

# The natural choice

DAIKIN ALTHERMA LOW-TEMPERATURE HEAT PUMP

#### DAIKIN ALTHERMA

**LOW TEMPERATURE** 

# Brand new

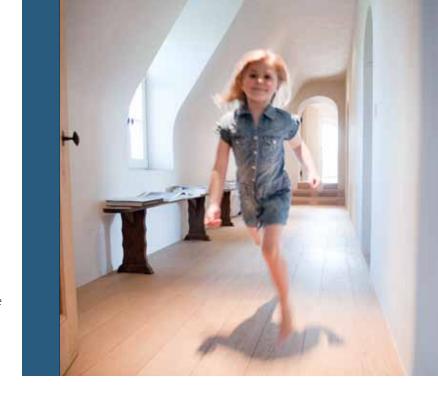
THE NEW DAIKIN ALTHERMA
LOW-TEMPERATURE HEAT PUMP,
AN INNOVATIVE PRODUCT RANGE,
DESIGNED TO DELIVER ONLY THE BEST
IN CLIMATE CONTROL

# Best seasonal efficiencies,

providing the highest savings on running costs

- excellent COP ratings for incentive and certification schemes
- no need for or only very limited use of electrical assistance
- best efficiencies achieved within the most relevant temperature range

p. 6



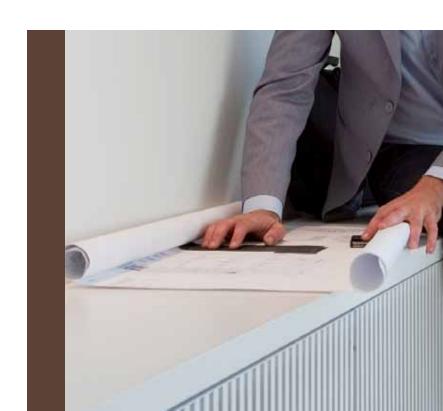
# 4 benefits

#### Perfect fit

for new builds, as well as for low-energy houses

- custom-made product for very low heat loads
- · build to withstand most severe winter conditions
- heating, cooling and domestic hot water in one system

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# Integrated indoor unit:

best solution for domestic hot water for installer & customer

- all components and connections factory-made
- very small installation footprint required
- minimum electrical input with constant availability of hot water

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# New user interface:

high functionalities, easy to use

- self-explanatory controller for easy and quick commissioning
- possibility of preparing and uploading field setting via a PC
- feedback on operation conditions and energy consumption

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With many years of air-to-water heat pump experience and over 150,000 units installed throughout Europe, we continuously strive to optimise Daikin Altherma's performance. This is achieved by a **constant focus on limiting electrical inputs** during each new product-development-process, resulting in further reducing the running costs.

# Best seasona

providing the **highest savings** on **running costs** 





#### HIGH HEAT PUMP EFFICIENCIES AT ALL OUTDOOR AND WATER TEMPERATURES

Daikin Altherma low temperature uses a range of efficient compressors, limiting electrical compressor inputs to its maximum. This results in optimal efficiencies at several rated conditions, providing excellent ratings, complying with incentive and certification schemes (e.g. EPBD regulations) throughout Europe.

Each capacity class has an individually sised compressor, dimensioned to provide optimal efficiencies per capacity range. This avoids having an over-dimensioned compressor, leading to lower seasonal efficiencies.

For example, the compressor of the new 4kW class is designed to work at optimal frequencies, delivering the low capacities needed by houses with low heat loads more efficiently.

In addition to its efficient compressor range, the Daikin Altherma optimises efficiency at all outside and water temperatures with the use of:

- a pressure sensor for detailed measurement of condensing pressure level to evaluate the optimal amount of subcool.
- an individual dimensioned plate heat exchanger per capacity class, to offer optimal efficiencies per capacity range.

**SWING** 

#### SCROLL





- Low-capacity 4-8kW range is equipped with swing compressor: integration of main moving parts in one component, assuring no abrasion and no refrigerant leakages, guaranteeing optimal reliability and efficiency;
- High-capacity 11-16kW range is equipped with scroll compressors: quiet, compact and robust, guaranteeing optimal operational reliability (no valves and built-in swing-link coupling) and efficiency (through a low initial flow and a constant compression ratio).

The seasonal efficiency (also called SCOP) of a heat pump is the average efficiency over a whole year, taking into account specific climatic conditions and house specifications (heat load, required water temperatures, etc.). This means the SCOP value can be seen as the real operating efficiency of a heat pump system, taking into account all the required inputs and specific application conditions.

Heat pump efficiency = SCOP = -

heating output / year

electricity input / year

The total heating output per year is defined by the climatic conditions and house specifications and is independent to the type of heating system. The total electricity input per year is the critical parameter as this is what the customer pays for.





#### HIGH HEATING CAPACITIES DOWN TO LOW OUTSIDE TEMPERATURE

Daikin Altherma low temperature maintains its high heating capacities down to low outdoor temperatures. The electrical back-up heater assistance is no longer required or only very limited.

These high heating capacities, available on the whole Daikin Altherma low temperature 4kW-16kW range, are achieved thanks to the combination of:

- Optimised controls to achieve higher frequency of use at low outdoor temperatures
- Liquid injection to avoid too high discharge temperatures when high water temperatures are required at low outdoor temperatures
- · Perfectly dimensioned plate heat exchangers to maximise the heat exchange surface

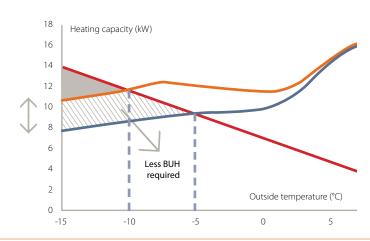
#### This is illustrated by a typical application in Munich

#### Typical application:

- · Location: Munich
- Design temperature: -15°C
- Heat load: 14kW
- Heating off temperature: 16°C

A comparison is made between a standard low-temperature air-to-water heat pump system, and the new Daikin Altherma units (ERLQ-C range – 11-16kW):

- New range delivers around 3kW additionally at -15°C (+40%)
- Equilibrium temperature shifts from -5°C to -10°C
- Operation of electrical assistance is very limited



Standard HP system
ERLQ016CA
Heat load



### 3. DAIKIN INVERTER COMPRESSORS WITH HIGH MODUL ATING RANGE

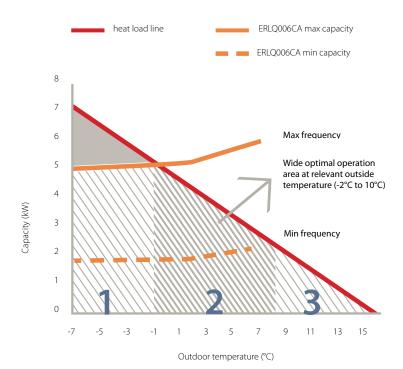
When the heat load is lower than the maximum capacity of the heat pump system, the compressor can turn in partial load operation. This reduced compressor frequency results in:

- Higher compressor efficiency in partial load operation
- · Delivered capacities exactly matching the actual heating demand of the building
- Obtaining the capacities needed with minimum energy consumption
- · Less on/off operation, increasing the operation life cycle of the compressor

The new Daikin Altherma low temperature has a high modulating range, meaning the compressor can modulate down to low frequencies to offer the highest efficiencies over the relevant temperature range.

Each inverter compressor has a certain maximum and minimum frequency, and works in between the optimal operation area with the highest operating efficiencies. This is illustrated by the graph bellow.

- 1 Heat load > max capacity: full load Compressor will operate at 100% frequency, with additional electrical assistance if required
- Max capacity > heat load > min capacity: partial load compressor will reduce its frequency delivering the capacities required by the house, with high operating efficiencies
- 3 Min capacity > heat load: partial load with on/off Compressor will work at its minimum frequency with high operating efficiencies, but switching on/off to deliver the capacities required



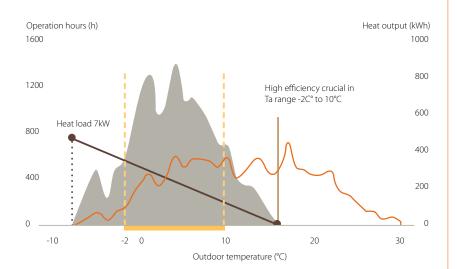
### The partial load operation and optimal operation area can be illustrated by a typical application in Paris

#### Typical application:

- · Location: Paris
- Design temperature: -7°C
- · Heat load: 7kW
- Heating off temperature: 16°C

Efficient partial-load operation is especially important for the temperature range where the highest heat output is required. Typically, 80% of the total heat output is required in an outdoor temperature range of -2°C to 10°C. Achieving high efficiencies in this temperature range, contributes strongly to high seasonal efficiencies.

