KAISAI

HEAT PUMPS

ENERGY-EFFICIENT SOLUTIONS FOR YOUR HOME AND BUSINESS

We care about air

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KAISAI

Klimatherm

The Klima-Therm Group has been an active member of the HVACR industry **for nearly 30 years.**

The company focuses on providing air conditioning, ventilation, and heating systems for both professional and individual use.

It is intensively developing its activities in the Renewable Energy Sources (RES) segment, focusing on heat pumps as one of the most promising growth drivers.

The competitive advantage of the Klima-Therm Group is its business model combining the production and distribution of a wide portfolio of HVACR devices in various price segments.

559
employees

540
authorized
Kaisai installers

24
offices
sales

3
centers
logistics

3
Klima-Therm
Academy

2000+
training courses per year
in-person and online

2
mobile showrooms
on a year-round tour

KAISAI

Klima-Therm Group

WE CARE ABOUT AIR

We feel responsible for both people and the environment.

We care about air quality and comfort – in the office, at home, and in all the spaces where we work and spend time every day. We care just as much about the immediate and wider environment of our business as we do about the air.

In line with the idea of sustainable development, we have set priorities based on an environmentally friendly approach to business, partnership with our customers, and care for human resources.

- Air conditioning
- Ventilation
- Heating
- Renewable energy sources

Klima-Therm **Academy**

For nearly 20 years, the Klima-Therm Academy has been providing technical, product, and authorization training.

ISO 9001 QUALITY MANAGEMENT SYSTEM

E-learning

A new level of learning

Classes are held at three of the Academy's campuses – in Gdańsk, Warsaw, and Katowice – as well as online via a proprietary e-learning platform.

In our daily work, we use proven and modern technologies as well as conventional methods of improvement through practice and experience with real devices.

Visit the Academy website

Training facilities

The Klima-Therm Group has three modern, fully equipped research and training centers located in Gdańsk, Warsaw, and Katowice, with a total area of over 600 m².


GDAŃSK

11

Experienced coaches


WARSAW

>1500

Participants per year


KATOWICE

15

Programs training

Technical documentation portal

One place, all documents

Technical documentation

Responsibility for the environment

A key element of the innovative HVACR industry is the introduction of efficient solutions that guarantee comfort and protect the environment.

Refrigerants have a huge impact on our planet, which is reflected in policies aimed at reducing the greenhouse effect and ensuring zero impact on the ozone layer.

In compliance with the latest European regulations, Klima-Therm introduces the latest technologies using refrigerants with the lowest GWP(*1) and zero ODP(*2) coefficients.

WE CARE ABOUT AIR

New standards construction

From 2030, all new buildings in the EU are to be zero-emission, and existing buildings will be gradually modernized with a view to completely decarbonizing the sector by mid-century.

Europe as a global player climate leader

The Fit for 55 package is not only an ambitious response to the climate crisis, but also a strategy for developing a modern, sustainable economy. The EU, which today accounts for around 7% of global CO_2 emissions, is focusing on innovation, social justice, and industrial competitiveness, setting global standards for climate protection.

R32 refrigerant

R32 is a modern refrigerant used mainly in air conditioners, heat pumps, and refrigeration systems. It belongs to the **HFC** (hydrofluorocarbon) group and has **a lower GWP** (Global Warming Potential) of approximately 675, which makes it significantly less harmful to the environment than the previously popular R410A (GWP ~2088).

The main advantages of R32:

- Higher energy efficiency compared to R410A
- Lower impact on the greenhouse effect

R290 refrigerant

R290 is **a natural refrigerant** in the form of pure propane. It is a hydrocarbon, chemically designated as **C_3H_8,** and belongs to a group of refrigerants with **a very low GWP** (Global Warming Potential ≈ 3) and **zero ODP** (Ozone Depletion Potential), which makes it environmentally friendly.

The main advantages of R290:

- Very low global warming potential (GWP)
- High energy efficiency – good thermodynamic properties
- Availability and low cost of the agent

(*1) GWP (Global Warming Potential) Measures the contribution of a single gas molecule to the greenhouse effect.
It is parameterized for CO2, which is assigned a value of 1. The higher the GWP, the greater the potential damage to the environment.
(*2) ODP (Ozone Depletion Potential) Measures the extent to which a single molecule of gas contributes to the depletion of the ozone layer.
The most harmful refrigerants, CFCs and HCFCs, have been banned from the market, which now only allows refrigerant gases with an ODP of 0.

Green light for **Fit for 55** – a new chapter in European climate policy

The European Union has taken decisive action in the fight against climate change by adopting the comprehensive "Fit for 55" legislative package, which aims to reduce greenhouse gas emissions by 55% by 2030 compared to 1990 levels and achieve climate neutrality by 2050.

This package supports the transition to a low-carbon economy and sustainable environmental development. The package proposes both new regulations and amendments to existing legislation.

Increase in the share of renewables renewable energy sources (RES)

The new regulations stipulate that renewable energy sources should account for at least 40% of total energy consumption in the EU by 2030, and set ambitious energy efficiency targets, including an 11.7% reduction in final energy consumption.

Kaisai technology and quality – **perfection** in every detail

Kaisai heat pumps combine **advanced technology**, **precise** production process **management**, and care for every stage of the product's journey – from design concept, through quality testing, to delivery to the customer.

Our goal is to provide devices that not only ensure thermal comfort, but also stand out in terms of energy efficiency, durability, and quiet operation.

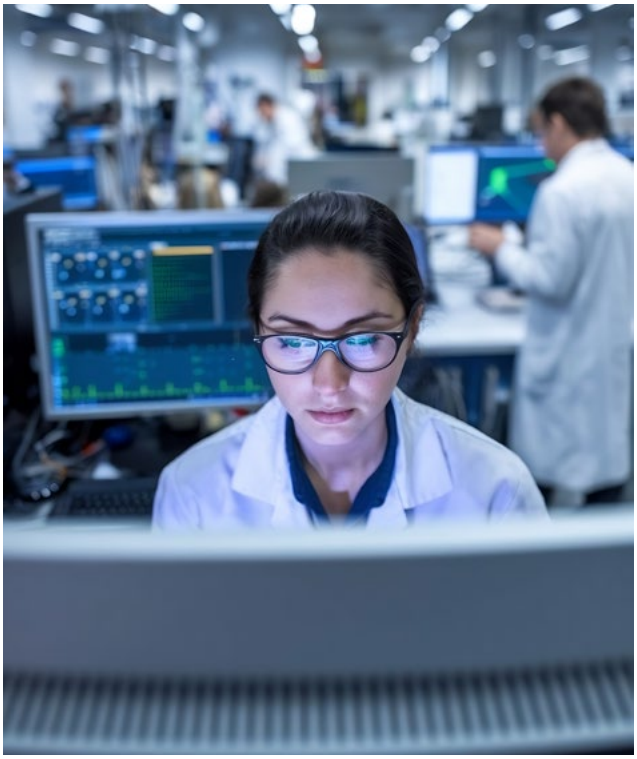
certified by **Keymark**

tested in **Denmark**

CE

Innovation in harmony with comfort and nature

Kaisai Research Laboratories – where innovation is born



Kaisai has modern research and development laboratories where engineers:

- test devices in climate chambers simulating extreme weather conditions (from severe frosts to heat waves),
- develop solutions that increase seasonal efficiency and reduce noise levels,
- implement innovations in control and automation, including remote management and smart home integration,
- test the service life of key components to ensure long-term, trouble-free operation of the pumps.

The result is equipment that not only meets but often exceeds European standards for energy efficiency and environmental protection.

Product management

From concept to finished solution. A team of experienced product managers is responsible for the development and improvement of Kaisai heat pumps.

Their work is a multi-stage process involving:

- market and technology trend analysis,
- selection and design of solutions that meet the real needs of users, cooperation with designers, electronics engineers, and programmers,
- Supervision of the implementation of new models and the modernization of existing product lines.

As a result, every Kaisai heat pump is well thought out in every aspect – from ergonomic operation and optimized energy consumption to aesthetic design.

People – the key to Kaisai quality

Behind every Kaisai heat pump are people – **qualified engineers**, **designers, technicians,** and **product managers**.

They ensure that the device that reaches the customer is synonymous with reliability, innovation, and high technical quality.

Our team combines knowledge with practical experience, and the commitment of our employees is evident in every detail – from the quality of assembly and the precision of the controller software to after-sales service.

Quality control of production and transport and deliveries – quality that passes every test

Kaisai pumps undergo multi-stage quality control. Each component is thoroughly verified before assembly, and the finished devices are tested for performance, safety, and reliability.

The inspection also covers the transport and logistics process, ensuring that the product reaches the customer intact and ready for use.

KAISAI

When you choose Kaisai appliances, you get a high-quality, environmentally friendly product designed for comfort of use, yet offered at a reasonable price point.

The Kaisai brand made its debut on the Polish market in 2011 and since then has recorded annual sales growth in Poland and on foreign markets.

The latest technological solutions make Kaisai devices leaders in their class and meet high expectations in terms of ecology, energy efficiency, quiet operation, safety, comfort of use, and manufacturer's warranty. Thanks to many years of investment in technology, Kaisai devices are considered to be among the most innovative air conditioning and heating solutions, successfully used in public and residential buildings, among others.

commercial AC

mini VRF

heat pumps

energy storage

inverters

Kaisai **range**

Home product line

Kaisai X
energy management system

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Split R32
Kaisai heat pump

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Hydraulic module
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Commercial product line

Mono R32
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Kaisai heat pump

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heat pump with DHW tank

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ALL in ONE
DHW/Buffer tank

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Kaisai X

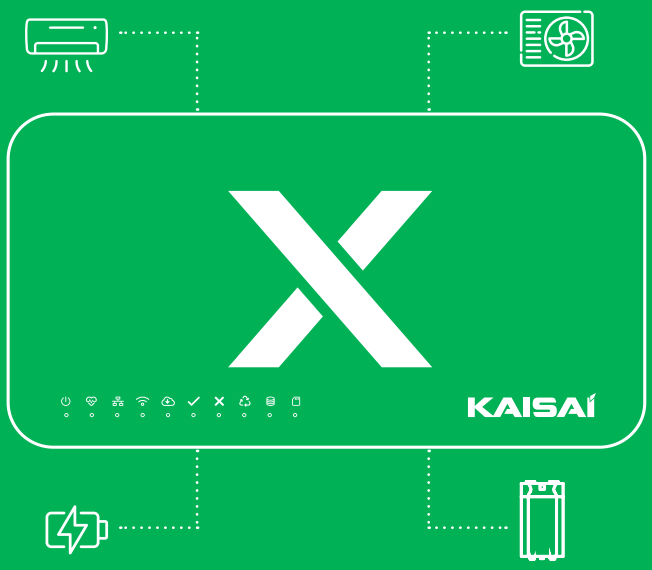
Energy management system

Your needs, our vision!
Kaisai X Innovation

Kaisai X is an innovative solution that redefines the way energy is managed in buildings. Thanks to advanced technology, our system provides full control over heating, ventilation, air conditioning, and renewable energy sources, combining intelligent algorithms with intuitive operation.

Kaisai X not only reduces operating costs, but also increases comfort while caring for the environment.

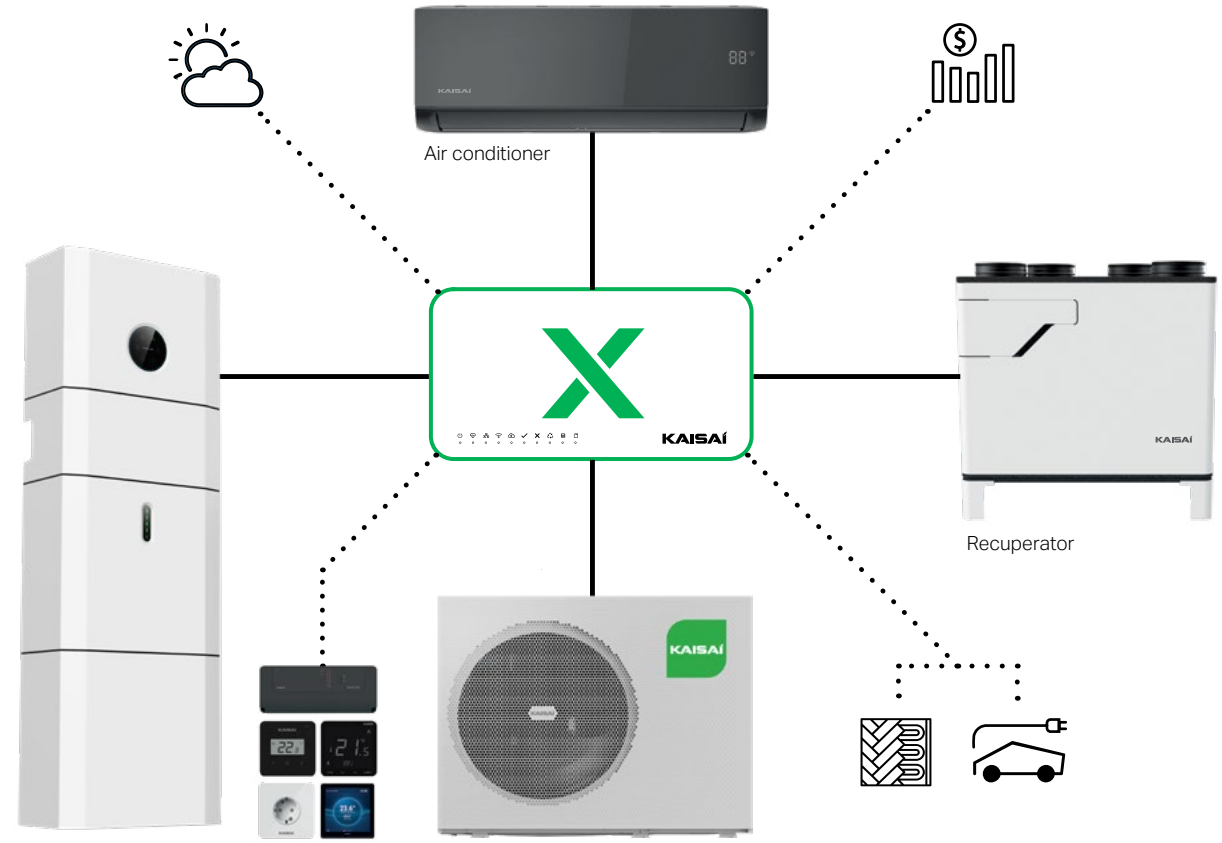
Our mission is to combine modernity with ecology and economy – all wrapped up in one system that works for you.



What is **Kaisai X?**

Kaisai X is a management system that enables optimization of electricity consumption, heating, and cooling.

Thanks to full integration with devices, it offers financial savings and ease of use.



Main advantages of the system

Optimization costs

Maximum energy **savings** and reduction of bills by up to **40%**.*

Comprehensive integration

Cooperation with heat pumps, recuperators, air conditioning, and energy storage.

Remote control

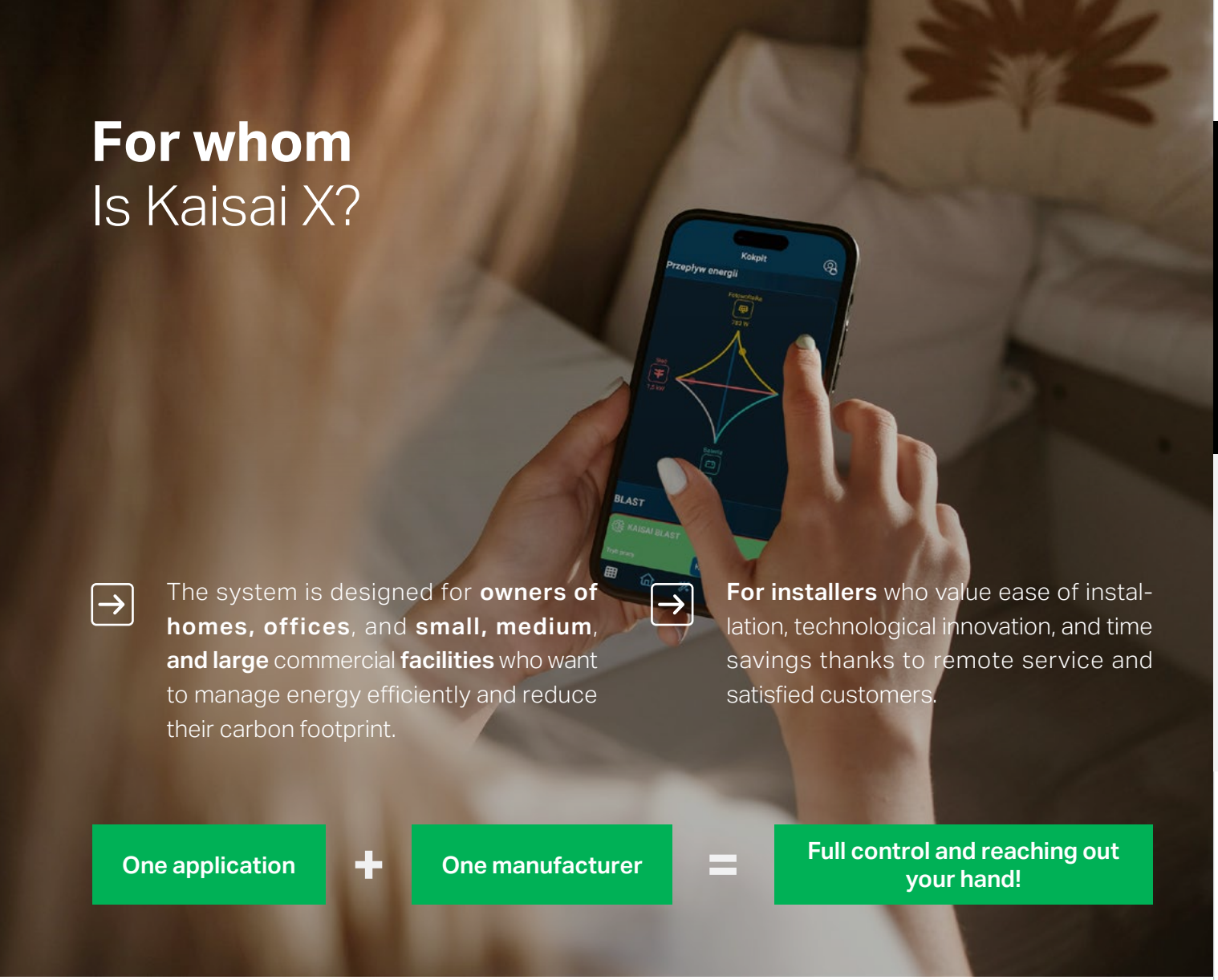
Manage the system from **a mobile app** or any web browser.

System Plug&Save;

A device that **saves energy** and reduces bills when connected.

*Simulation on a model building using Kaisai equipment.

For whom
Is Kaisai X?



The system is designed for **owners of homes, offices**, and **small, medium, and large** commercial **facilities** who want to manage energy efficiently and reduce their carbon footprint.

For installers who value ease of installation, technological innovation, and time savings thanks to remote service and satisfied customers.

One application + **One manufacturer** = **Full control and reaching out your hand!**

Benefits for Customers and Installers

Comfort
Manage your system from one place

Savings
Energy cost **reduction**

Ecology
Reduction of CO_2 emissions

Functionality
Convenience and intuitive use

Installation
Simple installation process

Service
Remote after-sales service

Configurator
Access to the online configurator

Help
Technical **support** and training

Heating zone

Precise temperature control

- The ability to set **different temperatures** in individual rooms depending on their function (e.g., cooler in the bedroom, warmer in the living room)
- **Smart** temperature sensors that adjust heating parameters in real time

Energy savings

- Only rooms that are **currently in use** are heated, which leads to a significant reduction in heat loss.
- **Reduction of** heating **costs** by up to **5%** compared to central heating systems without zone control

Comfort and health

- **Avoiding overheating** of rooms
- **Better** air **quality** thanks to integrated heat recovery control

Longer service life

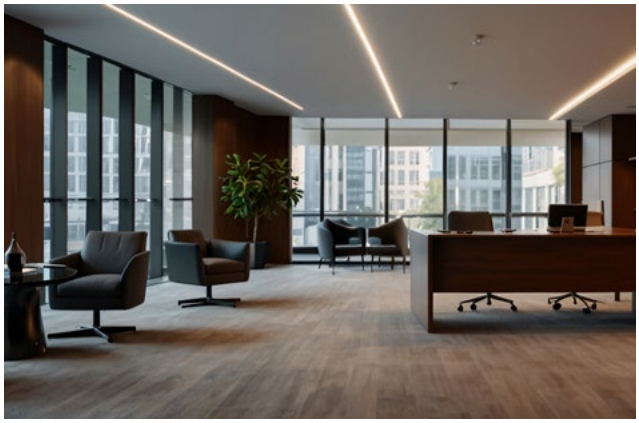
- The system operates **more efficiently**, which reduces the frequency of heat pump operation and thus extends its **service life**.

Simulation for heat pumps **with zone heating**

Example of a single-family house (150 m²)

Energy consumption without zone heating:
10,000 kWh/year

Energy consumption with zone heating:
7,500 kWh/year **(25% reduction)**



Example of an office (300 m²)

Energy consumption without zone heating:
20,000 kWh/year

Energy consumption with zone heating:
15,000 kWh/year **(25% reduction)**

Additional advantages **of integration with a heat pump**

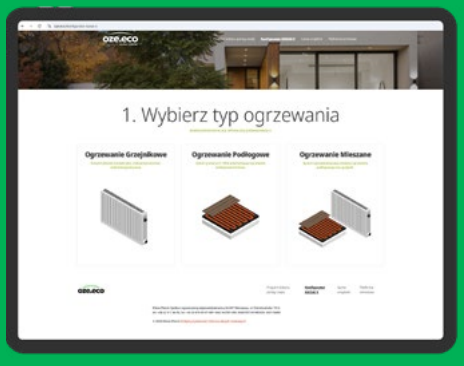
Dynamic heating

The heat pump **automatically** adjusts to changing weather conditions, increasing the efficiency of the zone system.

Cooling mode

In summer, the heat pump can operate as **an air conditioner**, which increases the comfort of using the system throughout the year.

IMPORTANT *– all savings calculations were based on practical tests of Kaisai devices working together.*



Optimize your building with us!

For optimal selection of equipment for your building, check out our Kaisai X Configurator.

https://oze.eco/konfigurator-kaisai-x

Kaisai X | Integration with devices

Kaisai **heat pumps**

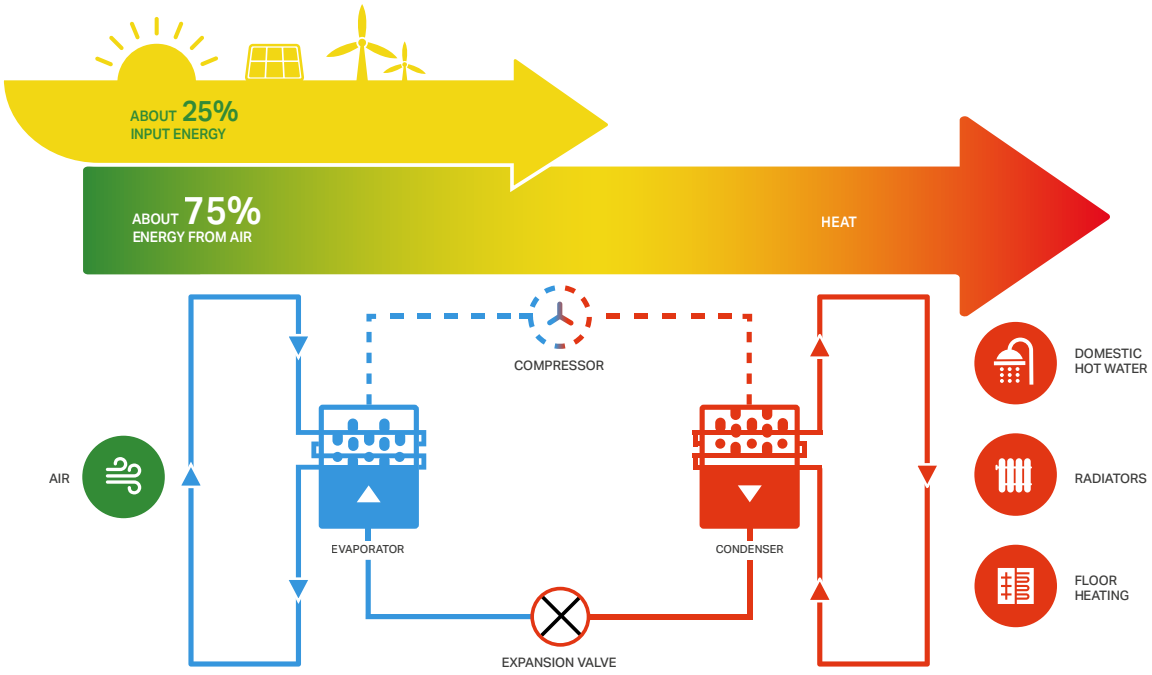
A heat pump is a modern device that efficiently heats and cools buildings by drawing energy from the air. How does it work?

1 **Energy consumption**
A heat pump extracts heat from the environment.

2 **Heat transfer**
The refrigerant transfers heat from the condenser to the heating water.

3 **Increasing the temperature**
The compressor increases the pressure by heating the refrigerant.

4 **Repeating the process**
Remote after-sales service



Kaisai heat pumps are highly efficient – for every unit of electricity consumed, they can deliver between 3 and 5 units of heat. This makes them one of the most economical and environmentally friendly ways to heat buildings.

Kaisai air conditioners

Kaisai air conditioners bring comfort and health to your home – the perfect temperature, clean air free from allergens, smog, and microorganisms thanks to advanced filters. Modern technologies, such as Wi-Fi control and energy-saving solutions, ensure comfort and savings, while the heating function is perfect for cold days. Kaisai also cares about the environment – eco-friendly refrigerants and minimal impact on the climate. Choose quality that combines innovation, health, and care for the planet!

WiFi module as standard

Multifunctional pilot

R32
Ecological R32 refrigerant

Wide range temperatures

1 Heat **extraction**
The air conditioner draws in warm air, and the refrigerant in the evaporator absorbs its heat, cooling the air.

2 **Compression**
The refrigerant enters the compressor, where its pressure and temperature increase.

3 Heat **transfer**
In the condenser, heat is released to the outside and the refrigerant returns to its liquid state.

4 **Expansion**
The pressure of the refrigerant is reduced, allowing the air to be cooled again.

Selected features

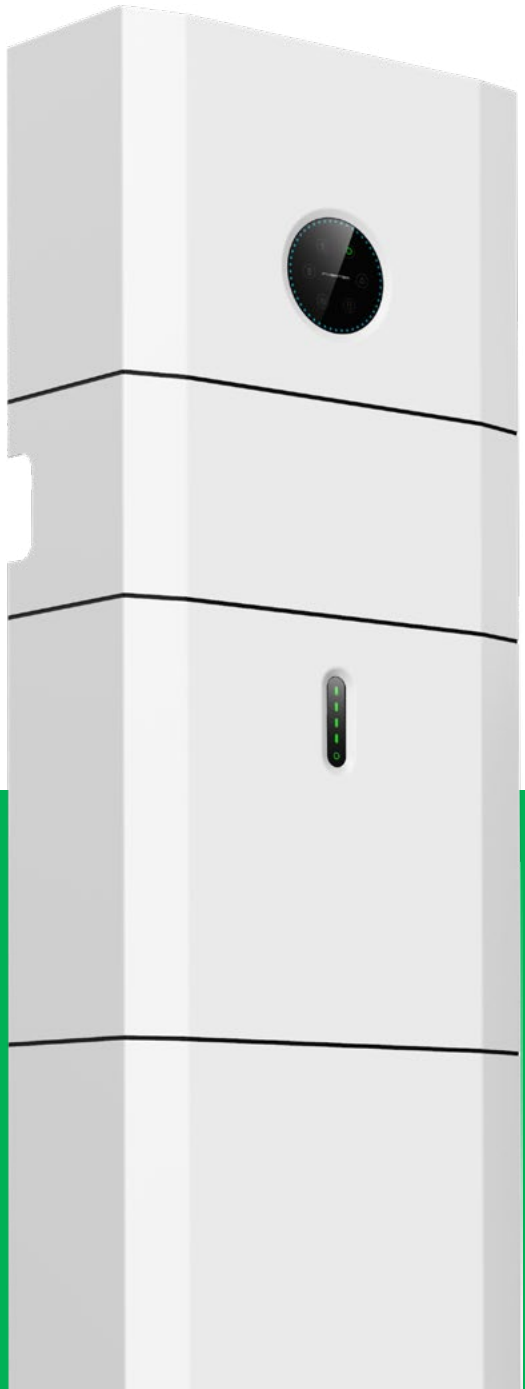
- **Air ionization**
- **Bio Hepa filter**
- **3D airflow**

Kaisai X | Integration with devices

Energy **storage**

The future of energy savings and independence

Modern energy storage systems, increasingly used with photovoltaic installations, enable intelligent energy management. A key component of the system is a hybrid inverter that supports both direct and alternating current, ensuring optimal adaptation to the current demand of the building. The energy storage system also works without photovoltaics, enabling savings through the use of variable electricity prices. The user can spread energy self-consumption throughout the day, allowing for greater autonomy and lower bills. Thanks to advanced solutions such as asymmetrical phase loading, it is possible to power energy-intensive devices without any problems.



Energy storage is not only about savings, but also the key to grid stability and optimizing everyday life.

10kW Hybrid Inverter

The ability to simultaneously generate power for the building and charge batteries. Available operation in ON/OFF Grid mode.

Adjustable power for each phase - asymmetry of operation due to loads. Cooperation with an additional current generator.

5.1 kWh battery

CATL LFP battery of the highest quality, guaranteeing safety thanks to triple protection.

Easy installation, modular design, and easy expansion after prolonged use.

Energy self-consumption

Energy storage systems allow you to maximize self-consumption of energy from PV installations, ensuring energy independence and significant cost reductions.

