity	-	Semi-hermetic pistons / 1				Semi-hermetic pistons / 2
Steps of capacity for each compressor (std)	-	2 (75 - 50%)	3 (83 - 67 - 50%)	3 (83 - 67 - 50%)	3 (83 - 67 - 50%)	2 (75 - 50%)
Expansion valve type	-	Electronic				
DESUPERHEATER (option) - A BP/**/DS/BP/*S						
Heating capacity ⁽³⁾	[kW]	8,77	10,3	12,2	14,7	12,5
Water flow	[m³/h]	1,50	1,79	2,11	2,55	2,15
User circuit pressure drop	[kPa]	2,7	2,9	2,8	3,0	4,2
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	25,2	31,8	36,6	44,2	32,6
Maximum absorbed current - MRA without pump	[A]	42,8	53,9	61,0	74,6	60,4
Locked rotor current – LRA without pump	[A]	145	145	159	189	137
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	2" (DN 50)	2" (DN 50)	2" (DN 50)	2" (DN 50)
Evaporator dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	1" 1/2 (DN 40)	2" (DN 50)	2" (DN 50)	2" (DN 50)
DIMENSIONS AND WEIGHTS - Standard unit						
Lenght	[mm]	1905	1905	1905	1905	2820
Width	[mm]	800	800	800	800	1200
Height	[mm]	1420	1420	1420	1420	1640
Shipping weight	[kg]	720	750	810	845	1045
Operating weight	[kg]	727	757	817	852	1055
Noise levels						
Total sound power (ST version)	[db(A)]	82	82	84	84	81
Total sound pressure (ST version) - at 1 m distance	[db(A)]	74	74	76	76	73
Total sound pressure (ST version) - at 10 m distance	[db(A)]	54	54	56	56	53
Total sound power (LN version)	[db(A)]	80	80	82	82	79
Total sound pressure (LN version) - at 1 m distance	[db(A)]	72	72	74	74	71
Total sound pressure (LN version) - at 10 m distance	[db(A)]	52	52	54	54	51
Total sound power (SL version)	[db(A)]	78	78	80	80	77
Total sound pressure (SL version) - at 1 m distance	[db(A)]	70	70	72	72	69
Total sound pressure (SL version) - at 10 m distance	[db(A)]	50	50	52	52	49

(1) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Desuperheater water temperature IN/OUT = 40/45 °C - Results according to UNI EN 14511-2022

