



HPC

Description

HPC heat pumps are high efficiency heating and cooling systems for residential buildings.

HPC heat pumps are already provided with technical storage tank for domestic hot water (DHW) instantaneous production thus making the hydraulic system planning and installation much easier.

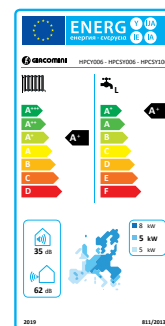
Heat pumps exploit the refrigerating cycle technology to "pump" the heat from the outside to the inside of buildings (heating) or, in reverse, to transfer heat from the inside to the outside (cooling), with reduced energy consumption.

HPC heat pumps can be used both in winter and summer, generating an air conditioning global system with one single energy source: electricity.

Heat pumps have been officially acknowledged as one of the main renewable sources, as they exploit the natural and unlimited natural energy of air.

ErP energy efficiency

Product code	Energy efficiency class Heating		Energy efficiency class DHW	
	55 °C	35 °C	Class	Profile
HPCY006	A+	A++	A+	L
HPCY008	A+	A++	A+	L
HPCY010	A+	A++	A+	L
HPCY012	A+	A++	A+	L
HPCY014	A+	A++	A+	L
HPCY016	A++	A++	A+	L



Versions and product codes

With 250 lt. DHW technical storage tank

Product code	Electric power	Calorific nominal power (A7W35) [kW]	COP *	Refrigerating nominal power (A35W18) [kW]	EER *
HPCY006	230 V monophase	6,77	4,61	6,87	4,06
HPCY008	230 V monophase	8,09	4,37	8,52	3,91
HPCY010	230 V monophase	10,00	4,43	10,00	4,43
HPCY012	230 V monophase	12,10	4,19	11,90	4,49
HPCY014	230 V monophase	13,76	4,30	13,80	4,70
HPCY016	400 V triphase	15,21	4,41	15,69	4,90



Note.

* Nominal cooling (EER) and heating (COP) efficiency are determined based on Standard EN 14511.

Optional completion codes

- **HPVY001 (HP-V series):** anti-vibration rubber supports for installation between base and heat pump. They prevent vibration transmission to the building structures and noise.
- **HPKSY001 (HP-KS series):** boiler connection kit for DHW technical storage tank. It allows the auxiliary heating of the technical accumulation through a boiler.
- **HPERY002 (HP-ER series):** electric resistance 2 kW, 230 V monophase, for auxiliary heating in technical storage tanks of HPC internal hydronic modules.
- **HPERY003 (HP-ER series):** electric resistance 3 kW, 230 V monophase, for auxiliary heating in technical storage tanks of HPC internal hydronic modules.
- **HPERY004 (HP-ER series):** electric resistance 4,5 kW, 230 V monophase, for auxiliary heating in technical storage tanks of HPC internal hydronic modules.



Note.

The HP-ER auxiliary resistance can be installed only in factory and must be purchased when ordering the heat pump.

Main characteristics

- 250 lt. integrated technical storage tank for DHW instantaneous production.
- Suitable for radiant and combined systems (heating/cooling).
- Fully autonomous control of main operation logics (heating, cooling, DHW production) based on well-defined priorities and actual weather conditions to provide maximum efficiency and energy saving.
- Possibility to control mixing valves, diverters, secondary side circulators and possible integration with external heat sources.
- Possible "modular" installation for commercial and industrial applications of medium dimensions.
- Various programming parameters for use customization.

Construction characteristics

- Manufacturer's control system with microcontroller regulation, overheating control logic through electronic expansion vessel.
- Twin Rotary DC inverter compressors.
- Axial fans with DC brushless motor.
- Source exchanger: circuitation optimized by finned coil with copper pipes and aluminum fins with hydrophylic treatment.
- Draw-off exchanger: braze-welded AISI 304 stainless steel plates with reduced loss of pressure on water side.
- Refrigerating circuit with copper pipes including: condensation control, electronic thermostatic valve, inversion valve, high/low pressure switches, maintenance and control valves, double pressure socket, high and low pressure transducers.
- Internal unit hydraulic circuit: high efficiency self-modulating brushless circulator, DHW expansion vessel, flow switch, air vent valve, safety valve (3 bar), double gauge, drain tap, 3-way diverter for system/DHW technical side commutation, flow meter for DHW water control.