Adding devices

Heat pump

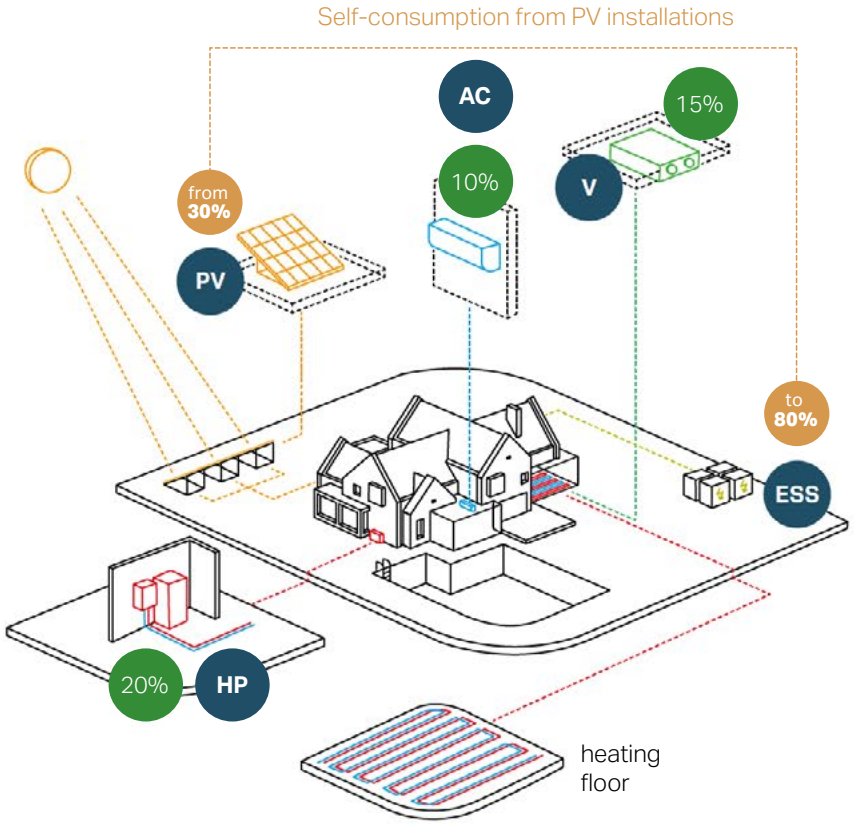
It draws energy from **the air** to provide heating and cooling. Installing a heat pump can reduce your bills by **20%**.

Recuperator

Recovers heat from ventilation, reducing energy losses by **15%**.

Air conditioning

Intelligent temperature control reduces power consumption by **10%**.



Single-family house

Effective heating can reduce heating costs by **30%** and cooling costs by **15%**.

Office

Optimizing energy consumption for lighting and ventilation can result in savings of up to **25%**.

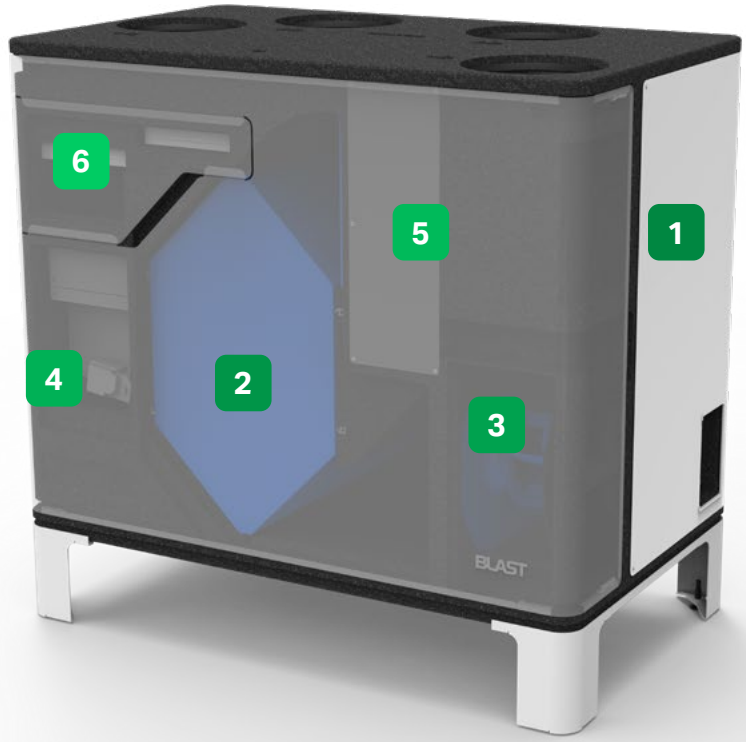
***IMPORTANT** – all savings calculations were based on practical tests of Kaisai devices working together.*

Kaisai X | Integration with devices

Blast Recuperator

Eco-friendly ventilation, greater comfort

The Blast heat recovery unit is a modern ventilation device with heat recovery, ideal for residential and commercial buildings, especially single-family homes. It provides clean, fresh air by filtering and heating it in a heat exchanger, while recovering energy from the exhaust air. At the same time, it allows quick access to components and filters. The molded polypropylene housing eliminates thermal bridges, minimizing the risk of condensation. Dedicated inspection panels ensure easy operation.



1 Housing
Insulation – EPP elimination of thermal bridges

2 Heat recovery
Counterflow, condensation, or enthalpy recuperator

3 Fans
High efficiency EC motors

4 Heater
Preliminary electrical integrated

5 Automation
Cooperation with peripheral devices

6 Filters
ePM$_{10}$5$_0$% (M5) as standard

Control panel

30% smaller spend energy

Compared to the total cost of building a house, the cost of preparing and installing a heat recovery system is not excessive, and a well-planned installation can generate significant savings in the future.

Available **accessories**

Zone heating and smart building system

Zone heating is a way to achieve comfort and savings. With the ability to regulate the temperature in each room, you only pay for the heat you actually use. It's the perfect solution to reduce your bills and increase comfort in your home!

KC-2N

A wireless device near a window or door transmits their status to the control panel, allowing the Kaisai X system to minimize heat loss.

KEX-G1

The extender extends the signal range for peripheral devices by transmitting data wirelessly to Wi-Fi and acting as a network socket.

KSTT-869

The Kaisai KSTT-869 wireless radiator actuator enables effective temperature management, ensuring thermal comfort and energy savings.

KSTT-230/2 T

KSTT automatically controls heating valves on manifolds or radiators, working in conjunction with mounting strips and room thermostats.

KR-8b PLUS

Wireless room controller with temperature and humidity sensors and a heating program, designed for wall mounting and controlling a single room.

KR-8s PLUS

An extended version of a wireless room controller with a large LCD display, glass panel, and temperature and humidity sensors, enabling heating programming.

KPS-10 230

Universal wireless thermostatic valve controller designed for managing underfloor heating.

KFF-230

The KSG-230 socket is a frame-mounted device with an energy meter that enables wireless control of connected devices.

Heat pumps series **Arctic R32**

LISTA ZUM

Reliable Arctic series heat pumps for **refrigerant sR32,** which has already won the trust of thousands of users, this is **the most frequently chosen model** in the pump category air-water.

Thanks to modern technology, Kaisai heat pumps operate in a very wide range of outdoor temperatures and achieve high heating or hot water system temperature parameters. Safety of use and maintenance-free operation make Kaisai heat pumps the ideal solution for anyone building a house, but also for those replacing or modernizing an existing heat source.

Due to its versatility and wide range of models (6, 8, 10, 12, 14, and 16 kW), the Arctic series is suitable for use in single-family, multi-family, and commercial buildings.

Compact design

Kaisai heat pumps come with a hydraulic module and DHW tank in one, which simplifies and shortens the installation time of the heat pump.

Two tank sizes

DHW tank available in two sizes:
190 and 240 liters

Plug and play

Complete device for working with
central heating and hot water

SPLIT R32 p. 42

SPLIT R32 with DHW tank
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Uutdoor units
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Mono R32
p. 50

Arctic R32 series heat pumps **range**

POWER (kW) A7W35		**6**	**8**
SPLIT WITHOUT DHW TANK			
	Outdoor unit	KHA-06RY1-B	KHA-08RY1-B
	Indoor unit	KMK-60RY1	KMK-100RY3
SPLIT WITH DHW TANK			 
	Outdoor unit	KHA-06RY1-B	KHA-08RY1-B	KHA-08RY1-B
	Indoor unit	KMK-190L-100RY1 KMK-240L-100RY3	KMK-190L-100RY1	KMK-240L-100RY3
MONOBLOCK			
	Outdoor unit	KHC-06RY1-B	KHC-08RY3-B

10	12	14	16	22	30

KHA-10RY1-B

KMK-100RY3

KHA-12RY3-B

KHA-14RY3-B

KMK-160RY3

KHA-16RY3-B

KHA-10RY1-B

KMK-190L-100RY1

KHA-10RY1-B

KMK-240L-100RY3

KHA-12RY3-B

KHA-14RY3-B

KMK-240L-160RY3

KHA-16RY3-B

KHC-10RY3-B

KHC-12RY3-B

KHC-14RY3-B

KHC-16RY3-B

KHC-22RX3

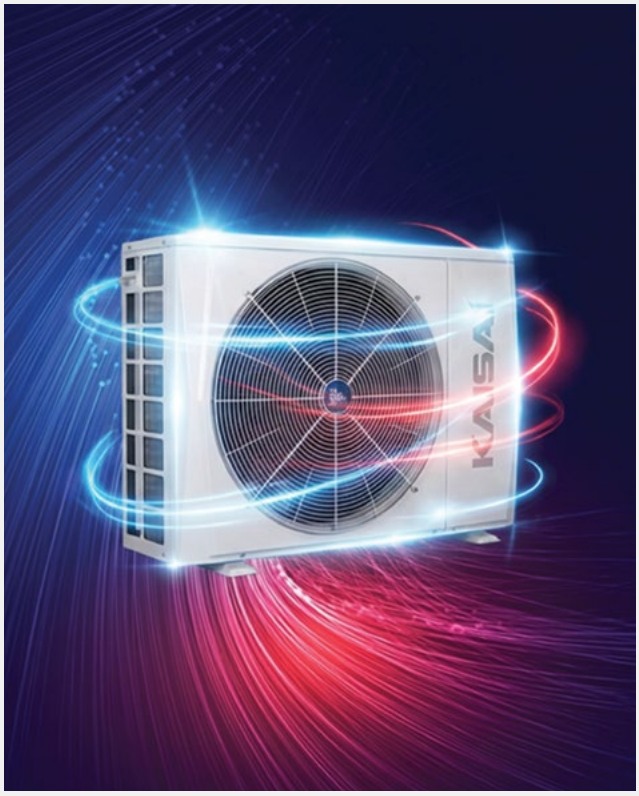
KHC-30RX3

Support for two heating circuits

The standard automation of the device allows you to control two independent heating circuits, including a circuit with a mixing group (e.g., underfloor heating), without the need for additional controllers or modules.

Remote control via the app

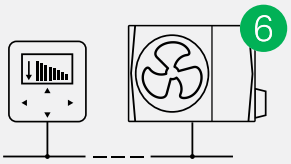
Arctic R32 devices are factory-ready to be controlled by the dedicated Kaisai X app. Simply connect the device to enjoy remote control.



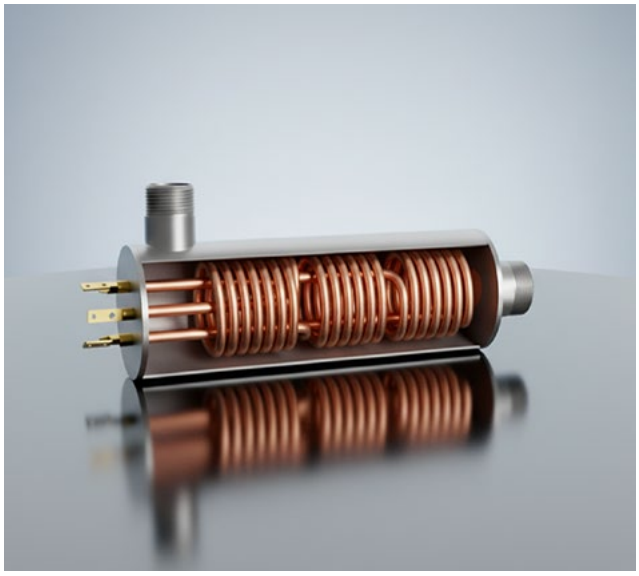
High energy efficiency

Heat pumps are equipped with energy-efficient inverter compressors that allow for smooth adjustment of heating power. This increases the efficiency of the entire system and reduces the operating costs of the pump.

Kaisai heat pumps **have a coefficient of performance (COP) of up to 5.20.** The higher the coefficient, the more heat can be generated using the same amount of electricity.

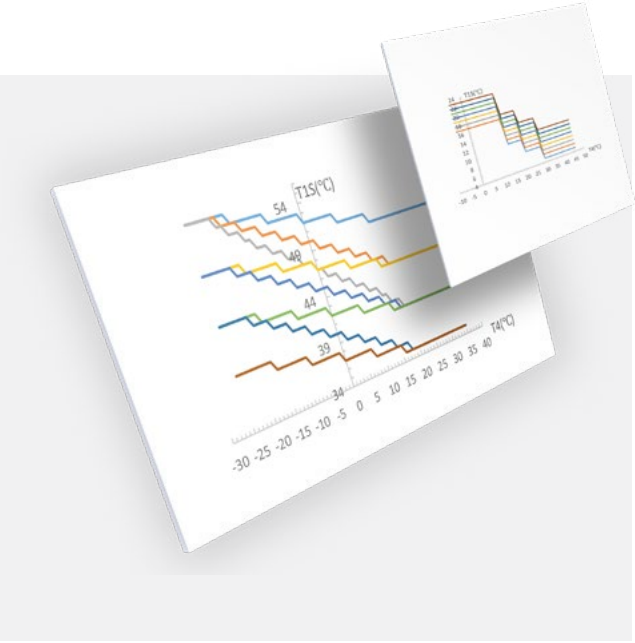


Cascade operation – the factory control system allows you to manage up to 6 units connected in cascade. Such a system can provide up to 96 kW of heating power.



Built-in electric backup heater

You do not have to incur additional costs for purchasing a peak heat source (required for every air-to-water heat pump). Our device has them installed as standard. You can also adjust its maximum power (models 8-16) to 3kW, 6kW, or 9kW, depending on the needs of your building.



Climate curves

- The water temperature is set automatically depending on the outside temperature.
- There are 32 standard weather temperature curves. Custom curves are also available to meet varying temperature requirements.

Twin rotary compressor

The high performance of the compressors ensures maximum efficiency. The unique design minimizes vibrations of moving parts, effectively reducing noise levels.

Better balance and exceptionally low vibration:

- Double eccentric cams
- 2 balancing weights

Optimization of compressor drive technology:

- Highly durable bearings
- Compact design

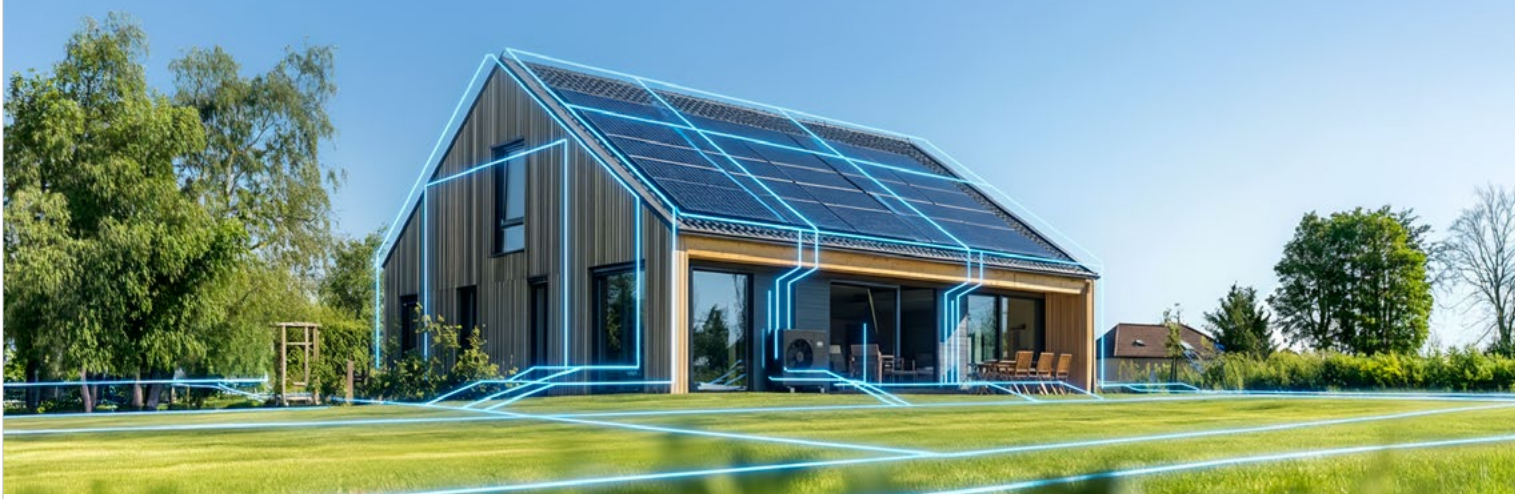
Smart grid function

The heat pump adjusts its operation to various control signals. The system's energy consumption can be automatically adjusted according to peak and base load to **minimize heating costs.**
Thanks to this function, the pump switches on automatically to take advantage of cheaper energy tariffs or to store surplus energy from the photovoltaic system.

DHW mode enabled – tank temperature set to 70°C. The heater switches on automatically when the water temperature drops below 69°C.

Normal heat pump operation

Limited operation – the unit operates for a specified period of time and then switches off.



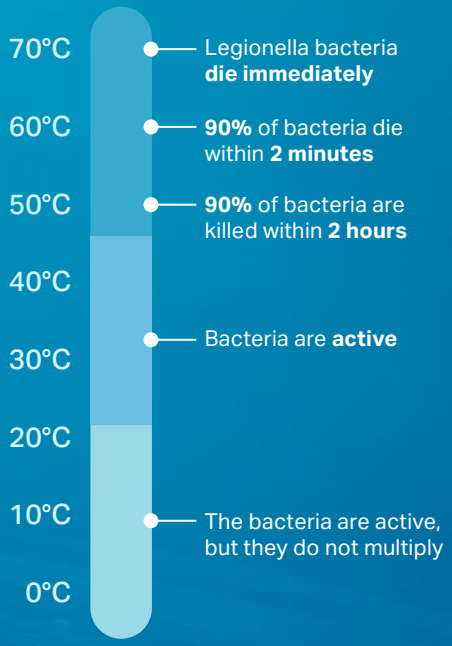
Analysis of energy consumption and production with calculated COP

Thanks to the weather curve, you can configure the supply temperatures very precisely, significantly reducing operating costs and maintaining thermal comfort in the building.

Precise control, up to 0.1°C measurement and setting values

It allows for more precise management of the installation, ensures comfort of use, and reduces energy consumption.

DHW tank **disinfection function**



By heating the water in the system to 70°C, the high temperature kills most bacteria (including Legionella).

Built-in stainless steel domestic hot water tank

Hydraulic modules with DHW tank KMK-190L-*100RY1, KMK-240L-100RY3, and KMK-240L-160RY3 with a capacity of 190 l and 240 l.

*hot water

Anti-corrosion coating of lamellas

The exchangers use aluminum fins with an additional hydrophilic coating. This significantly increases their resistance to weather conditions, resulting in greater durability and lower susceptibility to corrosion.

Automatic software updates*

The controller connected to the Wi-Fi network is automatically updated, ensuring constant access to the latest software version and current system features.

* Applies to versions with a color display.

Work preview

This function allows you to view the basic operating parameters of the device in real time, enabling you to react quickly in the event of an error. There are four operating modes available: cooling, heating, DHW, and auto. To meet the different requirements of users, it is possible to combine three modes.

Clear, intuitive controller with color display

The menu structure and descriptions of individual functions are very clear and precise, allowing for intuitive use of the controller.

Drain pan with heater

The heat pump is equipped with a drip tray that allows condensate to drain freely directly under the unit or to be reused, e.g., by draining it into a rainwater tank.

Arctic R32 series **heat pumps**

Split R32
Kaisai heat pump

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Split R32 with DHW tank
Kaisai heat pump

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Outdoor units
Kaisai heat pumps

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Mono R32
Kaisai heat pump

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Kaisai heat pumps

Split R32

Thanks to **modern technology,** Kaisai heat pumps operate in **a wide range of outdoor temperatures** and achieve high heating and domestic hot water system parameters. **No harmful emissions, safety, and maintenance-free operation** make them the ideal solution for both new homes and the modernization of existing heat sources.

The Arctic series, available in 6-16 kW capacities, is used in single-family, multi-family, and commercial construction, offering emission-free energy production and a wide range of applications.

R32

Compact design

An independent indoor unit and flexible installation make split heat pumps an ideal solution for homeowners, shops, offices, and service premises.

High level of integration

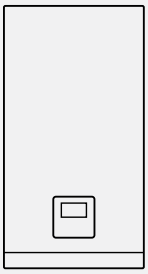
All hydraulic components are integrated into the indoor unit as standard: circulation pump, expansion vessel, safety and vent valve, flow sensor, pressure gauge, and flow heater.

Easy access

All hydraulic components are easily accessible. The refrigerant connection between the outdoor and indoor units is frost-proof, even during prolonged power outages, and additional refrigerant charge is only required if the refrigerant piping exceeds 15 m in length.

Technical **specifications**

hydraulic module



KMK-60RY1
KMK-100RY3, KMK-160RY3

Model			**KMK-60RY1**	**KMK-100RY3**	**KMK-160RY3**
Symbols for compatibile outdoor units			KHA-06RY1-B	KHA-08RY1-B KHA-10RY1-B	KHA-12RY3-B KHA-14RY3-B KHA-16RY3-B
Water-side heat exchanger			plate	plate	plate
Water pump	Type		adjustable DC inverter	adjustable DC inverter	adjustable DC inverter
	Lifting height	m H_2O	9	9	9
Expansion tank	Volume	l	8	8	8
	Initial pressure on the gas side	MPa	0,1	0,1	0,1
Safety valve		MPa	0,3	0,3	0,3
Flow sensor	Activation threshold	m^3/h	0,4	0,4	0,4
Internal volume of the system, total		l	5	5	5
Power supply	Voltage / number of phases / frequency	V/Ph/Hz	220÷240/1/50	380÷415/3/50	380÷415/3/50
	Maximum operating current (MCA)	A	14,3	14,0	14,0
Electric auxiliary heater	Electrical power	kW	3	3/6/9	3/6/9
	Performance levels		1	3	3
Sound power level		dB(A)	38	42	43
Sound pressure level		dB(A)	28	30	32
Range of water temperature at the outlet (TWW)	Cooling	°C	5÷25	5÷25	5÷25
	Heating	°C	25÷65	25÷65	25÷65
	DHW	°C	20÷60	20÷60	20÷60
Room temperature range		°C	5÷35	5÷35	5÷35
Connection	Water side (external thread gz)	inch	1	1	1
	Liquid refrigerant	mm	6,35	9,52	9,52
	Gas refrigerant	mm	15,88	15,88	15,88
Dimensions	Devices (W/H/L)	mm	420×790×270	420×790×270	420×790×270
	Packaging (width/height/length)	mm	525×1050×360	525×1050×360	525×1050×360
Weight	Net weight /per package	kg	37 / 43	37 / 43	39 / 45

The above technical data complies with the guidelines of standards EN16147/2017; EN14511/2018; EN14825/2018; EU No:811/2013.
The sound power level in heating mode is specified in accordance with EN 12102 under conditions compliant with EN 14825;

Kaisai heat pumps

Split R32 with DHW tank

All-in-One devices combine the best features of Split solutions and additionally have a 190 l/240 l domestic hot water tank integrated into the unit. The stainless steel tank allows for direct connection to the central heating and domestic hot water systems.

in the building, minimizing costs, saving space, and reducing the amount of fittings. Due to their versatility and compactness, All in One devices have become particularly popular in development projects and new construction.

R32

Two tank sizes
DHW tank available in two sizes:
190 and 240 liters

Small building area
The building area is only 0.36 m2.

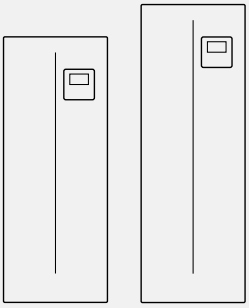
Plug and play
Complete device for **CO and DHW** operation

Full equipment
Built-in **3-way valve** and **auxiliary heater**

Compact design
Hydraulic module and DHW tank in one, which simplifies and shortens the installation time of the heat pump

Technical **specifications**

hydraulic module with 190/240 l DHW tank



KMK-190L-100RY1,
KMK-240L-100/160RY3

Model				**KMK-190L-100RY1**		**KMK-240L-100RY3**		**KMK-240L-160RY3**
Names of compatible outdoor unit models				KHA-06RY1-B	KHA-08RY1-BKHA-10RY1-B	KHA-06RY1-B	KHA-08RY1-BKHA-10RY1-B	KHA-12RY3-BKHA-14RY3-BKHA-16RY3-B
Heat exchanger				plate				
Water pump	Type			DC Inverter				
	Lifting height		m H_2O	9	9	9	9	9
Expansion tank		volume	l	8	8	8	8	8
Water distribution profile EN16147				L	L	XL	XL	XL
Hot water 1	DHW heating energy class	climate moderate	class	A+	A+	A+	A+	A+
			COP	3,10	3,02	3,34	3,36	3,00
		warm climate	class	A+	A+	A+	A+	A+
			COP	3,80	3,66	4,24	4,18	3,73
		cold climate	class	A	A	A	A	A
			COP	2,50	2,61	2,63	2,72	2,24
DHW tank	Type			stainless steel				
	Material			SUS 316L				
	Water capacity		L	190	190	240	240	240
	Maximum water temperature		°C	70	70	70	70	70
	Insulation (material)			polyurethane (cyclopentane)				
Power supply electric	Voltage / number of phases / frequency		V/Ph/Hz	220÷240/1/50		380÷415/3/50		380÷415/3/50
	Maximum operating current (MCA)		A	14,3	14,3	14,3	14,3	14,3
Electric auxiliary heater	Electrical power		kW	3	3	3/6/9	3/6/9	3/6/9
	Performance levels			1	1	3	3	3
	Power supply		V/Ph/Hz	220÷240/1/50		380÷415/3/50		380÷415/3/50
Sound power level			dB	38	40	38	40	44
Temperature range	Rooms		°C	5÷35	5÷35	5÷35	5÷35	5÷35
	Heating		°C	25÷65	25÷65	25÷65	25÷65	25÷65
	Cooling		°C	5÷25	5÷25	5÷25	5÷25	5÷25
	Domestic hot water (DHW)		°C	20÷60	20÷60	20÷60	20÷60	20÷60
Water connection	Heating system (external thread gz)	power supply/return	inch	1	1	1	1	1
	CWU (External thread gz)	cold water hot water circulation	inch	3/4	3/4	3/4	3/4	3/4
Dimensions	Devices (width/height/length)		mm	600x1683x600		600x1943x600		
	Packaging (width/height/length)		mm	653 x 1900 x 653		653 x 2160 x 653		
Weight	Net weight /per package		kg	138,6 / 153,8		155,3 / 170,2		157,3 / 172,2

The above technical data complies with the guidelines of standards EN16147/2017; EN14511/2018; EN14825/2018; EU No:811/2013.
The sound power level in heating mode is specified in accordance with EN 12102 under conditions compliant with EN 14825;

Kaisai heat pumps

Outdoor units

R32

Compact design

Compact design, independent hydraulic module, and flexible installation

Additional load

Additional refrigerant charge is only required if the length of the refrigerant lines exceeds 15 m.

