

**NEW**

**AIR TO WATER HEAT PUMP**  
R32 monobloc



# HYDRO UNIT M

A Carrier Company





## HYDRO UNIT M

### BERETTA'S NEW AIR-TO-WATER HYDRONIC HEAT PUMP WITH LOW-CONSUMPTION CIRCULATOR

HYDRO UNIT M heat pumps are suitable for heating, cooling and domestic hot water production, and are available in 14 different models with power capacity from 4 kW to 30 kW. Equipped with Twin Rotary compressor with DC-Inverter technology, they operate in a temperature range of  $-25^{\circ}\text{C}$  to  $+43^{\circ}\text{C}$  and can achieve high leaving water temperature up to  $65^{\circ}\text{C}$  (4-16kW) /  $60^{\circ}\text{C}$  (18-30kW). Advanced Remote Control as standard allows them to be combined with a Beretta boiler for greater comfort in domestic hot water and heating applications.



## EFFICIENCY AND SUSTAINABILITY

HYDRO UNIT M heat pumps uses R32 refrigerant, a gas with a lower Global Warming Potential (GWP) than traditional refrigerant gases.

The design of a new hermetically sealed circuit for the fluorinated gases, the use of R32, reduced charge volumes, lower CO<sub>2</sub> emissions, and increased energy efficiency are the characteristics which set HYDRO UNIT M apart and increase its environmental sustainability.



# LOW CONSUMPTION AND HIGH EFFICIENCY: PRODUCT STRENGTHS



## R32 REFRIGERANT GAS

The use of R32 refrigerant gas, with low Global Warming Potential (GWP) and lower CO<sub>2</sub> emissions.



## EFFICIENT PERFORMANCE

The range offers power outputs from 4kW to 30kW, with fast response to demand and reduced energy consumption that guarantee energy class A+++ / A++ up to 35°C and A++ / A+ up to 55°C<sup>(\*)</sup>.



## ALL SEASONS COMFORT

HYDRO UNIT M monobloc heat pumps are designed to offer heating, cooling and domestic hot water, providing comfort for all seasons.



## HP KEYMARK CERTIFICATION

The units are certified and listed on the voluntary European HP KEYMARK.



## LOW NOISE

The systems quiet operation is ensured by sturdy structural design, and can be further reduced thanks to the silent mode which can be selected by the user.



## WIDE RANGE

HYDRO UNIT M is distinguished by its wide range which includes 14 models, 7 single-phase (from 4kW to 16kW) and 7 three-phase (from 12kW to 30kW) to meet the wide variety of plant requirements.



## ANTI-FROST FUNCTION

The HYDRO UNIT M heat pump is designed for external installation and equipped with an anti-frost function to protect the entire hydronic circuit. This function, which can be programmed by the end user, is activated automatically whenever the water in the system falls below a preset temperature, protecting the entire system.



## EASY AND FLEXIBLE

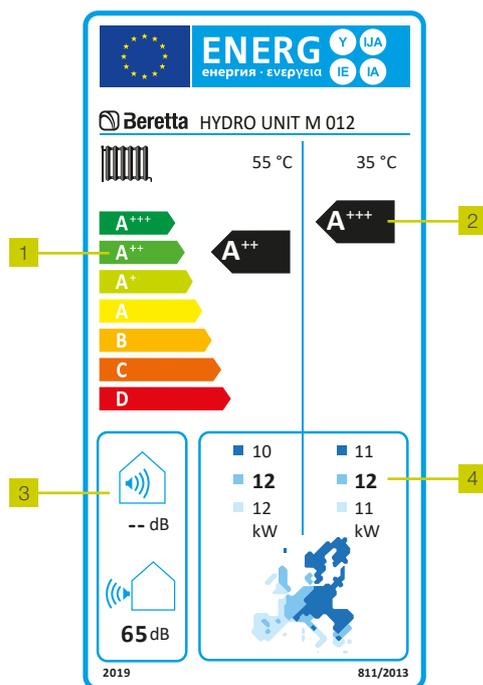
Installing HYDRO UNIT M is easy thanks to the hydronic kit that comes with the monoblock and contains all the essential components. HYDRO UNIT M is flexible thanks to its ability to respond to the actual needs of the rooms to be served.

