MANTA EVO: Packaged water cooled liquid chillers for indoor installation,
equipped with fully hermetic scroll compressors, plate type evaporator and condenser.
Cooling Capacity: 21 ÷ 464 kW

NEWPRODUCT
RC Hi-Tech

LOWNOISE
RC Hi-Tech

MANTA EVO

rcgroupairconditioning

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

R410A PLATE

MAIN FEATURES
- Water cooled liquid chiller.
- 24 models, 2 versions available, for a wide selection opportunity.
- Average step of 30kW.
- EER up to 4,36.
- ESEER up to 6,87.
- Scroll compressors.
- R410A Refrigerant charge.
- Plate type heat exchangers.
- Suitable for indoor installation.

MAIN BENEFITS
- New frame, more compact, suitable to walks in through a standard door;
- Hydraulic connections on the top side of the machine;
- Reduction of service spare around the machine;
- New control software, developed by RC Group, with an advanced control logic;
- Increased cooling density, up to 220kW per m^2;
- Total front access for the routine maintenance;
- Up to two three compressors for each refrigerant circuit to reach a high efficiency.
- Units with single or double refrigerant circuits.
- High ESEER.
- Low sound level guaranteed by the cabinet structure;
- Availability of plant side and source side pumping groups.
- Availability of total or partial heat recovery system.
- Easily of maintenance.
- Eurovent Certification.

INDOOR INSTALLATION
The machines are designed for indoor installation.

REDUCED NOISE EMISSION
The machines are characterized by a low sound level guaranteed by the containing structure.

NEW FRAME, MORE COMPACT
Suitable to walks in through a standard door

HYDRAULIC CONNECTION ON THE TOP SIDE OF THE MACHINE

DOMESTIC HOT WATER
On request is possible to install the system for the domestic hot water production.

WORKING LIMITS IN COOLING MODE
Evaporator chilled water outlet temperature: -12÷20°C
Condenser outlet water temperature: 20÷60°C

rcgroup.it
1 9 6 3 2 0 1 3
fifty cool years

MAIN COMPONENTS

FRAMEWORK

- Base in aluminium extrusion, painted with epoxy powders. Colour RAL 9005;
- Supporting feet in galvanized steel sheet with holes for floor fixing or rubber shock absorbers installation;
- Inner frame and upper frame in aluminium profile, painted with epoxy powders. The inner frame is provided with seals for the panels. Colour RAL 9005;
- Panels in galvanized steel sheet with protective surfaces treatment in compliance with UNI ISO 9227/ASTMB117 and ISO 7253, and painted with epoxy powders. Colour RAL 7016 hammered;
- Removable frontal panels for a total front access for routine maintenance;
- Removable side panels with grilles for interior ventilation;
- Compartment for electrical panel on unit front for direct access to control and regulation devices;
- Hydraulic connections on the machine top cover.

COMPRESSORS

- Orbiting spiral (SCROLL) hermetic compressors with spiral profile optimized for R410A refrigerant;
- ON / OFF capacity control (0 / 100% each compressor);
- 2-pole 3-phase electric motor with direct on line starting;
- Crankcase heater;
- Electric motor thermal protection via internal winding temperature sensors;
- Equalization system of the lubricant oil for units equipped with 2 or 3 compressors operating on the same refrigerating circuit;
- Rubber supports.

EVAPORATOR

- AISI 316 stainless steel plates type, vacuum brazed using copper as brazing material. Hydraulic and refrigerant connections in AISI 316 stainless steel:
  - With single hydraulic circuit for all machines;
  - With single refrigerant circuit for S version machines – size M1, M2, M3;
  - With double refrigerant circuit for D version machines – size M4
- Polyurethane insulation foam with closed cell;
- Temperature sensors on water inlet and outlet;
- Factory assembled differential water pressure switch for water flow control;
- Hydraulic piping insulated with closed cell elastomeric foam;
- Hydraulic connections on the machine top cover.

CONDENSER

- AISI 316 stainless steel plates type, vacuum brazed using copper as brazing material. Hydraulic and refrigerant connections in AISI 316 stainless steel:
  - With single hydraulic circuit for all machines;
  - With single refrigerant circuit for S version machines – size M1, M2, M3;
  - With double refrigerant circuit for D version machines – size M4
- 0÷10V proportional signal to manage the motorized valve for condensing control system;
- Hydraulic connections on the machine top cover.

