

NXHM

004÷030

NEW

Monobloc air to water heat pump R32



RIELLO
Energy For Life

A Carrier Company

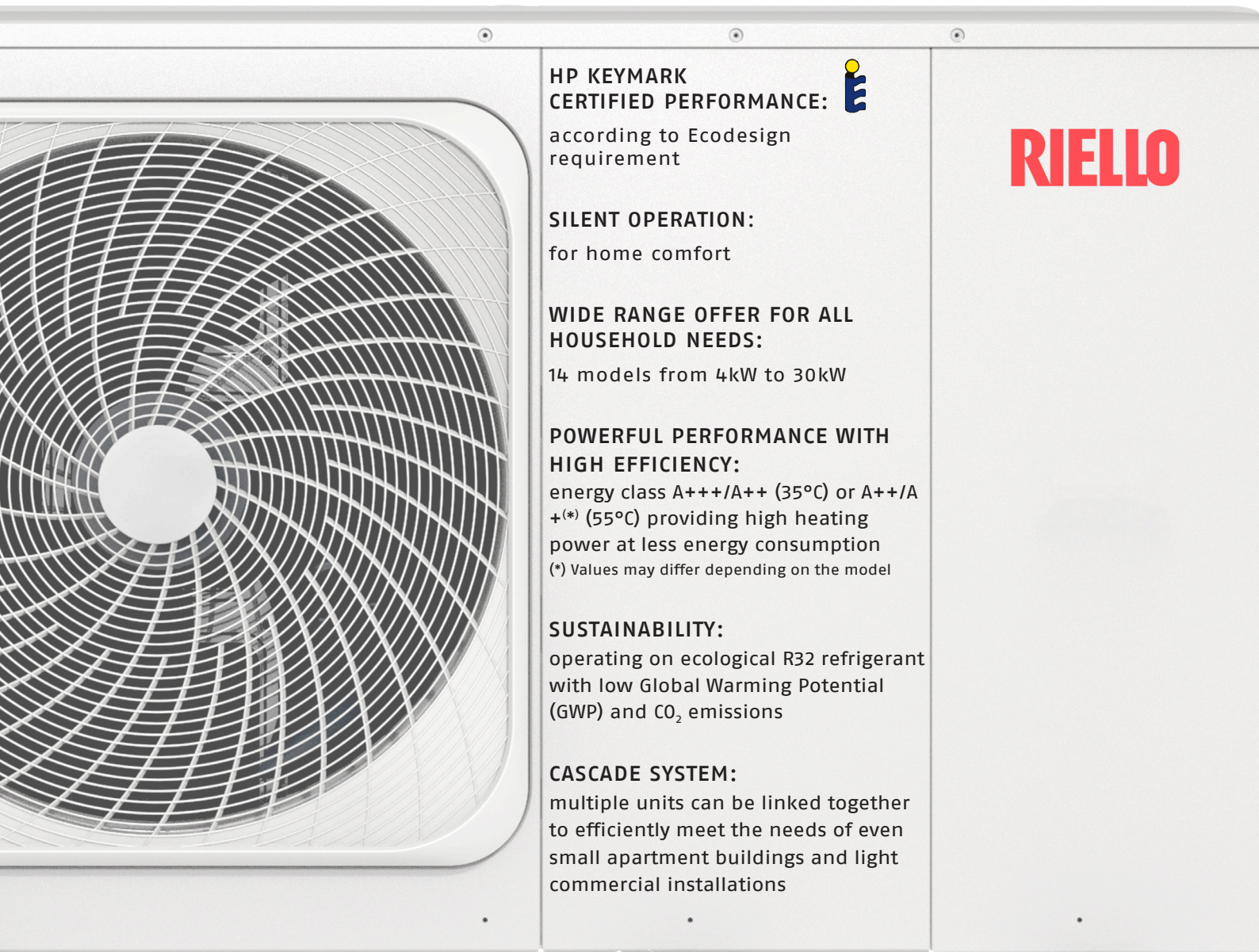
www.riello.com

RIELLO PRESENTS **NXHM**

NXHM IS A MONOBLOC HEAT PUMP FOR RESIDENTIAL AND LIGHT COMMERCIAL APPLICATIONS, ABLE TO MEET ALL HEATING AND COOLING NEEDS ALONG WITH THE PRODUCTION OF DOMESTIC HOT WATER. THE SYSTEM IS DESIGNED TO BE INSTALLED OUTDOORS AND CONNECTED TO THE RESIDENTIAL SERVICES BY MEANS OF DEDICATED HYDRAULIC LINES.

NXHM can be installed as a stand-alone heat generator, as a generator in the hybrid configurations available in the

Riello range, or as a single heat generator in full-electric systems.



HP KEYMARK CERTIFIED PERFORMANCE:



according to Ecodesign
requirement

SILENT OPERATION:

for home comfort

WIDE RANGE OFFER FOR ALL HOUSEHOLD NEEDS:

14 models from 4kW to 30kW

POWERFUL PERFORMANCE WITH HIGH EFFICIENCY:

energy class A+++/A++ (35°C) or A++/A
+(*) (55°C) providing high heating
power at less energy consumption

(*) Values may differ depending on the model

SUSTAINABILITY:

operating on ecological R32 refrigerant
with low Global Warming Potential
(GWP) and CO₂ emissions

CASCADE SYSTEM:

multiple units can be linked together
to efficiently meet the needs of even
small apartment buildings and light
commercial installations

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EFFICIENCY IS A CHOICE

THE USE OF NXHM IS:

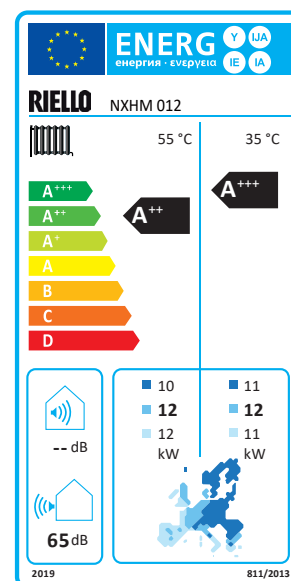
a choice of environmental responsibility, as it takes full advantage of renewable energy sources;

a design choice, as it guarantees the flexibility needed to adapt to a variety of application contexts, whether residential or otherwise;

an energy choice because, when combined with low temperature systems, it reaches class A+++;

a value choice, because it is a plant design solution that obtains the maximum overall energy efficiency of the building, minimising running costs and therefore enhancing the value of the building itself;

a suitability choice as it supplies a high output temperature of up to 65°C with wide operating conditions such as -25°C in winter and +43°C in summer.