<sup>(\*)</sup> Energy class depends on the model

# ENERGY CLASS A+++ O A++

## WHY HYDRO UNIT M?

- › Because it **RESPECTS THE ENVIRONMENT** by maximizing the use of energy obtained from renewable sources
- › Because it achieves **ENERGY EFFICIENCY CLASS A+++** in low-temperature applications
- › Because it offers **STABILITY OF PERFORMANCE** by supplying water at up to 65°C in a wide range of operating temperatures (from -25°C to +43°C)
- › Because it responds with flexibility to **DEMAND FROM THE INSTALLATION ENVIRONMENT**
- › Because it **INCREASES THE ENERGY EFFICIENCY** of the buildings in which it is installed, lowering running costs and increasing the economic value



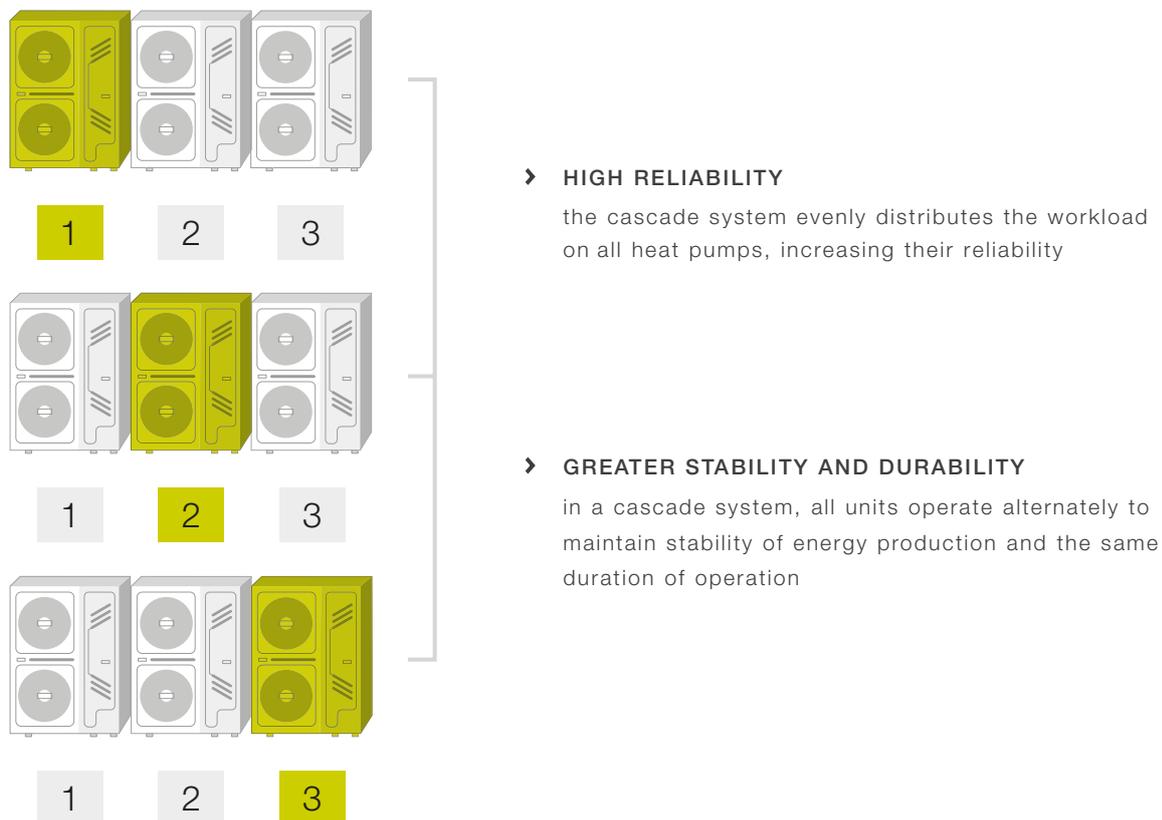
The entry into force of the European ErP Directive (26.09.2015) also requires heat pumps, like other heat generators for production of sanitary domestic hot water and heating, to be classified with the familiar energy efficiency class label. This mandatory labeling provides greater transparency on the characteristics of products for easy comparison, helping customers identify and choose the most efficient products. Beretta's heat pumps with energy efficiency class A+++/ A++ (\*) (35°C) o A++/ A+ (\*) (55°C) achieve maximum energy savings and increase the building's value.