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Technical data

HYDRA R290 range		110-2-2	130-2-2	155-2-2	190-2-2	220-2-2
P BP/**/AS/BP/*S version						
Heating capacity ⁽¹⁾	[kW]	128	161	181	215	253
Total power input ⁽¹⁾	[kW]	31,3	41,2	45,4	55,2	65,9
COP - Coefficient Of Performance ⁽¹⁾	[-]	4,09	3,91	3,99	3,89	3,84
Condenser water flow ⁽¹⁾	[m ³ /h]	22,1	27,9	31,4	37,3	43,9
Condenser circuit pressure drop ⁽¹⁾	[kPa]	38,4	50,3	53,2	31,3	31,1
Evaporator water flow ⁽¹⁾	[m ³ /h]	27,8	34,7	39,4	46,4	54,3
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	57,7	64,8	73,9	81,9	101,3
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	6,026	5,869	5,990	5,816	5,764
η _{s,h}	[%]	233,1	226,7	231,6	224,7	222,6
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,779	4,649	4,737	4,580	4,554
η _{s,h}	[%]	183,2	178,0	181,5	175,2	174,2
Cooling capacity ⁽²⁾	[kW]	109	132	156	177	208
Total power input ⁽²⁾	[kW]	27,3	35,2	39,9	47,6	56,2
EER - Energy Efficiency Ratio ⁽²⁾	[-]	3,99	3,75	3,91	3,72	3,70
Condenser water flow ⁽²⁾	[m ³ /h]	23,5	28,7	33,6	38,7	45,5
Condenser circuit pressure drop ⁽²⁾	[kPa]	44,7	55,2	62,6	34,8	34,6
Evaporator water flow ⁽²⁾	[m ³ /h]	18,8	22,7	26,5	30,5	35,8
Evaporator circuit pressure drop ⁽²⁾	[kPa]	28,5	30,1	36,9	38,5	47,9
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	5,2 (x2)	6,2 (x2)	7,3 (x2)	7,0 (x2)	8,0 (x2)
Independent refrigerant circuits	[n°]	2				
Compressors type / quantity	-	Semi-hermetic pistons / 2				
Steps of capacity for each compressor (std)	-	2 (75 - 50%)	2 (75 - 50%)	3 (83 - 67 - 50%)	3 (83 - 67 - 50%)	3 (83 - 67 - 50%)
Expansion valve type	-	Electronic				
DESUPERHEATER (option) - A BP/**/DS/BP/*S						
Heating capacity ⁽³⁾	[kW]	13,4	17,1	19,2	24,2	29,9
Water flow	[m ³ /h]	2,32	2,97	3,34	4,20	5,15
User circuit pressure drop	[kPa]	4,5	4,5	4,7	4,8	5,0
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	40,4	50,4	63,6	73,2	88,4
Maximum absorbed current - MRA without pump	[A]	84,0	85,6	108	122	149
Locked rotor current – LRA without pump	[A]	167	187	198	220	263
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2" (DN 50)	3" (DN 80)	3" (DN 80)
Evaporator dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2" (DN 50)	3" (DN 80)	3" (DN 80)
DIMENSIONS AND WEIGHTS - Standard unit						
Lenght	[mm]	2820	2820	2820	2820	2820
Width	[mm]	1200	1200	1200	1200	1200
Height	[mm]	1640	1640	1640	1640	1640
Shipping weight	[kg]	1145	1180	1225	1345	1370
Operating weight	[kg]	1155	1190	1235	1355	1380
Noise levels						
Total sound power (ST version)	[db(A)]	81	85	85	87	87
Total sound pressure (ST version) - at 1 m distance	[db(A)]	73	77	77	79	79
Total sound pressure (ST version) - at 10 m distance	[db(A)]	53	57	57	59	59
Total sound power (LN version)	[db(A)]	79	83	83	85	85
Total sound pressure (LN version) - at 1 m distance	[db(A)]	71	75	75	77	77
Total sound pressure (LN version) - at 10 m distance	[db(A)]	51	55	55	57	57
Total sound power (SL version)	[db(A)]	77	81	81	83	83
Total sound pressure (SL version) - at 1 m distance	[db(A)]	69	73	73	75	75
Total sound pressure (SL version) - at 10 m distance	[db(A)]	49	53	53	55	55

Reference conditions:

(1) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Desuperheater water temperature IN/OUT = 40/45 °C - Results according to UNI EN 14511-2022