Refrigeration connection

between the outdoor and indoor units is frost-resistant, even during prolonged power outages

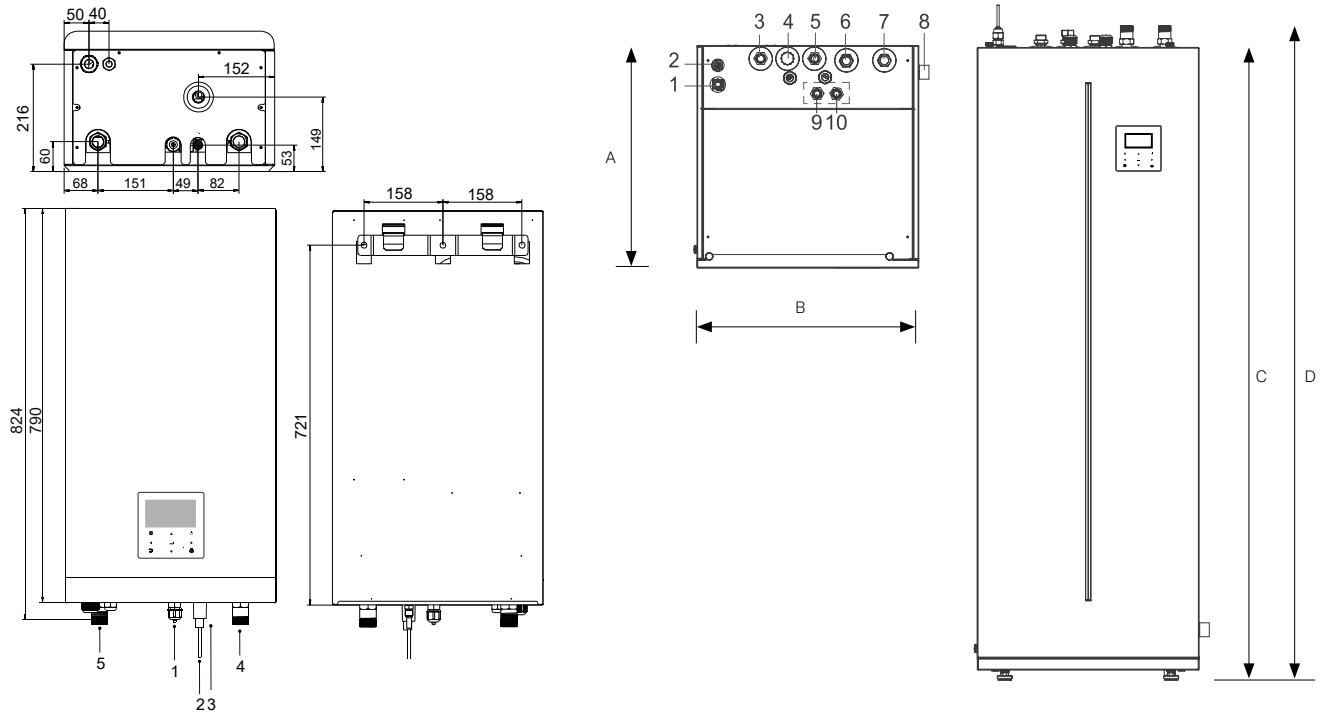
Technical specifications

KHA-06|08|10RY1-B, KHA-12|14|16RY3-B

Model			KHA-06RY1-B	KHA-08RY1-B	KHA-10RY1-B	KHA-12RY3-B	KHA-14RY3-B	KHA-16RY3-B
Heating A7W35 ΔT=5, R.H. 85%	Nominal heating capacity (range)	kW	6,20 (2,73÷7,41)	8,30 (3,36÷9,11)	10,00 (3,81÷10,32)	12,10 (5,58÷14,57)	14,50 (5,92÷15,46)	16,00 (6,43÷16,79)
	Power consumption Electric (range)	kW	1,24 (0,51÷1,56)	1,60 (0,61÷1,80)	2,00 (0,71÷2,09)	2,44 (1,04÷3,11)	3,09 (1,12÷3,44)	3,56 (1,27÷3,79)
	COP (range)	W/W	5,00 (5,32÷4,76)	5,20 (5,54÷5,07)	5,00 (5,39÷4,93)	4,95 (5,38÷4,69)	4,70 (5,27÷4,49)	4,50 (5,08÷4,43)
Heating A2W35 ΔT=5, R.H. 85%	Nominal heating capacity	kW	5,50	7,10	8,20	9,30	11,40	13,00
	Electric power consumption	kW	1,39	1,73	2,02	2,35	3,12	3,71
	COP	W/W	3,95	4,10	4,05	3,95	3,65	3,50
Heating A-7W35 ΔT=5, R.H. 85%	Nominal heating capacity (range)	kW	6,10(1,48÷6,21)	7,10(1,82÷7,27)	8,25(2,05÷8,31)	10,00(3,97÷11,00)	12,00(4,57÷12,70)	13,30(4,99÷13,90)
	Power consumption (range)	kW	2,00 (0,48÷2,17)	2,18 (0,53÷2,26)	2,62 (0,61÷2,61)	3,33 (1,26÷3,89)	4,29 (1,48÷4,55)	4,93 (1,68÷5,19)
	COP (range)	W/W	3,05 (3,06÷2,86)	3,25 (3,44÷3,21)	3,15 (3,37÷3,11)	3,00 (3,14÷2,83)	2,80 (3,10÷2,79)	2,70 (2,97÷2,67)
Cooling A35W18 ΔT=5	Nominal cooling capacity	kW	6,55	8,40	10,00	12,00	13,50	14,20
	Electric power consumption	kW	1,34	1,66	2,08	3,00	3,74	3,94
	EER	W/W	4,90	5,05	4,80	4,00	3,61	3,61
Cooling A35W7 ΔT=5	Nominal cooling capacity	kW	7,00	7,40	8,20	11,60	12,70	14,00
	Electric power consumption	kW	2,33	2,19	2,48	4,22	4,98	5,71
	EER	W/W	3,00	3,38	3,30	2,75	2,55	2,45
Class seasonal energy efficiency of space heating	TWW at 35°C(Temperate climate zone)	class	A+++	A+++	A+++	A+++	A+++	A+++
	TWW at 55°C (Temperate climate zone)	class	A++	A++	A++	A++	A++	A++
SCOP	TWW at 35°C		4,95	5,22	5,20	4,81	4,72	4,62
	TWW at 55°C		3,52	3,37	3,47	3,45	3,47	3,41
Power supply	Voltage / number of phases / frequency	V/Ph/ Hz	220÷240/1/50	220÷240/1/50	220÷240/1/50	380÷415/3/50	380÷415/3/50	380÷415/3/50
	Maximum operating current (mca)	A	14	16	17	10	11	12
Sound level	Sound power level (according to EN 12102)	dB	58	59	60	64	65	68
	Sound pressure (1 m)	dB	45	46	49	50	51	55
Scope temperatures air external	Cooling	°C	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43
	Heating	°C	-25÷35	-25÷35	-25÷35	-25÷35	-25÷35	-25÷35
	DHW	°C	-25÷43	-25÷43	-25÷43	-25÷43	-25÷43	-25÷43
Compressor type	Twin rotary		DC	DC	DC	DC	DC	DC
Installation refrigeration	Pipe diameter / gas	mm	6,35 / 15,88	9,52 / 15,88	9,52 / 15,88	9,52 / 15,88	9,52 / 15,88	9,52 / 15,88
		inch	1/4 / 5/8	3/8 / 5/8	3/8/ 5/8	3/8 / 5/8	3/8 / 5/8	3/8 / 5/8
	Permissible installation length / permissible height difference	m	2÷30 / 20	2÷30 / 20	2÷30 / 20	2÷30 / 20	2÷30 / 20	2÷30 / 20
	Connection method		calyx	calyx	calyx	calyx	calyx	calyx
Additional refrigerant	Cargo	g/m	20	38	38	38	38	38
	Length without recharging	m	<15	<15	<15	<15	<15	<15
Refrigerant	Symbol (GWP) / Amount of refrigerant	kg	R32 (675) / 1,5	R32 (675) / 1,65	R32 (675) / 1,65	R32 (675) / 1,84	R32 (675) / 1,84	R32 (675) / 1,84
Dimensions	Devices (width/height/ length)	mm	1008×712×426			1118×865×523		
	Packaging (width/height/ length)	mm	1065×800×485			1180×890×560		
Weight	Net / per package	kg	58 / 64	75 / 89	75 / 89	112 / 125	112 / 125	112 / 125

The above technical data complies with the guidelines of standards EN14511; EN14825; EN50564; EN12102; (EU) No 811:2013; (EU) No 813:2013; OJ 2014/C 207/02:2014. The seasonal heating performance SCOP has been determined for moderate climate conditions. The sound power level in heating mode has been determined in accordance with EN 12102 under conditions in accordance with EN 14825;

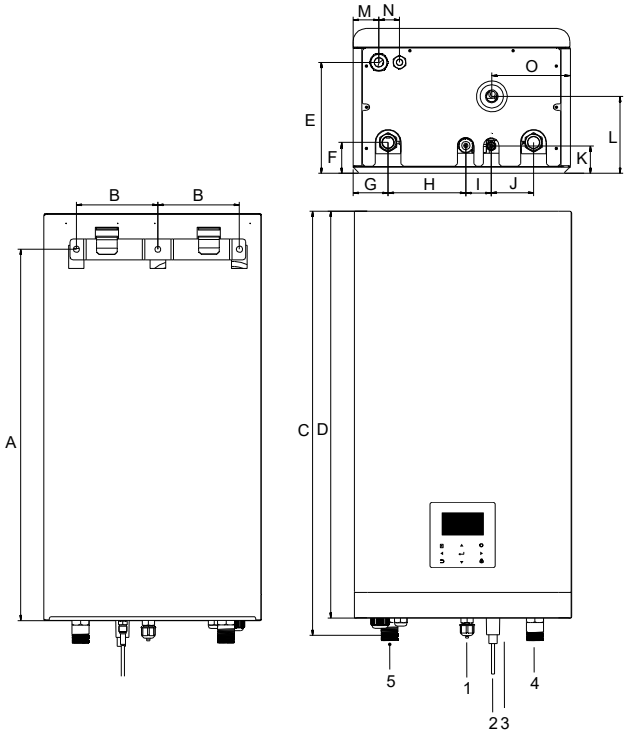
Unit **dimensions**



KMK-190L-100RY1
KMK-240L-100/160RY3

Code	Assembly unit	Code	Assembly unit
1	Refrigeration connection – gas 5/8"	6	Water inlet from the CO R1 system (GZ)
2	Refrigeration connection – liquid 3/8"	7	Water outlet to CO R1 system (GZ)
3	Hot water outlet	8	Condensate drain ø25
4	Domestic hot water recirculation inlet (plugged with a screw cap)	9	Circulation outlet from the solar collector system (non-standard)
5	Cold water inlet	10	Circulation inlet from the solar collector system (non-standard)

Model	A	B	C	D
KMK-190L-100 RY1	600	600	1711	1774
KMK-240L-100 RY3/ KMK-240L-160 RY3	600	600	1971	2034



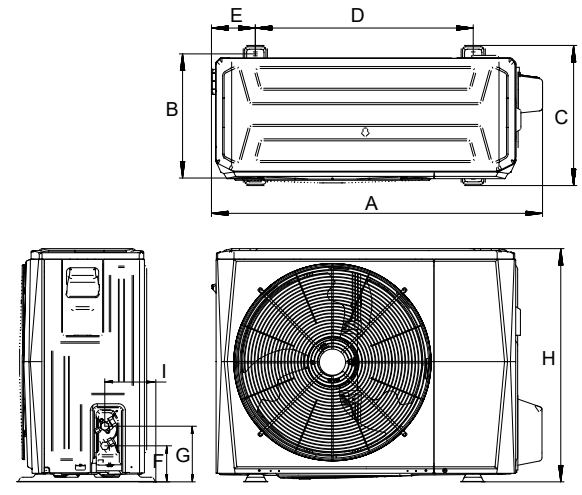
KMK-60/100/160RY3

1	Refrigeration connection – gas 5/8"
2	Refrigerant connection – liquid 1/4" (model 60), 3/8" (models 100/160)
3	Condensate drain ø25
4	Water inlet from the CO R1 system (GZ)
5	Water outlet to CO R1 system (GZ)

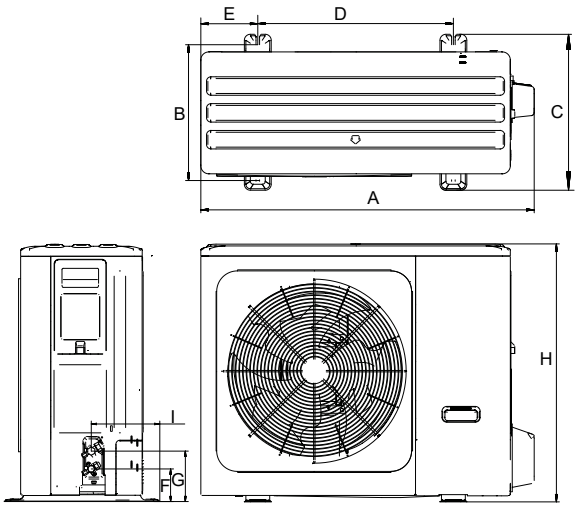
A	B	C	D	E	F	G	H
721	158	824	790	216	60	68	151

I	J	K	L	M	N	O	H
49	82	53	149	50	40	152	151

KHC-06RY1-B



KHC-08|10|12|14|16RY3-B



Model	A	B	C	D	E	F	G	H	I
KHA-06RY1	1008	375	426	663	134	110	170	712	160
KHA-08/10RY1	1118	456	523	656	191	110	170	865	230
KHA-12/14/16RY3	1118	456	523	656	191	110	170	865	230

Kaisai heat pumps

Mono R32

In monoblock heat pumps, the entire refrigeration system is located in the outdoor unit, which eliminates the need for specialized refrigeration qualifications for installation and guarantees low failure rates. This solution also minimizes the space required in the technical room.The absence of an indoor unit and integrated components – circulation pump, flow heater, and electronics (except for the controller) – means that the pump does not emit noise inside the building, ensuring comfortable use.RY models with a capacity of 6–16 kW are available for standard applications, while RX 22 and 30 kW models, which do not have an integrated flow heater, are available for more demanding and commercial applications.

R32

Compact design

Easy installation and simple maintenance, compact design, easy to transport and assemble

Time savings

Factory-made refrigerant installation, fully integrated into the outdoor unit, eliminating the need for additional freon pipes.

Plug and Play

All hydraulic components in the outdoor unit: circulation pump, expansion tank, safety and vent valve, flow sensor, pressure gauge, instantaneous water heater installed as standard

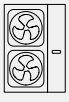
KHC-06RY1-B

Model				KHC-06RY1-B
Heating A7W35 ΔT=5, R.H. 85%	Nominal heating capacity (range)		kW	6,35 (2,73÷7,41)
	Power consumption (range)		kW	1,28 (0,53÷1,56)
	COP (range)		W/W	4,95 (5,32÷4,76)
Cooling A35W18 ΔT=5	Nominal cooling capacity		kW	6,50
	Electric power consumption		kW	1,35
	EER		W/W	4,80
Seasonal efficiency class energy for space heating	TWW at 35°C class	(temperate climate zone)	class	A+++
	TWW at 55°C class		class	A++
SCOP	TWW for 35°C		W/W	4,95
	TWW for 55°C		W/W	3,52
Power supply	Voltage / number of phases / frequency		V/Ph/Hz	220÷240/1/50
	Maximum operating current (mca)		A	27
Electric auxiliary heater	Electrical power		kW	3
	Performance levels			1
Sound level	Sound power level		dB(A)	58
	Sound pressure (1 m)		dB(A)	45
Temperature range outdoor air	Cooling		°C	-5÷43
	Heating		°C	-25÷35
	DHW		°C	-25÷43
Temperature range water at the outlet	Cooling		°C	5÷25
	Heating		°C	25÷65
	DHW		°C	20÷60

KHC-08|10|12|14|16RY3-B

Model				KHC-08RY3-B	KHC-10RY3-B	KHC-12RY3-B	KHC-14RY3-B	KHC-16RY3-B
Heating A7W35 ΔT=5, R.H. 85%	Nominal heating output (range)		kW	8,40 (3,36÷9,11)	10,00 (3,81÷10,32)	12,10 (5,58÷14,57)	14,50 (5,92÷15,46)	15,90 (6,43÷16,79)
	Power consumption (range)		kW	1,63 (0,61÷1,80)	2,02 (0,71÷2,09)	2,44 (1,04÷3,11)	3,15 (1,12÷3,44)	3,53 (1,27÷3,79)
	COP (range)		W/W	5,15 (5,54÷5,07)	4,95 (5,39÷4,93)	4,95 (5,38÷4,69)	4,60 (5,27÷4,49)	4,50 (5,08÷4,43)
Cooling A35W18 ΔT=5	Nominal cooling capacity.		kW	8,30	9,90	12,00	13,50	14,20
	Electric power consumption		kW	1,64	2,18	3,04	3,74	3,94
	EER		W/W	5,05	4,55	3,95	3,61	3,61
Seasonal space heating energy efficiency class	TWW at 35°C class	(climate zone Moderate)	class	A+++	A+++	A+++	A+++	A+++
	TWW at 55°C class		class	A++	A++	A++	A++	A++
SCOP	TWW for 35°C		W/W	5,22	5,20	4,81	4,72	4,62
	TWW for 55°C		W/W	3,37	3,47	3,45	3,47	3,41
Power supply	Voltage / Phase / Frequency		V/Ph/Hz	380÷415/3/50	380÷415/3/50	380÷415/3/50	380÷415/3/50	380÷415/3/50
	Max. Operating current (mca)		A	26	27	23	24	25
Electric auxiliary heater	Electrical power		kW	3/6	3/6	3/6/9	3/6/9	3/6/9
	Performance levels			2	2	3	3	3
Sound level	Sound power level		dB(A)	59	59	65	65	68
	Sound pressure (1 m)		dB(A)	46	49	50	51	55
Temperature range outdoor air	Cooling		°C	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43
	Heating		°C	-25÷35	-25÷35	-25÷35	-25÷35	-25÷35
	DHW		°C	-25÷43	-25÷43	-25÷43	-25÷43	-25÷43
Water temperature range at the outlet	Cooling		°C	5÷25	5÷25	5÷25	5÷25	5÷25
	Heating		°C	25÷65	25÷65	25÷65	25÷65	25÷65
	DHW		°C	20÷60	20÷60	20÷60	20÷60	20÷60

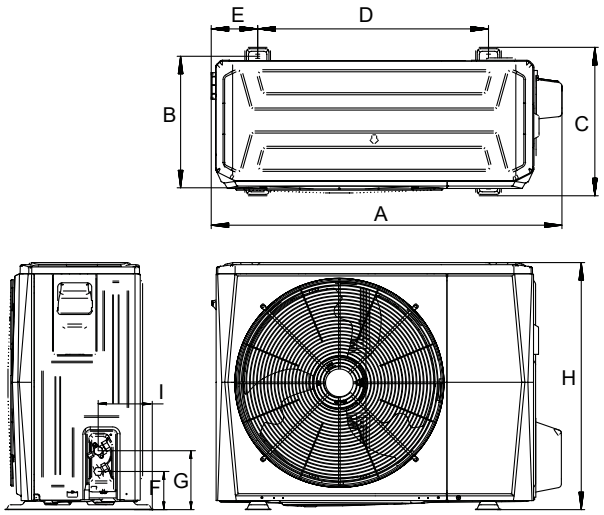
KHC-22|30RX3



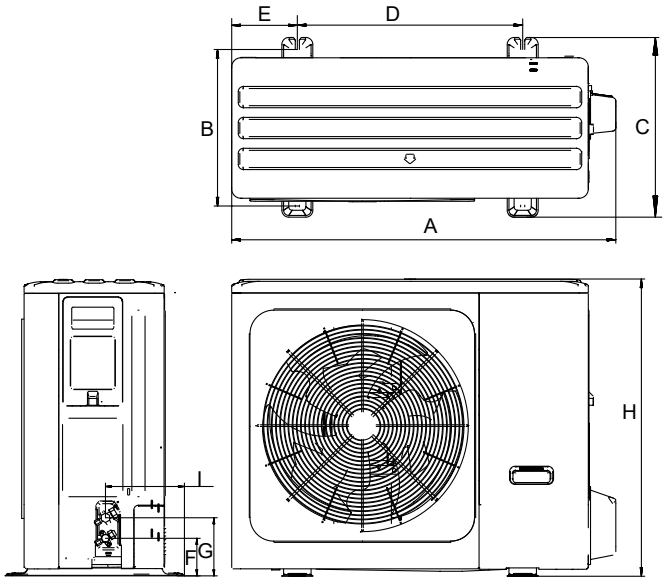
Model				KHC-22RX3	KHC-30RX3
Heating A7W35 ΔT=5, R.H. 85%	Nominal heating capacity (range)		kW	22,00 (9,92÷24,93)	30,10 (13,85÷31,75)
	Power consumption (range)		kW	5,00 (1,90÷6,47)	7,70 (2,93÷9,51)
	COP (range)		W/W	4,40 (5,33÷3,85)	3,91 (4,73÷3,34)
Cooling A35W18 ΔT=5	Nominal cooling capacity		kW	23,00	31,00
	Electric power consumption		kW	5,00	7,75
	EER		W/W	4,60	4,00
Seasonal space heating energy efficiency class	TWW at 35°C class	(climate zone moderate)	class	A+++	A++
	TWW at 55°C class		class	A++	A+
SCOP	TWW for 35°C		W/W	4,53	4,19
	TWW for 55°C		W/W	3,22	3,14
Power supply	Voltage / number of phases / frequency		V/Ph/Hz	380÷415/3/50	380÷415/3/50
	Maximum operating current (MCA)		A	24,5	28,5
Sound level	Sound power level		dB(A)	73	77
	Sound pressure (1 m)		dB(A)	59,8	63,5
Temperature range outdoor air	Cooling		°C	-5÷46	-5÷46
	Heating		°C	-25÷35	-25÷35
	DHW		°C	-25÷43	-25÷43
Temperature range water at the outlet	Cooling		°C	5÷25	5÷25
	Heating		°C	25÷60	25÷60
	DHW		°C	30÷60	30÷60

Unit **dimensions** [mm]

KHC-06RY1-B



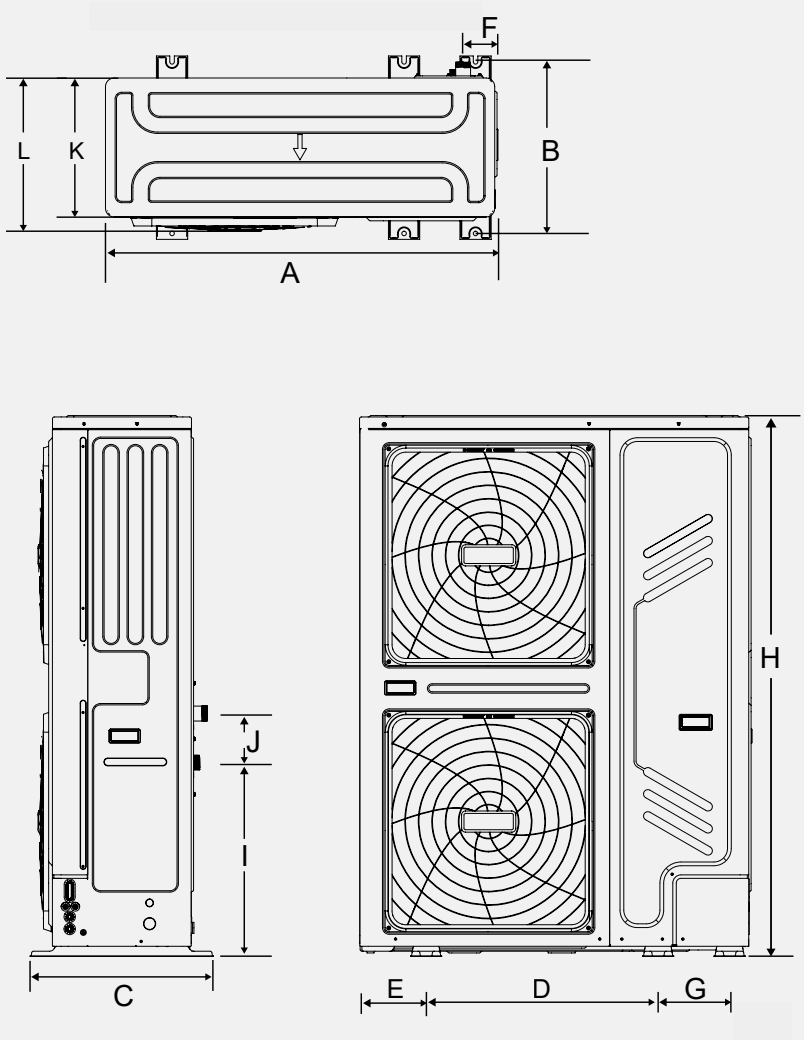
KHC-08|10|12|14|16RY3-B



MODEL	A	B	C	D	E	F	G	H	I	J	K
KHC-06RY1	1295	401	429	115	638	379	105	225	718	161	/
KHC-08/10/12/14/16RY3	1385	488	526	192	656	363	60	221	865	182	81

Unit **dimensions** [mm]

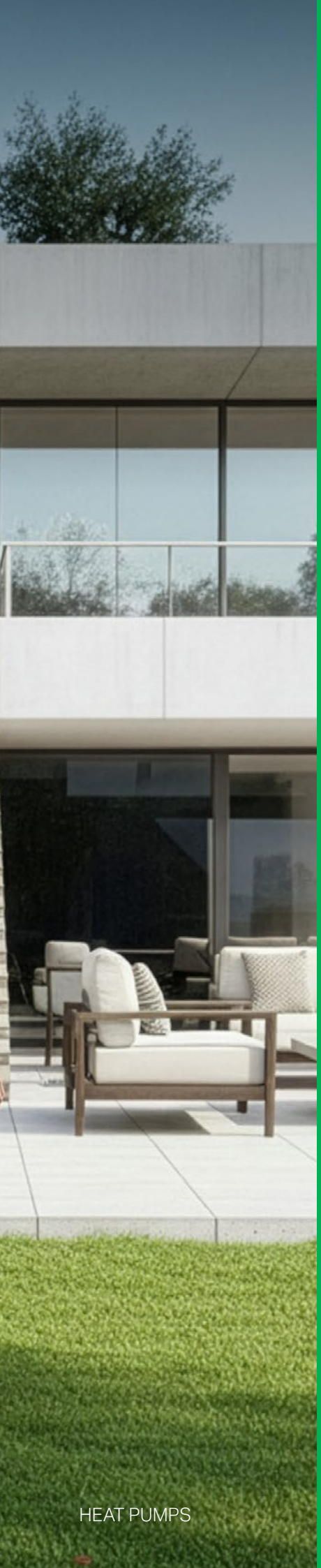
KHC-22 | 30 RX3



A	B	C	D	E	F	G	H	I	J	K	L
1129	494	528	668	192	98	206	1558	558	143	400	440

Kaisai heat pumps
with R290 refrigerant

KAISAI



The natural choice for conscious investors

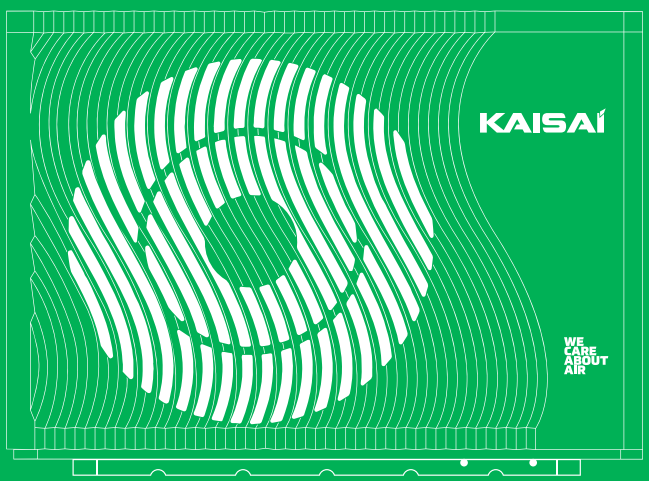
Ecology in practice – R290 is a natural refrigerant with an ultra-low GWP=3, which means minimal environmental impact and full compliance with EU directives. By choosing our solution, you are effectively reducing emissions and supporting climate protection. Efficiency that pays off – high SCOP values guarantee lower energy bills and a quick return on investment.

Comfort all year round. Stable operating parameters even in extreme conditions, ensuring warmth in winter and coolness in summer. No compromises.

Safety and future – the devices meet the highest safety standards and are resistant to regulatory changes. It is an investment that will protect your peace of mind for years to come.

Design and technology that make a difference – heat pumps are now an integral part of modern home architecture. Minimalist design, compact construction, and quiet operation make this technology an aesthetic feature. Inside, advanced components guarantee reliability and the highest operating standards.

A strategic investment in energy independence – by choosing our solutions, you are investing in innovation, responsibility, and real financial benefits. It is a decision that combines comfort with care for the environment and the future of your family.



R290 heat pump **series**

POWER (kW) A7W35	6	8	10	12	15
KHY P-LINE				 KHY-12PY3	 KHY-15PY3
HYDRAULIC MODULE NEW P-LINE				 KHSH090NPA3	 KHSH090NPA3
GREEN COMFORT NEW M-LINE	 KHOA-06PMA1	 KHOA-08PMA1	 KHOA-10PMA1		
GREEN POWER NEW M-LINE		 KHON-08PMA1	 KHON-10PMA1		
GREEN MODULE NEW M-LINE			 SOON KHSHOPONMA3		

KAISAI

Warmth and comfort

The Kaisai R290 heat pump is an excellent choice for those who expect thermal comfort, energy savings, full control over the heating system, and an elegant appearance. It is an investment in modern, environmentally friendly, and reliable heating for the future.

Possibility of working in a cascade system

Kaisai R290 heat pumps can be connected together in a cascade system, which means that several devices work together as one more powerful heat source. This is an ideal solution for larger homes, multi-family buildings, or commercial facilities. This allows the system to automatically adjust its power to the current demand, saving energy and ensuring continuous operation even when one of the units is turned off.

*cascade control system available separately

High work culture

Thanks to their quiet operation, simple control, and low energy consumption, R290 heat pumps ensure comfort throughout the year – not only by heating, but also by cooling rooms and preparing hot water. This solution allows you to significantly reduce operating costs and take advantage of available subsidy programs.

Smart Grid

Extensive cooperation with photovoltaics with the possibility of specifying the specifics of its operation – lower bills and better use of energy.

Can be connected to a dedicated hydraulic module

A complete solution in one set – facilitates installation and ensures an aesthetic appearance.

Multi-zone control

Independent temperature control in different parts of the building, thanks to thermostats or room sensors, allows you to precisely select comfortable temperatures and save heat energy.

*thermostats and temperature sensors available as optional extras

Kaisai R290 heat pumps

KHY R290

Kaisai KHY R290 air-to-water heat pumps are an efficient, eco-friendly, and smart heat source for modern homes. Thanks to the use of the natural refrigerant **R290**, they ensure high efficiency even at low temperatures and meet strict environmental standards.

The devices are distinguished by their modern design, intuitive touch control, and the possibility of integration with **Smart Grid** systems and photovoltaics, which allows for intelligent energy management and greater savings.

The KHY R290 pump enables heating, cooling, and DHW preparation in a single device. It is a complete outdoor unit that **does not require refrigeration installation or F-Gas certification,** which significantly reduces installation and commissioning time.

Two heating circuits

KHY heat pumps meet all user needs through a built-in factory logic system and control for operating two different heating circuit temperatures.

Inverter technology

DC Inverter technology allows for precise control of the compressor's performance, adapting to current needs. This reduces energy consumption while maintaining optimal time to reach set parameters and ensuring exceptionally quiet operation.

Intelligent heat exchanger defrosting

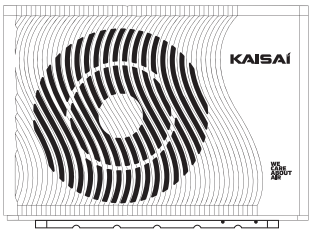
Advanced defrost algorithms ensure optimal operation of the refrigeration system, minimizing energy consumption and operating costs.