Benefits

- **Comfort:** the DC Inverter technology accurately adjusts the power required to condition the ambients, rapidly reaching and maintaining the set point with great precision.
- **Efficiency:** the compressor modulation with DC Inverter control provides an energy-saving operation.
- **Ecology:** as opposed to boilers, heat pumps do not emit CO₂ directly. Considering the reduced energy consumption, indirect CO₂ emissions (those from plants producing the energy used for their operation) represent however 25 % compared to those produced by traditional heating systems.
- **Money-saving:** by exploiting the energy of air, it provides low energy consumptions to produce the required heating power, especially in radiant systems with a reduced temperature difference.
- **Reliability:** all compressor components are evenly lubricated at every rotation speed. Start up must be executed by Authorized Technical Service.

Technical data

Internal unit (hydraulic module)	HPCY006	HPCY008	HPCY010	HPCY012	HPCY014	HPCY016
Electric power [V, Ph, Hz]	230 V / monophase 50 Hz	230 V / monophase 50 Hz	230 V / monophase 50 Hz	230 V / monophase 50 Hz	230 V / monophase 50 Hz	230 V / monophase 50 Hz
Max. absorbed current [A]	1,06	1,06	1,16	1,16	1,51	1,51
Max. absorbed power [kW]	0,13	0,13	0,14	0,14	0,19	0,19
Circulator water flow (A7W35) [m³/h]	1,16	1,39	1,72	2,08	2,37	2,62
Circulator useful head (A7W35) [kPa]	50,7	38,6	31,0	30,1	47,9	33,0
Min. additional water volume [l] ⁽¹⁾	31	37	46	51	69	88
Hydraulic system delivery/return connect. [inch]	1"M	1"M	1"M	1"M	1"M	88
DHW technical side puffer [l]	250	250	250	250	250	250
DHW technical side expansion vessel [l]	8	8	8	8	8	8
DHW side max. deliverable flow [l/min]	40	40	40	40	40	40
Min. flow for DHW circuit start up [l/min]	3	3	3	3	3	3
DHW circuit hydraulic connections [inch]	3/4"M	3/4"M	3/4"M	3/4"M	3/4"M	3/4"M
Refrigerating circuit - fluid connections [inch]	3/8" SAE	3/8" SAE	3/8" SAE	3/8" SAE	3/8" SAE	3/8" SAE
Refrigerating circuit - gas connections [inch]	5/8" SAE	5/8" SAE	5/8" SAE	5/8" SAE	5/8" SAE	5/8" SAE
Acoustic power [dB(A)] ⁽²⁾	35	35	39	39	40	40
Dimensions (W x H x D) [mm]	595 x 1830 x 705	595 x 1830 x 705	595 x 1830 x 705	595 x 1830 x 705	595 x 1830 x 705	595 x 1830 x 705
Net weight [kg]	189	189	190	190	192	192
Working weight [kg]	449	449	450	450	452	452

⁽¹⁾ Calculated for a 10 °C water temperature decrease with a 6-minute defrosting cycle. Minimum water volume to add to the system plus the one required for the hydraulic circuit of the system side unit.

⁽²⁾ Heating mode, condition (A7W35); value set based on the measurements performed in compliance with UNI EN ISO 9614-2 and with provisions of Eurovent certification