SUSTAINABILITY

The new NXHM supplied with R32 refrigerant helps the unit operate more sustainably and effectively. Due to lower Global Warming Potential (GWP) and smaller charge volume, R32 offers an excellent solution not only in terms of increased environmental protection, due to lower CO₂ emissions, but also in terms of increased energy efficiency^(*).

All parts containing fluorinated greenhouse gas have been hermetically sealed, which minimizes the potential for leaks and does not require to be opened for placing the system into operation.



^(*) Compared to standard refrigerant, e.g. R410A

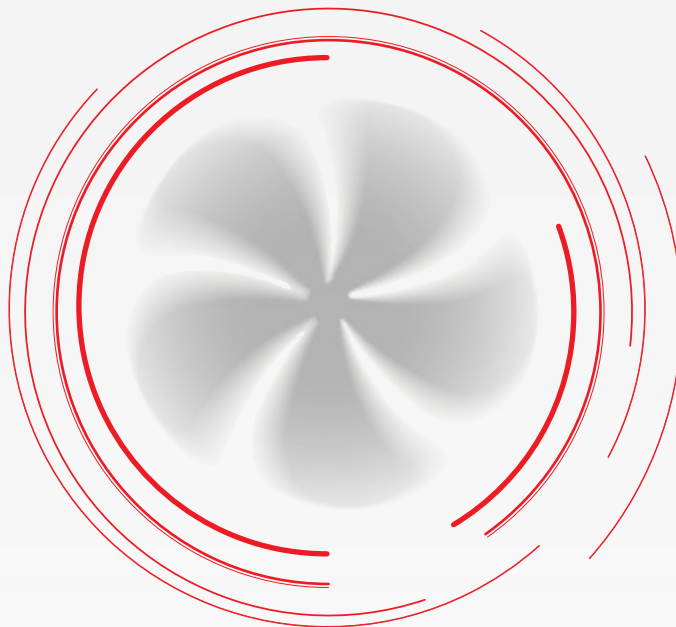
HOME COMFORT

EXTREME SILENCE



The low noise level is provided by the construction measures and can be further reduced by programming the Silent mode, which is available to the user.

Using the advanced remote control, supplied as standard, the user can select two quiet levels for maximum comfort.



ANTI-FREEZE



The anti-freeze program protects the entire system, and especially the hydraulic components, from damage due to a very cold ambient air temperature. The unit will work in heating mode when the temperature of the water flow in the system drops below a certain value.

The anti-freeze function has a highest priority compared with other functions. The program can be set by end users to make the unit work even when they are not at home to protect the unit from freeze damage.

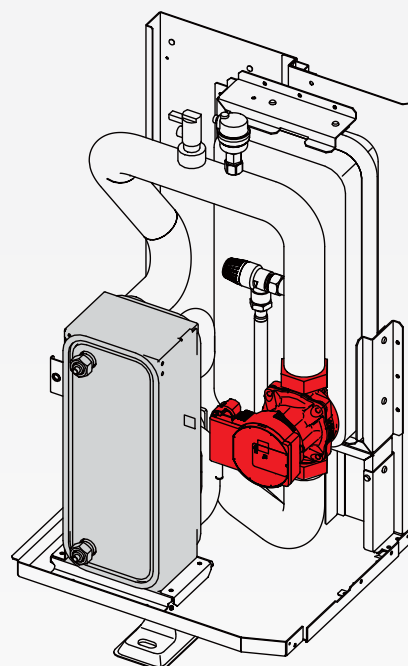


EASE OF INSTALLATION

PLUG-IN DESIGN



All the units are equipped with Twin rotary DC inverter compressor, which modulates the power necessary to perfectly match the real needed load. Plus the complete hydronic kit with all essential components are inside the unit for a quick and easy installation.



CASCADE SYSTEM

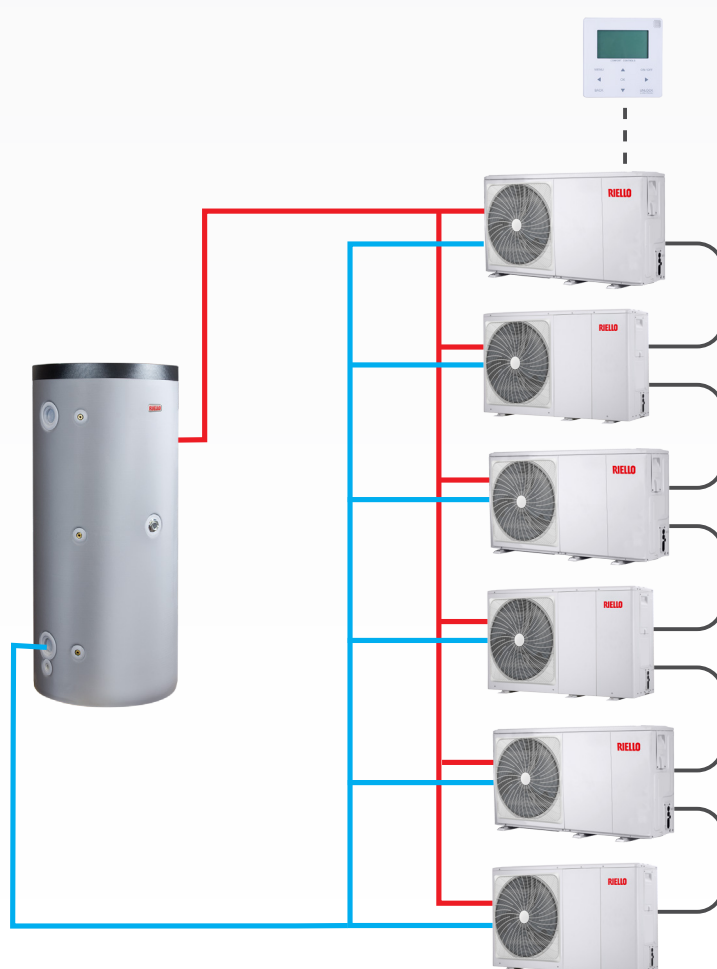


A cascaded heat pump system allows up to 6 units, even with different powers^(*).

