Panasonic

Centralised heating and DHW applications
New Big Aquarea T-CAP M Series air to water heat pumps | AQUAREA



Panasonic

AQUAREA

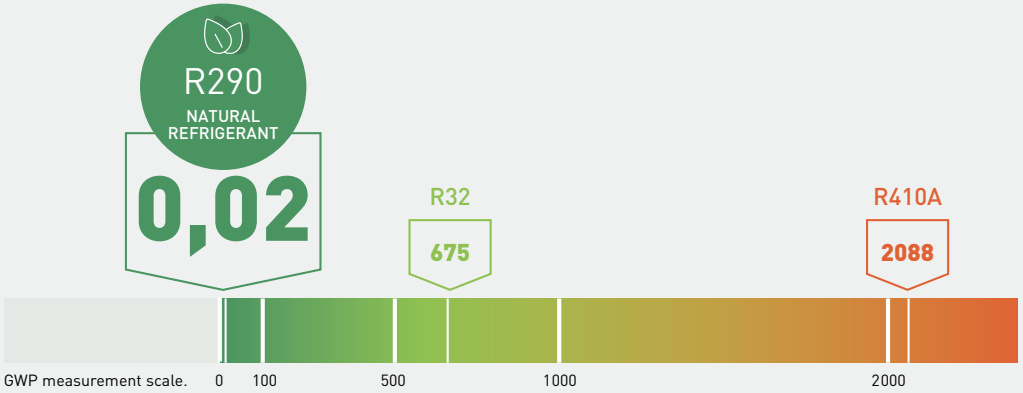
Contributing to a decarbonised society.

Aquarea air to water heat pumps with R290 refrigerant range is a groundbreaking low energy system for heating, cooling and domestic hot water production that delivers outstanding performance, aligning with our vision of a carbon-free society and our GREEN IMPACT plan.

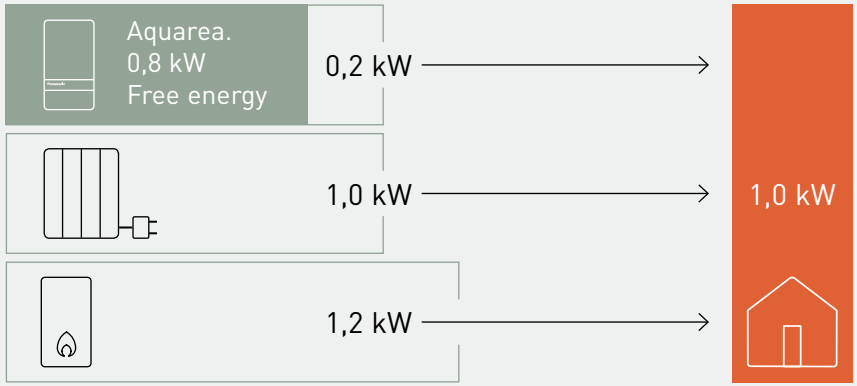
With sustainability at the forefront of its innovations, Panasonic's newest series are engineered with industry leading natural refrigerant R290, which has a low Global Warming Potential (GWP) of just 0,02*, helping reduce CO_2 emissions and environmental impact.

* GWP 3 (AR4) [1]/GWP 0,02 (AR6) [2].
1) Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change (IPCC).
2) Based on the Sixth Assessment Report adopted by the Intergovernmental Panel on Climate Change (IPCC).

Global Warming Potential refrigerant comparison.



Up to 80%* energy savings with Aquarea.



Power input / energy consumption power.
* At 35 °C flow temperature.

Heat output / heating capacity



As much as 79% of the energy consumption of European homes comes from heating and producing DHW*. That's why, compared to conventional boilers and electric heaters, highly efficient Panasonic air to water heat pump technology can make a significant difference. Moreover, by converting heat energy in the air into household warmth, this technology helps reduce CO_2 emissions and environmental impact.

*** https://ec.europa.eu/eurostat.**



R290

NATURAL REFRIGERANT

The Aquarea range meets one of the highest rank of energy efficiency criteria of European energy rating system.

Energy Labelling Regulation (EU) No. 811/2013.

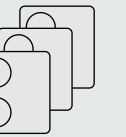
Panasonic

Introducing the new Big Aquarea T-CAP M Series of air to water heat pumps.

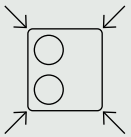
Aquarea M Series is a flexible, compact and energy-efficient solution ideal for central heating and/or domestic hot water installations in multi-family or commercial buildings.
It is engineered with industry leading R290 natural refrigerant. The line-up expanded from 20 to 30 kW models is perfect for renovations, where a high water outlet temperature is required or homes looking for avant-garde heat pump with natural refrigerant.



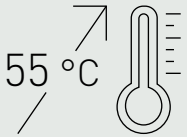
Wi-Fi adapter included



Up to 300 kW in cascade

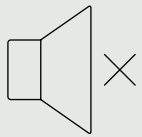


Compact solution with small footprint

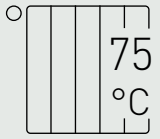


T-CAP technology

Keeping capacity at 55 °C water outlet down to -15 °C outdoor.

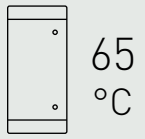


Quiet operation

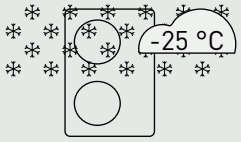


Output water

Up to 75 °C water outlet

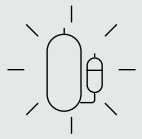


DHW at 65 °C with compressor only



Extreme conditions

Compressor operating down to -25 °C outdoor temperatures.



Panasonic Inverter compressor



Panasonic has more than 60 years of heat pump experience, having produced an exceptional amount of compressors. Quality is what Panasonic stands for and this is a key factor for succeeding in the European market.
The membership in the European Heat Pump Association, the production of Aquarea in Europe and high security protocols in European servers, make Panasonic a trusted heating partner.