Important





External unit	HPCY006	HPCY008	HPCY010	HPCY012	HPCY014	HPCY016
Refrigerating power MIN-NOM-MAX (A35W18) [kW]	3,65 - 6,87 - 7,56 ⁽¹⁾	4,65 - 8,52 - 9,12 ⁽¹⁾	5,4 - 10 - 11,35 ⁽¹⁾	5,4 - 11,9 - 13,1 ⁽¹⁾	6,7 - 13,8 - 15,2 ⁽¹⁾	8,7 - 15,69 - 16,3 ⁽¹⁾
Absorbed power (A35W18) [kW]	1,69	2,18	2,26	2,65	2,93	3,20
EER (A35W18)	4,06	3,91	4,43	4,49	4,70	4,90
Refrigerating power MIN-NOM-MAX (A35W7) [kW]	2,32 - 5,07 - 5,58 ⁽¹⁾	2,95 - 6,12 - 6,73 ⁽¹⁾	3,27 - 7,56 - 8,83 ⁽¹⁾	3,27 - 8,49 - 9,6 ⁽¹⁾	5,3 - 11,46 - 12,05 ⁽¹⁾	6,3 - 14,64 - 16 ⁽¹⁾
Absorbed power (A35W7) [kW]	1,74	2,11	2,43	2,74	3,70	4,52
EER (A35W7)	2,91	2,90	3,11	3,10	3,10	3,24
SEER (seasonal EER)	3,59	3,61	4,63	4,73	4,51	4,77
Calorific power MIN-NOM-MAX (A7W35) [kW]	2,84 - 6,77 - 7,37	3,56 - 8,09 - 8,90	4,69 - 10 - 10,8	4,69 - 12,1 - 12,7	5,5 - 13,76 - 15,1	7,1 - 15,21 - 15,9
Absorbed power (A7W35) [kW]	1,47	1,85	2,26	2,89	3,20	3,45
COP (A7W35)	4,61	4,37	4,43	4,19	4,30	4,41
Calorific power MIN-NOM-MAX (A7W45) [kW]	2,28 - 6,27 - 6,90	2,88 - 8,00 - 8,80	3,9 - 9,51 - 10,3	3,9 - 11,3 - 12,1	5,3 - 13,55 - 14,9	6,5 - 15,17 - 15,8
Absorbed power (A7W45) [kW]	1,83	2,40	2,74	3,32	4,04	4,38
COP (A7W45)	3,43	3,33	3,47	3,41	3,35	3,46
SCOP (seasonal COP)	3,91	3,91	4,24	4,31	4,01	4,07
Working external temperature [°C]	Heating Room temperature: -20÷30 °C Delivery water temperature: 25÷58 ⁽²⁾ /63 ⁽³⁾ °C Cooling Room temperature: -10÷46 °C Delivery water temperature: 5÷25 °C Domestic hot water Room temperature with water at 38 °C max: -20÷40 °C Room temperature with water at 55 °C max: -15÷35 °C Delivery water temperature: 20÷58 ⁽²⁾ /63 ⁽³⁾ °C					
Electric power [V, Ph, Hz]	230 V, monophase, 50 Hz	230 V, monophase, 50 Hz	230 V, monophase, 50 Hz	230 V, monophase, 50 Hz	230 V, monophase, 50 Hz	400 V, triphase, 50 Hz
Max. absorbed current [A]	13,6	20,4	21,6	26,1	31,8	10,6
Max. absorbed power [kW]	3,2	4,7	5,0	6,0	7,5	7,9
Type of refrigerating gas	R410A	R410A	R410A	R410A	R410A	R410A
Fans [n., type]	1 Motore DC Brushless	1 Motore DC Brushless	1 Motore DC Brushless	1 Motore DC Brushless	2 Motore DC Brushless	2 Motore DC Brushless
Compressor type	Twin rotary DC Inverter	Twin rotary DC Inverter	Twin rotary DC Inverter	Twin rotary DC Inverter	Twin rotary DC Inverter	Twin rotary DC Inverter
Anti-freezing kit ⁽⁴⁾	Included	Included	Included	Included	Included	Included
Ø refrigerant pipes (fluid-gas) [inch]	3/8" - 5/8"	3/8" - 5/8"	3/8" - 5/8"	3/8" - 5/8"	3/8" - 5/8"	3/8" - 5/8"
Min. length for refrigerant pipes [m]	3	3	3	3	3	3
Max. length for refrigerant pipes [m]	30	30	30	30	30	30
Refrigerant pipe length per nominal capacity [m]	5	5	5	5	5	5
Max. length of refrigerant pipes without reloading [m]	7	7	7	7	7	7
Refrigerant quantity per additional length meter [g/m] ⁽⁵⁾	20	20	20	20	20	20
Max. level difference of refrigerant pipes [m] ⁽⁶⁾	15 / 20	15 / 20	15 / 20	15 / 20	20 / 25	20 / 25
Acoustic power [dB(A)] ⁽⁷⁾	62,0	62,5	63,0	63,5	65,5	66,0
Dimensions (W x H x D) [mm]	925 x 785 x 380	925 x 785 x 380	1047 x 913 x 465	1047 x 913 x 465	1060 x 1405 x 455	1060 x 1405 x 455
Net weight [kg]	62,0	62,0	83,5	83,5	112,2	123,0

⁽¹⁾ Max. power with Hz Max function not factory-enabled

⁽²⁾ Unit setting 57 °C, max. temperature value considers a 1 °C hysteresis present on parameter

⁽³⁾ With supplementary electric heater (optional)

⁽⁴⁾ Anti-freezing kit made by a self-heating cable wrapped around external unit base, near condensation coil

⁽⁵⁾ Data for: internal unit at a higher position/external unit at a higher position. In the second case (higher external unit) we recommend using a siphon every 5 meters of pipe length

⁽⁶⁾ Based on installation level difference

⁽⁷⁾ Heating mode, condition (A7W35); value set based on the measurements performed in compliance with UNI EN ISO 9614-2 and with the provisions of the Eurovent certification.