This makes it possible to meet the requirements of even high thermal load in multiple applications, such as small apartment buildings and light commercial installations.

Cascaded system can satisfy both space heating or cooling and domestic hot water demands simultaneously.

^(*) The cascade system can combine different powers between the range 4÷16kW or between the range 18÷30kW



FULLY UNDER CONTROL

MULTI-FUNCTION WIRED CONTROLLER



- Multiple languages meet customer needs
- Modbus protocol and network flexibility
- Managing cascaded system up to 6 units
- Holiday mode

REC10MH SYSTEM CONTROLLER

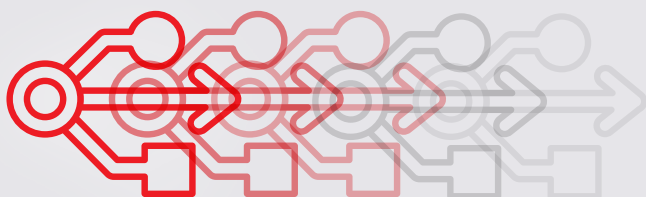


The panel is installed inside the home.

The REC10MH control panel provides the user with a simple, intuitive way of managing heat pump operation and the full-electric system that is installed in the residential application.

The large backlit colour display can be used to manage the various energy sources and set the operating temperatures and time bands. And when combined with a hybrid distribution system in the residential application, the operation of the multi-zone system can also be controlled via REC10MH.

USB FUNCTION



Easily transfer parameters setting between different wire controllers.

Convenient program upgrade with one key and save the time of on-site installation.

ACCESSORIES TO MEET EVERY NEED

STORAGE TANK RESISTENCE

2.2 kW power with single-phase supply. Includes 3-way diverting valve with storage tank probe. Remote control via the REC10MHH



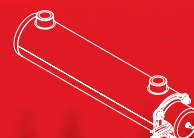
1"¼ DIVERTER VALVE

Available separately or included in the STORAGE TANK RESISTENCE kit



SUPPLEMENTARY RESISTENCE

Available from 2kW to 6 kW single phase and three phase. It is controlled by the heat pump



REC10MH REMOTE CONTROL

System controller for full-electric and residential hybrid systems



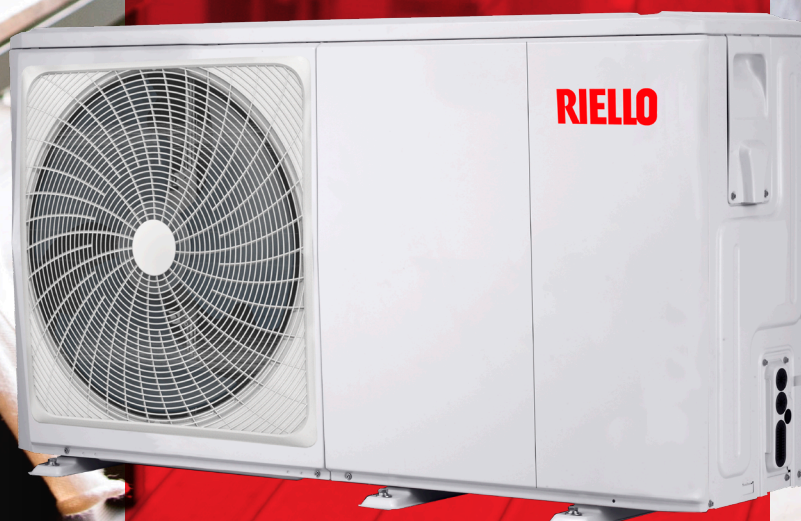
TEMPERATURE SENSOR

Allows to manage temperature operation for the balancing of tanks or the 2 zone flow temperature or the solar temperature

