# AQUACIAT$^{POWER\ TM}$ LD/ILD

Water chiller & heat pump

## *The high-performance single unit solution now available with R-32*

*Compact and silent*

*Scroll compressors*

*High-efficiency brazed-plate heat exchangers*

*Self-adjusting electronic control*

*Cooling capacity: 170 to 940 kW*

*Heating capacity: 160 to 1040 kW*

**Cooling and heating** | **Hydraulic module** | **Heat recovery** | ErP READY 2021 | R-32

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

## USE

The new generation of **AQUACIAT$^{POWER\ TM}$** high-efficiency air-to-water heat pumps and water chillers offers an optimal solution for all heating and cooling applications used for the Healthcare, Office, and Hotel sectors.

These units are designed for outdoor installation and require no special protection against adverse weather conditions.

**AQUACIAT$^{POWER\ TM}$** is optimised for R-32, the environmentally-responsible fluid with the lowest GWP.

This range guarantees compliance with the most demanding requirements for increased seasonal energy efficiency (SEER and SCOP) and $CO_2$ reduction to comply with the various applicable European directives and regulations.

### Self-regulating operation to adapt to seasonal variations and requirements

With exceptional SEER and SCOP seasonal energy efficiency levels, the **AQUACIAT$^{POWER\ TM}$** range offers the best technology combined with savings throughout the year.

Due to climatic variations and the different air-conditioning needs of tertiary buildings, most of the time water chillers and heat pumps run at part load.

Equipped with multiple compressors, **AQUACIAT$^{POWER\ TM}$** units automatically adjust the cooling capacity, anticipating variations in load and starting only the number of compressors needed to ensure optimum operation and energy efficiency.

The optional variable-speed fan motors guarantee even better results.

Thanks to their exceptional thermodynamic performance, provided by a radical selection of components, an electronic expansion valve as standard, and a specific control function, standard **AQUACIAT$^{POWER\ TM}$** units reach a high level of seasonal efficiency in cooling mode (SEER) and in heating mode (SCOP).

### Acoustic comfort

With different levels of sound equipment available, the **AQUACIAT$^{POWER\ TM}$** range guarantees the acoustic comfort of occupants and meets the needs of the most sensitive environments, including hotels, offices and hospitals.

### Quick, simple installation

With a wide variety of connection accessories and equipment, the **AQUACIAT$^{POWER\ TM}$** range is quick and simple to install.

The advanced controller functions and different communication protocols enable local control via CMS/BMS or remote control, providing building management with peace of mind.

OFFICES | HOTELS | HEALTHCARE | INDUSTRY

## GLOBAL SYSTEM SOLUTIONS

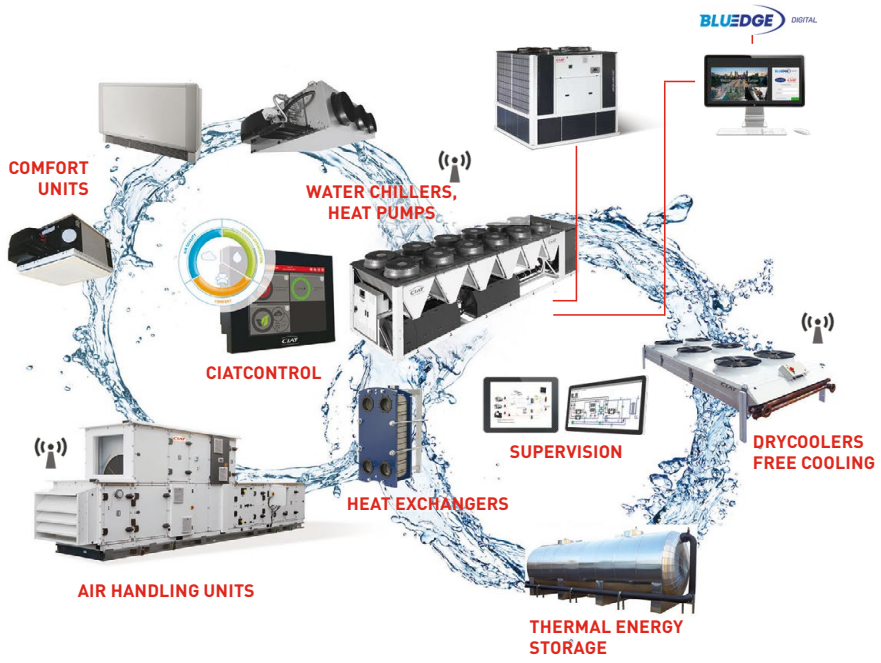
As an expert on customised HVAC solutions, CIAT works to improve the well-being of individuals in their living areas or places of work. Aware of the thermal, energy and air quality issues faced today by every sector of activity, CIAT has responded by developing global systems based on an adapted and efficient combination of products. The latest-generation **AQUACIATPOWER ™** with a low environmental footprint is part of our sustainable development process.

### Global energy systems based on the water loop for heating, cooling and indoor air quality

To comply with today's thermal and environmental regulations, CIAT designs optimised energy systems based on the water loop comprised of comfort units, heat pumps such as **AQUACIATPOWER ™** and dual-flow air handling units. As a renewable resource and a highly effective energy transfer fluid, water not only represents an excellent alternative to direct expansion systems, it also meets F-Gas regulations in terms of confinement and limitation of refrigerants within buildings.

### Benefits of the water loop

- **More competitive:** equipment that is more cost effective and requires less maintenance than direct expansion systems.
- **Greater comfort:** flexible, precise control of occupant comfort.
- **Greater energy efficiency:** the homogeneity and the thermal stability of water reduce the energy requirements for transferring heat.
- **Environmentally sustainable:** no refrigerant is required on the premises and only a small amount is used in the heat pump installed outside the building's occupied spaces.
- **Easy to install:** no refrigerant specialists are required during installation.
- **Flexibility:** an energy system based on the water loop adapts easily to the configuration of buildings and the changes that may be made to spaces over time.




## RANGE

### AQUACIATPOWER ™ LD/ILD series

In the LD water chiller & ILD standard reversible heat pump versions, **AQUACIATPOWER ™** units are optimised to meet the most demanding technical and economic requirements.