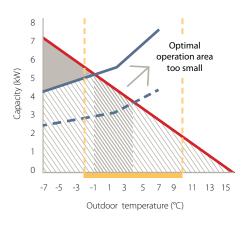
- · Largest part of heat output delivered at optimal efficiencies
- Less on/off operation when heat load becomes lower than the minimum capacity the heat pump can deliver, optimising efficiency and comfort

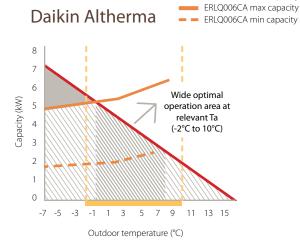




- Modulating range doubled vs standard air-to-water heat pumps
- New range delivers around 1kW additional in full-load condition at -7°C (+25%)

#### Standard heat pump





heat load line standard HP max capacity standard HP min capacity





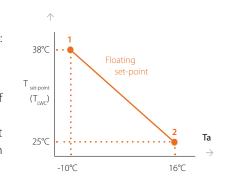
#### 4. SMART HEATING CONTROLS

The combined effect of the Daikin Altherma weather-dependent set-point control and the Daikin Altherma inverter compressors maximises the efficiency at each outdoor temperature, assuring stable room temperatures.

- 1 Weather-dependent set-point control: Daikin Altherma maximises efficiency at every outdoor temperature through its weather-dependent set-point control. This control logic will always keep the water temperatures as low as possible, to maximise the heat pump efficiency for each specific outdoor temperature. This results in:
- Higher heat pump efficiency with lower water temperatures
- · No unnecessary overheating, thereby delivering the temperatures required
- Continuous heating at lower water temperatures, providing stable room temperatures
- 2 Inverter technology: lowering the compressor frequency with increasing outdoor temperatures, thus increasing the efficiency

The example shown is for a typical application using under-floor heating:

- A water temperature of 38°C is required at a design temperature of -10°C (1)
- A water temperature of only 25°C is required at a space heating off temperature of 16°C (2)
- For temperatures between -10°C and 16°C, the Daikin Altherma unit calculates the required water temperature, to guarantee maximum efficiency, with continuous heating, at each outdoor temperature.







## 5. LIMITING ELECTRICAL INPUTS OF AUXILIARY COMPONENTS

In addition to limiting the electrical input of the compressor and the electrical back-up heater, Daikin pays special attention to limiting electrical inputs of auxiliary components. This also contributes to the high seasonal efficiencies achieved by the Daikin Altherma range.

- Factory-mounted high efficiency circulating pump already qualifying for future regulations (ErP2015) with an A-energy label (EEI ≤ 0.23)
- No standby losses of inverter drive PCB, lowering electricity consumption during standby mode
- No bottom plate heater needed on 4-8kW class
- Low-capacity bottom plate heater on 11-16kW class (ERLQ-C series), only operating during defrost cycles, results in 90% less electricity consumption when compared with standard thermostatic controlled bottom plate heaters.

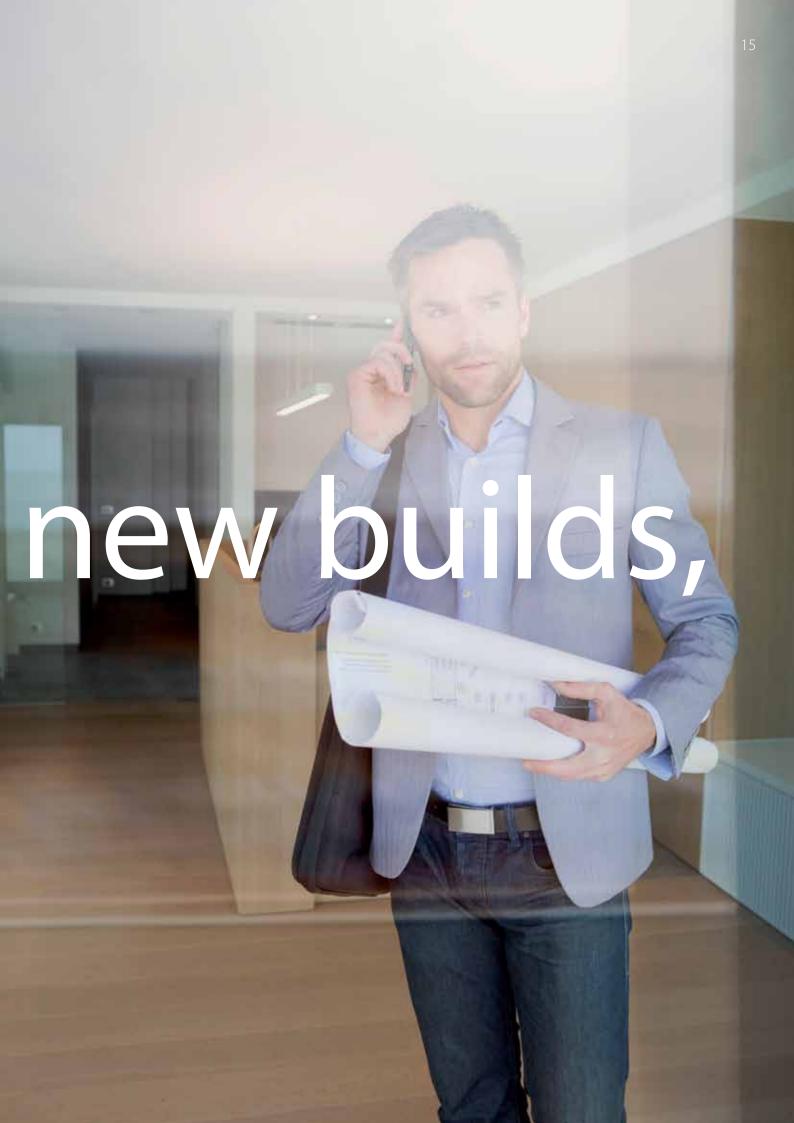
Applicable units: 4-8kW Location: Munich (Germany)	Advantage compared to tradional HP system	Conditions	Operating hours per year	Yearly benefit
High efficiency circulating pump	45W less (TBC) *	according to EN14511	5300 hours	240 kWh
No standby losses inverter drive PCB	20W less	in standby mode	3400 hours	70 kWh
No bottom plate heater	60W less	when Ta below 4°C	2800 hours	170 kWh

Applicable units: 11-16kW Location: Munich (Germany)	Advantage compared to tradional HP system	Conditions	Operating hours per year	Yearly benefit
High efficiency circulating pump	65W less (TBC) *	according to EN14511	5300 hours	340 kWh
No standby losses inverter drive PCB	20W less	in standby mode	3400 hours	70 kWh
Low capacity bottom plate heater	60W less + smart logic	when Ta below 4°C	2800 hours	160 kWh

<sup>\*</sup> preliminary data

# Perfect fit for low energy houses

The Daikin Altherma low temperature is fully optimised to fulfill the **efficiency, comfort and application** needs of newly built houses. In addition, the extended product range now offers the perfect solution for low-energy houses, even for very low heat loads.





#### 1. OPTIMISED UNIT FOR LOW HEAT LOADS

The new Daikin Altherma low temperature is designed to meet the requirements of newly built and low-energy houses characterised by low heat loads.

The low capacity 4kW unit with its high modulating range offers optimal efficiency in most relevant outdoor temperature ranges by combining compressors and plate heat exchangers that have been specifically designed for smaller heat loads.

The new-build house market in Europe is moving towards smaller heat loads, due to:

- 1. Growing importance of low- energy houses
- 2. Strengthened legislation on energy consumption in new residential constructions (e.g. EPBD regulations)
- 3. Decreasing size of new-build houses
- 4. EU member states planning to reach their 20-20-20 targets



ERLQ006CA max capacity

ERLQ006CA min capacity

Wide optimal operation area

11 13 15

at relevant Ta (-3°C to 7°C)

7 9

5 Outdoor temperature (°C)

1 3

With the new 4kW unit, Daikin Altherma low temperature offers a full product line-up with a specifically dimensioned heat pump system (compressor, modulating range, plate heat exchanger, ...) to deliver the required capacities for the house, with the best possible efficiencies.

The new Daikin Altherma 4kW unit is developed and dimensioned to reach Optimal efficiencies at the most relevant temperature range, thanks to its high modulating range.

#### This is illustrated by the practical example below

#### Typical application:

- · Location: Paris
- Design temperature: -7°C
- Heat load: 4kW
- Heating off temperature: 12°C

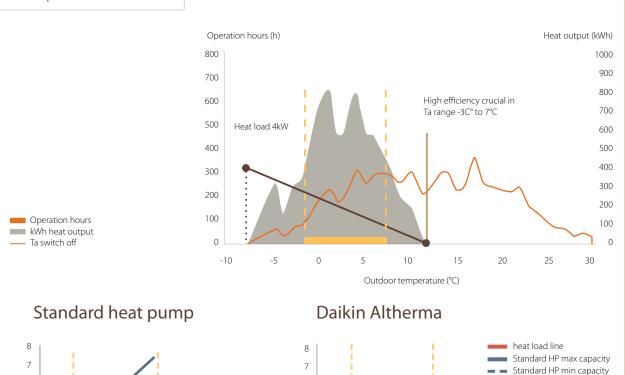
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3

2

Capacity (kW)

Low-energy houses have a lower space heating off temperature (12°C) than normal insulated houses (16°C). This means that the most relevant outdoor temperaturerange for low-energy houses, shifts towards lower temperatures. A typical lowenergy house (see details below) has 80% of its total heat output in the outdoor temperature range of -3°C to 7°C.