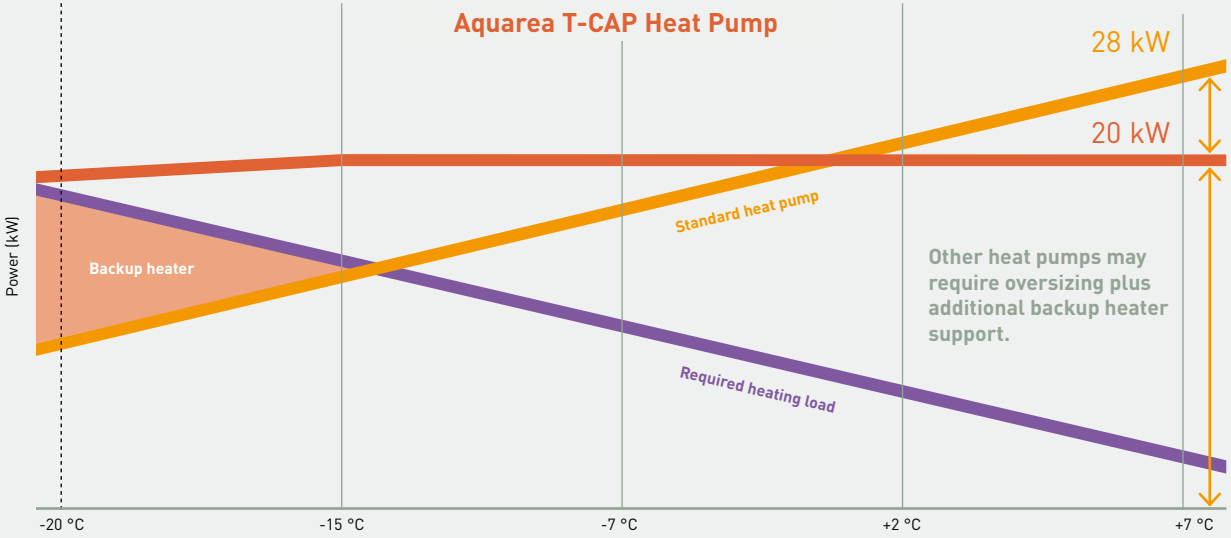


The new Big Aquarea M Series offers a solution for central heating and/or domestic hot water installations in multi-occupancy or commercial buildings.

T-CAP technology, stable operation and high performance under extreme conditions.

Aquarea T-CAP outdoor units are highly reliable thanks to the quality of all components, including the new compressor with injection technology, developed and manufactured by Panasonic, that can work in outdoor temperatures as low as -25 °C.

While other heat pumps decrease the heating capacity as the outdoor temperature drops and need to be oversized to secure the required capacity at very low temperatures, the Big Aquarea T-CAP M Series maintains its rated capacity at 55 °C water outlet down to -15 °C without back-up heater. This saves time, cost and space in the installation and maintenance of the system.



Conventional cascade system.

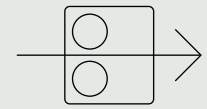
2 x **20 kW** heat pump



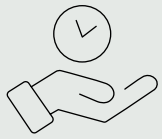
New Panasonic Aquarea T-CAP M Series.

1 x **30 kW Big Aquarea T-CAP**

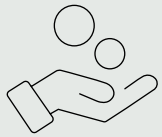
For 30 kW demand at 55 °C water outlet and -7 °C outdoor temperature.



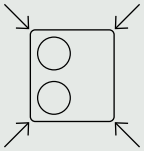
Maintained capacity



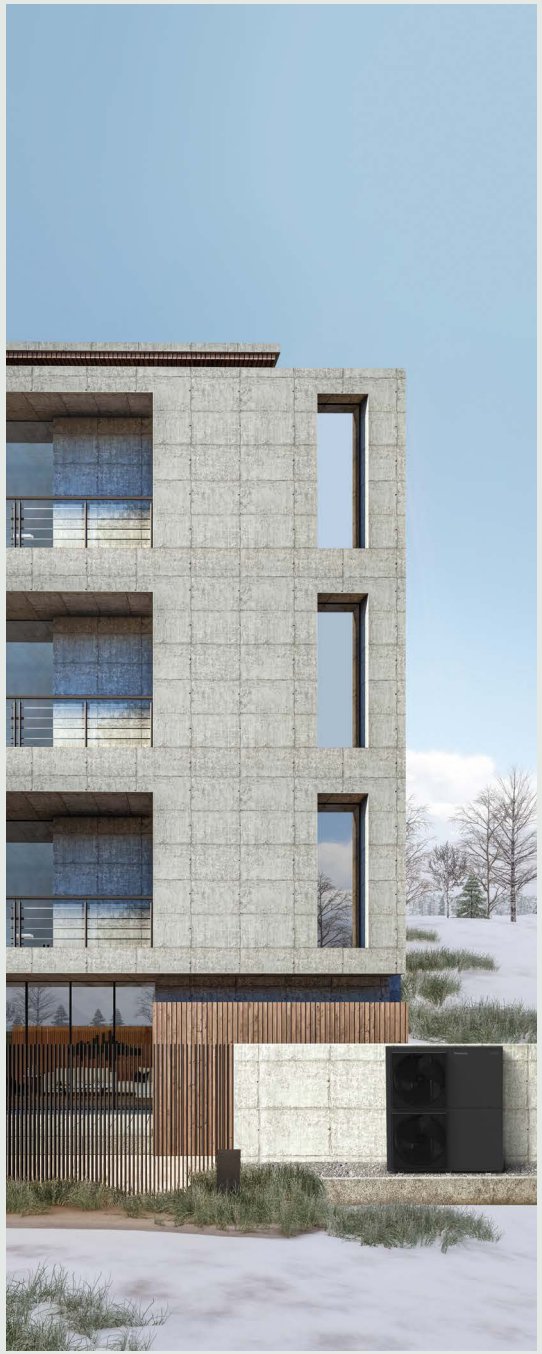
Time-saving installation



Cost-saving



Space-saving





Aquarea T-CAP is an innovative heat pump, designed to provide ideal temperatures and hot water, even with extreme outdoor temperatures.