### Units with nominal high energy performance (option)

In this configuration, the **AQUACIATPOWER ™** unit is optimised for full-load applications for which an optimum EER and COP value is required. In this case, the machine is equipped with high-speed fans enabling nominal efficiency and a broader application range.

### Units equipped with variable-speed fans (option)

High seasonal energy efficiency version.

In this configuration, the **AQUACIATPOWER ™** unit is optimised for partial load applications for which an optimum SEER and SCOP value is required. In this case, the machine is equipped with variable-speed fans, optimising the partial load efficiency throughout the year.

## Description

**AQUACIAT POWER ™** units are packaged machines supplied as standard with the following components:
- Hermetic SCROLL compressors
- Brazed-plate condenser or evaporator water type heat exchanger
- All-aluminium micro-channel condenser (LD) or evaporator air-cooled exchanger, copper tube coil with aluminium fins (ILD) and axial fan motor assembly
- Electrical power and remote control cabinet:
  - 400 V-3ph-50 Hz (+/-10%) mains power supply + earth
  - transformer fitted as standard on the machine for supplying the remote control circuit with 24 V
- Connect Touch electronic control module
- Casing for outdoor installation

The entire **AQUACIAT POWER ™** range complies with the following EC directives and standards:
- Machinery directive 2006/42/EC.
- Electromagnetic compatibility directive 2014/30/EC
- Safety of machinery: Electrical equipment of machines EN 60204-1
- EMC immunity and emissions EN 61800-3 'C3'
- Regulation (EC) No. 1907/2006 REACH

Pressure equipment directive (PED) 2014/68/EU
- Refrigerating systems and heat pumps EN 378-2
- Regulation (EU) No. 813/2013 implementing Directive 2009/125/EC with regard to ecodesign requirements (Heat pump)
- Regulation (EU) No. 2016/2281 implementing Directive 2009/125/EC with regard to ecodesign requirements (Chiller)

## Configuration

| | **Energy versions** | |
|---|---|---|
| **Acoustic versions** | **High outdoor temperature** option | **Nominal high performance** option |
| | **AQUACIAT POWER ™**<br>**Standard**<br>(AC motor fans) | **AQUACIAT POWER ™**<br>**Seasonal high-performance version**<br>(Optional AC motor fans + Inverter<br>or<br>EC motor fans) |
| | **Very Low Noise** option | **Very Low Noise** option |
| | **Ultra Low Noise** option | **Ultra Low Noise** option |

# CUSTOMER BENEFITS

## Environmental responsibility

**We are committed to meeting your strictest environmental requirements.**

We focus our energies on making our products ever more efficient and environmentally friendly.

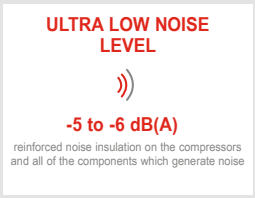
**AQUACIATPOWER TM** R-32 exceeds the requirements of Ecodesign 2021.

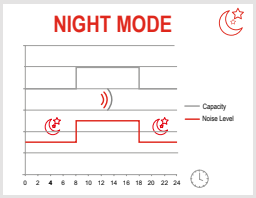
ErP READY 2021 | R-32 | SEER UP TO 5,33

## User comfort

**We guarantee acoustic comfort for your users.**

Thanks to fans with low noise levels installed as standard and the noise reduction technologies integrated into the new **AQUACIATPOWER TM** range, we can guarantee a level of acoustic comfort which meets the expectations of your users, even in night mode.




## Simplicity

**To save you time, we guarantee easy installation and integration in the building management system.**

- No machine room required for the pumps and other accessories thanks to the hydraulic module option.
- Optimum use of the surface area for easy integration into an existing building.
- Quick, easy installation and system start-up.
- Packaged solution for quick start-up and reliable installation.
- Communication with all types of building management system (BMS) via Modbus protocol available as standard, or optional LON or BACNET protocols.

## Reliability

**We use state-of-the-art monitoring solutions to guarantee complete reliability for your equipment.**

BluEdge® Digital* lets you track and monitor your CIAT equipment.

- Data extraction in real time via customised access to the BluEdge® Digital website (controller dashboard, temperature/event curve, fault memory and alerts and parameter history).
- Email alert.
- Analysis and recommendations from CIAT experts

## Energy savings

**We develop solutions to enable substantial savings while protecting the environment and guaranteeing user comfort.**

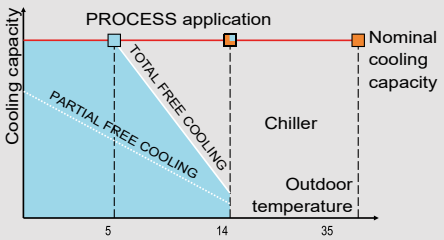
Heat recovery options can be used to produce free additional hot water at a high temperature. This hot water can be used to prepare domestic hot water for heating swimming pools, spas and hot tubs.

30% energy

| | | |
|---|---|---|
| 100 % | | Chilled or hot water production |
| + | | |
| 25 % | 80° | Domestic hot water production |
| or | | |
| 100 % | 65° | Hot water production |

The free cooling option is used to provide significant energy savings for all for applications which require cooling all year round or during the night, particularly in cold regions.

In these regions, free cooling is a very effective and environmentally-friendly means of meeting a large proportion of the cooling requirements.



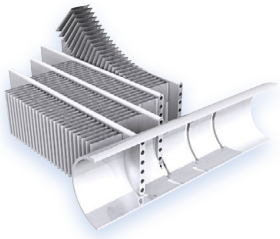

**FREE COOLING: The economical cooling solution**

* BluEdge® Digital is the new name for CIATM2M. The technology remains unchanged.