- 1 Energy efficiency class of heating at 55°C
- 2 Energy efficiency class of heating at 35°C
- 3 Outdoor sound power level (\*)
- 4 Nominal heat output at 55°C and 35°C in temperate, cold and warm climate conditions (\*)

(\*) Values may differ by model

## ALTERNATING CYCLE OPERATION: HIGH RELIABILITY, STABILITY AND DURABILITY

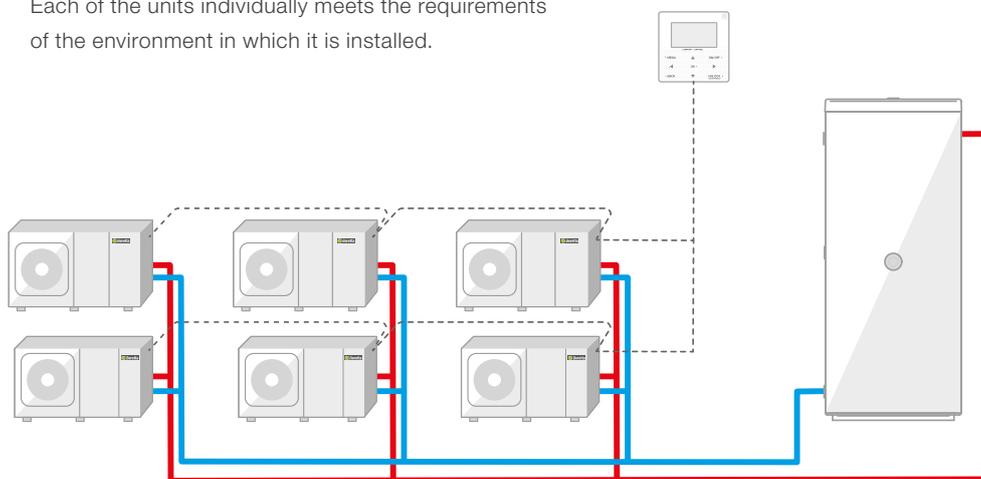


## EASY SERVICE AND MAINTENANCE

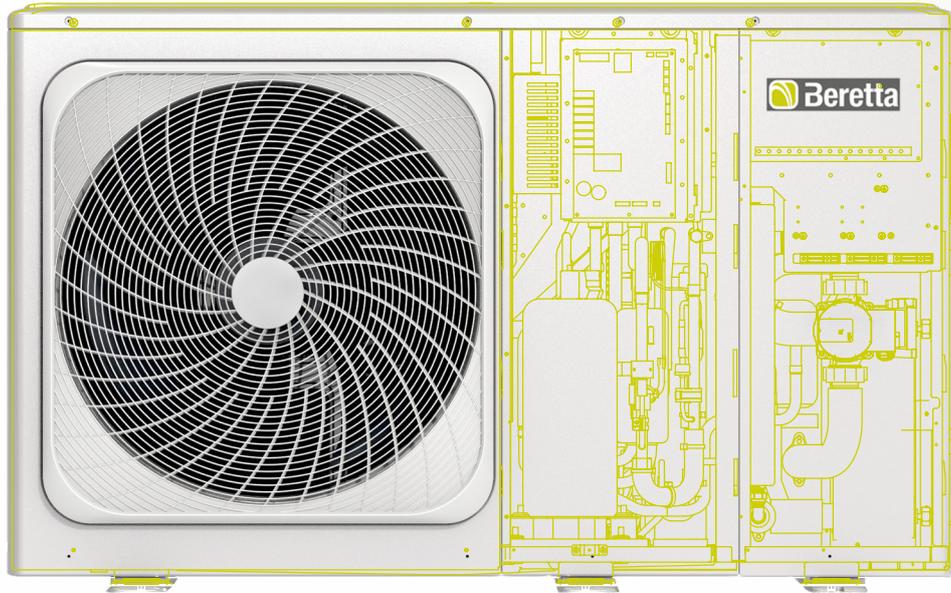


## INSTALL MULTIPLE HYDRO UNIT M

- › HYDRO UNIT M offers the possibility of interconnecting up to six units to each other for heating, cooling and domestic hot water needs of small apartment and light commercial environments. Each of the units individually meets the requirements of the environment in which it is installed.