Heat pump technology for improved energy efficiency.



Aquarea M Series can reach a domestic hot water temperature of up to 65 °C without the use of the electric heater, so the tank sterilisation can be performed with the heat pump operation for further energy savings.

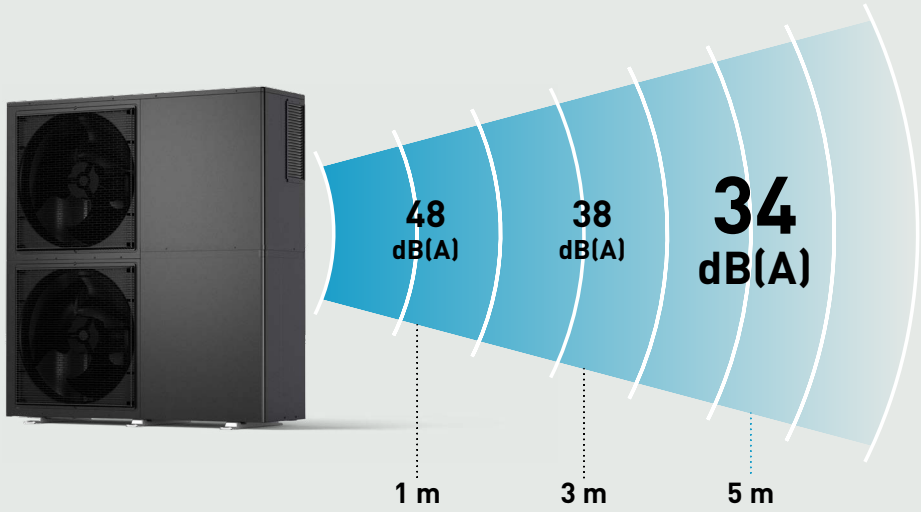
Reliable technology.

The outdoor units are equipped with a Panasonic R290 Scroll compressor. The compressor is manufactured in-house with T-CAP technology including injection.
The outdoor heat exchanger is protected with a Bluefin treatment for harsh ambient conditions.

Quiet operation. Panasonic's unique low noise architecture.

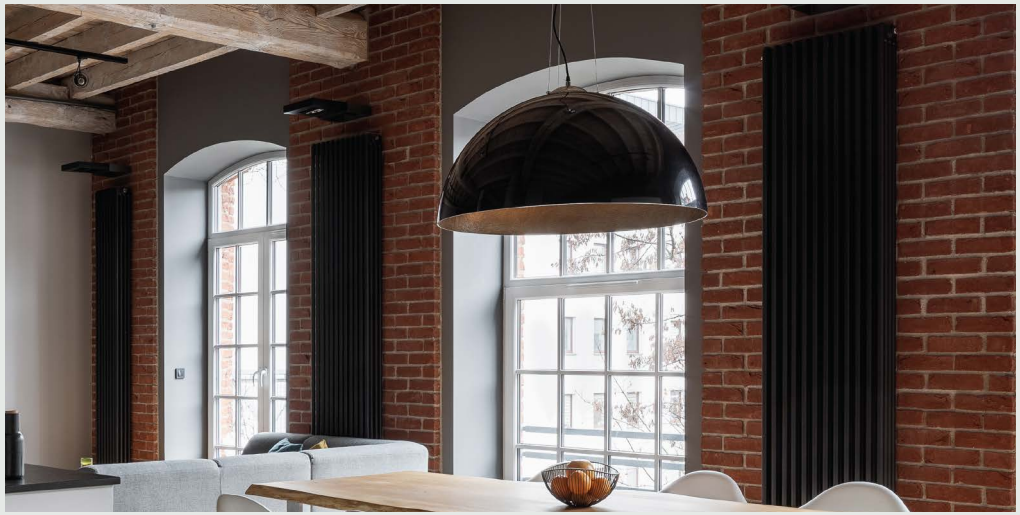
The compressor, which is a major source of noise, is equipped with a double-bottomed structure to provide a safe, quiet structure that does not disturb neighbours in crowded residential areas.

* Sound pressure calculation for WH-WXG20ME8, free standing, A +7 °C, W 35 °C in Quiet mode 3.



Output water. High performance under extreme conditions.

Excellent solution for heating system retrofit.
The compressor operates without backup heating down to -25 °C ambient temperatures, and can be integrated alongside existing radiators with a high-water flow temperature of up to 75 °C.



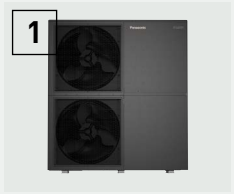


For businesses that require heating and large volumes of hot water, such as restaurants or supermarkets, the Big Aquarea T-CAP can further improve energy efficiency by producing hot water up to 65 °C without a back-up heater.

Big Aquarea for centralised heating and DHW installations in multi-family or commercial buildings.

A revolution in the design, performance, connectivity, and sustainability.

The new Big Aquarea M Series offers a flexible, compact and energy-efficient solution for central heating and/or domestic hot water installations in multi-occupancy or commercial buildings.
Its compact footprint makes it more flexible to install, allowing it to fit where space is limited.