## Main components

MICRO-CHANNEL COIL, LD COOLING ONLY VERSION

COPPER-ALUMINIUM COIL, ILD HEAT PUMP VERSION



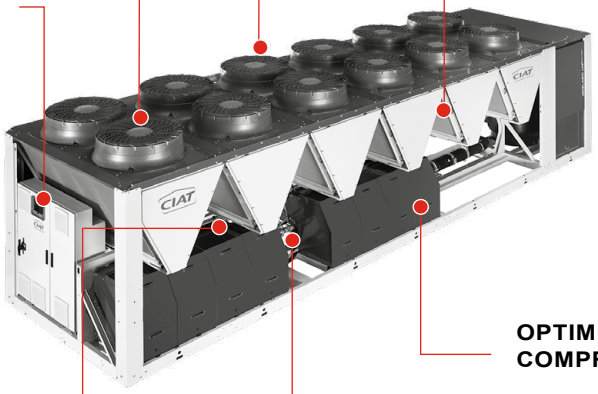
FAN SPIGOT MADE FROM COMPOSITE MATERIAL

FIXED-SPEED FANS (STANDARD)
VARIABLE-SPEED FANS
(INVERTER OR EC MOTOR OPTION)

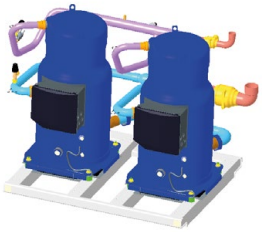
HYDRAULIC MODULE OPTION WITH OR WITHOUT BUFFER TANK

VARIABLE OR FIXED SPEED PUMP

CONNECT TOUCH CONTROL

OPTIMISED SCROLL COMPRESSORS



R-32

ASYMMETRICAL BRAZED-PLATE HEAT EXCHANGER

ELECTRONIC EXPANSION VALVE

# DESCRIPTION OF THE MAIN COMPONENTS

## Compressors
- hermetic SCROLL type
- electronic motor overheating protection
- crankcase heater
- mounted on anti-vibration mounts

## Water type heat exchanger
- asymmetrical brazed-plate heat exchanger
- plate patterns optimised for high efficiency
- 19 mm armaflex thermal insulation

## Air-cooled exchanger
- liquid chiller: air-cooled exchanger, all-aluminium, micro-channels
- heat pump: air-cooled exchanger, copper tube coil, aluminium fins
- propeller fans with composite blades offering an optimised profile with fixed-speed or variable-speed according to the model, variable-speed option using frequency inverter or EC motor
- motors – IP 54, class F

## Refrigerating accessories
- dehumidifier filters with rechargeable cartridges
- hygroscopic sight glasses
- electronic expansion valves
- service valves on the liquid line
- four-way reverse cycle valve in cooling/heating mode

## Control and safety instruments
- low and high pressure sensors
- safety valves on refrigerant circuit
- water temperature control sensors
- evaporator antifreeze protection sensor
- factory-fitted evaporator water flow controller

## Electrical cabinet
- electrical cabinet with IP 54 protection rating
- a connection point without neutral
- front-mounted main safety switch with handle
- control circuit transformer
- 24 V control circuit
- fan and compressor motor circuit breaker
- fan and compressor motor contactors
- Connect Touch microprocessor-controlled electronic control module
- wire numbering
- marking of the main electrical components

## Casing
Casing made from RAL 7035 light grey & RAL 7024 graphite grey painted panels

## Connect Touch control module
- user interface with 4.3-inch touch screen
- Intuitive, user-friendly navigation using icons
- clear text display of information available in 7 languages (FR-EN-DE-ES-I-PT-NL)


The electronic control module performs the following main functions:
- Regulation of the chilled water temperature (at the return or at the outlet)
- Control of the water temperature based on the outdoor temperature (water law)
- Control for low temperature energy storage
- Management of a second setpoint
- Complete management of the compressors with start-up sequence, timer and runtime balancing
- Self-adjusting and proactive functions with adjustment of settings on drift control
- In-series staged power control system on the compressors according to the thermal requirements
- Management of compressor short-cycle protection
- Frost protection (exchanger heater option)
- Compressor phase reversal protection
- Optimised defrosting with free defrost function to optimise part-load performance and the SCOP
- Management of occupied/unoccupied modes (according to the time schedule)
- Compressor and pump runtime balancing
- Management of the machine operation limit according to outdoor temperature
- Sound level reduction device (night mode according to the user programme) with limitation of compressor capacity and fan speed
- Diagnosis of fault and operating statuses
- Management of a fault memory allowing a log of the last 50 incidents to be accessed, with an operating reading taken when the fault occurs
- Blackbox memory
- Master/slave management of the two machines in parallel with runtime balancing and automatic changeover if a fault occurs on one machine
- Weekly and hourly time schedule for the machine, including 16 periods of absence
- Pump standby based on demand (energy saving)
- Calculation of the water flow rate and operating pressure (hydraulic module version)
- Electronic adjustment of the water pump speed and water flow rate (variable-speed pump option)
- Display of all machine parameters (3 access levels, User/Maintenance/Factory, password-protected): temperature, setpoints, pressures, water flow rate (hydraulic version), runtime.
- Display of trend curves for the main values
- Storage of maintenance manual, wiring diagram and spare parts list.
- Innovative smart energy monitoring, providing users with smart data such as real-time electrical energy consumption and heating and cooling capacity, and instantaneous and average energy efficiency rates.

# DESCRIPTION OF THE MAIN COMPONENTS

## Remote management

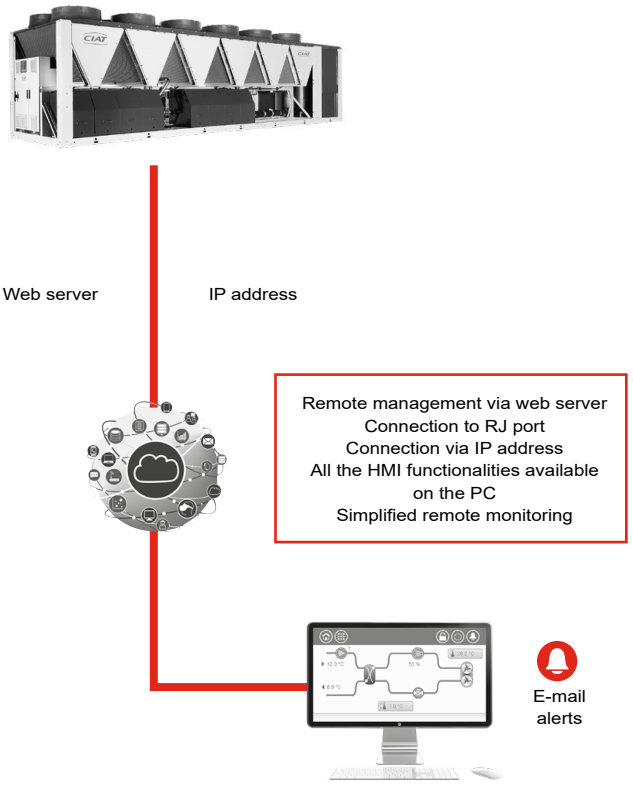
Connect Touch is equipped as standard with an RS485 port and an ETHERNET (IP) connection, offering a range of options for remote management, monitoring and diagnostics.

