

NEW AQUAREA RANGE HIGH-EFFICIENCY HEAT PUMP TECHNOLOGY **2014 - 2015** 





AQUAREA

heating and cooling systems

# **Panasonic**

# **NEW 2014 / 2015** AQUAREA AIR TO WATER HEAT PUMP

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**Quality Management System Certificate** 

Certified to ISO 9001: 2008 Malaysia. Sdn.Bhd. Cert. No.: MY-AR 1010

CEPREI

Certified to ISO 9001: 2008 Panasonic Appliances Air-Conditioning (GuangZhou) Co., Ltd. Registration Number: 01209Q20645R5L



Certified to ISO 14001: 2004 Malaysia Sdn.Bhd. Cert. No.: MY-ER0112

Environmental Management System Certificate

Certified to ISO 14001: 2004 Panasonic Appliances Air-Conditioning (GuangZhou) Co., Ltd. Registration Number: 02110E10562R4L

# NEW

New All in One solution from 3 to 16kW with 200l tank, A class pump and small foot print. Ideal for new and retrofit homes. PG 32

# NEW

**New 5kW Monobloc, the most efficient solution of the market with a COP of 5.08! Ideal for low consumption homes.** PG 22

NEW

New 16kW T-Cap Bi-Bloc, ideal for retrofit and commercial applications. PG 26

# NEW

New 9 and 12kW T-Cap Bi-Bloc, with A class pump, higher efficiency, and energy consumption. PG 26



New remote control to improve performance, comfort and to deliver maximum energy savings. PG 34

# NEW

New, square-chassis hot water tank, with integral 80-litre buffer tank. PG 60















Panasonic

# A Better Life, A Better World

As we move towards our Centenary in 2018, our new brand slogan encapsulates Panasonic's vision of expanding and pursuing a better life for each of our customers. Working with our many partners, we operate in a wide range of fields such as the home, community, business, travel, realising a better world globally through its contribution to the environment and other activities, in both its B2C and B2B businesses.



# History of Air Conditioning Group

Panasonic starts with a desire to create things of value. As hard work and dedication results in one innovative product after another, the fledgling company takes its first steps towards becoming the electronics giant of today.





1936 First electric Fan with Automatic Oscillation (36 cm table top model).

conditioner launched for domestic installation. Prior to this date, air conditioners were large and only for commercial use. Panasonic developed the first compact air conditioner for windows; it was lightweight and easy to install, improving the quality of life in Japanese homes. 1,100 units were sold in Japan in the first year, and just two years later, in 1960, this figure rose to 230,000.

1958

First room air

1973 1975 Panasonic launches the first Japanese air the first highly efficient air-to-water conditioner heat pump in Japan. manufacturer in Europe.

2008 Panasonic becomes

Etherea new concept of air conditioning systems: high efficiency and high performances with a great design. Etherea also includes a verv innovative air quality sensor and air purifier in order to enjoy healthy air at home at all times.

#### 2010

2011 New Aquarea. Panasonic has created Aquarea, an innovative new, low-energy system, designed to help you enjoy ideal temperatures and hot water in your home, even with extreme outdoor temperatures. Aquarea cools or heats to ensure maximum comfort. Aquarea is far cleaner, owners and safer, cheaper and environmentally friendly than alternatives using gas, oil and other electrical

systems.

New Eco i VRF solution. The new Panasonic

VRF solution for big buildings is the most efficient in the industry in more than 74% of combinations. ECO i satisfies the most demanding standards required by design offices, architects, installers.

2012 2013 New GHP units. New ECOi 3-pipes. The best efficiency Pansonic's gasdriven VRF systems for your building. are ideal for projects Our New 6 Series where power 3-pipes is achieving restrictions apply. In a COP of 4.77 at full 2012, Panasonic load, and even more extends the Gas Heat when recovering heat Pump range with a from the building. new GHP line-up, There is no doubt, new GHP G Power Panasonic is (electricity reducina production) and the environmental new Chiller Units. impact!



New Aquarea 16kW T-CAP. Improvements deliver impressive, high efficiencies at low ambient temperatures. T-CAP stands for Total Capacity and is capable of maintaining the same nominal capacity even at -15°C without the help of an electric booster heater. Ideal for retrofit and commercial applications.

7



such as offices and restaurants, and large-scale buildings. These offer maximum effectiveness, comply with the strictest environmental standards and meet the most avant-garde construction requirements of our time. At Panasonic we know what a great responsibility it is to install heating and cooling systems. Because offering you the best solutions in heating and cooling matters



& Cooling

heating and cooling sector.

transcending borders.



# RELIABILITY FACTS

## Reliable comfort comes from reliable technologies

Today, Panasonic air conditioners have earned widespread acclaim throughout the world. A rugged design ensures that the air conditioner will continue to keep the room comfortable, and operate troublefree for many years. Panasonic believes this is the true value of an air conditioner. And this is why we subject them to a wide range of stringent tests.



Long-term Durability Test The air conditioner's main mission is to provide a level of durability that allows it to operate stably for years. In order to achieve this, we conduct an accelerated test for 10,000 hours of continuous operation. The results of this test, which is conducted under conditions that are much more severe than actual operating conditions, prove the rugged strength of Panasonic air conditioners.

#### Durability. Long Time Continuous Operation Simulation.



**Compressor Disassembly Test** After a test with 10,000 hours of continuous operation, we remove the compressor from a randomly selected outdoor unit, disassemble it, then examine the internal mechanisms and parts for possible failure. Panasonic air conditioners continue to provide their designed performance for many years even after prolonged operation under harsh conditions.



#### **Operating Test in Harsh Conditions**

In addition to normal operating conditions, an operating durability test is conducted in a high-temperature, high humidity test chamber at a temperature of 55 °C. For use in cold climates, the test is also conducted in a low temperature test chamber at -20 °C. This test assures that the oil inside the compressor will not freeze during use and interrupt operation.



Checking the oil inside the compressor under extremely cold conditions.



#### Waterproof Test The outdoor unit, which is subject to rain and wind, is

provided with IPX4 waterproof compliance. Contact sections on printed circuit boards are also resin-potted to prevent adverse effects caused by an unlikely exposure to droplets of water.





#### **Shock Resistance**

Panasonic simulates impacts, vibrations and other environmental conditions that air conditioners might be subjected to during transport. We promise that the quality and performance at the time of the final product inspection are unchanged when the product reaches the user's home.

#### No Breaking. When Dropped onto Sides or Corners.



#### Drop Test

Even with the large impacts that may occur due to improper handling during transportation, the product packaging has been strengthened to prevent it from being damaged. In addition to conventional vertical dropping, more severe conditions in which the sides or corners hit the floor first are carefully tested to ensure that the products rigidity and shock-absorbing materials work to prevent problems.



Vibration Test Preventing damage that would hinder the product's performance due to vibration during transport is a major role of the packaging. Panasonic confirms that the product operates properly even after applying vibrations in both horizontal and vertical directions.



Warehouse Storage Test During distribution, products may be subjected to extended warehouse storage under unfavourable conditions. To simulate these conditions, we place a weight equal to a stack of five product packages on top of the test package, and leave it in that condition in a room at a temperature of 27°C and a humidity level of 85%. Then, the product is checked for proper operation.



#### Comfort

Air conditioners should keep each person in the room comfortable without making their presence known. They should work totally in the background, using their strength to create and maintain a relaxing environment. We build this hidden strength into our air conditioners, and test them repeatedly from this viewpoint.



#### Noise Test

The operating noise of the indoor and outdoor units is measured in an echo-free chamber. The noise test verifies that the operating noise is low enough so that the product operation will not disturb daily activities including conversations and sleep.



Sunshine simulation.

Silence. That Does Not Disturb You.



Amenity Test

An actual air conditioner is operated in a test room that simulates an ordinary living room. Conditions such as the amount of sunlight entering the room from outside are changed while measuring a variety of parameters, such as cooling speed, cooling efficiency, and temperature and humidity differences throughout the room. This makes it possible to confirm whether the air conditioner is operating at its designed performance level under ordinary conditions.





EMC (Electromagnetic Compatibility) Test This test determines whether electromagnetic waves emitted during operation are sufficiently low to prevent adverse effects, i.e., electrical noise, on signals such as TV and radio broadcasts.



Remote Control Dropping Test Because the remote control is the main interface between people and the air conditioner, it is naturally subjected to frequent impacts such as drops and bumps - when it is passed from person to person during normal operation. Panasonic drops the remote control from a height of 1.5 metres at various angles to ensure that no problems in basic performance will result from accidental dropping.



#### World Standard Quality

Over the years, Panasonic air conditioners have continued to offer the highest possible quality with the lowest environmental impact worldwide. Naturally, the fundamental production principles that are common to all Panasonic products apply to air conditioners as well. The fact that these principles actively support every product, rather than simply serving as slogans, is the result of the endless repetition of challenges and trial-and-error efforts that are conducted at our production bases all over the world.



Reliable Parts with Major Standards Approval Panasonic air conditioners comply with all of the major standards that maintain high reliability in the countries and regions where they are marketed. To ensure this, we conduct a variety of tests to examine the quality of materials used in parts.



## Quality. Is at the Core of All Our Manufacturing.



RoHS/REACH Compliant Parts All parts and materials comply with RoHS/REACH, Europe's worldleading environmental regulations. Stringent inspections of more than 100 materials are conducted to ensure that no hazardous substances are included during parts development.



Sophisticated Production Process The air conditioner production line uses advanced, state-of-the-art factory automation technologies to produce products with higher reliability. Products are efficiently manufactured with high and uniform quality.



Eco Activities

Panasonic has set up eco ideas factories around the globe. While developing and manufacturing energy-saving products based on original environmental technologies, these factories reduce CO2 emissions from manufacturing processes and conduct regional-based environmental communication activities to contribute to both the global environment and the local communities that they serve.



## Panasonic Europe announces Sustainability Declaration

Panasonic establishes new targets for the business' environmental performance and CSR initiatives

#### **Best Global Green Brand 2013**

We were recently awarded Interbrand's 4th Best Global Green Brand 2013 – the highest of any consumer electronics brands. This is the result of our commitment to energy efficient products, reduction in  $CO_2$  emissions, kids school 'eco learning' programme and much more.

#### Sustainability Declaration. Berlin, Germany, 4th September 2013

Panasonic Europe announces today its new Sustainability Declaration for Europe and CIS, extending its current initiatives to ensure all business activities lead to a more sustainable society.

The Sustainability Declaration unites Panasonic's new brand direction towards 'A Better Life, A Better World' with a series of environment and CSR initiatives contributing to the progress and development of society. Recognising the impact on the environment and society through its products and practices, Panasonic aims to deliver on specified targets by March 2016. The European Sustainability Declaration is in accordance with Panasonic's Global Sustainability Policy, which has been rolled out globally in recent weeks.

# We aim to realize a lifestyle with virtually zero CO<sub>2</sub> emissions throughout the entire home

Solar Power Generator HIT solar cells achieve maximum output even on smaller roofs. These solar modules are 100% emission free, have no moving parts and produce no noise. Home AV Panasonic offers a wide range of energy saving home equipment to fulfil a sustainable and comfortable lifestyle.

Heat Pump The Aquarea Heat Pump is part of a new generation of heating systems that use a renewable, free energy source: air, to heat or cool the home and to produce hot water.

#### Fuel Cell

The Panasonic Fuel Cell is an energy-creating device, which generates electricity and heat at the same time with chemical reaction between hydrogen extracted from natural gas and oxygen.

> Solar Power Generator Our mobility space can be connected to our HIT solar panels – with help of our storage batteries.

#### LED Lamps

Expertise gathered over years of research and development has enabled Panasonic to provide a renaissance in energysaving home LED lighting – with our LED Nostalgic Clear lamp.

#### Home Appliances

Panasonic is globally committed to develop products which are environmentally friendly. Panasonic delivers home appliances such as refrigerators and washing machines that incorporate the latest energy-efficient technology.

Storage Battery

The battery stores the energy generated by a combination of solar power and fuel cells to ensure a constant supply of electricity on demand.

## Exemplary sustainable projects



#### Fujisawa Sustainable Smart Town

Homes will employ the full range of Panasonic's most advanced systems for energy production, storage and management.

In this project, a new concept and process will be adopted to build the town by designing spaces first with a primary focus on services based on people's lifestyles and creating an optimal smart infrastructure. In Fujisawa SST, Panasonic will offer its unique solutions from an Eco & Smart perspective. With bringing energy to life for residents as the town concept, we will provide services that enhance people's lives with photovoltaic power, security, mobility, community, and healthcare.

The unparalleled town building, where as many as 1,000 families will live, will serve as a new business model both within Japan and overseas.





# Panasonic joins Smart Electric Lyon consortium

What is Smart Electric Lyon?

Smart Electric Lyon is a project that looks at electricity consumption as a key part of the building energy solutions of tomorrow. The project aims to develop a wide range of innovative facilities and services through real-life experiments to test energy saving technologies and to measure how consumers can control energy consumption.

This experiment, unprecedented in scale in Europe, will be conducted for four years in more than 25,000 homes, businesses and communities of Grand Lyon. It is intended to test innovative solutions that will consume less and better.



The connected home of the future

Panasonic will provide the project with a variety of its energy efficient heating and cooling products, including the Aquarea Air Source Heat Pump – a super-efficient system for providing heating and / or cooling facilities, as well as the production of domestic hot water. These heat pumps are especially equipped with connectivity solutions from Panasonic to ensure the systems are easy to use, and collect the vital, accurate data. The company will also integrate other home equipment solutions such as LED white lighting products to optimize the overall energy management of the project's properties. This project is particularly apt for Panasonic, as heating and hot water occupy a prominent place in household energy consumption. Panasonic plans to make its European and French resources available for Smart Electric Lyon. The company has involved for the project a dedicated and experienced R&D team from Panasonic's European technical centre in Frankfurt.





# PRO Club: the professional website of Panasonic

Panasonic has an impressive range of support services for designers, specifiers, engineers and distributors working in the heating and cooling markets.

Panasonic announces a new initiative for all professionals involved in the heating and cooling business - the Panasonic PRO Club

(www.panasonicproclub.com). Panasonic PRO Club is the online tool which makes your life easier! You just have to register and a lot of functionalities are freely available to you, where ever you are, from your computer or smart phone!

- Print catalogues with your logo and your address
- Download the latest Aquarea designer to define your system and select the good Aquarea Heat pump.
- Calculate the specs of the Aquarea Air fan coil based on the parameters of your system
- Get Documents of conformity and all other documents you may need
- Download all the service manuals, end user manuals and installation manuals
- Know what to do with error codes
- Find out about the latest news first
- Register for training and take part in online training

#### **Highlighted Features**

- Extensive library of resources
- Tools & Apps for end users. Check availability in your country:
  - My Home: sizing wizard for domestic and A2W range
- My Project: Contact form to Panasonic team
- iFinder: Lists of installers displayed by postcode
- Special offers & promotions
- Training PRO Academy
- Catalogues (Commercial documentation)
- Marketing (Images in high resolution, advertisements, deco guidelines)
- Tools (Professional software, sizing tools...)

#### **NEW Highlighted Features**

- NEW! Installers customize leaflets in PDF format with their logo & contact details
- NEW! Energy label generator. Download energy labels of any device in PDF format
- NEW! Heating calculator demand
- NEW! Noise calculator for outdoor unit
- NEW! Aquarea Radiator calculator
- NEW! Error Code Search by error code or unit ref. Compatible with smartphone and tablet computer
- NEW! Revit / CAD Images / Spec texts
- $\cdot$  NEW! Access to Pananet, online library of technical documentation
- NEW! Download Documents of Conformity and other Certifications
- NEW! Commissioning online



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ADUAREA - PAPAMY120513205



NERG

Read



Panasonic PRO Club is fully compatible with Tablet computer and smartphone



#### The Panasonic PRO Academy opens its doors

Panasonic takes its responsibility to its distributors, specifiers and installers seriously and has developed a comprehensive Training Programme. The Panasonic Pro-Academy encompasses the traditional hands-on approach, as well as embracing today's technology to offer an eLearning facility available 24 hours, 7 days a week! New training courses cover three levels. Design, installation, and

commissioning & trouble-shooting. Training courses include:

- Domestic applications Air to Air
- Aquarea air source heat pumps
- VRF ECOi

The courses are offered on site at Panasonic's premises across Europe as well as via the Panasonic ProClub eLearning site. The Training Centres display Panasonic's latest product range and give delegates an opportunity to get hands-on experience with the latest controllers, indoor and outdoor units from the VRF ECOi, Etherea, GHP and Aquarea ranges.





# Aquarea Designer

Panasonic provides bespoke software helping system designers, installers and dealers to very quickly design and size systems, create wiring diagrams and issue bills of quantities at the push of a button.

AQUAREA DESIGNER

This program allows HVAC designers, installers and distributors to identify the correct heat pump for a particular application from Panasonic's Aquarea range, calculate the savings compared to other heat sources and very quickly calculate  $CO_2$  emissions.

Using Panasonic's Aquarea Designer, projects can be developed simply and easily, by either using the Quick Design or Expert Design options. Each allows the user to build up the project data in a simple step-by-step process and choose to output reports (in either Quick or Large formats) as HTML files or as print-outs. To create these useful reports, project data is input, including:

- Heated area
- Heating requirement
- Heating flow and return temperatures
- Climate data (from a simple drop-down menu) including outdoor temperature
- Type of hot water tank, storage capacity and hot water target temperature.

## -AQUAREA

#### Aquarea Designer also means saving

Aquarea Designer will calculate the project's energy costs in terms of hot water, heating and pumping. It will show the equipment running times and calculate the COP (coefficient of performance). It then allows the designer to show clients a comparison with other equipment options such as heating by conventional gas-fired boilers, oil systems, wood, standard electric heating and electric night storage heaters. This compares running costs, initial investment costs and maintenance costs. The comparison can also be made for CO<sub>2</sub> emissions and savings.







#### PRO Club: the professional website of Panasonic

Panasonic announces a new initiative for all professionals involved in the heating and cooling business - the Panasonic PRO Club (www.panasonicproclub.com). This exciting new portal provides distributors, installers, engineers and specifiers with a direct communication channel with one of the industry's major manufacturers. The website contains a wealth of information from the latest versions of Panasonic's Aquarea and Etherea Design Software, to Technical Documentation, Catalogues and Images for the company's wide range of heating and cooling systems - all in an easy to navigate and use website. Also, registered users will be able to access news regarding special promotions and take advantage of these offers, as well as access helpful business advice such as ideas and guidelines for showroom decoration or van livery featuring Panasonic logos and display material.

#### Donwload on www.panasonicproclub.com

or connect simply with your smartphone to the proclub using this QR:



# **ENERGY SAVING**

Inverter+ System. The A Inverter+ system provides energy savings of up to 30% compared to non Inverter models. Both you, and nature, wins!



Refrigerant R410A / R407C. R410A / R407C offers optimal performance and involves no environmental cost since it does not harm the ozone layer.



Up to -20°C In Heating Mode. The Heat Pumps works in heat pump mode with an outdoor temperature as low as -20°C.

# HIGH CONNECTIVITY



Renovation. Our Aquarea heat pumps can be connected to an existing or new boiler for optimum comfort even at very low outdoor temperatures.



#### Solar Kit. For even greater efficiency, our Aquarea heat pumps can be connected to photovoltaic solar panels with an optional kit

#### Domestic hot water

DHW With Aquarea you can also heat your domestic hot water at a very low cost with the optional hot water cylinder.



#### Connectivity.

The communication port is integrated into the indoor unit and provides easy connection to, and control of, your Panasonic heat pump to your home or building management system.



Internet Control is a next generation system providing a user-friendly remote control of air conditioning or heat pump units from everywhere, using a simple Android or iOS smartphone, tablet or PC via internet.



5 Years Warranty. We guarantee the compressors in the entire range for five years.



#### Aquarea's new Air To Water Heat Pump for residential applications

Offering capacities from 3kW all the way through to 16kW, the Aquarea Heat Pump Range is the widest on the market, ensuring a system is available, whatever your heating and cooling needs. Suitable for new build and refurbishment projects, the systems are cost-effective and environmentally friendly.





\* Not all products certified. As the certification process is on-going and the list of certified products constantly changing, please check for latest details on the official websites.



# NEW AQUAREA AIR TO WATER HEAT PUMP

#### Panasonic's new Aquarea Air To Water system can work in outdoor temperature even at -20°C

Panasonic's new Aquarea system, based on high-efficiency heat pump technology, not only heats your home and hot water, but also cools your home in summer with incredible operating performance. This creates perfect comfort whatever the weather conditions, even at outdoor temperatures as low as -20°C. Panasonic new heat pumps are designed in response to the new demand for low consumption housing, with high efficiency and low running costs.





# Aquarea the best seasonal efficiency

# Panasonic's new Aquarea air to water system can work in outdoor temperature even at -20°C

Panasonic's new Aquarea system, based on high-efficiency heat pump technology, not only heats your home and hot water, but also cools your home in summer with incredible operating performance. This creates perfect comfort whatever the weather conditions, even at outdoor temperatures as low as -20°C. Panasonic new heat pumps are designed in response to the new demand for low consumption housing, with high efficiency and low running costs.

#### **Impressive Energy Savings**

Panasonic's Aquarea Heat Pump provides savings of up to 80% on heating expenses compared to electrical heaters.



The Panasonic Aquarea Heat Pumps are designed and produced by Panasonic and not by other companies.

#### Up to 80% energy savings\*

At the forefront of energy innovation, Aquarea is resolutely positioned as a "green" heating and air-conditioning system. Aquarea is part of a new generation of heating and air-conditioning systems that use a renewable, free energy source – the air – to heat or cool the home and to produce hot water. The Aquarea heat pump is a much more flexible and cost-effective alternative to a traditional fossil fuel boiler.



#### Why air source heat pumps?

- Reduced heating bills and maintenance costs
- Savings of up to Euro 1,000 a year are possible
- Reduce your carbon footprint
- Simple to integrate into most heating systems
- Energy efficient alternative to oil, LPG and electric systems
- Highly compatible with other energy efficient energy sources eg solar panels

"We expect to save around 1,000 € a year on fuel costs and we've been able to get rid of a large ugly oil tank in the garden thanks to the new Aquarea."

Aquarea Customer, Surrey<sup>1</sup>



1) Information provided by Aquarea customer, August 2012.

#### Air source heat pumps – Quick facts

- Provides sustainable heating, cooling and hot water for your home
- 30%-40% reduction in annual energy bills
- Ideal for properties without access to mains gas
- Operates even in freezing temperatures (-20°C).

AQUAREA

**UP TO 80%** 

ENERGY SAVINGS

- Externally positioned saving valuable internal living space
- Proven technology from Panasonic and already well established in other EU countries

#### "Green" High-efficiency heating with Panasonic's new Air to Water Heat Pump Systems

Panasonic's Aquarea Heat Pump provides savings of up to 80% on heating expenses compared to electrical heaters. For example, the Aquarea 5kW system has a COP of 5,08. This is 4,08 more than a conventional electrical heating system which has a maximum COP of 1. This is equivalent to an 80%\* saving. Consumption can be further reduced by connecting photovoltaic solar panels to the Aquarea system.



POWER OUTPUT / HEATING CAPACITY (kW)

\* Up to 80% of the heat produced by a heat pump is free, since it comes from the outdoor air. Rating conditions: Heating: Inside air temperature: 20°C Dry Bulb / Outside air temperature: 7°C Dry Bulb / 6°C Wet Bulb. Conditions : Water input temperature: 30°C Water output temperature: 35°C

# Panasonic has designed a completely new line-up to offer the best to our customers

# There are several types of heat pump available:

- The Mono-Bloc system: This only has an outdoor unit. The installation doesn't require a refrigerated connection and is only connected to the heating and/or hot water.
- The Bi-Bloc system: The system, separate indoor and outdoor units, connects to the heating and/or hot water system.

A wide range from 3 to 16kW, Single and Three Phase, Mono-Bloc and Bi-Bloc. 3 Versions:

- Aquarea High Performance: From 3 to 16kW
- Aquarea T-CAP: From 9 to 16kW
- Aquarea HT: From 9 to 12kW



# Three Aquarea solutions



#### Aquarea High Performance for low consumption houses. From 3 to 16kW

For a house with low temperature radiators or under-floor heating, our high performance Aquarea HP is a good solution. This solution can work as a stand-alone unit or can be combined with an existing gas- or oil-fired heating system depending on requirements. This new solution is ideal for low consumption homes.

1) For WH-MDC05E3E5



#### Aquarea T-CAP. From 9 to 16kW

If the most important aspect is to maintain nominal heating capacities even at temperatures as low as -7°C or -15°C, select the Aquarea T-CAP. This ensures that there is always enough capacity to heat the house without help from an external boiler - even at extremely low temperatures.