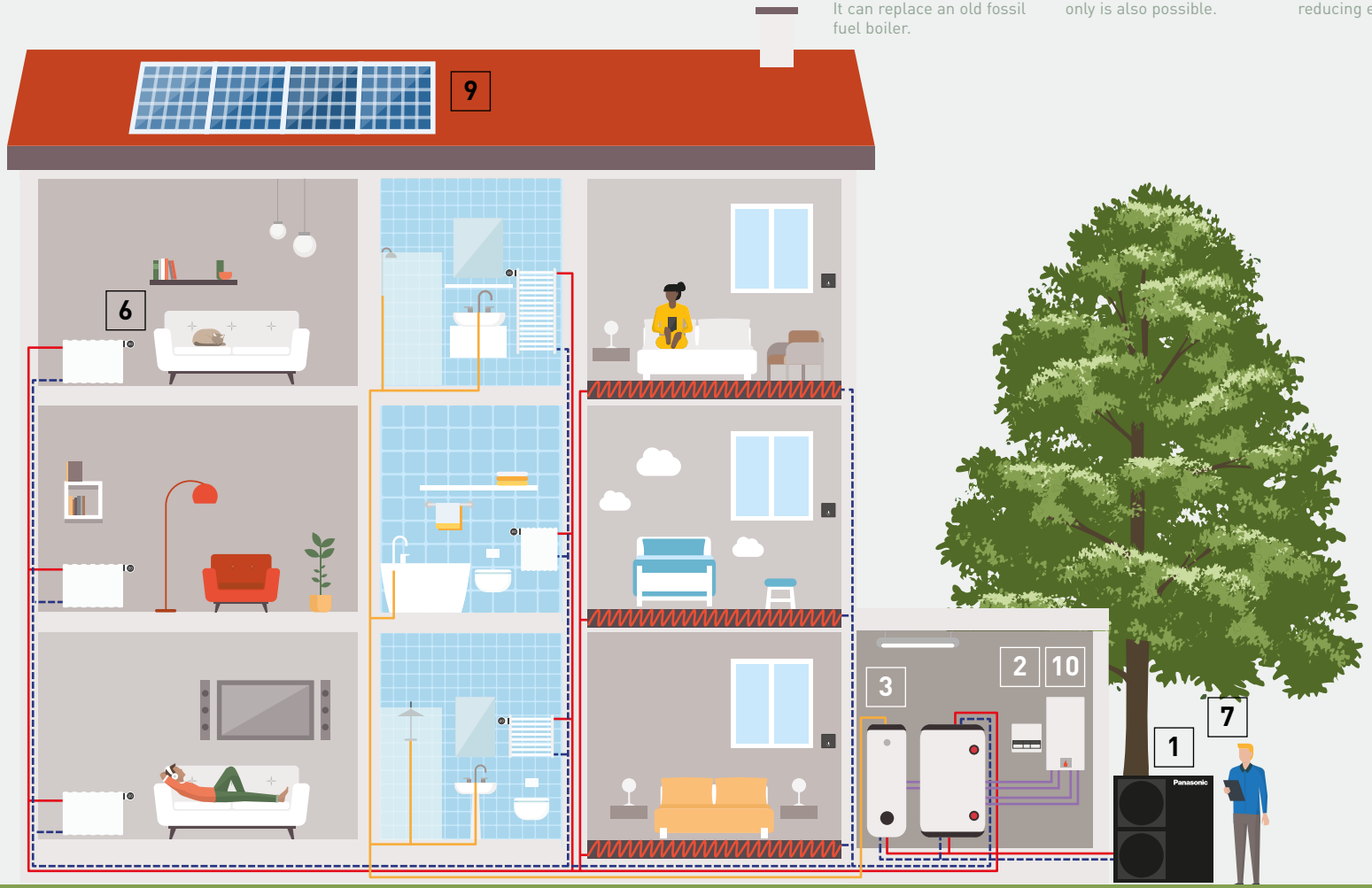
Big Aquarea T-CAP M Series.
20, 25 or 30 kW heat pumps in cascade, for a space-saving solution.
It can replace an old fossil fuel boiler.



M Series control module.
The control module allows for enhanced control functionality. Operation with the remote controller only is also possible.



High efficiency DHW tank.
A high efficiency tank provides the required volume of hot water, at the correct temperature, reducing energy costs.

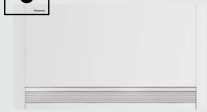


4



Aquarea Loop.
The water loop heat pump provides heating and cooling for every apartment or room connected to a central water loop.

5



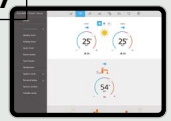
Fan coils.
Aquarea Heat Pumps can be integrated into a new or existing water system.

6



Radiators or floor heating.
Together with tado° room control and smart energy management services Aquarea provides maximum energy savings and comfort.

7



Aquarea Smart and Service Cloud.
This IoT solution provides powerful and user-friendly management and monitoring of Aquarea Heat Pumps and enables remote maintenance.

8



BMS integration.
The system can be easily integrated into a Modbus project with the optional accessory.

9



Photovoltaics.
Thanks to the integration with PV, the demand or power consumption for heating or hot water production is adapted to the PV production.