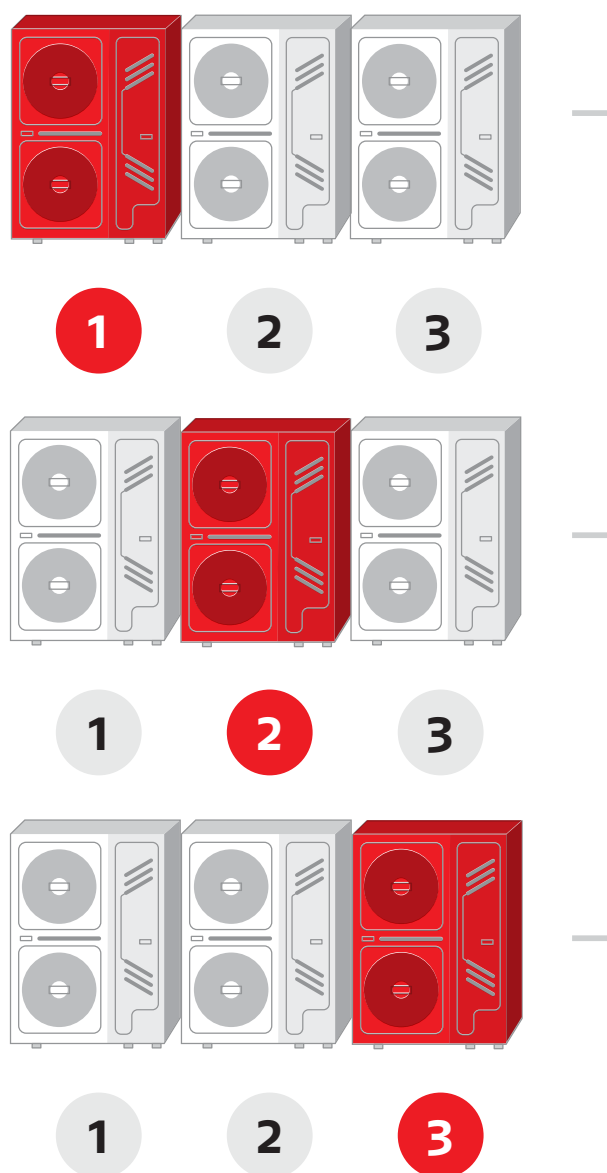


BUFFER TANK

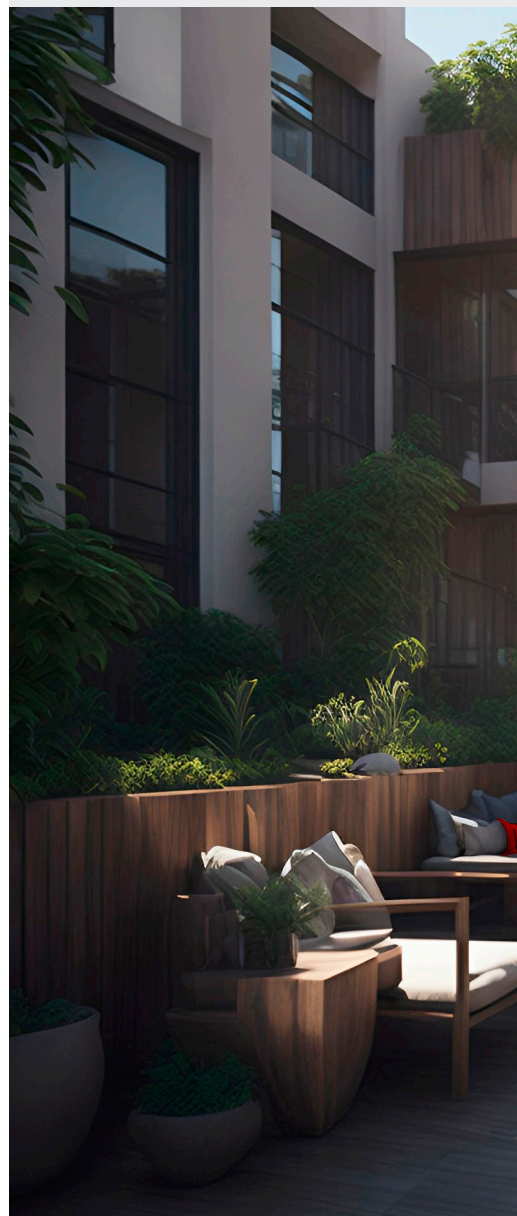
of 50L (4-16kW) or 100L (18-30kW)
Suitable for installation with NXHM



ALTERNATING CYCLE OPERATION: HIGH RELIABILITY, STABILITY AND DURABILITY

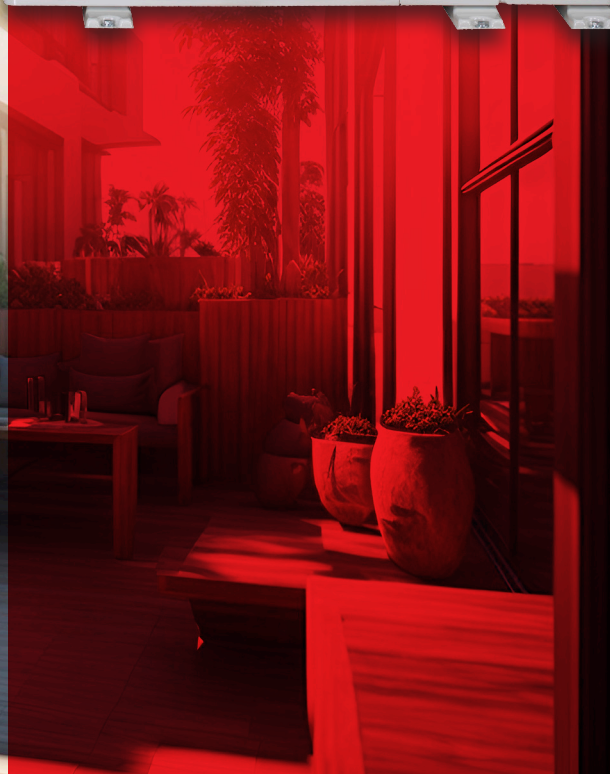


- **HIGH RELIABILITY**
the cascade system evenly distributes the workload on all heat pumps, increasing their reliability.



- **GREATER STABILITY AND DURABILITY**

In a cascade system, all units operate alternately to maintain stability of energy production and the same duration of operation.