Using the integrated Webserver, a simple internet connection uses the unit's IP address to access the Connect Touch interface on the PC, facilitating everyday management tasks and maintenance operations.

A range of communication protocols are available: MODBUS/JBUS RTU (RS485) or TC/IP as standard, LONWORKS – BACNET IP (BTL certified) as an option, enabling most CMS/BMS to be integrated

Several contacts are available as standard, enabling the machine to be controlled remotely by wired link:
- Automatic operation control: when this contact is open, the machine stops
- Heating/cooling mode selection
- Setpoint 1/setpoint 2 selector: when this contact is closed, a second cooling setpoint is activated (energy storage mode, for example)
- Power limitation: closing the contact concerned allows the power or refrigerating consumption of the machine to be limited by stopping one or more compressors (this limit can be set with a parameter)
- Fault reporting: this contact indicates the presence of a major fault which has caused one or both refrigerant circuits to stop
- Operational status reporting indicates that the unit is in production mode.
- Activation control for partial energy heat recovery unit using the desuperheater.
- Switch control for the customer pump, external to the machine (on/off).

Contacts available as an option:
- Setpoint adjustable via 4-20 mA signal: this input is used to adjust the setpoint in COOLING mode
- On/off control for a boiler
- 4-stage on/off management for additional heaters
- Power limitation adjustable by 4-20 mA signal
- Second power limitation level
- Power indication: analogue output (0-10 V) providing an indication of the unit's load rate.
- User fault reporting, enables integration of a fault in the water loop
- General fault reporting: this contact indicates that the unit has stopped completely
- Alert reporting: this contact indicates the presence of a minor fault which did not cause the refrigerant circuit in question to stop.
- End of storage signal: enables return to the second setpoint at the end of the storage cycle
- Schedule override: closing this contact cancels the time schedule.
- Desuperheater activation control
- Desuperheater pump On/Off control.




## Maintenance

Connect Touch has two maintenance reminder functions as standard, making users aware of the need to regularly perform maintenance operations and to guarantee the service life and performance of the unit. These two functions can be activated independently.

A reminder message appears on the unit's HMI screen, and stays there until it is acknowledged by the maintenance operator. The information and alert relating to these functions are available on the communication bus to be used on the CMS/BMS.

- The scheduled maintenance reminder: when activated, this function enables the period between two maintenance inspections to be set. This period may be set by the operator in either days, months or operating hours, depending on the application.
- The compulsory F-GAS sealing test maintenance reminder: when activated, this function, which is the default factory setting, enables the period between two sealing tests to be selected, according to the unit's refrigerant charge, in compliance with the F-GAS regulations.

R-32

# ENVIRONMENTAL RESPONSIBILITY

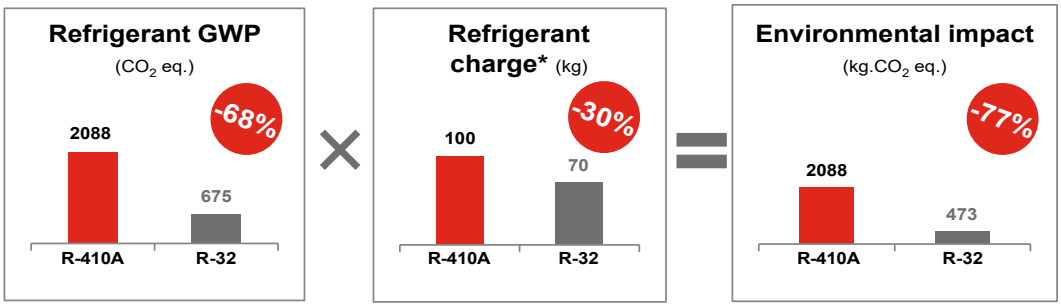
The **AQUACIAT POWER ™** contributes to sustainable development via an environmentally responsible approach, aimed at balancing ecological and economic concerns. This enables it to meet the requirements of future European thermal regulations and to protect our environment for future generations.

The impact of an air conditioning system on global warming of the planet is in large part caused by $CO_2$ emissions released into the atmosphere when the electricity required to power the unit is produced (indirect effect) and in small part by $CO_2$ emissions linked to uncontrolled emissions of refrigerant with global warming potential into the atmosphere (direct effect).

With **AQUACIAT POWER ™**, it's a win-win situation: its low charge of R-32 refrigerant with low GWP reduces the direct environmental impact by 80% while reducing the indirect environmental impact thanks to its high energy performance.

## ■ 77% reduction in the direct environmental impact (refrigerant)

This performance is the result of the high-quality components used, which have all been rigorously selected:
- R-32 refrigerant with low environmental impact (Ozone depletion potential = 0, Global warming potential = 675)
- Aluminium micro-channel coil on LD chiller versions with a 40% reduction in refrigerant charge compared to a conventional coil
- New generation of copper tube coil-aluminium fins on ILD heat pump versions with a 30% reduction in refrigerant charge compared to a conventional coil
- Asymmetrical brazed-plate heat exchanger (BPHE) with a reduction in the refrigerant charge compared to a shell and tube heat exchanger
- Systematic tightness check of units in leak detection cabinets at end of line production




**To conclude, the potential direct impact of AQUACIAT POWER ™ on the environment with R-32 refrigerant is reduced by 77% compared to the previous generation R-410A.**

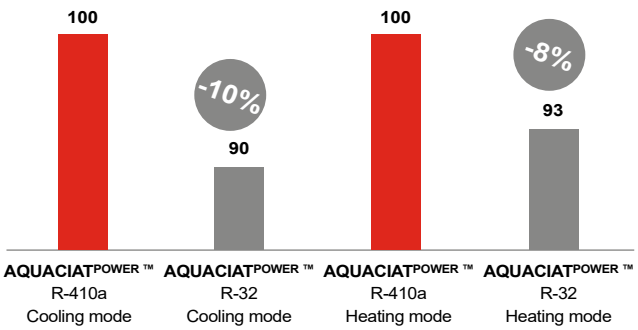
## ■ Reduced indirect environmental impact (Energy)

The high energy performance offered by **AQUACIAT POWER ™** R-32 enables energy consumption to be greatly reduced, therefore reducing energy bills for the user whilst reducing the unit's carbon footprint.