6

4

3

Capacity (kW)

Optimal operation area too small

and not in relevant Ta (-3°C to 7°C)

Outdoor temperature (°C)

11 13 15





#### 2. MAXIMUM COMFORT

Daikin Altherma low temperature: one system for optimal year-round comfort



Keeping the house at the desired temperature the whole year, with both heating and cooling possible

- Only one outdoor unit required to provide heating and cooling
- Same emitters can be used for heating and cooling (Daikin heat pump convector or under-floor system)

#### Stable room temperatures:

The combined effect of the Daikin inverter compressors and weather-dependent set-point control guarantees a continuous heating operation.

With higher outdoor temperature, the water temperature will be lowered and the frequency of the compressor reduced, in order to ensure a CONTINUOUS heating Operation, providing stable room temperature.



Room thermostat:

The Daikin user interface can be installed in the living room using the room thermostat function, which can additionally lower or raise the set-point water temperature in function of actual room temperature, to even better match the set-point room temperature.

#### → 3. ALL TYPES OF HEAT EMITTERS POSSIBLE

The Daikin Altherma low temperature has an operation range up to 55°C leaving water temperature, allowing for connection to all types of low-temperature heat emitters.

Under-floor heating

25°C → 35°C

Heat pump convector

35°C → 45°C

The Daikin heat pump convector is specifically designed to offer optimal efficiencies and comfort for residential applications.

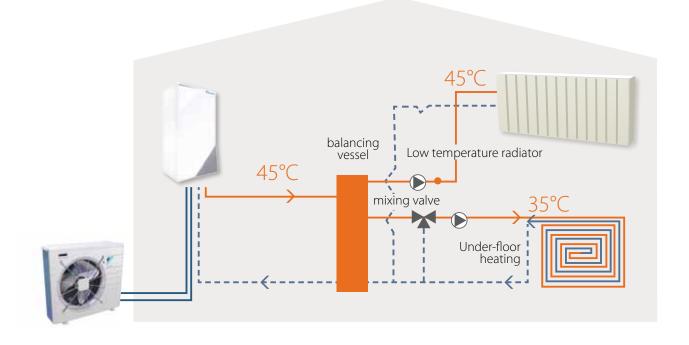
- Small dimensions compared to low-temperature radiators
- Low sound level, optimal for bedroom applications
- High-capacity cooling with water temperatures down to 6° C

#### Low temperature radiators

 $40^{\circ}\text{C} \rightarrow 55^{\circ}\text{C}$ 

Thanks to the multiple set-point function, a combination of different types of heat emitters operating at different water temperatures is possible. When there is no heating request from the higher temperature zone, the water temperature will be lowered to the temperature required by the low temperature zone. This ensures keeping the water temperatures as low as possible, while always guaranteeing the highest efficiency.

	Tset	Thermo status				
Space 1 low-temperature radiator	45°C	OFF	ON	ON	OFF	
Space 2 under-floor heating	35℃	OFF	ON	OFF	ON	
Heat pump		OFF	45°C	45°C	35°C	





## 4. DAIKIN ALTHERMA IS SUITABLE FOR ALL CLIMATES, EVEN WITHSTANDING SEVERE WINTER CONDITIONS

Daikin is renowned for its know-how related to frost protection on its heat pump range.
The outdoor units are specifically designed to avoid ice build-up problems, even in the most severe winter conditions.

Daikin Altherma low temperature has a guaranteed operation down to an outside temperature of -25°C. This ensures sufficient heat pump operation for even the coldest climates.

- 1. The 4-8kW range of Daikin Altherma has a specifically designed casing to avoid the risk of ice formation on the outdoor unit coil.
  - The outdoor unit has a free hanging coil,ensuring no ice accumulates in the lower part of the outdoor unit. This is key to offering appropriate frost protection and has the additional advantage that no electrical bottom plate heater is required.
  - The discharge grill is also specifically designed to avoid ice accumulation.





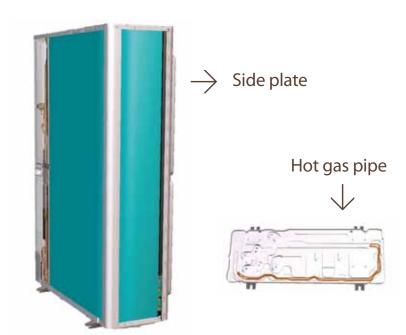
This adequate frost protection results in one product offering throughout Europe, from the south of Spain to the north of Finland.

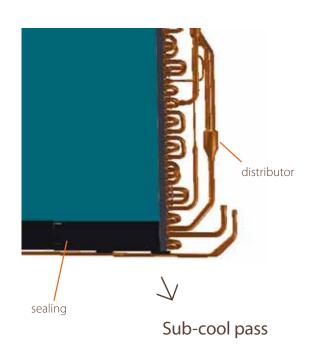




- **2.** The 11-16kW range of Daikin Altherma (ERLQ-C) has specific frost protection to avoid the risk of ice forming on the outdoor unit coil.
  - Hot gas pass: hot gaseous refrigerant coming from the compressor runs through the bottom plate to keep the base free of ice and all the drain holes open
  - Sub-cool pass: before the refrigerant pipe is split by the distributor to the hairpins, the refrigerant passes through the bottom of the coil to keep this lower part free of ice

Only a small capacity bottom plate heater is installed (35W) on the ERLQ-C range, with smart operation logic only operating during defrost cycles. This saves around 90% of electricity consumption compared to a traditional heat pump system with a thermostatically controlled bottom plate heater.



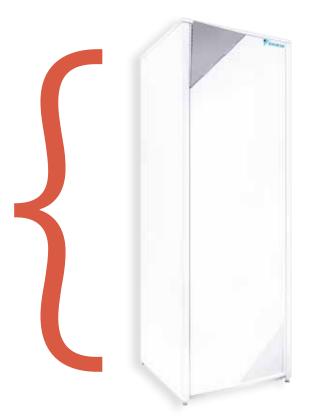


# Integrated in

best solution for domestic hot water

– for installer & customer

all in ONE



# door unit:

The new Daikin Altherma low temperature integrated indoor unit is an all-in-one floor-standing heat pump unit including the domestic hot water tank (available in 180l and 260l). This makes it the **easiest and fastest installation** when domestic hot water is required, and provides **the highest domestic hot water heating efficiency and comfort** for the end user in a compact, sleek design. When domestic hot water is preferred in combination with the Daikin Altherma low temperature, **the integrated indoor unit is the best solution, for the installer and the end user!** 

A wall-mounted indoor unit is available as well, to offer the best solution in specific situations, e.g. when no domestic hot water heating is required or a combination with thermal solar energy is preferred.

#### EASIEST AND FASTEST INSTALLATION, DOMESTIC HOT WATER TANK INCLUDED

- The stainless steel domestic hot water tank is included in the unit, with all connections between heat pump module and tank factory made. This allows for a fast installation compared to a traditional set-up (wallmounted with separate domestic hot water tank) with only water and refrigerant pipes to be connected.
- All hydraulic components are included (circulating pump, expansion vessel, back-up heater, etc. No need to look for third party components.
- The electric PCB board and hydraulic components are accessible from the front. This ensures easy serviceability and avoids the risk of any damage to electrical components due to water leakages.
- All water and refrigerant connections are at the top of the unit, assuring easy connection and accessibility.
   This means no connections are required at the back of the unit, resulting in a lower installation footprint.

Components are accessible from the front



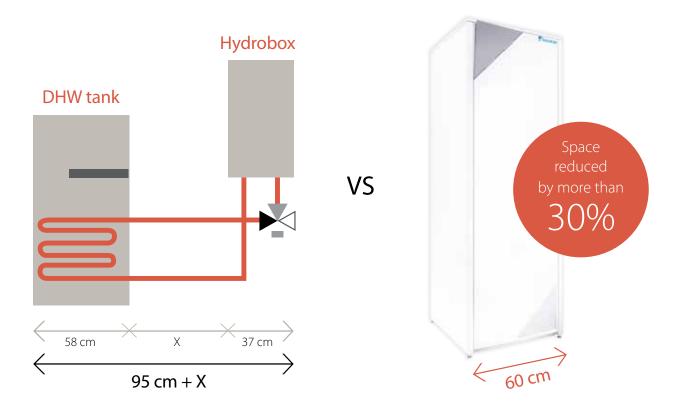




#### 2. COMPACT INDOOR UNIT WITH SLEEK DESIGN

Thanks to the all-in-one design, the installation space is minimised both in terms of footprint and height

Compared to the traditional split-up version for a wall-mounted indoor unit and separate domestic hot water tank, the integrated indoor unit greatly reduces the installation space required.





Small footprint: with a width of only 60cm and a depth of 74cm, the integrated indoor unit has a similar footprint compared to other household appliances.

Small installation footprint: no side clearances are required, and no space is required behind the unit for the piping, as the piping connections are at the top. This results in an installation footprint of only 0.44m<sup>2</sup>.

- Low installation height: both the 180l and 260l version come with a height of 1.7m. The required installation hight is less than 2m, taking into account 30cm for installing the piping.
- The compactness of the integrated indoor unit is emphasised by its sleek design and modern look, easily fitting with other household appliances.