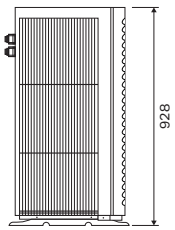
Technical specifications

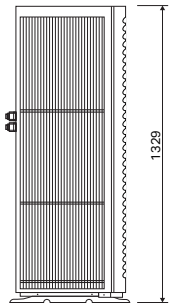
Model			**KHY-12PY3**	**KHY-15PY3**
				
A7W35 heating	Nominal heating capacity	kW	11,60	15,45
	Electric power consumption	kW	3,80	5,20
	COP	W/W	3,11	2,98
A7W55 heating	Nominal heating capacity	kW	10,36	16,4
	Electric power consumption	kW	3,41	6,14
	COP	W/W	3,04	2,67
Cooling A35W7	Nominal cooling capacity	kW	9,90	12,50
	Electric power consumption	kW	4,10	5,20
		W/W	2,40	2,40
Seasonal energy efficiency class (temperate climate zone)	Energy efficiency class for 35°C	–	A+++	A++
	Energy efficiency class for 55°C	–	A++	A++
Power supply	Voltage / number of phases / frequency	V / Ph / Hz	380~415 / 3N / 50	380~415 / 3N / 50
Energy efficiency class for 35°C	Maximum operating current (MCA)	A	10,5	15,0
Hydraulic system	Nominal medium flow	m^3/h	1,7	2,9
	Pump lift value	mH_2O	5,5	6,9
Sound level	Sound power level (EN 12102)	dB(A)	63	62
	Sound pressure level (1 m)	dB(A)	51,5	50
Outdoor air temperature range	Heating	°C	-25~43	-25~43
	Cooling	°C	-5~43	-5~43
Water outlet temperature range	Heating	°C	9~70	9~70
	Cooling	°C	5~15	5~15
Water connection	Diameter – external thread	inch	G1	G1
Refrigerant	Symbol (GWP) / amount of refrigerant	--- / kg	R290(3) / 0,85	R290(3) / 1,30
Dimensions	Devices (W/H/L)	mm	1287 x 928 x 458	1250 x 1330 x 540
	Packaging (width/height/length)	mm	1420 x 1080 x 540	1380 x 1480 x 570
Weight	Net / per package	kg	160 / 163	202 / 205

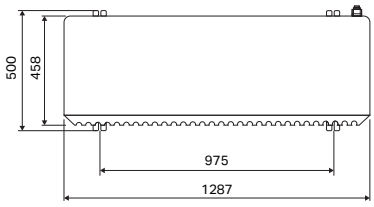
Model		**KHSH090NPA3**
Power supply	V / Ph / Hz	380-415 / 3N / 50Hz
Electric heater	kW	9.00
Maximum power consumption	kW	9.18
Pressure drop for 1.7 m^3/h	kPa	22
Maximum water pressure	bar	3
Noise level	dB(A)	35
Water connection on the heat pump side	inches	1
Water connection on the central heating side		1
Hot water connection		1
Net dimensions (WxHxD)	mm	501 x 676 x 320
Transport dimensions (WxHxD)	mm	565 x 765 x 350
Net weight	kg	53
Transport weight	kg	58

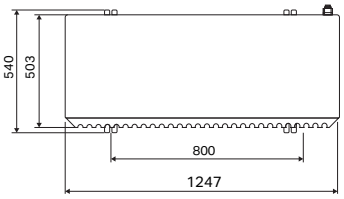
Unit **dimensions** [mm]

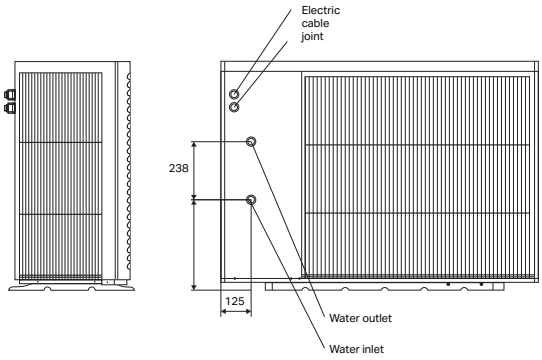


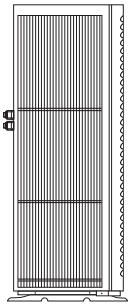


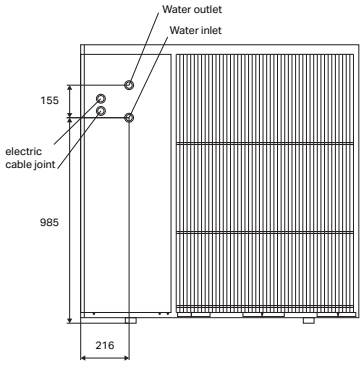


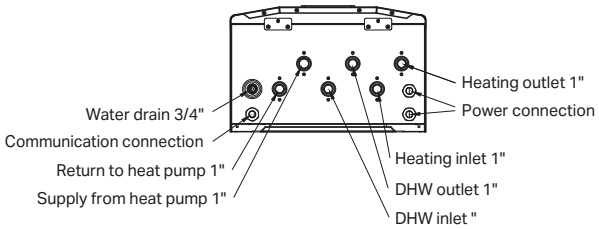


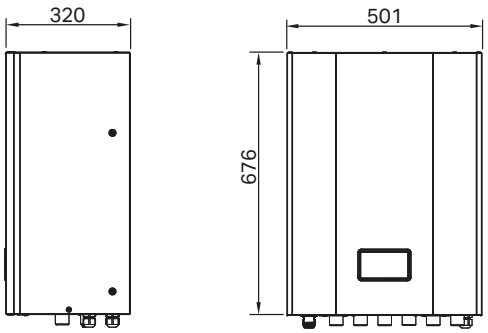












Hydraulic module

The KHY R290 hydraulic module for heat pumps has been designed to match both modern and traditional interiors.

Its functionality and integration of basic functions such as peak heat source and domestic hot water production ensure maximum thermal comfort for the user.

Support for two heating circuits

The standard automation of the device allows you to control two independent heating circuits, including a circuit with a mixing group (e.g., underfloor heating), without the need for additional controllers or modules.

Zone control

Built-in dual-zone support allows for **precise temperature control** in rooms regardless of the type of heating system.

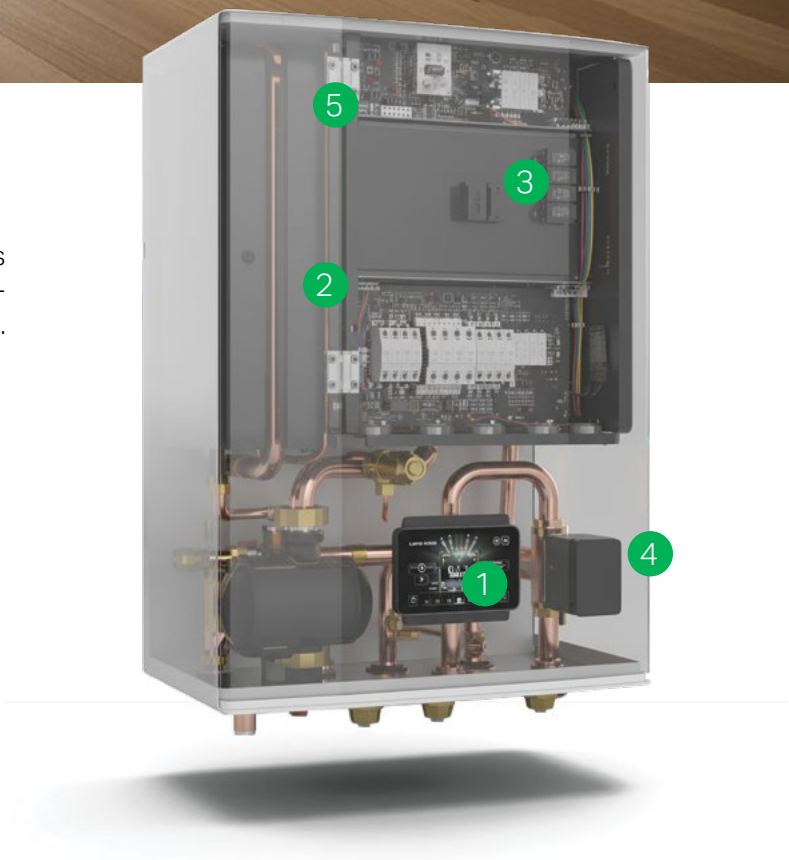
Radiator
>50°C
Even distribution of warm air throughout the room ensures comfort even in remote corners.

Fan coil unit
>40°C ≤20°C
It provides both cooling and heating efficiently and extremely quietly.

Underfloor heating
>40°C ≤20°C
Ensures even temperature increase, maintaining comfortable conditions at all times.

Components of the Kaisai hydraulic module

shortens the installation process and increases the reliability of the heating system by integrating components into a factory-prepared device.



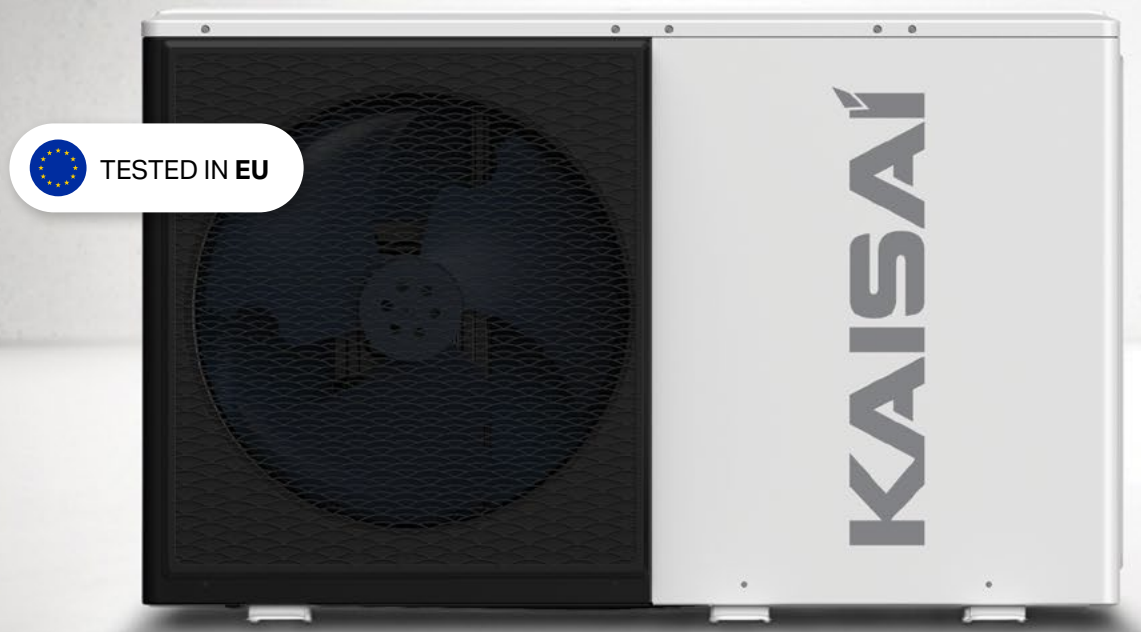
1. Color screen controller
2. 10 l expansion vessel
3. Controler PCB
4. 3-way valve
5. Electric heater

Kaisai R290 heat pumps

Green Comfort

Kaisai Green Comfort is a modern heat pump that ensures high comfort of use throughout the year. It combines **high energy efficiency, environmentally friendly technology**, **and reliability**, making it suitable for both new investments and the modernization of existing heating systems. The device works with underfloor heating and radiators, and in combination with fan coil units, it also enables effective cooling. The GREEN Comfort system is used **in single-family homes, multi-family buildings, and commercial facilities**, and can operate independently or in a bivalent system, creating a flexible and economical heating system.

R290



Environmentally friendly refrigerant R290

The pump uses the natural refrigerant R290 (propane) with an extremely low global warming potential (GWP = 3). This is a forward-looking solution that fully complies with the most stringent EU environmental standards.

Very high supply temperature

Thanks to the use of R290 refrigerant, the device allows the outlet water temperature to reach 75°C. This makes the pump ideal for modernized buildings, working with traditional radiators without any loss of efficiency.

Quiet operation and modern design

The device's design has been optimized to minimize noise, allowing it to be installed close to residential areas. The modern housing combines aesthetics with high resistance to weather conditions.

Technical specifications

Model			KHOA-06PMA1	KHOA-08PMA1	KHOA-10PMA1
Heating A7W35 ΔT=5K	Nominal heating capacity	kW	6,20	8,40	10,00
	Electric power consumption	kW	1,27	1,68	2,13
	COP	W/W	4,90	5,00	4,70
Heating A7W55 ΔT=8K	Nominal heating capacity	kW	6,20	7,80	9,50
	Electric power consumption	kW	2,00	2,44	3,12
	COP	W/W	3,10	3,20	3,05
Heating A-7W35 ΔT=5	Nominal heating capacity	kW	5,90	7,00	8,00
	Electric power consumption	kW	2,00	2,33	2,81
	COP	W/W	2,95	3,00	2,85
Heating A-7W55 ΔT=8K	Nominal heating capacity	kW	5,20	6,90	7,40
	Electric power consumption	kW	2,42	3,21	3,52
	COP	W/W	2,15	2,15	2,10
Cooling A35W7 ΔT=5	Nominal cooling capacity	kW	6,80	7,50	8,90
	Electric power consumption	kW	2,19	2,17	2,74
	EER	W/W	3,10	3,45	3,25
Seasonal space heating energy efficiency class (temperate climate zone)	TWW at 35°C class		A+++	A+++	A+++
	TWW at 55°C class		A++	A++	A++
SCOP (temperate climate zone)	TWW for 35°C	W/W	4,85	5,08	4,98
	TWW for 55°C	W/W	3,74	3,82	3,82
Power supply	Voltage / number of phases / frequency	V/Ph/Hz	220÷240/1/50	220÷240/1/50	220÷240/1/50
	Maximum operating current (MCA)	A	13,5	16	17,5
Electric auxiliary heater	Voltage / number of phases / frequency	V/Ph/Hz	220÷240/1/50	220÷240/1/50	220÷240/1/50
	Maximum operating current (MCA)	A	13,5	13,5	13,5
	Electrical power / efficiency levels	kW / n	3,0 / 1	3,0 / 1	3,0 / 1
Sound level	Sound power level (according to EN 12102)	dB(A)	58	60	61
	Sound pressure (1 m)	dB(A)	46	48	49
Outdoor air temperature range	Heating	°C	-25 ÷ 35	-25 ÷ 35	-25 ÷ 35
	DHW	°C	-25 ÷ 46	-25 ÷ 46	-25 ÷ 46
	Cooling	°C	-5 ÷ 46	-5 ÷ 46	-5 ÷ 46
Water outlet temperature range	Heating	°C	25 ÷ 75	25 ÷ 75	25 ÷ 75
	DHW	°C	20 ÷ 70	20 ÷ 70	20 ÷ 70
	Cooling	°C	5 ÷ 25	5 ÷ 25	5 ÷ 25
Water flow	Nominal / range	m^3/h	1,09 / 0,4...1,25	1,44 / 0,4...1,65	1,72 / 0,4...2,10
Permissible operating pressure		bar	3	3	3
Expansion tank volume		dm^3	8	8	8
Water connection	Diameter – external thread	inch	G 1	G 5/4	G 5/4
Refrigerant	Symbol (GWP) / amount of refrigerant	--- / kg	R290 (3) / 0,700	R290 (3) / 1,100	R290 (3) / 1,100
Dimensions	Devices (W/H/L)	mm	1299 × 717 × 426	1385 × 865 × 523	1385 × 865 × 523
	Packaging (width/height/length)	mm	1375 × 885 × 475	1465 × 1035 × 560	1465 × 1035 × 560
Weight	Net / per package	kg	95 / 115	122 / 144	122 / 144

*) The above technical data complies with the guidelines of standards EN14511; EN14825; EN50564; EN12102; (EU) No 811:2013; (EU) No 813:2013.
*) Seasonal heating efficiency SCOP has been determined for moderate climate conditions.
*) The power level in heating mode is specified in accordance with EN 12102 under conditions compliant with EN 14825;

Modern design and high performance

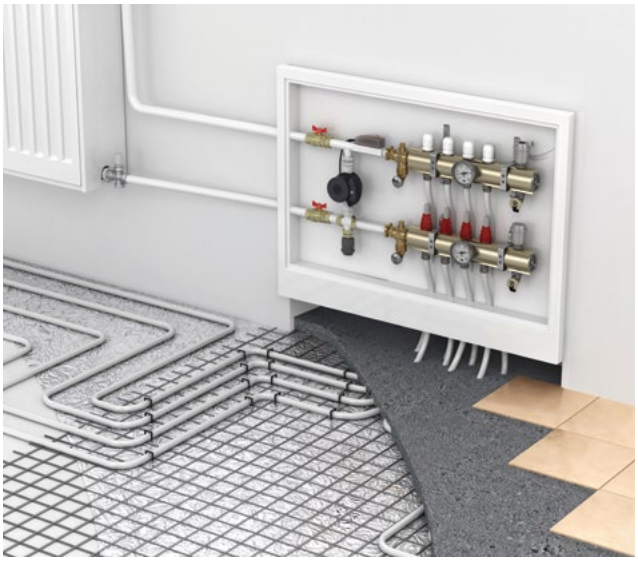
Kaisai Green Comfort pumps feature **a modern design** and **high efficiency of the R290 refrigerant**. This allows the heating system supply parameter to reach up to +75°C for an outside air temperature of -10°C.

Energy efficiency class A+++

Highest energy efficiency class for low-temperature systems +35°C and class A++ for parameters of +55°C, is the result of innovative solutions used in KAISAI devices.

Comfort

Modern GREEN Comfort heat pumps can operate in **central heating (CH), domestic hot water (DHW), and cooling** modes**.**



Two heating circuits

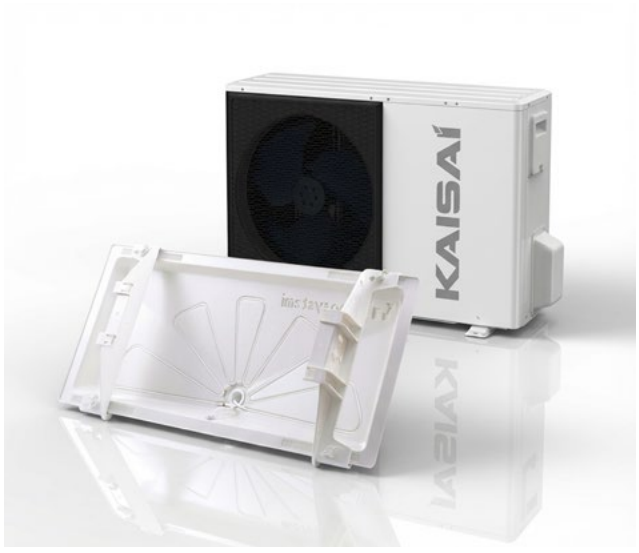
Support for **two heating circuits** and built-in automation for controlling the mixing group and circulation pumps allows the entire heating system to be controlled from a single controller and saves installation time.

Clear, intuitive controller with color display

The menu configuration and descriptions of individual functions are very clear and precise. In addition, the analysis of energy consumption and production with a calculated efficiency coefficient provides full control over heating costs.

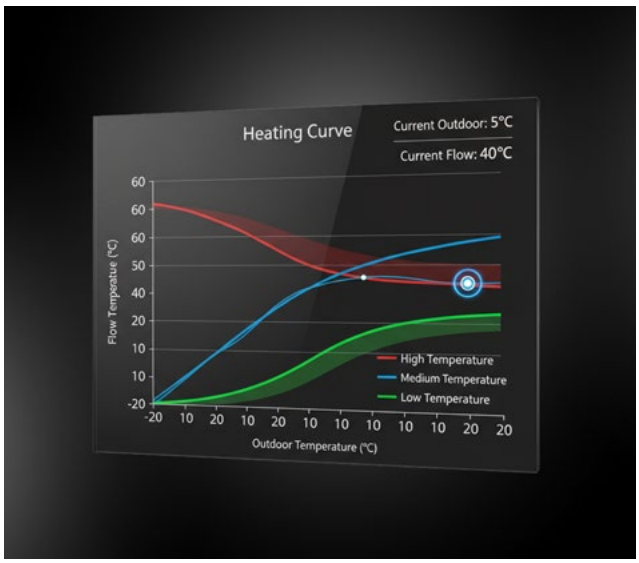
Wi-Fi module

The controller connected to the Wi-Fi network is automatically updated, ensuring constant access to the latest software version and current system features.



Drain pan with heater

The heat pump is equipped with a drip tray that allows condensate to drain freely directly under the unit or to be reused, e.g., by draining it into a rainwater tank.

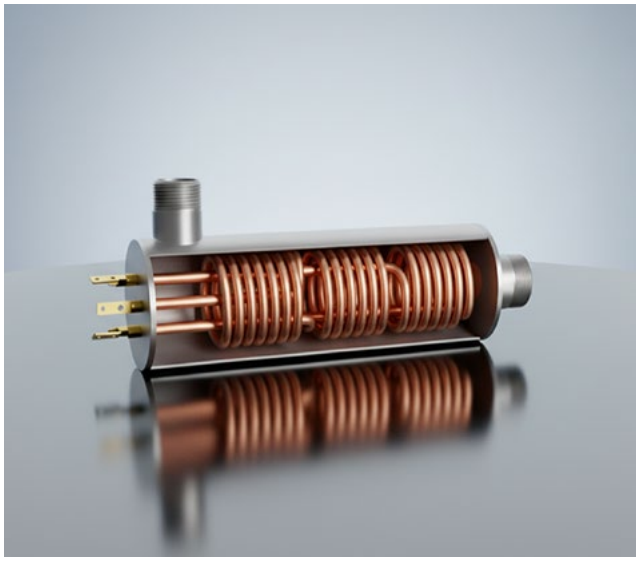


Heating curves

By adjusting the **heating curve**, you can freely configure the supply temperatures, maintaining thermal comfort in the rooms.

Modern and quiet inverter compressor

Designed for use with R290 refrigerant, it ensures the efficiency and reliability of the GREEN Comfort heat pump.



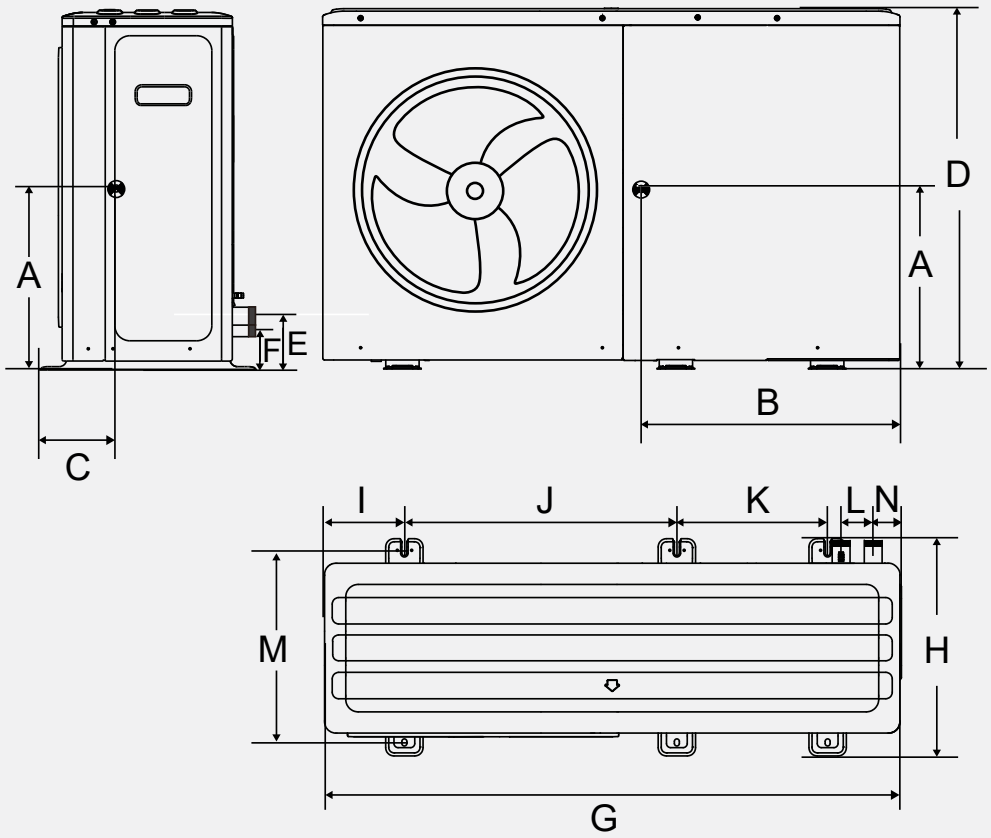
Built-in electric backup heater

Effectively fulfilling its role as the primary heat source, it guarantees that thermal comfort in the building will be ensured even during extreme conditions.
weather conditions.

Built-in circulation pump

It ensures uninterrupted circulation in the heating system, and variable flow control perfectly adapts to current demand.
heating system.

Unit **dimensions**



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1-phase 4/6 kW	333	528	210	717	91	91	1299	426	121	644	379	90	375	71
1-phase 8/10 kW	360	550	234	865	129	100	1385	523	192	656	363	77	456	68
1-phase 12/14/16 kW	415	715	200	865	129	100	1385	523	192	656	363	77	456	68
3-phase 12/14/16 kW	415	715	200	865	129	100	1385	523	192	656	363	77	456	68

Kaisai R290 heat pumps

Green Power

Green Power series devices **set a new standard in modern heating.** Thanks to the excellent thermodynamic properties of propane – R290 and advanced heat pump technology, Kaisai Green Power achieves excellent results even in difficult weather conditions using a small amount of R290 refrigerant. As a result, Green series devices have achieved **the highest energy efficiency class A+++** for both 35°C and 55°C supply temperatures. This modern solution balances **environmental protection** requirements **with high efficiency and economy.** Choose Kaisai technology now for a long-term solution.

Highest energy efficiency class A+++

both for low-temperature systems at +35°C and for parameters at +55°C.

Heating and DHW

Heating (CO) and domestic hot water (DHW) production, as well as the possibility of using the device in cooling mode, are standard features of the GREEN POWER series.

Continuous power of the device

The continuous power of the GREEN POWER device down to an outside temperature of -10°C allows for the highest heating system power parameters of up to +80°C.

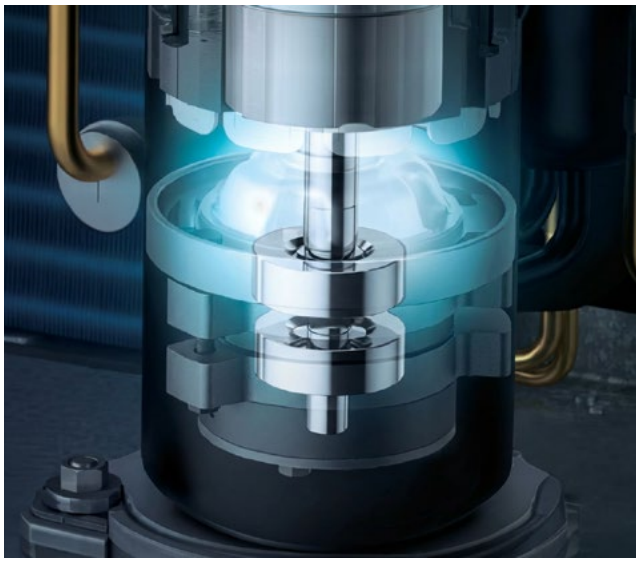
Different supply temperatures for heating circuits

The heat pump supports two different heating circuit supply temperatures as standard. This means you do not need to use additional automation to regulate the mixing group and circulation pump, which reduces investment costs.

Technical specifications

Model			KHON-08PMA1	KHON-10PMA1
Heating A7W35 ΔT=5K	Nominal heating capacity	kW	8,00	9,50
	Electric power consumption	kW	1,52	1,92
	COP	W/W	5,25	4,95
Heating A7W55 ΔT=8K	Nominal heating capacity	kW	8,00	9,50
	Electric power consumption	kW	2,39	2,97
	COP	W/W	3,35	3,20
Heating A-7W35 ΔT=5	Nominal heating capacity	kW	7,00	8,00
	Electric power consumption	kW	2,15	2,54
	COP	W/W	3,25	3,15
Heating A-7W55 ΔT=8K	Nominal Heating Capacity	kW	7,50	8,80
	Electric Power Consumption	kW	3,23	4,00
	COP	W/W	2,30	2,20
Cooling A35W7 ΔT=5	Nominal cooling capacity	kW	7,45	8,10
	Electric power consumption	kW	2,22	2,61
	EER	W/W	3,35	3,10
Seasonal space heating energy efficiency class (temperate climate zone)	TWW at 35°C class		A+++	A+++
	TWW at 55°C class		A+++	A+++
SCOP (temperate climate zone)	TWW for 35°C	W/W	5,35	5,33
	TWW for 55°C	W/W	4,06	4,01
Power supply	Voltage / number of phases / frequency	V/Ph/Hz	220÷240/1/50	220÷240/1/50
	Maximum operating current (MCA)	A	18,0	19,5
Electric auxiliary heater	Voltage / number of phases / frequency	V/Ph/Hz	220÷240/1/50	220÷240/1/50
	Maximum operating current (MCA)	A	13,5	13,5
	Electrical power / efficiency levels	kW / n	3,0 / 1	3,0 / 1
Sound level	Sound power level (according to EN 12102)	dB(A)	53	54
	Sound pressure (1 m)	dB(A)	40	41
Outdoor air temperature range	Heating	°C	-25 ÷ 35	-25 ÷ 35
	DHW	°C	-25 ÷ 46	-25 ÷ 46
	Cooling	°C	-5 ÷ 46	-5 ÷ 46
Water outlet temperature range	Heating	°C	25 ÷ 80	25 ÷ 80
	DHW	°C	20 ÷ 70	20 ÷ 70
	Cooling	°C	5 ÷ 25	5 ÷ 25
Water flow	Nominal / range	m^3/h	1,44 / 0,4...1,65	1,72 / 0,4...2,10
Permissible operating pressure		bar	3	3
Expansion tank volume		dm^3	none	none
Water connection	Diameter – external thread	inch	G 5/4	G 5/4
Refrigerant	Symbol (GWP) / amount of refrigerant	--- / kg	R290 (3) / 1,100	R290 (3) / 1,100
Dimensions	Devices (W/H/L)	mm	1330 × 1051 × 501	1330 × 1051 × 501
	Packaging (width/height/length)	mm	1390 × 1235 × 570	1390 × 1235 × 570
Weight	Net / per package	kg	161 / 186	161 / 186

*) The above technical data complies with the guidelines of standards EN14511; EN14825; EN50564; EN12102; (EU) No 811:2013; (EU) No 813:2013.
*) Seasonal heating efficiency SCOP has been determined for moderate climate conditions.
*) The power level in heating mode is specified in accordance with EN 12102 under conditions compliant with EN 14825;



Reliable and quiet compressor

Modern heat pumps require the latest compressor technology, thanks to which the devices operate very quietly, efficiently, and reliably.