Aquarea T-CAP always has high efficiency and high heating capacity even at extremely low temperatures. With Aquarea T-CAP, you can always enjoy high savings.



#### Aquarea HT. From 9 to 12kW

For a house with traditional high-temperature radiators (such as cast iron radiators), the Aquarea HT Solution is the most appropriate as the Aquarea HT can work in output water temperatures of 65°C even at outdoor temperatures as low as -20°C. Aquarea HT is able to deliver hot water to 65°C with the Heat Pump alone.



#### Aquarea outdoor air source heat pumps

Panasonic has developed an extensive range of air-to-water heat pumps designed to efficiently convert free air into sustainable heating and hot water. Fitted externally to your home and designed to operate in all year round weather conditions (-20°C), it's the smart alternative to oil, LPG and electric heating systems.



#### Aquarea Heat Pump Manager

This new generation of smart controllers for eco-efficient heating, features our versatile stand-alone controller not only for our heat pump systems, but also your gas, oil boiler and all other devices installed on your heating system.



Heating control App for smart phone, tablet or computer The heating control App allows you to control the heating and hot water system via your smart phone, tablet or computer with ease, whether at home or away

The heat pump can be also connected to house management system using KNX, Modbus or Zig Bee interfaces.



#### Super High Efficiency: PAW-TE20/30/50E3HI

- High efficient tank solution: specially designed to improve the efficiency of the sanitary hot water production.
- HI lineup:
- low energy losses
- high exchange surface for high efficiency and short time to heat up the water



#### High efficient radiators for heating and cooling

- High efficient radiators working with water at 35°C.
- · No need for two kits if both floor heating and radiators are required.
- As the product is efficient, it opens the possibility to also

provide cooling while still meeting construction requirements. Panasonic offers a cooling mode within its heat pump range for low consumption homes



Heat Pump + HIT Photovoltaic solar panel

Photovoltaic solar panels: the best solution for big savings. Combining photovoltaic solar panels with your heat pump can help to further reduce your electrical consumption and CO, emissions. Additionally, with the unique HIT photovoltaic solar panel technology from Panasonic, you can produce more electricity per square metre, helping you to increase your energy savings still further.





# New High Performance for low consumption homes.

#### Maximum savings, maximum efficiency, minimum CO<sub>2</sub> emissions, minimum of space.

Panasonic has designed the new Aquarea Bi-Bloc and Mono-Bloc heat pumps for homes which have high performance requirements.

Whatever the weather, Aquarea can work even at -20 °C! The New Aquarea is easy to install on new or existing installations, in all types of properties.

# New High Performance helps you to meet strict building requirements and reduce building costs

The heating and production of hot water have a very important impact on the energy consumption of a house. Efficient Panasonic heat pumps can help to significantly reduce the energy consumption of the house.

Total energy consumption of a conventional house, compared to the energy consumption with Panasonic heat pumps





#### Key points of the line-up

- A-Class pump significantly reduces the energy consumption



New A class pump with Constant water flow (Dynamic pump control) for 5kW Mono-Bloc

Comparison of energy consumption - Standard pumps vs A class pump \* Based on German market: Assuming Standard pump may vary depending on consumption and energy cost.

- A Class pump adapts water pressure according to demand, reducing energy consumption, noise on the valves, and makes installation easy.
- No Backup heater needed to maintain the capacity at -15°C, high efficiency guaranteed even at -15°C
- Many new remote control functions added: Auto mode, holiday mode, show power consumption

HIGH PERFORMANCE PUMPS ARE ALSO HIGHLY EFFICIENT



# With a Panasonic heat pump, there is no need to oversize the heat pump to reach the required capacity at low temperatures.

- Dedicated software for low consumption houses which allows the heat pump to produce hot water at 20°C. This is needed during the seasons, when a little heating is required
- No need for an additional expansion vessel, as the unit already has a 6l expansion vessel
- No buffer tank required as the Panasonic heat pump has an inverter compressor which can regulate the capacity. (Please check on the service manual the minimum volume of water needed on the circuit)
- 3kW electrical heater is included on the heat  $\operatorname{pump}$
- Panasonic heat pumps can work in outdoor temperatures as low as -20°C and guarantee the capacity without backup heating down to -15°C
- Panasonic heat pumps are very quiet and have a night mode program for even lower noise. See noise calculator on www.panasonicproclub.com

# Special attention has been given to noise levels - Panasonic created a night mode to reduce the noise when it's needed.



Capacity is stable even at -15°C, no need to 5.0kW 5 **N**kW oversize the heat pump 5kW WH-MDC05F3E5 High flexibility with Capacity inkW Panasonic Inverter Capacity needed to heat the house compressors High performance even at part load -15°C -7°C +2°C +7°C Outdoor temperature









# New T-CAP for extremely low temperatures. Install A Class pump: Industry top class energy-saving!

**AQUAREA T-CAP** 

The whole T-CAP line-up can replace old gas or oil boilers, and in a new application with under floor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating or cooling control and management.

- T-CAP stands for Total Capacity. This line-up is able to maintain the same nominal capacity even at -15°C without the help of an electrical booster heater.
- High heating capacity even at low ambient temperatures.
- Maintains capacity of 16 kW until -15°C outdoor temperature. Adding many new functions: Auto mode, Holiday mode, power consumption display.

#### The New T-CAP range has extended with the addition of the 16kW pump

The new 16kW maintains full capacity of 16kW even at outdoor temperatures down to -15°C.

The 16kW fits perfectly to retrofit houses, as well as to commercial applications to heat and cool the applications and also to provide sanitary hot water.

#### New Aguarea T-CAP. High capacity improvement at low ambient & high efficiency

#### Enhance larger capacity (16kW)

More Energy saving with A Class pump.

#### Adding new functions

Auto mode, Holiday mode, Displays power consumption, New de-ice control, Concrete Dry mode, Lock cooling mode and Pump speed control.

#### **Applications**



manage bivalent

Manager.

com

and existing gas or oil

Further information on

www.panasonicproclub.





#### For retrofit houses For commercial Replace easily expensive applications

gas or oil boilers for high Wide range of capacities efficient 16kW T-CAP or now covered - from 9kW to 45kW with the Heat Pump installations (heat pump Manager. Also you are able to connect up to five heat boiler) with the Heat Pump pumps on cascade with the Heat Pump Manager.

For heating and cooling mode	For heating and sanitary hot water
The 16kW model is able to	Efficient domestic hot
heat the water at 55°C and	water tanks allow large
can work even when the	storage for high
temperature is as low as	consumption of hot wate
-20°C. Cooling operation	(for example Jacuzzi or
can be activated on the	bathtub). All our tanks
remote control to cool	have an anti-legionella
water up to +5°C.	protection with a backup
	heater of 3kW.

#### Best efficiency compared to other heating Efficiency systems

Panasonic heat pumps have a maximum COP of 4.85 at + 7 °C which makes them much more efficient than fossil fuel fired boilers, gas boilers and electrical heaters.



#### A Class pump. More Energy saving

#### Aquarea T-CAP maintains the nominal capacity until -15°C

The T-CAP line-up is able to maintain the same nominal capacity even at -15°C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiencies, whatever the outside or the water temperature. Panasonic has now extended the range with the new three phase 16kW.

kW Heating capacity 18 16 14 12 10 +7°C +2°C -15°C -7°C Outdoor temperature (heating water at 35°C) T-CAP 16kW High connectivity 16kW

- Backup heater capacity can be selected (3/6/9kW)
- Cooling mode activation possible by software\*
- \* This activation can only be done by service partner or installer



COMPARISON WITH COMPETITORS







Panasonic Aquarea HT is super efficient even at low temperature.

Heating Capacity of a 9 kW HT (WH-SHF09F3E5)

# Aquarea HT ideal for retrofit: green energy source works with existing radiators

Replace a traditional heating source (such as oil or gas) with Aquarea HT, but keep existing old style radiators for minimum disruption to the home. From 9 to 12kW. For a house with traditional high-temperature radiators (such as cast iron radiators), the Aquarea HT Solution is the most appropriate as the Aquarea HT provides output water temperatures of 65°C even at outdoor temperatures as low as -15°C. Aquarea HT is able to deliver hot water to 65°C with the Heat Pump alone.

# W 9 8 9 7 9 6 9 5 9 4 9 3 9 2 9 1 9 +7°C +2°C +2°C -7°C Heating capacity of a 9 kW HT

#### **COP Coefficient of Performance**





#### Aquarea HT: High savings and low CO,

The results of replacing traditional heating systems with Aguarea HT are clear: lowest running cost and lowest CO, emissions. Panasonic heat pumps are much more efficient than gas boilers and help you to reach your house energy targets easier.

#### Yearly savings with Aquarea HT



\* For a 170 m<sup>2</sup> house and 40 W/m<sup>2</sup> energy losses in central Europe Conditions, outside minimum conditions -10°C.

#### **Easy installation**

Air source heat pumps are simple to install. They do not require a chimney, gas connection nor oil tank. All that is required is a standard power supply connection. Aquarea heat pumps are also quick to start up.

## Panasonic Aquarea HT is super efficient even at low temperature

#### **Smart Bivalent operation**

Thanks to Aquarea HPM (Heat Pump Manager), it is possible to combine different heat sources and use the most appropriate source, depending on user's preferences. This smart control will



decide which is the best source to use anytime.

Thus, if it is necessary to combine gas heater, oil with heat pump, Aquarea HPM is simply the best solution.

#### Heat Pump + Boiler Management with DHW with PAW-HPM12ZONELCD-U





#### New DHW Tank with buffer Tank PAW-TD20B8E3-NDS

Designed for retrofit applications, the new DHW 200l tank with a 80l buffer tank is particularly suitable for fast integration on an existing installation. Panasonic has developed a New tank with 80l Buffer tank and 200l Sanitary hot water cylinder. This tank includes a 3-way valve and an A Class pump. Easy to install, nice looking, high efficiency for DHW production and for heating.







# Aquarea commercial solutions for best savings

Efficient Panasonic heat pumps can help to significantly reduce the energy consumption of your business.

Recent improvements to air source heat pump technology, including compact single unit systems, can provide an ideal housing and commercial solution. They offer space saving, energy-efficient heating and can be easily adapted for installation in flats, houses and commercial premises. And for businesses producing heat, such as restaurants, installing an Aquarea heat pump system can also use this wasted heat to improve energy efficiency further.

#### "Green" High-efficiency heating with Panasonic's new Air to Water Heat Pump Systems

Panasonic's Aquarea Heat Pump provides savings of up to 80% on heating expenses compared to electrical heaters. For example, the Aquarea 5kW system has a COP of 5,08. This is 4,08 more than a conventional electrical heating system which has a maximum COP of 1. This is equivalent to a 80%\* saving. Consumption can be further reduced by connecting photovoltaic solar panels to the Aquarea system.



POWER INPUT / ENERGY CONSUMPTION POWER OUTPUT / HEATING CAPACITY (kW) \* Up to 80% of the heat produced by a heat pump is free, since it comes from the outdoor air. Rating conditions: Heating: Inside air temperature: 20°C Dry Bulb / Outside air temperature: 7°C Dry Bulb / 6°C Wet Bulb. Conditions : Water input temperature: 30°C Water output temperature: 35°C



Easy connection to existing system

- Fan Coils
- Floor Heating
- 4 way and 2 way convectors
- Domestic hot water tanks

#### Key points:

Key points:

• Easy control

of the system

• Fast return of investment

- High efficiency
- Very good part load management
- Cascade management for higher durability of the system



#### **Restaurant with Aquarea**

Air Curtain

If you look for savings on you business, Aquarea is the right choice! Ideal for heating, cooling and for production of big quantities of hot water at 65 degres, Aquarea have a extremely quick return on investment and a low CO2 footprint.

5 Aquarea T-Cap Heat Pump 16kW on cascade mode

High Efficiency Aquarea Hidrokit

Buffer Tank of 1000 L

Super High Efficiency Tanks

From 200L to 500L for domestic hot water





#### Aquarea All in One Bi-Bloc (Inverter)

# New All in one\*

#### New All in One hydromodule + 200l tank

Panasonic has developed a highly efficient solution, easy to install.

Furthermore, Panasonic has developed a range of controllers which allows the control of 2 heating zones, bivalent and cascade systems.

#### Line up

3, 5, 7, 9kW with 12, 14, 16 kW Single Phase and 9, 12, 14, 16kW Three Phase.

\*Preliminary design. Significant changes may occur.



10 YEARS WARRANTY OF THE STAINLESS STEEL TANK

-AQUAREA

#### **High efficiency solution**

The best of Panasonic:

- Best stainless steel tank with high insulation to reduce energy losses
- High exchange surface to increase efficiency
- Best performing Aquarea hydraulic module to heat the water.

#### **Connectivity Possibilities**

3 Remote controls can be installed:

- New Remote control. New function for customer:
- Auto Mode for Heating and Cooling mode
- How to show Energy Consumption
- How to set Holiday Mode
- Heat pump Manager for more then 600 installations possible (as 2 zone control, Bivalent, etc.)
- Heat pump Manager with touch screen LCD.

All In One Tank+indoor unit	Outdoor unit connection
WH-ADC0309G3E5	WH-UD03EE5
	WH-UD05EE5
	WH-UD07FE5
	WH-UD09FE5
WH-ADC1216G6E5	WH-UD12FE5
	WH-UD14FE5
	WH-UD16FE5
	WH-UX09FE5
	WH-UX12FE5
WH-ADC0916G9E8	WH-UD09FE8
	WH-UD12FE8
	WH-UD14FE8
	WH-UD16FE8
	WH-UX09FE8
	WH-UX12FE8
	WH-UX16FE8





\* Preliminary design. Significant changes may occur.

#### Easy installation

The pipings are sited on the bottom of the heat pump to make the installation easy and invisible.

A 15cm gap under the unit provides space to connect the pipes.

To make the installation even easier, a piping kit is available in order to pre mount the quide and fix it on the wall during the construction phase of the house.





**Mounting system** 





#### Accessories

Flexible piping kit with pre mounted element. PAW-FP-WMP-1: Flexible pipings and wall mounting plate for all in one.





## New remote control. New features

For 2014, Panasonic has introduced a new remote controller to improve performance, enhance comfort and deliver maximum savings.

#### New function for installer

- Floor heating concrete dry mode
- How to Lock Cool Mode
- Class A Pump management with 7 speeds

Floor heating concrete dry mode: Allows slow increase in temperature of floor heating via software.



**Heating and Cooling Mode:** Authorized service partner or Authorized installer can enable the cooling mode through a special operation via the remote controller on site.

Pump with 7 speeds: Pump speed can be selected on the remote control.

#### New Remocon changing point

#### Better user interface:

- 1. Adding Holiday Mode
- 2. Adding Power Consumption

#### LCD display:

- 1. Expand LCD display to show mode on left and right side
- 2. Adding AUTO mode and remove defrost display (using heat blink)
- 3. Change not available into EXT SW  $\ensuremath{\mathsf{OFF}}$
- 4. Adding kWh and Hr

#### Button:

- 5. Adding holiday button6. Change force and error reset position

#### New function for end user

- Auto Mode for Heating and Cooling mode
- Show Energy Consumption
- Set Holiday Mode



5

dЯУ

**Auto Mode:** Automatically changes from heating to cooling depending on outdoor temperature.

**Energy Consumption:** Displays the heat pump's energy consumption, split by heating, cooling and domestic hot water, and shows total consumption figure.

**Holiday Mode:** Enables the system to resume at the preset temperature after your holiday.



## New indoor unit design

- New A-class pump with 7 speeds
- Expansion vessel of 10L
- Selectable back-up heater (3/6/9kW)



6 L for the 3kW, 5kW and 6kW.
 2) 3kW for 7 and 9kW, 6kW for 12, 14, 16kW Single Phase, 9kW for 12, 14, 16kW Three Phase.

Inverter+ compressor for even greater efficiency

Panasonic has clearly demonstrated it status as leaders in this field with over 200 million compressors supplied and the excellent quality and reliability of its heat pumps. With a Panasonic Inverter+ compressor, you can save up to 30% energy compared to a traditional system with no inverter. With a Panasonic Inverter compressor, the heat pump is always producing heat with the maximum of efficiency and adapting the capacity to the element.

101 EXPANSION VESSEL 3/6/9KW ELECTRIC

ELEMENT





The advantages of inverter heat pumps. Comparing Inverter and non-Inverter heat pumps.







# Heat and produce Domestic Hot Water for free

Panasonic has developed an innovative algorithm for its HPM (Heat Pump Manager) which drastically improves the Heat Pump's use of self-generated electricity from connected Photovoltaic panels. The Heat Pump will take the electricity generation by the solar system into consideration for the heating system and the domestic hot water production, without reducing confort in the house.

The HPM (Heat Pump Manager) activates the heat pump based on:

- Energy produced by the photovoltaic system.
- The consumption requirement of the house, eg if a washing machine is working, the heat pump will not draw electricity from the photovoltaic system to avoid net increases on overall energy consumption and hence maximise efficiency.
- Heating demand of the house (in case of high electricity production, the house can be overheated by 1 or 2 degrees, or reduced by 1 or 2 degrees if low production of electricity).

As the production of domestic hot water is linked to the level of electricity generated by the solar system, if this was too low, the heat pump would start a normal process to maintain maximum comfort in the house for a given set time (defined by the user).

#### Key points

- Increases the amount of self-consumed electricity from the solar system up to 120%.
- Control the heat pump's energy consumption according to the output of electricity from the PV considering the electric energy consumtion requirement of the house.
- Innovative algorithm balancing the consumption of the heat pump and the comfort in the house based on the outside temperature and the energy demand of the building.
- Easy configuration of the Heat Pump manager system with the PV system.

\*Results of simulations for new housing (see next page)

#### **Comparison on New housing** Increase usage of self production by: 120%

The HPM could increase the energy consumption of the heat pump coming from the Photovoltaic from 352 kWh to 775 kWh a year. Results of simulations:

#### New building Frankfurt (non-optimized) Old building Frankfurt (non-optimized) New building Frankfurt (optimized-eco) PV Production (5.630 kWh/a) PV Production (5.630 kWh/a) 73% (4,129 kWh/a 66% (3,706 kWh/a 27% [1 502 kWh/a] 34% (1 974 kWh/a) (Energy) To Grid (Energy) (Energy) To Grid To Grid (4,129 kWh (3,706 kWh) (3,955 kWh) 33% (1,149 kWh) 33% (1,149 kWh) 33% (1,149 kWh) 14% (352 kWh) 32% (775 kWh) (2,351 kWh) 2,351 kWh) (2.351 kWh) 86% (2,116 kWh) 62% (1,661 kWh) Consumption of the HP Consumption of the tion of the HP Consumption of the Usage of energy in the house Usage of energy in the house Conditions Conditions From Grid (Energy) (Energy) Conditions Installed PV Capacity: 5.64 kWp Installed PV Capacity: 5.64 kWp Household Consumer Demand: 3,500 kWh/a From Grid From Grid (6.060 kWh) (4,467 kWh) Household Consumer Demand: 3,500 kWh/a (4,012 kWh) Hotwater Demand: 200 l/day @ 45 °C Hotwater Demand: 200 l/day @ 40 °C Insulation Standard (Heat demand): 35 kWh/m<sup>2</sup> Insulation Standard (Heat demand): 35 kWh/m<sup>2</sup> Controller: Non-Intelligent Controller: FCO Electrical panel Inverter Electrical meter\* 2345 ----Electrical meter\* 12345 Photovoltaic solar panels Electrical panel $\cap$ ----•

Heating and DHW

#### **Comparison on Old housing** Increase usage of self production by: 71%

The HPM could increase the energy consumption of the heat pump coming from the Photovoltaic from 526 kWh to 898 kWh a year. Results of simulations:

PV Production (5.630 kWh/a) 70% (3,955 kWh/a) 30% (1.675 kWh/a) **12%** (526 kWh) 88% (3,709 kWh) Consumption of the HP Usage of energy in the house Installed PV Capacity: 5.64 kWp Household Consumer Demand: 3,500 kWh/a Hotwater Demand: 200 V/day @ 45 °C Insulation Standard (Heat demand): 80 kWh/m<sup>2</sup> Controller: Non-Intelligent PV: Production of energy

Grid



## **PV + HP control**

How to create added value of the combination PV+HP?

- Optimize the HP considering the PV production
- When the PV is producing enough to cover the HP consumption. then Tank mode will be forced to heat up the DHW to 55 or 65 degrees
- If buffer tank on the installation. temperature on the buffer tank will increase 1-to 5 degrees or up to 55°C.

\*Device supply by Panasonic-PAW-HPM-Solar (HPM + 2 Electrical Retors)

#### Standard combination PV+HP. Why the Panasonic HPM can increase by 120% the performance of the combination PV+HP

Typical Electricity consumption and production profile WITHOUT Panasonic HPM

Home appliances and Lightin



Typical Electricity consumption and production profile optimize by the Panasonic HPM







# Control & connectivity

Aware of the importance of both control and connectivity in offering the best comfort at the lowest price, Panasonic offers its customers cutting-edge technology, specially designed to ensure our Aquarea heat pump systems deliver maximum performance. You can properly manage the heat pump and perform comprehensive monitoring and control, with all of the features the remote control provides at home, from anywhere in the world thanks to the internet applications Panasonic has created for you.

## New

Connected to a router, all information of the heating system controlled by the HPM is available from internet. Installers, service companies and end user can monitor the installation remotely.

Panasonic has developed a new easy start up mode for the HPM. Start your bivalent system in just 10 minutes!
### OPTIONAL









External touch display with the Heat Pump Manager

### The next generation of Aquarea Manager

This new generation of smart controllers for eco-efficient heating features our versatile stand-alone controller for heating and domestic hot water.

### Panasonic offers:

Trends. Statistics. Consumption Energy Management-Optimization. Alarm. Handling + Maintenance. Complete documentation etc.



# **READY STEADY GO**

## **Easy Installation & Easy Configuration**

Ready: Pre-programmed with up to 610 applications/system diagrams Steady: At start up - state the number of application/system diagram Go: The controller starts working according to selected diagram

### Key points

- Easy selection with the "ready to go" system
- Up to 610 preconfiguration installations available on **www.panasonicproclub.com**
- Cascade system possible for big installations.
- Bivalent control in order to also manage gas boilers
- Able to control 2 mixed heated zones
- Smart grid ready
- Solar panel mode in order to produce heat when the PV is generating electricity
- Online access with control of all parameters.
- Easy installation and needs less than 3 minutes to configure a complex system

### **Technical Specification**

- New function: Smart Setup
- Control of 2 x Mixed Heating Circuits
- Floor screed dry program
- Cascade/bivalent controller
- Automatic switch from heating to cooling mode
- Night shift: Internal Energy Manager
- Solar collector control
- Domestic hot water priority
- Easy to startup easy to operate
- 7 output relays
- 0-10 V In/Output Signal
- 8 Sensor inputs (PT1000)
- USB interface (upload, service, remote control, trend)
- RS485 interface (com. with additional heat pump)
- RS485 interface (for external display)
- Built-in backlit text display

### Easy mounting

Simple mounting without screws in the cabinet/door or on DIN-rail. Also possible to mount directly on to the wall.



# Control your heat pump from wherever you are. Control your comfort and efficiency with the lowest energy consumption





### What's Internet Control?

Internet Control is a next generation system providing user-friendly remote control of air conditioning or heat pump units from anywhere, using a simple Android or iOS smartphone, tablet or PC via internet with the optional Wired Room temperature sensor, the temperature be display (only with PAW-AW-WIFI-1A.

#### Simple Installation

Just connect the Internet Control device to the air conditioner or heat pump with the supplied wire and then link it to your WIFI Access point.

#### Internet Control. Easy to install. Maximum benefit

Internet Control is underlined with the slogan "Your home in the cloud", meaning a simple and easy to handle solution has been considered for every user to manage the device, not requiring any communication or computer skills.

No servers. No adaptors. No wires. Just a small box needs to be connected and placed close to the air conditioning indoor unit... and your smartphone, tablet or PC.

Your existing WiFi connection does the rest when you are at home. Start the App from your smartphone device, your tablet or your computer, and enjoy a new experience in comfort. And if you are out of home, just launch the App, and manage the air conditioning of your home from the cloud. An intuitive and user-friendly application on the screen of your smartphone or PC that lets you manage the air conditioning unit in the same way you do with the remote controller at home.

Internet Control can be downloaded in Apple's AppStore and Android's PlayStore.