REFRIGERANT CIRCUIT

Components for each refrigerant circuit:

- Thermostatic expansion valve;
- Electronic expansion valve for models 236 P2 S – 280 P3 S – 354 P3 S – 472 P4 D;
- Sight glass;
- Electromagnetic valve on liquid line. The valve is not installed on models 236 P2 S – 280 P3 S – 354 P3 S – 472 P4 D;
- Filter dryer on liquid line;
- Service valve on liquid line upstream the filter dryer. The valve is present only with exchangeable cartridge filter;
- Safety valves on high and low pressure side;
- Pressure transducers with indication, control and protection functions, on low and high refrigerant pressure;
- High pressure safety switch with manual reset;
- Refrigerant circuit with copper tubing with insulation of the suction line;
- Plastic capillary hoses for pressure sensors connection;
- R410A refrigerant charge.

ELECTRICAL PANEL

In accordance with EN60204-1 norms, suitable for indoor installation, complete with:

- Main switch with door lock safety on frontal panel;
- Magnetothermic switches or fuses for each compressor;
- Contactors for each compressor motor;
- Transformer for auxiliary circuit and microprocessor supply;
- Machine operating mode selector “Loc – Off - Remote”:
  - Loc position: Machine is active;
  - Off position: Machine is deactivated;
  - Remote position: The machine is remotely controlled with a command by the Customer. Electric connections in the terminal.
- Terminals:

OUTLETS

- Voltage free deviating contact for General Alarm 1.
- Voltage free deviating contact for General Alarm 2 – only for units with single refrigerant circuit.

INLETS

- External enabling (from timer, ecc. At Customer care);
- Remote control (from operating mode selector. At Customer care);
- Emergency unit stop with signalling on display (external alarm. At Customer care).;
- Panel with machine controls;
- Power supply: 400V / 3Ph / 50Hz.

CONTROL SYSTEM

Microprocessor control system with graphic display for control and monitor of operating and alarms status. The system includes:

- Built-in clock for alarms date and time displaying and storing;
- Built-in memory for the storing of the intervened events (up to 100 events recorded);
- Predisposition for connectivity board housing (RCcom MBUS/JBUS, LON, BACnet for Ethernet (SNMP- TCP/IP), BACnet for MS/TP). The electronic cards are optional accessories;
- Main components hour-meter;
- Non-volatile “Flash” memory for data storage in case of power supply faulty;
- Analogue set point compensation (0÷1 Vdc) according to an external analogue signal at Customer care;
- Menu with protection password;
- LAN connection (max 15 units).