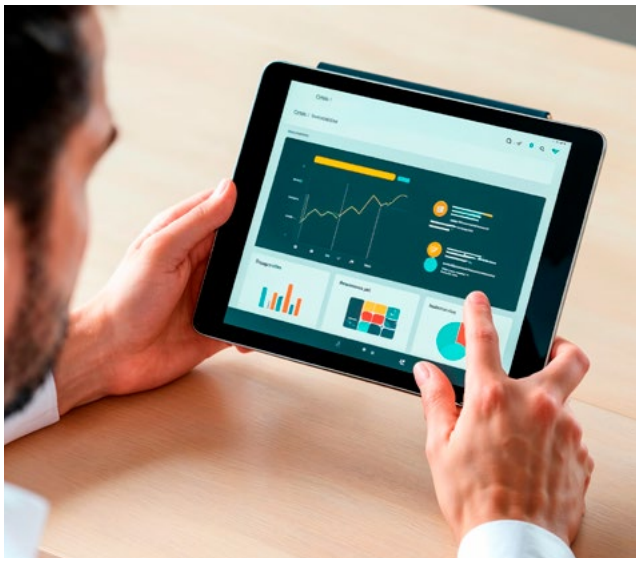
Wi-Fi module

The controller connected to the Wi-Fi network is automatically updated, ensuring constant access to the latest software version and current system features.

Precise control

Your comfort

Increased precision of settings, measurements, and adjustments through built-in automation allows for more accurate management of the entire heating system in the facility. A clear, intuitive controller with a color display, transparent menu, and descriptions of individual functions allow for efficient use of the heat pump.

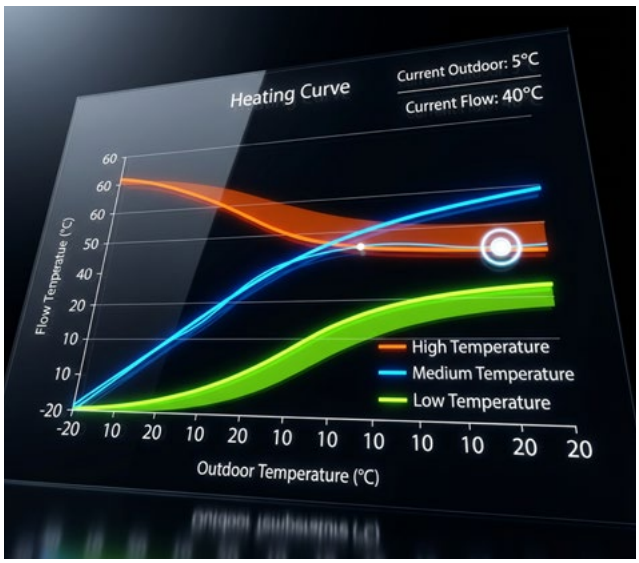


Energy analysis

The results of the entire system's operation are more transparent thanks to access to heat production analysis and electricity consumption data. This means you always know the operating costs of your heating system.

Working in a cascade

The factory control system allows you to manage up to 6 units connected in cascade. Such a system can provide up to 96 kW of heating power.



Regulation according to the heating curve

With built-in or custom weather curve settings, you can configure supply temperatures very precisely, reducing significantly reduce operating costs and maintain thermal comfort in the building.

Drain pan with heater

Effectively fulfilling its role as the primary heat source, it guarantees that thermal comfort in the building will be ensured even during extreme conditions.
weather conditions.

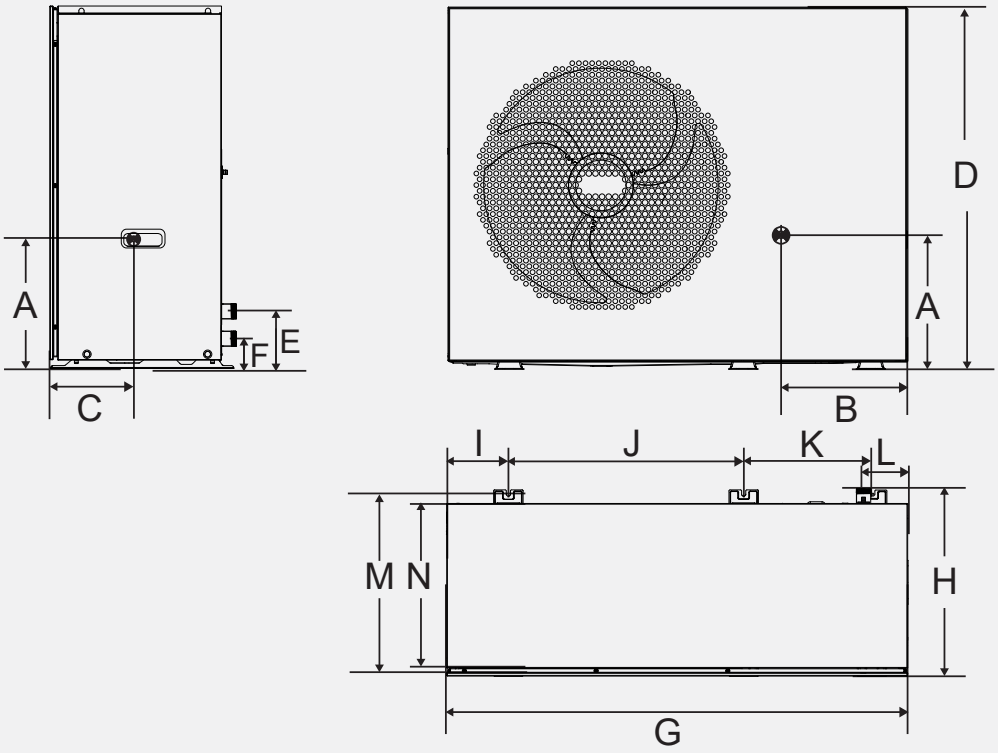
Drain pan with heater

The heat pump is equipped with a drip tray that allows condensate to drain freely directly under the unit or to be reused, e.g., by draining it into a rainwater tank.

Efficient circulation pump as standard

If your CO system is designed for Δt=5°C (e.g., 35/30 or 45/40) and a small amount of water, you can connect the heat pump directly to the heating system using minimal buffer/hydraulic coupling capacities, which will significantly reduce the cost of the investment. The circulation pump precisely adjusts its output to the current needs of the heating system.

Unit **dimensions**



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1-phase 8/10kW	420	490	205	1051	170	89	1330	538	178	679	370	132	513	501
3-phase 8/10kW	361	490	197	1051	170	89	1330	538	178	679	370	132	513	501
1-phase 12-16 kW	352	535	225	1051	170	89	1330	538	178	679	370	132	513	501
3-phase 12-16kW	352	535	225	1051	170	89	1330	538	178	679	370	132	513	501

Heat pumps with DHW tank

Green Combo

Durability and reliability

Full corrosion protection thanks to a combination of magnesium and electric anodes – no need for frequent replacement and lower maintenance costs.

Energy savings and high efficiency

Energy efficiency class A+ results in a real reduction in electricity bills.

Technical specifications

Model			**KHFS190PRA1**	**KHFP190PRA1**	**KHFS300PRA1**	**KHFP300PRA1**
Power supply		V / Ph / Hz	220~240 / 1 / 50	220~240 / 1 / 50	220~240 / 1 / 50	220~240 / 1 / 50
Tank capacity		L	185	182	275	270
EN16147 data	Load profile	-	L	L	L	L
	Water heating energy efficiency class	-	A+	A+	A+	A+
	Energy efficiency of water heating	%	131	131	127,3	127,3
	COP	-	3,14	3,14	3,1	3,1
	Reference hot water temperature	°C	53	53	52,5	52,5
	Annual electricity consumption	kWh	780	780	804,9	804,9
	SCF (Smart)	%	13	13		
Electricity consumption (heat pump + electric heater)	Maximum heat pump power	W	600	600	900	900
	Maximum heater power	W	1500	1500	1500	1500
	Total maximum power	W	2240	2240	2400	2400
EN12102-2:2019 data	Noise level in the room (without air extraction)	dB(A)	56	56	56	56
Outdoor air temperature range	Heat pump / electric heater	°C	-7 ÷ 43 / -20 ÷ 47	-7 ÷ 43 / -20 ÷ 47	-7 ÷ 43 / -20 ÷ 47	-7 ÷ 43 / -20 ÷ 47
Maximum water temperature of the heat pump (with electric heater)		°C	65 (70)	65 (70)	65 (70)	65 (70)
Tank	Material	-	Enameled steel	Enameled steel	Enameled steel	Enameled steel
	Cathodic protection	-	Magnesium anode + electric anode (optional)	Magnesium anode + electric anode (optional)	Magnesium anode + electric anode (optional)	Magnesium anode + electric anode (optional)
	Inlet water connection	G"	`3/4	`3/4	`3/4	`3/4
	Outlet water connection	G"	`3/4	`3/4	`3/4	`3/4
	Drain connection	G"	`3/4	`3/4	`3/4	`3/4
Maximum cold water pressure		bar	8,5	8,5	8,5	8,5
Solar coil	Material	-	x	stainless steel	x	stainless steel
	Area	m^2	x	0,35	x	0,7
	Maximum pressure	bar	x	10	x	10
Refrigeration system	Compressor	-	Rotary	Rotary	Rotary	Rotary
	Refrigerant / quantity	g	R290 / 150	R290 / 150	R290 / 150	R290 / 150
	Condenser	-	Aluminum pipe wound around the outside of the tank	Aluminum pipe wound around the outside of the tank	Aluminum pipe wound around the outside of the tank	Aluminum pipe wound around the outside of the tank
HP/LP refrigerant pressure		bar	30 / 12	30 / 12	30 / 12	30 / 12
Dimensions (HxWxD)		mm	560 x 590 x 1745	560 x 590 x 1745	650 x 688 x 1895	650 x 688 x 1895
Dimensions in packaging (WxDxH)		mm	675 x 655 x 1945	675 x 655 x 1945	750 x 720 x 2210	750 x 720 x 2210
Net/gross weight		kg	91/112	91/112	128/148	128/148

Comfort and hygiene in everyday use

- Precise temperature control thanks to dual sensors – stable and predictable water temperature.
- Disinfection function (60–70°C) – effective protection against Legionella bacteria, health safety for the whole family.
- Vacation mode – automatic disinfection and return to previous settings after the break is over
- The quiet operation of the device makes it suitable for installation in a garage, basement, or utility room.
- Indoor installation possible thanks to a specially designed air inlet and outlet system.

Energy savings and high efficiency

- Energy efficiency class A+ means a real reduction in your electricity bills.
- Microchannel heat exchange technology – faster water heating with lower energy consumption.
- Compatible with photovoltaic (PV) systems – free electricity for water heating.
- Support for solar collectors and cooperation with an external boiler – system flexibility and additional savings.
- Smart Grid function – full power during off-peak hours.

Durability and reliability

- Tank protected by a 45 mm layer of insulation – minimal heat loss and lower costs.
- EISENMAN (Germany) enameling technology and FERRO coating materials – the best resistance to corrosion and high pressure.
- Full corrosion protection thanks to a combination of magnesium and electric anodes – no need for frequent replacement and lower maintenance costs.

Modern control system and smart features

- Operation via SmartHome APP – control the heater from anywhere in the world, at any time.
- Remote software updates – always access the latest features and improvements without a service technician visit.
- Ready to work with photovoltaics smart grid (SG ready) – automatic adjustment of device operation for maximum savings.

Easy installation and servicing

- Can be transported in a horizontal position – easier delivery and transport of the device to hard-to-reach places.
- Easy front access for service – quick maintenance, replacement of anodes or consumable parts.
- Replace the magnesium anode in just a few minutes – no need to take apart the entire device.
- Durable construction with enamelled steel and optional current anode (titanium) – minimal maintenance and long service life.

ALL in ONE tank

DHW / buffer tank

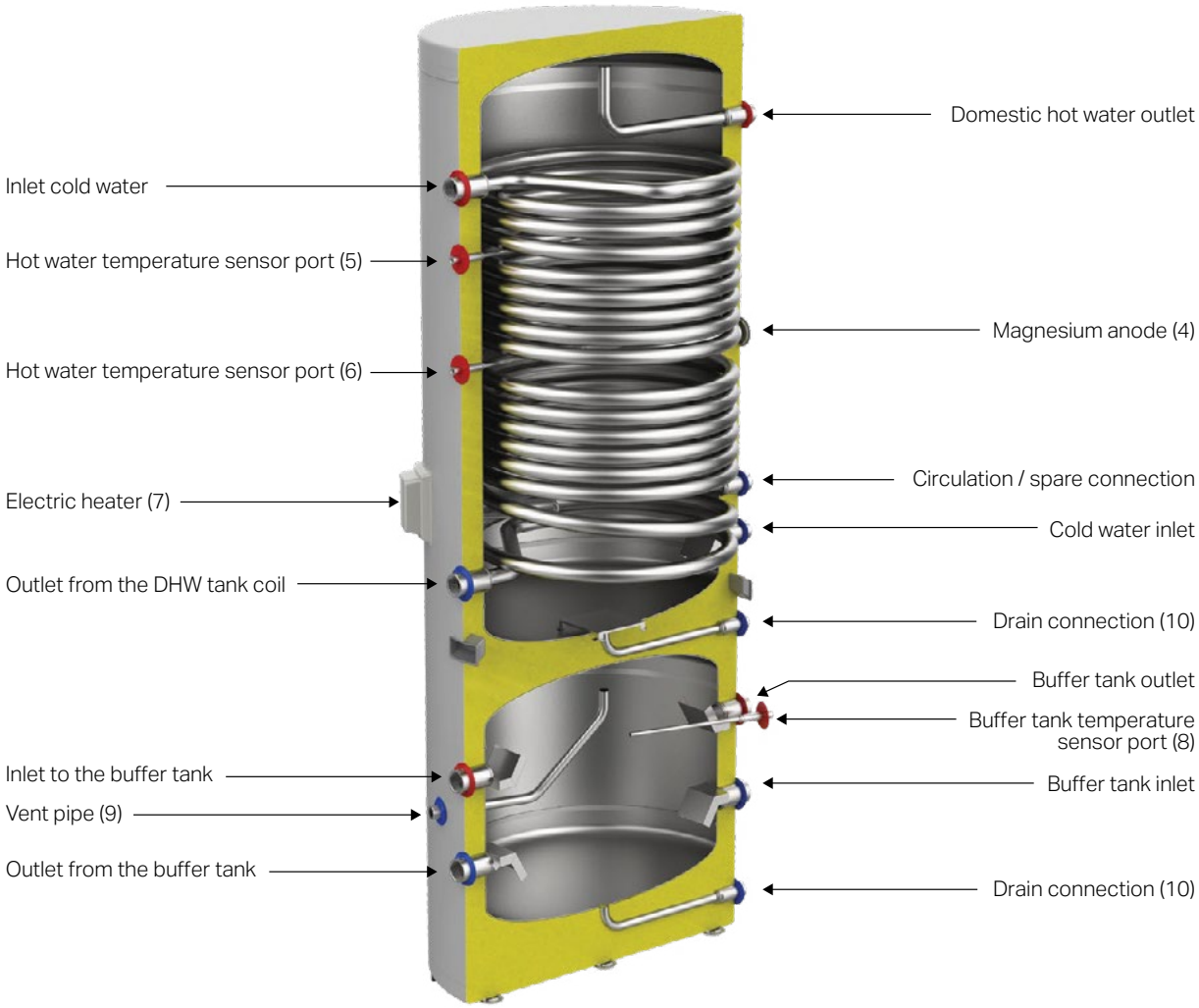
Kaisai Eco Home is an innovative solution specially designed for heat pumps, combining a domestic hot water tank and a buffer tank, which also acts as a hydraulic coupling in the central heating system, in a single housing.The combination of tanks is an optimal alternative to solutions commonly available on the market. It saves space thanks to its compact design, while maintaining functionality and the necessary operating parameters. The **Eco Home** tank fits perfectly into any type of installation, whether newly designed or modernized.

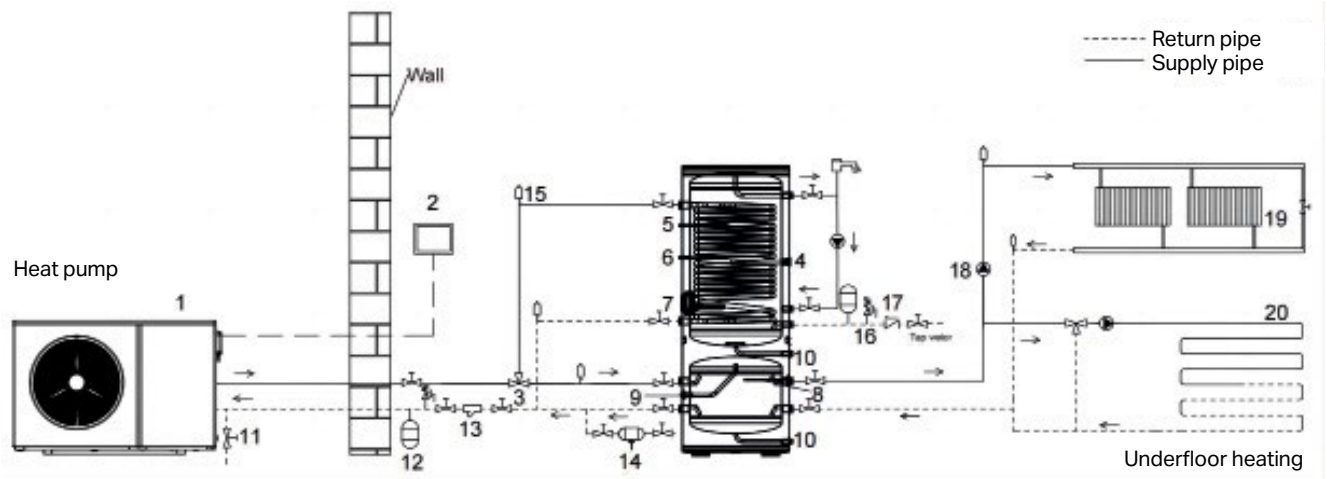
280 l
Domestic hot water tank

2,9 m²
Coil surface area

50 mm
Thickness of polyurethane insulation

Diagram of conection heating and DHW system





Technical specifications

DHW tank		
Model		KTFD280XNA1
Nominal capacity	L	280
Actual capacity	L	274
Maximum working pressure of the tank	Bar	10
Maximum water temperature in the tank	°C	95
Heat loss	kW/24h	2,3
Surface area of the DHW tank coil	m²	2,9
Max. operating pressure of the DHW tank coil	Bar	10
Max. water temperature in the DHW tank coil	°C	95
Drop in DHW coil pressure / water flow	Bar/m³/h	0,25/3,0
Hot/cold water pipe connections	inch	1
Hot water coil pipe connections	inch	5/4
Dimensions of the drainage pipe	inch	3/4
Dimensions of the temperature sensor connector		M12

Electric heater		
Rated power of electric heater	kW	3
Electric heater voltage	V	230
Maximum operating current	A	13,7
Cable	mm²	3x2,5

Buffer tank		
Nominal capacity	L	135
Actual capacity	L	134
Maximum working pressure of the tank	Bar	10
Maximum water temperature in the tank	°C	95
Downtime losses	kW/24h	1,1
Buffer tank pipe connections	inch	5/4
Dimensions of the drainage pipe	inch	3/4
Vent valve	inch	1/2
Dimensions of the temperature sensor connector		M12

Hot water tank with buffer		
Gross dimensions	m	0.775 x 0.775 x 2
Net dimensions	m	0,70x1,895
Gross weight	kg	122
Net weight without water	kg	103,5
Total weight with water	kg	530

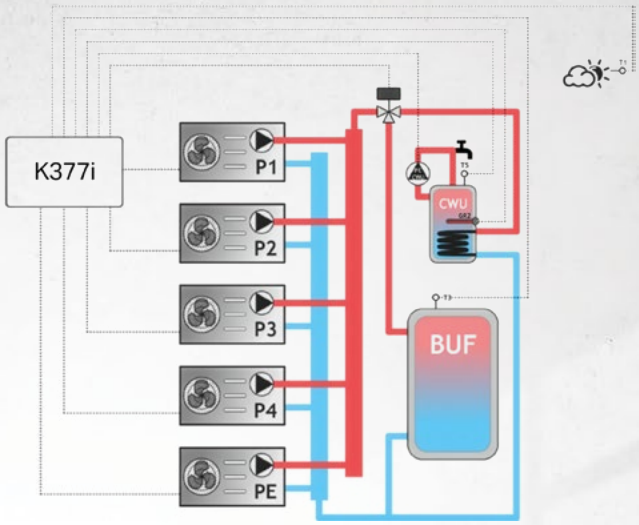
Circulating water quality requirements

Parameter	**Restrictions on tap water**
Temperature	Below 60°C
pH reaction	7÷9
Alkalinity	60 mg/l < HCO_3 < 300 mg/l
Chairmanship	< 500 µS/cm
Hardness	From 3.5 to 8.4 °dH
Chloride content	< 200 mg/l at 60°C
Sulfate content	[SO_4^{2-}] < 100 mg/l and [HCO_3^-]/[SO_4^{2-}] > 1
Nitrate content	NO_3 < 100 mg/l
Chlorine content	< 0.5 mg/l
*Glycol concentration	< 30%

K377i controller

is designed to control a cascade of heat sources

It allows you to work according to one of two available DHW tank charging schemes. It allows you to control up to five heat pumps (or up to four in the case of a configuration with a bivalent heat source). The controller activates successive heating stages with automatic change of the leading stage. It allows heating according to a weather curve and a weekly schedule.



3-way valve switching heating / DHW dedicated to Kaisia heat pumps

The Heating/DHW switching valve with actuator for heat pumps is a device used in heating and cooling systems that allows **automatic switching of hot water flow between the central heating system and the domestic hot water system (DHW)**.

The actuator in such a valve is a drive element which, upon receiving a signal from an external control source (e.g., a thermostat or building management system), physically switches the 3-way valve to the heat pump, changing the direction of the heating medium flow. In the case of devices that efficiently heat buildings and heat domestic water, the Heating/DHW switching valve with an actuator enables optimal use of the heat produced by directing it to where it is most needed at any given moment.

The use of a 3-way valve for a heat pump in the system is very important for energy efficiency and comfort of use, as **it allows automatic switching between different operating modes of the device without the need for manual intervention**. This allows the system to provide heat for space heating during the day, for example, and to heat domestic water at night or during other periods of lower heating demand. The 3-way switching valve for the heat pump **enables optimal use of the heat produced throughout the year**. In winter, the device switches several times a day to keep the building warm and heat domestic water, while in summer it is set to DHW. This allows it to adapt to the current needs of users.

The 3-way valve for heat pumps **has three ports: an inlet (A) and two outlets (B and C)**. Depending on the position of the valve, the medium can flow from A to B, from A to C, or be blocked. In the case of heat pumps, this valve can, for example, direct hot water from the pump to the underfloor heating system (B) or to the domestic hot water tank (C).

A 3-way valve can respond quickly and precisely to changes in heating or cooling demand, and heat pump-based systems are able to provide a high level of comfort while minimizing energy consumption.

Valve	DN	G	C	PN
KTSGZ20	20	1"	9.6 m^3/h	32
KTSGZ25	25	1 1/4"	11.3 m^3/h	32

The set is available in two variants:

- KTSGZ20 3-way valve with KSRG90 actuator – designed for 6-10 kW heat pumps,
- KTSGZ25 3-way valve with KSRG90 actuator – designed for 10-30 kW heat pumps.

Kaisai commercial heat pumps

Arctic Power

Arctic Power compact monoblock high-power heat pumps that revolutionize heating, cooling, and domestic hot water (DHW) production in commercial buildings.

Designed with efficiency and economy in mind, air-to-water heat pumps are the ideal choice for buildings with heating and cooling requirements **above 40 kW.** They are an excellent alternative or supplement to traditional heating systems such **as solid fuel or gas boilers.**

Whether you are building from scratch or modernizing an existing installation, Arctic Power heat pumps will ensure optimal comfort and lower operating costs in:

- **Residential buildings**
- **Public facilities**
- **Hospitals and medical facilities**
- **Car dealerships**
- **Production and storage halls**
- **And many other types of commercial buildings**

High-power heat pump series

	Arctic power heat pumps R32				Arctic power heat pumps R290		
	KCHP-SU65-RN8L	**KCHP-SU75-RN8L**	**KCHP-SU110-RN8L**	**KCHP-SU140-RN8L**	**KCOP050PMA3**	**KCOP060PMA3**	**KCOP070PMA3**
Heating capacity A7W45	65,65	75,71	110,67	140,94	50	60	70
Cooling capacity A35W7	56,68	69,29	99,33	129,29	50	60	65
Energy efficiency class	A+++ (W35), A++ (W55)	A+++ (W35), A++ (W55)	Not applicable		A+++ (W35), A+++ (W55)	A+++ (W35), A+++ (W55)	A+++ (W35), A++ (W55)
Compressor	EVI Rotary - Inverter		2 x EVI Rotary inverter		2 x EVI (Scroll) inverter		
Circulation pump	WILO - Variable speed	WILO - Variable speed	WILO - Variable speed and fixed speed	WILO - Variable speed and fixed speed	WILO - Variable speed		
Evaporator	Plate				Plate		
Condenser	With a hydrophilic coating and a corrosion-resistant jacket				With a hydrophilic coating and a corrosion-resistant jacket		
Silent mode	Yes				Yes		
Super quiet mode	Yes				Yes		
Night mode	Yes				Yes		
Cascade mode	Yes (up to 16 units)				Yes (up to 8 units)		

Advantages **of high-power** heat pumps

Wide range of applications

Designed for efficient **heating, cooling, and DHW production** in the most demanding installations, our high-capacity heat pumps guarantee unmatched performance and significant savings for a wide range of facilities:

Residential buildings

Car dealerships

Production and storage halls

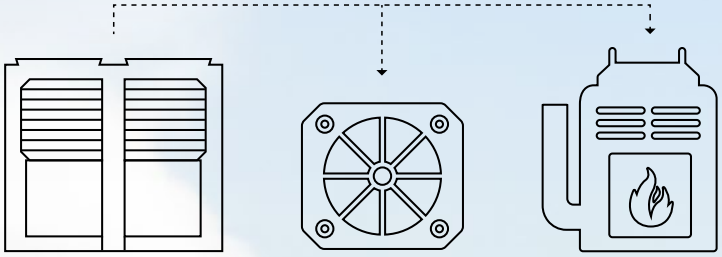
Public facilities

Hospitals

Other commercial properties

Arctic Power
heat pump

It is also an ideal solution for modernizing existing installations, including those with traditional radiators or heating and ventilation units, ensuring a smooth transition to a modern, environmentally friendly heat source.



A smart alternative for traditional heating

Choose a future of comfort and savings! The Arctic Power heat pump is **an excellent and effective replacement for a traditional solid fuel or gas boiler**, offering much more than just heating. It provides you with **a comprehensive solution that eliminates the need for two separate systems** – heating and cooling.

On cold days, you can heat your building, and in summer, the same unit **will effectively cool the medium**, ensuring a pleasant climate without the need to invest in additional air conditioning. It's a smart choice for comfort and lower bills all year round.

Flexible operating modes for optimal comfort

A variety of operating modes are available, allowing you to tailor the heat pump perfectly to your individual needs:

Smart heating and cooling with weather curve

The heat pump uses a **weather curve** function that **automatically adjusts the temperature of the medium in heating or cooling mode to the changing outside air temperature, which affects:**

- **Optimal comfort:** Always the perfect temperature in the building, without manual adjustments.
- **Maximum savings:** The pump heats/cools only as much as needed, consuming less energy.
- **Simple operation:** The system works for you, eliminating the need for constant monitoring and adjustment.