# Control your air conditioning with the smart internet control device via smartphones, tablet, PC and smart desktop phone via internet

Offering the same functions as if you were at home or office: start/stop, Mode Operation, Set Temperature, Room Temperature etc as well as the new, advanced functionality provided by Internet Control to achieve the best comfort and efficiency with the lowest energy consumption.



#### Case Study: Helen, Panasonic customer

"I was sick of heating my house in the mountains on the weekends when I couldn't go. It was a pointless and annoying expense. But now, with Internet Control, I've managed to put the rigidity of weekly programming behind me. If I go then I just put my Panasonic Aquarea heating system on. And if I don't go then I go to the cinema or the theatre with the money I've saved."

-AQUAREA

# Connectivity: Great flexibility for integration into your KNX / Zig Bee / Modbus projects allows fully bi-directional monitoring and control of all the functioning parameters





#### Interface to connect Aquarea to KNX Reference: PAW-AW-KNX-1i

This new Aquarea-KNX interface allows full monitoring and control, bi-directionally, of all the functioning parameters of Aquarea control from KNX installations.

- Small dimensions, / Quick installation and possibility of hidden installation.
- External power not required.
- Direct connection to the unit.
- Fully KNX interoperable. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.
- Aquarea unit can be controlled simultaneously by the remote control of the Aquarea unit and by KNX devices.





Model name	Interface
PAW-AW-KNX-1i	KNX
PAW-ZIG-A2W	Zig Bee
PAW-AW-MBS-1	Modbus RTU
PAW-AW-WIFI-1	IntesisHome for web control
PAW-AW-WIFI-1TE	IntesisHome for web control with Wired room temperature sensor to display the temperature
	of a room



### Interface to connect Aquarea to Zig Bee **Reference: PAW-ZIG-A2W**

This new Aquarea-Zig Bee home automation interface allows full monitoring and control, bi-directionally, of all the functioning parameters of the Aquarea control from Zig Bee installations.

- Small dimensions. / Quick installation.
- External power not required.

0

- Direct connection to the Aquarea unit using the same parameters as on the control.
- Fully Zig Bee interoperable. Control and monitoring, from sensors or gateways, of the internal variables of the indoor unit and error codes and indication.
- Aquarea unit can be controlled simultaneously by the remote control of the Aquarea unit and by Zig Bee devices.

ZigBee



This connectivity solution is made by a third party company, please contact Panasonic for more information.



# Modbus®

### Interface to connect Aquarea to Modbus **Reference: PAW-AW-MBS-1**

This new Aquarea-Modbus RTU Slave interface allows monitoring and control, fully bi-directionally, all the functioning parameters of Aquarea control from Modbus installations.

- Small dimensions. / Quick installation and possibility of hidden installation.
- External power not required.
- · Direct connection to the unit.
- Fully Modbus interoperable. Control and monitoring, from any BMS or PLC Modbus Master, of internal variables of the indoor unit and error codes and indication.
- Aquarea unit can be controlled simultaneously by the remote control of the Aquarea unit and by Modbus Master device.



# Aquarea Line-Up!

							Annua Gina Pir Pir	-				
FI	GURE	1 (F1)		FIGURE	2 (F2)	FIGURE 3 (F3)	F	IGURE 4 (F4)	FIGURE	5 (F5)	FIGURE 6	(F6)
		a		-	3kW	5kW	6kW	7kW	9kW	12kW	14kW	16kW
		erformanc	Single Phase	leating and cooling	WH-UD03EE5 (F1)	WH-ADC030963E5 WH-UD05EE5 (F1)		WH-ADC03096325 WH-UD07FE5 (F1)	WH-ADC030963E5 WH-UD09FE5 (F1)	WH-UD12FE5 (F1)	WH-UD14FE5 (F1)	WH-ADC121666E5 WH-UD16FE5 (F1)
	one	Bi-Bloc High p	Three Phase	Heating and H cooling	4	1		<b>A</b>	WH-ADC0916G9E8 WH-UD09FE8 (F1)	WH-ADC0916G9E8 WH-UD12FE8 (F1)	WH-ADC0916G9E8 WH-UD14FE8 (F1)	WH-ADC0916G9E8 WH-UD16FE8 (F1)
	Alli	CAP	Single Phase	eating and cooling					WH-ADC1216G6E5 WH-UX09FE5 (F1)	WH-ADC1216G6E5 WH-UX12FE5 (F1)		
		Bi-Bloc T	Three Phase	Heating and H cooling					WH-ADC0916G9E8 WH-UX09FE8 (F1)	WH-ADC0916G9E8 WH-UX12FE8 (F1)		WH-ADC091669E8 WH-UX16FE8 (F1)
	nouses		hase	eating only	WH-SDF03E3E5 WH-UD03EE5 (F2)	WH-SDF05E3E5 WH-UD05EE5 (F2)						
	insulated 1	Bi-Bloc	Single PI	Heating and He cooling	WH-SDC03E3E5 WH-UD03EE5 (F2)	WH-SDC05E3E5 WH-UD05EE5 (F2)		WH-SDC07F3E5 WH-UD07FE5 (F4)	WH-SDC09F3E5 WH-UD09FE5 (F4)	WH-SDC12F6E5 WH-UD12FE5 (F5)	WH-SDC14F6E5 WH-UD14FE5 (F5)	WH-SDC16F6E5 WH-UD16CE5 (F5)
	e for well	-	Three Phase	Heating and cooling	4	4			WH-SDC09F3E8 WH-UD09FE8 (F5)	WH-SDC12F9E8 WH-UD12FE8 (F5)	WH-SDC14F9E8 WH-UD14FE8 (F5)	WH-SDC16F9E8 WH-UD16FE8 (F5)
	formanc		Phase	Heating only			(F3)		WH-MDF09E3E5			
	High Per	Mono-Bloc	Single	Heating and cooling		WH-MDC05F3E5 (F3)	WH-MDC06E3E5 (F3)		WH-MDC09E3E5 (F3)	WH-MDC12C6E5 (F6)	WH-MDC14C6E5 (F6)	WH-MDC16C6E5 (F6)
	Aquarea		Three Phase	Heating and cooling					WH-MDC09C3E8 (F6)	WH-MDC12C9E8 (F6)	WH-MDC14C9E8 (F6)	WH-MDC16C9E8 (F6)
	areas	Bloc	Single Phase	Heating and cooling					WH-SXC09F3E5 WH-UX09FE5 (F5)	WH-SXC12F6E5 WH-UX12FE5 (F5)		
	for cold	Bi	Three Phase	Heating and cooling					WH-SXCU9F3E8 WH-UX09FE8 (F5)	WH-UX12FE8 (F5)		WH-SXC16F9E8 WH-UX16FE8 (F5)
	ea T-CAP	Bloc	Single Phase	Heating and cooling					WH-MXC09D3E5 (F6)	WH-MXC12D6E5 (F6)		
	Aquaro	Mono-	Three Phase	Heating and cooling					WH-MXC09D3E8 (F6)	WH-MXC12D9E8 (F6)		
	ĮĮ	Bloc	Single Phase	Heating only					WH-SHF09F3E5 WH-UH09FE5 (F5)	WH-SHF12F6E5 WH-UH12FE5 (F5)		
	I for retro	Bi-	Three Phase	y Heating only					WH-SHF09F3E8 WH-UH09FE8 (F5)	WH-SHF12F9E8 WH-UH12FE8 (F5)		
	quarea H	10-Bloc	e Single Phase	ly Heating only					WH-MHFU9D3E5 (F6)	WH-MHF12D0E0 (F()		
	A	Mon	hree Phas	eating onl					vvn-mnrU9U3E8 (F6)	vvn-mnr ו עשינע (61)		

Low connectivity : control of 3 way valve, tank heater On/Off signal, tank thermostat signal reception, On/Off from external control, weekly timer. High connectivity : Low connectivity + solar panels connection, room thermostat connection. \* Cooling mode activation possible by software. This activation can only be done by service partner.



# Aquarea Bi-Bloc (Inverter)



# Aquarea Mono-Bloc (Inverter)



\* Not all products have A class pump.



**AQUAREA** 

# **NEW**



• New remote control functions

 $\ensuremath{^*}$  Cooling mode activation possible by software. This activation can only be done by service partner.



WH-UD03EE5 WH-UD05EE5



WH-UD07FE5 WH-UD09FE5



WH-UD09FE8 WH-UD12FE8 WH-UD14FE8 WH-UD14FE5 WH-UD16FE5 WH-UD16FE8 0

**Optional Controllers** 

Aquarea Manager with LCD. PAW-HPM1

• Space saving: 1827 x 600 x 720 (H x W x D)

 $\cdot$  Piping on the bottom of the All in One (easy to install) • Reduce timing and minimize installation errors

Reduce installation costs



Aquarea Manager touch screen. PAW-HPMED for HPM

Wireless LCD room thermostat with weekly timer. PAW-A2W-RTWIRELESS

			Single Phase (	Power to indoor	0					Inree Phase (I	ower to indoor	1	
Kit			KIT-ADC3GE5	KIT-ADC5GE5	KIT-ADC7GE5	KIT-ADC9GE5	KIT-ADC12GE5	KIT-ADC14GE5	KIT-ADC16GE5	KIT-ADC9GE8	KIT-ADC12GE8	KIT-ADC14GE8	KIT-ADC16GE8
ndoor unit				WH-ADC	0309G3E5		V	NH-ADC1216G6E	5		WH-ADC	0916G9E8	
Dutdoor unit			WH-UD03EE5	WH-UD05EE5	WH-UD07FE5	WH-UD09FE5	WH-UD12FE5	WH-UD14FE5	WH-UD16FE5	WH-UD09FE8	WH-UD12FE8	WH-UD14FE8	WH-UD16FE8
leating capacity at +7°	2°	kW	3,20	5,00	7,00	9,00	12,00	14,00	16,00	9,00	12,00	14,00	16,00
COP at +7°C (heating w	/ater at 35°C)		5,00	4,63	4,46	4,13	4,75	4,57	4,28	4,85	4,75	4,57	4,28
Heating capacity at +2°	C (heating water at 35°C)	kW	3,20	4,20	6,55	6,70	11,40	12,40	13,00	9,00	11,40	12,40	13,00
COP at +2°C (heating w	vater at 35°C)		3,56	3,11	3,34	3,13	3,45	3,36	3,29	3,59	3,45	3,36	3,29
Heating capacity at -7°	C	kW	3,20	4,20	5,15	5,90	10,00	10,70	11,40	9,00	10,00	10,70	11,40
COP at -7°C			2,69	2,59	2,68	2,52	2,74	2,71	2,68	2,85	2,74	2,71	2,68
Cooling capacity at 35°	C	kW	3,20	4,50	6,00	7,00	10,00	11,50	12,20	7,00	10,00	11,50	12,20
EER at 35°C (cooling w	ater at 7/12°C)		3,08	2,69	2,63	2,43	2,81	2,64	2,57	3,17	2,81	2,64	2,57
ndoor unit													
Dimensions	H x W x D	mm	1.827x600x720	1.827x600x720	1.827x600x720	1.827x600x720							
Weight		kg											
Water pipe connect	or	mm	R1 1/4	R1 1/4	R1 1/4	R1 1/4							
🚊 A class Pump	No. of Speed		7	7	7	7	7	7	7	7	7	7	7
5	Input power (Min/Max.)	W					Min: 21 W at 10	l/min / Max: 13	5 W at 53.8l/mir	n			
읍 Heating water flow	(∆T=5 K. 35°C)	l/min	9,2	14,3	20,1	25,8	34,4	40,1	45,9	25,8	34,4	40,1	45,9
Capacity of integrat	ed electric heater	kW	3	3	3	3	6	6	6	3	9	9	9
E Input Power	Heating / Cooling	kW	0,64 / 1,04	1,08 / 1,67	1,59 / 2,30	2,20 / 2,90	2,57 / 3,60	3,11 / 4,40	3,78 / 4,80	1,90 / 2,25	2,57 / 3,55	3,11 / 4,40	3,78 / 4,80
😌 Running current	Heating / Cooling	A	3,00 / 4,8	5,00 / 7,6	7,30 / 10,40	10,10 / 13,10	11,70 / 16,10	14,10 / 19,70	17,10 / 21,50	2,90 / 3,40	3,90 / 5,30	4,70 / 6,60	5,70 / 7,20
을 Current 1 / Current	2	A			21,0 / 26,0	22,9 / 26,0	24,0 / 26,0	25,0 / 26,0	26,0 / 26,0	11,8 / 13,0	8,8 / 13,0	9,4 / 13,0	9,9 / 13,0
Recommended Fuse		A	30 / 15	30 / 15	30 / 30	30 / 30	30 / 30	30 / 30	30 / 30	16 / 16	16 / 16	16 / 16	16 / 16
Recommended powe	er cable section	mm <sup>2</sup>	4,0 / 2,5	4,0 / 2,5	4,0 / 4,0	4,0 / 4,0	4,0 / 4,0	4,0 / 4,0	4,0 / 4,0	2,5 / 2,5	2,5 / 2,5	2,5 / 2,5	2,5 / 2,5
₩ater volume		L	200	200	200	200	200	200	200	200	200	200	200
Maximum water ten	nperature	°C	65	65	65	65	65	65	65	65	65	65	65
헐 Material inside tank	(		Stainless steel	Stainless steel	Stainless steel	Stainless steel							
≇ Exchange surface		m <sup>2</sup>	2,1	2,1	2,1	2,1	2,1	2,1	2,1	2,1	2,1	2,1	2,1
🗄 Warranty of the sta	inless steel tank		10 years	10 years	10 years	10 years							
E Maintenance require	ed on the tank		No	No	No	No							
Dutdoor unit													
Sound pressure level /	Sound power level	dB(A) / dB	47 / 65	48 / 66	48 / 66	49 / 67	50 / 67	51 / 68	53 / 70	49 / 65	50 / 66	51/71	53 / 68
Dimensions / Weight	H x W x D	mm / kg	622 x 824	x 298 / 39	795 x 900	x 320 / 66			1.3	40 x 900 x 320 /	106		
Pipe diameter	Liquid / Gas	mm (Inch)	6,35 (1/4)	/ 12,7 (1/2)	6,35 (1/4) /	15,88 (5/8)			9,5	2 (3/8) / 15,88 (	5/8)		
Refrigerant / Additional	gas amount (R410A)	kg / g/m	1,20 / 20	1,20 / 20	1,45 / 30	1,45 / 30	2,75 / 50	2,75 / 50	2,75 / 50	2,75 / 50	2,75 / 50	2,75 / 50	2,75 / 50
Pipe length range		m	3-15	3-15	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30
Pipe length for nominal	capacity / additional gas	m	7 / 10	7 / 10	7 / 10	7 / 10	7 / 10	7 / 10	7 / 10	7 / 10	7/10	7 / 10	7 / 10
Elevation dif. (in/out)		m	5	5	20	20	20	20	20	20	20	20	20
Dperation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35							
Water outlet at -2/-7/-1	15	°C	20 - 55 / 5 - 20	20 - 55 / 5 - 20	20 - 55 / 5 - 20	20 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20

Internet Control Ready	<b>5.00</b> COP high efficiency	<b>High</b> efficiency heating	Environmentally <b>friendly</b> refrigerant	Down to -20 °C in heating mode	<b>Boiler</b> connection	Solar panels connection	Domestic hot water	Easy control by BMS	5 year compressor
INTERNET CONTROL	AQUAREA HIGH PERFORMANCE	<b>GINVERTER</b> +	R410A	OUTDOOR TEMPERATURE	RETROFIT	SOLAR KIT	DHW	CONNECTIVITY	wallality

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511. 1) Insulated tested under EN12897. \* Preliminary design. Significant changes may occur.

INTERNET CONTROL READY: Optional.

# -AQUAREA NEW AQUAREA AQUAREA NEW REMOTE CONTRAL **ALL IN ONE T-CAP BI-BLOC SINGLE PHASE /** THREE PHASE A **SEASONAL** HEATING AND COOLING class pumi **EFFICIENCY** All the benefits of the T-CAP All in ONE unit! • Easy remote control to set up



WH-UX09FE5 WH-UX16FE8 WH-UX09FE8 WH-UX12FE8 WH-UX12FE5

Technical focus

• Space saving: 1827 x 600 x 720 (H x W x D)

Reduce installation costs

**Optional Controllers** 

0

• Piping on the bottom of the All in One (easy to install)

Aquarea Manager with LCD.

Panasonic has developed a highly efficient solution, easy to install.

• Reduce timing and minimize installation errors

PAW-HPM1

• Electrical connections on the front

- Reduce installation spaces
- All piping connections at bottom of the indoor unit Easier installation and maintenance
- 1 phase and 3 phase
- New remote control functions

Aquarea Manager touch screen. PAW-HPMED for HPM

Wireless LCD room thermostat with weekly timer. PAW-A2W-RTWIRELESS

				Single Phase (Dewor to indeer)		Three Phace (Dower to indeer)		
Kit				KIT_AYCOFE5	KIT_AYC12EE5			
Ind	oor unit							
Out	door unit			WH-11YN0FF5	WH-112121000E3	WH-IIYNOFF8	WH-11212EE8	WH-11116FE8
Hoa	ting conscitu at 17º	۴	L/M	0 00	12 00	0.00	12 00	14 00
COE	) at 1.7°C (boating wa	u ator at 35°C)	K.V.V	7,00	4 75	7,00	12,00	10,00
Lon	ting conscituat 120	C (hosting water at 25°C)	L/M	0.00	4,75	0,00	4,75	4,20
COE	at 2°C (booting w	to (lied(lily water at 35 c)	r.vv	7,00	3.4.	7,00	3.4.	2 10
Lon	ting conceity of 7°C		LAM	0.00	12.00	0.00	12.00	14.00
COL	ning capacity at -/ t		KVV	2.95	12,00	2.95	2 72	2 /0
Con	ling consolity of 2E°C	<b>`</b>	LAM	7.00	10.00	7.00	10.00	12 20
CUU	any capacity at 30 t	, tor at 7/12°C)	KVV	7,00	10,00	7,00	2 01	12,20
LER	al 35 C (cooling wa			3,1/	2,01	3,1/	2,01	2,07
Dim	oor unit	II w W w D		1 027 v / 00 v 720	1 027 v / 00 v 720	1 027 v / 00 v 720	1 027 v / 00 v 720	1 007 v / 00 v 700
DIII		HXWXD	11111	1.627 X 000 X 720	1.627 X 000 X 720	1.627 X 000 X 720	1.627 X 000 X 720	1.027 X 000 X 720
vve	ignt Watan alaa asaa ay		кд	D 1 1/	D 1 1/	D 1 1/	D 1 1/	D 1 1/
	Water pipe connecto			K I 1/4	K I 1/4	K I 1/4	K I 1/4	K I 1/4
Ë	A class Pump	No. of Speed	14/	1	1			1
or u		Input power (Min/Max.)	W	05.0	Min: Z	I W at TUL/MIN / Max: 135 W at 53	3.8L/min	15.0
-opu	Heating water flow (	ΔI=5 K. 35°CJ	U/min	25,8	34,4	25,8	34,4	45,9
hei	Capacity of integrate	ed electric heater	kW	6	6	9	9	9
int	Input Power	Heating / Cooling	kW	1,90	2,57	1,90	2,57	2,57
kit	Running current	Heating / Cooling	A	8,8 (10,4)	11,9 (16,7)	2,9 [3,4]	3,9 [5,4]	7,2
lidro	Current 1 / Current 2	2	A	25,0 / 26,0	29,0 / 26,0	14,7 / 13,0	11,9 / 13,0	15,5 / 13,0
-	Recommended Fuse		A	30 / 30	30 / 30	16 / 16	16 / 16 / 16	16 / 16
	Recommended powe	r cable section	mm <sup>2</sup>	4,0 / 4,0	4,0 / 4,0	2,5 / 2,5	2,5 / 2,5	2,5 / 2,5
nit	Water volume		L	200	200	200	200	200
DOL	Maximum water tem	perature	°C	65	65	65	65	65
ind	Material inside tank			Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
the	Exchange surface		m <sup>2</sup>	2,1	2,1	2,1	2,1	2,1
ці.	Warranty of the Stai	nless steel tank		10 years	10 years	10 years	10 years	10 years
Tan	Maintenance require	d on the tank		No	No	No	No	No
Out	door unit							
Sou	nd pressure level / S	Gound power level	dB(A) / dB	49 / 66	50 / 67	49 / 66	50 / 67	50 / 67
Dim	ensions / Weight	H x W x D	mm / kg	1.340 x 900 x 320 / 107	1.340 x 900 x 320 / 107	1.340 x 900 x 320 / 110	1.340 x 900 x 320 / 110	1.340 x 900 x 320 / 110
Pip	e diameter	Liquid / Gas	mm (Inch)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)
Ref	rigerant / Additional	gas amount (R410A)	kg / g/m	3,10 / 50	3,10 / 50	3,10 / 50	3,10 / 50	2,90 / 50
Pip	e length range		m	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30
Pip	e length for nominal	capacity / additional gas	m	7 / 10	7 / 10	7 / 10	7 / 10	7 / 10
Ele	vation dif. (in/out)	· •	m	20	20	20	20	20
Ope	ration range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35
Wa	ter outlet at -2/-7/-1	5	°C	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20

21.4°C 🔶

Internet Control Ready	<b>4.85</b> COP high efficiency	<b>High</b> efficiency heating	Environmentally <b>friendly</b> refrigerant	Down to -20 °C in heating mode	<b>Boiler</b> connection	Solar panels connection	Domestic hot water	Easy control by BMS	5 year compressor
INTERNET CONTROL	AQUAREA HIGH PERFORMANCE	GINVERTER+	R410A	OUTDOOR TEMPERATURE	RETROFIT	SOLAR KIT	DHW	CONNECTIVITY	wallality

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511. 1) Insulated tested under EN12897.

\* Preliminary design. Significant changes may occur.

INTERNET CONTROL READY: Optional

# AQUAREA HIGH PERFORMANCE

BI-BLOC SINGLE PHASE HEATING ONLY - SDF HEATING AND COOLING - SDC 3 AND 5KW



# The 3 and 5kW is specially designed for low energy homes and achieves an impressive COP of 5 (on the 3.2kW).

Thanks to the system's high degree of technology and advanced control, it is able to maintain a high capacity and efficiency even at -7°C and -15°C. The Aquarea's software is optimised to the requirements of low consumption homes in order to maximise energy efficiency. Whatever the weather, Aquarea can work even at -20°C. The compact design of the outdoor unit makes installation very easy.

- Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager.
- Super efficient: COP of 5 in the 3.2kW!
- A Class Pump
- Special software for low consumption homes with minimum output
- temperature: 20°C
- Works down to -20°C
- Automatic Air purge valve
- Display of the compressor frequency



WH-UD03EE5 WH-UD05EE5

#### Technical focus



			Single Phase Heating Only		Single Phase Heating and Cooling	
Kit			KIT-WF03C3E5	KIT-WF05C3E5	KIT-WC03C3E5	KIT-WC05C3E5
Indoor unit			WH-SDF03E3E5	WH-SDF05E3E5	WH-SDC03E3E5	WH-SDC05E3E5
Outdoor unit			WH-UD03EE5	WH-UD05EE5	WH-UD03EE5	WH-UD05EE5
Heating capacity at +7°C		kW	3,20	5,00	3,20	5,00
COP at +7°C (heating water a	t 35°C)		5,00	4,63	5,00	4,63
Heating capacity at +2°C (hea	ating water at 35°C)	kW	3,20	4,20	3,20	4,20
COP at +2°C (heating water a	t 35°C)		3,56	3,11	3,56	3,11
Heating capacity at -7°C		kW	3,20	4,20	3,20	4,20
COP at -7°C			2,69	2,59	2,69	2,59
Cooling capacity at 35°C		kW	-	-	3,20	4,50
EER at 35°C (cooling water at	: 7/12°C)		-	-	3,08	2,69
Indoor unit						
Dimensions	H x W x D	mm	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353
Weight		kg	43	43	44	44
Water pipe connector		mm	28	28	28	28
A class Pump	No. of Speed		Variable Speed	Variable Speed	Variable Speed	Variable Speed
	Input power (Min/Max.)	W		Min: 21 W at 10l/min /	Max: 135 W at 53.8l/min	
Heating water flow ( $\Delta T=5 K$ .	35°C)	l/min	9,2	14,3	9,2	14,3
Capacity of integrated electric	c heater	kW	3	3	3	3
Input Power	H / C	kW	0,64 / 1,04	1,08 / 1,67	0,64 / 1,04	1,08 / 1,67
Running and Starting current	H / C	Α	3 / 4,8	5 / 7,6	3 / 4,8	5 / 7,6
Current 1 / Current 2		Α	11,0 / 26,0	12,0 / 26,0	11,0 / 26,0	12,0 / 26,0
Recommended Fuse		Α	15 / 30	15 / 30	15 / 30	15 / 30
Recommended power cable se	ection	mm <sup>2</sup>	2,5 / 4,0	2,5 / 4,0	2,5 / 4,0	2,5 / 4,0
Outdoor unit						
Sound pressure level		dB(A)	47	48	47	48
Sound power level		dB	65	66	65	66
Dimensions	H x W x D	mm	622 x 824 x 298	622 x 824 x 298	622 x 824 x 298	622 x 824 x 298
Weight		kg	39	39	39	39
Pipe diameter	Liquid	mm (Inch)	6,35 (1/4)	6,35 (1/4)	6,35 (1/4)	6,35 (1/4)
	Gas	mm (Inch)	12,7 (1/2)	12,7 (1/2)	12,7 (1/2)	12,7 (1/2)
Refrigerant (R410A)		kg	1,20	1,20	1,20	1,20
Pipe length range		m	3-15	3-15	3-15	3-15
Pipe length for nominal capac	city	m	7	7	7	7
Pipe length for additional gas		m	10	10	10	10
Additional gas amount (R410/	A)	g/m	20	20	20	20
Elevation difference (in/out)		m	5	5	5	5
Operation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35
Water outlet at -2/-7/-15		°C	20 - 55	20 - 55	20 - 55	20 - 55

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511.