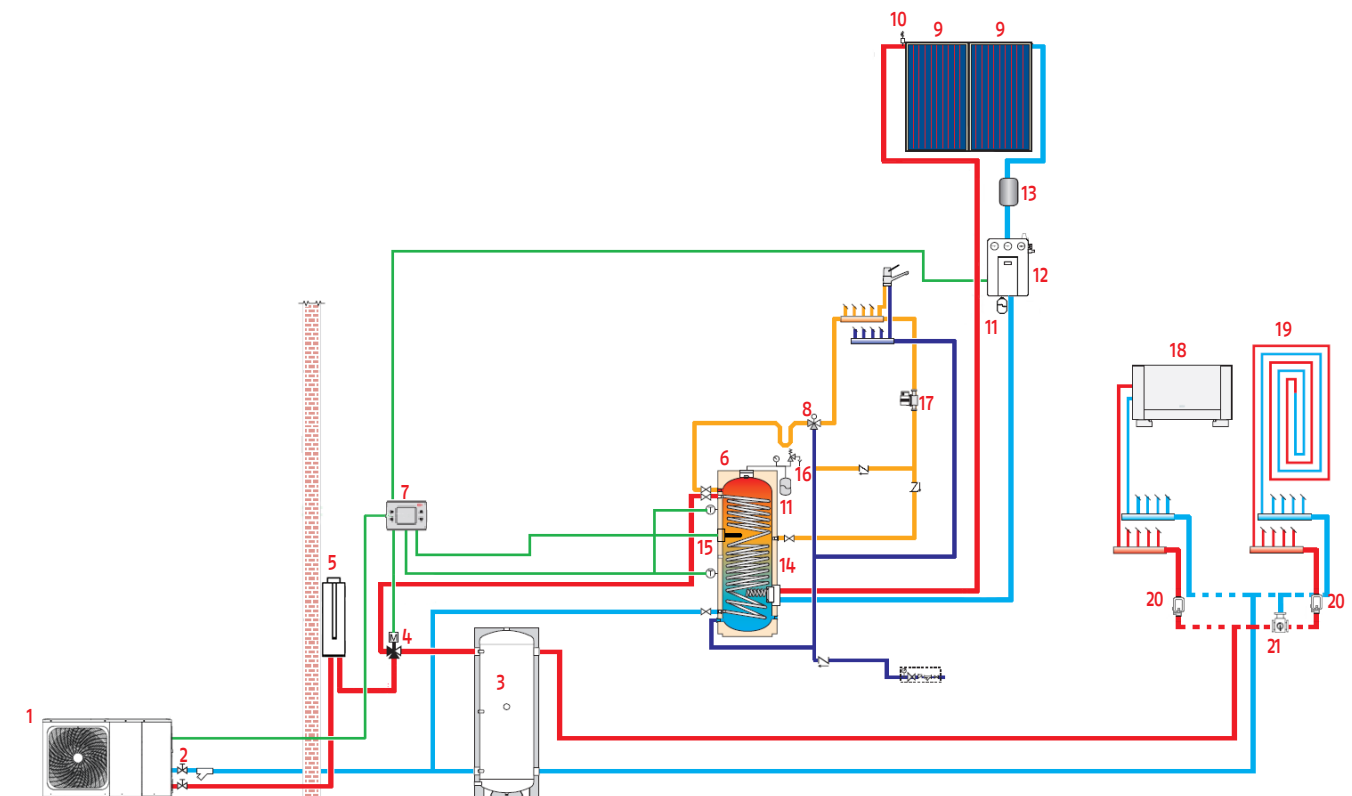
APPLICATIONS

The following diagram is an example of installation where the only heat generator is the heat pump, which meets all the typical heating, cooling and DHW needs of a single-family domestic context.

The REC10MH remote control coordinates system operation so as to guarantee optimum comfort for the occupants with the lowest possible electricity consumption.

1 DIAGRAM: BIVALENT HEATING, COOLING AND DHW SYSTEM (FULL-ELECTRIC VERSION)

- | | |
|-----------------------------------|----------------------------|
| 1 NXHM heat pump | 12 Solar hydraulic unit |
| 2 Water filter | 13 Intermediate solar tank |
| 3 Buffer storage tank | 14 Solar exchanger |
| 4 DHW diverter valve kit | 15 DHW tank resistance |
| 5 Supplementary system resistance | 16 Safety valve |
| 6 DHW tank | 17 DHW recirculation pump |
| 7 REC10MH system controller | 18 Fan coil unit |
| 8 3/4" thermostatic mixer | 19 Floor heating system |
| 9 Solar collector | 20 Zone pump |
| 10 Manual solar vent kit | 21 Zone mixing valve |
| 11 Expansion vessel | |



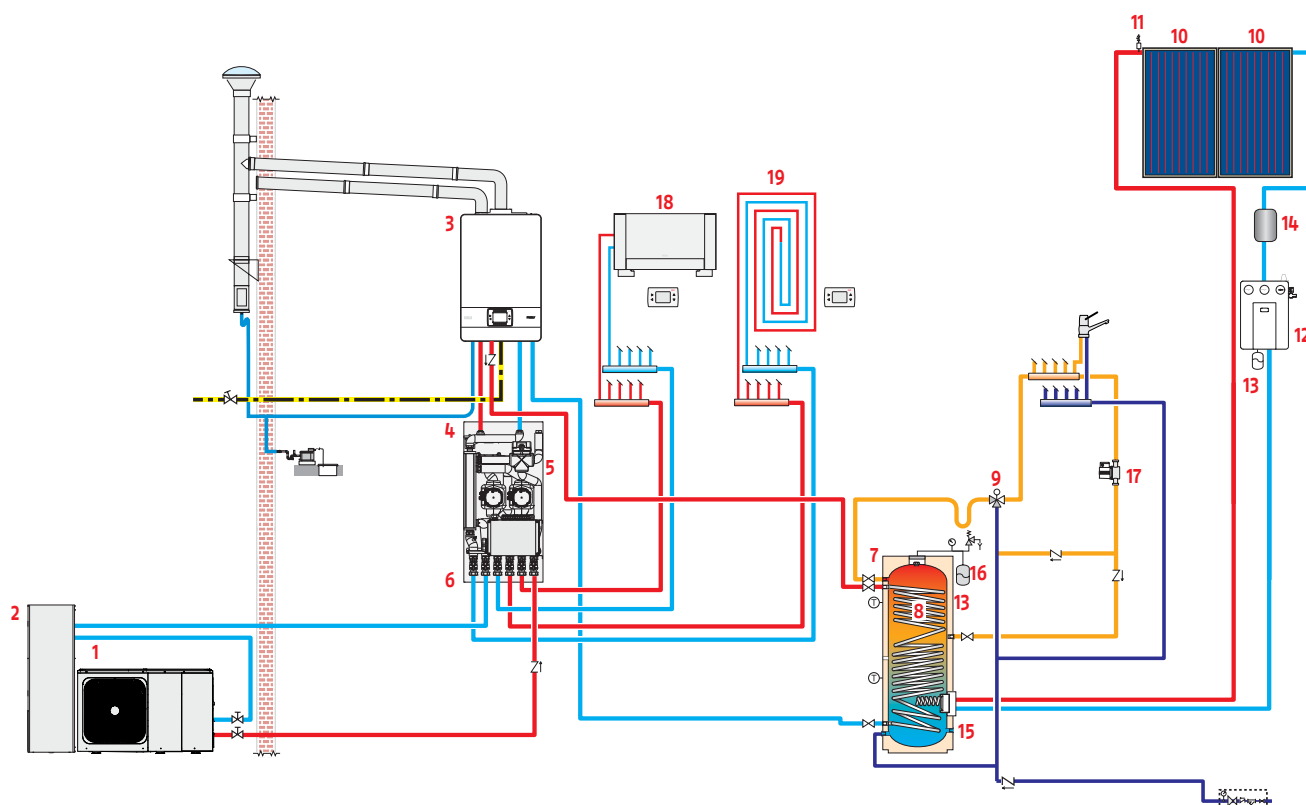
The following diagram shows one of the possible installation versions for a heat pump and a boiler that meet all the typical heating, cooling and DHW needs of a single-family

domestic context.

There are many hybrid solutions, but all of them are designed to minimise consumption without compromising the user's wellbeing.