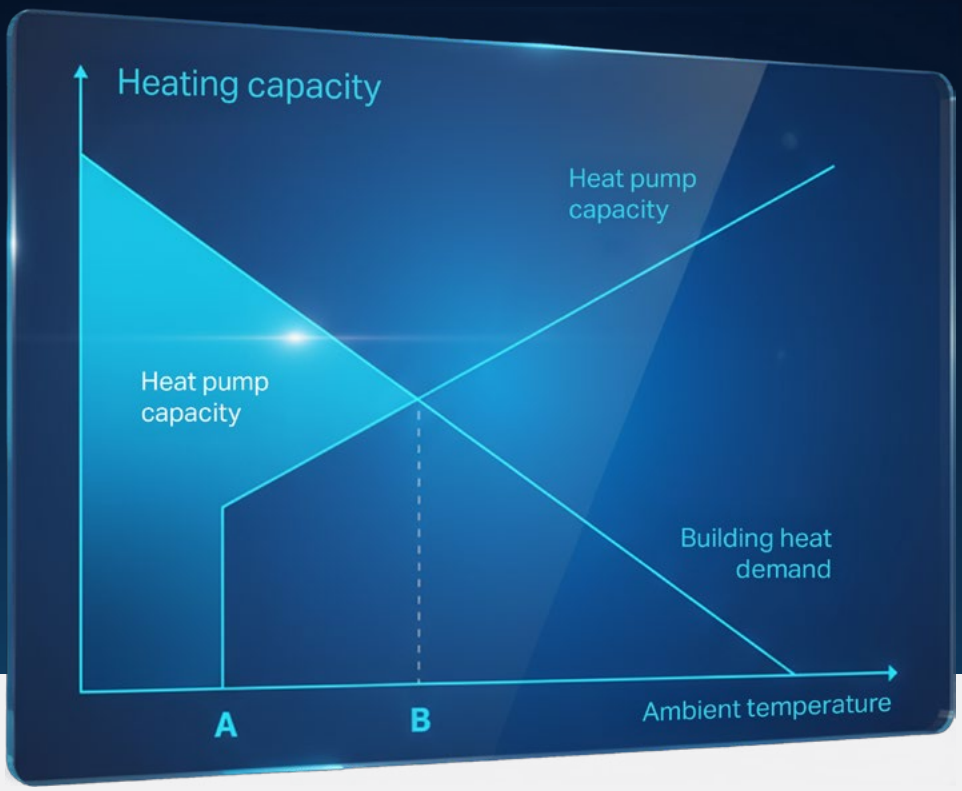
Quiet operating modes: Acoustic comfort in your facility

The heat pump has been designed to minimize noise levels. It offers **quiet/super quiet mode and 4 night modes,** which ensure maximum acoustic comfort.

What does this mean?

- **Peace and quiet:** Undisturbed acoustic comfort near the device, ideal for residential buildings and facilities where silence is a priority.
- **Nighttime comfort:** Special operating modes adjust the volume of the heat pump to ensure peaceful sleep and rest.
- **Maximum discretion:** Low noise emissions allow for more flexible placement of the device, even in dense urban areas.

Advanced hybrid system management



The controller enables **hybrid system** management, ensuring flexible and economical cooperation between the heat pump and an external heat source, such as a boiler or district heating network.

This feature allows you to set **3 operating modes:**

1

Cooperation between a heat pump and a bivalent source (e.g., boiler, district heating network):

In difficult weather conditions, both sources work together to ensure comfort and efficiency in **renovated and new buildings.**

2

Operation exclusively with a bivalent source from a given outdoor temperature:

Below a set outdoor temperature, the system automatically switches to a more economical or efficient source, ensuring reliable heat supply. This is an ideal opportunity **to combine modern heat pumps with district heating networks in renovated and new buildings.**

3

Work only heat pumps:

When weather conditions are favorable, the system operates exclusively on the heat pump, maximizing savings.

Domestic hot water (DHW) preparation management

The controller built into the device **can regulate the operation of an external 3-way switching valve** to prepare hot water in response to demand, which can be controlled by a sensor installed in the DHW tank.

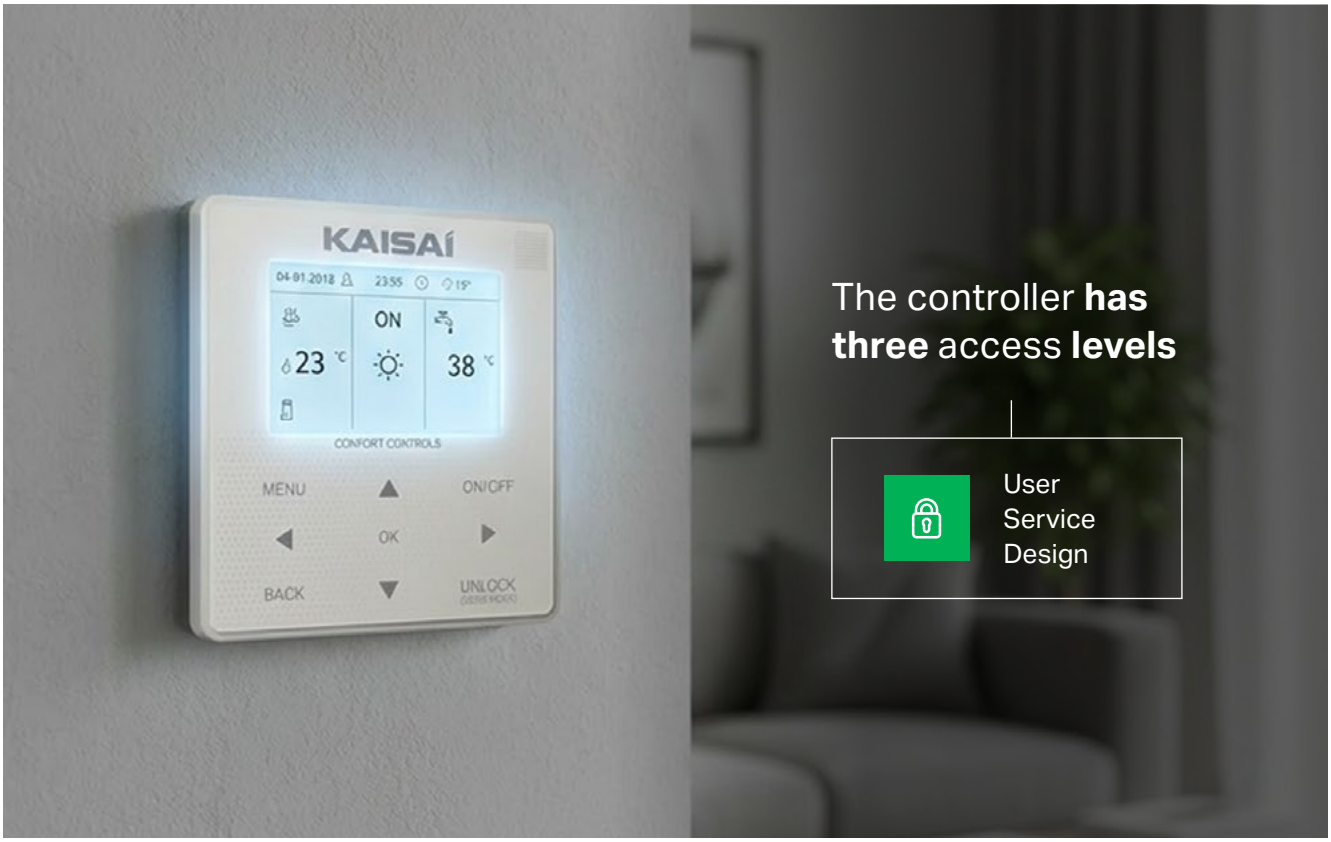
There are 3 operating modes available for the device.

1	Operating mode	Cooling	+	DHW preparation	
2	Operating mode	DHW preparation			
3	Operating mode	Heating	+	DHW preparation	

Power flexibility: commissioning before the formalities

Our heat pump offers **an** innovative **function that limits electrical power in the range from 40% to 100%.** This allows you to **start up the heating system in the building even before the final electrical power allocation is obtained,** significantly accelerating the implementation of the investment.

This flexible solution provides comfort and warmth, eliminating bureaucratic delays.



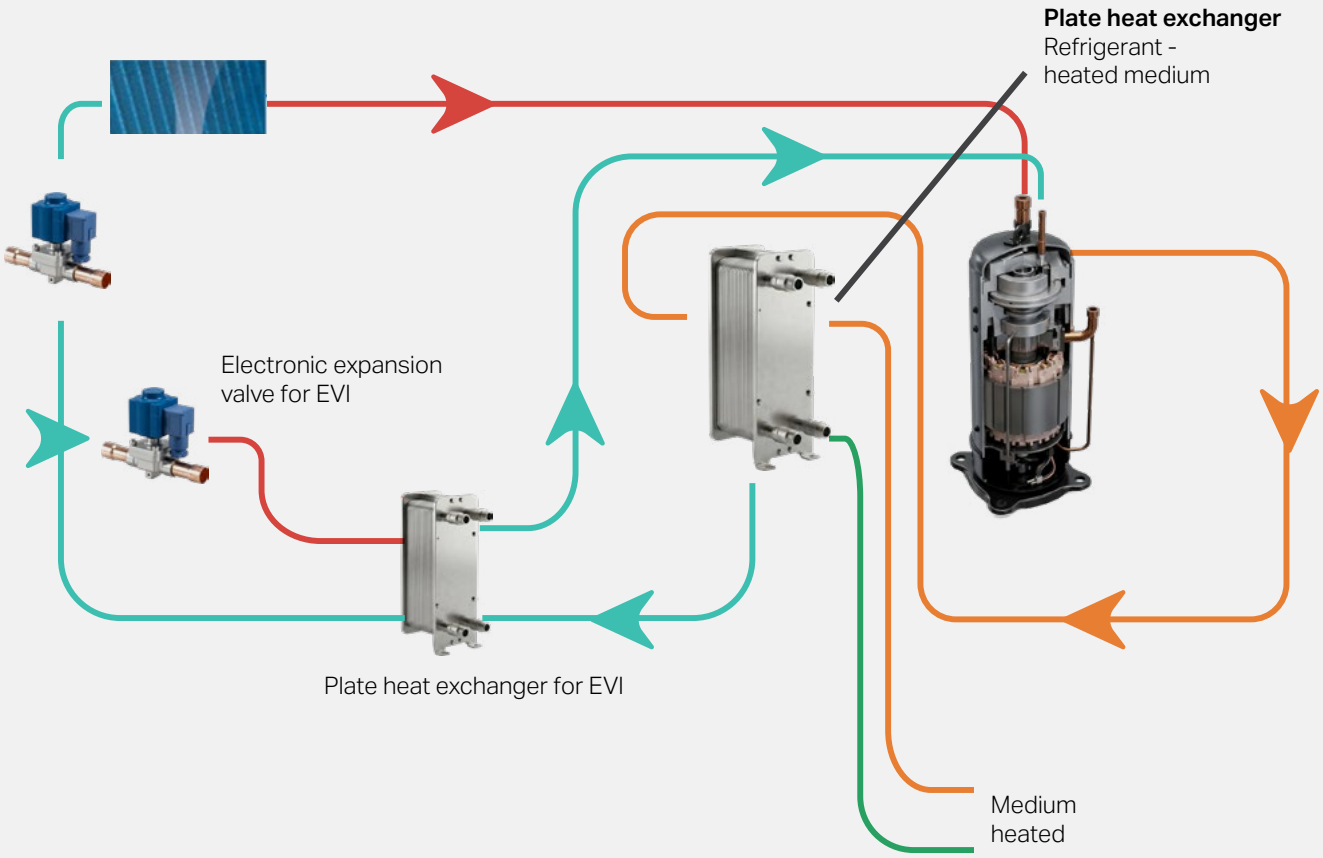
Electronic controller microprocessor-controlled with display

has a diverse range of functions, including a graphical display of the device status and the ability to view key parameters of the cooling and water systems

- **Ease of use:** You can quickly check how your heat pump is working without complicated readings.
- **Optimization of operation:** You have full control over the system, allowing you to fine-tune settings and maximize savings.
- **Rapid diagnostics:** If necessary, you can instantly identify potential anomalies, which reduces service response times and minimizes downtime.

EVI technology – efficient heating

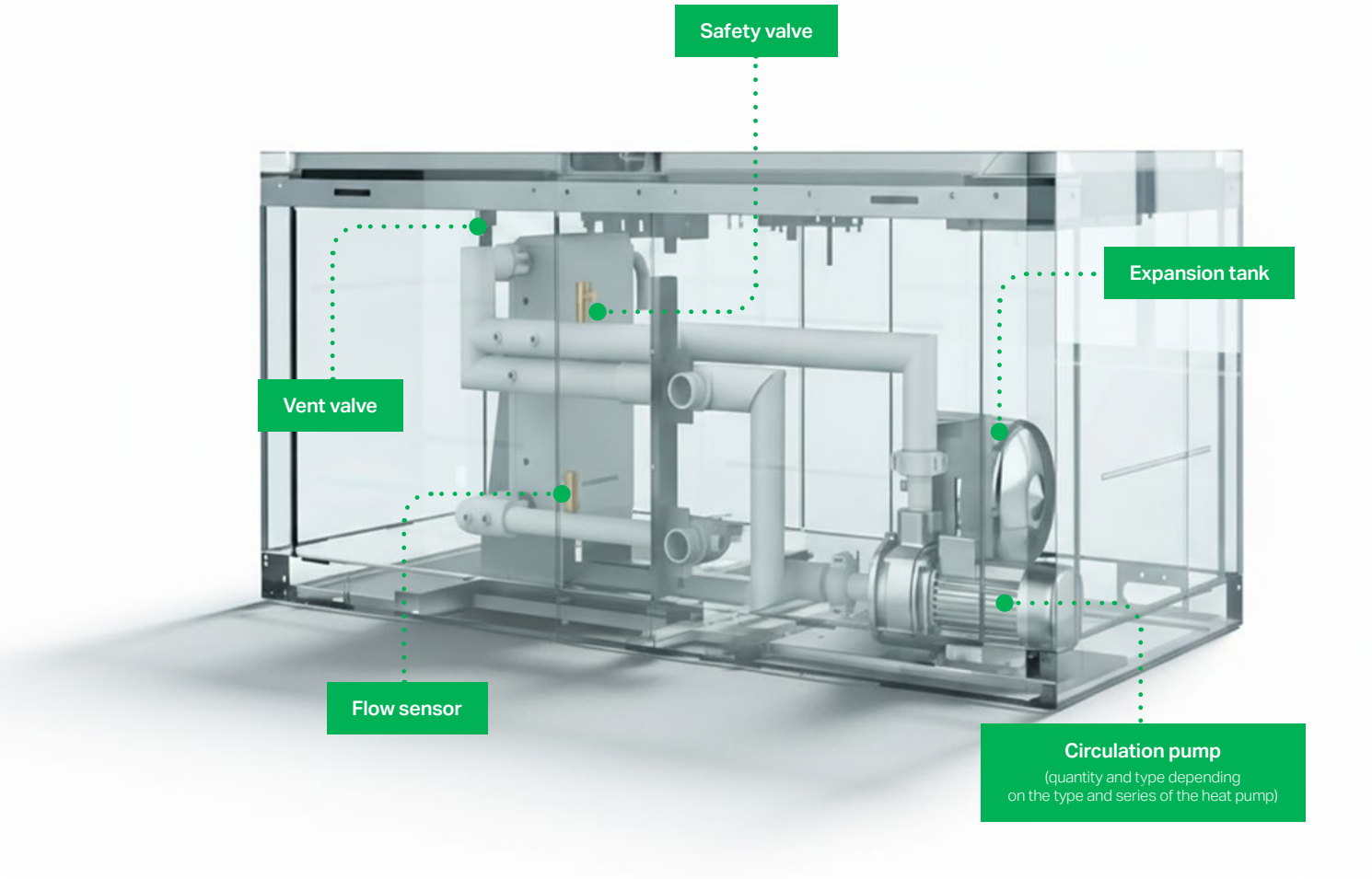
Innovative EVI (Enhanced Vapor Injection) compressors are an advanced technological solution which, thanks to additional vapor injection into the compressor, significantly increases the efficiency and effectiveness of the device and extends its operating range. At the same time, EVI technology allows for a reduction in the size of the refrigeration system, which translates into a more compact heat pump design.



Specific benefits for the customer:

- **Significantly lower operating costs** thanks to higher efficiency, especially in winter.
- **Comfort assurance:** Reliable heating even during severe frosts.
- **Versatile application:** The ideal solution for renovated buildings with radiators and new developments.
- **Smaller installation space:** Compact dimensions mean easier planning and installation.

PLUG & PLAY solution



Our heat pumps are the epitome of simplicity.

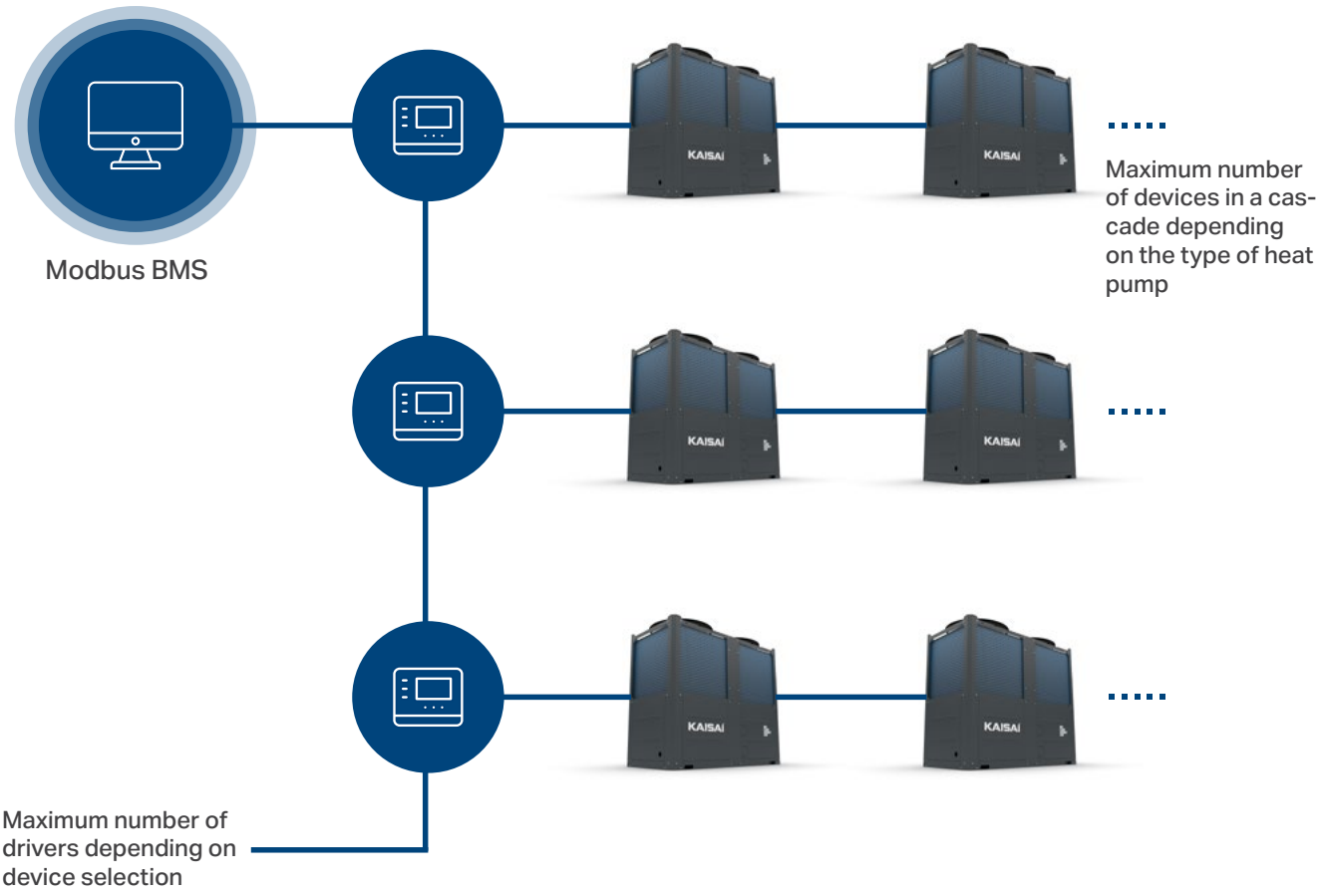
Thanks to the compact design and full integration of the cooling system with the hydraulic module in a single housing, you get a complete, factory-filled, and ready-to-use device. This guarantees minimal installation time and cost, as well as significant savings in valuable space in your facility.

But that's not all! Arctic Power heat pumps offer additional features that increase comfort of use and servicing:

- **Easy service access:** thanks to the design with access from 4 sides, maintenance and any servicing are quick and hassle-free.
- **Simple updates:** You can easily update the device software via the USB port, ensuring you always have the latest functionality.
- **Universal compatibility:** The heat pump supports variable speed pumps, offering savings and flexibility in system design.

Heat pump cascade management and Modbus RTU connectivity

Number of heat pumps in a cascade depending on the device selection



Possibility of expanding the installation

One of the key advantages is the possibility of expanding the installation with additional heat pumps as heating and cooling needs grow. Users can start with a smaller system and then **expand it as needed,** without having to replace existing heat pumps. This provides flexibility and the ability to adapt to growing energy demands.

Increasing system reliability

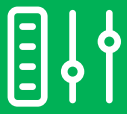
The cascading connection of multiple heat pumps in the system means that **the failure of one unit** does not cause the entire heating system to shut down. The remaining heat pumps will continue to operate, ensuring continuity of heating and cooling and minimizing the risk of downtime.

Flexibility and energy consumption optimization

Thanks to the possibility of connecting heat pumps with the same and **different capacities,** the system can be **adapted to the changing heat demand** in the building. Depending on weather conditions or specific requirements, heat pumps can automatically and optimally manage heating and cooling capacity.

Optimization of operating costs

Thanks to **intelligent system management,** individual heat pumps in the cascade can be switched on and off depending on the demand for heat and cooling. This allows for **minimizing operating costs,** because the system only operates when necessary.

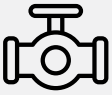


Better adaptation to the specific characteristics of the building

In large facilities such as production halls, offices, or hotels, **the variation in pump capacity** allows the system to be precisely adapted to different areas of the building, which may have different heating or cooling requirements.

Main components of a heat pump

EVI inverter compressor



Electronic expansion valves

Electronic expansion valve for precise control of refrigerant flow in heating mode, separate in cooling mode, and a third electronic expansion valve for the EVI (Enhanced Vapor Injection) system.

Wilo variable speed circulation pump

(Second Wilo fixed-speed circulation pump only in 110 and 140 kW heat pumps).

Medium flow control

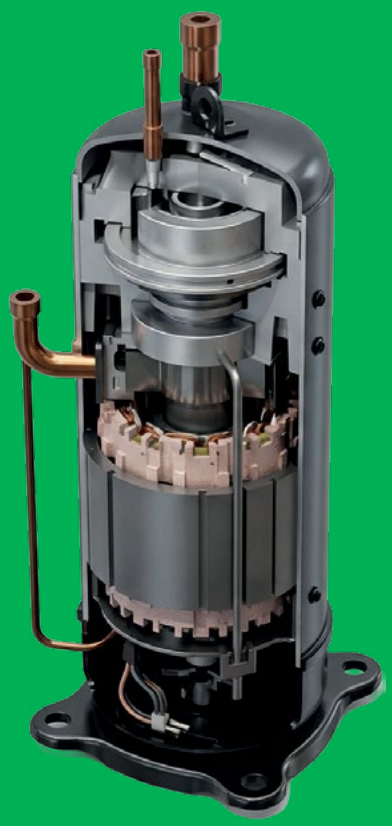
depending on the return temperature.

Brushless DC fan motor

Built-in, miniaturized electronic control systems eliminate losses resulting from motor slip and ensure that the motor operates within the optimal speed range.

Plate heat exchanger

Our heat pumps feature advanced stainless steel (316) plate heat exchangers. This material and design are the foundation for the reliability, high efficiency, and long service life of your heating and cooling system.



EVI inverter **compressor**

Thanks to the use of an EVI inverter compressor, electronic expansion valves, stepless fan control, and a variable-speed water pump, it is possible **to achieve significant technical, energy , and operational benefits:**

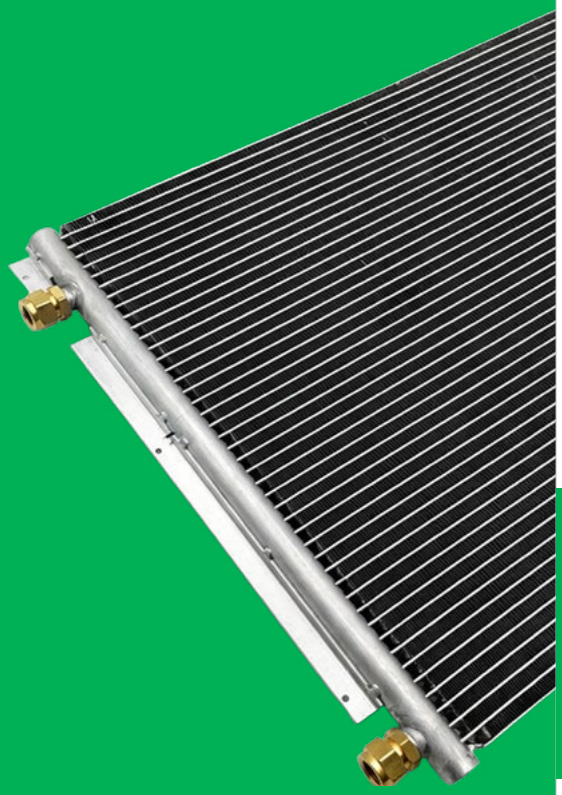
- **Higher energy efficiency** thanks to the EVI inverter compressor and electronic expansion valves.
- **Lower energy consumption** and lower heating bills.
- **Longer systemlife** thanks to smooth operation and precise adjustment.
- **Optimization** of user **comfort** with constant temperature and quiet operation.
- **Increased reliability** and reduced risk of failure thanks to intelligent management.
- **The ability to achieve higher temperatures** at lower operating costs.
- **Lower maintenance costs** and reduced risk of system damage.
- **Better adaptation** to changing weather conditions.

Heat **exchanger**

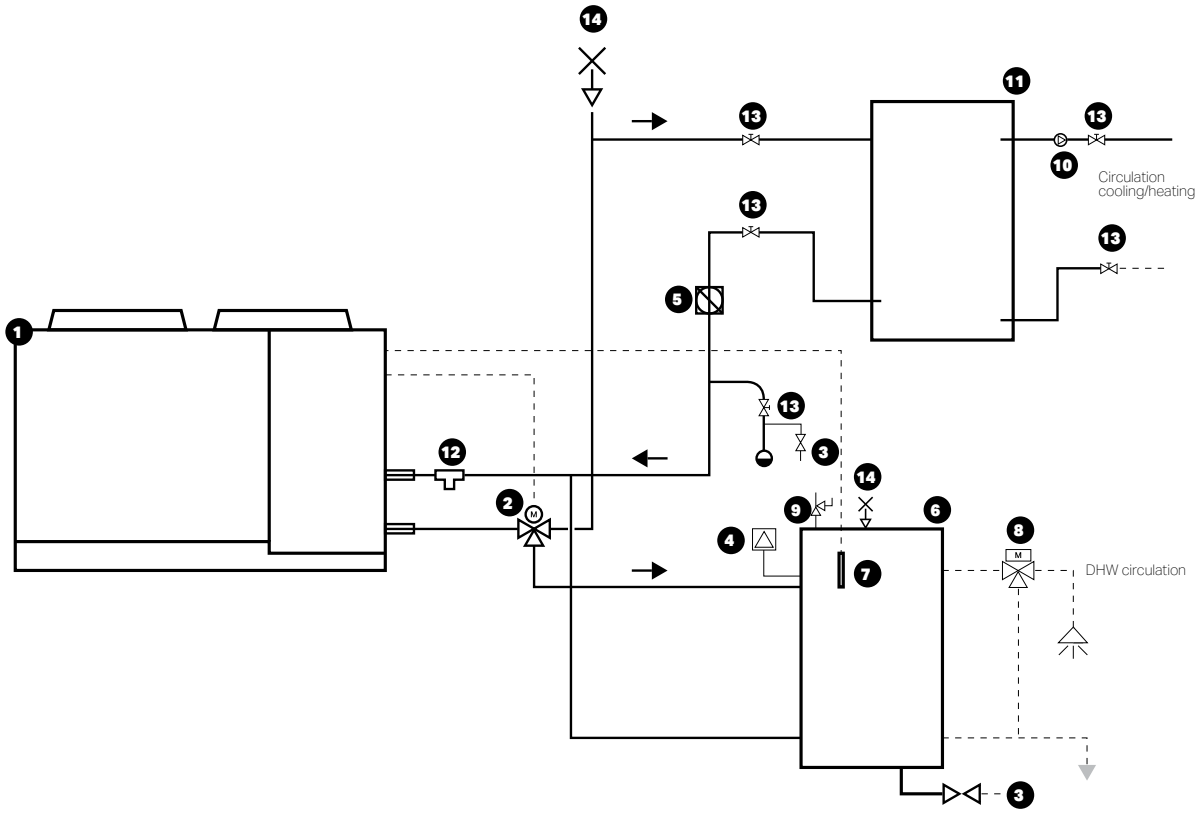
High-quality air-refrigerant heat exchanger made of copper pipes and aluminum fins.

The use of a special coating for exceptional corrosion resistance and a hydrophilic coating that facilitates water drainage from the exchanger surface results in:

- **Longer operation without interruptions:** Exceptionally long heat pump operation without the need to activate the Defrost function, which increases heating efficiency.
- **Faster defrosting:** Reduced defrosting time for the exchanger, minimizing downtime in heat supply.
- **Stable performance throughout the year:** Reliable operation in all weather conditions and lower energy consumption.



Hot water preparation management



Legend

1. Heat pump with inverter compressors and a circulation pump with smooth speed variation
2. 3-way switching valve
3. Drain valve
4. Expansion tank
5. Air separator
6. Domestic hot water tank
7. Hot water tank sensor/thermostat
8. Thermostatic valve
9. Safety valve
10. Central heating circulation pump
11. Buffer tank
12. Water filter
13. Shut-off valve
14. Vent valve


KAISAI

Kaisai Arctic Power commercial heat pumps

Mono R32

KCHP Arctic Power is a series of commercial high-power heat pumps designed for **efficient and energy-saving** heating. The devices are distinguished by **their compact, compact design,** which facilitates installation even in limited space. They operate **extremely quietly** and achieve **maximum energy efficiency** in every mode: heating (from –25°C to +43°C), cooling (from –15°C to +48°C), and DHW production (from –20°C to +43°C outside temperature). What is more, KCHP Arctic Power pumps supply heating water at temperatures **up to 65°C, even at ambient temperatures as low as –10°C,** making them the ideal solution for both new installations and the modernization of systems with solid fuel or gas boilers and traditional radiators.

In addition, the ability **to connect up to 16 units in a cascade configuration** ensures precise power matching and **design flexibility** for the most demanding installations.

R32

High performance

The device supplies heating water at temperatures up to 65°C, even at ambient temperatures as low as –10°C.