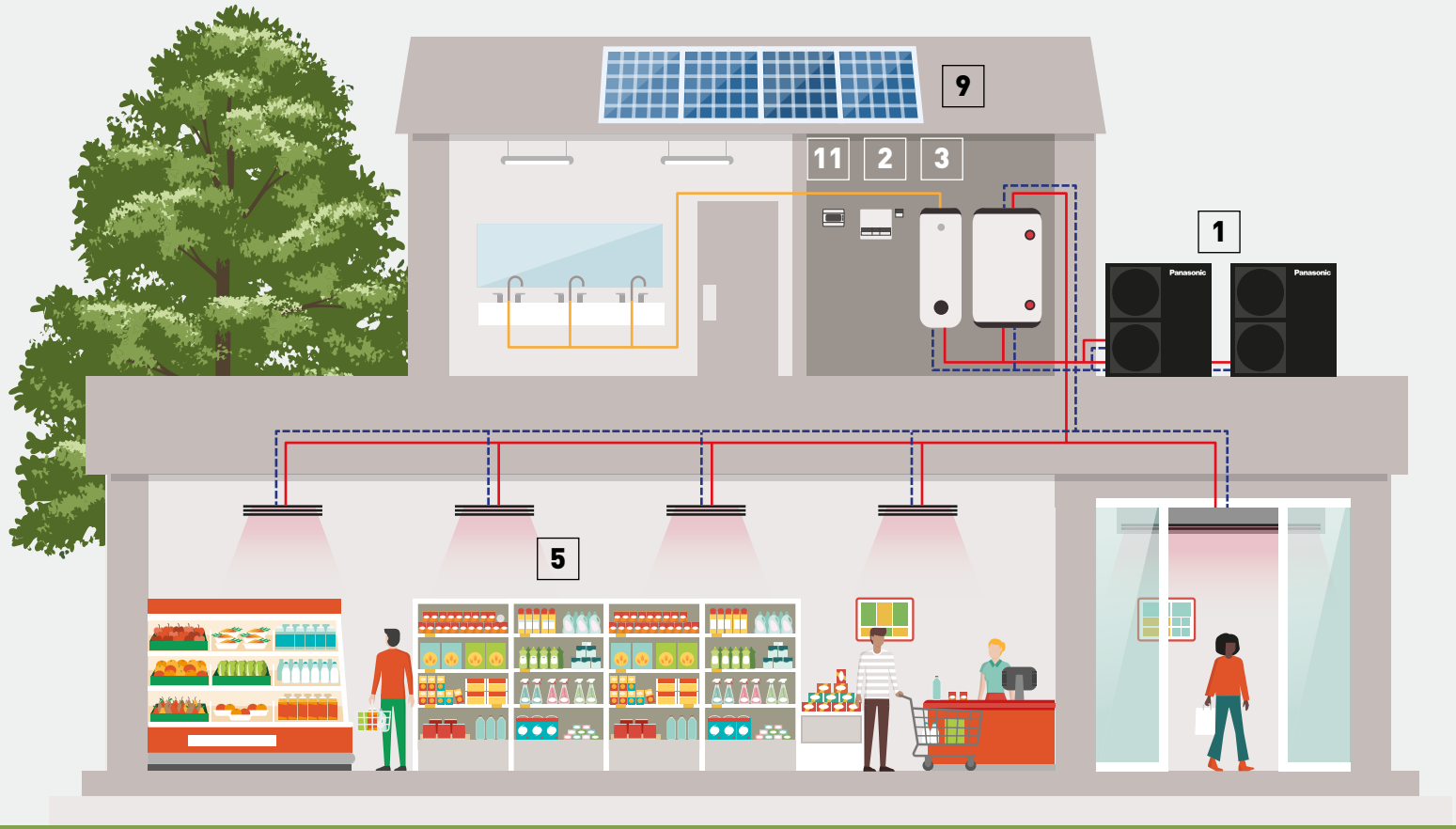
10

OPTIONAL.
Bivalent mode.
Cost-effective bivalent mode with energy tariff logic when combined with an existing boiler.

11



Aquarea Cascade Edge.
Boost the capacity up to 300 kW by connecting up to 10 units in cascade.



Advanced control and connectivity features, enhanced interface.

Smart bivalency.
Cost effective bivalent mode with power tariff logic.

Enhanced connectivity.
A second interface connection port (CN-CNT) offers improved connectivity when connecting the outdoor unit to the control module or an indoor unit.

Smart Grid Ready.
The Aquarea M Series features the SG Ready function* for seamless connection to smart grid controls.

BMS integration.
Aquarea integrates seamlessly with Modbus or KNX projects*, allowing bi-directional monitoring and control of all operating parameters.

* Additional accessory required.





Aquarea Service Cloud.

Saves time and money and shortens the response time, thus increasing the customers' satisfaction.

Watch demo

The Aquarea Service Cloud allows professionals to take care of their customers' heating systems remotely, engaging in predictive maintenance and system finetuning and respond rapidly to any malfunctions.



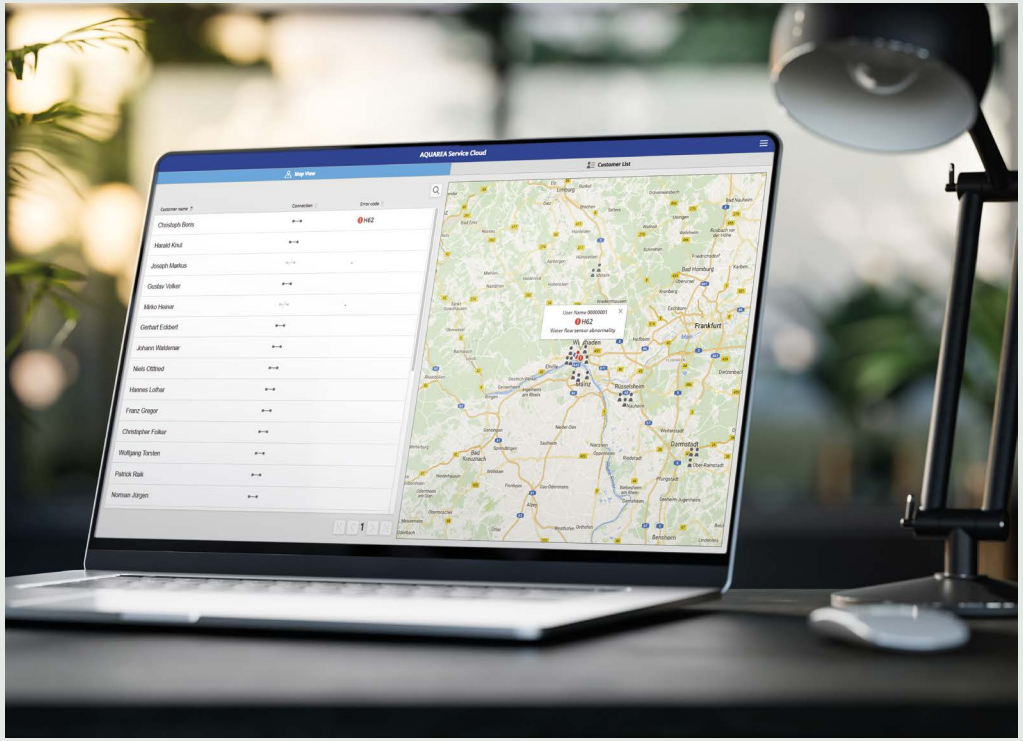
Time and cost saving

Remote system adjustment.
Remote diagnosis.
One visit, spare part in hand.