2 DIAGRAM: BIVALENT MULTI-ZONE HEATING, COOLING AND DHW SYSTEM (HYBRID VERSION)

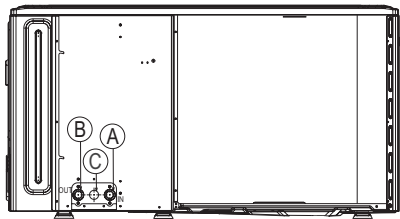
- | | |
|---|----------------------------|
| 1 NXHM heat pump | 10 Solar collector |
| 2 Hot/cold inertial accumulation kit | 11 Manual solar vent kit |
| 3 Wall-hung boiler | 12 Solar hydraulic unit |
| 4 BAG ³ HYBRID | 13 Expansion vessel |
| 5 BAG ³ HYBRID diverter valve kit | 14 Intermediate solar tank |
| 6 Tap kit for BAG ³ HYBRID (system side) and heat pump | 15 Solar exchanger |
| 7 DWH tank | 16 Safety valve |
| 8 DWH tank heater | 17 DHW recirculation pump |
| 9 3/4" thermostatic mixer | 18 Fan coil unit |
| | 19 Floor heating system |



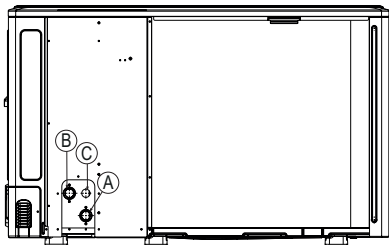
FEATURES AND TECHNICAL DATA OF NXHM

CONNECTIONS

NXHM 004-006



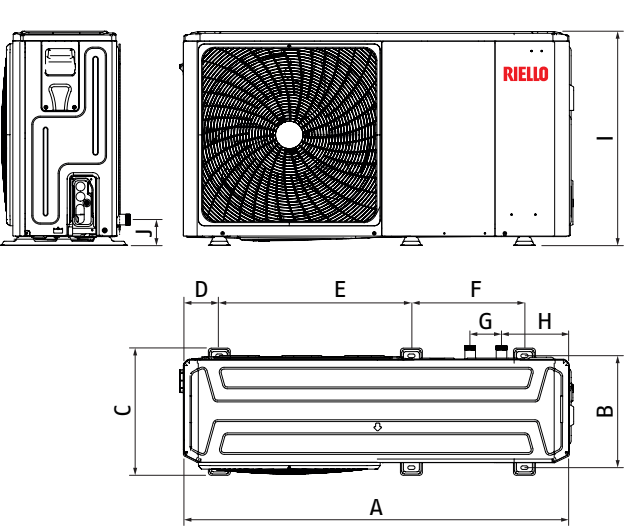
NXHM 008-016



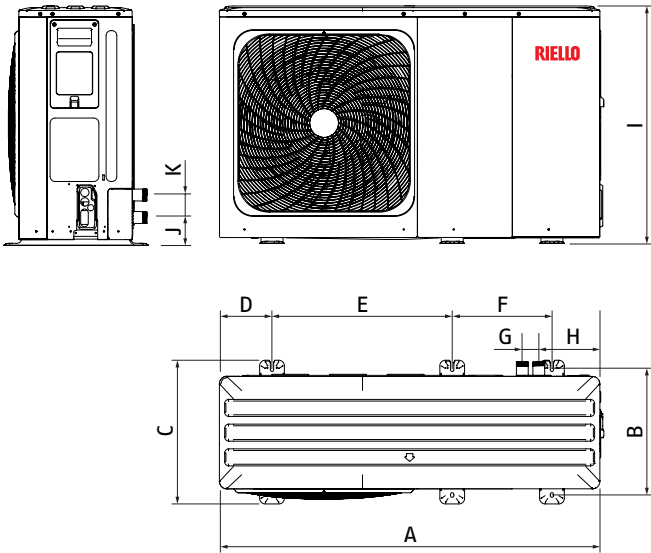
A. Water inlet connection B. Water outlet connection C. Discharge connection

TECHNICAL DRAWINGS

NXHM 004-006



NXHM 008-016

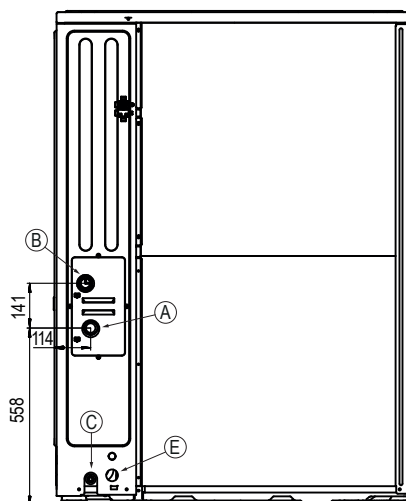


DIMENSIONS AND WEIGHT

| | uom | A | B | C | D | E | F | G | H | I | J | K |
|-----------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 4 - 6 | mm | 1295 | 375 | 426 | 120 | 644 | 379 | 105 | 225 | 718 | 87 | / |
| 8 - 10 - 12 - 14 - 16 | mm | 1385 | 458 | 523 | 192 | 656 | 363 | 60 | 221 | 865 | 101 | 81 |
| 12T - 14T - 16T | mm | 1385 | 458 | 523 | 192 | 656 | 363 | 60 | 221 | 865 | 101 | 81 |
| | uom | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 12T | 14T | 16T | |
| Net weight | kg | 86 | 86 | 105 | 105 | 129 | 129 | 129 | 144 | 144 | 144 | |

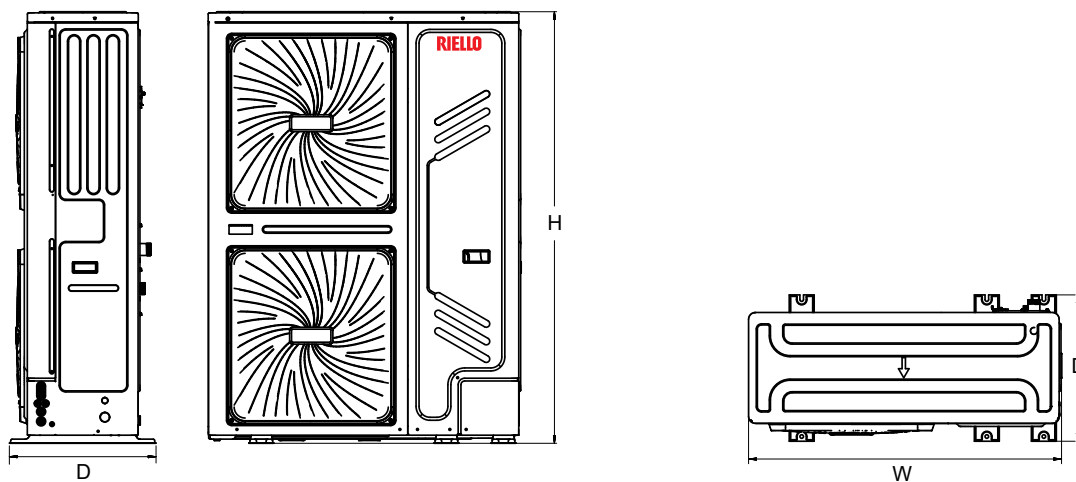
CONNECTIONS

NXHM 018÷030



- A. Water inlet connection
- B. Water outlet connection
- C. Discharge connection
- E. Drain pipe hole
(for safety valve)