Compact design

Thanks to the full integration of the cooling system with the hydraulic module in a single housing, you get a complete, factory-filled, and ready-to-use device that saves you time, space, and installation costs.

Working in a cascade

In addition, the ability to connect up to 16 units in a cascade configuration ensures precise power matching and design flexibility for the most demanding installations.

Technical specifications

ARCTIC POWER KCHP (R32)						
Model			**KCHP-SU65-RN8L**	**KCHP-SU75-RN8L**	**KCHP-SU110-RN8L**	**KCHP-SU140-RN8L**
A7W35 heating	Nominal heating capacity	kW	64,65	77,7	113,14	142,94
	Electric power consumption	kW	16,37	21,61	28,52	40,54
	COP	W/W	3,95	3,59	3,97	3,53
A7W55 heating	Nominal heating capacity	kW	64,15	66,15	106,32	126,37
	Electric power consumption	kW	21,68	22,5	35,85	50,28
	COP	W/W	2,96	2,94	2,97	2,51
Cooling A35W7	Nominal cooling capacity	kW	56,68	69,29	99,33	129,29
	Electric power consumption	kW	19,79	28,26	34,09	52,01
	EER	W/W	2,86	2,45	2,91	2,49
Seasonal energy efficiency class (temperate climate zone)	Energy efficiency class for 35°C	–	A+++	A+++		
	Energy efficiency class for 55°C	–	A++	A++		
Power supply	Voltage / number of phases / frequency	V / Ph / Hz	380~415 / 3N / 50	380~415 / 3N / 50	380~415 / 3N / 50	380~415 / 3N / 50
	Maximum operating current (MOP)	A	54	54	106	106
Hydraulic system	Nominal medium flow	m^3/h	11,2	12,9	18,9	24,08
	Pump lift value	mH_2O	25	22,5	16	9,5
Sound level	Sound power level (EN 12102)	dB(A)	80	86	80	92
	Sound pressure level (1 m)	dB(A)	64	69	64	73
Outdoor air temperature range	Heating	°C	-25~43	-25~43	-25~43	-25~43
	Cooling	°C	-15~48	-15~48	-15~48	-15~48
Water outlet temperature range	Heating	°C	25~65	25~65	25~65	25~65
	Cooling	°C	0~20	0~20	0~20	0~20
Water connection		mm	DN50	DN50	DN65	DN65
Refrigerant	Symbol (GWP) / amount of refrigerant	--- / kg	R32 (675) / 9	R32 (675) / 9	R32 (675) / 11.5 + (4 kg boost)	R32 (675) / 11.5 + (4 kg boost)
Dimensions	Devices (W/H/L)	mm	2000x1770x960	2000x1770x960	2220 x 2300 x 1135	2220 x 2300 x 1135
	Packaging (width/height/length)	mm	2085 x 1890 x 1030	2085 x 1890 x 1030	2250 x 2445 x 1180	2250 x 2445 x 1180
Weight	Net / per package	kg	475 / 490	475 / 490	746 / 767	746 / 767

Energy efficiency
and savings

The high energy efficiency class of Kaisai heat pumps – up to A+++ – means real savings for the user.
As a result, the devices consume less electricity to generate the same amount of heat, which translates into lower energy bills, greater energy independence, and more environmentally friendly operation.

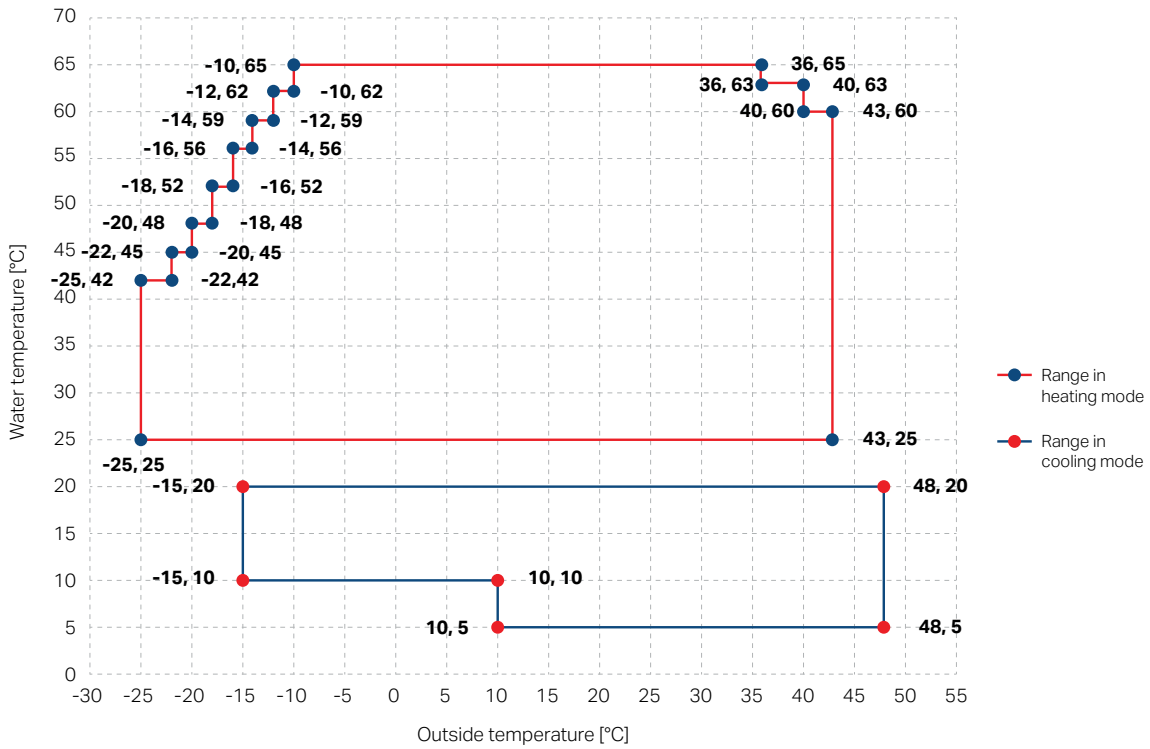
- Energy efficiency class:
  – **A+++ at 35°C** (for 65.75 kW heat pumps)
  – **A++ at 55°C** (for 65.75 kW heat pumps)
- Seasonal **SCOP** coefficient **up to 4.47**

Seasonal Coefficient of Performance (SCOP) up to **4.47** indicates exceptionally high efficiency throughout the heating season – the pump can generate up to 4.47 kWh of heat from 1 kWh of electricity.

A+++ **A++** **ErP SCOP**

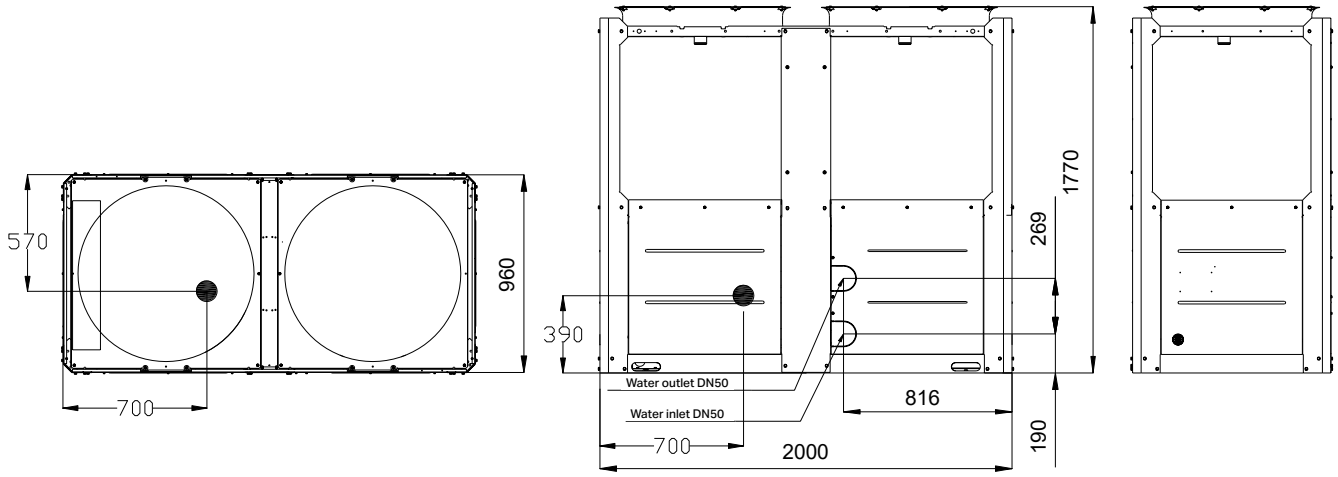
Wide range of applications: comfort in every season

The Arctic Power heat pump guarantees thermal comfort regardless of weather conditions. Designed to operate in extreme temperatures, it provides **reliable heating from -25°C to +43°C**, delivering water at temperatures **up to 65°C even when it is -10°C** outside. In cooling mode, it operates effectively in the range from **-15°C to +48°C**, offering stable medium temperatures **up to 20°C**, which allows it to work in advanced air conditioning systems, including active floor or ceiling cooling installations.

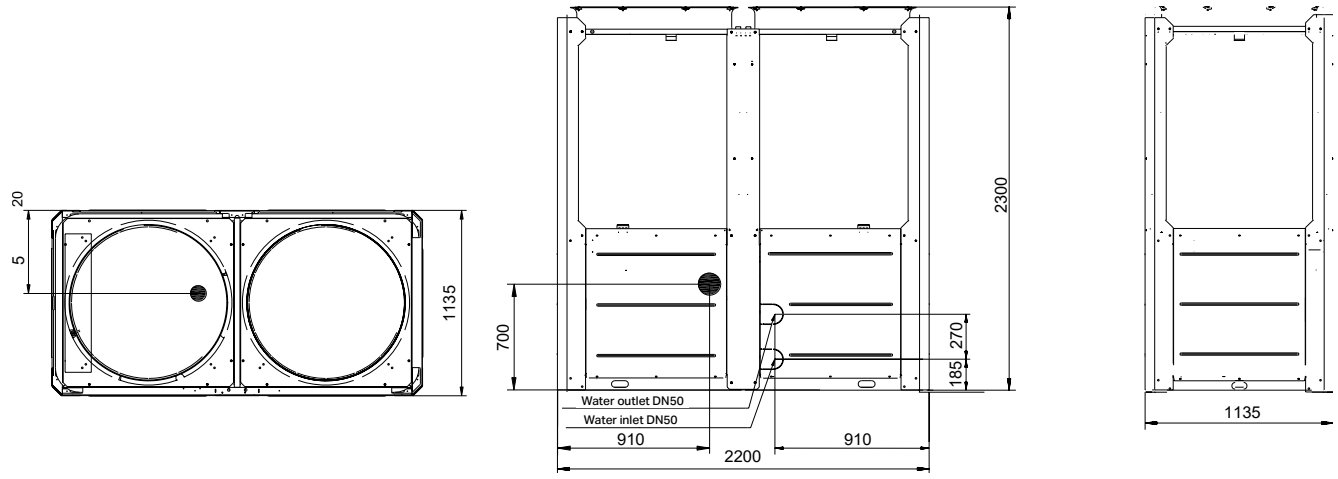


Unit **dimensions** [mm]

Dimensions **KCHP-SU65-RN8L | KCHP-SU75-RN8L**

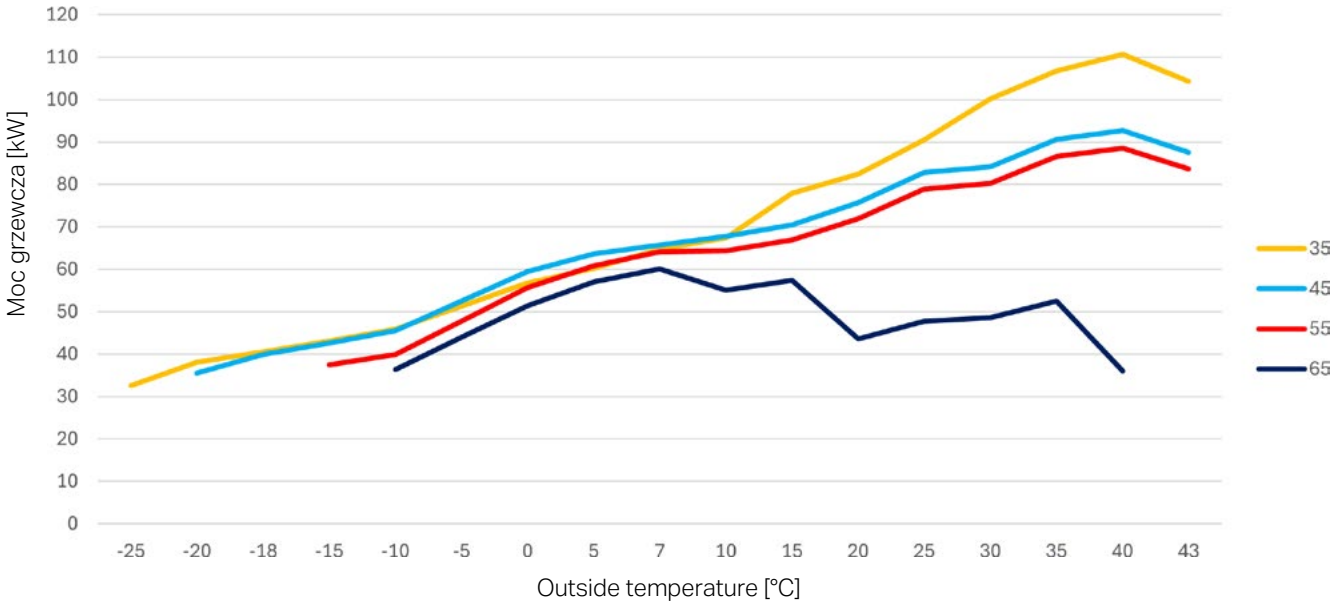


Dimensions **KCHP-SU110-RN8L | KCHP-SU140-RN8L**

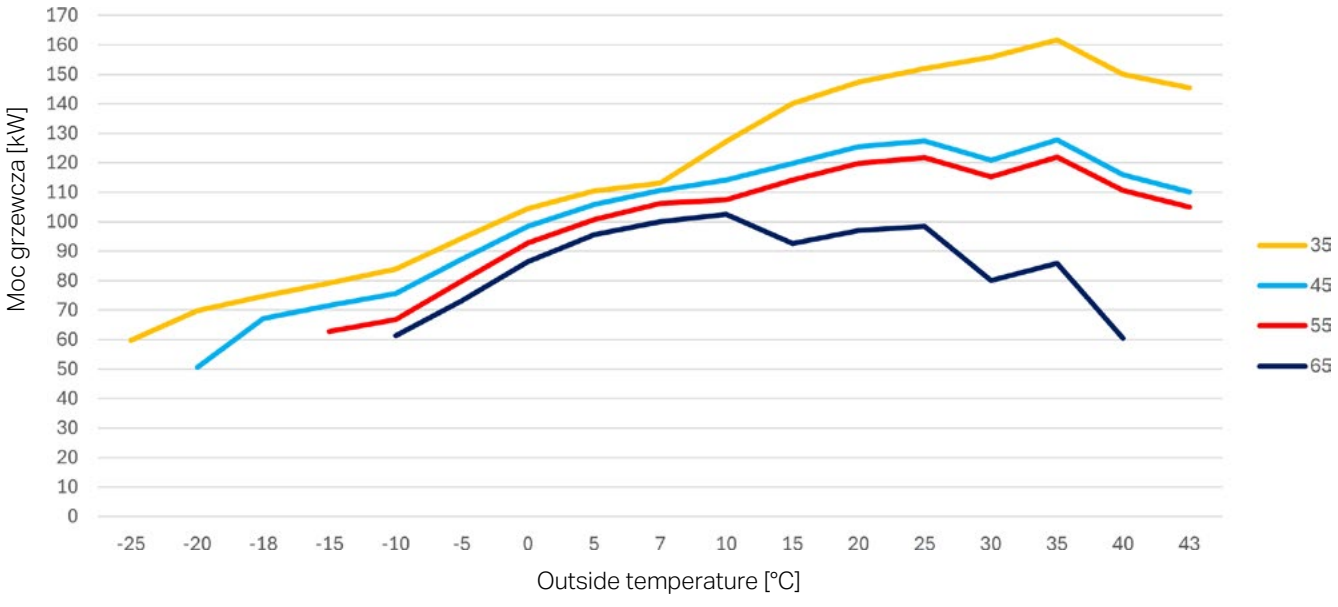


Heating capacity charts for
KCHP Arctic Power heat pumps

Performance chart for the KCHP-SU65-RN8L heat pump in heating mode for four selected water temperatures (35, 45, 55, 65 °C)

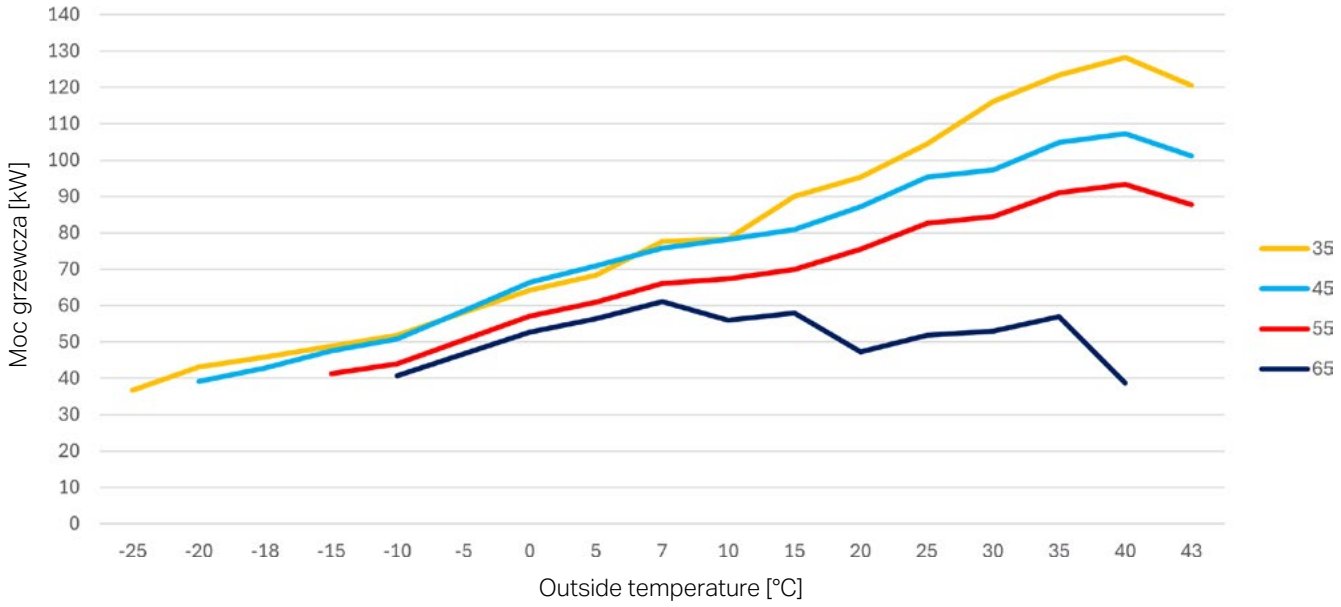


Performance chart for the KCHP-SU110-RN8L heat pump in heating mode for four selected water temperatures (35, 45, 55, 65 °C)

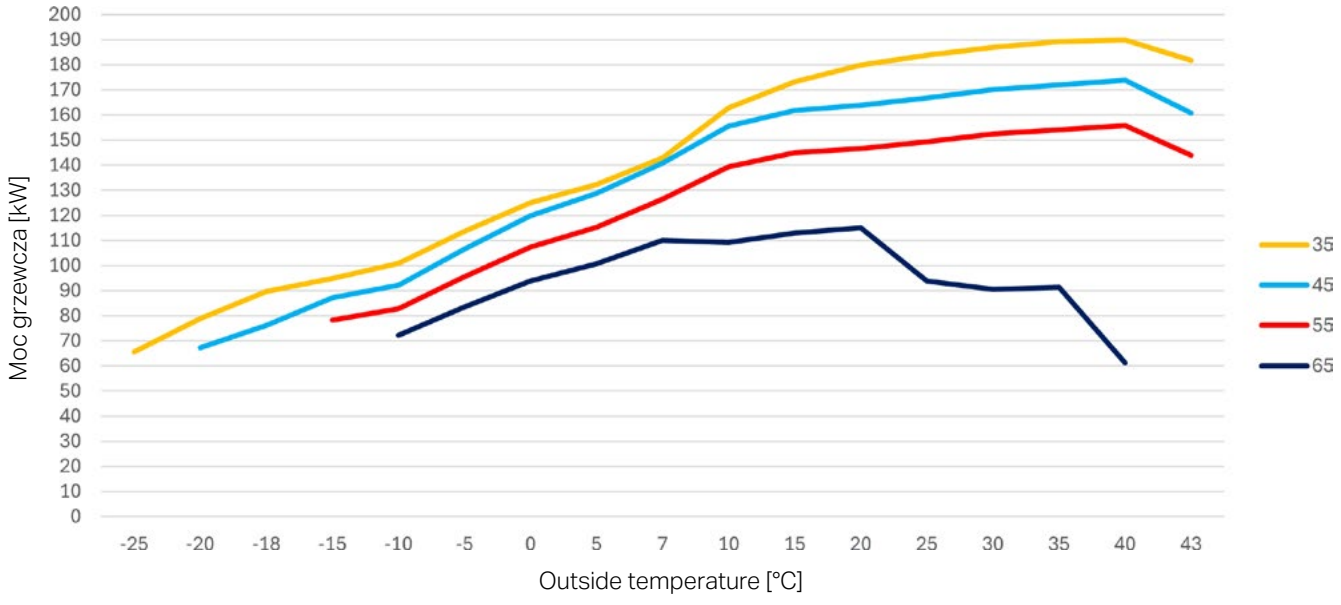


Heating capacity charts for
KCHP Arctic Power heat pumps

Performance chart for the KCHP-SU75-RN8L heat pump in heating mode for four selected water temperatures (35, 45, 55, 65 °C)

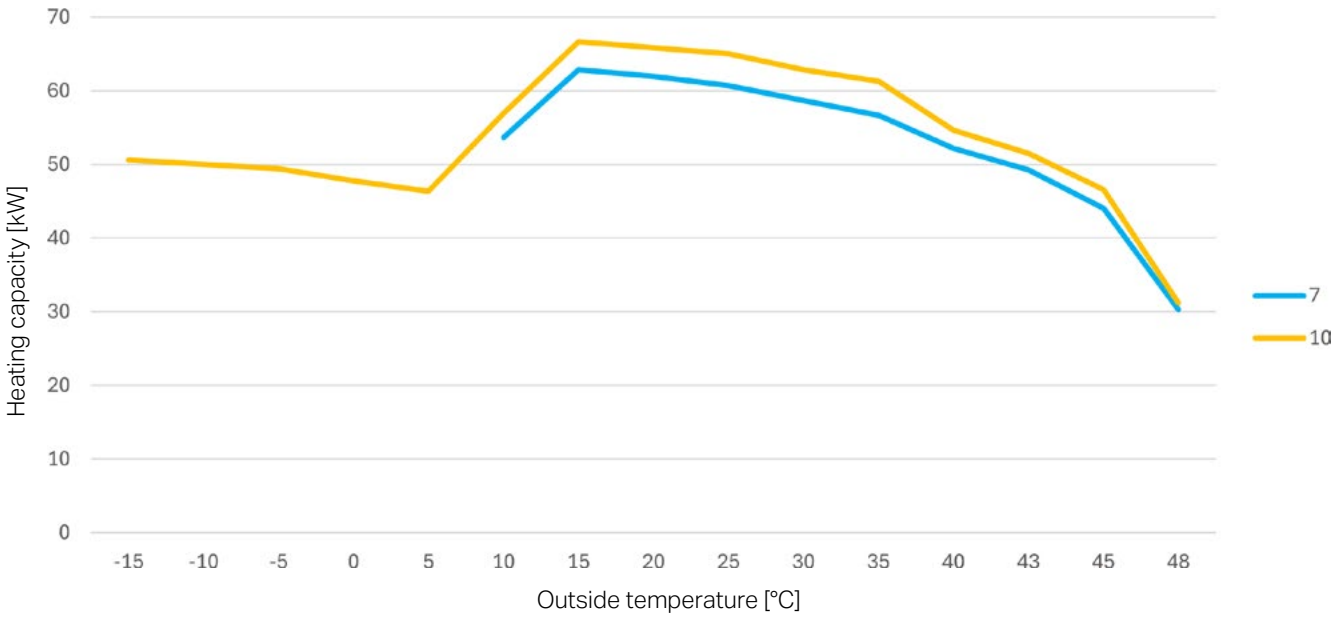


Performance chart for the KCHP-SU140-RN8L heat pump in heating mode for four selected water temperatures (35, 45, 55, 65 °C)

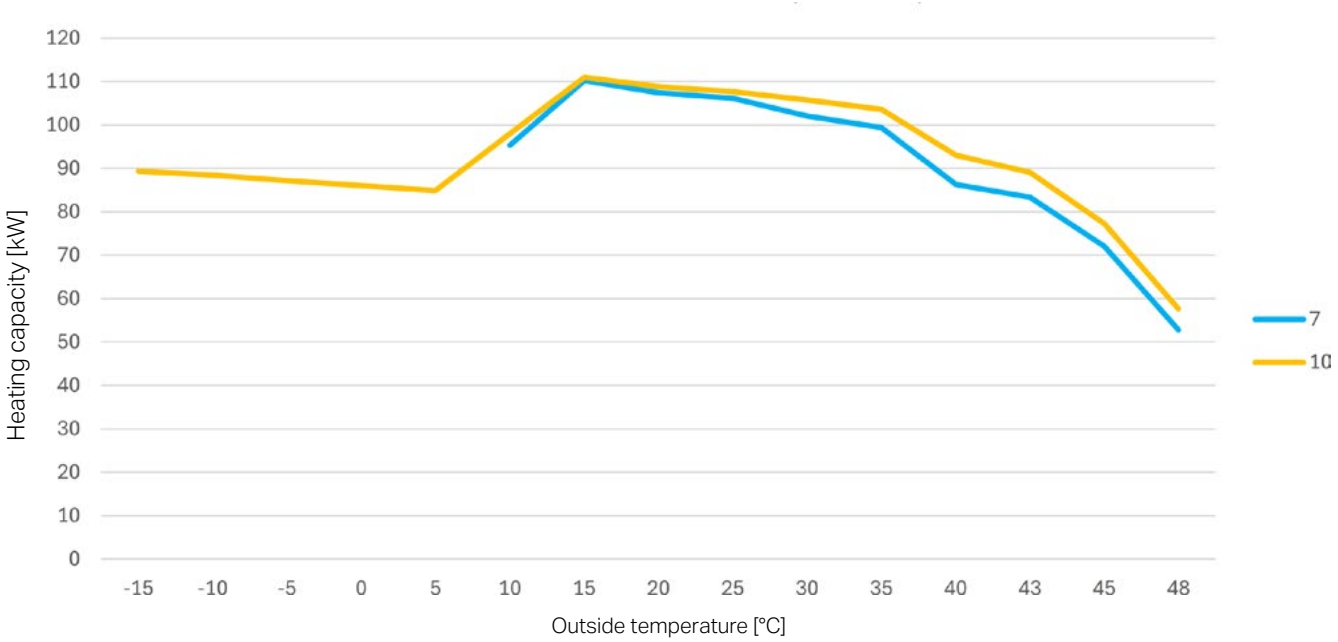


Arctic Power KCHP heat pump cooling **capacity charts**

Performance curve of the KCHP-SU65-RN8L heat pump in cooling mode for water temperatures (7 and 10 °C)

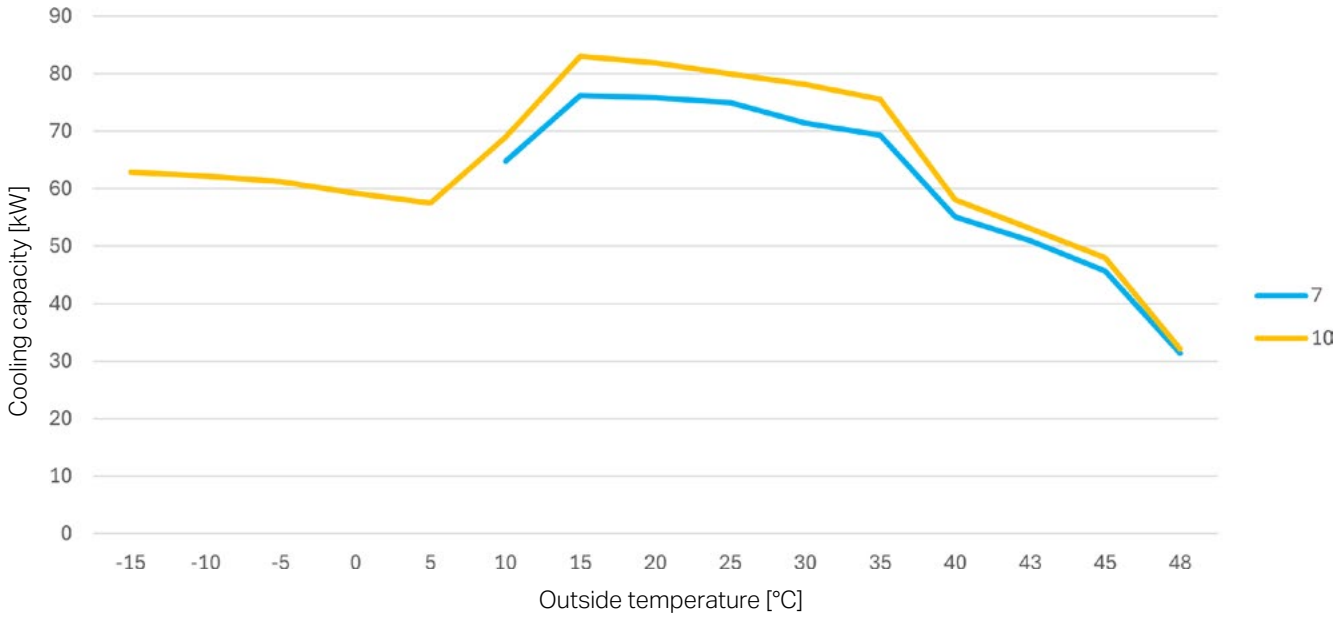


Performance chart for the KCHP-SU110-RN8L heat pump in cooling mode for water temperatures (7 and 10 °C)

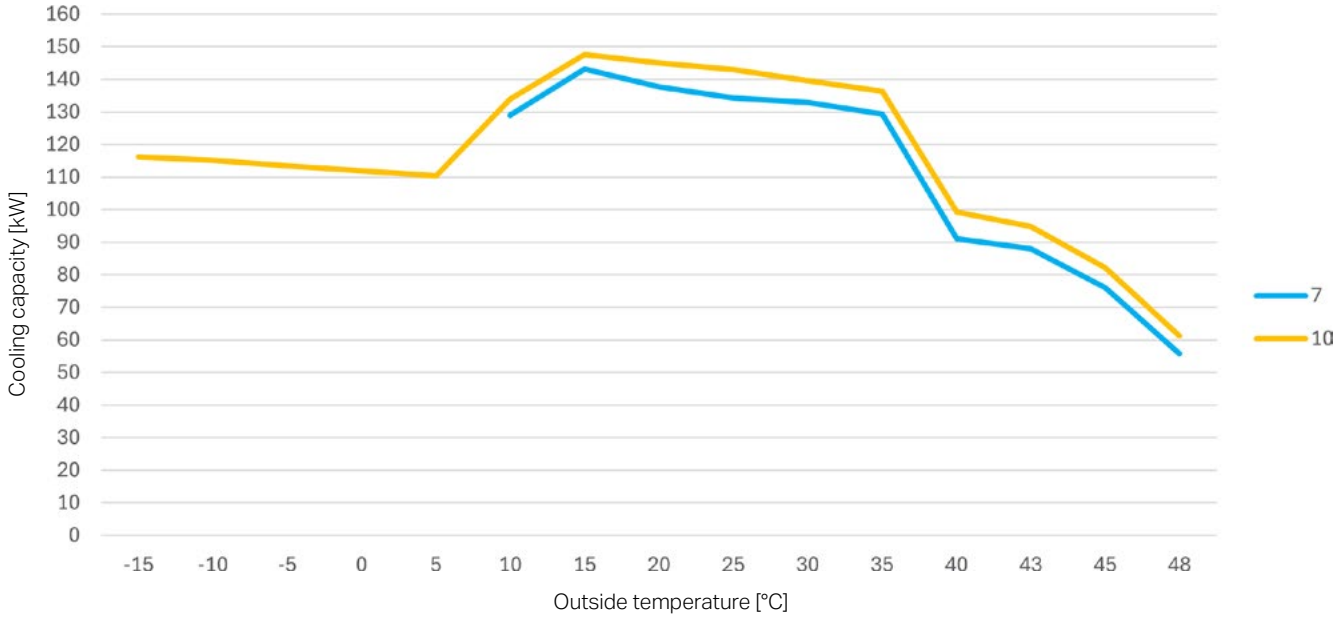


Arctic Power KCHP heat pump cooling **capacity charts**

Performance curve of the KCHP-SU75-RN8L heat pump in cooling mode for water temperatures (7 and 10 °C)



Performance chart for the KCHP-SU140-RN8L heat pump in cooling mode for water temperatures (7 and 10 °C)



Kaisai Arctic Power commercial heat pumps

Mono R290

Kaisai KCOP Arctic Power is a series of high-power commercial heat pumps designed for **energy-efficient heating,** cooling, and domestic hot water production in facilities with high energy demand. They use **the environmentally friendly R290 refrigerant** with **a very low GWP = 3,** thus meeting the requirements of modern, sustainable construction. The devices have a compact design, quiet operation, and high efficiency in heating, cooling, and DHW modes across a wide range of outdoor temperatures. They provide heating water **up to 75°C even at -15°C,** making them suitable for both new investments and the modernization of existing installations. In addition**, the possibility of cascade operation of up to 8 units** allows for flexible adjustment of power to the needs of the installation.