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Technical data

HYDRA R290 range		15-1-1	25-1-1	35-1-1	45-1-1	55-1-1
P BP/**/AS/BP/II version						
Heating capacity ⁽¹⁾	[kW]	19,3	23,6	36,9	47,5	67,5
Total power input ⁽¹⁾	[kW]	5,26	5,64	9,79	12,3	17,8
COP - Coefficient Of Performance ⁽¹⁾	[-]	3,67	4,18	3,77	3,86	3,79
Condenser water flow ⁽¹⁾	[m³/h]	3,34	4,09	6,39	8,23	11,70
Condenser circuit pressure drop ⁽¹⁾	[kPa]	44,3	31,9	50,5	24,3	44,9
Evaporator water flow ⁽¹⁾	[m³/h]	4,07	5,20	7,86	10,20	14,40
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	49,1	37,9	47,9	45,5	50,4
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	4,955	6,187	5,720	5,675	5,416
η _{s,h}	[%]	190,2	239,5	220,8	219,0	208,6
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,061	4,766	4,346	4,327	4,237
η _{s,h}	[%]	154,4	182,6	165,9	165,1	161,5
Cooling capacity ⁽²⁾	[kW]	15,7	20,7	30,7	39,5	56,0
Total power input ⁽²⁾	[kW]	4,64	4,89	8,32	10,4	15,8
EER - Energy Efficiency Ratio ⁽²⁾	[-]	3,38	4,23	3,69	3,80	3,54
Condenser water flow ⁽²⁾	[m³/h]	3,50	4,40	6,71	8,60	12,30
Condenser circuit pressure drop ⁽²⁾	[kPa]	50,1	37,9	57,4	27,3	51,4
Evaporator water flow ⁽²⁾	[m³/h]	2,71	3,56	5,29	6,80	9,64
Evaporator circuit pressure drop ⁽²⁾	[kPa]	23,6	19,2	23,5	22,1	24,5
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	1,1	1,4	1,7	2,5	3,8
Independent refrigerant circuits	[n°]	1				
Compressors type / quantity	-	Semi-hermetic pistons / 1				
Type of capacity control	-	VFD				
Expansion valve type	-	Electronic				
DESUPERHEATER (option) - A BP/**/DS/BP/II						
Heating capacity ⁽³⁾	[kW]	2,41	2,34	3,91	5,38	8,2
Water flow	[m³/h]	0,42	0,41	0,68	0,94	1,42
User circuit pressure drop	[kPa]	3,8	1,6	2,4	2,2	3,3
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	5,7	6,2	10,9	12,9	16,3
Maximum absorbed current - MRA without pump	[A]	10,7	10,8	18,9	21,6	30,2
Locked rotor current – LRA without pump	[A]	10,7	10,8	18,9	21,6	30,2
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" (DN 25)	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)
Evaporator dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" (DN 25)	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)
DIMENSIONS AND WEIGHTS - Standard unit						
Lenght	[mm]	1155	1155	1155	1155	1905
Width	[mm]	800	800	800	800	800
Height	[mm]	1420	1420	1420	1420	1420
Shipping weight	[kg]	460	470	515	535	710
Operating weight	[kg]	465	475	520	540	717
Noise levels						
Total sound power (ST version)	[db(A)]	69	74	74	78	78
Total sound pressure (ST version) - at 1 m distance	[db(A)]	61	66	66	70	70
Total sound pressure (ST version) - at 10 m distance	[db(A)]	41	46	46	50	50
Total sound power (LN version)	[db(A)]	67	72	72	76	76
Total sound pressure (LN version) - at 1 m distance	[db(A)]	59	64	64	68	68
Total sound pressure (LN version) - at 10 m distance	[db(A)]	39	44	44	48	48
Total sound power (SL version)	[db(A)]	65	70	70	74	74
Total sound pressure (SL version) - at 1 m distance	[db(A)]	57	62	62	66	66
Total sound pressure (SL version) - at 10 m distance	[db(A)]	37	42	42	46	46

Reference conditions:

(1) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-202

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Desuperheater water temperature IN/OUT = 40/45 °C - Results according to UNI EN 14511-2022