INTERNET CONTROL READY: Optional.

# -AQUAREA



#### The Aquarea SDC range adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters.

This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for better heating and cooling control and management.

#### Technical focus

- NEW! New remote control functions
- · Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control
- Range from 7 to 16kW, Single and Three Phase
- Maximum hydraulic module output temperature: 55°C
- Works down to -20°C
- Maximum 30 m rise between the outdoor unit and the hydraulic module
- Cooling temperature range 5–20°C





WH-UD07FE5 WH-UD09FE5

WH-UD09FE8 WH-UD12FE8 WH-UD14FE8 WH-UD14FE5 WH-UD16FE5 WH-UD16FE8





Aquarea Manager touch screen. PAW-HPMED for HPM



Wireless LCD room thermostat with weekly timer. PAW-A2W-RTWIRELESS

			Single Phase (Po	ower to indoor)				Three Phase (Power to indoor)			
Kit			KIT-WC07F3E51	KIT-WC09F3E51	KIT-WC12F6E5 <sup>2</sup>	KIT-WC14F6E5 <sup>2</sup>	KIT-WC16F6E5 <sup>2</sup>	KIT-WC09F3E8 <sup>3</sup>	KIT-WC12F9E8 <sup>3</sup>	KIT-WC14F9E8 <sup>3</sup>	KIT-WC16F9E8 <sup>3</sup>
Indoor unit			WH-SDC07F3E5	WH-SDC09F3E5	WH-SDC12F6E5	WH-SDC14F6E5	WH-SDC16F6E5	WH-SDC09F3E8	WH-SDC12F9E8	WH-SDC14F9E8	WH-SDC16F9E8
Outdoor unit			WH-UD07FE5	WH-UD09FE5	WH-UD12FE5	WH-UD14FE5	WH-UD16FE5	WH-UD09FE8	WH-UD12FE8	WH-UD14FE8	WH-UD16FE8
Heating capacity at +7°C		kW	7,00	9,00	12,0	14,00	16,00	9,00	12,00	14,00	16,00
COP at +7°C (heating water a	t 35°C)		4,46	4,13	4,74	4,56	4,28	4,84	4,14	4,56	4,28
Heating capacity at +2°C		kW	6,55	6,70	11,40	12,40	13,00	9,00	11,40	12,40	16,00
COP at +2°C (heating water a	t 35°C)		3,34	3,13	3,44	3,36	3,28	3,59	3,44	3,36	3,28
Heating capacity at -7°C		kW	5,15	5,90	10,00	10,70	11,40	9,00	10,00	10,70	11,40
COP at -7°C (heating water at	t 35°C)		2,68	5,52	2,73	2,70	2,68	2,85	2,23	2,70	2,68
Cooling capacity at 35°C (cool	ing water at 7°C)	kW	6,00	7,00	10,00	11,50	12,20	7,00	10,00	11,50	12,20
EER at 35°C (cooling water at	: 7°C)		2,61	2,41	2,81	2,64	2,56	3,17	2,81	2,64	2,56
Indoor unit											
Dimensions	H x W x D	mm	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353
Weight		kg	43	43	45	46	46	46	46	47	47
Water pipe connector			R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4	R1 1/4
Pump	No. of Speed		7	7	7	7	7	7	7	7	7
	Input power (Min/Max.)	W				Min: 21 W at 1	Ol/min / Max: 135	W at 53.8l/min			
Heating water flow ( $\Delta$ T=5 K.	35°C)	l/min	20,1	25,8	34,4	40,1	45,9	25,8	34,4	40,1	45,9
Capacity of integrated electric	c heater	kW	3	3	6	6	6	3	9	9	9
Input Power	Heating / Cooling	kW	1,59 / 2,30	2,20 / 2,90	2,53 / 3,56	3,07 / 4,36	3,74 / 4,76	1,86 / 2,21	2,53 / 3,56	3,07 / 4,36	3,74 / 4,76
Running and Starting current	Heating / Cooling	A	7,30 / 10,40	10,10 / 13,10	11,50 / 16,00	13,90 / 19,50	16,90 / 21,30	2,90 / 3,40	3,90 / 5,30	4,70 / 6,60	5,70 / 7,20
Current 1 / Current 2		A	21,0 / 26,0	22,9 / 26,0	24,0 / 26,0	25,0 / 26,0	26,0 / 26,0	11,8 / 13,0	8,8 / 13,0	9,4 / 13,0	9,9 / 13,0 / -
Recommended Fuse		A	30 / 30	30 / 30	30 / 30	30 / 30	30 / 30	16 / 16	16 / 16	16 / 16	16 / 16
Recommended power cable se	ection	mm <sup>2</sup>	4,0 / 4,0	4,0 / 4,0	4,0 / 4,0	4,0 / 4,0	4,0 / 4,0	2,5 / 2,5	2,5 / 2,5	2,5 / 2,5	2,5 / 2,5
Outdoor unit											
Sound pressure level		dB(A)	48	49	50	51	53	49	50	51	53
Sound power level		dB	66	67	67	68	70	66	67	68	70
Dimensions / Weight	H x W x D	mm / kg	795 x 900	x 320 / 66			1.	340 x 900 x 320 / 1	101		
Pipe diameter	Liquid / Gas	mm (Inch)	6,35 (1/4) /	15,88 (5/8)			9,	52 (3/8) / 15,88 (5	/8)		
Refrigerant (R410A)		kg	1,45	1,45	2,55	2,55	2,55	2,55	2,55	2,55	2,55
Pipe length range		m	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30
Pipe length for nominal capac	city	m	7	7	7	7	7	7	7	7	7
Pipe length for additional gas		m	10	10	10	10	10	10	10	10	10
Additional gas amount (R410A) g/m			30	30	50	50	50	50	50	50	50
Elevation difference (in/out)		m	20	20	20	20	20	20	20	20	20
Operation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35
Water outlet at -2/-7/-15	Heating / Cooling	°C	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511. 1) Available from September 2014. 2) Available from May 2014. 3) Available from June 2014.



**AQUAREA T-CAP** 

THREE PHASE

**BI-BLOC SINGLE PHASE /** 

HEATING AND COOLING - SXC

# NEW



#### The new SXC is ideal for residential properties which don't have an external boiler and require a maintained capacity level.

T-CAP stands for Total Capacity. This new line-up is able to maintain the same nominal capacity even at -15°C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiency, whatever the outside temperature or the water temperature. The SXC adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This Range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating or cooling control and management.

#### Technical focus

- NEW! 16kW Model: Maintains 16kW capacity at outdoor temperatures down to -15°C
- NEW! New remote control functions
- Efficient control of room temperature based on the outdoor
- temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control
- Range from 9 to 16kW, Single and Three Phase
- Maximum hydraulic module output temperature: 55°C
- Works down to -20°C (Cooling temperature range 5-20°C)
- Constant capacity at outdoor temperatures down to -15°C
- Maximum 20 m rise between the outdoor unit and the hydraulic module
- **Optional Controllers** 21.4°C ≑ Wireless LCD room thermostat Aquarea Manager with LCD Aquarea Manager touch screen with weekly timer.

WH-I WH-I

			PAW-HPM1		PAW-HPMED for HPM		PAW-A2W-RTWIRELESS
			Single Phase (Power to indoo	or)	Three Phase (Power to indoo	r)	
Kit			KIT-WXC09F3E5	KIT-WXC12F6E5	KIT-WXC09F3E8	KIT-WXC12F9E8	KIT-WXC16F9E8
Indoor unit			WH-SXC09F3E5	WH-SXC12F6E5	WH-SXC09F3E8	WH-SXC12F9E8	WH-SXC16F9E8
Outdoor unit			WH-UX09FE5	WH-UX12FE5	WH-UX09FE8	WH-UX12FE8	WH-UX16FE8
Heating capacity at +7°C (hea	ating water at 35°C)	kW	9,00	12,00	9,00	12,00	16,00
COP at +7°C (heating water a	t 35°C)		4,84	4,74	4,84	4,74	4,28
Heating capacity at +2°C (heating capacity capacity at +2°C (heating capacity capacity at +2°C (heating capacity ca	ating water at 35°C)	kW	9,00	12,00	9,00	12,00	16,00
COP at +2°C (heating water a	t 35°C)	1	3,59	3,44	3,59	3,44	3,10
Heating capacity at -7°C (hea	ting water at 35°C)	kW	9,00	12,00	9,00	12,00	16,00
COP at -7°C (heating water a	: 35°C)		2,85	2,72	2,85	2,72	2,49
Cooling capacity at 35°C (coo	ling water at 7°C)	kW	7,00	10,00	7,00	10,00	12,20
EER at 35°C (cooling water at	7°C)		3,17	2,81	3,17	2,81	2,57
Indoor unit							
Dimensions	H x W x D	mm	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353	892 x 502 x 353
Weight		kg	44	45	45	46	52
Water pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4
Pump	No. of Speed		7	7	7	7	7
	Input power (Min/Max.)	W		Min	: 21 W at 10l/min / Max: 135 W at	53.8l/min	
Heating water flow ( $\Delta T$ =5 K.	35°C)	l/min	25,8	34,4	25,8	34,4	45,9
Capacity of integrated electri	c heater	kW	3	6	3	9	9
nput Power		kW	1,86	2,53	1,86	2,53	3,74
Starting Current		Α	10,2	16,5	3,4	5,4	7,2
Current 1 / Current 2		Α	25,0 / 26,0	29,0 / 26,0	14,7 / 13,0	11,9 / 13,0	15,5 / 13,0
Recommended Fuse		Α	30 / 30	30 / 30	16 / 16	16 / 16	16/16
Recommended power cable s	ection	mm <sup>2</sup>	4,0 / 4,0	4,0 / 4,0	2,5 / 2,5	2,5 / 2,5	2,5 / 2,5
Dutdoor unit							
Sound pressure level		dB(A)	49	50	49	50	53
Sound power level		dB	66	67	66	67	70
Dimensions / Weight	H x W x D	mm / kg	1.340 x 900 x 320 / 107	1.340 x 900 x 320 / 107	1.340 x 900 x 320 / 109	1.340 x 900 x 320 / 109	1.340 x 900 x 320 / 110
Pipe diameter	Liquid / Gas	mm (Inch)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)
Refrigerant (R410A)		kg	2,85	2,85	2,85	2,85	2,90
Pipe length range		m	3 - 30	3 - 30	3 - 30	3 - 30	3 - 30
Pipe length for nominal capac	ity	m	7	7	7	7	7
Pipe length for additional gas		m	10	10	10	10	10
Additional gas amount (R410/	<i>I</i> )	g/m	50	50	50	50	50
Elevation difference (in/out)		m	20	20	20	20	20
Operation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35
	Heating / Coaling	00		25 55 / 5 20			

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511.



INTERNET CONTROL READY: Optional.

# -AQUAREA

**AQUAREA HT BI-BLOC SINGLE PHASE /** THREE PHASE HEATING ONLY - SHF



#### Aquarea HT is able to deliver water heated to 65°C with the Heat Pump alone.

For a house with high temperature radiators (for example, cast iron radiators), the Aquarea High Temperature Solution is most suited as it provides output water temperatures of 65°C even at -20°C.

#### Technical focus

- NEW! New remote control functions
- · Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control
- Range from 9 to 12kW, Single and Three Phase
- Maximum hydraulic module output temperature: 65°C
- Works down to -20°C
- Maximum 20 m rise between the outdoor unit and the hydraulic module



WH-UH09FE5 WH-UH09FE8 WH-UH12FE5 WH-UH12FE8



Aquarea Manager touch screen. PAW-HPMED for HPM

Wireless LCD room thermostat with weekly timer. PAW-A2W-RTWIRELESS

			Single Phase (Power to indoor)		Three Phase (Power to indoor)			
Kit			KIT-WHF09F3E51	KIT-WHF12F6E51	KIT-WHF09F3E8 <sup>2</sup>	KIT-WHF12F9E8 <sup>2</sup>		
Indoor unit			WH-SHF09F3E5	WH-SHF12F6E5	WH-SHF09F3E8	WH-SHF12F9E8		
Outdoor unit			WH-UH09FE5	WH-UH12FE5	WH-UH09FE8	WH-UH12FE8		
Heating capacity at +7°C (hea	ting water at 35°C)	kW	9,00	12,00	9,00	12,00		
COP at +7°C (heating water a	t 35°C)		4,64	4,46	4,64	4,46		
Heating capacity at +2°C (heating water at 35°C) kW			9,00	12,00	9,00	12,00		
COP at +2°C (heating water at 35°C)			3,45	3,26	3,45	3,26		
Heating capacity at -7°C (hea	ting water at 35°C)	kW	9,00	12,00	9,00	12,00		
COP at -7°C (heating water at	35°C)		2,74	2,52	2,74	2,52		
Heating capacity at +7°C (hea	ting water at 65°C)	kW	9,00	12,00	9,00	12,00		
COP at +7°C (heating water a	t 65°C)		2,25	2,20	2,25	2,20		
Heating capacity at +2°C (heat	ting water at 65°C)	kW	9,00	10,30	9,00	10,30		
COP at +2°C (heating water a	t 65°C)		1,88	1,83	1,88	1,83		
Heating capacity at -7°C (hea	ting water at 65°C)	kW	8,90	9,60	8,90	9,60		
COP at -7°C (heating water at	65°C)		1,64	1,61	1,64	1,61		
Indoor unit								
Dimensions / Weight	H x W x D	mm / kg	892 x 502 x 353 / 46	892 x 502 x 353 / 47	892 x 502 x 353 / 47	892 x 502 x 353 / 48		
Water pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4		
Pump	No. of Speed		7	7	7	7		
	Input Power (Max.)	W		Min: 21 W at 10l/min /	Max: 135 W at 53.8l/min			
Heating water flow ( $\Delta$ T=5 K. 3	35°C)	l/min	25,8	34,4	25,8	34,4		
Capacity of integrated electric	: heater	kW	3	6	3	9		
Input Power		kW	1,94	2,69	1,94	2,69		
Running and Starting current		Α	9,3	12,9	3,0	4,2		
Current 1 / Current 2		Α	28,5 / 26,0	29,0 / 26,0	14,7 / 13,0	10,9 / 13,0		
Recommended Fuse		Α	30 / 30	30 / 30 / -	30 / 16	30 / 16 / -		
Recommended power cable se	ection	mm <sup>2</sup>	4,0 / 4,0	4,0 / 4,0 / -	4,0 / 2,5	4,0 / 2,5 / -		
Outdoor unit								
Sound pressure level / Sound	power level	dB(A) / dB	49 / 66	50 / 67	49 / 66	50 / 67		
Dimensions / Weight	H x W x D	mm / kg	1.340 x 900 x 320 / 104	1.340 x 900 x 320 / 104	1.340 x 900 x 320 / 110	1.340 x 900 x 320 / 110		
Pipe diameter	Liquid / Gas	mm (Inch)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)	9,52 (3/8) / 15,88 (5/8)		
Refrigerant (R407C)		kg	2,90	2,90	2,90	2,90		
Pipe length range		m	3 - 30	3 – 30	3 - 30	3 – 30		
Pipe length for nominal capac	ity	m	7	7	7	7		
Pipe length for additional gas		m	10	10	10	10		
Additional gas amount (R407C) g/m			70	70	70	70		
Elevation difference (in/out) m			20	20	20	20		
Operation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35		
Water outlet at -2/-7/-15		°C	25 - 65	25 - 65	25 - 65	25 - 65		



INTERNET CONTROL READY: Optional

### **Panasonic**

# NEW

# **AQUAREA HIGH PERFORMANCE**

MONO-BLOC SINGLE PHASE HEATING ONLY - MDF HEATING AND COOLING - MDC



#### Panasonic has designed the new Aquarea Mono-Bloc heat pump for houses which have high performance requirements but limited space to install the outdoor unit.

. Whatever the weather, Aquarea can work even at -20°C. The Mono-Bloc is easy to install in new and existing residential properties.

#### Technical focus • NEW! 5kW Model

- NEW! New remote control functions
- Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control
- Range from 6 to 9kW, Single Phase
- Maximum hydraulic module output temperature: 55°C
- Works down to -20°C
- Plug and play system



NEW REMOTE CONTROL Only for the 5 kW Monobloc **Optional Controllers** Aquarea Manager with LCD. 0 PAW-HPM1



Wireless LCD room thermostat with weekly timer. PAW-A2W-RTWIRELESS

			Single Phase Heating Only		Single Phase Heating and Cooling			
			WH-MDF06E3E5	WH-MDF09E3E5	WH-MDC05F3E5	WH-MDC06E3E5	WH-MDC09E3E5	
Heating capacity at +7°C (heat	ing water at 35°C)	kW	6,00	9,00	5,00	6,00	9,00	
COP at +7°C (heating water at	: 35°C)		4,48	4,15	5,08	4,48	4,15	
Heating capacity at +2°C (heat	ing water at 35°C)	kW	5,00	7,45	4,80	5,00	7,45	
COP at +2°C (heating water at	: 35°C)		3,45	3,14	3,75	3,45	3,14	
Heating capacity at -7°C (heati	ng water at 35°C)	kW	5,15	7,70	4,50	5,15	7,70	
COP at -7°C (heating water at	35°C)		2,68	2,12	2,98	2,68	2,12	
Cooling capacity at 35°C (cool	ing water at 7°C)1	kW	-	-	4,50	5,50	7,00	
EER at 35°C (cooling water at	7°C)1		-	-	3,33	2,74	2,44	
Sound pressure level		dB(A)	47	49	47	47	49	
Sound power level		dB	65	67	65	65	67	
Dimensions	H x W x D	mm	865 x 1283 x 320	865 x 1283 x 320	865 x 1.283 x 320	865 x 1.283 x 320	865 x 1.283 x 320	
Weight		kg	112	112	107	112	112	
Water pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4	
Pump	No. of Speed		Variable Speed	Variable Speed	7	Variable Speed	Variable Speed	
	Input power (Min/Max.)	W		Min: 21	W at 101/min / Max: 135 W at 5	3.81/min		
Water Flow ( $\Delta$ T=5 K. 35°C)		l/min	17,2	25,8	9,2	17,2	25,8	
Capacity of integrated electric	heater	kW	3,00	3,00	3	3,00	3,00	
Input Power at +7°C		kW	1,34	2,17	0,985	1,34	2,17	
Running and Starting current	at +7°C	Α	6,1	9,9	3	6,1	9,9	
Recommended Fuse		Α	30 / 16	30 / 16	30 / 15	30 / 16	30 / 16	
Recommended power cable section mm <sup>2</sup>		mm <sup>2</sup>	4,0 / 2,5	4,0 / 2,5	4,0 / 2,5	4,0 / 2,5	4,0 / 2,5	
Operation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35	-20 to 35	
Water outlet at -2/-7/-15		°C	20 – 55	20 - 55	20 - 55	20 - 55	20 - 55	

COP classification is at 230 V only in accordance with EU directive 2003/32/EC.

Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511.

1. Tentative. Authorized service partner or Authorized installer can enable the cooling mode through a special operation via the remote controller on site. 2. Tentative.



INTERNET CONTROL READY: Optional.

# -AQUAREA

# **AQUAREA HIGH PERFORMANCE**

MONO-BLOC SINGLE PHASE / THREE PHASE HEATING AND COOLING - MDC



The Aquarea MDC range adapts well in an existing installation with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating and cooling control and management.

#### Technical focus

- · Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control
- Range from 9 to 16kW, Single and Three Phase • Maximum hydraulic module output temperature: 55°C
- Works down to -20°C
- Cooling temperature range 5–20°C
- **Optional Controllers** 21.4°C 🔷 Wireless LCD room thermostat Aquarea Manager with LCD. Aquarea Manager touch screen. with weekly timer. PAW-A2W-RTWIRELESS 0 PAW-HPM1 PAW-HPMED for HPM Single Phase Three Phase WH-MDC14C6E5 WH-MDC16C6E5 WH-MDC12C6E5 WH-MDC09C3E8 WH-MDC12C9E8 WH-MDC14C9E8 WH-MDC16C9E8 Heating capacity at +7°C (heating water at 35°C) kW 12,00 14,00 16,00 9,00 12,00 14,00 16,00 COP at +7°C (heating water at 35°C) 4,50 4,23 4,74 4,67 4,50 4,23 4,67 Heating capacity at +2°C (heating water at 35°C) kW 11,40 12,40 13,00 9,00 11,40 12,40 13,00 COP at +2°C (heating water at 35°C) 3,41 3,32 3,25 3,53 3,41 3,32 3,25 Heating capacity at -7°C (heating water at 35°C) kW 10,00 10,70 11,40 9,00 10,00 10,70 11,40 COP at -7°C (heating water at 35°C) 2,65 2,70 2,68 2,65 2,81 2,70 2,68 Cooling capacity at 35°C (cooling water at 7°C)<sup>1</sup> kW 10,00 11,50 12,20 7,00 10,00 11,50 12,20 EER at 35°C (cooling water at 7°C)<sup>1</sup> 2,78 2,61 2,54 3,11 2,78 2,61 2,54 Sound pressure level dB(A) 53 50 53 49 50 51 51 Sound power level dB 67 70 67 68 68 66 70 HxWxD 1.410 x 1.283 x 320 mm 153 153 157 157 157 157 153 kg R 1 1/4 R 1 1/4 Water pipe connector R 1 1/4 No. of Speed 3 3 3 3 3 3 3 Input power (Max.) 190 W 190 190 190 190 Heating water flow ( $\Delta T=5 \text{ K. } 35^{\circ}\text{C}$ ) 40,1 45,9 25.8 40,1 45,9 l/min 34.4 34.4

neuting water new (Z1-5 K.	33 0)	y mm	04,4	40,1	40,7	20,0	04,4	40,1	40,7
Capacity of integrated electri	c heater	kW	6	6	6	3	9	9	9
Input Power	Heating	kW	2,57	3,11	3,78	1,90	2,57	3,11	3,78
	Cooling <sup>1</sup>	kW	3,60	4,40	4,80	2,25	3,60	4,40	4,80
Running and Starting current	Heating	Α	11,6	14,1	17,1	2,9	3,9	4,7	5,7
	Cooling <sup>1</sup>	Α	16,1	19,7	21,5	3,4	5,3	6,6	7,2
Current 1		Α	24,0	25,0	26,0	11,8	8,8	9,4	9,9
Current 2		Α	26,0	26,0	26,0	13,0	13,0	13,0	13,0
Current 3		Α	13,0	13,0	13,0		13,0	13,0	13,0
Recommended Fuse		Α	30 / 30 / 16	30 / 30 / 16	30 / 30 / 16	16 / 16	16 / 16 / 16	16 / 16 / 16	16 / 16 / 16
Recommended power cable s	ection	mm <sup>2</sup>	4,0 / 4,0 / 2,5	4,0 / 4,0 / 2,5	4,0 / 4,0 / 2,5	2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5	2,5 / 2,5 / 2,5
Operation range	Outdoor ambient	°C	-20 to 35						
Water outlet at -2/-7/-15	Heating / Cooling <sup>1</sup>	°C	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20	25 - 55 / 5 - 20

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511.

1. Specifications for Heating an Cooling models.

Dimensions

Weight

Pump



**AQUAREA T-CAP** MONO-BLOC SINGLE PHASE / THREE PHASE HEATING AND COOLING - MXC



#### The MXC is ideal for residential properties which don't have an external boiler and require a maintained capacity level.