R290

Supply temperature 70°C

High operating parameters allow for effective heating of water up to 70°C even at outdoor temperatures as low as -25°C. It is the perfect choice for modernized buildings that still have traditional radiators.

Power in a harsh climate

The devices maintain high performance even in freezing temperatures down to -25°C.

Working in a cascade

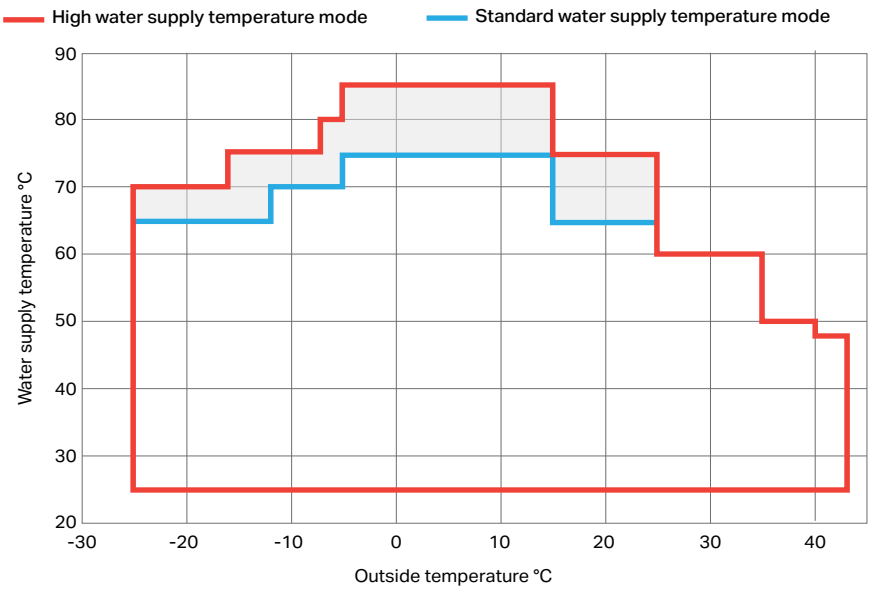
In addition, the ability to connect up to 8 units in a cascade configuration ensures precise power matching and design flexibility for the most demanding installations.

Technical specifications

Arctic Power KCOP (R290)					
Model			**KCOP070PMA3**	**KCOP060PMA3**	**KCOP050PMA3**
A7W35 heating	Nominal heating capacity	kW	70	60	50
	Electric power consumption	kW	17,5	13,95	10,635
	COP	W/W	4	4,3	4,7
A7W55 heating	Nominal heating capacity	kW	70	60	50
	Electric power consumption	kW	24,56	19,605	15,15
	COP	W/W	2,85	3,06	3,3
Cooling A35W7	Nominal cooling capacity	kW	65	60	50
	Electric power consumption	kW	23,21	20	15,15
	EER	W/W	2,8	3	3,3
Seasonal energy efficiency class (temperate climate zone)	Energy efficiency class for 35°C	–	A+++	A+++	A+++
	Energy efficiency class for 55°C	–	A++	A+++	A+++
Power supply	Voltage / number of phases / frequency	V / Ph / Hz	380~415 / 3N / 50	380~415 / 3N / 50	380~415 / 3N / 50
	Maximum operating current (MCA)	A	80	80	80
Hydraulic system	Medium flow range	m^3/h	1,8 - 14,4	1,8 - 12,4	1,8 - 10,3
Sound level	Sound power level (EN 12102)	dB(A)	86,7	84,4	80
	Sound pressure level (1 m)	dB(A)	69,5	67,6	63,4
Outdoor air temperature range	Heating	°C	-25~43	-25~43	-25~43
	Cooling	°C	-15~48	-15~48	-15~48
Water outlet temperature range	Heating	°C	25~70 (25~85*)	25~70 (25~85*)	25~70 (25~85*)
	Cooling	°C	5~25 (-5~25*)	5~25 (-5~25*)	5~25 (-5~25*)
Water connection		mm	DN50	DN50	DN50
Refrigerant	Symbol (GWP) / amount of refrigerant	--- / kg	R290(3) / 5,6	R290(3) / 5,6	R290(3) / 5,6
Dimensions	Devices (W/H/L)	mm	2000 x 960 x 1880	2000 x 960 x 1880	2000 x 960 x 1880
	Packaging (width/height/length)	mm	2085 x 1030 x 2050	2085 x 1030 x 2050	2085 x 1030 x 2050
Weight	Net / per package	kg	615 / 640	615 / 640	615 / 640

Wide range of work **comfort** in every season

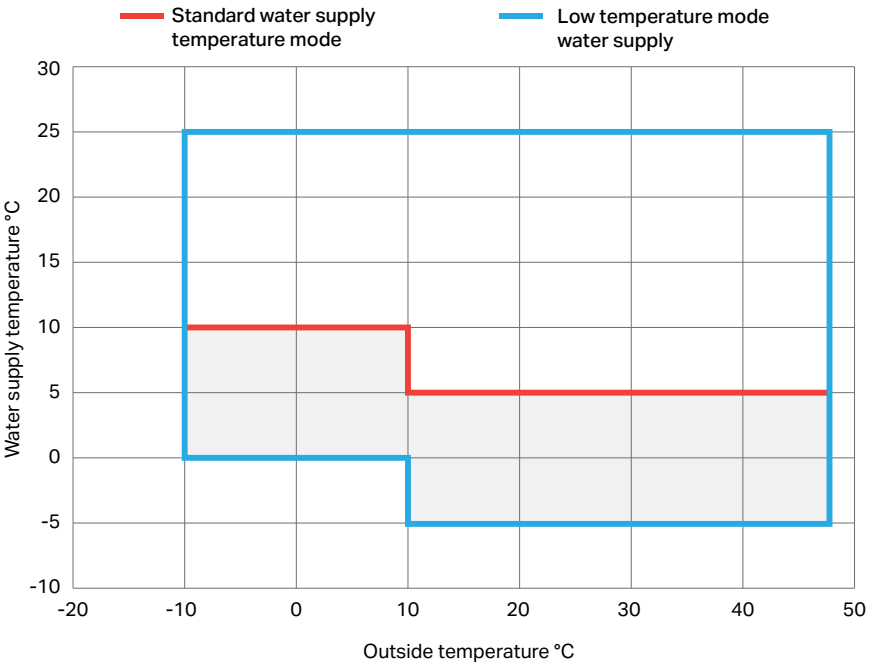
Heating mode



The KCOP Arctic Power heat pump guarantees thermal comfort regardless of weather conditions. Designed to operate in extreme temperatures, it provides **reliable heating from -25°C to +43°C**, supplying heating water at temperatures up to **85°C**, which allows for effective cooperation with traditional radiator installations, especially in modernized buildings.

Hot water temperature up to **80°C** ensures comfort and hygiene safety, e.g. in facilities with high DHW consumption.

Cooling mode



In cooling mode, it operates effectively in external air temperatures ranging **from -15°C to +48°C, offering a stable supply water temperature of up to +25°C**, which enables operation in advanced air conditioning systems, including active floor or ceiling cooling installations.

Energy efficiency
and savings

The high energy efficiency class of Kaisai heat pumps – up to A+++ – means real savings for the user.
As a result, the devices consume less electricity to generate the same amount of heat, which translates into lower energy bills, greater energy independence, and more environmentally friendly operation.

- Energy efficiency class:
  – **A+++ at 35°C**– **A+++ at 55°C** (for 60 and 50 kW)
  – **A++ at 55°C** (for 70 kW)

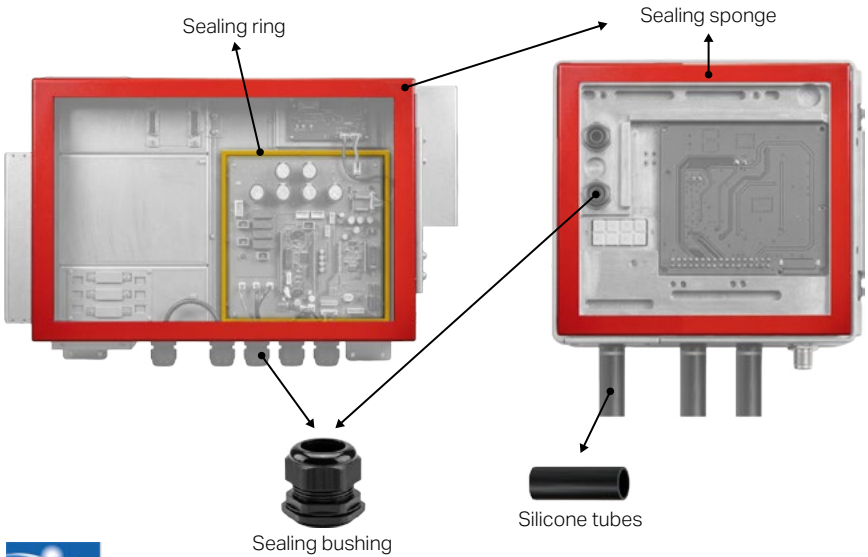
- Seasonal **SCOP** coefficient **up to 4.7**

A seasonal coefficient of performance (SCOP) of up to **4.7** indicates exceptionally high efficiency throughout the heating season – the pump can generate up to 4.7 kWh of heat from 1 kWh of electricity.

A+++ **A++** **ErP SCOP**

Stability, reliability, safety

- The sealed, laser-welded sheet metal housing of the control box ensures safety and repeatability of production.
- Dual cooling system allowing the heat pump to continue operating even if one compressor fails
- The electrical wiring has been routed outside the machine using silicone tubes to prevent refrigerant from entering the control box.
- A special valve on the water side of the heat pump significantly reduces the risk associated with R290 refrigerant leakage.
- Special design of the condensate tray with electric heaters, which ensures uninterrupted water drainage and the possibility of connecting drain pipes in any direction.
- The heat pump meets the requirements for three-stage explosion protection and has an Intertek certificate confirming compliance with standards for refrigerant concentration testing. Explosion-proof components such as varistors and relays have been used on the electronic boards.



IECEx

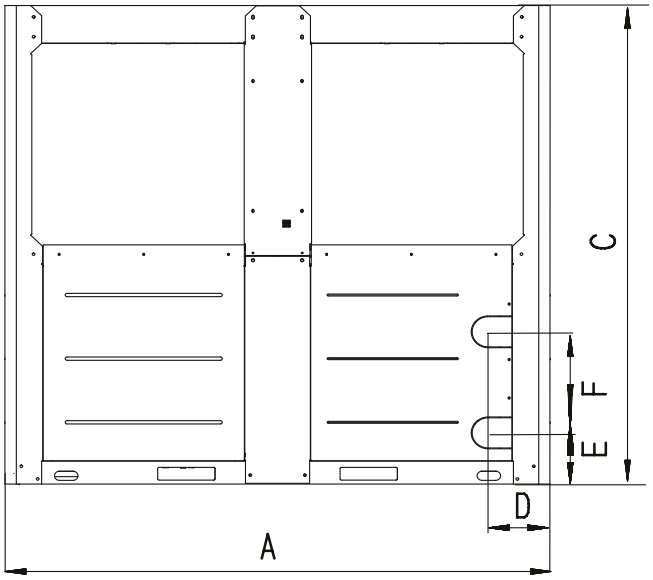
EVI technology – efficient heating

Innovative EVI (Enhanced Vapor Injection) compressors are an advanced technological solution which, thanks to additional vapor injection into the compressor, significantly increases the efficiency and effectiveness of the device and extends its operating range. At the same time, EVI technology allows for a reduction in the size of the refrigeration system, which translates into a more compact heat pump design.

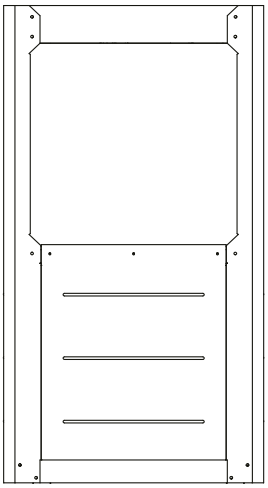
EVI scroll **compressors** also provide:

- **Higher efficiency at low outdoor temperatures:** EVI compressors are designed to maintain high performance even at very low outdoor air temperatures (e.g., -25°C). They minimize the drop in power that is typical for standard heat pumps on cold days. As a result, the heat pump can independently cover the building's heat demand for most of the heating season, reducing or eliminating the need for electric heaters, which significantly lowers operating costs.
- **Excellent energy efficiency (COP):** The combination of EVI and R290 results in higher COP values, which means that the heat pump consumes less electricity to produce the same amount of heat. This translates into lower heating bills.
- **Stable operation and longer service life.** Better control over the compression process thanks to EVI and the stability of the R290 refrigerant translate into smoother operation of the device, lower loads on the compressor, and, as a result, a longer service life for the entire system.
- **Ability to achieve high supply temperatures (up to 85°C):** This is crucial in modernized buildings, where radiator installations are common and require higher supply temperatures than surface systems.

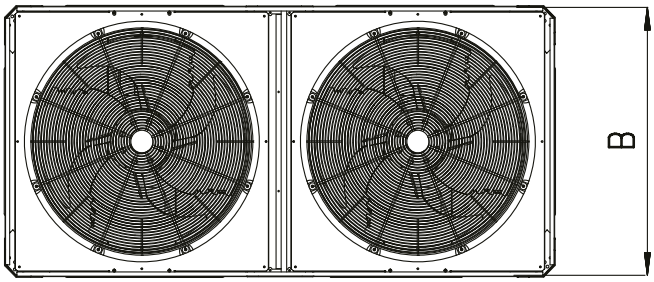
Unit **dimensions** [mm]



Front view



Side view
(left side)



View from above

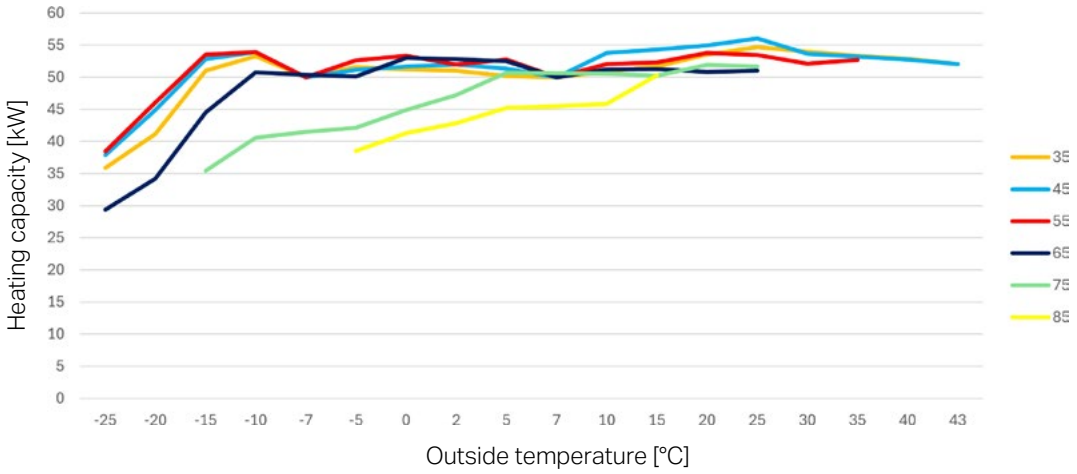
Model	50/60/70 kW
A	2000 mm
B	960 mm
C	1870 mm
D	226 mm
E	200 mm
F	397 mm

After installing the spring shock absorbers, the total height of the device will increase by approximately 135 mm.

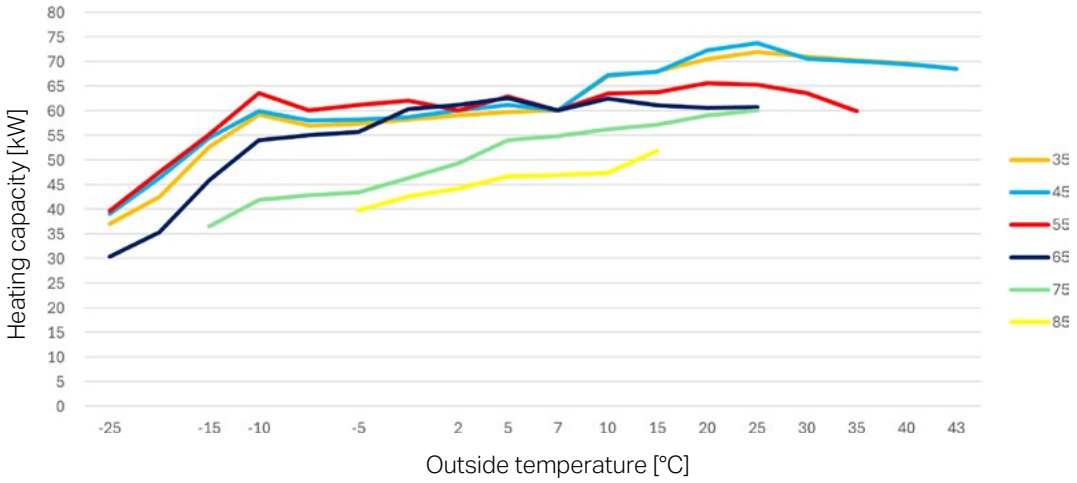
Heating capacity charts

Arctic Power heat pumps

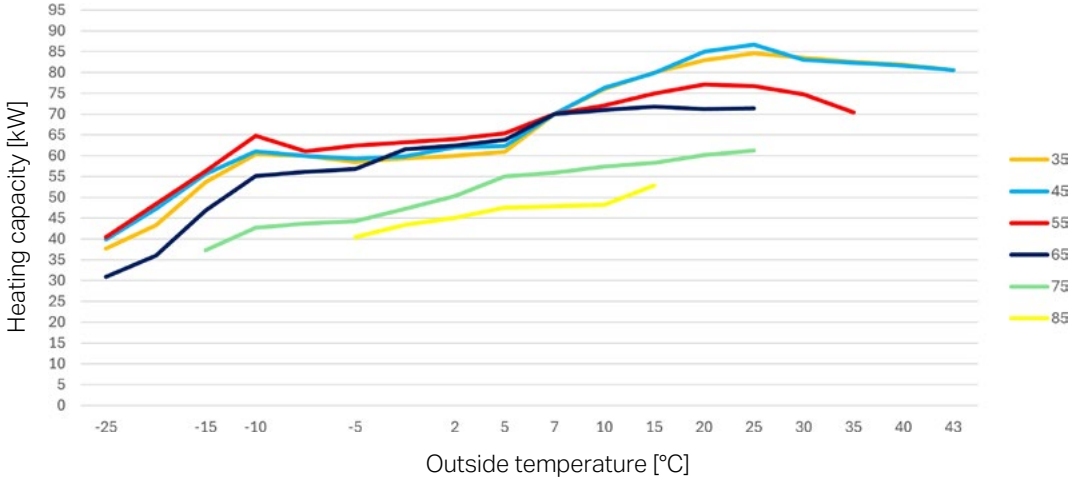
Performance chart of the KCOP050PMA3 heat pump in heating mode for selected water temperatures (35, 45, 55, 65, 75, 85 °C)



Performance chart of the KCOP060PMA3 heat pump in heating mode for selected water temperatures (35, 45, 55, 65, 75, 85 °C)



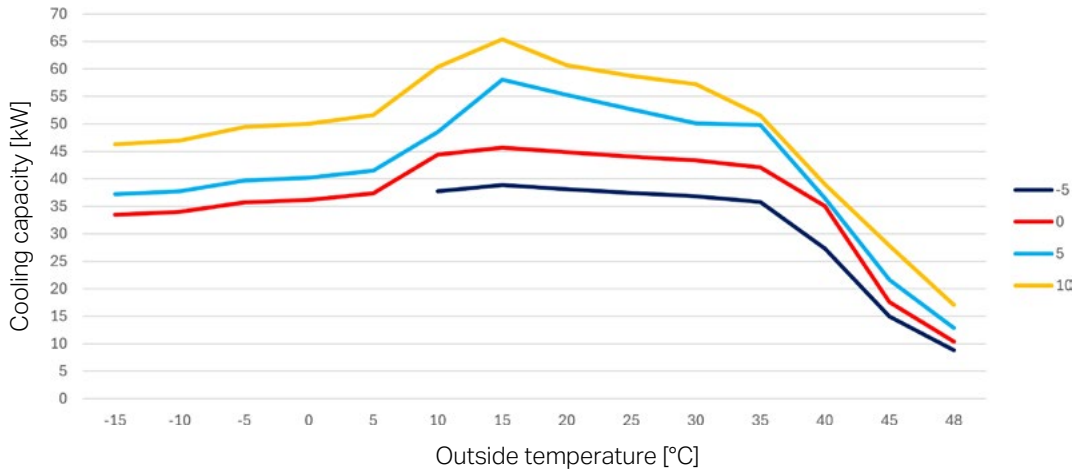
Performance chart of the KCOP070PMA3 heat pump in heating mode for selected water temperatures (35, 45, 55, 65, 75, 85 °C)



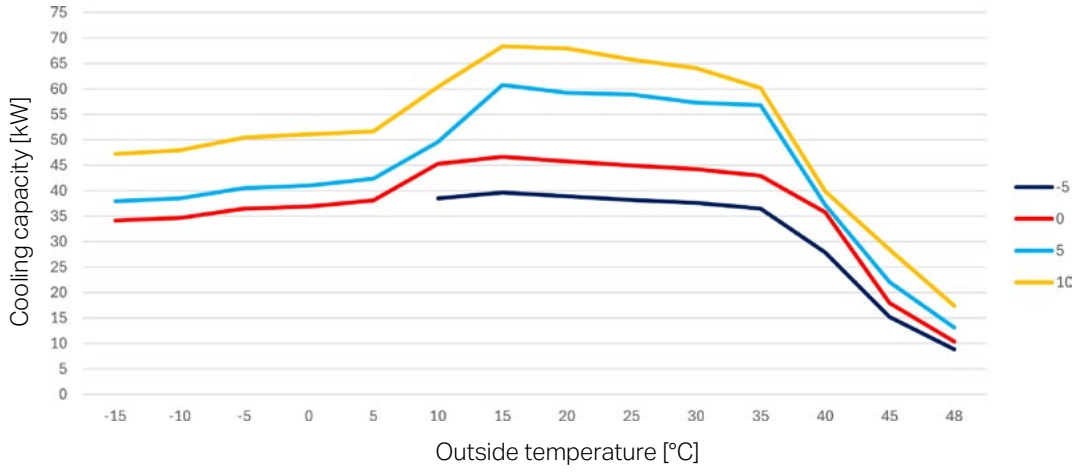
Cooling capacity charts

Arctic Power heat pumps

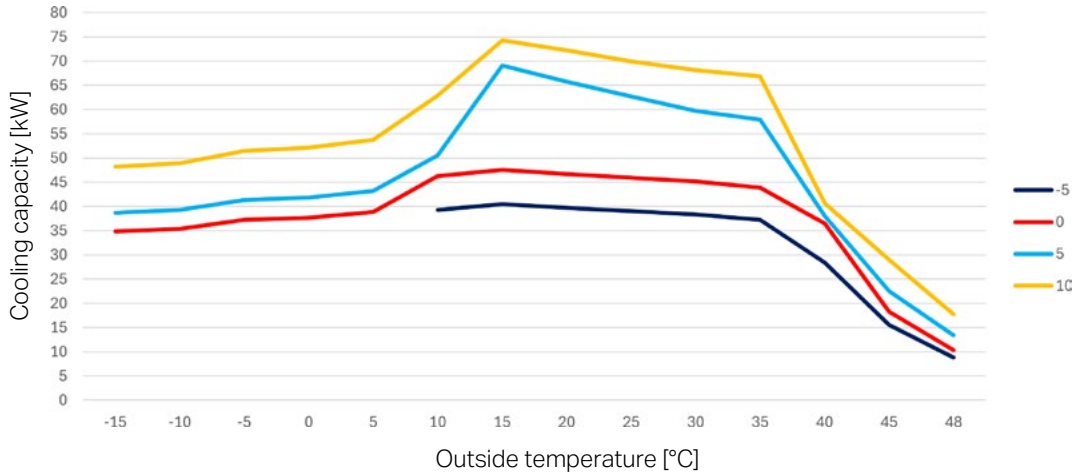
Performance chart of the KCOP050PMA3 heat pump in cooling mode for selected water temperatures (-5, 0, 5, 10°C)



Performance curve of the KCOP060PMA3 heat pump in cooling mode for selected water temperatures (-5, 0, 5, 10°C)



Performance chart of the KCOP070PMA3 heat pump in cooling mode for selected water temperatures (-5, 0, 5, 10°C)



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40-101 Katowice
32 209 49 26

All technical data complies with the guidelines of standards EN14511; EN14825; EN50564; EN12102; (EU) No 811:2013; (EU) No 813:2013; OJ 2014/C 207/02:2014.
The seasonal heating efficiency SCOP has been determined for moderate climate conditions.
The sound power level in heating mode is specified in accordance with EN 12102 under conditions compliant with EN 14825.


KAISAI
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Key **ESG aspects**

As a company, we recognize that our actions **have an impact on the world** we live in. For this reason, we have adopted a sustainable approach, focusing our activities on three key areas: **the environment, society, and corporate governance.**

S-Social
(Social responsibility)

- We provide our employees with comfortable working conditions and advanced tools.
- We respect diversity and support a sense of belonging.
- We respect employee rights
- We protect personal data

E-Environmental
(Environment)

- Our products are energy efficient
- Our devices use low GWP refrigerants.
- We invest in the Renewable Energy Sources segment
- We implement solutions dedicated to energy-efficient buildings.
- We minimize the impact of our operations on the environment

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G-Governance
(Corporate governance)

- We have implemented the SAP S/4 HANA ERP management system.
- Our business activities are subject to external verification (ISO, GDPR, and financial audits).
- We report and publish the results of our activities
- We have developed a "Code of Ethics" containing good practices for cooperation with our partners.
- We ensure the cybersecurity of resources

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