OPTIONAL ACCESSORIES

MANTA EVO	22 P1 S	30 P1 S	37 P1 S	44 P1 S	40 P2 S	50 P2 S	60 P2 S	72 P2 S	88 P2 S	114 P2 S	142 P2 S	186 P2 S
SIZE	M1	M1	M1	M1	M2	M2	M2	M2	M2	M3	M3	M3
739 - Pumping group (plant side)	●	●	●	●	●	●	●	●	●	●	●	-
Pumping group (source side)	●	●	●	●	●	●	●	●	●	●	●	-
960 - Free contact enable plant pump	●	●	●	●	●	●	●	●	●	●	●	-
Free contact enable source pump	●	●	●	●	●	●	●	●	●	●	●	-
752 - Hydronic group (1 pump)	●	●	●	●	●	●	●	●	●	●	●	●
753 - Hydronic group (2 pumps)	●	●	●	●	●	●	●	●	●	●	●	●
764 - Water tank	●	●	●	●	●	●	●	●	●	●	●	●
1004 - Antifreeazing heater for pumping group	●	●	●	●	●	●	●	●	●	●	●	●
780 - Noise absorption box	●	●	●	●	●	●	●	●	●	●	●	●
610 - Noise deading cup on compressor	●	●	●	●	●	●	●	●	●	●	●	●
171 - Rubber antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A (for glycol solution production up to -6°C)	●	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B (for glycol solution production up to -12°C)	●	●	●	●	●	●	●	●	●	●	●	●
460 - Kit for outdoor installation	●	●	●	●	●	●	●	●	●	●	●	●
450 - Partial heat recovery	●	●	●	●	●	●	●	●	●	●	●	●
449 - Voltage free contact for partial heat recovery water pump activation	●	●	●	●	●	●	●	●	●	●	●	●
785 - Sanitary antifreezing heater	●	●	●	●	●	●	●	●	●	●	●	●
451 - 100% heat reclaim	●	●	●	●	●	●	●	●	●	●	●	●
1018 -3-way motorized valve kit for condensing control	●	●	●	●	●	●	●	●	●	●	●	-
100% heat reclaim antifreezing heater	●	●	●	●	●	●	●	●	●	●	●	●
Loc-Off -Remote - Working mode selector	●	●	●	●	●	●	●	●	●	●	●	●
1023 - Double circuit version	-	-	-	-	●	●	●	●	●	●	●	●
1092 -2-way motorized valve kit for condensing control	●	●	●	●	●	●	●	●	●	●	●	●
3-way motorized valve kit for condensing control	●	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●	●
1002 - Soft Starter	●	●	●	●	●	●	●	●	●	●	●	●
83 - Compressor operation indicator	●	●	●	●	●	●	●	●	●	●	●	●
220 - Electronic expansion valve	●	●	●	●	●	●	●	●	●	●	●	●
Electronic Expansion valve energy reserve module	●	●	●	●	●	●	●	●	●	●	●	●
552 - Service valves on compressor	●	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●	●	●	●	●	●
85 - Demand limit	●	●	●	●	●	●	●	●	●	●	●	●
81 - Phases sequence control	●	●	●	●	●	●	●	●	●	●	●	●
651 - Special power supply 230/3/50 Hz	-	●	●	●	-	●	●	●	●	●	-	-
1003 - Analogic flowmeter	●	●	●	●	●	●	●	●	●	●	●	●
1005 - Power supply analyzer	●	●	●	●	●	●	●	●	●	●	●	●
1009 - Multimeter kit	●	●	●	●	●	●	●	●	●	●	●	●
84 - Additional external alarm	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●	●
RC CLOUD PLATFORM	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