HYDRA

Technical data

HYDRA R290 range		65-1-1	75-1-1	90-1-1	110-1-1	90-2-2
P BP/**/AS/BP/II version						
Heating capacity ⁽¹⁾	[kW]	78,9	99,3	110,0	133	95,9
Total power input ⁽¹⁾	[kW]	20,6	27,0	29,9	36,0	24,7
COP - Coefficient Of Performance ⁽¹⁾	[-]	3,83	3,68	3,68	3,69	3,88
Condenser water flow ⁽¹⁾	[m ³ /h]	13,7	17,2	19,0	23,0	16,6
Condenser circuit pressure drop ⁽¹⁾	[kPa]	40,6	46,4	55,1	49,7	31,7
Evaporator water flow ⁽¹⁾	[m ³ /h]	16,90	21,0	23,3	28,0	20,6
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	49,0	57,0	67,2	64,2	39,5
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	5,939	5,296	5,320	5,300	5,968
η _{s,h}	[%]	229,6	203,9	204,8	204,0	230,7
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,681	4,171	4,207	4,161	4,566
η _{s,h}	[%]	179,2	158,8	160,3	158,4	174,7
Cooling capacity ⁽²⁾	[kW]	66,3	79,5	91,9	107	80,1
Total power input ⁽²⁾	[kW]	18,1	23,1	26,4	31,2	20,9
EER - Energy Efficiency Ratio ⁽²⁾	[-]	3,66	3,44	3,48	3,43	3,83
Condenser water flow ⁽²⁾	[m ³ /h]	14,5	17,6	20,3	23,7	17,4
Condenser circuit pressure drop ⁽²⁾	[kPa]	47,0	50,7	64,4	54,7	35,8
Evaporator water flow ⁽²⁾	[m ³ /h]	11,4	13,7	15,8	18,4	13,8
Evaporator circuit pressure drop ⁽²⁾	[kPa]	24,3	26,6	33,5	30,0	19,2
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	4,3	4,5	5,8	7,1	4,2 (x2)
Independent refrigerant circuits	[n°]	1				2
Compressors type / quantity	-	Semi-hermetic pistons / 1				Semi-hermetic pistons / 2
Type of capacity control	-	VFD				
Expansion valve type	-	Electronic				
DESUPERHEATER (option) - A BP/**/DS/BP/II						
Heating capacity ⁽³⁾	[kW]	8,99	12,5	13,5	16,8	11,1
Water flow	[m ³ /h]	1,55	2,16	2,34	2,89	1,93
User circuit pressure drop	[kPa]	2,8	4,1	3,4	3,7	3,5
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	24,8	24,7	31,9	36,6	25,8
Maximum absorbed current - MRA without pump	[A]	42,0	42,8	53,9	61,0	43,2
Locked rotor current – LRA without pump	[A]	42,0	42,8	53,9	61,0	43,2
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	2" (DN 50)	2" (DN 50)	2" (DN 50)	2" (DN 50)
Evaporator dimension (nominal external diameter)	[inch/DN]	1" 1/2 (DN 40)	1" 1/2 (DN 40)	2" (DN 50)	2" (DN 50)	2" (DN 50)
DIMENSIONS AND WEIGHTS - Standard unit						
Length	[mm]	1905	1905	1905	1905	2820
Width	[mm]	800	800	800	800	1200
Height	[mm]	1420	1420	1420	1420	1640
Shipping weight	[kg]	720	750	810	845	1045
Operating weight	[kg]	727	757	817	852	1055
Noise levels ⁽³⁾						
Total sound power (ST version)	[db(A)]	82	82	84	84	81
Total sound pressure (ST version) - at 1 m distance	[db(A)]	74	74	76	76	73
Total sound pressure (ST version) - at 10 m distance	[db(A)]	54	54	56	56	53
Total sound power (LN version)	[db(A)]	80	80	82	82	79
Total sound pressure (LN version) - at 1 m distance	[db(A)]	72	72	74	74	71
Total sound pressure (LN version) - at 10 m distance	[db(A)]	52	52	54	54	51
Total sound power (SL version)	[db(A)]	78	78	80	80	77
Total sound pressure (SL version) - at 1 m distance	[db(A)]	70	70	72	72	69
Total sound pressure (SL version) - at 10 m distance	[db(A)]	50	50	52	52	49

Reference conditions:

(1) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Desuperheater water temperature IN/OUT = 40/45 °C - Results according to UNI EN 14511-2022