## 3. BEST SOLUTION FOR DOMESTIC HOT WATER HEATING: HIGH EFFICIENCY – HIGH COMFORT

The domestic hot water tank of the integrated indoor unit is equipped with thick polystyrene insulation which results in 50% less heat loss compared to a standard insulated tank. This results in high savings on running costs as less energy is required for the next heat-up cycle.

 Heat loss from the 180l tank: only 1.2kWh per day (temperature difference of 45°C between tank and room temperature). This results in a difference of 440kWh per year compared to a standard insulated tank.

Daikin Altherma low temperature can heat the domestic hot water tank up to high tank temperatures with heat pump operation only . This avoids the use of electrical assistance for heating up the hot water tank, maximising the efficiency of hot water production.

• Tank temperature with heat pump only operation: up to 55°C with the 11-16kW unit (ERLQ-C range) and up to 50°C with the 4-8kW unit. Tank temperature can be further raised to 60°C with the standard back-up heater of the heat pump module, or up to 80°C with an optional booster heater in the tank.

This results in high hot water volumes. Following volumes can be achieved with only one heat-up cycle.

- Hot water volume of 300l is available at 40°C, sufficient for six showers, without any electrical assistance required (260l tank, tank temperature 50°C, cold water temperature 10°C, one heat-up cycle)
- The hot water volume can be further increased to 375l using the standard back-up heater (260l tank, tank temperature up to 60°C).

Daikin Altherma uses a smart control principle to heat-up the domestic hot water tank, maximising efficiency and comfort for the end-user. The combination of the reheat and schedule function guarantees minimum electrical input and ensures the constant availability of hot water.

- Schedule function: heat-up the tank at a specified time during the day, up to a pre-set tank temperature. This action can be repeated four times per day, with the possibility of setting two different tank temperatures (storage comfort and storage economic.)
- Reheat function: when the tank temperature goes below a specified minimum reheat temperature, Daikin Altherma switches automatically to domestic hot water heating, heating up the tank to a specified maximum reheat temperature.
- These two control functionalities can be used individually, but also in combination to provide the best efficiency and maximum comfort.

The schedule function can be used to heat up the tank during the night with the low electricity tariff, up to a relatively low tank temperature (e.g. 50°C avoiding the use of electrical assistance). When higher hot water consumption occurs during the day, lowering the tank temperature to the minimum reheat temperature, the heat pump will switch automatically to domestic hot water heating with the reheat function to guarantee the constant availability of hot water.

Thanks to the large coil surface of the tank (coil surface of 1.56m<sup>2</sup>) heating up the tank with the scheduled function or reheat function occurs very quickly.

## 4. WALL-MOUNTED INDOOR UNIT INCLUDING ALL HYDRAULIC COMPONENTS









#### The wall-mounted indoor unit is the perfect solution, in certain situations

- **1.** When no domestic hot water is required in combination with the Daikin Altherma system:
- All hydraulic components are included in the heat pump unit (circulating pump, expansion vessel, back-up heater, etc), no need to look for third-party components
- All hydraulic components and the PCB board, are accessible from the front for easy serviceability
- Compact unit: height 88cm, width 48cm, depth 37cm
- Small installation space as no side clearances are required
- Modern outlook easily fits in with other modern household appliances.
- **2.** The wall-mounted indoor unit can be combined with a separate domestic hot water tank.
- stainless steel tank: 150l, 200l or 300l
- enamel tank: 150l, 200l or 300l.

- 3. Connection to DAIKIN solar system
- Pressurised thermal hot water
- Separate domestic hot water tank can be used (stainless and enamel)
- Specific designed solar kit selects most relevant source (solar or heat pump) to heat up the tank, assuring optimal efficiency and maximum comfort.



# New User high functionalities easy to use

The Daikin Altherma low temperature is equipped with a new user-interface. Commissioning, servicing and day-to-day operation become straightforward the multi-lingual and graphical interface that provides full-text representation, easy menu navigation and intelligent control features.







#### 1. QUICK AND EASY COMMISSIONING

At the first start-up, a quick configuration wizard will guide the installer through the commissioning process. Through a series of short questions, the set-up of basic parameters will automatically be completed. Fine-tuning these parameters remains possible using the menu-based navigation. As a result of the quick configuration wizard, only the parameter settings relevant to the installation will be shown in the menus. The irrelevant parameters will be hidden and thus inaccessible.

The parameters can be downloaded to a PC as a back-up, or be duplicated to other similar installations. If preferred, the parameter settings can also be prepared on beforehand and uploaded to the units during commissioning.

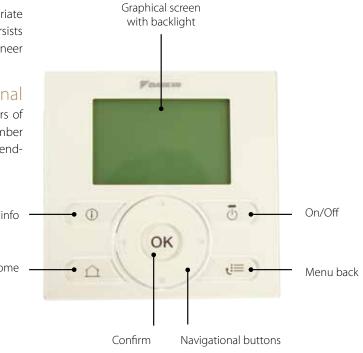
Before the actual test-run of the unit, an actuator test mode allows all the wired components to be activated one by one. This allows for a quick and easy check of all connections and wirings made to ensure a correct operation. An automatic screed-drying function can be activated to proceed through a gradual heat-up of an Underfloor heating system to avoid cracks in the floor during the first heat-up. Individual and easy-to-programme schedule timers for heating, cooling, domestic hot water operation and recirculation noise-sensitive operation and electrical booster heater allow to adjust the operation of the unit to match the end-user's typical daily schedule.

After the commissioning, access to the installer's menu can be restricted (manually or automatically after one hour) to avoid wrong manipulation of the unit by the end-user.

#### $\rightarrow$ 2. EASY SERVICEABILITY

In case something goes wrong, full-text error messages will guide the end-user to take appropriate action to try and resolve the problem. If the problem persists and a site intervention is necessary, the service engineer will be able to review the last 20 error occurrences.

Detailed information on the operational CONDITIONS of the unit, such as the running hours of the different elements, operating temperatures or number of starts, can easily be read out from the extended enduser's menu.



#### $\rightarrow$

#### 3. ROOM TEMPERATURE CONTROL FUNCTIONALITY

The user interface itself is equipped with a temperature sensor and can be installed remotely from the Daikin Altherma low temperature indoor unit.

- Installed on the unit, it will allow quick and easy access to the unit's operating information and settings.
- Installed remotely (e.g. in a living room) it will also act as a room thermostat with more advanced features than a standard room thermostat, resulting in More stable room temperatures, increased efficiency and operation life cycle. A second optional interface can still be installed on the unit for service purposes.

#### $\rightarrow$

#### 4. USER-FRIENDLY WITH INTUITIVE CONTROLS

In the detailed display mode, the large graphical display of the user interface displays the actual room temperature and the operation mode of the unit. Depending on the end-user's preference, a simplified basic display is available that shows just the actual room temperature and only allows the room temperature set-point to be changed.

User settings can be accessed through an intuitive and self-explanatory menu. This menu will also give access to additional information such as the energy consumption and heat production of the System, split up between heating, cooling and domestic hot water operation, enabling close monitoring of the unit's efficient operation.

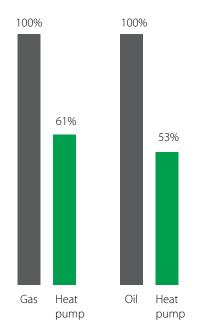
# Heat pump in practice

#### $\rightarrow$ 1. EXAMPLE ON RUNNING COST AND CO<sub>2</sub> COMPARISON

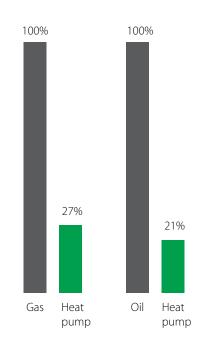
The Daikin Altherma low temperature heat pump operates much more efficiently than a traditional fossilfuel boiler. Compared to a condensing gas boiler, installing a Daikin Altherma low temperature results in a running cost reduction of 39%. The savings are even up to 47% when comparing the Daikin Altherma low temperature to a condensing oil boiler.

Since a heat pump only indirectly emits  $CO_{2^r}$  the system produces up to 79% less  $CO_2$  compared to a traditional fossil-fuel boiler. When the electricity used to run the heat pump is gained fully from renewable energy sources, the heat pump is  $CO_2$  neutral. Thus, installing a Daikin Altherma low temperature contributes actively to a better and cleaner environment.

#### Less running costs



#### Reduction on CO<sub>2</sub>



<sup>\*</sup> Data calculated by taking into account Belgian conditions: Average energy prices 2007-2011, CO<sub>2</sub> emission factor for electricity, production and Belgian climate conditions.

#### 2. ECO-CALCULATOR

Daikin provides a web-based tool to give a quick estimation of savings on running costs and savings on  $\mathrm{CO}_2$  emissions. Based on a few inputs from the customer (location, house type, floor area, number of people), a comparison is made between the Daikin Altherma heat pump system and traditional heating systems. This comparison includes the space heating and domestic hot water heating. This is available for both new builds and refurbishment applications.