T-CAP stands for Total Capacity. This new line-up is able to maintain the same nominal capacity even at -15°C without the help of an electrical booster heater. T-CAP is also able to provide extremely high efficiency, whatever the outside temperature or the water temperature. The MXC adapts well in an existing install with a boiler backup, and in a new application with underfloor heating, low temperature radiators or even fan-coil heaters. This range can also be connected to a solar kit in order to increase efficiency and minimize the impact on the ecosystem. Finally, it is possible to connect a thermostat for even better heating or cooling control and management.

#### Technical focus

· Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control

- Range from 9 to 12kW, Single and Three Phase
- Maximum hydraulic module output temperature: 55°C
- Works down to -20°C
- Cooling temperature range 5–20°C







Three Phase Single Phase WH-MXC09D3E WH-MXC09D3E WH-MXC12D6E5 WH-MXC12D9E8 Heating capacity at +7°C (heating water at 35°C) kW 9.00 12.00 9,00 12.00 4,67 COP at +7°C (heating water at 35°C) 4,74 4,67 4,74 Heating capacity at +2°C (heating water at 35°C) kW 9,00 12,00 9,00 12,00 COP at +2°C (heating water at 35°C) 3,53 3,40 3,53 3,40 Heating capacity at -7°C (heating water at 35°C) kW 9,00 12,00 9,00 12,00 COP at -7°C (heating water at 35°C) 2,81 2,70 2,81 2,70 Cooling capacity at 35°C (cooling water at 7°C) kW 7,00 10,00 10,00 7,00 EER at 35°C (cooling water at 7°C) 3,11 2,78 3,11 2,78 Sound pressure level dB(A) 49 50 49 50 Sound power level 67 67 dB 66 66 14.10 x 1.283 x 320 1.410 x 1.283 x 320 1.410 x 1.283 x 320 1.410 x 1.283 x 320 HxWxD Dimensions mm Weight 155 155 158 158 kg R 1 1/4 Water pipe connector R 1 1/4 R 1 1/4 R 1 1/4 No. of Speed Pump 3 3 3 3 Input power (Max.) 190 190 W 190 190 Heating water flow ( $\Delta$ T=5 K. 35°C) l/min 25,8 34,4 25,8 34,4 kW Capacity of integrated electric heater 3 6 3 9 1.90 2.57 1.90 2.57 kW Input Power Starting Current A 10.4 16.7 2,9 3,9 Current 1 A 25.0 29 N 14.7 11.9 Current 2 A 26,0 26.0 13.0 13.0 Current 3 A 13,0 13,0 Recommended Fuse A 30 / 30 30 / 30 / 16 16/16 16 / 16 / 16 4,0 / 4,0 / 2,5 2,5 / 2,5 / 2,5 Recommended power cable section mm 4.0/4.0 2.5/2.5 Operation range Outdoor ambient °C -20 to 35 -20 to 35 -20 to 35 -20 to 35 Water outlet at -2/-7/-15 Heating / Cooling<sup>1</sup> °C 25 - 55 / 5 - 20 25 - 55 / 5 - 20 25 - 55 / 5 - 20 25 - 55 / 5 - 20

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511.



INTERNET CONTROL READY: Optional.

# -AQUAREA

**AQUAREA HT** MONO-BLOC SINGLE PHASE / THREE PHASE HEATING ONLY - MHF



#### Aquarea HT is able to deliver 65°C with the Heat Pump alone.

For a house with high temperature radiators (for example, cast iron radiators), the Aquarea High Temperature Solution is most suited as it provides output water temperatures of 65°C even at -20°C.

#### Technical focus

- Efficient control of room temperature based on the outdoor temperature, indoor temperature using the Aquarea Manager. Optional Smartphone control
- Range from 9 to 12kW, Single and Three Phase • Maximum hydraulic module output temperature: 65°C
- Works down to -20°C



COP at +2°C (heating water a	at 35°C)		3,40	3,23	3,40	3,23
Heating capacity at -7°C (heating	ating water at 35°C)	kW	9,00	12,00	9,00	12,00
COP at -7°C (heating water a	t 35°C)		2,70	2,50	2,70	2,50
Heating capacity at +7°C (he	ating water at 65°C)	kW	9,00	12,00	9,00	12,00
COP at +7°C (heating water a	at 65°C)		2,25	2,20	2,25	2,20
Heating capacity at +2°C (he	ating water at 65°C)	kW	9,00	10,30	9,00	10,30
COP at +2°C (heating water a	at 65°C)		1,88	1,83	1,88	1,83
Heating capacity at -7°C (heating capacity a	ating water at 65°C)	kW	8,90	9,60	8,90	9,60
COP at -7°C (heating water a	t 65°C)		1,62	1,61	1,62	1,61
Sound pressure level		dB(A)	49	50	49	50
Sound power level		dB	66	67	66	67
Dimensions	H x W x D	mm	1.410 x 1.283 x 320			
Weight		kg	155	155	158	158
Water pipe connector			R 1 1/4	R 1 1/4	R 1 1/4	R 1 1/4
Pump	No. of Speed		3	3	3	3
	Input Power (Max.)	W	190	190	190	190
Heating water flow ( $\Delta$ T=5 K.	35°C)	l/min	25,8	34,4	25,8	34,4
Capacity of integrated electri	ic heater	kW	3	6	3	9
Input Power		kW	1,98	2,73	1,98	2,73
Running and Starting current		Α	9,5	12,8	9,5	12,8
Current 1		Α	28,5	29,0	14,7	11,9
Current 2		Α	26,0	26,0	13,0	13,0
Current 3		Α		13,0		13,0
Recommended Fuse		Α	30 / 30	30 / 30 / 16	-16 / 16	16 / 16 / 16
Recommended power cable s	ection	mm <sup>2</sup>	4,0 / 4,0	4,0 / 4,0 / 2,5	2,5 / 2,5	2,5 / 2,5 / 2,5
Operation range	Outdoor ambient	°C	-20 to 35	-20 to 35	-20 to 35	-20 to 35
Water outlet at -2/-7/-15		°C	25 – 65	25 – 65	25 - 65	25 - 65

COP classification is at 230 V only in accordance with EU directive 2003/32/EC. Sound pressure measured at 1 m from the outdoor unit and at 1.5 m height. Performance in agreement with EN14511.



# AQUAREA AIR RADIATORS

The slimline Panasonic Aquarea Air radiators deliver high efficiency climate control. With a depth of just under 13 cm they are at the cutting edge of the market. Blending easily into the home, Aquarea Air's elegant design and product refinements are clear to see in every detail.

The Aquarea Air's slimline profile has been achieved thanks to the innovative layout of the ventilation unit and the heat exchanger. The fan is tangential with asymmetric blades and the large surface heat exchanger enables high airflows to be achieved with low pressure loss and low noise levels. Exceptional ventilation efficiency means the motor uses considerably less energy (low wattage). The fan speed is continuously modulated by the temperature controller with proportional integral logic, with undoubted advantages for regulating the temperature and humidity in summer mode.

All temperature curves and capacity are available on www.panasonicproclub.com





Fan Coils for Heat Pump application PAW-AAIR-200				PAW-AAIR-700 PAW-AAIR-900												
Without radiant heating		PAW-AAIR-	200L				PAW-AAIR-	AW-AAIR-700L PAW-AAIR-900L								
Total heating capacity	W	138	160	217	470	570	223	360	708	1.032	1.188	273	475	886	1.420	1.703
Water flow	kg/h	23,7	27,5	37,3	80,8	98,0	38,4	61,9	121,8	177,5	204,3	47,0	81,7	152,4	244,2	292,9
Water pressure drop	kPa	0,1	0,2	0,4	2,0	2,9	0,1	0,1	0,3	0,8	1,0	0,1	0,2	0,5	1,6	2,2
Air flow	m³/h	28	37	55	113	162	44	84	155	252	320	54	110	248	367	461
	Speed	Main Fan Off	Super Min	Min	Med	Max	Main Fan Off	Super Min	Min	Med	Max	Main Fan Off	Super Min	Min	Med	Max
Maximum input power	W	2	5	7	9	13	3	9	14	18	22	3	11	16	20	24
Sound pressure level	dB(A)	17,6	18,8	24,7	33,2	39,4	18,4	19,6	25,8	34,1	40,2	18,4	22,3	26,2	34,4	42,2
Inlet water temperature	°C	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Outlet water temperature	°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Inlet air temperature	°C	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Outlet air temperature	°C	34,5	32,6	38,9	32,0	30,0	34,9	32,4	33,3	31,8	30,6	34,8	32,5	30,2	31,1	30,6
Dimensions (H x W x D)	mm	735 x 576 x	129				935 x 579 x	129				1.135 x 579	x 129			
Weight	kg	17	17				20				23					
3 ways valve included Yes			Yes Yes													
Touch screen thermostat		Yes					Yes					Yes				

During winter, the operating principle is based on micro fans of very low power consumption and minimum noise that send hot air, coming from the heat exchanger, to the inside of the front panel of the device and therefore heat it effectively. With this principle, the terminal also provides significant power while heating, without running the main fan. Comfort temperatures are therefore maintained, without air movements and in silence. In summer mode, the airflow generated by the micro fans is stopped to avoid any dew formation on the terminal's front surface.



Very silent and efficient DC fan motor







#### **New line up of Super low temperature radiators for Heat Pump application:** Aquarea Air 200/700/900 with radiating effect

#### Major Benefit

- On the water installation
- Only 1 water temperature on the water circuit (35°C)
- No expansive 2 zone kits
- No overflow valve (as Aquarea Air has a 3-way valve)
- Very easy to install
- On the efficiency
  - COP with water at 35°C is 32% higher than efficiency with water at 45°C! (case MDF06, at +7°C)

#### Main features

- Front panel heating with radiant effect
- High heating capacity (without main fan running)
- 4 fan speeds and capacities
- Exclusive design
- Extremely compact (only 12.9 cm deep)
- Cooling and dehumidification functions possible (drain is needed)
- 3-way valve included (no overflow valve needed on the installation if more than 3 radiators installed)
- Touch screen thermostat

#### Accessories for Aquarea Air

PAW-AAIR-LEGS-1 Kits of 2 legs to support the Aquarea Air on the floor and to protect the water pipings



# Accessories

Tanks Stainless Steel Tank E		Enamelled Tank		Enamelled high efficiency Tank			Enamelled 2 coils Tank (for bivalent Solar + HP)	C-b)		
Model		WH-TD20E3E5	WH-TD30E3E5-1	PAW-TE20E3STD	PAW-TE30E3STD	PAW-TE20E3HI	PAW-TE30E3HI	PAW-TE50E3HI	PAW-TE30C2E3ESTD	
			·		• • • •	•	ö 0	õ •	•	
Water volume	L	200	300	190	290	200	288	440	287	
Maximum water temnerature	°C	75	75	95	95	95	95	95	95	
Dimensions Hight / Diameter	mm	1 150 / 580	1 600 / 580	1 432 / 540	1 794 / 600	1 804 / 600	1 294 / 700	1 921 / 700	1 294 / 700	
Weight	ka	49	65	65	85	78	139	222	145	X P VOIR
Electric heater	kW	3	3	3	3	3	3	3	3	
Power supply	V	230	230	230	230	230	230	230	230	
Material inside tank		Stainless steel	Stainless steel	Enamelled	Enamelled	Enamelled	Enamelled	Enamelled		
Exchange surface	m²	1,4	1,8	1,90	2,55	2,25	3,20	6,20	2,4 (for HP) +1,1 (for solar or boiler)	High efficiency water
Energy loss at 65°C1	kWh/24h	1,9	2,3	1,6	1,8	1,2	1,8	2,4	2,7	tanks with a large
3 Way valve included	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	exchange surface and high
20 m temperature sensor cab	le included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	levels of insulation to
Heat up time	Valuation	****	****	****	****	****	****	****	****	minimine operau lesson
Energy losses	Valuation	****	****	****	****	****	****	****	****	minimise energy tosses.
Efficiency of the tank	Valuation	****	****	****	****	****	****	****	****	
Warranty		10 years	10 years	7 years	7 years	7 years	7 years	7 years	7 years	
Maintenance required		No	No	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly	

1) Insulated tested under EN12897.

# AQUAREA TANK

# Aquarea Tank. Tanks and buffer tank in one!

Tanks and buff	er tank in one!		Standard Sanitary		
Model			PAW-TD20B8E3-NDS		
Water volume		L	185 (for DHW tank) / 80 (for buffer tank)		
Maximum water	temperature	°C	100		
Dimension	HxWxD	mm	1.810 x 600 x 632		
Weight		kg	150		
Electric heater		kW	3		
Power supply		V	230 - 2p		
Material inside	tank		Stainless steel		
Exchange surface	ce	m <sup>2</sup>	2,3		
Energy loss at 6	5°C1	kWh/24h	1,3		
A class pump	Number of speed		Stepless (800-4250 rpm)		
	Pressure drop (Min / Max)	kPa	5/6		
	Input power (Min / Max)	W	3 / 45		
3 Way valve inc	luded		Yes		
Safety thermost	at with contact for failure part of	f E-Heating	Yes		
Location of the	electrical heater		Mid		
Electrical backu	ip heater on the buffer tank		Optional		





CZ-NS1P // CZ-NS3P // CZ-NS2P

CZ-TK1	



PAW-TS1 / PAW-TS2

CZ-NE1P



Solar Kit	Solar Kit Accessories		
CZ-NS1P	PCB for solar connection kit for split systems		
CZ-NS2P	PCB for solar connection kit for monoblock systems		
CZ-NS3P	PCB for solar connection kit for monoblock systems 6 & 9 kW		

Sanitary Tank Accessories		
CZ-TK1	Temperature sensor kit for third party tank (with copper pocket and 6 m length sensor cable)	
PAW-TS1	Tank sensor with 6 meter cable length	
PAW-TS2	Tank sensor with 6 meter cable length	

Deice Accessories		
CZ-NE1P	Base pan heater (for all old Bi-Block and Mono Block, not for the 3 and 5 kW)	
CZ-NE2P	Base pan heater (for 3 kW and 5 kW)	
CZ-NE3P	Base pan heater (for all new F generation products: F3, F6, F9)	

Connectivity Solutions				
Model name	Interface			
PAW-AW-KNX-1i	KNX Interface			
PAW-ZIG-A2W	Interface to connect to Zig Bee			
PAW-AW-MBS-1	Modbus Interface			
PAW-AW-WIFI-1A	IntesisHome for web control			
PAW-AW-WIFI-1TE	Wired room temperature sensor			
	(only for PAW-AW-WIFI-1A)			







PAW-HPM1

PAW-HPM2

Aquarea	Manager

Aquarea Manager Kits	
PAW-HPM12ZONE-U	HPM with roomsensor and setpoint adaption for Bi-bloc + sensors
PAW-HPM12ZONE-M	HPM with roomsensor and setpoint adaption for Mono-bloc + sensors
PAW-HPM12ZONELCD-U	HPM with LCD Wireless Room Thermostat for Bi-bloc + sensors
PAW-HPM12ZONELCD-M	HPM with LCD Wireless Room Thermostat for Mono-bloc + sensors
PAW-HPM12ZONE-F	HPM with roomsensor and setpoint adaption for Mono-bloc + Bi-bloc F type + sensor
PAW-HPM12ZONELCD-F	HPM with LCD Wireless Room Thermostat for Mono-bloc + Bi-bloc F type + sensor



#### PAW-HPMED

Aquarea Manager with LCD
Aquarea Manager without LCD
Interface to connect Aquarea Manager to Heat pump Aquarea Bi-Bloc, with inverter control C and D types
Interface to connect Aquarea Manager to Heat pump Aquarea Mono-Bloc, with inverter control
Interface to connect Aquarea Manager to Heat pump Aquarea Bi-Bloc F type
Buffer tank sensor
Buffer tank sensor with well
Buffer tank sensor solar (with higher temperature range)
Water flow pipe sensor for heating circuit
Room sensor + set point adaption
Touch screen
Room thermostast with LCD
Network cable
Network switch
HPM casing with Premounted cables NEW!
Dew point sensor
Outdoor temperature sensor
2 zone kit, hydraulic switch, manifold, 2 A-class pumps, 1 mixture valve and check valve + filter
2 check valves + filter with 1"
Filter with 1"

nyurdulit ALLESSURES	
PAW-2PMP2ZONE	2 zone kit, hydraulic switch, manifold, 2 A-class pumps, 1 mixture valve and check valve + filter
PAW-FILTER	2 check valves + filter with 1"
PAW-FILTER-ONLY	Filter with 1"





PAW-A2W-RTWIRED

PAW-A2W-RTWIRELESS

Room Thermostats	
PAW-A2W-RTWIRED	Wired LCD room thermostat with weekly timer
PAW-A2W-RTWIRELESS	Wireless LCD room thermostat with weekly timer

Accessories For All In One 2014 PAW-FP-WMP-1

# Examples of installations with Aquarea Manager

Temperature control in the 2 zones with PAW-HPM12ZONE-U



### 2 heat pumps in cascade with the PAW-HPM12ZONELCD-U





2 heat pump + boiler with PAW-HPM12ZONE-U Temperature control in zones 2 + ECS with PAW-HPM12ZONE-U



### Management of heat pump + boiler and DHW with PAW-HPM12ZONELCD-U



# 3 heat pumps in cascade with PAW-HPM12ZONELCD-U





# A typical example of savings and efficiencies that Aquarea can offer to you

# A 125m<sup>2</sup> house in Reims

The example below shows a typical 3 bedroom French home and highlights the potential savings that can be achieved with Panasonic's Aquarea heat pump.\*

Building data	
Address	Reims (French)
Building area	125 m <sup>2</sup>
Standard heating requirement	11,3 kW
Internal gains	5625 kWh/year
Solar gains (windows)	4500 kWh/year
Indoor design temperature	20 °C
Outdoor temp. limit for heating 'on'	15 °C
Heat distribution	Underfloor heating by 100 %
	Radiator heating by %
	Wall heating by %
Max. flow water temperature	55 °C
Max. return water temperature	50 °C
Solar collector area	m²

Service hot water								
Type of service	Hot water with heat pump							
Tank volume	300 Litre							
Average daily need	200 Litre							
Cold water inlet temperature	10 °C							
Target tank temperature	50 °C							
Exchange loss	5 K							
Electrical auxiliary heating necessary	no							

Used Panasonic heat pump	
Description	WH-SXF12D6E5
Sanitary tank	WH-TD30E3E5
Heat pump type	air / water
Wattage at 2/35	heat: 11,7 kW, electric: 3,4 kW
Recommended flow-through of air	4800,0 m³/h
Max. flow temperature	55 °C
Mode of operation	monovalent
Design/Bivalent temperature	-5,0 °C
Number of heat pumps used	1
Wattage of fan (included in heat pump performance data: yes)	60 W
Wattage of heat circulation pump(s)	180 W

Rate data		
Description	French (Panasonic)	
Shut off times total	0.0 h/day	
Weekends with shut off times	yes	
Daytime rate of heat pump	Time for daytime rate	
	5 - 19 o'clock	14,0 pence/kWh
Nighttime rate of heat pump	Time for nighttime rate	
	19 - 5 o'clock	14,0 pence/kWh
Heat circulation pump(s)	like heat pump: yes	pence/kWh
Heating element for monoenergetic operation	Like heat pump: yes	pence/kWh
Heating element for post heating of hot water	like heat pump: yes	pence/kWh

Climatic data				
Climatic location	Reims (FR	)		
Monthly average temperatures in °C	Jan	3,4	Jul	16,0
	Feb	3,6	Aug	15,9
	Mar	5,7	Sep	13,7
	Apr	8,0	Oct	10,4
	May	11,2	Nov	6,7
	Jun	14,1	Dec	4,6

\* Calculations were carried using Panasonic's Aquarea Designer software, available from the PRO Club website (www.panasonicproclub.com).

# **Calculation results**

### Monthly heat consumption in kWh

Allitudi ellergy cosis	
Caused by heat producers	
Heat pump	1.600€
Hot water heating rod	0€
Caused by heat consumers	
Caused by heat consumers	
Caused by heat consumers Space heating	1.220 €
Caused by heat consumers Space heating Service hot water	1.220 € 225 €
Caused by heat consumers Space heating Service hot water Heat circulation pump(s)	1.220 € 225 € 155 €



#### Aquarea energy coverage



### **Comparison of running costs**

Type of heating	Price in pence/kWh	Efficiency [%]	Additional costs in €/year	Total costs in €/year
Heat pump	-	-	0	1.600
Oil	6,5	85	0	3.050
Gas	4,0	90	0	1.868
Wood heating	5,0	80	0	2.539
Electric night storage heater	12,0	100	0	4.455
Electric heating element	14,0	100	0	5.197



# Comparison of CO<sub>2</sub> emissions



### Comparison of CO<sub>2</sub> savings



# Heating capacity table based on outlet temperature and outside temperature

#### **Heating capacity Curve**

Aquarea. High Performance. Bi-Bloc Single Phase. Heating Only - SDF. Heating and Cooling - SDC. 3 and 5kW

WH-SDF03	WH-SDF03E3E5 / WH-SDC03E3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	3,20	1,39	2,30	3,20	1,39	2,30	3,00	1,64	1,83	3,00	1,64	1,83	2,75	1,92	1,43	2,75	1,92	1,43
-7	3,20	1,19	2,69	3,20	1,19	2,69	3,20	1,48	2,16	3,20	1,48	2,16	3,20	1,86	1,72	3,20	1,86	1,72
2	3,20	0,90	3,56	3,20	0,90	3,56	3,20	1,16	2,76	3,20	1,16	2,76	3,20	1,49	2,15	3,20	1,49	2,15
7	3,20	0,64	5,00	3,20	0,64	5,00	3,20	0,89	3,60	3,20	0,89	3,60	3,20	1,20	2,67	3,20	1,20	2,67
WH-SDF05	ie3e5 / WH·	SDC05E3E5	i															
WH-SDF05 Tamb	E3E5 / WH- HC	-SDC05E3E5 IP	i COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
WH-SDF05 Tamb LWC	E3E5 / WH- HC 30	SDC05E3E5 IP 30	i COP 30	HC 35	IP 35	COP 35	HC 40	IP 40	COP 40	HC 45	IP 45	COP 45	HC 50	IP 50	COP 50	HC 55	IP 55	COP 55
WH-SDF05 Tamb LWC -15	E3E5 / WH- HC 30 4,20	-SDC05E3E5 IP 30 1,94	5 COP 30 2,16	HC 35 4,20	IP 35 1,94	COP 35 2,16	HC 40 3,4	IP 40 1,98	COP 40 1,72	HC 45 3,40	IP 45 1,98	COP 45 1,72	HC 50 3,00	IP 50 2,12	COP 50 1,42	HC 55 3,00	IP 55 2,12	COP 55 1,42
WH-SDF09 Tamb LWC -15 -7	E3E5 / WH- HC 30 4,20 4,20	-SDC05E3E5 IP 30 1,94 1,62	COP 30 2,16 2,59	HC 35 4,20 4,20	IP 35 1,94 1,62	COP 35 2,16 2,59	HC 40 3,4 3,8	IP 40 1,98 1,82	COP 40 1,72 2,09	HC 45 3,40 3,80	IP 45 1,98 1,82	COP 45 1,72 2,09	HC 50 3,00 3,55	IP 50 2,12 2,08	COP 50 1,42 1,71	HC 55 3,00 3,55	IP 55 2,12 2,08	COP 55 1,42 1,71
WH-SDF05 Tamb LWC -15 -7 2	<b>E3E5 / WH</b> <b>HC</b> <b>30</b> 4,20 4,20 4,20 4,20	-SDC05E3E5 IP 30 1,94 1,62 1,35	5 COP 30 2,16 2,59 3,11	HC 35 4,20 4,20 4,20	IP 35 1,94 1,62 1,35	COP 35 2,16 2,59 3,11	HC 40 3,4 3,8 4,2	IP 40 1,98 1,82 1,65	COP 40 1,72 2,09 2,55	HC 45 3,40 3,80 4,20	IP 45 1,98 1,82 1,65	COP 45 1,72 2,09 2,55	HC 50 3,00 3,55 4,10	IP 50 2,12 2,08 2,07	COP 50 1,42 1,71 1,98	HC 55 3,00 3,55 4,10	IP 55 2,12 2,08 2,07	COP 55 1,42 1,71 1,98

#### **Cooling Capacity Curve**

Aquarea. High Performance. Bi-Bloc Single Phase. Heating and Cooling - SDC. 3 and 5kW

MODELS	WH-SDC03E3E5					WH-SDC05E3E5						
Tamb	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP
LWC	7	7	14	14	18	18	7	7	14	14	18	18
18	2,40	0,42	4,40	0,73	3,70	0,49	4,50	0,89	5,00	0,90	5,70	0,90
25	3,20	0,73	4,10	0,86	3,50	0,59	5,00	1,43	6,30	1,50	5,40	1,06
35	3,20	1,04	3,90	1,07	3,30	0,74	4,50	1,67	5,50	1,68	5,00	1,33
43	2,90	1,20	3,50	1,20	3,00	0,88	3,30	1,53	4,10	1,52	4,40	1,53

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). CC: Cooling Capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

#### Hydraulic Pump Performance. Constant Pressure Head Difference ( $\Delta p$ -c). 3 and 5kW



When pressure loss of system increased, pump speed will be reduced for maintain constant pressure.