HYDRA

Technical data

HYDRA R290 range		110-2-2	130-2-2	155-2-2	190-2-2	220-2-2
P BP/**/AS/BP/II version						
Heating capacity ⁽¹⁾	[kW]	135	159	199	225	267
Total power input ⁽¹⁾	[kW]	35,4	41,3	54,3	59,8	72,6
COP - Coefficient Of Performance ⁽¹⁾	[-]	3,81	3,85	3,66	3,76	3,68
Condenser water flow ⁽¹⁾	[m³/h]	23,4	27,5	34,5	39,0	46,2
Condenser circuit pressure drop ⁽¹⁾	[kPa]	42,7	49,0	62,9	33,9	34,3
Evaporator water flow ⁽¹⁾	[m³/h]	28,9	34,0	42,1	47,8	56,4
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	61,8	62,3	83,0	86,5	108,5
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	5,696	6,163	5,483	5,647	5,521
η _{s,h}	[%]	219,8	238,5	211,3	217,9	212,9
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,466	4,898	4,362	4,462	4,358
η _{s,h}	[%]	170,6	187,9	166,5	170,5	166,3
Cooling capacity ⁽²⁾	[kW]	112	134	160	187	215
Total power input ⁽²⁾	[kW]	31,2	36,2	46,5	52,5	62,4
EER - Energy Efficiency Ratio ⁽²⁾	[-]	3,59	3,70	3,44	3,56	3,45
Condenser water flow ⁽²⁾	[m³/h]	24,7	29,2	35,4	41,3	47,8
Condenser circuit pressure drop ⁽²⁾	[kPa]	48,9	56,8	68,6	39,1	37,8
Evaporator water flow ⁽²⁾	[m³/h]	19,3	23,0	27,5	32,3	37,0
Evaporator circuit pressure drop ⁽²⁾	[kPa]	29,9	30,8	38,5	42,6	50,8
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	5,2 (x2)	6,2 (x2)	7,3 (x2)	7,0 (x2)	8,0 (x2)
Independent refrigerant circuits	[n°]	2				
Compressors type / quantity	-	Semi-hermetic pistons / 2				
Type of capacity control	-	VFD				
Expansion valve type	-	Electronic				
DESUPERHEATER (option) - A BP/**/DS/BP/II						
Heating capacity ⁽³⁾	[kW]	15,9	17,6	23,5	26,8	33,6
Water flow	[m³/h]	2,77	3,06	4,08	4,66	5,81
User circuit pressure drop	[kPa]	6,1	4,8	6,7	5,8	6,2
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	32,6	49,6	49,4	63,8	73,2
Maximum absorbed current - MRA without pump	[A]	60,4	84,0	85,6	107,8	122,0
Locked rotor current – LRA without pump	[A]	60,4	84,0	85,6	107,8	122,0
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2" (DN 50)	3" (DN 80)	3" (DN 80)
Evaporator dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2" (DN 50)	3" (DN 80)	3" (DN 80)
DIMENSIONS AND WEIGHTS - Standard unit						
Lenght	[mm]	2820	2820	2820	2820	2820
Width	[mm]	1200	1200	1200	1200	1200
Height	[mm]	1640	1640	1640	1640	1640
Shipping weight	[kg]	1145	1180	1225	1345	1370
Operating weight	[kg]	1155	1190	1235	1355	1380
Noise levels						
Total sound power (ST version)	[db(A)]	81	85	85	87	87
Total sound pressure (ST version) - at 1 m distance	[db(A)]	73	77	77	79	79
Total sound pressure (ST version) - at 10 m distance	[db(A)]	53	57	57	59	59
Total sound power (LN version)	[db(A)]	79	83	83	85	85
Total sound pressure (LN version) - at 1 m distance	[db(A)]	71	75	75	77	77
Total sound pressure (LN version) - at 10 m distance	[db(A)]	51	55	55	57	57
Total sound power (SL version)	[db(A)]	77	81	81	83	83
Total sound pressure (SL version) - at 1 m distance	[db(A)]	69	73	73	75	75
Total sound pressure (SL version) - at 10 m distance	[db(A)]	49	53	53	55	55

Reference conditions:

(1) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 12/7 °C - Evaporator Fluid: water - Desuperheater water temperature IN/OUT = 40/45 °C - Results according to UNI EN 14511-2022

HYDRA HT

30-1-1 ↔ 230-2-2



Refrigerant
R290 | GWP=3



Brazen plate
heat exchanger



Semi-hermetic
piston compressor



SCOP

Water to water heat pumps for high and medium temperature applications (up to 70 °C)



Solution

B - Base

Version

ST - Standard

LN - Low Noise

SL - Super Low Noise

Equipment

AS - Standard equipment

Heating capacity 34 - 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.