#### 3. SIMULATION SOFTWARE

The Daikin Altherma simulation software provides for every specific application and appropriate heat pump selection, taking into account the needs of the building and specific climate data. An installer can provide the following data:

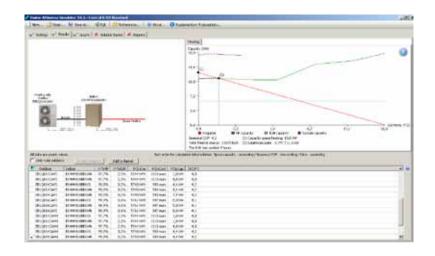
- house application: heat/cool load, water temperatures, power supply
- climate conditions: location, design temperature
- domestic hot water requirements: tank volume, material, solar connection
- preferences: "heating off" temperature, night setback function

Based on the specific house and location details, the software provides a full dimensioning assuring a correct material selection.

As well as a full material selection, the software provides detailed information for the installer and the end-user, on the expected outcome of the specified Daikin Altherma unit for its specific application and climate:

- seasonal efficiency of the heat pump system
- amount of back-up heater operation
- energy consumption and energy cost per month
- savings on running costs compared to traditional heating systems

All this information will be summarised in a detailed report.



### Heat pump convector



## 4. INTEGRATION FOR A TOTAL SOLUTION

Whether you have a newly built house or live in an existing low energy home, the Daikin Altherma low temperature split allows for completely integrated components for total climate control. Whether you opt for the integrated floor standing indoor unit to provide heating and domestic hot water or go for a wall mounted indoor unit, whether you use under-floor heating or heat pump convectors, whether your electricity comes from the grid or from a renewable eco-friendly resource like solar power, the Daikin Altherma low temperature is a total solution 4 you.



#### Solar connection

(optional)



Integrated indoor unit

Under-floor heating

#### $\rightarrow$ 5. TECHNICAL SPECIFICATIONS

#### **HEATING ONLY**

INDOOR UNIT					EHBH04C3V PRELIMINARY DATA	EHBH08C3V PRELIMINARY DATA	EHBH08C9W PRELIMINARY DATA
Casing	Colour				S5730 White / RAL7037	S5730 White / RAL7037	S5730 White / RAL7037
Dimensions	Unit	Jnit HeightxWidthxDepth mm		880x480x350	880x480x350	880x480x350	
Operation range	Operation range Heating		Min.~Max.	°C	-20~25	-20~25	-20~25
		Water side	Min.~Max.	°C	25~55	25~55	25~55
	Domestic hot	Ambient	Min.~Max.	°CDB	-20~35	-20~35	-20~35
	water	Water side	Min.~Max.	°C	25~55	25~55	25~55
Sound power level	Nom.			dBA	42	42	42
Sound pressure level	Nom. dBA			dBA	28 ¹	28 1	28 1
Power supply	Name				V3	V3	9W
	Phase				1~	1~	1~/3~

OUTDOOR UNIT				ERLQ004CV3 PRELIMINARY DATA	ERLQ006CV3 PRELIMINARY DATA	ERLQ008CV3 PRELIMINARY DATA
Heating capacity	Min.		kW	1.80 2	2.30 <sup>2</sup>	2.30 <sup>2</sup>
	Nom.		kW	4.312/3.503/4.384/3.925/4.706	6.101 / 5.932 / 4.693 / 5.494 / 5.465 / 5.156	7.471 / 7.462 / 5.843 / 6.074 / 6.985 / 6.166
	Max.		kW	3.50 4	5.00 ⁴	6.10 4
COP				4.72 <sup>2</sup> / 3.81 <sup>3</sup> / 2.79 <sup>4</sup> / 3.54 <sup>5</sup> / 2.29 <sup>6</sup>	4.80 <sup>1</sup> / 4.57 <sup>2</sup> / 3.62 <sup>3</sup> / 2.72 <sup>4</sup> / 3.41 <sup>5</sup> / 2.21 <sup>6</sup>	4.64 <sup>1</sup> / 4.35 <sup>2</sup> / 3.44 <sup>3</sup> / 2.57 <sup>4</sup> / 3.37 <sup>5</sup> / 2.11 <sup>6</sup>
Dimensions	Unit	HeightxWidthxDepth	mm	735x825x300	735x825x300	735x825x300
Operation range	Heating	Min.~Max.	°CWB	-20~25	-20~25	-20~25
	Cooling	Min.~Max.	°CDB	10~43	10~43	10~43
	Domestic hot water	Min.~Max.	°CDB	-20~35	-20~35	-20~35
Refrigerant	Charge		kg	2	2	2
Sound power level	Heating	Nom.	dBA	61	61	62
	Cooling	Nom.	dBA	63	63	63
Sound pressure	Heating	Nom.	dBA	48	48	49
level	Cooling	Nom.	dBA	48	48	50
Power supply	Name/Phase/Frequency/Voltage Hz/V		V3/1~/-	V3/1~/-/-	V3/1~/-/-	

(1) EW 30°C; LW 35°C; ambient conditions: 10°CDB (2) EW 30°C; LW 35°C; ambient conditions: 7°CDB/8°CWB (3) EW 30°C; LW 35°C; ambient conditions: 2°CDB/1°CWB (4) EW 30°C; LW 35°C; ambient conditions: -7°CDB/8°CWB (5) EW 40°C; LW 45°C; ambient conditions: 7°CDB/8°CWB (5) EW 40°C; LW 45°C; ambient conditions: -7°CDB/8°CWB (5) EW 40°C; LW 45°

#### **HEATING & COOLING**

INDOOR UNIT					EHBX04C3V PRELIMINARY DATA	EHBX08C3V PRELIMINARY DATA	EHBX08C9W PRELIMINARY DATA
Cooling capacity	Nom. kW				5.60 <sup>8</sup> / 5.12 <sup>9</sup>	8.16 <sup>8</sup> / 5.86 <sup>9</sup>	8.37 <sup>8</sup> / 6.65 <sup>9</sup>
Casing	Colour				S5730 White / RAL7037	S5730 White / RAL7037	S5730 White / RAL7037
Dimensions	Unit	t HeightxWidthxDepth mm			880x480x350	880x480x350	880x480x350
Operation range	Heating	Ambient	Min.~Max.	°℃	-20~25	-20~25	-20~25
		Water side	Min.~Max.	°℃	25~55	25~55	25~55
	Cooling	Ambient	Min.~Max.	°CDB	10~43	10~43	10~43
		Water side	Min.~Max.	°C	5~50	5~50	5~50
	Domestic hot water	Ambient	Min.~Max.	°CDB	-20~35	-20~35	-20~35
		Water side	Min.~Max.	°℃	25~55	25~55	25~55
Sound power level	Nom. dBA				42	42	42
Sound pressure level	Nom. dBA				28 1	28 1	28 1
Power supply	Name				V3	V3	9W
	se			1~	1~	-	

OUTDOOR UNIT				ERLQ004CV3 PRELIMINARY DATA	ERLQ006CV3 PRELIMINARY DATA	ERLQ008CV3 PRELIMINARY DATA
Heating capacity	Min.		kW	1.80 2	2.30 <sup>2</sup>	2.30 <sup>2</sup>
	Nom.		kW	4.31 <sup>2</sup> /3.50 <sup>3</sup> /4.38 <sup>4</sup> /3.92 <sup>5</sup> /4.70 <sup>6</sup>	6.10 <sup>1</sup> / 5.93 <sup>2</sup> / 4.69 <sup>3</sup> / 5.49 <sup>4</sup> / 5.46 <sup>5</sup> / 5.15 <sup>6</sup>	7.471/7.462/5.843/6.074/6.985/6.166
	Max.		kW	3.50 4	5.00 4	6.10 4
Cooling capacity	Nom.		kW	7.04 <sup>8</sup> / 4.98 <sup>9</sup>	8.20 <sup>8</sup> / 6.16 <sup>9</sup>	8.20 <sup>8</sup> / 6.65 <sup>9</sup>
COP				4.72 <sup>2</sup> / 3.81 <sup>3</sup> / 2.79 <sup>4</sup> / 3.54 <sup>5</sup> / 2.29 <sup>6</sup>	4.80 <sup>1</sup> / 4.57 <sup>2</sup> /3.62 <sup>3</sup> / 2.72 <sup>4</sup> / 3.41 <sup>5</sup> / 2.21 <sup>6</sup>	4.64 <sup>1</sup> / 4.35 <sup>2</sup> / 3.44 <sup>3</sup> / 2.57 <sup>4</sup> / 3.37 <sup>5</sup> / 2.11 <sup>6</sup>
EER				3.21 <sup>8</sup> / 2.58 <sup>9</sup>	3.06 <sup>8</sup> /2.71 <sup>9</sup>	3.06 <sup>8</sup> /2.28 <sup>9</sup>
Dimensions	Unit	HeightxWidthxDepth	mm	735x825x300	735x825x300	735x825x300
Operation range	Heating	Min.~Max.	°CWB	-20~25	-20~25	-20~25
	Cooling	Min.~Max.	°CDB	10~43	10~43	10~43
	Domestic hot water	Min.~Max.	°CDB	-20~35	-20~35	-20~35
Refrigerant	Charge		kg	2	2	2
Sound power level	Heating	Nom.	dBA	61	61	62
	Cooling	Nom.	dBA	63	63	63
Sound pressure level	Heating	Nom.	dBA	48	48	49
	Cooling	Nom.	dBA	48	48	50
Power supply	Name/Phase/Frequency/Voltage Hz/V		V3/1~/-/-	V3/1~/-/-	V3/1~/-/-	