OPTIONAL ACCESSORIES

MANTA EVO	211 P2 S	236 P2 S	280 P3 S	354 P3 S	148 P4 D	176 P4 D	228 P4 D	284 P4 D	328 P4 D	372 P4 D	422 P4 D	472 P4 D
SIZE	M3	M3	M4	M4	M4	M4	M4	M4	M4	M4	M4	M4
739 - Pumping group (plant side)	-	-	-	-	-	-	-	-	-	-	-	-
Pumping group (source side)	-	-	-	-	-	-	-	-	-	-	-	-
960 - Free contact enable plant pump	-	-	-	-	-	-	-	-	-	-	-	-
Free contact enable source pump	-	-	-	-	-	-	-	-	-	-	-	-
752 - Hydronic group (1 pump)	●	●	●	●	●	●	●	●	●	●	●	●
753 - Hydronic group (2 pumps)	●	●	●	●	●	●	●	●	●	●	●	●
764 - Water tank	●	●	●	●	●	●	●	●	●	●	●	●
1004 - Antifreeazing heater for pumping group	●	●	●	●	●	●	●	●	●	●	●	●
780 - Noise absorption box	●	●	●	●	●	●	●	●	●	●	●	●
610 - Noise deading cup on compressor	●	●	●	●	●	●	●	●	●	●	●	●
171 - Rubber antivibration holders (kit)	●	●	●	●	●	●	●	●	●	●	●	●
118 - Kit brine A (for glycol solution production up to -6°C)	●	●	●	●	●	●	●	●	●	●	●	●
119 - Kit brine B (for glycol solution production up to -12°C)	●	●	●	●	●	●	●	●	●	●	●	●
460 - Kit for outdoor installation	●	●	●	●	●	●	●	●	●	●	●	●
450 - Partial heat recovery	●	●	●	●	●	●	●	●	●	●	●	●
449 - Voltage free contact for partial heat recovery water pump activation	●	●	●	●	●	●	●	●	●	●	●	●
785 - Sanitary antifreezing heater	●	●	●	●	●	●	●	●	●	●	●	●
451 - 100% heat reclaim	●	●	●	●	●	●	●	●	●	●	●	●
1018 -3-way motorized valve kit for condensing control	-	-	-	-	●	-	-	-	-	-	-	-
100% heat reclaim antifreezing heater	●	●	●	●	●	●	●	●	●	●	●	●
Loc-Off -Remote - Working mode selector	●	●	●	●	●	●	●	●	●	●	●	●
1023 - Double circuit version	●	●	-	-	-	-	-	-	-	-	-	-
1092 -2-way motorized valve kit for condensing control	●	●	●	●	●	●	●	●	●	●	●	●
3-way motorized valve kit for condensing control	●	●	●	●	●	●	●	●	●	●	●	●
605 - Compr. power factor capacitor - 0,9	●	●	●	●	●	●	●	●	●	●	●	●
1002 - Soft Starter	●	●	●	●	●	●	●	●	●	●	●	●
83 - Compressor operation indicator	●	●	●	●	●	●	●	●	●	●	●	●
220 - Electronic expansion valve	●	-	-	-	●	●	●	●	●	●	●	-
Electronic Expansion valve energy reserve module	●	-	-	-	●	●	●	●	●	●	●	-
552 - Service valves on compressor	●	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature sensor	●	●	●	●	●	●	●	●	●	●	●	●
85 - Demand limit	●	●	●	●	●	●	●	●	●	●	●	●
81 - Phases sequence control	●	●	●	●	●	●	●	●	●	●	●	●
651 - Special power supply 230/3/50 Hz	-	-	-	-	●	●	●	-	-	-	-	-
1003 - Analogic flowmeter	●	●	●	●	●	●	●	●	●	●	●	●
1005 - Power supply analyzer	●	●	●	●	●	●	●	●	●	●	●	●
1009 - Multimeter kit	●	●	●	●	●	●	●	●	●	●	●	●
84 - Additional external alarm	●	●	●	●	●	●	●	●	●	●	●	●
923 - RC-Com MBUS/JBUS Serial board	●	●	●	●	●	●	●	●	●	●	●	●
926 - LON Serial board	●	●	●	●	●	●	●	●	●	●	●	●
931 - BACnet Ethernet - SNMP - TCP/IP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
932 - BACnet MS/TP Serial board	●	●	●	●	●	●	●	●	●	●	●	●
930 - Remote graphic terminal kit	●	●	●	●	●	●	●	●	●	●	●	●
962 - Kit modem GSM	●	●	●	●	●	●	●	●	●	●	●	●
957 - Plantwatch without modem	●	●	●	●	●	●	●	●	●	●	●	●
889 - Master plant SEQUENCER	●	●	●	●	●	●	●	●	●	●	●	●
RC CLOUD PLATFORM	●	●	●	●	●	●	●	●	●	●	●	●