Increased customer satisfaction

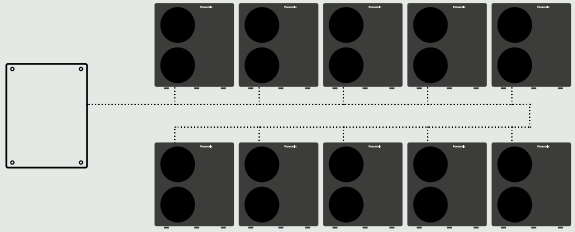
Faster service. Time saving (less number of visits).



Boost the capacity up to 300 kW by connecting your units in cascade.

Designed for central heating projects, small hotels, supermarkets and restaurants, the cascade manager manages the demand for energy-efficient heating and cooling balancing working hours.

- **New Line-up to meet the needs of wider applications reaching up to 300 kW in cascade**
- **Seamless cascade connection up to 10 units**
- **Heating and cooling control**
- **Domestic hot water (DHW) control**
- **Management up to 75 °C**



Aquarea Cascade Edge.

PAW-A2W-CME4 and PAW-A2W-CME10.

Cascade up to 4 or 10 units* and remotely control your heat pumps via smartphone, tablet or PC. Manage your units with the P-Smart Edge web interface.



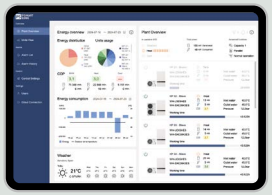
Degree of protection: IP65

P-Smart Edge.

Control and monitoring online solution for Aquarea Cascade Edge systems wherever you are. In a simple click, configure and receive status updates of all your units.

- Powerful remote management with user-friendly interface
- Online visualisation of your cascade system
- Remote configuration of the technical parameters
- Historical system data

P-SMART EDGE

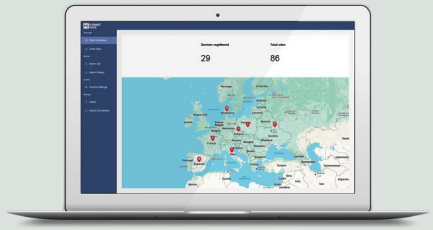


P-Smart Nexus.

Smart multi-site online control which allows a remote global supervision of all your sites.

- Remote online supervision of all your sites in one place
- 24/7 control of all the installations
- Easy connection to Aquarea Cascade Edge without special on-site network setup

P-Smart Nexus



Cascade manager.

PAW-A2W-CMH-3.

Cascade up to 10 units* and manage your system with a large, easy-to-use touch screen display.



* A Modbus gateway is required for each connected device: CZ-NSMB (for Big Aquarea T-CAP M Series) or PAW-AZAW-MBS-M.

Panasonic

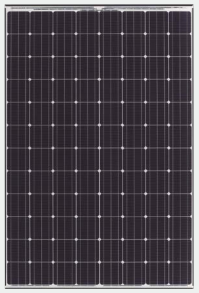
Aquarea M Series gives you even more.

Highly efficient Panasonic solutions can help to significantly reduce the energy consumption of the building, at the same time a high level of comfort and good indoor air quality are kept.



Ventilation unit for a low-energy buildings.

Maximise building comfort by combining heat recovery ventilation units with Aquarea Heat Pumps for an efficient, space-saving solution for heating, cooling, ventilation and DHW.



Maximised efficiency with PV panels.

By integrating Aquarea Heat Pumps with PV panels*, heating, cooling and hot water production is adapted to the solar energy output, reducing energy costs.

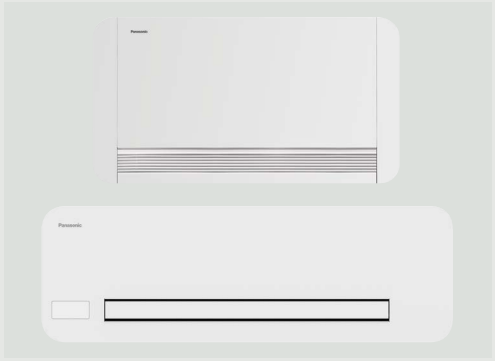
* Additional accessory required.

Big Aquarea T-CAP can be connected to different indoor terminals, such as fan coils and water source heat pumps.

Even in retrofit projects, it can easily replace other heating sources and integrate with existing hydronic systems.

Aquarea Air Smart fan coil floor standing / wall-mounted.

Sophisticated and slim design, with an elegant metal body.



Aquarea Air Smart fan coil ducted / ducted thin.

Variable speed, constant air flow.



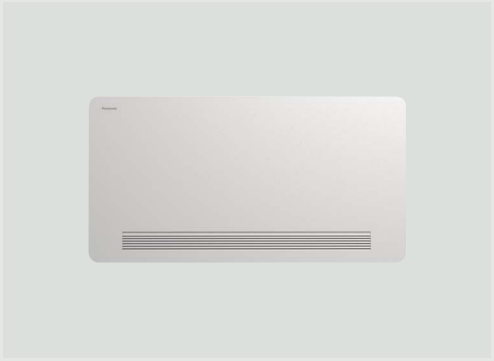
Fan coil cassette / comfort / wall.

Commercial cassette, floor, ceiling and wall-mounted fan coil with multiple accessories for flexible configuration.