Refrigerant charge

Maximum allowable charge of Refrigerating systems and heat pumps should be evaluated according to EN378:2016. EN378:2016 is a safety and environmental standard published by CEN that provides guidance for Design, Construction, Installation, Operation and Maintenance of Refrigerating systems and heat pumps. To ensure an high level of security for indoor installation, according to EN378:2016, the maximum charge of refrigerant for circuit is always under 5 kg.

Structure

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

Compressor

Reciprocating semi-hermetic single-stage compressor specifically designed and optimized for operation with R290 refrigerant (propane). These compressors, built with robust construction, are specifically designed to guarantee high performance, reliability and efficiency. The three-phase electric motor is cooled by the refrigerant gas coming from the suction side and is protected against any operating anomalies with integral electronic protection and from excessive discharge temperature, with over-temperature and motor overcurrent devices. Inverter driven compressor, that allows to significantly increase the efficiency of the unit at partial loads and to reduce electrical power consumption.

Water heat exchanger

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

Electrical board

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

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

Control

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

Refrigerant circuit

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

Water circuit

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

MAIN ACCESSORIES

- Anti-vibration rubber/bell mounts
- Low/High pressure switch
- Low/High pressure safety valve
- Low/High pressure gauge
- Double safety valve
- Compressor suction and discharge valve
- Advanced control c.pCo
- Differential pressure switch hydraulic circuit
- Gas detector with separate electrical supply