## TECHNOLOGY: FUNCTIONAL ELEMENTS



- › **INVERTER CONTROL BOARD** maximizes power under critical load conditions and provides stability and efficiency under partial loads
- › **AISI 316 STAINLESS-STEEL PLATE HEAT EXCHANGER:** protected with closed-cell anti-condensation insulation, it offers high heat-exchange efficiency
- › **OPERATING PARAMETERS CONTROL BOARD** constantly analyzes the ambient temperature and the water temperature to activate the different components and satisfy the demand
- › **HYDRONIC MODULE** incorporating energy-efficient circulator, expansion vessel, automatic relief valve and safety valve
- › **ELECTRONIC EXPANSION VALVE** optimizes the flow of refrigerant in all situations
- › **TWIN ROTARY COMPRESSOR:** the design of the Inverter System which includes the DC twin rotary compressor, the fan motor and the pump ensures precise motor speed control for the correct power required to perfectly adapt to the actual load and save energy
- › **FAN:** special blade and tip design allows optimization of the flow surface, improving efficiency and reducing fan noise
- › **HEAT EXCHANGER BATTERY** with large surface and aluminum fins



## EXTREME SILENCE

### › TWO LEVELS OF SILENT MODE

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.



## EASY SYSTEM MANAGEMENT

### ADVANCED REMOTE CONTROL

This control, incorporated in all HYDRO UNIT M installations, features a multi-language display and offers the following functions:

- Management of up to six units connected in cascaded system
- Activation of the scheduled functions such as the anti-frost and vacation options, giving the end user's peace of mind



### REC10MH MANAGEMENT MODULE

Designed for full-electric and residential hybrid applications, this module is installed within the building and offers user-friendly management of the entire system.

If the system incorporates a residential hybrid distribution system, REC10MH manages the multi-zone system to optimize system operation.

The control is equipped with a color display and multi-language menu.



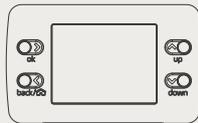
### USB

Each HYDRO UNIT M is equipped with a USB port for connection of USB flash storage devices to upgrade the unit's firmware.



## A WIDE RANGE OF ACCESSORIES

HYDRO UNIT M can be supplied with various accessories to adapt it to different installation types:



### REC10MH REMOTE CONTROL

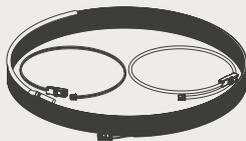
for complete management of full-electric and residential hybrid systems



### 50 L (4-16KW) OR 100L (18-30KW)

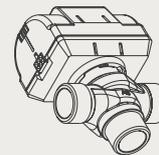
#### BUFFER TANK

designed for vertical installation with HYDRO UNIT M



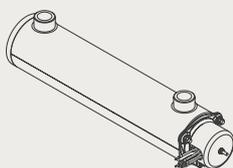
### TEMPERATURE SENSOR

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



### 1 1/4" DIVERTER VALVE

also available in the storage tank resistance kit



### SUPPLEMENTARY HEATING ELEMENT

to increase the system's speed of response to demand from the installation environment. Available in 2kW up to 6kW single or three phase versions