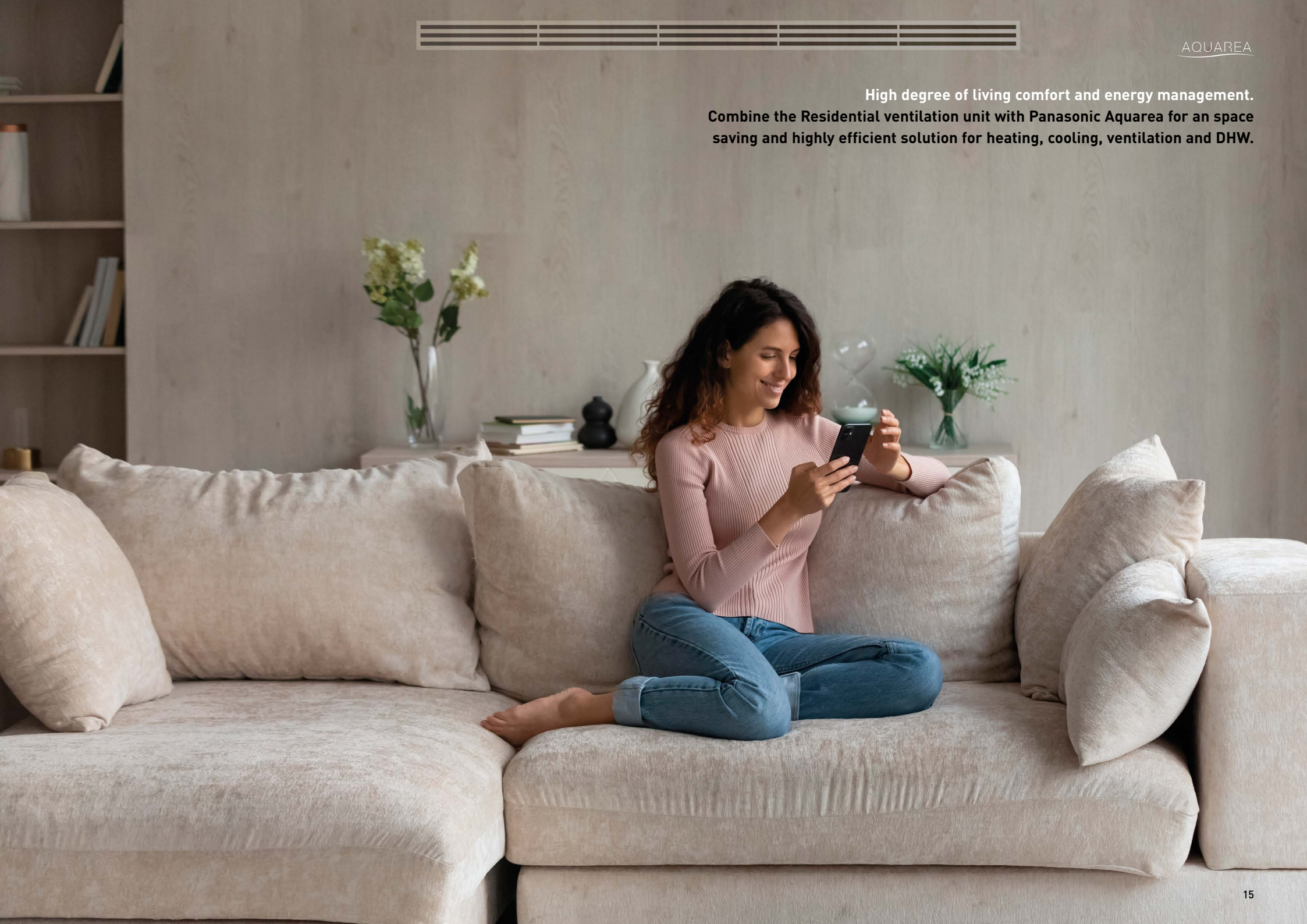


Aquarea Loop.

Decentralised water loop heat pump with high quality metal finishing.



High degree of living comfort and energy management.
Combine the Residential ventilation unit with Panasonic Aquarea for an space saving and highly efficient solution for heating, cooling, ventilation and DHW.



Panasonic

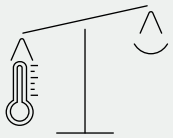
Aquarea Loop, the water loop heat pump for multi-family buildings.

The Aquarea Loop is a decentralised water to air heat pump using R290, designed to provide heating and cooling for each apartment.

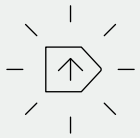
The system circulates water year-round at a neutral temperature (20 ~ 30 °C), preventing condensation on uninsulated pipes during summer. The Aquarea Loop adjusts the water temperature to optimal levels, ensuring each room is properly heated or cooled.

R290
NATURAL REFRIGERANT

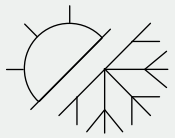




Low thermal losses



High seasonal efficiency of the entire system



Simultaneous heating and cooling



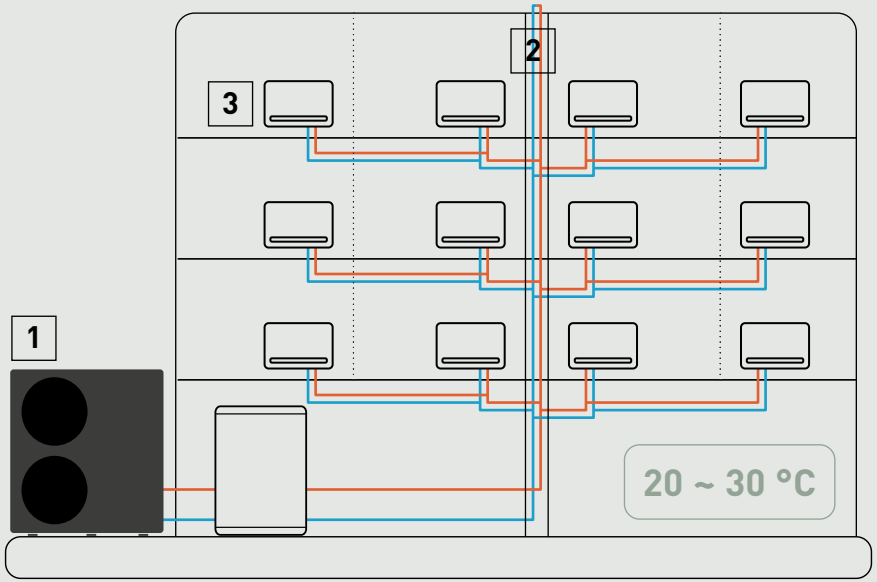
Use of existing pipework for renovations*

* Based on the low flow rate requirement – must be checked on each project.