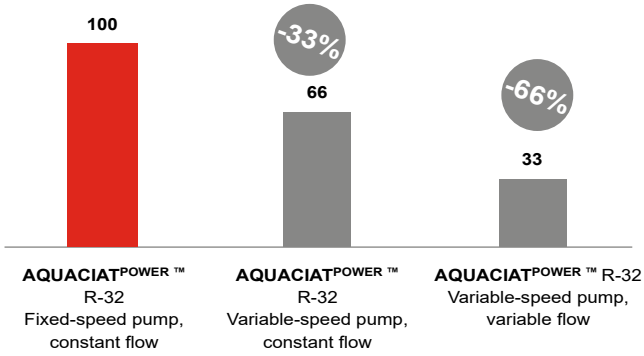
The seasonal efficiency of **AQUACIAT POWER ™** R-32 in cooling mode is 10% greater than the previous version with R-410A and 6% greater in heating mode.

In addition, the **AQUACIAT POWER ™** unit with R-32 refrigerant can be equipped with a variable-speed pump with constant or variable water flow control to significantly reduce pumping energy costs.

**Energy consumption level during operation (kWh index)**




**Pump energy consumption (kWh index)**



R-32

# ENVIRONMENTAL RESPONSIBILITY

This performance is the result of the high-quality components used, which have all been rigorously selected:
- R-32 refrigerant with high energy performance,
- New generation of scroll compressors optimised for R-32 refrigerant
- Asymmetrical brazed-plate heat exchanger with extremely low water-side pressure drops enabling a reduction in pump electricity consumption
- Optional variable-speed pump enabling automatic adjustment of the rated water flow rate (disposal of the control valve), during operation and during unit shut down periods.

**To conclude, the AQUACIAT POWER ™ unit with R-32 refrigerant and variable-speed pump greatly reduces the indirect environmental impact compared to the previous generation R-410A.**

## EcoPassport®

The PEP ecopassport® programme provides an international reference framework for procedures enabling manufacturers to report the environmental specifications of their products in the form of an environmental claim known as a Product Environmental Profile (PEP).

The PEP ecopassport® programme guarantees that PEPs are correctly drawn up, verified and reported in line with the requirements of the ISO 14025 and IEC/PAS 62545 standards.

The Life Cycle Analysis (LCA) PEP is the environmental identity card for an item of equipment which details the environmental impacts of the product during its life cycle according to eight mandatory indicators:

1. Global Warming Potential
2. Impact on the ozone layer
3. Acidification of soil and water
4. Eutrophication of water
5. Photochemical ozone creation
6. Abiotic resource depletion
7. Fresh water consumption
8. Total use of primary energy during the life cycle

Products with certified environmental profiles are used to support methods to assess building sustainability such as BREEAM, LEED. BREEAM, LEED gives additional recognition for materials with robust environmental product declaration types using manufacturer data.

CIAT is the first HVAC manufacturer to provide the PEP for liquid chillers and heat pumps including not only the 8 mandatory indicators, but all 27 indicators.

The **AQUACIAT POWER ™** LD PEP can be downloaded from the PEP ecopassport® website: http://www.pep-ecopassport.org/fr/

## AVAILABLE OPTIONS

| Options | Description | Advantages | LD | ILD |
|---|---|---|---|---|
| Corrosion protection, traditional coils | Fins made of pre-treated aluminium (polyurethane and epoxy) | Improved corrosion resistance, recommended for moderate marine and urban environments | No | ● |
| Low-temperature brine solution | Low temperature chilled water production down to -15 °C with ethylene glycol and down to -12 °C with propylene glycol. | Covers specific applications such as ice storage and industrial processes | ● | No |
| XtraFan | Unit equipped with specific variable-speed fans: XtraFans (See specific chapter for maximum available static pressure according to size), each fan equipped with a connection flange and flexible sleeves | Ducted fan discharge, optimised fan speed control, based on the operating conditions and system characteristics | ● | ● |
| Very Low Noise | Acoustic compressor enclosure and low-speed fans | Noise level reduction for sensitive sites | ● | ● |
| Ultra Low Noise | Acoustic compressor enclosure, low-speed fans and enhanced sound insulation of main noise sources | Noise level reduction for sensitive sites | ● | ● |
| High ambient temperature | Unit equipped with a higher speed fan | Unit operating range extended to higher ambient temperatures | ● | ● |
| Protection grilles | Metallic protection grilles | Coil protection against possible impact | ● | ● |
| Soft starter per compressor | Electronic starter on each compressor | Reduced start-up current | ● | ● |
| Soft starter per circuit | Soft starter on each circuit | Economical solution for reduced start-up current | ● | ● |
| All year round cooling operation down to -20 °C | Fanspeed control via frequency converter | Stable unit operation when the outdoor air temperature is between 0 °C and -20 °C | ● | ● |
| Water exchanger frost protection | Electric heater on the water type heat exchanger and the water duct | Water type heat exchanger module frost protection for an outdoor air temperature between 0 °C and -20 °C | ● | ● |
| Exchanger & hydraulic module frost protection | Electrical heaters on the water type heat exchanger, water pipes, hydraulic module and expansion tank | Water type heat exchanger and hydraulic module frost protection down to an outdoor air temperature of -20 °C | ● | ● |
| Exchanger & hydraulic module frost protection | Electrical heaters on the water type heat exchanger, water pipes, hydraulic module and optional expansion tank and buffer tank | Water type heat exchanger and hydraulic module frost protection down to an outdoor air temperature of -20 °C | ● | ● |
| Water collection vessel frost protection | Electric heater on the water collection vessel pipes | Water collection vessel frost protection down to an outdoor temperature of -20 °C | No | 2300R-4000R |
| Partial heat recovery | Unit equipped with one desuperheater on each refrigerant circuit | Production of free high-temperature hot water simultaneously with chilled water production (or hot water for heat pump) | ● | ● |
| Total heat recovery | Unit equipped with additional heat exchanger in series with the condenser coils. | Production of free hot water, adjustable on demand | ● | No |
| Master/slave operation | Unit equipped with supplementary water outlet temperature sensor kit (to be field installed) allowing master/slave operation of two units connected in parallel | Optimised operation of two units connected in parallel operation with runtime balancing | ● | ● |
| Compressor suction and discharge valves | Shut-off valves on the common compressor suction and discharge pipes | Simplified maintenance. Possibility to store the refrigerant charge in the cooler or condenser side during servicing | ● | ● |
| Evaporator single HP pump | Evaporator hydraulic module equipped with high pressure fixed-speed pump, drain valve, air vent and pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included); option with built-in hydraulic safety components available) | Quick and easy installation (plug & play) | 0602R-1400R | 0602R-2000R |