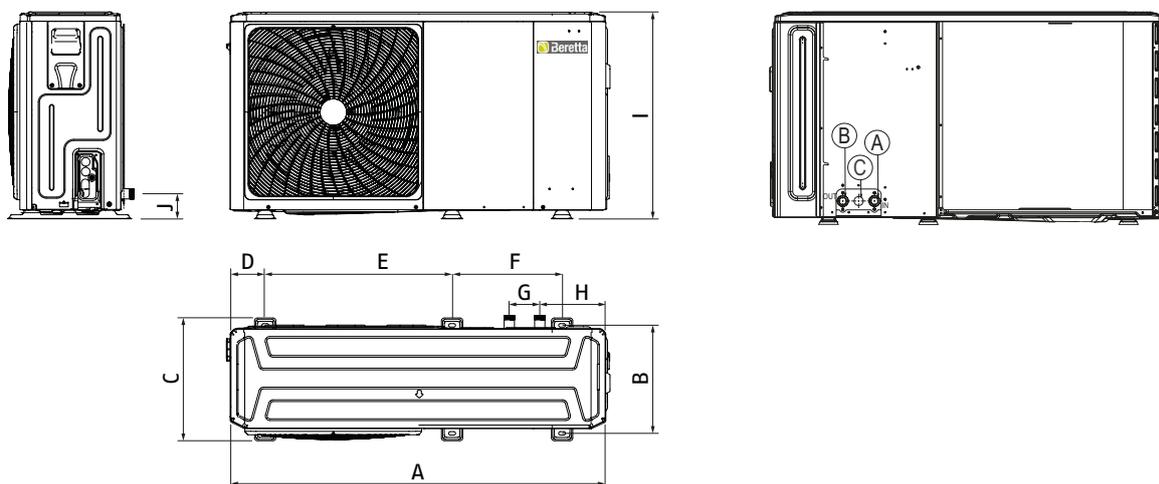


### STORAGE TANK HEATING ELEMENT

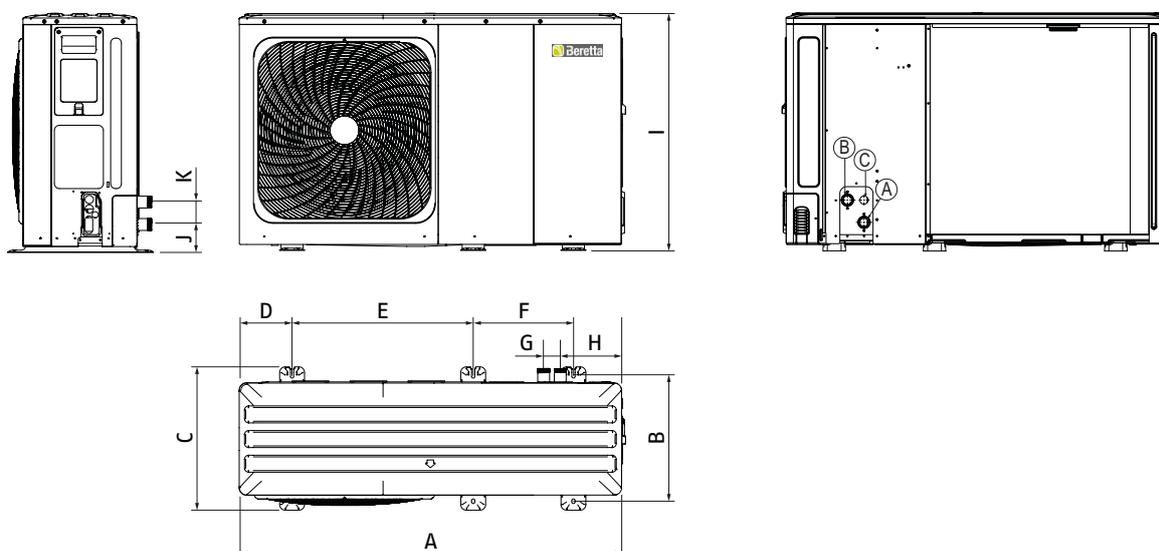
managed by the REC10MH control, with 2,2 kW single-phase power output, it incorporates the three-way bypass valve and storage tank sensor