#### Hydraulic Pump Performance. Variable Pressure Head Difference ( $\Delta p\text{-v}$ ). 3 and 5kW



When pressure loss of system increased, pump speed will be reduced for maintain pressure according to water flow rate.

#### **Heating capacity Curve**

Aquarea. High Performance. Mono-Bloc Single Phase. Heating Only - MDF. Heating and Cooling - MDC. 5, 6 and 9kW

WH-MDC	05F3E5																	
Tamb	MDC05F3E5       IP       COP       HC       IP       COP       If       Solution       Solution																	
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	5,00	1,82	2,75	5,00	1,95	2,56	5,00	2,20	2,27	5,00	2,45	2,04	5,00	2,70	1,85	5,00	2,95	1,69
-7	4,50	1,44	3,13	4,50	1,51	2,98	4,50	1,64	2,74	4,50	1,78	2,53	4,50	1,94	2,32	4,30	2,12	2,03
2	4,80	1,22	3,93	4,80	1,28	3,75	4,80	1,40	3,43	4,50	1,52	2,96	4,30	1,57	2,14	4,00	1,72	2,33
7	5,00	0,91	5,49	5,00	0,99	5,08	5,00	1,13	4,42	5,00	1,26	3,97	5,00	1,44	3,47	5,00	1,63	3,07
25	5,00	0,67	7,46	5,00	0,71	7,04	5,00	0,78	6,41	5,00	0,86	5,81	5,00	0,98	5,10	5,00	1,10	4,55
WH-MDF(	5,00         0,67         7,46         5,00         0,71         7,04         5,00         0,78         6,41         5,00         0,86         5,81         5,00         1,44         3,47         5,00         1,63         3,07           5,00         0,67         7,46         5,00         0,71         7,04         5,00         0,78         6,41         5,00         0,86         5,81         5,00         0,98         5,10         5,00         1,10         4,55																	
Tamb	5.00         0.91         5.49         5.00         0.99         5.08         5.00         1,13         4.42         5.00         1,26         3.97         5.00         1.44         3.47         5.00         1.63         3.07           25         5.00         0.67         7.46         5.00         0.71         7.04         5.00         0.78         6.41         5.00         0.86         5.81         5.00         0.98         5.10         5.00         1,10         4.55															COP		
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	6,15	2,50	2,46	5,90	2,66	2,22	5,65	2,82	2,00	5,40	2,98	1,81	5,20	3,15	1,65	5,00	3,32	1,51
-7	5,18	1,68	3,09	5,15	1,92	2,68	5,13	2,17	2,37	5,10	2,41	2,12	5,45	2,81	1,94	5,80	3,20	1,81
2	5,00	1,23	4,08	5,00	1,45	3,45	5,00	1,68	2,99	5,00	1,90	2,63	5,00	2,19	2,28	5,00	2,48	2,02
7	6,00	1,13	5,33	6,00	1,35	4,46	6,00	1,58	3,81	6,00	1,80	3,33	6,00	2,09	2,87	6,00	2,38	2,52
25	7,30	0,78	9,42	7,10	0,93	7,63	6,90	1,09	6,36	6,70	1,24	5,40	6,50	1,41	4,61	6,30	1,58	3,99
WH-MDF(	09E3E5 / WH-	MDC09E3E5																
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	7,90	3,62	2,19	7,60	3,77	2,02	7,30	3,93	1,86	7,00	4,08	1,72	6,45	4,06	1,59	5,90	4,03	1,46
-7	7,80	3,38	2,31	7,70	3,63	2,12	7,60	3,88	1,96	7,50	4,13	1,82	7,55	4,59	1,64	7,60	5,05	1,50
2	7,00	2,01	3,49	2,45	2,37	3,14	7,00	2,60	2,70	7,00	2,89	2,42	7,00	3,37	2,08	7,00	3,85	1,82
7	9,00	1,87	4,83	9,00	2,17	4,16	9,00	2,48	3,64	9,00	2,78	3,24	8,95	3,31	2,70	8,90	3,84	2,32
25	9,00	0,99	9,09	9,00	1,31	6,87	9,00	1,63	5,52	9,00	1,95	4,62	9,00	2,20	4,09	9,00	2,45	3,67

#### **Cooling Capacity Curve**

Aquarea. I	ligh Perforn	nance. Mon	o-Bloc Sing	jle Phase. I	leating and	Cooling - M	IDC. 5, 6 and	19kW										
MODELS	WH-MDCO	5F3E5					WH-MD	C06E3E5					WH-ME	C09E3E5				
Tamb	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP
LWC	7	7	14	14	18	18	7	7	14	14	18	18	7	7	14	14	18	18
18	1,95	0,45	2,20	0, 45	2,45	0,50	4,64	0,91	5,83	0,99	6,74	0,94	5,36	1,05	6,12	1,08	7,02	1,08
25	5,00	1,25	6,30	1,20	6,30	0,80	5,85	1,43	9,55	1,73	9,81	1,68	6,44	1,85	10,50	2,51	11,16	2,52
35	4,50	1,35	5,10	1,50	5,00	1,00	5,50	2,03	6,70	2,06	7,30	2,05	7,00	2,90	8,40	2,95	9,00	3,00
43	3,75	1,75	4,50	1,80	4,25	1,20	4,56	2,34	6,31	2,47	7,14	2,45	5,32	3,18	6,34	2,48	6,78	2,46

60

0

Pump Speed 5

10

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). CC: Cooling Capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)







Pump Speed 6 Hydraulic Pump Performance. Variable Pressure Head Difference ( $\Delta p$ -c)

20



When pressure loss of system increased, pump speed will be reduced for maintain constant pressure.

. When pressure loss of system increased, pump speed will be reduced for maintain pressure according to water flow rate.

30

40

Water Flow Rate (L/min)

Max

50

60

70

Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)

# Heating capacity table based on outlet temperature and outside temperature

Heating capacity Curve Aquarea. High Performance. Bi-Bloc Single Phase / Three Phase. Heating and Cooling. SDC

WH-SDC07	/F3E5		Juc Jingle I	nase / Three	c i nasc. ne	cating and c	ooting. SDC											
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	4,6U	1,85	2,49	4,60	1,98	2,32	4,60	2,17	2,12	4,60	2,40	1,92	4,55	2,66	1,71	4,50	2,98	1,51
-/	5,15 6 70	1,70	3 70	6 55	1,72	2,00	6 58	2,12	2,40	5,00	2,30	2,12	4,70	2,40	2,00	4,00	3 1/	1,01
7	7.00	1.41	4.96	7.00	1.57	4.46	7.00	1.75	4.00	7.00	2.10	3.33	6.90	2,28	3.03	6.80	2.70	2.52
25	7,00	0,77	9,09	7,00	0,91	7,69	6,40	1,01	6,34	6,10	1,15	5,30	5,90	1,31	4,50	5,70	1,47	3,88
WH-SDC09	F3E5	ID	000	110	ID	COD	110	ID	COD	110	ID	000	110	ID	000	110	ID	000
	30	30	30	35	35	35	HL //0	IP //1	LUP //	HL 45	1P //5	LUP (5	50	50	50	FL 55	55	55
-15	6.00	2.53	2.37	5.90	2.66	2.22	5.50	2.80	1.96	5.40	2.98	1.81	5.20	3.12	1.67	5.00	3.31	1.51
-7	6,10	2,14	2,85	5,90	2,34	2,52	5,85	2,61	2,24	5,80	2,88	2,01	5,80	3,04	1,91	5,80	3,21	1,81
2	6,80	1,85	3,68	6,70	2,14	3,13	6,70	2,36	2,84	6,60	2,62	2,52	6,30	2,88	2,19	6,00	3,14	1,91
7	9,00	1,91	4,71	9,00	2,18	4,13	9,00	2,43	3,70	9,00	2,79	3,23	8,95	3,21	2,79	8,90	3,85	2,31
25	9,00	1,00	8,57	9,00	1,25	7,20	8,40	1,38	0,09	8,00	1,57	5,10	/,80	1,/9	4,30	7,50	2,01	3,/3
WH-SDC12	F6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,30	3,46	2,69	8,90	3,62	2,46	8,50	3,79	2,24	8,10	3,95	2,05	7,50	4,05	1,85	7,00	4,16	1,68
-/	10,40	3,37	3,09	11 / 0	3,00	2,73	9,00	3,00	2,49	9,20	4,00	2,27	0,70	4,10	2,09	0,20	4,27	2 20
7	12 00	2 10	5,01	12 00	2 53	474	12 00	2 96	4 05	12 00	3,74	3 54	12 00	3,74	3 17	12 00	4,14	2,20
25	12,00	1,38	8,70	12,00	1,66	7,23	11,80	1,94	6,08	11,70	2,23	5,25	11,50	2,49	4,62	11,40	2,74	4,16
WH-SDC14	4F6E5	ID	CUD	μr	ID	COD	μr	ID	COD	uс	ID	CUD	μr	ID	CUD	uс	ID	COD
	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,90	3,87	2,56	9,50	4,01	2,37	9,00	4,15	2,17	8,60	4,29	2,00	7,90	4,41	1,79	7,30	4,52	1,62
-7	11,10	3,69	3,01	10,70	3,96	2,70	10,20	4,16	2,45	9,80	4,36	2,25	9,10	4,53	2,01	8,50	4,70	1,81
2	12,90	3,47	3,72	12,40	3,69	3,36	11,90	3,91	3,04	11,40	4,13	2,76	10,40	4,25	2,45	9,50	4,36	2,18
7	14,00	2,56	5,47	14,00	3,07	4,56	14,00	3,59	3,90	14,00	4,10	3,41	13,60	4,57	2,98	13,30	5,04	2,64
25	14,00	1,/1	8,19	14,00	2,00	0,80	14,00	2,41	5,81	14,00	2,/0	5,07	14,00	3,01	4,00	14,00	3,40	4,12
WH-SDC16	F6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10,60	4,09	2,59	10,30	4,38	2,35	10,00	4,67	2,14	9,70	4,96	1,96	8,80	4,94	1,78	7,90	4,91	1,61
-7	11,90	4,03	2,95	11,40	4,20	2,00	10,80	4,40	2,42	10,30	4,00	2,21	9,00	4,81	2,00	9,00	4,95	1,82
7	16.00	3,74	4 98	16 00	3.74	4 28	16 00	4,10	3 75	16.00	4,40	3 33	15 20	5 11	2,42	14 50	5 41	2,17
25	16,00	2,31	6,93	16,00	2,69	5,95	16,00	3,07	5,21	16,00	3,45	4,64	16,00	3,67	4,36	15,90	3,89	4,09
WH-SUCU Tamb	9F3E8 HC	ID	CUD	HC	IP	CUD	HC	ID	CUD	HC	IP	CUD	HC	IP	CUD	HC	ID	CUD
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	8,65	3,06	2,83	8,30	3,21	2,59	7,95	3,41	2,33	7,60	3,61	2,11	7,15	3,71	1,93	6,70	3,81	1,76
-7	9,35	2,91	3,21	9,00	3,16	2,85	8,85	3,46	2,56	8,70	3,76	2,31	8,30	3,81	2,18	7,90	3,86	2,05
2	9,31	2,35	3,96	9,00	2,51	3,59	9,00	2,78	3,24	9,00	3,05	2,95	8,90	3,49	2,55	8,80	3,94	2,23
7	9,00	1,54	5,84	9,00	1,86	4,84	9,00	2,16	4,17	9,00	2,46	3,66	9,00	2,76	3,26	9,00	3,06	2,94
25	9,00	1,00	8,5/	9,00	1,24	1,20	8,/3	1,44	0,00	8,40	1,04	5,10	8,28	1,82	4,00	8,10	Z,UU	4,00
WH-SDC12	F9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,30 10 //0	3,40	2,09	0,90 10.00	3,02	2,40	0,00	3,79	2,24	9,10	3,90	2,00	7,50	4,00	2 09	7,00	4,10	1,00
2	11.80	3.10	3,81	11.40	3.31	3.44	11.00	3,53	3.12	10.60	3.74	2.83	9.80	3.94	2,49	9.10	4,14	2.20
7	12,00	2,10	5,71	12,00	2,53	4,74	12,00	2,96	4,05	12,00	3,39	3,54	12,00	3,78	3,17	12,00	4,16	2,88
25	12,00	1,38	8,70	12,00	1,66	7,23	11,80	1,94	6,08	11,70	2,23	5,25	11,50	2,49	4,62	11,40	2,74	4,16
WH-SDC1/	FOES																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,90	3,87	2,56	9,50	4,01	2,37	9,00	4,15	2,17	8,60	4,29	2,00	7,90	4,41	1,79	7,30	4,52	1,62
-7	11,10	3,69	3,01	10,70	3,96	2,70	10,20	4,16	2,45	9,80 11 / 0	4,36	2,25	9,10	4,53	2,01	8,5U 0 E0	4,70	1,81
7	12,70	2,47	5,72	12,40	3,07	4,56	14 00	3,59	3,04	14 00	4,13	3 41	13.60	4,20	2,45	7,00	4,30 5 04	2,10
25	14,00	1,71	8,19	14,00	2,06	6,80	14,00	2,41	5,81	14,00	2,76	5,07	14,00	3,01	4,65	14,00	3,40	4,12
WH-SDC16	19E8	ID	COP	ПС	ID	COP	ЦС	ID	COP	ПС	ID	COP	ИС	ID	COP	ПС	ID	COD
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10,60	4,09	2,59	10,30	4,38	2,35	10,00	4,67	2,14	9,70	4,96	1,96	8,80	4,94	1,78	7,90	4,91	1,61
-7	11,90	4,03	2,95	11,40	4,26	2,68	10,80	4,46	2,42	10,30	4,66	2,21	9,60	4,81	2,00	9,00	4,95	1,82
2	13,50	3,74	3,61	13,00	3,96	3,28	12,40	4,18	2,97	11,90	4,40	2,70	10,80	4,46	2,42	9,80	4,51	2,17
7	16,00	3,21	4,98	16,00	3,74	4,28 5.0E	16,00	4,27	3,/5 5.21	16,00	4,8U	3,33	15,20	5,11	2,97	14,50	5,41	2,68
<b>L</b> J	10,00	2,J1	U,7J	10,00	2,07	J,7J	10,00	J,U/	J, Z I	10,00	J,4J	4,04	10,00	J,U/	4,30	10,70	J,U7	4,07

### **Cooling Capacity Curve**

Aquarea. High Perf	ormance. B	li-Bloc Sing	le Phase / '	Three Phase	e. Heating a	nd Cooling.	SDC											
MODELS	WH-SDC0	7F3E5	WH-SDCO	9F3E5	WH-SDC1	2F6E5	WH-SDC1	4F6E5	WH-SDC1	6F6E5	WH-SDC0	9F3E8	WH-SDC12	2F9E8	WH-SDC1	4F9E8	WH-SDC1	6F9E8
Tamb	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP	CC	IP
LWC	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
16	5,09	0,86	5,93	1,05	7,65	1,26	8,85	1,46	9,62	1,59	5,90	0,97	7,65	1,26	8,85	1,46	9,62	1,59
25	6,58	1,73	7,79	2,23	9,20	2,26	10,00	2,64	10,51	2,81	7,45	1,55	9,20	2,26	10,00	2,64	10,51	2,81
35	6,00	2,28	7,00	2,88	10,00	3,56	11,50	4,36	12,20	4,76	7,00	2,21	10,00	3,56	11,50	4,36	12,20	4,76
43	5,14	2,67	6,20	3,26	7,60	3,91	9,05	4,97	10,08	5,43	5,80	2,55	7,60	3,91	9,05	4,97	10,08	5,43

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). CC: Cooling Capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.





Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)

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# Heating capacity table based on outlet temperature and outside temperature

### **Heating capacity Curve**

Aquarea, High Performance, Mono-Bloc Single Phase / Three Phase, Heating Only - MDF, Heating and Cooling - MDC

Aquarea.	HIGN PERIO	rmance. M	OUO-RIOC 21	ngle Phase /	Inree Pha	se. Heating	UNLY - MUF. I	Heating and	1 Cooling - M	100								
Tomb	IZLOED	ID	COD	шс	ID	COD	UC	ID	COD	μc	ID	COD	uс	ID	COD	шс	ID	COD
	20	20	20	25	25	25	/0	117	(0	/5	1F /5	LUF /E	F0	IF 50	CUP E0	nL 55	F	EE
15	30	30	30	30	30	30	40	40	40	40	40	40	7.50	00	1 00	20	00	00
-10	7,30	3,00	2,00	0,70	3,00	2,43	0,00	3,03	2,22	0,10	J,77	2,03	7,30	4,07	1,00	7,00	4,20	1,07
-/	10,40	3,41	3,00	10,00	3,/0	2,70	9,00	3,90	2,40	9,20	4,10	2,24	0,70	4,20	2,07	0,20	4,31	1,70
2	12.00	3,14	J,/0	11,40	3,34	3,41	12.00	3,37	3,00	10,00	3,70	2,00	7,00	3,70	2,40	7,10	4,10	2,10
/ 25	12,00	2,14	0,01	12,00	2,37	4,0/	12,00	3,00	4,00	12,00	3,43	3,30	12,00	3,02	3,14	12,00	4,20	2,00
25	12,00	1,42	8,45	12,00	1,/U	7,00	11,80	1,98	5,90	11,/0	2,27	5,15	11,50	2,53	4,55	11,40	2,78	4,10
WH-MDC	14C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9.90	3.91	2.53	9.50	4.05	2.35	9.00	4.19	2.15	8.60	4.33	1.99	7.90	4.45	1.78	7.30	4.56	1.60
-7	11.10	3.73	2.98	10.70	4.00	2.68	10.20	4.20	2.43	9.80	4.40	2.23	9.10	4.57	1.99	8.50	4.74	1.79
2	12.90	3.51	3.68	12.40	3.73	3.32	11.90	3.95	3.01	11.40	4.17	2.73	10.40	4.29	2.42	9.50	4.40	2.16
7	14.00	2.60	5.38	14.00	3.11	4.50	14.00	3.63	3.86	14.00	4.14	3.38	13.60	4.61	2.95	13.30	5.08	2.62
25	14.00	1.75	8.00	14.00	2.10	6.67	14.00	2.45	5.71	14.00	2.80	5.00	14.00	3.05	4.59	14.00	3.44	4.07
WH-MDC	16C6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	10,60	4,13	2,57	10,30	4,42	2,33	10,00	4,71	2,12	9,70	5,00	1,94	8,80	4,98	1,77	7,90	4,95	1,60
-7	11,90	4,07	2,92	11,40	4,30	2,65	10,80	4,50	2,40	10,30	4,70	2,19	9,60	4,85	1,98	9,00	4,99	1,80
2	13,50	3,78	3,57	13,00	4,00	3,25	12,40	4,22	2,94	11,90	4,44	2,68	10,80	4,50	2,40	9,80	4,55	2,15
7	16,00	3,25	4,92	16,00	3,78	4,23	16,00	4,31	3,71	16,00	4,84	3,31	15,20	5,15	2,95	14,50	5,45	2,66
25	16,00	2,35	6,81	16,00	2,73	5,86	16,00	3,11	5,14	16,00	3,49	4,58	16,00	3,71	4,31	15,90	3,93	4,05
WH-MDC	0903E8																	
Tamh	HC	IP	CUD	HC	IP	CUD	HC	IP	CUD	HC	IP	CUD	HC	IP	CUD	нс	IP	CUD
IWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	8.65	3 10	2 79	8 30	3 25	2 55	7.95	3 /5	2 30	7.60	3.65	2.08	7 15	3 75	1 91	6 70	3.85	1.7/
-7	9.35	2 95	3 17	9 00	3 20	2,00	8.85	3 50	2,53	8 70	3,80	2,00	8.30	3.85	2.16	7 90	3.90	2.03
2	9,30	2,70	3.90	9 00	2 55	3 53	9 00	2,82	3 10	9 00	3.00	2,27	8 90	3 53	2,10	8.80	3.08	2,00
7	9,01	1 58	5,70	9 00	1 90	6,00	9 00	2,02	6,17	9 00	2.50	3.60	9,70	2.80	3 21	9 00	3 10	2,21
25	9 00	1,00	8.26	9 00	1,70	7.03	8.73	1 48	5.90	8.46	1.68	5.04	8 28	1.86	4.45	8 10	2 04	3.97
20	1,00	1,07	0,20	1,00	1,20	1,00	0,10	1,10	0,70	0,10	1,00	0,01	0,20	1,00	1,10	0,10	2,01	0,11
WH-MDC	12C9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,30	3,50	2,66	8,90	3,66	2,43	8,50	3,83	2,22	8,10	3,99	2,03	7,50	4,09	1,83	7,00	4,20	1,67
-7	10,40	3,41	3,05	10,00	3,70	2,70	9,60	3,90	2,46	9,20	4,10	2,24	8,70	4,20	2,07	8,20	4,31	1,90
2	11,80	3,14	3,76	11,40	3,34	3,41	11,00	3,57	3,08	10,60	3,78	2,80	9,80	3,98	2,46	9,10	4,18	2,18
7	12,00	2,14	5,61	12,00	2,57	4,67	12,00	3,00	4,00	12,00	3,43	3,50	12,00	3,82	3,14	12,00	4,20	2,86
25	12,00	1,42	8,45	12,00	1,70	7,06	11,80	1,98	5,96	11,70	2,27	5,15	11,50	2,53	4,55	11,40	2,78	4,10
WH-MDC	14C9F8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,90	3,91	2,53	9,50	4,05	2,35	9,00	4,19	2,15	8,60	4,33	1,99	7,90	4,45	1,78	7,30	4,56	1,60
-7	11,10	3,73	2,98	10,70	4,00	2,68	10,20	4,20	2,43	9,80	4,40	2,23	9,10	4,57	1,99	8,50	4,74	1,79
2	12,90	3,51	3,68	12,40	3,73	3,32	11,90	3,95	3,01	11,40	4,17	2,73	10,40	4,29	2,42	9,50	4,40	2,16
7	14,00	2,60	5,38	14,00	3,11	4,50	14,00	3,63	3,86	14,00	4,14	3,38	13,60	4,61	2,95	13,30	5,08	2,62
25	14,00	1,75	8,00	14,00	2,10	6,67	14,00	2,45	5,71	14,00	2,80	5,00	14,00	3,05	4,59	14,00	3,44	4,07
WH-MDC	16C9E8	ID	000	110	ID	000	110	10	000	110	ID	000	110	10	000	110	10	000
	HU	11	CUP	HU	IP 25	CUP	HU	IP (C	LOP	HU	112	CUP	HU	IP FC	LUP	HU	IP FF	CUP
15	JU 10.70	JU ( 10	30	10.00	<b>JD</b>	30	40	40	40	40	4 <b>0</b>	40	0.00	00	1 77	7.00	00	<b>33</b>
-10	11,60	4,13	2,5/	10,30	4,42	2,33	10,00	4,/1	2,12	9,/0	0,00	1,94	0,00	4,98	1,//	7,90	4,95	1,00
-/	11,70	4,0/	2,92	11,40	4,30	2,00	10,00	4,00	2,40	11.00	4,/U	2,19	7,00	4,00	1,98	7,00	4,77	1,00
2	17.00	J,/ Ŭ	3,57	1/ 00	4,00	3,20	1/ 00	4,22	2,94	1/ 00	4,44	2,00	10,00	4,00	2,40	9,80	4,00	2,10
/	16,00	J,25	4,92	16,00	3,/8	4,23	10,00	4,51	5,/1	16,00	4,84	3,31	15,20	0,10	2,95	14,50	5,45	2,00
Z5	16,00	Z,35	6,81	16,00	2,/3	5,86	16,00	3,11	5,14	16,00	3,49	4,58	16,00	٥,/١	4,31	15,90	3,93	4,05

#### Hydraulic Pump Performance. 9 kW single phase



Hydraulic Pump Performance. MDC 12 to MDC 16 single phase and all MDC three phase