(1) EW 30°C; LW 35°C; ambient conditions: 10°CDB (2) EW 30°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (3) EW 30°C; LW 35°C; ambient conditions: 2°CDB/1°CWB (4) EW 30°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (5) EW 40°C; LW 45°C; ambient conditions: 7°CDB/6°CWB (5) EW 40°C; LW 45°C; ambient conditions: 7°CDB/6°CWB (6) EW 40°C; LW 45°C; ambient conditions: 7°CDB/6°CWB (8) EW 23°C; LW18°C; ambient conditions: 35°C (9) EW 12°C; LW 7°C; LW 7°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (8) EW 30°C; LW 35°C; ambient conditions: 7°C

EHBH16CV3 PRELIMINARY DATA	EHBH16CV3 PRELIMINARY DATA	EHBH16CV3 PRELIMINARY DATA	EHBH16CW9 PRELIMINARY DATA	EHBH16CW9 PRELIMINARY DATA	EHBH16CW9 PRELIMINARY DATA
S5730 WIT / RAL7037					
880x480x350	880x480x350	880x480x350	880x480x350	880x480x350	880x480x350
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
18~55	18~55	18~55	18~55	18~55	18~55
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
25~50	25~50	25~50	25~50	25~50	25~50
e e	-	=	-	-	-
e e	-	=	-	=	-
3V	3V	3V	9W	9W	9W
1~	1~	1~	1~/3~	1~/3~	1~/3~

ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA	ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA		
-	-	-	-	-	-		
11,21/11,202/8,563/8,004/11,005/8,516/6,447	14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,70 <sup>1</sup> / 16,00 <sup>2</sup> /11,10 <sup>3</sup> / 9,25 <sup>4</sup> /15,20 <sup>5</sup> / 10,90 <sup>6</sup> / 9,20 <sup>7</sup>	11,21 / 11,202 / 8,563 / 8,004 / 11,005 / 8,516 / 6,447	14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,70 <sup>1</sup> / 16,00 <sup>2</sup> / 11,10 <sup>3</sup> / 9,25 <sup>4</sup> / 15,20 <sup>5</sup> / 10,90 <sup>6</sup> / 9,20 <sup>7</sup>		
-	-	-	-	-	-		
4,731 / 4,552 / 3,503 / 2,704 / 3,515 / 2,806 / 2,047	4,62 <sup>1</sup> / 4,40 <sup>2</sup> / 3,45 <sup>3</sup> / 2,70 <sup>4</sup> / 3,34 <sup>5</sup> / 2,75 <sup>6</sup> / 2,09 <sup>7</sup>	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107	4,731 / 4,552 / 3,503 / 2,704 / 3,515 / 2,806 / 2,047	4,621 / 4,402 / 3,453 / 2,704 / 3,345 / 2,756 / 2,097	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107		
1345x320x900	1345x320x900	1345x320x900	1345x320x900	1345x320x900	1345x320x900		
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35		
10~46	10~46	10~46	10~46	10~46	10~46		
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35		
3-6	3-6	3-6	3-6	3-6	3-6		
64	64	66	64	64	66		
64	66	69	64	66	69		
51	51	52	51	51	52		
50	52	54	50	52	54		
V3/1~/-/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/1~/-/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-		

EHBX16CV3 PRELIMINARY DATA	EHBX16CV3 PRELIMINARY DATA	EHBX16CV3 PRELIMINARY DATA	EHBX16CW9 PRELIMINARY DATA	EHBX16CW9 PRELIMINARY DATA	EHBX16CW9 PRELIMINARY DATA
15,05 <sup>8</sup> / 11,72 <sup>9</sup>	16,068 / 12,559	16,768 / 13,129	15,058 / 11,729	16,068 / 12,559	16,768 / 13,129
S5730 WIT / RAL7037	S5730 WIT / RAL7037	S5730 WIT / RAL7037	S5730 WIT / RAL7037	S5730 WIT / RAL7037	S5730 WIT / RAL7037
880x480x350	880x480x350	880x480x350	880x480x350	880x480x350	880x480x350
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
18~55	18~55	18~55	18~55	18~55	18~55
10~46	10~46	10~46	10~46	10~46	10~46
5~22	5~22	5~22	5~22	5~22	5~22
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
25~50	25~50	25~50	25~50	25~50	25~50
-	-	-	-	-	-
-	-	-	-		-
3V	3V	3V	W1	W1	W1
1~	1~	1~	3N~	3N~	3N~

ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA	ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA
-	-	-	-	-	-
11,21 / 11,202 / 8,563 / 8,004 / 11,005 / 8,516 / 6,447	14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,70 <sup>1</sup> /16,00 <sup>2</sup> /11,10 <sup>3</sup> /9,25 <sup>4</sup> /15,20 <sup>5</sup> /10,90 <sup>6</sup> /9,20 <sup>7</sup>	11,21/11,202/8,563/8,004/11,005/8,516/6,447	14,4 <sup>1</sup> / 14,50 <sup>2</sup> ; 10,30 <sup>3</sup> / 8,50 <sup>4</sup> / 13,60 <sup>5</sup> / 10,10 <sup>6</sup> / 8,40 <sup>7</sup>	15,70 <sup>1</sup> / 16,00 <sup>2</sup> / 11,10 <sup>3</sup> 9,25 <sup>4</sup> / 15,20 <sup>5</sup> /10,90 <sup>6</sup> / 9,20 <sup>7</sup>
-	-	-	-	-	-
15,05 <sup>8</sup> / 11,72 <sup>9</sup>	16,068 / 12,559	16,768 / 13,129	15,05 <sup>8</sup> /11,72 <sup>9</sup>	16,068 / 12,559	16,768 / 13,129
4,73 <sup>1</sup> / 4,55 <sup>2</sup> / 3,50 <sup>3</sup> / 2,70 <sup>4</sup> / 3,51 <sup>5</sup> / 2,80 <sup>6</sup> / 2,04 <sup>7</sup>	4,621/4,402/3,453/2,704/3,345/2,756/2,097	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107	4,731 / 4,552 / 3,503 / 2,704 / 3,515 / 2,806 / 2,047	4,621 / 4,402 / 3,453 / 2,704 / 3,345 / 2,756 / 2,097	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107
3,39 <sup>8</sup> / 2,78 <sup>9</sup>	3,018; 2,519	2,76 <sup>8</sup> / 2,32 <sup>9</sup>	3,39 <sup>8</sup> / 2,78 <sup>9</sup>	3,018 / 2,519	2,76 <sup>8</sup> / 2,32 <sup>9</sup>
1345x320x900	1345x320x900	1345x320x900	1345x320x900	1345x320x900	1345x320x900
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
10~46	10~46	10~46	10~46	10~46	10~46
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
3-6	3-6	3-6	3-6	3-6	3-6
64	64	66	64	64	66
64	66	69	64	66	69
51	51	52	51	51	52
50	52	54	50	52	54
V3/ 1~/ -/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-

#### **HEATING ONLY**

INDOOR UNIT					EHVH04S18C3V PRELIMINARY DATA	EHVH08S18C3V PRELIMINARY DATA	EHVH08S26C9W PRELIMINARY DATA
Casing	Colour				S5730 White / RAL7037	S5730 White / RAL7037	S5730 White / RAL7037
Dimensions	Unit	HeightxWid	thxDepth	mm	1,700x600x740	1,700x600x740	1,700x600x740
Operation range	Heating	Ambient Min.~Max.		°C	-20~25	-20~25	-20~25
		Water side	Min.~Max.	°C	25~55	25~55	25~55
	Domestic hot	Ambient	Min.~Max.	°CDB	-20~35	-20~35	-20~35
	water	Water side	Min.~Max.	°C	25~55	25~55	25~55
Sound power level	Nom.			dBA	42	42	42
Sound pressure level	Nom. dBA		28 1	28 1	28 1		
Power supply	Name		V3	V3	9W		
	Phase				1~	1~	1~/3~