● ALL MODELS
Refer to the selection tool to find out which options are not compatible.

## AVAILABLE OPTIONS

| Options | Description | Advantages | LD | ILD |
|---|---|---|---|---|
| HP dual-pump hydraulic module | Dual high pressure water pump, water filter, electronic water flow rate control, pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included; option with built-in hydraulic safety components available) | Quick and easy installation (plug & play) | 0602R-1400R | 0602R-2000R |
| LP single-pump hydraulic module | Single low pressure water pump, water filter, electronic water flow rate control, pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included; option with built-in hydraulic safety components) | Quick and easy installation (plug & play) | 0602R-1400R | 0602R-2000R |
| LP dual-pump hydraulic module | Dual low pressure water pump, water filter, electronic water flow control, pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included; option with built-in hydraulic safety components) | Quick and easy installation (plug & play) | 0602R-1400R | 0602R-2000R |
| HP evap. variable-speed single-pump | Evaporator hydraulic module equipped with high-pressure variable-speed pump, drain valve, air vent and pressure sensors. For more details, refer to the dedicated chapter (expansion tank not included; option with built-in hydraulic safety components available.) | Quick and easy installation (plug & play), significant reduction in pumping energy consumption level (more than two-thirds), precise water flow control, improved system reliability | ● | ● |
| Variable-speed dual high-pressure pump | Dual high pressure water pump with speed regulator, pressure sensors. Multiple water flow rate control options. For more details, refer to the dedicated section. | Quick and easy installation (plug & play), significant reduction in pumping energy consumption level (more than two-thirds), precise water flow control, improved system reliability | ● | ● |
| High nominal energy efficiency | Higher air flow through the condenser coils improving heat exchange efficiency on the condenser | Energy cost reduction and extended operating envelope (full load operation at higher air temperature) | ● | ● |
| High seasonal energy efficiency (VSD) | Unit equipped with variable-speed fans (VSD) | Enhances the unit seasonal energy efficiency performance and reduces the noise emission thanks to a smooth fan speed variation. | 0602R-1400R | ● |
| High seasonal energy efficiency (EC) | Variable-speed fans with EC motors | Enhances the unit seasonal energy efficiency performance and reduces the noise emission thanks to a smooth fan speed variation. | ● | ● |
| High energy efficiency underfloor heating/cooling application | Optimisation of the refrigerant circuit and control for the underfloor heating/cooling system application | Improvement of performance and reduction of energy costs for the underfloor heating/ cooling application | No | ● |
| Lon gateway | Two-directional communication board complying with Lon Talk protocol | Connects the unit by communication bus to a centralised building management system | ● | ● |
| Bacnet over IP | Two-directional high-speed communication using BACnet protocol over Ethernet network (IP) | Easy and high-speed connection by Ethernet line to a BMS. Allows access to multiple unit parameters | ● | ● |
| Energy management module | EMM Control board with additional inputs/outputs. See Energy Management Module section | Extended remote control capabilities (setpoint reset, ice storage end, demand limits, boiler on/off command...) | ● | ● |
| Contact for refrigerant leak detection | 0-10 V signal to report any refrigerant leakage in the unit directly (the leak detector itself must be supplied by the customer) | Immediate customer notification of refrigerant losses to the atmosphere, allowing timely corrective actions | ● | ● |
| Contact for refrigerant leak detection | 0-10 V signal to report any refrigerant leakage in the unit directly (the leak detector itself must be supplied by the customer) | Immediate customer notification of refrigerant losses to the atmosphere, allowing timely corrective actions | Dec. 2022 | Dec. 2022 |
| Compliance with Russian regulations | EAC certification | Compliance with Russian regulations | ● | ● |

- ALL MODELS

Refer to the selection tool to find out which options are not compatible.