### **Cooling Capacity Curve**

Aquarea. High P	erformance. Mon	o-Bloc Single Pha	ase / Three Phase	e. Cooling. MDC								
Models	WH-MDC09			WH-MDC12			WH-MDC14			WH-MDC16		
Tamb	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER
16	5,90	1,01	5,84	7,65	1,30	5,88	8,85	1,50	5,90	9,62	1,63	5,90
25	7,45	1,59	4,69	9,20	2,30	4,00	10,00	2,68	3,73	10,51	2,85	3,69
35	7,00	2,25	3,11	10,00	3,60	2,78	11,50	4,40	2,61	12,20	4,80	2,54
43	5,80	2,59	2,24	7,60	3,95	1,92	9,05	5,01	1,81	10,08	5,47	1,84

#### **Heating Capacity Curve**

Aquarea T-CAP. Mono-Bloc Single Phase / Three Phase. Heating. MXF / MXC

WH-MXC	09D3E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,00	3,28	2,74	9,00	3,55	2,54	9,00	3,95	2,28	9,00	4,34	2,07	9,00	4,77	1,89	9,00	5,20	1,73
-7	9,00	2,75	3,27	9,00	3,20	2,81	9,00	3,66	2,46	9,00	4,11	2,19	9,00	4,31	2,09	9,00	4,50	2,00
2	9,00	2,40	3,75	9,00	2,55	3,53	9,00	2,82	3,19	9,00	3,09	2,91	9,00	3,60	2,50	9,00	4,11	2,19
7	9,00	1,68	5,36	9,00	1,90	4,74	9,00	2,20	4,09	9,00	2,50	3,60	9,00	2,80	3,21	9,00	3,10	2,90
25	13,60	1,54	8,83	13,60	1,75	7,77	13,20	1,97	6,70	12,80	2,18	5,87	12,00	2,45	4,90	11,20	2,71	4,13
WH-MXC	12D6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12,00	4,79	2,51	12,00	5,00	2,40	11,50	5,21	2,21	11,00	5,42	2,03	10,70	5,86	1,83	10,50	6,30	1,67
-7	12,00	3,89	3,08	12,00	4,45	2,70	12,00	5,02	2,39	12,00	5,58	2,15	12,00	5,94	2,02	12,00	6,30	1,90
2	12,00	3,23	3,72	12,00	3,53	3,40	12,00	3,91	3,07	12,00	4,29	2,80	12,00	4,90	2,45	12,00	5,51	2,18
7	12,00	2,22	5,41	12,00	2,57	4,67	12,00	3,00	4,00	12,00	3,43	3,50	12,00	3,82	3,14	12,00	4,20	2,86
25	13,60	1,59	8,55	13,60	1,80	7,56	13,40	2,14	6,26	13,20	2,47	5,34	12,60	2,70	4,67	12,00	2,93	4,10
WH-MXC	09D3E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,00	3,28	2,74	9,00	3,55	2,54	9,00	3,95	2,28	9,00	4,34	2,07	9,00	4,77	1,89	9,00	5,20	1,73
-7	9,00	2,75	3,27	9,00	3,20	2,81	9,00	3,66	2,46	9,00	4,11	2,19	9,00	4,31	2,09	9,00	4,50	2,00
2	9,00	2,40	3,75	9,00	2,55	3,53	9,00	2,82	3,19	9,00	3,09	2,91	9,00	3,60	2,50	9,00	4,11	2,19
7	9,00	1,68	5,36	9,00	1,90	4,74	9,00	2,20	4,09	9,00	2,50	3,60	9,00	2,80	3,21	9,00	3,10	2,90
25	13,60	1,54	8,83	13,60	1,75	7,77	13,20	1,97	6,70	12,80	2,18	5,87	12,00	2,45	4,90	11,20	2,71	4,13
WH-MXC	12D9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12,00	4,79	2,51	12,00	5,00	2,40	12,00	5,45	2,20	12,00	5,90	2,03	11,50	6,28	1,83	11,10	6,66	1,67
-7	12,00	3,89	3,08	12,00	4,45	2,70	12,00	5,02	2,39	12,00	5,58	2,15	12,00	5,94	2,02	12,00	6,30	1,90
2	12,00	3,23	3,72	12,00	3,53	3,40	12,00	3,91	3,07	12,00	4,29	2,80	12,00	4,90	2,45	12,00	5,51	2,18
7	12,00	2,22	5,41	12,00	2,57	4,67	12,00	3,00	4,00	12,00	3,43	3,50	12,00	3,82	3,14	12,00	4,20	2,86
25	13,60	1,59	8,55	13,60	1,80	7,56	13,40	2,14	6,26	13,20	2,47	5,34	12,60	2,70	4,67	12,00	2,93	4,10

### **Cooling Capacity Curve**

Aquarea T-CAP. Mono-Bloc Sing	gle Phase / Three Phase. Coolin	g. MXC				
MODELS	WH-MXC09			WH-MXC12		
Tamb	CC	IP	EER	CC	IP	EER
16	7,00	1,40	5,00	7,50	1,45	5,17
25	7,65	1,95	3,92	8,90	2,20	4,05
35	7,00	2,25	3,11	10,00	3,60	2,78
43	6,25	2,70	2,31	8,00	3,05	2,62

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). CC: Cooling Capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.



### Hydraulic Pump Performance. MXC 12 to MXC 16 single phase and all MXC three phase

# Heating capacity table based on outlet temperature and outside temperature

#### **Heating Capacity Curve**

#### Aquarea T-CAP. Bi-Bloc Single Phase / Three Phase. Heating and Cooling. S)

Aquarea I	-CAP. DI-DI	oc annyte	Flidse / Tille	e riidse. ni	auny anu u	Joounny. SAC												
WH-SXCO	9F3E5																	
Tamb	Net of the P inter Plase. Recently and County. Suc         Net of the P       COP       HC       IP       COP       HC       IP																	
National product singer makes / numer makes. meaning and condity. Such           National product singer makes / numer makes. meaning and condity. Such           National product singer makes / numer makes. meaning and condity. Such Such Such Such Such Such Such Such		55																
-15	9,00	3,24	2,78	9,00	3,51	2,56	9,00	3,91	2,30	9,00	4,30	2,09	9,00	4,73	1,90	9,00	5,16	1,74
-7	9,00	2,71	3,32	9,00	3,16	2,85	9,00	3,62	2,49	9,00	4,07	2,21	9,00	4,27	2,11	9,00	4,46	2,02
2	9,00	2,36	3,81	9,00	2,51	3,59	9,00	2,78	3,24	9,00	3,05	2,95	9,00	3,56	2,53	9,00	4,07	2,21
7	9,00	1,64	5,49	9,00	1,86	4,84	9,00	2,16	4,17	9,00	2,46	3,66	9,00	2,76	3,26	9,00	3,06	2,94
25	13,60	1,50	9,07	13,60	1,71	7,95	13,20	1,93	6,84	12,80	2,14	5,98	12,00	2,41	4,98	11,20	2,67	4,19
WH-SXC1	2F6E5																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12,00	4,75	2,53	12,00	4,96	2,42	11,50	5,17	2,22	11,00	5,38	2,04	10,70	5,82	1,84	10,50	6,26	1,68
-7	12,00	3,85	3,12	12,00	4,41	2,72	12,00	4,98	2,41	12,00	5,54	2,17	12,00	5,90	2,03	12,00	6,26	1,92
2	12,00	3,19	3,76	12,00	3,49	3,44	12,00	3,87	3,10	12,00	4,25	2,82	12,00	4,86	2,47	12,00	5,47	2,19
7	12,00	2,18	5,50	12,00	2,53	4,74	12,00	2,96	4,05	12,00	3,39	3,54	12,00	3,78	3,17	12,00	4,16	2,88
25	13,60	1,55	8,77	13,60	1,76	7,73	13,40	2,10	6,38	13,20	2,43	5,43	12,60	2,66	4,74	12,00	2,89	4,15
WH-SXCO	9F3E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	9,00	3,24	2,78	9,00	3,51	2,56	9,00	3,91	2,30	9,00	4,30	2,09	9,00	4,73	1,90	9,00	5,16	1,74
-7	9,00	2,71	3,32	9,00	3,16	2,85	9,00	3,62	2,49	9,00	4,07	2,21	9,00	4,27	2,11	9,00	4,46	2,02
2	9,00	2,36	3,81	9,00	2,51	3,59	9,00	2,78	3,24	9,00	3,05	2,95	9,00	3,56	2,53	9,00	4,07	2,21
7	9,00	1,64	5,49	9,00	1,86	4,84	9,00	2,16	4,17	9,00	2,46	3,66	9,00	2,76	3,26	9,00	3,06	2,94
25	13,60	1,50	9,07	13,60	1,71	7,95	13,20	1,93	6,84	12,80	2,14	5,98	12,00	2,41	4,98	11,20	2,67	4,19
WH-SXC1	2F9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	12,00	4,75	2,53	12,00	4,96	2,42	12,00	5,41	2,22	12,00	5,86	2,05	11,50	6,24	1,84	11,10	6,62	1,68
-7	12,00	3,85	3,12	12,00	4,41	2,72	12,00	4,98	2,41	12,00	5,54	2,17	12,00	5,90	2,03	12,00	6,26	1,92
2	12,00	3,19	3,76	12,00	3,49	3,44	12,00	3,87	3,10	12,00	4,25	2,82	12,00	4,86	2,47	12,00	5,47	2,19
7	12,00	2,18	5,50	12,00	2,53	4,74	12,00	2,96	4,05	12,00	3,39	3,54	12,00	3,78	3,17	12,00	4,16	2,88
25	13,60	1,55	8,77	13,60	1,76	7,73	13,40	2,10	6,38	13,20	2,43	5,43	12,60	2,66	4,74	12,00	2,89	4,15
WH-SXC1	6F9E8																	
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55
-15	16,00	6,50	2,46	16,00	6,89	2,32	16,00	7,50	2,13	16,00	8,10	1,98	15,60	8,76	1,78	15,20	9,41	1,62
-7	16,00	5,85	2,74	16,00	6,42	2,49	16,00	7,00	2,29	16,00	7,57	2,11	16,00	8,31	1,93	16,00	9,05	1,77
2	16,00	4,59	3,49	16,00	5,16	3,10	16,00	5,74	2,79	16,00	6,31	2,54	16,00	7,10	2,26	16,00	7,88	2,03
7	16,00	3,21	4,98	16,00	3,74	4,28	16,00	4,27	3,75	16,00	4,80	3,33	16,00	5,51	2,91	16,00	6,21	2,58
25	16,00	1,90	8,42	16,00	2,40	6,67	16,00	2,90	5,52	16,00	3,40	4,71	16,00	3,86	4,15	16,00	4,31	3,71

#### **Cooling Capacity Curve**

Aquarea T-CAP. Bi-Bloc Single	Phase / Three Phase.	. Cooling. SXC							
Models	WH-SXC09			WH-SXC12			WH-SXC16		
Tamb	CC	IP	EER	CC	IP	EER	CC	IP	EER
16	7,00	1,36	5,15	7,50	1,41	5,32	9,62	1,59	6,05
25	7,65	1,91	4,01	8,90	2,16	4,12	10,51	2,81	3,74
35	7,00	2,21	3,17	10,00	3,56	2,81	12,20	4,76	2,56
43	6,25	2,66	2,35	8,00	3,01	2,66	10,08	5,43	1,86

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). CC: Cooling Capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

#### Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)

#### Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)





#### **Heating Capacity Curve**

Aquarea HT. Bi-Bloc Single Phase / Three Phase. Heating Only - SHF

WH-SHF09	F3E5	•																						
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55	60	60	60	65	65	65
-15	9,00	3,46	2,60	9,00	3,71	2,43	8,90	4,01	2,22	8,80	4,26	2,07	8,60	4,61	1,87	8,50	4,91	1,73	8,00	5,06	1,58	7,80	5,86	1,33
-7	9,00	3,06	2,94	9,00	3,29	2,74	9,00	3,56	2,53	8,90	3,83	2,32	8,90	4,11	2,17	8,90	4,46	2,00	8,90	4,96	1,79	8,90	5,46	1,63
2	9,00	2,43	3,70	9,00	2,61	3,45	9,00	2,91	3,09	9,00	3,21	2,80	9,00	3,55	2,54	9,00	3,88	2,32	9,00	4,35	2,07	9,00	4,76	1,89
7	9,00	1,82	4,95	9,00	1,94	4,64	9,00	2,21	4,07	9,00	2,46	3,66	9,00	2,76	3,26	9,00	3,12	2,88	9,00	3,46	2,60	9,00	3,96	2,27
25	12,00	1,66	7,23	12,00	1,76	6,82	12,00	2,01	5,97	10,80	2,14	5,05	10,60	2,46	4,31	10,20	2,66	3,83	10,00	2,91	3,44	9,80	3,31	2,96
WH-SHF12	F6E5										1													
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55	60	60	60	65	65	65
-15	12,00	5,16	2,33	12,00	5,53	2,17	11,00	5,51	2,00	10,80	5,49	1,97	10,30	5,63	1,83	9,70	5,76	1,68	9,00	6,01	1,50	8,00	6,11	1,31
-7	12,00	4,43	2,71	12,00	4,76	2,52	11,50	4,91	2,34	11,20	5,06	2,21	10,80	5,16	2,09	10,10	5,28	1,91	9,85	5,66	1,74	9,60	5,91	1,62
2	12,00	3,42	3,51	12,00	3,68	3,26	11,50	3,86	2,98	11,30	4,14	2,73	11,00	4,51	2,44	10,80	4,86	2,22	10,65	5,31	2,01	10,30	5,59	1,84
7	12,00	2,52	4,76	12,00	2,69	4,46	12,00	3,06	3,92	12,00	3,44	3,49	12,00	3,81	3,15	12,00	4,28	2,80	12,00	4,86	2,47	12,00	5,41	2,22
25	12,00	1,66	7,23	12,00	1,76	6,82	12,00	2,01	5,97	12,00	2,41	4,98	12,00	2,64	4,55	12,00	2,96	4,05	12,00	3,41	3,52	12,00	3,86	3,11
WH-SHF09	F3E8	1.0																						
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55	60	60	60	65	65	65
-15	9,00	3,46	2,60	9,00	3,71	2,43	8,90	4,01	2,22	8,80	4,26	2,07	8,60	4,61	1,87	8,50	4,91	1,73	8,00	5,06	1,58	7,80	5,86	1,33
-7	9,00	3,06	2,94	9,00	3,29	2,74	9,00	3,56	2,53	8,90	3,83	2,32	8,90	4,11	Z,1/	8,90	4,46	2,00	8,90	4,96	1,/9	8,90	5,46	1,63
2	9,00	2,43	3,/0	9,00	2,61	3,45	9,00	2,91	3.09	9 111	1371	7 81	9 1111	3 55	7 54	9 1111	3 88	7.37	9.00	4.35	2.07	9,00	4,/6	1,89
7	9 111			0.00	1 0 /	111	0.00	0.01	1.07	0.00	0,21	2,00	0.00	0,00	0.0/	0.00	0.10	2,02	0.00	0.//	2 / 0	0.00	100/	
25	10.00	1,02	4,95	9,00	1,94	4,64	9,00	2,21	4,07	9,00	2,46	3,66	9,00	2,76	3,26	9,00	3,12	2,88	9,00	3,46	2,60	9,00	3,96	2,27
	12,00	1,66	4,95	9,00 12,00	1,94 1,76	4,64 6,82	9,00 12,00	2,21 2,01	4,07 5,97	9,00 10,80	2,46 2,14	3,66 5,05	9,00 10,60	2,76 2,46	3,26 4,31	9,00 10,20	3,12 2,66	2,88 3,83	9,00 10,00	3,46 2,91	2,60 3,44	9,00 9,80	3,96 3,31	2,27 2,96
WH-SHE12	12,00	1,66	4,95 7,23	9,00 12,00	1,94 1,76	4,64 6,82	9,00 12,00	2,21 2,01	4,07 5,97	9,00 10,80	2,46	3,66 5,05	9,00 10,60	2,76 2,46	3,26 4,31	9,00 10,20	3,12 2,66	2,88 3,83	9,00 10,00	3,46 2,91	2,60 3,44	9,00 9,80	3,96 3,31	2,27 2,96
WH-SHF12 Tamb	F9E8	1,66	4,95 7,23	9,00 12,00	1,94 1,76	4,64 6,82	9,00 12,00	2,21 2,01	4,07 5,97	9,00 10,80	2,46 2,14	2,00 3,66 5,05	9,00 10,60	2,76 2,46	3,26 4,31	9,00 10,20	3,12 2,66	2,88 3,83	9,00 10,00	3,46 2,91	2,60 3,44	9,00 9,80	3,96 3,31	2,27 2,96
WH-SHF12 Tamb	F9E8 HC 30	1,66	4,95 7,23 COP	9,00 12,00 HC 35	1,94 1,76 IP 35	4,64 6,82 COP	9,00 12,00 HC 40	2,21 2,01 IP 40	4,07 5,97 COP	9,00 10,80 HC 45	2,46 2,14 IP 45	3,66 5,05 COP	9,00 10,60 HC 50	2,76 2,46	3,26 4,31 COP 50	9,00 9,00 10,20 HC 55	3,12 2,66	2,82 2,88 3,83 COP 55	9,00 10,00 HC 60	3,46 2,91	2,60 3,44 COP	9,00 9,80 HC 65	3,96 3,31 IP 65	2,27 2,96
WH-SHF12 Tamb LWC -15	F9E8 HC 30 12,00	I,66 IP 30 5.16	4,95 7,23 COP 30 2,33	9,00 12,00 HC 35 12,00	1,94 1,76 IP 35 5,53	4,64 6,82 COP 35 2,17	9,00 12,00 HC 40 11,00	2,21 2,01 IP 40 5,51	4,07 5,97 COP 40 2,00	9,00 10,80 HC 45 10,80	2,46 2,14 IP 45 5,49	2,00 3,66 5,05 COP 45 1,97	9,00 10,60 HC 50 10.30	2,76 2,46 IP 50 5.63	3,26 4,31 COP 50 1 83	9,00 10,20 HC 55 9,70	3,12 2,66 IP 55 5.76	2,82 2,88 3,83 COP 55 1,68	9,00 10,00 HC 60 9,00	3,46 2,91 IP 60 6,01	2,60 3,44 COP 60 1,50	9,00 9,80 HC 65 8,00	3,96 3,31 IP 65 6 11	2,2/ 2,96 COP 65 1,31
WH-SHF12 Tamb LWC -15 -7	F9E8 HC 30 12,00 HC 12,00	IP 30 5,16 4,43	4,95 7,23 COP 30 2,33 2,71	9,00 12,00 HC 35 12,00 12,00	1,94 1,76 IP 35 5,53 4,76	4,64 6,82 COP 35 2,17 2,52	9,00 12,00 HC 40 11,00 11,50	2,21 2,01 IP 40 5,51 4,91	4,07 5,97 COP 40 2,00 2,34	9,00           10,80           HC           45           10,80           11,20	2,46 2,14 IP 45 5,49 5,06	2,00 3,66 5,05 COP 45 1,97 2,21	HC           50           10,30	2,76 2,46 IP 50 5,63 5,16	3,26 4,31 COP 50 1,83 2,09	HC           55         9,70           10,10         10,10	3,12 2,66 IP 55 5,76 5,28	2,82 2,88 3,83 <b>COP</b> 55 1,68 1,91	9,00 10,00 HC 60 9,00 9,85	3,46 2,91 IP 60 6,01 5,66	2,60 3,44 COP 60 1,50 1,74	9,00 9,80 HC 65 8,00 9,60	3,96 3,31 IP 65 6,11 5,91	2,27 2,96 COP 65 1,31 1,62
WH-SHF12 Tamb LWC -15 -7 2	F9E8 HC 30 12,00 HC 30 12,00 12,00	IP 30 5,16 4,43 3,42	4,95 7,23 COP 30 2,33 2,71 3,51	9,00 12,00 HC 35 12,00 12,00 12,00	1,94 1,76 <b>IP</b> <b>35</b> 5,53 4,76 3,68	4,64 6,82 COP 35 2,17 2,52 3,26	9,00 12,00 HC 40 11,00 11,50 11,50	2,21 2,01 IP 40 5,51 4,91 3.86	4,07 5,97 <b>COP</b> 40 2,00 2,34 2,98	HC           45           10,80	2,46 2,14 IP 45 5,49 5,06 4,14	2,00 3,66 5,05 <b>COP</b> 45 1,97 2,21 2,73	HC           50           10,30           10,80	2,76 2,46 IP 50 5,63 5,16 4,51	2,8 1 3,26 4,31 <b>COP</b> 50 1,83 2,09 2,44	HC           55           9,70           10,10           10,80	3,12 2,66 IP 55 5,76 5,28 4,86	2,88 3,83 COP 55 1,68 1,91 2,22	9,00           9,00           10,00             HC           60           9,00           9,00           9,00	3,46 2,91 IP 60 6,01 5,66 5,31	2,60 3,44 COP 60 1,50 1,74 2,01	9,00 9,80 HC 65 8,00 9,60 10,30	3,96 3,31 IP 65 6,11 5,91 5,59	2,27 2,96 <b>COP</b> 65 1,31 1,62 1,84
WH-SHF12 Tamb LWC -15 -7 2 7	F9E8 HC 30 12,00 12,00 12,00 12,00 12,00 12,00	I,62 1,66 IP 30 5,16 4,43 3,42 2,52	4,95 7,23 COP 30 2,33 2,71 3,51 4,76	9,00 12,00 HC 35 12,00 12,00 12,00 12,00	1,94 1,76 <b>IP</b> <b>35</b> 5,53 4,76 3,68 2,69	4,64 6,82 COP 35 2,17 2,52 3,26 4,46	9,00 12,00 HC 40 11,00 11,50 11,50 12,00	2,21 2,01 IP 40 5,51 4,91 3,86 3,06	4,07 5,97 <b>COP</b> 40 2,00 2,34 2,98 3,92	P,00           9,00           10,80           HC           45           10,80           11,20           11,30           12,00	2,46 2,14 1P 45 5,49 5,06 4,14 3,44	2,00 3,66 5,05 <b>COP</b> 45 1,97 2,21 2,73 3,49	P,00           9,00           10,60           HC           50           10,30           10,80           11,00           12,00	2,76 2,46 IP 50 5,63 5,16 4,51 3,81	3,26 4,31 COP 50 1,83 2,09 2,44 3,15	P,00           9,00           10,20           HC           55           9,70           10,10           10,80           12,00	3,12 2,66 IP 55 5,76 5,28 4,86 4,28	2,88 3,83 <b>COP</b> 55 1,68 1,91 2,22 2,80	9,00           9,00           10,00           HC           60           9,00           9,85           10,65           12,00	3,46 2,91 IP 60 6,01 5,66 5,31 4,86	2,60 3,44 <b>COP</b> 60 1,50 1,74 2,01 2,47	9,00 9,80 HC 65 8,00 9,60 10,30 12,00	3,96 3,31 <b>IP</b> 65 6,11 5,91 5,59 5,41	2,27 2,96 <b>COP</b> 65 1,31 1,62 1,84 2,22

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

#### Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)