● available accessory; - not available accessory

TECHNICAL DATA MANTA EVO

	MANTA EVO		22 P1 S	30 P1 S	37 P1 S	44 P1 S	40 P2 S	50 P2 S	60 P2 S	72 P2 S
	SIZE		M1	M1	M1	M1	M2	M2	M2	M2
STANDARD	Cooling capacity (1)	kW	21,4	29,3	37,6	43,6	39,6	49,8	59,6	73,7
	Unit power input	kW	5,5	7,2	9,1	10,8	9,8	12,2	14,0	18,4
	Evaporator water flow rate	m³/h	3,7	5,0	6,5	7,5	6,8	8,5	10,2	12,6
	Evaporator pressure drop	kPa	33	30	38	27	22	33	29	33
	Condenser water flow rate	m³/h	4,6	6,2	8,0	9,3	8,5	10,6	12,6	15,8
	Condenser pressure drop	kPa	49	45	57	42	30	28	29	45
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	1	1	1	1	2	2	2	2
	Capacity steps	n.	1	1	1	1	2	2	2	2
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	1,3	2,1	2,2	2,7	2,2	4,6	4,8	4,9
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	16,8	23,1	32,6	35,7	31,5	44,1	46,2	65,1
	Unit starting current (LRA)	A	95	118	140	174	116	132	140	171
	EER (1)	kW/kW	3,87	4,06	4,15	4,02	4,03	4,08	4,26	4,01
	ESEER		5,10	5,38	5,39	5,22	6,24	6,19	6,56	6,05
	Sound power level [Lw] (2)	dB(A)	66,7	68,7	70,7	71,7	70,0	72,0	72,0	74,0
	Average sound pressure level [Lpm] (3)	dB(A)	51,0	53,0	55,0	56,0	54,0	56,0	56,0	58,0
	Net weight	kg	220	245	260	270	330	375	380	390
	Hydraulic connections									
	Evaporator / Condenser IN/OUT - ISO 7/1-G M	Ø	1+1/2"	1+1/2"	1+1/2"	1+1/2"	--	--	--	--
	Evaporator IN/OUT - OD (4)	Ø mm	--	--	--	--	60,3	60,3	60,3	60,3
OPTIONAL	Partial heat recovery (5)									
	Heating capacity	kW	3,3	4,6	5,9	6,8	6,2	7,8	9,3	11,5
	Total heat recovery (5)									
	Heating capacity	kW	25,4	34,6	43,9	51,5	47,2	59,0	69,8	86,9
	Pumping group									
	Plant side - Power input	kW	0,75	0,55	0,90	0,90	0,75	0,75	1,10	1,10
	Source side - Power input	kW	0,75	0,55	0,90	0,90	0,75	1,10	1,10	1,10
	Serbatoio di accumulo - volume	l	250	250	250	250	250	250	250	250

	MANTA EVO		88 P2 S	114 P2 S	142 P2 S	186 P2 S	211 P2 S	236 P2 S	280 P3 S	354 P3 S
	SIZE		M2	M3	M3	M3	M3	M3	M4	M4
STANDARD	Cooling capacity (1)	kW	87,2	112,0	140,0	183,0	207,0	230,0	275,0	355,0
	Unit power input	kW	21,4	27,3	34,3	43,9	50,6	57,6	64,7	85,5
	Evaporator water flow rate	m³/h	15,0	19,2	24,0	31,4	35,6	39,4	47,2	60,9
	Evaporator pressure drop	kPa	25	37	34	31	33	36	42	48
	Condenser water flow rate	m³/h	18,7	23,9	29,9	39,0	44,3	49,4	58,4	75,6
	Condenser pressure drop	kPa	26	34	36	41	47	48	48	67
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	2	2	2	2	2	2	3	3
	Capacity steps	n.	2	2	2	2	2	2	3	3
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	5,6	7,9	10,4	11,5	12,5	13,3	17,3	21,4
	Gas circuits	n.	1	1	1	1	1	1	1	1
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	71,4	84,0	101,9	137,3	155,4	173,3	153,3	260,4
	Unit starting current (LRA)	A	208	265	320	375	473	490	406	572
	EER (1)	kW/kW	4,07	4,10	4,08	4,17	4,09	3,99	4,25	4,15
	ESEER		6,31	6,04	5,95	6,08	5,96	5,84	6,45	6,29
	Sound power level [Lw] (2)	dB(A)	75,0	80,6	83,6	83,6	86,1	87,6	86,0	90,0
	Average sound pressure level [Lpm] (3)	dB(A)	59,0	64,0	67,0	67,0	69,5	71,0	68,8	72,8
	Net weight	kg	400	675	710	775	810	845	1270	1380
	Hydraulic connections									
	Evaporator / Condenser IN/OUT - ISO 7/1-G M	Ø	--	--	--	--	--	--	--	--
	Evaporator IN/OUT - OD (4)	Ø mm	60,3	76,1	76,1	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (5)									
	Heating capacity	kW	13,6	17,4	21,8	28,6	32,3	35,8	42,9	55,3
	Total heat recovery (5)									
	Heating capacity	kW	103,0	132,0	166,0	216,0	244,0	272,0	323,0	415,0
	Pumping group									
	Plant side - Power input	kW	1,10	1,85	1,85	-	-	-	-	-
	Source side - Power input	kW	1,85	1,85	1,85	-	-	-	-	-
	Serbatoio di accumulo - volume	l	250	380	380	380	380	380	380	380

1. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature to the condenser 30/35°C – 0% glycol solution. Fouling factor of the exchangers 0,043 m²°K/kW.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [Lpm] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end complete with flexible joint and adapter pipe for solder connection.
5. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature to the condenser 30/35°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution. Fouling factor of the exchangers 0,043 m²°K/kW.
6. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution; Fouling factor of the exchangers 0,043 m²°K/kW.