Installation and start up



Warning.
Start up must be executed by Authorized Technical Service.

Installer's operations:

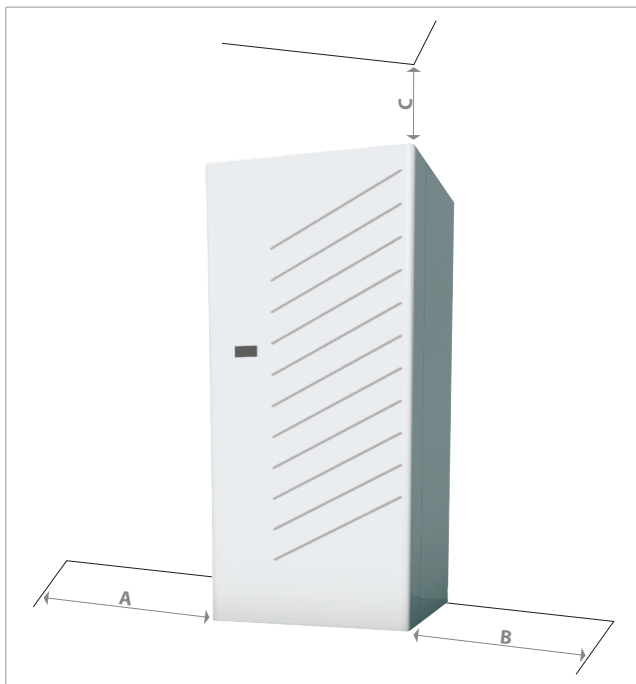
- Full connection of refrigerant pipes between external unit and internal hydronic module.
- Seal test of refrigerant pipes pressurized in nitrogen and with vacuum execution.
- Complete filling of hydraulic system.
- Complete electric wiring between HPC heat pump and installed accessories.

Operations by Authorized Technical Service:

- Check vacuum of refrigerant pipes and opening of R410A gas pipe taps.
- Check proper hydraulic circuitation of HPC system based on installation technical specifications.
- Check correct electric wiring, safety device intervention, water flow.
- Setting of working parameters based on project requirements.
- Fill in the "First start up" form and provide client with operation useful information.

Minimum dimensions required for installation

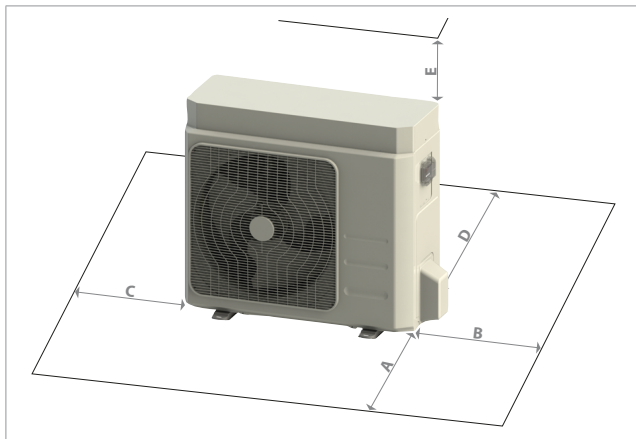
► Internal unit (hydronic module)



Product code	A [mm] *	B [mm] *	C [mm]
HPCY006	300	300	300
HPCY008	300	300	300
HPCY010	300	300	300
HPCY012	300	300	300
HPCY014	300	300	300
HPCY016	300	300	300

* Distances recommended for side inspection in case of exposed installation.
Built-in installations do not provide for side inspection and 10 mm can be kept on each side.

► External unit



Product code	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
HPCY006	1500	500	400	400	500
HPCY008	1500	500	400	400	500
HPCY010	1500	500	400	400	500
HPCY012	1500	500	400	400	500
HPCY014	1500	500	400	400	500
HPCY016	1500	500	400	400	500



Note.
Contact Sale Manager to verify supply conditions.