HYDRA HT

Technical data

HYDRA HT R290 range		30-1-1	40-1-1	50-1-1	70-1-1	95-1-1
P BP/**/AS/BP/II version						
Heating capacity ⁽¹⁾	[kW]	29,1	35,1	52,3	74,0	93,7
Total power input ⁽¹⁾	[kW]	11,17	13,3	19,4	28,1	35,9
COP - Coefficient Of Performance ⁽¹⁾	[-]	2,61	2,64	2,69	2,63	2,61
Condenser water flow ⁽¹⁾	[m³/h]	2,54	3,06	4,56	6,45	8,18
Condenser circuit pressure drop ⁽¹⁾	[kPa]	9,1	7,9	9,9	13,3	11,3
Evaporator water flow ⁽¹⁾	[m³/h]	5,18	6,30	9,52	13,3	16,7
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	49,8	51,7	63,4	70,2	61,7
Heating capacity ⁽²⁾	[kW]	34,2	41,8	62,0	87,5	111
Total power input ⁽²⁾	[kW]	9,87	11,9	17,4	25,3	32,2
COP - Coefficient Of Performance ⁽²⁾	[-]	3,46	3,52	3,57	3,46	3,44
Condenser water flow ⁽²⁾	[m³/h]	5,91	7,24	10,7	15,1	19,2
Condenser circuit pressure drop ⁽²⁾	[kPa]	44,2	39,1	48,5	65,0	55,7
Evaporator water flow ⁽²⁾	[m³/h]	7,08	8,72	13,1	18,2	22,9
Evaporator circuit pressure drop ⁽²⁾	[kPa]	87,2	92,6	112	123	109
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,229	4,296	4,356	4,277	4,259
η _{s,h}	[%]	161,2	163,9	166,3	163,1	162,4
Heating capacity ⁽³⁾	[kW]	36,7	45,2	66,6	93,8	119
Total power input ⁽³⁾	[kW]	9,09	11,0	16,0	23,5	29,9
COP - Coefficient Of Performance ⁽³⁾	[-]	4,04	4,10	4,16	4,00	3,99
Condenser water flow ⁽³⁾	[m³/h]	6,33	7,80	11,5	16,2	20,6
Condenser circuit pressure drop ⁽³⁾	[kPa]	51,9	46,6	57,1	76,6	65,7
Evaporator water flow ⁽³⁾	[m³/h]	8,08	10,01	14,8	20,7	26,2
Evaporator circuit pressure drop ⁽³⁾	[kPa]	110,5	118,5	141	155	138
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	5,329	5,431	5,495	5,350	5,337
η _{s,h}	[%]	205,2	209,2	211,8	206,0	205,5
REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	1,3	1,5	1,9	2,6	3,3
Independent refrigerant circuits	[n°]	1				
Compressors type / quantity	-	Semi-hermetic pistons / 1				
Type of capacity control	-	VFD				
Expansion valve type	-	Electronic				
Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	11,7	15,3	22,1	33,2	42,6
Maximum absorbed current - MRA without pump	[A]	18,7	24,5	35,4	53,3	68,3
Locked rotor current – LRA without pump	[A]	18,7	24,5	35,4	53,3	68,3
Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	1" 1/2 (DN 40)
Evaporator dimension (nominal external diameter)	[inch/DN]	1" (DN 25)	1" 1/2 (DN 40)	1" 1/2 (DN 40)	2" (DN 50)	2" (DN 50)
DIMENSIONS AND WEIGHTS - Standard unit						
Lenght	[mm]	1155	1155	1905	1905	1905
Width	[mm]	800	800	800	800	800
Height	[mm]	1420	1420	1420	1420	1420
Shipping weight	[kg]	515	535	710	750	810
Operating weight	[kg]	520	540	717	757	817
Noise levels						
Total sound power (ST version)	[db(A)]	74	78	78	82	84
Total sound pressure (ST version) - at 1 m distance	[db(A)]	66	70	70	74	76
Total sound pressure (ST version) - at 10 m distance	[db(A)]	46	50	50	54	56
Total sound power (LN version)	[db(A)]	72	76	76	80	82
Total sound pressure (LN version) - at 1 m distance	[db(A)]	64	68	68	72	74
Total sound pressure (LN version) - at 10 m distance	[db(A)]	44	48	48	52	54
Total sound power (SL version)	[db(A)]	70	74	74	78	80
Total sound pressure (SL version) - at 1 m distance	[db(A)]	62	66	66	70	72
Total sound pressure (SL version) - at 10 m distance	[db(A)]	42	46	46	50	52

(1) Condenser fluid temperature IN/OUT = 55/65 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

HYDRA HT

Technical data

HYDRA HT R290 range		115-1-1	105-2-2	150-2-2	195-2-2	230-2-2
P BP/**/AS/BP/II version						
Heating capacity ⁽¹⁾	[kW]	112	105	148	189	226
Total power input ⁽¹⁾	[kW]	42,4	39,2	56,6	71,8	84,9
COP - Coefficient Of Performance ⁽¹⁾	[-]	2,63	2,69	2,61	2,63	2,66
Condenser water flow ⁽¹⁾	[m ³ /h]	9,73	9,19	12,9	16,5	19,7
Condenser circuit pressure drop ⁽¹⁾	[kPa]	12,0	8,70	13,4	15,5	17,5
Evaporator water flow ⁽¹⁾	[m ³ /h]	20,0	19,1	26,3	33,8	40,7
Evaporator circuit pressure drop ⁽¹⁾	[kPa]	62,9	58,5	68,8	67,0	75,7
Heating capacity ⁽²⁾	[kW]	132	125	174	223	267
Total power input ⁽²⁾	[kW]	38,0	34,8	50,9	64,6	76,4
COP - Coefficient Of Performance ⁽²⁾	[-]	3,48	3,59	3,43	3,45	3,50
Condenser water flow ⁽²⁾	[m ³ /h]	22,9	21,6	30,2	38,6	46,3
Condenser circuit pressure drop ⁽²⁾	[kPa]	59,4	43,4	66,0	76,2	86,5
Evaporator water flow ⁽²⁾	[m ³ /h]	27,5	26,2	36,1	46,3	55,8
Evaporator circuit pressure drop ⁽²⁾	[kPa]	111	103,5	121	118	133
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Medium Temperature - Average Climate						
SCOP	[-]	4,310	4,137	4,003	4,061	4,136
η _{s,h}	[%]	164,4	157,5	152,1	154,4	157,4
Heating capacity ⁽³⁾	[kW]	142	134	188	240	287
Total power input ⁽³⁾	[kW]	35,1	32,0	47,2	59,9	70,8
COP - Coefficient Of Performance ⁽³⁾	[-]	4,05	4,20	3,97	4,01	4,06
Condenser water flow ⁽³⁾	[m ³ /h]	24,5	23,2	32,4	41,4	49,6
Condenser circuit pressure drop ⁽³⁾	[kPa]	70,0	51,1	77,8	89,9	102,1
Evaporator water flow ⁽³⁾	[m ³ /h]	31,3	29,9	41,1	52,8	63,6
Evaporator circuit pressure drop ⁽³⁾	[kPa]	141	131,0	154	149	169
Applications for seasonal efficiency for heating according to Commission Regulation (EU) No 813/2013 - Low Temperature - Average Climate						
SCOP	[-]	5,409	5,726	5,503	5,588	5,689
η _{s,h}	[%]	208,4	221,1	212,1	215,5	219,6