TECHNICAL DATA MANTA EVO

	MANTA EVO		148 P4 D	176 P4 D	228 P4 D	284 P4 D	328 P4 D	372 P4 D	422 P4 D	472 P4 D
	SIZE		M4	M4	M4	M4	M4	M4	M4	M4
STANDARD	Cooling capacity (1)	kW	154,0	178,0	226,0	283,0	326,0	365,0	413,0	464,0
	Unit power input	kW	35,3	42,8	54,6	68,9	78,6	87,7	100,5	115,7
	Evaporator water flow rate	m³/h	26,5	30,5	38,8	48,7	55,9	62,6	70,9	79,7
	Evaporator pressure drop	kPa	28	36	41	44	41	50	39	52
	Condenser water flow rate	m³/h	32,5	37,9	48,2	60,5	69,5	77,8	88,4	99,6
	Condenser pressure drop	kPa	37	37	43	55	51	48	33	54
	Compressors		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
	Quantity	n.	4	4	4	4	4	4	4	4
	Capacity steps	n.	4	4	4	4	4	4	4	4
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Total refrigerant charge (optional excluded)	kg	13,0	14,2	18,6	23,8	25,8	27,8	31,0	35,0
	Gas circuits	n.	2	2	2	2	2	2	2	2
	Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
	Max unit operating current (FLA)	A	130,2	142,8	168,0	203,7	239,4	275,1	310,8	346,5
	Unit starting current (LRA)	A	233	276	345	416	471	505	620	654
	EER (1)	kW/kW	4,36	4,16	4,14	4,11	4,15	4,16	4,11	4,01
	ESEER		6,67	6,87	6,47	6,39	6,50	6,49	6,36	6,25
	Sound power level [Lw] (2)	dB(A)	78,2	79,2	84,2	87,2	87,2	87,2	89,7	91,2
	Average sound pressure level [Lpm] (3)	dB(A)	61,0	62,0	67,0	70,0	70,0	70,0	72,5	74,0
	Net weight	kg	1000	1010	1350	1470	1500	1520	1650	1800
	Hydraulic connections									
	Evaporator / Condenser IN/OUT - ISO 7/1-G M	Ø	--	--	--	--	--	--	--	--
	Evaporator IN/OUT - OD (4)	Ø mm	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9
OPTIONAL	Partial heat recovery (5)									
	Heating capacity	kW	24,1	27,7	35,2	44,2	50,8	56,9	64,4	72,4
	Total heat recovery (5)									
	Heating capacity	kW	179,0	209,0	266,0	335,0	383,0	429,0	487,0	547,0
	Pumping group									
	Plant side - Power input	kW	-	-	-	-	-	-	-	-
	Source side - Power input	kW	-	-	-	-	-	-	-	-
	Serbatoio di accumulo - volume	l	380	380	380	380	380	380	380	380

1. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature to the condenser 30/35°C – 0% glycol solution. Fouling factor of the exchangers 0,043 m²°K/kW.
2. Sound power level [Lw] according to ISO EN 9614 - 2
3. Average sound pressure level [L_{Pm}] 1m far according to ISO EN 3744.
4. Hydraulic connection with grooved end complete with flexible joint and adapter pipe for solder connection.
5. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature to the condenser 30/35°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution. Fouling factor of the exchangers 0,043 m²°K/kW.
6. Referred to chilled water temperature 12/7°C – 0% glycol solution; water temperature heat recovery 40/45°C – 0% glycol solution; Fouling factor of the exchangers 0,043 m²°K/kW.

DIMENSIONS (mm)

SIZE M	a	b	c
M1	785	725	1820
M2	1085	725	1820
M3	1480	935	1875
M4	2360	935	2025