Note.
Refer to user manual for installation instructions.

HEAT PUMPS

0877EN May 2017

HEAT PUMP SPLIT, AIR/WATER, HOT AND COLD REVERSIBLE,
WITH INTEGRATED DHW STORAGE TANK
HPC

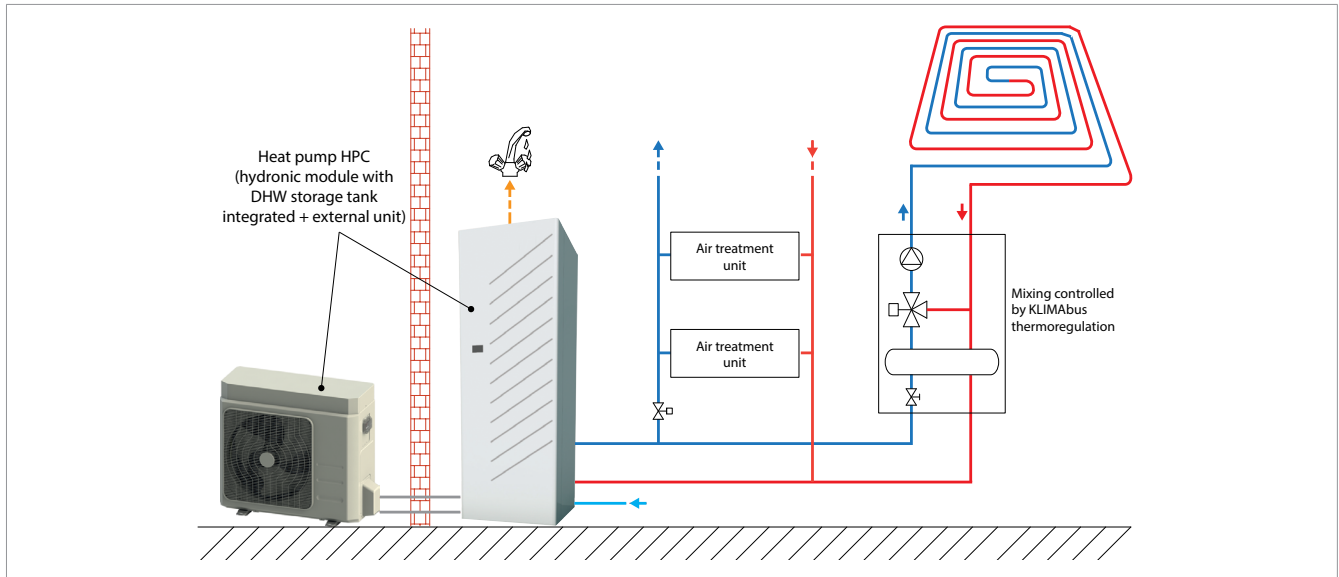


GIACOMINI
WATER E-MOTION



Application diagrams

Application example for DHW production and heating/cooling with 2 circuits



For more applications, contact Giacomini Technical Assistance

Certifications





Product specifications

HPCY006

Heat pump split, air/water, hot and cold reversible with 250 lt. integrated storage tank for domestic hot water. Electric power 230 V, monophas, 50 Hz. Heating energy efficiency class: A+ at 55 °C; A++ at 35 °C. Domestic hot water energy efficiency class: A+, profile L. EXTERNAL UNIT: Heating efficiency COP = 4,61 (A7W35); cooling efficiency EER = 4,06 (A35W18) (based on Standard EN 14511). Calorific nominal power (A7W35) 6,27 kW. Refrigerating nominal power (A35W18) 6,87 kW. Dimensions (W x H x D): 925 x 768 x 380 mm. Net weight: 62 kg. Anti-freezing kit included. INTERNAL UNIT (HYDRONIC MODULE): DHW technical side puffer: 250 lt. Dimensions (W x H x D): 595 x 1830 x 705 mm. Net weight: 189 kg. Working weight: 449 kg.