# AVAILABLE OPTIONS

| Options | Description | Advantages | LD | ILD |
|---|---|---|---|---|
| Coil defrost resistance heaters | Electric heaters under the coils and the condensate pans | Prevents frost formation on the coils; compulsory in heating mode if the outdoor temperature is below 0 °C | No | ● |
| Insulation of the evaporator inlet/outlet refrigerant lines | Thermal insulation of the evaporator inlet/outlet refrigerant lines, with UV-resistant flexible connection and insulation | Prevents condensation on the evaporator inlet/outlet refrigerant lines | ● | ● |
| Protect2 anti-corrosion protection | Coating applied using a conversion process which modifies the surface of the aluminium producing a coating that is integral to the coil. Complete immersion in a bath to ensure 100% coverage. No heat transfer variation, tested to withstand more than 4000 hours of salt spray as per ASTM B117 | Protect2 Improved corrosion resistance of the MCHE coils by 2, recommended for use in moderately corrosive environments | ● | No |
| Protect4 anti-corrosion protection | Extremely durable and flexible epoxy polymer coating applied on micro channel coils by electro coating process, final UV protective topcoat. Minimal heat transfer variation, tested to withstand more than 6000 hours of constant neutral salt spray as per ASTM B117, improved impact resistance as per ASTM D2794 | Protect4 Improved corrosion resistance of the MCHE coils by 4, recommended for use in corrosive environments | ● | No |
| Flanged evaporator water connection kit | Victaulic piping connections with flanged joints | Easy installation | ● | ● |
| Compressor enclosure | Compressor with enclosure | Improved aesthetics, compressor protection against external elements (dust, sand, water…) | ● | ● |
| EMC class. C2, as per EN 61800-3 | Additional RFI filters on the unit power line | Reduces electromagnetic interference in accordance with the emission level required by category C2 to allow use in the first environment (“residential environment”) | ● | ● |
| 230 V electrical plug | 230 VAC power source provided with plug socket and transformer (180 VA, 0.8 A) | Enables connection of a laptop or an electrical device during system start-up or maintenance | ● | ● |
| Expansion tank | 6-bar expansion tank built into the hydraulic module (requires hydraulic module option) | Easy and fast installation (plug & play), & protection of closed water systems from excessive pressure | ● | ● |
| Electric energy meter | Electric energy meter. Display of energy consumption, instantaneous (U, V, I) and cumulative (kWh) on the machine interface, data available on the communication buses | Enables acquisition, monitoring (remote on CMS/BMS) of energy used. | Dec. 2022 | Dec. 2022 |
| Ultra-fast capacity recovery | Built-in battery to allow an ultra-rapid restart whilst maintaining the unit's reliability. | Full capacity recovery in less than one minute after power failure. Matches requirements of typical critical mission applications. (process, data centres) | Dec. 2022 | No |
| Screwed water connection sleeves for desuperheater | DSH connections with screw connection sleeves | Easy to install. Allows unit connection to a screw connector | ● | ● |
| Free cooling (total) | Free cooling hydraulic coils on the two refrigerant circuits | Energy savings for applications which require cooling all year round (e.g.: industrial processes, data centres) | ● | No |
| Free cooling (partial) | Free cooling hydraulic coils on a refrigerant circuit | Energy savings for applications with reduced demand for cooling in the winter (e.g. office space with computer room, meeting rooms) | ● | No |
| Water buffer tank module | Built-in water buffer tank module | Avoids short cycle on compressors and ensures stable water in the loop | ● | ● |
| Anti-vibration mounts | Elastomer anti-vibration mounts to be placed under the unit (material classified as fire class B2 according to DIN 4102). | Isolate the unit from the building, prevent the transmission of vibrations and associated noise to the building. Must be used in conjunction with a flexible connection on the water side | ● | ● |

● ALL MODELS
Refer to the selection tool to find out which options are not compatible.

## AVAILABLE OPTIONS

| Options | Description | Advantages | LD | ILD |
|---|---|---|---|---|
| Exchangers flexible coupling connection | Flexible connections on the exchanger water side | Easy to install. Limits the transmission of vibrations to the water network | ● | ● |
| Exchanger water filter | Water filter | Prevents dust entering the water network | ● | ● |
| Free cooling drycooler management | Control and connections to an Opera or Vextra free cooling drycooler fitted with optional FC control box | Easy system management, extended control capabilities to a drycooler used in free cooling mode | ● | No |
| Desuperheater flexible couplings | Flexible connections on the desuperheater water side | Easy to install. Limits the transmission of vibrations to the water network | ● | ● |
| Water manifold | Pipe system providing a single hydraulic connection point | Easy installation | No | 2300R-4000R |
| Installation or application process outside Europe | Specific management of option compatibility | Permits non-standard option compatibility for HVAC application in the EU | ● | No |
| Compliance with Moroccan regulations | Specific regulatory documentation | Compliance with Moroccan regulations | ● | ● |
| Delivered wrapped in plastic film | Plastic sheet covering the unit with strapping to secure on the wooden pallet. | Prevents external dust and dirt from contaminating the machine when storing and transporting the unit. | ● | ● |
| IT neutral system | Specific earthing to insulate the earth neutral point. | The unit still operates after the first electrical isolation fault to guarantee continuity of operation (industrial processes, data centres, hospitals). | Dec. 2022 | Dec. 2022 |

● ALL MODELS

Refer to the selection tool to find out which options are not compatible.