#### Hydraulic pump performance of the F type Heat Pumps: A class pump F (5 kW and 16 kW)



# Heating capacity table based on outlet temperature and outside temperature

#### **Heating Capacity Curve**

Aquarea Ht. Mono-Bloc Single Phase / Three Phase. Heating Only - MHF

WH-MHF09D3E5		•				• •																		
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55	60	60	60	65	65	65
-15	9,00	3,50	2,57	9,00	3,75	2,40	8,90	4,05	2,20	8,80	4,30	2,05	8,60	4,65	1,85	8,50	4,95	1,72	8,00	5,10	1,57	7,80	5,90	1,32
-7	9,00	3,10	2,90	9,00	3,33	2,70	9,00	3,60	2,50	8,90	3,87	2,30	8,90	4,15	2,14	8,90	4,50	1,98	8,90	5,00	1,78	8,90	5,50	1,62
2	9,00	2,47	3,64	9,00	2,65	3,40	9,00	2,95	3,05	9,00	3,25	2,77	9,00	3,59	2,51	9,00	3,92	2,30	9,00	4,39	2,05	9,00	4,80	1,88
7	9,00	1,86	4,84	9,00	1,98	4,55	9,00	2,25	4,00	9,00	2,50	3,60	9,00	2,80	3,21	9,00	3,16	2,85	9,00	3,50	2,57	9,00	4,00	2,25
25	12,00	1,70	7,06	12,00	1,80	6,67	12,00	2,05	5,85	10,80	2,18	4,95	10,60	2,50	4,24	10,20	2,70	3,78	10,00	2,95	3,39	9,80	3,35	2,93
WH-MHF12D6E5	1															_								
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	30	30	30	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55	60	60	60	65	65	65
-15	12,00	5,20	2,31	12,00	5,57	2,15	11,00	5,55	1,98	10,80	5,53	1,95	10,30	5,67	1,82	9,70	5,80	1,67	9,00	6,05	1,49	8,00	6,15	1,30
-7	12,00	4,47	2,68	12,00	4,80	2,50	11,50	4,95	2,32	11,20	5,10	2,20	10,80	5,20	2,08	10,10	5,32	1,90	9,85	5,70	1,73	9,60	5,95	1,61
2	12,00	3,46	3,47	12,00	3,72	3,23	11,50	3,90	2,95	11,30	4,18	2,70	11,00	4,55	2,42	10,80	4,90	2,20	10,65	5,35	1,99	10,30	5,63	1,83
7	12,00	2,56	4,69	12,00	2,73	4,40	12,00	3,10	3,87	12,00	3,48	3,45	12,00	3,85	3,12	12,00	4,32	2,78	12,00	4,90	2,45	12,00	5,45	2,20
25	12,00	1,70	7,06	12,00	1,80	6,67	12,00	2,05	5,85	12,00	2,45	4,90	12,00	2,68	4,48	12,00	3,00	4,00	12,00	3,45	3,48	12,00	3,90	3,08
WH-MHF09D3E8																								
Tamb	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
LWC	35	35	35	35	35	35	40	40	40	45	45	45	50	50	50	55	55	55	60	60	60	65	65	65
-15								10	10				50	00									LE 00	1 32
10	9,00	3,50	2,57	9,00	3,75	2,40	8,90	4,05	2,20	8,80	4,30	2,05	8,60	4,65	1,85	8,50	4,95	1,72	8,00	5,10	1,57	7,80	0,90	1,02
-7	9,00 9,00	3,50 3,10	2,57 2,90	9,00 9,00	3,75 3,33	2,40 2,70	8,90 9,00	4,05 3,60	2,20 2,50	8,80 8,90	4,30 3,87	2,05 2,30	8,60 8,90	4,65 4,15	1,85 2,14	8,50 8,90	4,95 4,50	1,72 1,98	8,00 8,90	5,10 5,00	1,57 1,78	7,80 8,90	5,90 5,50	1,62
-7 2	9,00 9,00 9,00	3,50 3,10 2,47	2,57 2,90 3,64	9,00 9,00 9,00	3,75 3,33 2,65	2,40 2,70 3,40	8,90 9,00 9,00	4,05 3,60 2,95	2,20 2,50 3,05	8,80 8,90 9,00	4,30 3,87 3,25	2,05 2,30 2,77	8,60 8,90 9,00	4,65 4,15 3,59	1,85 2,14 2,51	8,50 8,90 9,00	4,95 4,50 3,92	1,72 1,98 2,30	8,00 8,90 9,00	5,10 5,00 4,39	1,57 1,78 2,05	7,80 8,90 9,00	5,90 5,50 4,80	1,62 1,88
-7 2 7	9,00 9,00 9,00 9,00	3,50 3,10 2,47 1,86	2,57 2,90 3,64 4,84	9,00 9,00 9,00 9,00	3,75 3,33 2,65 1,98	2,40 2,70 3,40 4,55	8,90 9,00 9,00 9,00	4,05 3,60 2,95 2,25	2,20 2,50 3,05 4,00	8,80 8,90 9,00 9,00	4,30 3,87 3,25 2,50	2,05 2,30 2,77 3,60	8,60 8,90 9,00 9,00	4,65 4,15 3,59 2,80	1,85 2,14 2,51 3,21	8,50 8,90 9,00 9,00	4,95 4,50 3,92 3,16	1,72 1,98 2,30 2,85	8,00 8,90 9,00 9,00	5,10 5,00 4,39 3,50	1,57 1,78 2,05 2,57	7,80 8,90 9,00 9,00	5,90 5,50 4,80 4,00	1,62 1,88 2,25
-7 2 7 25	9,00 9,00 9,00 9,00 12,00	3,50 3,10 2,47 1,86 1,70	2,57 2,90 3,64 4,84 7,06	9,00 9,00 9,00 9,00 12,00	3,75 3,33 2,65 1,98 1,80	2,40 2,70 3,40 4,55 6,67	8,90 9,00 9,00 9,00 9,00 12,00	4,05 3,60 2,95 2,25 2,05	2,20 2,50 3,05 4,00 5,85	8,80 8,90 9,00 9,00 10,80	4,30 3,87 3,25 2,50 2,18	2,05 2,30 2,77 3,60 4,95	8,60 8,90 9,00 9,00 10,60	4,65 4,15 3,59 2,80 2,50	1,85 2,14 2,51 3,21 4,24	8,50 8,90 9,00 9,00 10,20	4,95 4,50 3,92 3,16 2,70	1,72 1,98 2,30 2,85 3,78	8,00 8,90 9,00 9,00 10,00	5,10 5,00 4,39 3,50 2,95	1,57 1,78 2,05 2,57 3,39	7,80 8,90 9,00 9,00 9,80	5,90 5,50 4,80 4,00 3,35	1,62 1,88 2,25 2,93
-7 2 7 25	9,00 9,00 9,00 9,00 12,00	3,50 3,10 2,47 1,86 1,70	2,57 2,90 3,64 4,84 7,06	9,00 9,00 9,00 9,00 12,00	3,75 3,33 2,65 1,98 1,80	2,40 2,70 3,40 4,55 6,67	8,90 9,00 9,00 9,00 12,00	4,05 3,60 2,95 2,25 2,05	2,20 2,50 3,05 4,00 5,85	8,80 8,90 9,00 9,00 10,80	4,30 3,87 3,25 2,50 2,18	2,05 2,30 2,77 3,60 4,95	8,60 8,90 9,00 9,00 10,60	4,65 4,15 3,59 2,80 2,50	1,85 2,14 2,51 3,21 4,24	8,50 8,90 9,00 9,00 10,20	4,95 4,50 3,92 3,16 2,70	1,72 1,98 2,30 2,85 3,78	8,00 8,90 9,00 9,00 10,00	5,10 5,00 4,39 3,50 2,95	1,57 1,78 2,05 2,57 3,39	7,80 8,90 9,00 9,00 9,80	5,90 5,50 4,80 4,00 3,35	1,62 1,88 2,25 2,93
-7 2 7 25 WH-MHF12D9E8	9,00 9,00 9,00 9,00 12,00	3,50 3,10 2,47 1,86 1,70	2,57 2,90 3,64 4,84 7,06	9,00 9,00 9,00 9,00 12,00	3,75 3,33 2,65 1,98 1,80	2,40 2,70 3,40 4,55 6,67	8,90 9,00 9,00 9,00 12,00	4,05 3,60 2,95 2,25 2,05	2,20 2,50 3,05 4,00 5,85	8,80 8,90 9,00 9,00 10,80	4,30 3,87 3,25 2,50 2,18	2,05 2,30 2,77 3,60 4,95	8,60 8,90 9,00 9,00 10,60	4,65 4,15 3,59 2,80 2,50	1,85 2,14 2,51 3,21 4,24	8,50 8,90 9,00 9,00 10,20	4,95 4,50 3,92 3,16 2,70	1,72 1,98 2,30 2,85 3,78	8,00 8,90 9,00 9,00 10,00	5,10 5,00 4,39 3,50 2,95	1,57 1,78 2,05 2,57 3,39	7,80 8,90 9,00 9,00 9,80	5,90 5,50 4,80 4,00 3,35	1,62 1,62 1,88 2,25 2,93
-7 -7 2 7 25 WH-MHF12D9E8 Tamb	9,00 9,00 9,00 9,00 12,00 HC	3,50 3,10 2,47 1,86 1,70	2,57 2,90 3,64 4,84 7,06	9,00 9,00 9,00 9,00 12,00 HC	3,75 3,33 2,65 1,98 1,80	2,40 2,70 3,40 4,55 6,67	8,90 9,00 9,00 9,00 12,00 HC	4,05 3,60 2,95 2,25 2,05	2,20 2,50 3,05 4,00 5,85	8,80 8,90 9,00 9,00 10,80	4,30 3,87 3,25 2,50 2,18	2,05 2,30 2,77 3,60 4,95	8,60 8,90 9,00 9,00 10,60	4,65 4,15 3,59 2,80 2,50	1,85 2,14 2,51 3,21 4,24	8,50 8,90 9,00 9,00 10,20 HC	4,95 4,50 3,92 3,16 2,70	1,72 1,98 2,30 2,85 3,78	8,00 8,90 9,00 9,00 10,00 HC	5,10 5,00 4,39 3,50 2,95	1,57 1,78 2,05 2,57 3,39 COP	7,80 8,90 9,00 9,00 9,80 HC	5,90 5,50 4,80 4,00 3,35	1,62 1,62 1,88 2,25 2,93
-7 2 7 25 WH-MHF12D9E8 Tamb LWC	9,00 9,00 9,00 9,00 12,00 HC 35	3,50 3,10 2,47 1,86 1,70	2,57 2,90 3,64 4,84 7,06 COP 35	9,00 9,00 9,00 12,00 HC 35	3,75 3,33 2,65 1,98 1,80 IP 35	2,40 2,70 3,40 4,55 6,67 COP 35	8,90 9,00 9,00 12,00 HC 40	4,05 3,60 2,95 2,25 2,05	2,20 2,50 3,05 4,00 5,85	8,80 8,90 9,00 9,00 10,80 HC 45	4,30 3,87 3,25 2,50 2,18	2,05 2,30 2,77 3,60 4,95	8,60 8,90 9,00 9,00 10,60 HC 50	4,65 4,15 3,59 2,80 2,50	1,85 2,14 2,51 3,21 4,24 COP 50	8,50 8,90 9,00 9,00 10,20 HC 55	4,95 4,50 3,92 3,16 2,70 IP 55	1,72 1,98 2,30 2,85 3,78 COP 55	8,00 8,90 9,00 9,00 10,00 HC 60	5,10 5,00 4,39 3,50 2,95	1,57 1,78 2,05 2,57 3,39 COP 60	7,80 8,90 9,00 9,00 9,80 HC 65	5,90 5,50 4,80 4,00 3,35 IP 65	1,62 1,62 1,88 2,25 2,93 COP 65
-7 2 7 25 WH-MHF12D9E8 Tamb LWC -15	9,00 9,00 9,00 9,00 12,00 HC 35 12,00	3,50 3,10 2,47 1,86 1,70 IP 35 5,20	2,57 2,90 3,64 4,84 7,06 COP 35 2,31	9,00 9,00 9,00 9,00 12,00 HC 35 12,00	3,75 3,33 2,65 1,98 1,80 IP 35 5,57	2,40 2,70 3,40 4,55 6,67 COP 35 2,15	8,90 9,00 9,00 9,00 12,00 HC 40 11,00	4,05 3,60 2,95 2,25 2,05 IP 40 5,55	2,20 2,50 3,05 4,00 5,85 COP 40 1,98	8,80 8,90 9,00 9,00 10,80 HC 45 10,80	4,30 3,87 3,25 2,50 2,18 IP 45 5,53	2,05 2,30 2,77 3,60 4,95 COP 45 1,95	8,60 8,90 9,00 9,00 10,60 HC 50 10,30	4,65 4,15 3,59 2,80 2,50 IP 50 5,67	1,85 2,14 2,51 3,21 4,24 COP 50 1,82	8,50 8,90 9,00 9,00 10,20 HC 55 9,70	4,95 4,50 3,92 3,16 2,70 IP 55 5,80	1,72 1,98 2,30 2,85 3,78 COP 55 1,67	8,00 8,90 9,00 9,00 10,00 HC 60 9,00	5,10 5,00 4,39 3,50 2,95 IP 60 6,05	1,57 1,78 2,05 2,57 3,39 COP 60 1,49	7,80 8,90 9,00 9,00 9,80 HC 65 8,00	5,90 5,50 4,80 3,35 IP 65 6,15	1,62 1,62 1,88 2,25 2,93 COP 65 1,30
-7 2 7 25 WH-MHF12D9E8 Tamb LWC -15 -7	9,00 9,00 9,00 12,00 HC 35 12,00 12,00	3,50 3,10 2,47 1,86 1,70 IP 35 5,20 4,47	2,57 2,90 3,64 4,84 7,06 COP 35 2,31 2,68	9,00 9,00 9,00 12,00 HC 35 12,00 12,00	3,75 3,33 2,65 1,98 1,80 IP 35 5,57 4,80	2,40 2,70 3,40 4,55 6,67 COP 35 2,15 2,50	8,90 9,00 9,00 12,00 HC 40 11,00 11,50	4,05 3,60 2,95 2,25 2,05 IP 40 5,55 4,95	2,20 2,50 3,05 4,00 5,85 COP 40 1,98 2,32	8,80 8,90 9,00 9,00 10,80 HC 45 10,80 11,20	4,30 3,87 3,25 2,50 2,18 IP 45 5,53 5,10	2,05 2,30 2,77 3,60 4,95 COP 45 1,95 2,20	8,60 8,90 9,00 9,00 10,60 HC 50 10,30 10,80	4,65 4,15 3,59 2,80 2,50 IP 50 5,67 5,20	1,85 2,14 2,51 3,21 4,24 COP 50 1,82 2,08	8,50 8,90 9,00 9,00 10,20 HC 55 9,70 10,10	4,95 4,50 3,92 3,16 2,70 IP 55 5,80 5,32	1,72 1,98 2,30 2,85 3,78 COP 55 1,67 1,90	8,00 8,90 9,00 9,00 10,00 HC 60 9,00 9,85	5,10 5,00 4,39 3,50 2,95 IP 60 6,05 5,70	1,57 1,78 2,05 2,57 3,39 COP 60 1,49 1,73	7,80 8,90 9,00 9,00 9,80 HC 65 8,00 9,60	5,90 5,50 4,80 3,35 IP 65 6,15 5,95	1,62 1,62 1,88 2,25 2,93 COP 65 1,30 1,61
-7 2 7 25 WH-MHF12D9E8 Tamb LWC -15 -7 2	9,00 9,00 9,00 12,00 HC 35 12,00 12,00 12,00	3,50 3,10 2,47 1,86 1,70 IP 35 5,20 4,47 3,46	2,57 2,90 3,64 4,84 7,06 COP 35 2,31 2,68 3,47	9,00 9,00 9,00 12,00 HC 35 12,00 12,00 12,00	3,75 3,33 2,65 1,98 1,80 IP 35 5,57 4,80 3,72	2,40 2,70 3,40 4,55 6,67 COP 35 2,15 2,50 3,23	8,90 9,00 9,00 12,00 HC 40 11,00 11,50	4,05 3,60 2,95 2,25 2,05 IP 40 5,55 4,95 3,90	2,20 2,50 3,05 4,00 5,85 COP 40 1,98 2,32 2,95	8,80 8,90 9,00 9,00 10,80 HC 45 10,80 11,20 11,30	4,30 3,87 3,25 2,50 2,18 IP 45 5,53 5,10 4,18	2,05 2,30 2,77 3,60 4,95 COP 45 1,95 2,20 2,70	8,60 8,90 9,00 9,00 10,60 HC 50 10,30 10,80 11,00	4,65 4,15 3,59 2,80 2,50 IP 50 5,67 5,20 4,55	1,85 2,14 2,51 3,21 4,24 COP 50 1,82 2,08 2,42	8,50 8,90 9,00 10,20 HC 55 9,70 10,10 10,80	4,95 4,50 3,92 3,16 2,70 IP 55 5,80 5,32 4,90	1,72 1,98 2,30 2,85 3,78 COP 55 1,67 1,90 2,20	8,00 8,90 9,00 9,00 10,00 HC 60 9,00 9,85 10,65	5,10 5,00 4,39 3,50 2,95 IP 60 6,05 5,70 5,35	1,57 1,78 2,05 2,57 3,39 COP 60 1,49 1,73 1,99	7,80 8,90 9,00 9,00 9,80 HC 65 8,00 9,60 10,30	5,90 5,50 4,80 4,00 3,35 IP 65 6,15 5,95 5,63	1,62 1,62 1,88 2,25 2,93 COP 65 1,30 1,61 1,83
-7 -7 25 WH-MHF12D9E8 Tamb LWC -15 -7 2 7 2	9,00 9,00 9,00 9,00 12,00 HC 35 12,00 12,00 12,00 12,00 12,00	3,50 3,10 2,47 1,86 1,70 IP 35 5,20 4,47 3,46 2,56	2,57 2,90 3,64 4,84 7,06 COP 35 2,31 2,68 3,47 4,69	9,00 9,00 9,00 12,00 HC 35 12,00 12,00 12,00 12,00	3,75 3,33 2,65 1,98 1,80 IP 35 5,57 4,80 3,72 2,73	2,40 2,70 3,40 4,55 6,67 <b>COP</b> 35 2,15 2,50 3,23 4,40	8,90 9,00 9,00 12,00 HC 40 11,00 11,50 11,50 12,00	4,05 3,60 2,95 2,25 2,05 IP 40 5,55 4,95 3,90 3,10	2,20 2,50 3,05 4,00 5,85 COP 40 1,98 2,32 2,95 3,87	8,80 8,90 9,00 9,00 10,80 HC 45 10,80 11,20 11,30 12,00	4,30 3,87 3,25 2,50 2,18 IP 45 5,53 5,10 4,18 3,48	2,05 2,30 2,77 3,60 4,95 COP 45 1,95 2,20 2,70 3,45	8,60 8,90 9,00 9,00 10,60 HC 50 10,30 10,80 11,00 12,00	4,65 4,15 3,59 2,80 2,50 IP 50 5,67 5,20 4,55 3,85	1,85 2,14 2,51 3,21 4,24 COP 50 1,82 2,08 2,42 3,12	8,50 8,90 9,00 10,20 HC 55 9,70 10,10 10,80 12,00	4,95 4,50 3,92 3,16 2,70 IP 55 5,80 5,32 4,90 4,32	1,72 1,98 2,30 2,85 3,78 COP 55 1,67 1,90 2,20 2,78	8,00 8,90 9,00 10,00 HC 60 9,00 9,85 10,65 12,00	5,10 5,00 4,39 3,50 2,95 IP 60 6,05 5,70 5,35 4,90	1,57 1,78 2,05 2,57 3,39 COP 60 1,49 1,73 1,99 2,45	7,80 8,90 9,00 9,00 9,80 HC 65 8,00 9,60 10,30 12,00	5,90 5,50 4,80 4,00 3,35 IP 65 6,15 5,95 5,63 5,63	1,62 1,62 1,88 2,25 2,93 COP 65 1,30 1,61 1,83 2,20

Tamb: Ambient Temperature (°C). LWC: Leaving Water Condenser Temperature (°C). HC: Heating capacity (kW). IP: Power Input (kW) This data is measured by Panasonic in accordance with EN14511-2 standard. This data is for reference purpose only, and does not guarantee the performance.

#### Hydraulic Pump Performance





# Error Codes

# The operation led blinks and an error code appears on the control panel display.



- Turn the unit off and inform the authorised dealer of the error code.
- The timer operation is cancelled when an error code occurs.

### Force Heater mode button

- The backup heater also serves as backup in case of malfunctioning of the outdoor unit.
- Press  $\bigcirc$  to stop the force heater operation.
- During Force Heater mode, all other operations are not allowed.

## **Error Code List**

Diagnosis display	Abnormality / Protection control	Abnormality Judgement	Primary location to verify
HOO	No abnormality detected	_	_
H12	Indoor/Outdoor capacity unmatched	90s after power supply	Indoor/outdoor connection wire
			Indoor/outdoor PCB
			Specification and combination table in catalogue
H15	Outdoor compressor temperature sensor abnormality	Continue for 5 sec.	Compressor temperature sensor (defective or disconnected)
HZ3	Indoor refrigerant liquid temperature sensor abnormality	Continue for 5 sec.	Refrigerant liquid temperature sensor (defective or disconnected)
H38	Indoor/Uutdoor mismatch	-	Indoor/Uutdoor PLB
H42	Compressor low pressure abnormality	-	Uutdoor pipe temperature sensor     Clagged expansion value or strainer
			Insufficient refrinerant
			Outdoor PCB
			Compressor
H62	Water flow switch abnormality	Continue for 1 min.	Water flow switch
H64	Refrigerant high pressure abnormality	Continue for 5 sec.	<ul> <li>Outdoor high pressure sensor (defective or disconnected)</li> </ul>
H70	Back-up heater OLP abnormality	Continue for 60 sec.	<ul> <li>Back-up heater OLP (Disconnection or activated)</li> </ul>
H72	Tank sensor abnormal	Continue for 5 sec.	Tank sensor
H76	Indoor - control panel communication abnormality	-	Indoor - control panel (defective or disconnected)
H90	Indoor / outdoor abnormal communication	> 1 min after starting operation	Internal / external cable connections     Indoor / Outdoor PCB
H91	Tank heater OLP abnormality	Continue for 60 sec.	Tank heater OLP (Disconnection or activated)
H95	Indoor/Outdoor wrong connection	_	<ul> <li>Indoor/Outdoor supply voltage</li> </ul>
H98	Outdoor high pressure overload protection	-	Outdoor high pressure sensor
			Water pump or water leakage
			Clogged expansion valve or strainer
			EXCESS retrigerant     Outdoor PCB
U00	Indeer best exchanger freeze provention		- Indeer heat evenanger
1177	nuoor neat exchanger neeze prevention		Refrigerant shortage
F12	Pressure switch activate	4 times occurrence within 20 minutes	Pressure switch
F14	Outdoor compressor abnormal revolution	4 times occurrence within 20 minutes	Outdoor compressor
F15	Outdoor fan motor lock abnormality	2 times occurrence within 30 minutes	Outdoor PCB
			Outdoor fan motor
F16	Total running current protection	3 times occurrence within 20 minutes	Excess refrigerant     Outdoor PCB
F20	Outdoor compressor overheating protection	4 times occurrence within 30 minutes	Compressor tank temperature sensor
			Clogged expansion valve or strainer
			• Insumicient reinigerant
			Compressor
F22	IPM (power transistor) overheating protection	3 times occurrence within 30 minutes	Improper heat exchange
			• IPM (Power transistor)
F23	Outdoor Direct Current (DC) peak detection	7 times occurrence continuously	Outdoor PCB     Compressor
E2/	Defrigeration avale obnormality	2 times accurrence within 20 minutes	Insufficient refrigerent
124		Z times occurrence within zo minutes	Outdoor PCB
			Compressor low compression
F25	Cooling / Heating cycle changeover abnormality	4 times occurrence within 30 minutes	- 4-way valve
	<b>D</b>		• V-COIL
F27	Pressure switch abnormality	Continue for 1 min.	Pressure switch
130	Outdoor air temperature sensor abnormality	Lontinue for 5 sec.	• Uutdoor air temperature sensor (defective or disconnected)
F3/	Indoor water inlet temperature sensor abnormality	Continue for 5 sec.	Water Intel temperature sensor (defective or disconnected)
F4U F/1	Outdoor discharge pipe temperature sensor abnormality	CONTINUE FOR 5 SEC.	• Outdoor discharge pipe temperature sensor (derective or disconnected)
F41 F/2	PFC COIIIIOL Outdoor boot evolution temperature concer chaermolity	4 unles occurrence within to minutes	Vullaye al PFL     Outdoor boot evenoper temperature concer (defective or disconnected)
F42 F/2	Outdoor defreet experies observative	Continue for 5 sec.	Outdoor field excitatinger temperature serior (defective or disconnected)
F43 E/5	Indeer water outlet temperature concer appermality	Continue for 5 sec.	Water outlot temperature concer (defective or disconnected)
F/6	Author Current Transformer open circuit		Insufficient refrinerant
			Outdoor PCB
			Compressor low
F95	Cooling high pressure overload protection	-	Outdoor high pressure sensor
			Water pump or water leakage     Clagged expansion value as attrainer
			Cougged expansion value of scranner     Fycess refrinerant
			- Outdoor PCB
F48	Outdoor EVA outlet temperature sensor abnormality	Continue for 5 sec.	Outdoor EVA outlet temperature sensor (detective or disconnected)
F49	Out bypass outlet temperature sensor abnormality	Continue for 5 sec.	Outdoor bypass outlet temperature sensor (detective or diconnected)

# Dimensions

# Hydraulic Module for all models



# Bi-Bloc 3 and 5kW



# One fan outdoor unit





Two fans outdoor unit



# Mono-Bloc 6 and 9kW



# Mono-Bloc 9 to 16kW





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