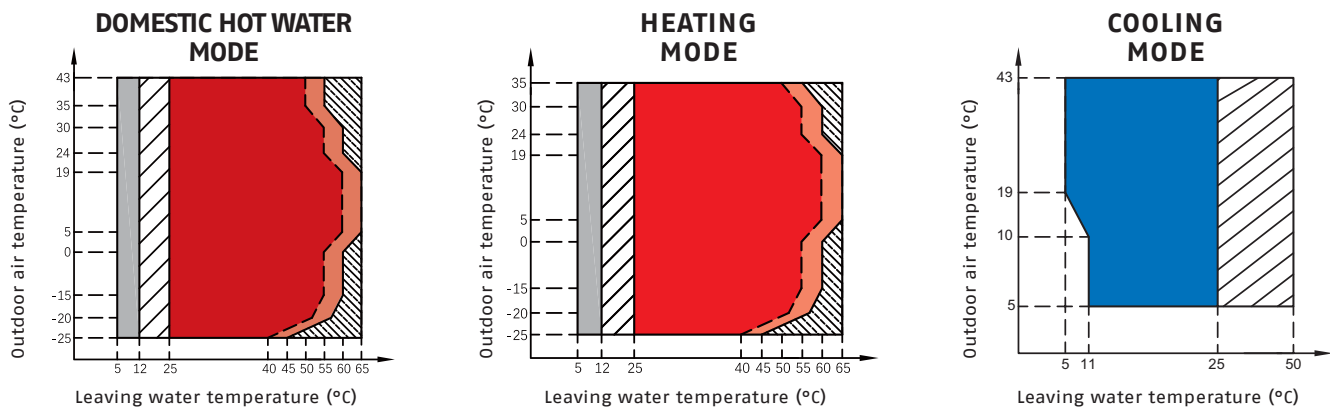
TECHNICAL DRAWINGS



DIMENSIONS AND WEIGHT

| | uom | 18T | 22T | 26T | 30T |
|------------|-----|------|------|------|------|
| W - Width | mm | 1129 | 1129 | 1129 | 1129 |
| D - Depth | mm | 528 | 528 | 528 | 528 |
| H - Height | mm | 1558 | 1558 | 1558 | 1558 |
| Net weight | kg | 177 | 177 | 177 | 177 |

NXHM 004÷016 OPERATING LIMITS



KEY:

- If **Backup Electric Heater / Additional Heat Source** setting is valid, only **Backup Electric Heater / Additional Heat Source** turns on.
- If **Backup Electric Heater / Additional Heat Source** setting is invalid, only heat pump turns on. Limitation and protection may occur during heat pump operation.
- Heat pump turns off, only **Backup Electric Heater / Additional Heat Source** turns on.
- Operation range by heat pump with possible limitation and protection.
- - - Maximum inlet water temperature line for heat pump operation.

NXHM 004÷016 TECHNICAL DATA

| | uom | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 12T | 14T | 16T | note |
|--|---------|----------|------|------|-------|-------|-------|----------|-------|-------|-------|------|
| PERFORMANCE DATA IN HEATING | | | | | | | | | | | | |
| Performance in heating (A7°C DB; W35°C) | | | | | | | | | | | | |
| Nominal heating capacity | kW | 4,20 | 6,35 | 8,40 | 10,00 | 12,10 | 14,50 | 15,90 | 12,10 | 14,50 | 15,90 | 1 |
| COP | | 5,10 | 4,95 | 5,15 | 4,95 | 4,95 | 4,60 | 4,50 | 4,95 | 4,60 | 4,50 | 1 |
| Energy efficiency class | | A+++ | A+++ | A+++ | A+++ | A+++ | A+++ | A+++ | A+++ | A+++ | A+++ | 6 |
| Performance in heating (A7°C DB; W45°C) | | | | | | | | | | | | |
| Heating capacity | kW | 4,30 | 6,30 | 8,10 | 10,00 | 12,30 | 14,10 | 16,00 | 12,30 | 14,10 | 16,00 | 2 |
| COP | | 3,80 | 3,70 | 3,85 | 3,75 | 3,70 | 3,60 | 3,50 | 3,70 | 3,60 | 3,50 | 2 |
| Performance in heating (A7°C DB; W55°C) | | | | | | | | | | | | |
| Heating capacity | kW | 4,40 | 6,00 | 7,50 | 9,50 | 11,90 | 13,80 | 16,00 | 11,90 | 13,80 | 16,00 | 3 |
| COP | | 2,95 | 2,95 | 3,18 | 3,10 | 3,05 | 2,95 | 2,85 | 3,05 | 2,95 | 2,85 | 3 |
| Energy efficiency class | | A++ | A++ | A++ | A++ | A++ | A++ | A++ | A++ | A++ | A++ | 7 |
| PERFORMANCE DATA IN COOLING | | | | | | | | | | | | |
| Performance in cooling (A35°C; W18°C) | | | | | | | | | | | | |
| Cooling capacity | kW | 4,50 | 6,50 | 8,30 | 9,90 | 12,00 | 13,50 | 14,20 | 12,00 | 13,50 | 14,20 | 4 |
| EER | | 5,50 | 4,80 | 5,05 | 4,55 | 3,95 | 3,61 | 3,61 | 3,95 | 3,61 | 3,61 | 4 |
| Performance in cooling (A35°C; W7°C) | | | | | | | | | | | | |
| Cooling capacity | kW | 4,50 | 6,50 | 8,30 | 9,90 | 12,00 | 13,50 | 14,20 | 12,00 | 13,50 | 14,20 | 5 |
| EER | | 5,50 | 4,80 | 5,05 | 4,55 | 3,95 | 3,61 | 3,61 | 3,95 | 3,61 | 3,61 | 5 |
| SOUND DATA | | | | | | | | | | | | |
| Sound pressure | dB(A) | 45,0 | 47,5 | 48,5 | 50,5 | 53,0 | 53,5 | 57,5 | 53,5 | 54,0 | 58,0 | 8 |
| Sound power | dB(A) | 55 | 58 | 59 | 60 | 65 | 65 | 68 | 65 | 65 | 68 | 9 |
| ELECTRICAL DATA | | | | | | | | | | | | |
| Supply voltage | V/ph/Hz | 230/1/50 | | | | | | 400/3/50 | | | | |