## TECHNICAL DATA AND SPECIFICATIONS

### HYDRO UNIT M 004-006



### HYDRO UNIT M 008÷016

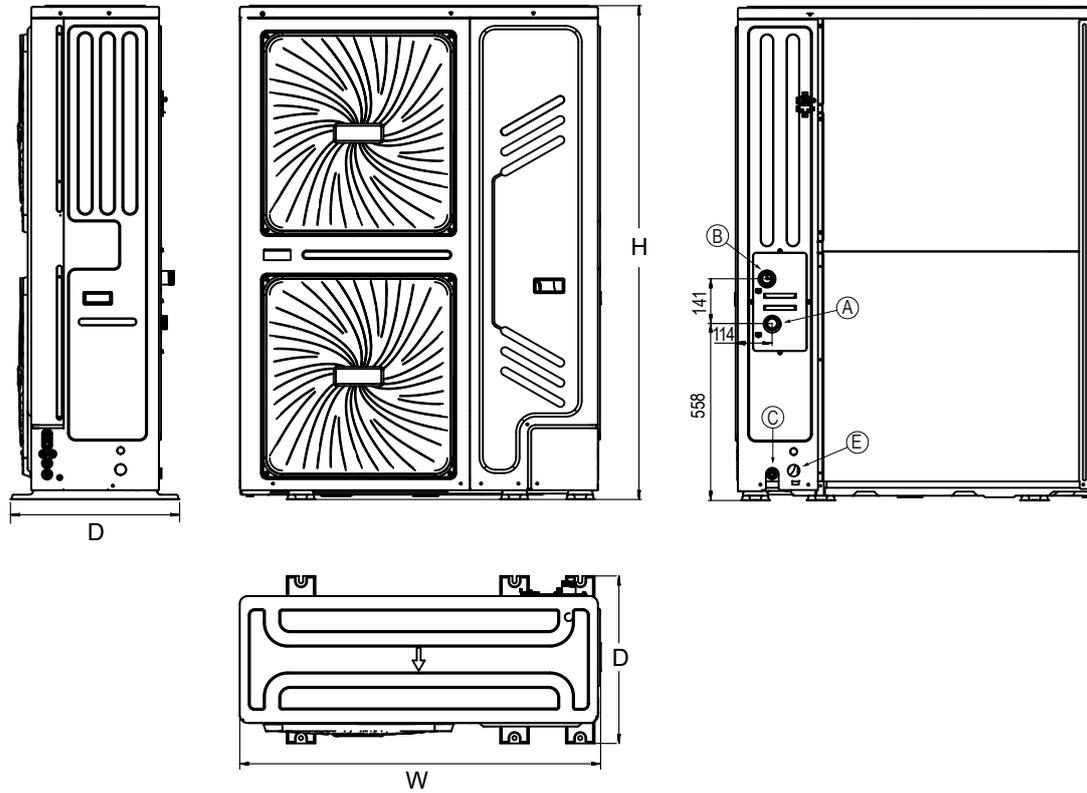


A. Water inlet connection      B. Water outlet connection      C. Discharge connection

## DIMENSIONS AND WEIGHT

MODEL	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	

## HYDRO UNIT M 018÷030



A. Water inlet connection

B. Water outlet connection

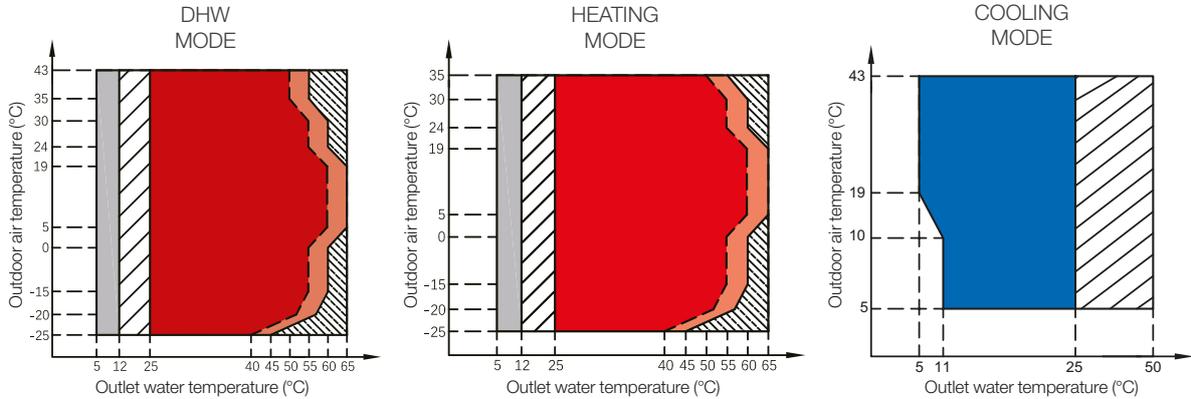
C. Discharge connection

E. Drain pipe hole (for safety valve)

## 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

### OPERATING LIMITS 004÷016



**KEY**

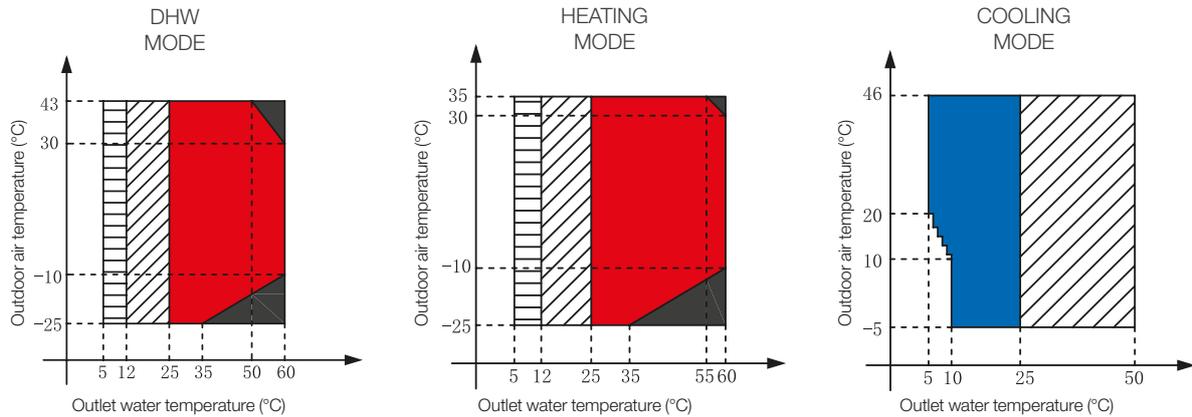
- If Backup Electric Heater / Additional Heat Source setting is valid, only Backup Electric Heater / Additional Heat Source turns on;
- Heat pump turns off, only Backup Electric Heater/ Additional Heat Source turns on.
- Operation range by heat pump with possible limitation and protection.
- Maximum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

### TECHNICAL DATA

	UoM	4	6	8	10	12	14	16	12T	14T	16T	Note
<b>HEATING PERFORMANCE DATA</b>												
<b>Heating performance (A7°C; W35°C)</b>												
Nominal heat output	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
<b>Heating performance (A7°C; W45°C)</b>												
Heat output	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
<b>Heating performance (A7°C; W55°C)</b>												
Heat output	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
<b>COOLING PERFORMANCE DATA</b>												
<b>Cooling performance (A35°C; W18°C)</b>												