HPCY008

Heat pump split, air/water, hot and cold reversible with 250 lt. integrated storage tank for domestic hot water. Electric power 230 V, monophas, 50 Hz. Heating energy efficiency class: A+ at 55 °C; A++ at 35 °C. Domestic hot water energy efficiency class: A+, profile L. EXTERNAL UNIT: Heating efficiency COP = 4,37 (A7W35); cooling efficiency EER = 3,91 (A35W18) (based on Standard EN 14511). Calorific nominal power (A7W35) 8,09 kW. Refrigerating nominal power (A35W18) 8,52 kW. Dimensions (W x H x D): 925 x 768 x 380 mm. Net weight: 62,5 kg. Anti-freezing kit included. INTERNAL UNIT (HYDRONIC MODULE): DHW technical side puffer: 250 lt. Dimensions (W x H x D): 595 x 1830 x 705 mm. Net weight: 189 kg. Working weight: 449 kg.

HPCY010

Heat pump split, air/water, hot and cold reversible with 250 lt. integrated storage tank for domestic hot water. Electric power 230 V, monophas, 50 Hz. Heating energy efficiency class: A+ at 55 °C; A++ at 35 °C. Domestic hot water energy efficiency class: A+, profile L. EXTERNAL UNIT: Heating efficiency COP = 4,43 (A7W35); cooling efficiency EER = 4,43 (A35W18) (based on Standard EN 14511). Calorific nominal power (A7W35) 10,00 kW. Refrigerating nominal power (A35W18) 10,00 kW. Dimensions (W x H x D): 1047 x 913 x 465 mm. Net weight: 63 kg. Anti-freezing kit included. INTERNAL UNIT (HYDRONIC MODULE): DHW technical side puffer: 250 lt. Dimensions (W x H x D): 595 x 1830 x 705 mm. Net weight: 190 kg. Working weight: 450 kg.

HPCY012

Heat pump split, air/water, hot and cold reversible with 250 lt. integrated storage tank for domestic hot water. Electric power 230 V, monophas, 50 Hz. Heating energy efficiency class: A+ at 55 °C; A++ at 35 °C. Domestic hot water energy efficiency class: A+, profile L. EXTERNAL UNIT: Heating efficiency COP = 4,19 (A7W35); cooling efficiency EER = 4,49 (A35W18) (based on Standard EN 14511). Calorific nominal power (A7W35) 12,10 kW. Refrigerating nominal power (A35W18) 11,90 kW. Dimensions (W x H x D): 1047 x 913 x 465 mm. Net weight: 63,5 kg. Anti-freezing kit included. INTERNAL UNIT (HYDRONIC MODULE): DHW technical side puffer: 250 lt. Dimensions (W x H x D): 595 x 1830 x 705 mm. Net weight: 190 kg. Working weight: 450 kg.

HPCY014

Heat pump split, air/water, hot and cold reversible with 250 lt. integrated storage tank for domestic hot water. Electric power 230 V, monophas, 50 Hz. Heating energy efficiency class: A+ at 55 °C; A++ at 35 °C. Domestic hot water energy efficiency class: A+, profile L. EXTERNAL UNIT: Heating efficiency COP = 4,30 (A7W35); cooling efficiency EER = 4,70 (A35W18) (based on Standard EN 14511). Calorific nominal power (A7W35) 13,76 kW. Refrigerating nominal power (A35W18) 13,80 kW. Dimensions (W x H x D): 1060 x 1405 x 455 mm. Net weight: 65,5 kg. Anti-freezing kit included. INTERNAL UNIT (HYDRONIC MODULE): DHW technical side puffer: 250 lt. Dimensions (W x H x D): 595 x 1830 x 705 mm. Net weight: 192 kg. Working weight: 452 kg.

HPCY016

Heat pump split, air/water, hot and cold reversible with 250 lt. integrated storage tank for domestic hot water. Electric power 230 V, monophas, 50 Hz. Heating energy efficiency class: A+ at 55 °C; A++ at 35 °C. Domestic hot water energy efficiency class: A+, profile L. EXTERNAL UNIT: Heating efficiency COP = 4,41 (A7W35); cooling efficiency EER = 4,90 (A35W18) (based on Standard EN 14511). Calorific nominal power (A7W35) 15,21 kW. Refrigerating nominal power (A35W18) 15,69 kW. Dimensions (W x H x D): 1060 x 1405 x 455 mm. Net weight: 66 kg. Anti-freezing kit included. INTERNAL UNIT (HYDRONIC MODULE): DHW technical side puffer: 250 lt. Dimensions (W x H x D): 595 x 1830 x 705 mm. Net weight: 192 kg. Working weight: 452 kg.

Additional information

For more information, go to www.giacomini.com or contact our technical assistance service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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