Retrofit application: centralised low temperature installation for decentralised heating and cooling.

1 | Centralised Aquarea Heat Pumps replacing a high temperature traditional heat source
2 | Loop water temperature 20 ~ 30 °C. The existing pipework may be reused
3 | Aquarea Loop heat pump replacing conventional radiators

Efficiently replaces existing radiators in centralised heating systems.
Aquarea Loop offers low thermal losses and high seasonal efficiency. Enjoy simultaneous heating and cooling while effortlessly integrating with existing pipework for seamless renovations.



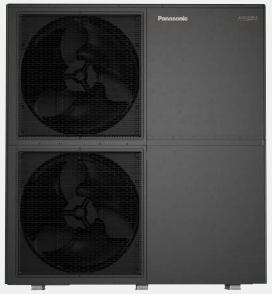


Combination table

Indoor unit		CN-CNT	Backup heater	Additional functions		Outdoor unit Heating capacity Three phase 20,0 kW WH-WXG20ME8	Outdoor unit Heating capacity Three phase 25,0 kW WH-WXG25ME8	Outdoor unit Heating capacity Three phase 30,0 kW WH-WXG30ME8
Control module	3ph	✔ (2)	Field supply	CZ-NS7P	**WH-CME8L**	✔	✔	✔
Remote controller with Wi-Fi adapter	—	✔ (1)	—	—	**CZ-RTW2TAW1C**	✔	✔	✔

R290
NATURAL REFRIGERANT





A++ ErP 55 °C Scale from A+++ to D

A+++ ErP 35 °C Scale from A+++ to D

Outdoor unit				WH-WXG20ME8	WH-WXG25ME8	WH-WXG30ME8
Heating capacity / COP (A +7 °C, W 35 °C)			kW / COP	20,00/4,80	25,00/4,50	30,00/4,40
Heating capacity / COP (A +7 °C, W 55 °C)			kW / COP	20,00/3,18	25,00/3,00	30,00/3,00
Heating capacity / COP (A +2 °C, W 35 °C)			kW / COP	20,00/3,39	25,00/2,80	30,00/2,50
Heating capacity / COP (A +2 °C, W 55 °C)			kW / COP	20,00/2,08	25,00/1,97	30,00/1,95
Heating capacity / COP (A -7 °C, W 35 °C)			kW / COP	20,00/2,48	25,00/2,36	30,00/2,33
Heating capacity / COP (A -7 °C, W 55 °C)			kW / COP	20,00/1,90	25,00/1,80	30,00/1,49
Cooling capacity / EER (A 35 °C, W 7 °C) at Comfort mode			kW / EER	20,00/3,02	25,00/2,86	26,00/2,68
Cooling capacity / EER (A 35 °C, W 7 °C) at Efficiency mode (default)			kW / EER	15,00/3,61	15,00/3,61	15,00/3,61
Cooling capacity / EER (A 35 °C, W 18 °C) at Comfort mode			kW / EER	20,00/4,79	25,00/4,47	30,00/4,10
Heating average climate (W 35 °C / W 55 °C)	Seasonal energy efficiency		SCOP (η_{s} %)	4,36/3,59 (171/141)	4,25/3,57 (167/140)	3,95/3,46 (155/135)
	Energy class [1]		A+++ to D	A++/A++	A++/A++	A++/A++
Heating warm climate (W 35 °C / W 55 °C)	Seasonal energy efficiency		SCOP (η_{s} %)	5,37/4,07 (212/160)	5,22/4,14 (206/163)	4,93/4,01 (194/158)
	Energy class [1]		A+++ to D	A+++/A+++	A+++/A+++	A+++/A+++
Heating cold climate (W 35 °C / W 55 °C)	Seasonal energy efficiency		SCOP (η_{s} %)	3,07/2,57 (120/100)	3,16/2,71 (123/105)	3,20/2,71 (125/105)
	Energy class [1]		A+++ to D	A/A+	A+/A+	A+/A+
Sound power [2]	Heat		dB(A)	56	59	61
Dimension	H x W x D		mm	1645 x 1500 x 460	1645 x 1500 x 460	1645 x 1500 x 460
Net weight			kg	240	240	240
A class pump	Number of speeds			Variable speed	Variable speed	Variable speed
	Input power (Min/Max)		W	230	230	230
Heating water flow (ΔT=5 K. 35 °C)			L/min	57,3	71,6	86,0
Refrigerant (R290) / CO_2 Eq. [3]			kg / T	3,0/0,009	3,0/0,009	3,0/0,009
Operating range - outdoor ambient	Heat		°C	-25 ~ +35	-25 ~ +35	-25 ~ +35
	Cool		°C	+10 ~ +43	+10 ~ +43	+10 ~ +43
Water outlet	Heat / Cool		°C	20 ~ 75 [4]/5 ~ 20	20 ~ 75 [4]/5 ~ 20	20 ~ 75 [4]/5 ~ 20
Recommended RCD, supply			A	50	50	50
Recommended minimum cable size, supply [4]			mm²	5x10 - 5x16	5x10 - 5x16	5x10 - 5x16

1) Scale from A+++ to D. 2) Sound power level in accordance to EN 12102 under conditions of the EN14825 (part load). 3) WH-WXG models are hermetically sealed. 4) Above 15 °C ambient temperature. 5) Check local regulations. * EER and COP calculation is based in accordance to EN 14511.

Indoor unit			WH-CME8L
Dimension	H x W x D	mm	450 x 450 x 116
Net weight		kg	7
Field supply electrical backup heater		kW	Up to 18 kW
Recommended fuse, supply [1]		A	≤9kW 20 9kW< ≤18 kW 40
Recommended minimum cable size, supply [1]		mm²	≤12kW 5x2,5 12kW< ≤15 kW 5x4,0 15kW< ≤18 kW 5x6,0
Connecting cable to the outdoor unit size		mm²	2x0,75

1) Check local regulations.

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DHW.
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Down to -25 °C in heating mode.
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Water filter with magnet.
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