Cooling power	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
<b>Cooling performance (A35°C; W7°C)</b>												
Cooling power	kW	4,70	7,00	7,45	8,20	11,50	12,40	14,00	11,50	12,40	14,00	5
EER		3,45	3,00	3,35	3,25	2,75	2,5	2,5	2,75	2,5	2,5	5
<b>SOUND DATA</b>												
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
<b>ELECTRICAL DATA</b>												
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

## OPERATING LIMITS 018÷030



### 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.		No heat pump operation, IBH or AHS only.
	Line of the maximum water inlet temperature for heat pump operation.		Interval of falling or rising temperature of the outlet water temperature.

## TECHNICAL DATA

	UoM	18T	22T	26T	30T	Note
<b>HEATING PERFORMANCE DATA</b>						
<b>Heating performance (A7°C; W35°C)</b>						
Nominal heat output	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
<b>Heating performance (A7°C; W45°C)</b>						
Heat output	kW	18,00	22,00	26,00	30,00	2
COP		3,50	3,40	3,10	2,90	2
<b>Heating performance (A7°C; W55°C)</b>						
Heat output	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
<b>COOLING PERFORMANCE DATA</b>						
<b>Cooling performance (A35°C; W18°C)</b>						
Cooling power	kW	18,50	23,00	27,00	31,00	4
EER		4,75	4,60	4,30	4,00	4
<b>Cooling performance (A35°C; W7°C)</b>						
Cooling power	kW	17,00	21,00	26,00	29,50	5
EER		3,05	2,95	2,70	2,55	5
<b>SOUND DATA</b>						
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
<b>ELECTRICAL DATA</b>						
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



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