OUTDOOR UNIT				ERLQ004CV3 PRELIMINARY DATA	ERLQ006CV3 PRELIMINARY DATA	ERLQ008CV3 PRELIMINARY DATA
Heating capacity	Min.		kW	1.80 <sup>2</sup>	2.30 <sup>2</sup>	2.30 <sup>2</sup>
1	Nom.		kW	4.312/3.503/4.384/3.925/4.706	6.101 / 5.932 / 4.693 / 5.494 / 5.465 / 5.156	7.471 / 7.462 / 5.843 / 6.074 / 6.985 / 6.166
	Max.		kW	3.50 4	5.00 4	6.10 4
COP			1	4.722 / 3.813 / 2.794 / 3.545 / 2.296	4.801 / 4.572 / 3.623 / 2.724 / 3.415 / 2.216	4.64 <sup>1</sup> / 4.35 <sup>2</sup> / 3.44 <sup>3</sup> / 2.57 <sup>4</sup> / 3.37 <sup>5</sup> / 2.11 <sup>6</sup>
Dimensions	Unit	HeightxWidthxDepth	mm	735x825x300	735x825x300	735x825x300
Operation range	Heating	Min.~Max.	°CWB	-20~25	-20~25	-20~25
	Cooling	Min.~Max.	°CDB	10~43	10~43	10~43
	Domestic hot water	Min.~Max.	°CDB	-20~35	-20~35	-20~35
Refrigerant	Charge		kg	2	2	2
Sound power level	Heating	Nom.	dBA	61	61	62
	Cooling	Nom.	dBA	63	63	63
Sound pressure	Heating	Nom.	dBA	48	48	49
level	Cooling	Nom.	dBA	48	48	50
Power supply	Name/Phase/Fred	eguency/Voltage	Hz/V	V3/1~/-/-	V3/1~/-/-	V3/1~/-/-

(1) EW 30°C; LW 35°C; ambient conditions: 10°CDB (2) EW 30°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (3) EW 30°C; LW 35°C; ambient conditions: 2°CDB/1°CWB (4) EW 30°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (5) EW 40°C; LW 45°C; ambient conditions: 7°CDB/6°CWB (6) EW 40°C; LW 45°C; ambient conditions: 7°CDB/6°CW

#### **HEATING & COOLING**

INDOOR UNIT					EHVX04S18C3V PRELIMINARY DATA	EHVX08S18C3V PRELIMINARY DATA	EHVX08S26C9W PRELIMINARY DATA
Cooling capacity	Nom.			kW	5.60 <sup>8</sup> / 5.12 <sup>9</sup>	8.16 <sup>8</sup> / 5.86 <sup>9</sup>	8.37 <sup>8</sup> / 6.65 <sup>9</sup>
Casing	Colour				S5730 White / RAL7037	S5730 White / RAL7037	S5730 White / RAL7037
Dimensions	Unit	HeightxWidt	ıthxDepth	mm	1,700x600x740	1,700x600x740	1,700x600x740
Operation range	Heating	Ambient	Min.~Max.	°C	-20~25	-20~25	-20~25
[ '	[	Water side	Min.~Max.	°C	25~55	25~55	25~55
1	Cooling	Ambient	Min.~Max.	°CDB	10~43	10~43	10~43
1	1	Water side	Min.~Max.	°C	5~50	5~50	5~50
1	Domestic hot	Ambient	Min.~Max.	°CDB	-20~35	-20~35	-20~35
[	water	Water side	Min.~Max.	°C	25~55	25~55	25~55
Sound power level	Nom.			dBA	42	42	42
Sound pressure level	Nom.	Nom. dBA		dBA	28 1	28 1	28 1
Power supply	Name	Name			V3	V3	9W
1	Phase			-	1~	1~	1~/3~

OUTDOOR UNIT				ERLQ004CV3 PRELIMINARY DATA	ERLQ006CV3 PRELIMINARY DATA	ERLQ008CV3 PRELIMINARY DATA
Heating capacity	Min.		kW	1.80 <sup>2</sup>	2.30 <sup>2</sup>	2.30 <sup>2</sup>
	Nom.		kW	4.312/3.503/4.384/3.925/4.706	6.10 <sup>1</sup> / 5.93 <sup>2</sup> / 4.69 <sup>3</sup> / 5.49 <sup>4</sup> / 5.46 <sup>5</sup> / 5.15 <sup>6</sup>	7.471 / 7.462 / 5.843 / 6.074 / 6.985 / 6.166
	Max.		kW	3.50 4	5.00 4	6.10 4
Cooling capacity	Nom.		kW	7.04 <sup>8</sup> / 4.98 <sup>9</sup>	8.20 <sup>8</sup> / 6.16 <sup>9</sup>	8.20 <sup>8</sup> /6.65 <sup>9</sup>
COP				4.722 / 3.813 / 2.794 / 3.545 / 2.296	4.801/4.572/3.623/2.724/3.415/2.216	4.641 / 4.352 / 3.443 / 2.574/3.375/2.116
EER				3.21 <sup>8</sup> / 2.58 <sup>9</sup>	3.068 / 2.719	3.068/2.289
Dimensions	Unit	HeightxWidthxDepth	mm	735x825x300	735x825x300	735x825x300
Operation range	Heating	Min.~Max.	°CWB	-20~25	-20~25	-20~25
	Cooling	Min.~Max.	°CDB	10~43	10~43	10~43
	Domestic hot water	Min.~Max.	°CDB	-20~35	-20~35	-20~35
Refrigerant	Charge		kg	2	2	2
Sound power level	Heating	Nom.	dBA	61	61	62
	Cooling	Nom.	dBA	63	63	63
Sound pressure	Heating	Nom.	dBA	48	48	49
level	Cooling	Nom.	dBA	48	48	50
Power supply	Name/Phase/Fre	quency/Voltage	Hz/V	V3/1~/-/-	V3/1~/-/-	V3/1~/-/-

(1) EW 30°C; LW 35°C; ambient conditions: 10°CDB (2) EW 30°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (3) EW 30°C; LW 35°C; ambient conditions: 2°CDB/1°CWB (4) EW 30°C; LW 35°C; ambient conditions: 7°CDB/6°CWB (5) EW 40°C; LW 45°C; ambient conditions: 7°CDB/6°CWB (7) EW 23°C; LW 18°C; ambient conditions: 35°C (8) EW 12°C; LW 7°C; ambient conditions: 35°C

EHVH16S18CV3 PRELIMINARY DATA	EHVH16S18CV3 PRELIMINARY DATA	EHVH16S18CV3 PRELIMINARY DATA	EHVH16S26CW9 PRELIMINARY DATA	EHVH16S26CW9 PRELIMINARY DATA	EHVH16S26CW9 PRELIMINARY DATA
S5730 WIT / RAL7037					
1700x600x740	1700x600x740	1700x600x740	1700x600x740	1700x600x740	1700x600x740
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
18~55	18~55	18~55	18~55	18~55	18~55
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
25~55	25~55	25~55	25~55	25~55	25~55
=	-	-	-	-	-
W1	W1	W1	9W	9W	9W
3N~	3N~	3N~	1~/3~	1~/3~	1~/3~

ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA	ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA
-	-	-	-	-
14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,701 / 16,002 / 11,103 / 9,254 / 15,205 / 10,906 / 9,207	11,21 / 11,202 / 8,563 / 8,004 / 11,005 / 8,516 / 6,447	14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,701 / 16,002 / 11,103 / 9,254 / 15,205 / 10,906 / 9,207
-	-	-	-	-
4,621 / 4,402 / 3,453 / 2,704 / 3,345 / 2,756 / 2,097	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107	4,731 / 4,552 / 3,503 / 2,704 / 3,515 / 2,806 / 2,047	4,621 / 4,402 / 3,453 / 2,704 / 3,345 / 2,756 / 2,097	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107
1345x320x900	1345x320x900	1345x320x900	1345x320x900	1345x320x900
-20~35	-20~35	-20~35	-20~35	-20~35
10~46	10~46	10~46	10~46	10~46
-20~35	-20~35	-20~35	-20~35	-20~35
3-6	3-6	3-6	3-6	3-6
64	66	64	64	66
66	69	64	66	69
51	52	51	51	52
52	54	50	52	54
V3/ 1~/ -/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-
		PRELIMINARY DATA  - 144' / 1450' / 1030' / 850' / 1360' / 1010' / 840'   1570' / 1600' / 11,10' / 925' / 1520' / 1090' / 920'   462' / 440' / 3,45' / 2,70' / 3,34' / 2,75' / 2,09'   4,33' / 4,35' / 3,40' / 2,75' / 3,31' / 2,70' / 2,10'   1345x320x900   1345x320x900   -20~35   -20~35   10~46   10~46   10~46   -20~35   3-6   3-6   3-6   64   66   66   69   51   52   52   54	PRELIMINARY DATA	PRELIMINARY DATA  PRELIMINARY

| EHVX16S18CV3<br>PRELIMINARY DATA |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 15,058 / 11,729                  | 16,068 / 12,559                  | 16,768 / 13,129                  | 15,058 /11,729                   | 16,068 /12,559                   | 16,768 / 13,129                  |
| S5730 WIT / RAL7037              |
1700x600x740	1700x600x740	1700x600x740	1700x600x740	1700x600x740	1700x600x740
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
18~55	18~55	18~55	18~55	18~55	18~55
10~46	10~46	10~46	10~46	10~46	10~46
5~22	5~22	5~22	5~22	5~22	5~22
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
25~50	25~50	25~50	25~50	25~50	25~50
=	-	-	-	-	-
	-	-	-	-	-
3V	3V	3V	W1	W1	W1
1~	1~	1~	3N~	3N~	3N~

ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA	ERLQ11CV3 / ERLQ11CW1 PRELIMINARY DATA	ERLQ14CV3 / ERLQ14CW1 PRELIMINARY DATA	ERLQ16CV3 / ERLQ16CW1 PRELIMINARY DATA
-	-	-	-	-	-
11,21/11,201/8,563/8,004/11,005/8,516/6,447	14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,701 / 16,002 / 11,103 / 9,254 / 15,205 / 10,906 / 9,207	11,21 / 11,202 / 8,563 / 8,004 / 11,005 / 8,516 / 6,447	14,41 / 14,502 / 10,303 / 8,504 / 13,605 / 10,106 / 8,407	15,701 / 16,002 / 11,103 / 9,254 / 15,205 / 10,906 / 9,207
÷	-			-	
15,058 / 11,729	16,068 / 12,559	16,768/13,129	15,058/11,729	16,068 / 12,559	16,768/ 13,129
4,731 / 4,552 / 3,503 / 2,704 / 3,515 / 2,805 / 2,047	4,621 / 4,402 / 3,453 / 2,704 / 3,345 / 2,756 / 2,097	4,331 / 4,352 / 3,403 / 2,754 / 3,315 / 2,706 / 2,107	4,731 / 4,552 / 3,503 / 2,704 / 3,515 / 2,806 / 2,047	4,621 / 4,402 / 3,453 / 2,704 / 3,345 / 2,756 / 2,097	4,331 / 4,352 / 3,408 / 2,754 / 3,315 / 2,706 / 2,107
3,398 / 2,789	3,018 / 2,519	2,768 / 2,329	3,398 / 2,789	3,018 / 2,519	2,768 / 2,329
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
10~46	10~46	10~46	10~46	10~46	10~46
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
3-6	3-6	3-6	3-6	3-6	3-6
64	64	66	64	64	66
64	66	69	64	66	69
51	51	52	51	51	52
50	52	54	50	52	54
-	-	-	-	-	-
V3/1~/-/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/-/- / W1/3N~/-/-	V3/ 1~/ -/- / W1/3N~/-/-

## DOMESTIC HOT WATER TANK



STAINLESS STEEL DOMESTIC HOT WATER TANK			EKHWS150B3V3	EKHWS200B3V3	EKHWS300B3V3	EKHWS200B3Z2	EKHWS300B3Z2			
Casing	Colour					Neutral white				
	Material				Epoxy-coated mild steel					
Weight	Unit	Empty	kg	37	45	59	45	59		
Tank	Water volume	Water volume   I		150	200	300	200	300		
	Material	Material			Stainless steel (DIN 1.4521)					
	Maximum wat	Maximum water temperature		85						
Heat exchanger	Quantity			1						
	Tube material		Duplex steel LDX 2101							
Booster heater	Capacity kW		3							
Power supply	Phase/Frequer	ncy/Voltage	Hz/V	1~/50/230 2~/50/400			0/400			

ENAMELED STEEL DOMESTIC HOT WATER TANK			EKHWE150A3V3	EKHWE200A3V3	EKHWE300A3V3	EKHWE200A3Z2	EKHWE300A3Z2		
Casing	Colour					RAL9010			
	Material				Epoxy coated steel				
Weight	Unit	Empty	kg	80	104	140	104	140	
Tank	ank Water volume		1	150	200	300	200	300	
	Material			Enamel coated steel acc.DIN4753TL2					
	Maximum water temperature °C		75						
Booster heater	Capacity kW		3.0						
Power supply	Phase/Frequency/Voltage Hz/V		1~/50/230 2~/50/400			0/400			

## ROOM THERMOSTAT





WIRED ROOM THERMOSTAT				EKRTWA
Dimensions	Unit	Height/Width/ Depth	mm	87/125/34
Weight	Unit		g	215
Outdoor	Storage	Min./Max.	°C	-20/60
temperature	Operation	Min./Max.	°℃	0/50
Temperature	Heating	Min./Max.	°C	4/37
setting range	Cooling	Min./Max.	°C	4/37
Clock				Yes
Regulation function			Proportional band	
Power supply	Voltage	Voltage V		Battery powered 3* AA-LR6 (alkaline)
Connection	Type			Wired

WIRELESS ROOM T	HERMOSTAT			EKRTR1		
Dimensions	Thermostat	Height/Width/ Depth	mm	87/125/34		
	Receiver	Height/Width/ Depth	mm	170/50/28		
Weight	Thermostat		g	210		
	Receiver		g	125		
Outside	Storage	Min./Max.	°C	-20/60		
temperature	Operation	Min./Max.	°C	0/50		
Temperature	Heating	Min./Max.	°C	4/37		
setting range	Cooling	Min./Max.	°C	4/37		
Clock				Yes		
Regulation function	1			Proportional band		
Power supply	Thermostat	nermostat Voltage \		Battery powered 3x AA-LRG (alkaline)		
	Receiver	Voltage	V	230		
	Frequency		Hz	50		
	Phase			1~		
Connection	Thermostat			Wireless		
	Receiver			Wired		
Maximum distance	Indoor		m	approx.30m		
to receiver	Outdoor		m	approx.100m		

## SOLAR CONNECTION



SOLAR CONNECTION				EKSOLHWAV1
Dimensions	Unit	HeightxWidthxDepth	mm	770x305x270
Weight	Unit		kg	8
Operation range	Outdoor temperature	Min.~Max.	°C	1~35
Sound pressure level	Nom.		dBA	27
Thermal performance	Zero loss collector efficiency η0		%	-
Power supply Phase/Frequency/Voltage Hz/V		Hz/V	1~/50/220-240	
Power supply intake				Indoor unit

ACCESSORY				EKSR3PA		
Mounting				On wall		
Dimensions	Unit	HeightxWidthxDepth	mm	332x230x145		
Thermal performance	Zero loss coll	Zero loss collector efficiency η0 %		·		
Control	Type	Type		Digital temperature difference controller with plain text display		
	Power consu	Power consumption W		2		
Sensor	Solar panel te	emperature sensor		Pt1000		
	Storage tank sensor			PTC		
	Return flow sensor			PTC		
	Feed temperature and flow sensor			Voltage signal (3.5V DC)		
Power supply	Frequency;Vo	ltage	Hz;V	/50/230		

#### SOLAR COLLECTOR



SOLAR COLLECTOR				EKSV26P	EKSH26P	
Dimensions	Unit	HeightxWidthxDepth	mm	2,000x1,300x85	1,300x2,000x85	
Weight	Unit		kg	4	3	
Volume			1	1.7	2.1	
Surface	Outer		m²	2.6	501	
	Aperture		m²	2.3	64	
	Absorber		m²	2.3	54	
Coating				Micro-therm (absorption max	x.96%, Emission ca. 5% +/-2%)	
Absorber				Harp-shaped copper pipe register with laser-w	relded highly selective coated aluminium plate	
Glazing				Single pane safety glass, transmission +/- 92%		
Allowed roof angle	Min.~Max.		0	15~80		
Operating pressure	Max.		bar	6		
Stand still temperature	Max.		℃	20	00	
Thermal	Zero loss collecto	or efficiency η0	%	78	3.7	
performance	Heat loss coeffici	ient a1	W/m².K	4.2	70	
	Temperature dependence of the heat loss coefficient a2		W/m².K²	0.0	070	
	Thermal capacity	y	kJ/K	6	5	
Incident angle AM at 50° modifier			0.94			
Installed position				Vertical	Horizontal	

#### HEAT PUMP CONVECTOR



INDOOR UNITS				FWXV20AVEB	FWXV15AVEB	
Heating capacity	Total capacity	Nom.	kW	2.0	1.5	
Cooling capacity	Total capacity	Nom.	kW	1.7	1.2	
	Sensible capacity	Nom.	kW	1.4	0.98	
Power input	Heating	Nom.	kW	0.015	0.013	
	Cooling	Nom.	kW	0.015	0.013	
Dimensions	Unit	Height/Width/ Depth	mm	600/76	00/210	
Weight	Unit		kg	1	5	
Piping connections	Drain/OD/Inlet/Outlet mm/			18/G 1/2/G 1/2		
Sound pressure	Heating	Nom.	dBA	29	19	
level	Cooling	Nom.	dBA	29	19	
Power supply	Phase/Frequency/Voltage Hz/V		Hz/V	1~/50/60/220-240/220		



## Notes





# Daikin **Altherma**



Daikin is known worldwide as one of the biggest AC players, with a wide product range for residential, commercial and industrial applications

## Daikin Altherma is the market creator of the air-to-water heat pump business

- first inverter-driven split low-temperature heat pump system
- first heat pump system for true high-temperature applications
- first inverter-driven split heat pump system for apartment and commercial applications
- full range of heating solutions for any kind of application, including solar collectors, domestic hot water tanks, under-floor heating, heat pump convector etc.

## Daikin Altherma is the reference on quality and reliability

- 50 years of heat pump experience
- 6 years of air-to-water heat pump experience
- Daikin Altherma is the most sold air-to-water heat pump system throughout Europe, with over 150,000 systems sold

#### A clean environment

In producing your customer's climate-control system, we strive for sustainable energy consumption, product recycling and waste reduction. Daikin rigorously applies the principles of eco-design, thus restricting the use of materials that are harmful to our environment



Daikin's unique position as a manufacturer of ai conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become For several years Jankin has had the intention to Decome a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction

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