REFRIGERANT CIRCUIT						
Refrigerant / GWP	-	R290 / 3				
Charge of refrigerant - Base unit	[kg]	4,2	5,1	5,9	9,8	12,1
Independent refrigerant circuits	[n°]	1	2			
Compressors type / quantity	-	Semi-hermetic pistons / 1	Semi-hermetic pistons / 2			
Type of capacity control	-	VFD				
Expansion valve type	-	Electronic				

Electrical data						
Power supply (main - gas detector)	-	400/3+N/50 - 230/1/50				
Maximum power input without pump	[kW]	52,1	44,2	66,4	85,2	104
Maximum absorbed current - MRA without pump	[A]	83,5	70,8	107	137	167
Locked rotor current - LRA without pump	[A]	83,5	70,8	107	137	167

Water connections						
Condenser dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	3" (DN 80)	3" (DN 80)	3" (DN 80)
Evaporator dimension (nominal external diameter)	[inch/DN]	2" (DN 50)	2" (DN 50)	2" (DN 50)	3" (DN 80)	3" (DN 80)

DIMENSIONS AND WEIGHTS - Standard unit						
Length	[mm]	1905	2820	2820	2820	2820
Width	[mm]	800	1200	1200	1200	1200
Height	[mm]	1420	1640	1640	1640	1640
Shipping weight	[kg]	845	1145	1225	1345	1370
Operating weight	[kg]	852	1155	1235	1355	1380

Noise levels						
Total sound power (ST version)	[db(A)]	84	81	85	87	87
Total sound pressure (ST version) - at 1 m distance	[db(A)]	76	73	77	79	79
Total sound pressure (ST version) - at 10 m distance	[db(A)]	56	53	57	59	59
Total sound power (LN version)	[db(A)]	82	79	83	85	85
Total sound pressure (LN version) - at 1 m distance	[db(A)]	74	71	75	77	77
Total sound pressure (LN version) - at 10 m distance	[db(A)]	54	51	55	57	57
Total sound power (SL version)	[db(A)]	80	77	81	83	83
Total sound pressure (SL version) - at 1 m distance	[db(A)]	72	69	73	75	75
Total sound pressure (SL version) - at 10 m distance	[db(A)]	52	49	53	55	55

Reference conditions:

(1) Condenser fluid temperature IN/OUT = 55/65 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(2) Condenser fluid temperature IN/OUT = 40/45 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022

(3) Condenser fluid temperature IN/OUT = 30/35 °C - Condenser Fluid: water - Evaporator fluid temperature IN/OUT = 10/7 °C - Evaporator Fluid: water - Results according to UNI EN 14511-2022



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