(1) Outside air temperature 7°C DB, 6°C WB; water inlet/outlet 30/35°C

(2) Outside air temperature 7°C DB, 6°C WB; water inlet/outlet 40/45°C

(3) Outside air temperature 7°C DB, 6°C WB; water inlet/outlet 47/55°C

(4) Outside air temperature 35°C; water inlet/outlet 23/18°C

(5) Outside air temperature 35°C; water inlet/outlet 12/7°C

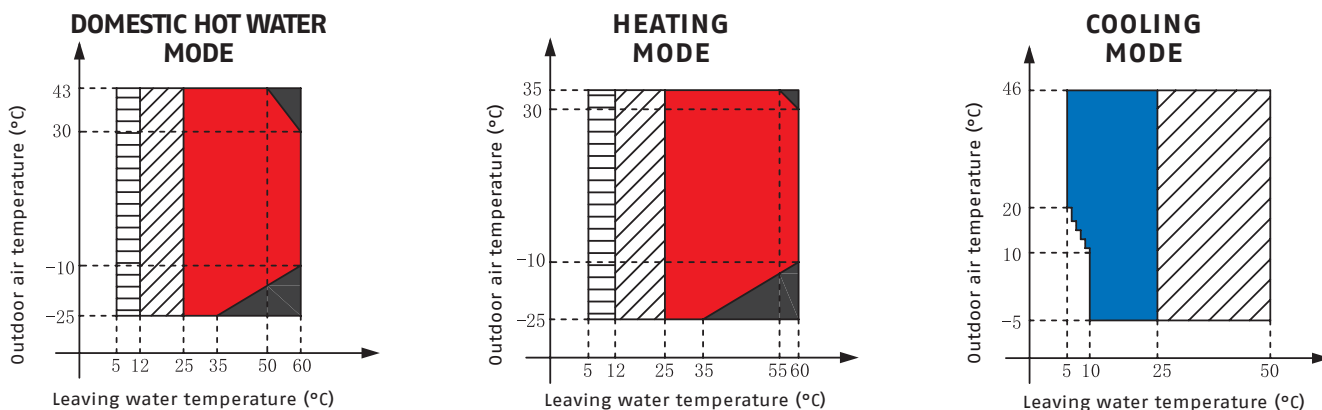
(6) Value refers to the average climate profile for a feed temperature of 35°C. Values compliant with regulation (EU) 811/2013

(7) Value refers to the average climate profile for a feed temperature of 55°C. Values compliant with regulation (EU) 811/2013

(8) Measured at a position of 1m in front of the unit and (1+unit height)/2m above the floor in a semi-anechoic chamber

(9) Declared value in compliance with EN 12102-1

NXHM 018÷030 OPERATING LIMITS



KEY

- If the IBH/AHS setting is valid, only IBH/AHS turns on. If the IBH/AHS setting is invalid, only the heat pump turns on.
- Line of the maximum water inlet temperature for heat pump operation.
- No heat pump operation, IBH or AHS only.
- falling or rising range of the outlet water temperature.

NXHM 018T÷030T TECHNICAL DATA

| | uom | 18T | 22T | 26T | 30T | Note |
|--|---------|----------|-------|-------|-------|------|
| PERFORMANCE DATA IN HEATING | | | | | | |
| Performance in heating (A7°C DB; W35°C) | | | | | | |
| Nominal heating capacity | kW | 18,00 | 22,00 | 26,00 | 30,10 | 1 |
| COP | | 4,70 | 4,40 | 4,08 | 3,91 | 1 |
| Energy efficiency class | | A+++ | A+++ | A+++ | A++ | 6 |
| Performance in heating (A7°C DB; W45°C) | | | | | | |
| Heating capacity | kW | 18,00 | 22,00 | 26,00 | 30,00 | 2 |
| COP | | 3,50 | 3,40 | 3,10 | 2,90 | 2 |
| Performance in heating (A7°C DB; W55°C) | | | | | | |
| Heating capacity | kW | 18,00 | 22,00 | 26,00 | 30,00 | 3 |
| COP | | 2,75 | 2,65 | 2,45 | 2,30 | 3 |
| Energy efficiency class | | A++ | A++ | A+ | A+ | 7 |
| PERFORMANCE DATA IN COOLING | | | | | | |
| Performance in cooling (A35°C; W18°C) | | | | | | |
| Cooling capacity | kW | 18,50 | 23,00 | 27,00 | 31,00 | 4 |
| EER | | 4,75 | 4,60 | 4,30 | 4,00 | 4 |
| Performance in cooling (A35°C; W7°C) | | | | | | |
| Cooling capacity | kW | 17,00 | 21,00 | 26,00 | 29,50 | 5 |
| EER | | 3,05 | 2,95 | 2,70 | 2,55 | 5 |
| SOUND DATA | | | | | | |
| Sound pressure | dB(A) | 57,60 | 59,80 | 61,50 | 63,50 | 8 |
| Sound power | dB(A) | 71,00 | 73,00 | 75,00 | 77,00 | 9 |
| ELECTRICAL DATA | | | | | | |
| Supply voltage | V/ph/Hz | 400/3/50 | | | | |

(1) Outside air temperature 7°C DB, 6°C WB; water inlet/outlet 30/35°C

(2) Outside air temperature 7°C DB, 6°C WB; water inlet/outlet 40/45°C

(3) Outside air temperature 7°C DB, 6°C WB; water inlet/outlet 47/55°C

(4) Outside air temperature 35°C; water inlet/outlet 23/18°C

(5) Outside air temperature 35°C; water inlet/outlet 12/7°C

(6) Value refers to the average climate profile for a feed temperature of 35°C. Values compliant with regulation (EU) 811/2013

(7) Value refers to the average climate profile for a feed temperature of 55°C. Values compliant with regulation (EU) 811/2013

(8) Measured at a position of 1m in front of the unit and (1+unit height)/2m above the floor in a semi-anechoic chamber

(9) Declared value in compliance with EN 12102-1

RIELLO

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