# TECHNICAL SPECIFICATIONS - COOLING ONLY

| AQUACIATPOWER TM LD | | | | 0602R | 0650R | 0750R | 0900R | 1100R | 1200R | 1350R | 1400R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cooling** | | | | | | | | | | | | |
| **Standard unit** Full load performances* CA1 | Nominal capacity | | kW | 165 | 180 | 198 | 217 | 256 | 296 | 328 | 361 | 394 |
| | EER | | kW/kW | 3,05 | 3,24 | 3,04 | 3,02 | 2,81 | 2,96 | 2,86 | 2,94 | 2,86 |
| Seasonal energy efficiency** | **SEER 12/7 °C Comfort low temp.** | | **kWh/kWh** | **4,49** | **4,64** | **4,45** | **4,47** | **4,35** | **4,70** | **4,67** | **4,62** | **4,92** |
| | **ηs cool 12/7 °C** | | **%** | **169** | **181** | **178** | **176** | **171** | **185** | **183** | **183** | **194** |
| | **SEER 23/18 °C Comfort medium temp.** | | **kWh/kWh** | **5,27** | **5,52** | **5,22** | **5,26** | **4,99** | **5,66** | **5,55** | **5,43** | **5,82** |
| | SEPR 12/7 °C Process high temp. | | kWh/kWh | 5,27 | 5,42 | 5,34 | 5,19 | 5,14 | 5,44 | 5,47 | 5,60 | 5,63 |
| | SEPR -2/-8 °C Process medium temp. | | kWh/kWh | 3,06 | 3,11 | 3,08 | 3,00 | 3,04 | 3,09 | 3,14 | 3,09 | 3,16 |
| Part Load integrated values | IPLV.SI | | kW/kW | 5,06 | 5,16 | 5,04 | 5,16 | 5,08 | 5,25 | 5,23 | 5,21 | 5,52 |
| **Unit + Rated & Seasonal high performance options** Full load performances* CA1 | Nominal capacity | | kW | 172 | 187 | 206 | 227 | 270 | 311 | 346 | 380 | 416 |
| | EER | | kW/kW | 3,20 | 3,36 | 3,21 | 3,16 | 3,03 | 3,15 | 3,09 | 3,14 | 3,10 |
| Seasonal energy efficiency** | **SEER 12/7 °C Comfort low temp.** | | **kWh/kWh** | **4,82** | **5,02** | **4,84** | **4,94** | **4,79** | **5,25** | **5,15** | **5,09** | **5,11** |
| | **ηs cool 12/7 °C** | | **%** | **190** | **198** | **191** | **195** | **189** | **207** | **203** | **201** | **201** |
| | **SEER 23/18 °C Comfort medium temp.** | | **kWh/kWh** | **5,98** | **6,23** | **5,93** | **5,99** | **5,69** | **6,35** | **6,17** | **6,13** | **6,07** |
| | SEPR 12/7 °C Process high temp. | | kWh/kWh | 6,30 | 6,61 | 6,42 | 6,13 | 5,97 | 6,30 | 6,24 | 6,36 | 6,30 |
| | SEPR -2/-8 °C Process medium temp. | | kWh/kWh | 3,48 | 3,60 | 3,54 | 3,41 | 3,41 | 3,51 | 3,56 | 3,50 | 3,57 |
| **Sound levels** | | | | | | | | | | | | |
| **Unit + High temperature option/Nominal high performance** | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 91,0 | 91,5 | 91,5 | 92,0 | 92,0 | 93,0 | 93,0 | 93,5 | 93,5 |
| Sound pressure at 10 m(2) | | | dB(A) | 58,5 | 59,5 | 59,5 | 60,0 | 60,0 | 60,5 | 60,5 | 61,0 | 61,5 |
| **Standard unit** | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 88,5 | 89,0 | 89,0 | 89,5 | 89,5 | 90,5 | 90,5 | 91,0 | 91,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 56,5 | 57,0 | 57,0 | 57,5 | 57,5 | 58,5 | 58,5 | 59,0 | 58,5 |
| **Unit + Very Low Noise option** | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 85,5 | 85,5 | 85,5 | 86,5 | 86,5 | 87,5 | 87,5 | 88,0 | 88,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 53,0 | 53,5 | 53,5 | 54,5 | 54,5 | 55,5 | 55,5 | 55,5 | 56,0 |
| **Unit + Ultra Low Noise option** | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 83,5 | 83,5 | 83,5 | 84,5 | 84,5 | 85,5 | 85,5 | 86,0 | 86,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 51,5 | 51,5 | 51,5 | 52,5 | 52,5 | 53,5 | 53,5 | 53,5 | 53,5 |

* In accordance with EN14511-3:2018.

** In accordance with EN14825:2018, average climate conditions

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m². k/W

**ηs cool12/7°C & SEER 12/7 °C** **Values in bold comply with Ecodesign Regulation (EU) No. 2016/2281 for Comfort applications**

**SEER 23/18 °C** **Values in bold comply with Ecodesign Regulation (EU) No. 2016/2281 for Comfort applications**

SEPR 12/7 °C Values calculated in accordance with EN 14825:2016

SEPR -2/-8 °C Values calculated in accordance with EN 14825:2016

IPLV.SI Calculated as per AHRI standard 551-591.

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

# TECHNICAL SPECIFICATIONS - COOLING ONLY

| AQUACIATPOWER TM LD | | 0602R | 0650R | 0750R | 0900R | 1100R | 1200R | 1350R | 1400R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | | | | |
| **Standard unit** | | | | | | | | | | |
| Length | mm | 2410 | 2410 | 2410 | 2410 | 2410 | 3604 | 3604 | 3604 | 3604 |
| Width | mm | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 |
| Height | mm | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 |
| **Unit + water buffer tank module option** | | | | | | | | | | |
| Length | mm | 3604 | 3604 | 3604 | 3604 | 3604 | 4798 | 4798 | 4798 | 4798 |
| **Operating weight (3)** | | | | | | | | | | |
| Standard unit | kg | 1349 | 1397 | 1397 | 1521 | 1556 | 1995 | 2049 | 2211 | 2269 |
| Unit + Ultra Low Noise option | kg | 1453 | 1501 | 1501 | 1656 | 1690 | 2153 | 2208 | 2394 | 2452 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module option | kg | 1588 | 1636 | 1636 | 1791 | 1837 | 2302 | 2403 | 2589 | 2646 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module + Water buffer tank module option | kg | 2571 | 2619 | 2619 | 2774 | 2819 | 3288 | 3389 | 3575 | 3632 |
| **Compressors** | | Hermetic Scroll 48.3 r/s | | | | | | | | |
| Circuit A | | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| Circuit B | | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| Number of power stages | | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 |
| **Unit PED category** | | III | III | III | III | III | III | III | III | III |
| **Refrigerant(3)** | | R-32 / A2L/ GWP= 675 in accordance with ARI4 | | | | | | | | |
| Circuit A | kg | 6,1 | 9,3 | 9,3 | 10,9 | 11,3 | 11,9 | 12,7 | 17,3 | 18,0 |
| | $tCO_2e$ | 4,1 | 6,3 | 6,3 | 7,4 | 7,6 | 8,0 | 8,6 | 11,7 | 12,2 |
| Circuit B | kg | 10,9 | 10,9 | 10,9 | 10,9 | 11,3 | 16,7 | 17,5 | 17,3 | 18,0 |
| | $tCO_2e$ | 7,4 | 7,4 | 7,4 | 7,4 | 7,6 | 11,3 | 11,8 | 11,7 | 12,2 |
| **Oil** | | | | | | | | | | |
| Circuit A | l | 6,6 | 6,6 | 6,6 | 13,2 | 13,2 | 13,2 | 13,2 | 19,8 | 19,8 |
| Circuit B | l | 13,2 | 13,2 | 13,2 | 13,2 | 13,2 | 19,8 | 19,8 | 19,8 | 19,8 |
| **Capacity control** | | Connect'Touch | | | | | | | | |
| Minimum capacity | % | 33 | 33 | 25 | 25 | 25 | 20 | 20 | 17 | 17 |
| **Condenser** | | All-aluminium micro-channel coils (MCHE) | | | | | | | | |
| **Fans** | | Axial with rotating impeller | | | | | | | | |
| **Standard unit** | | | | | | | | | | |
| Quantity | | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| Maximum total air flow | l/s | 11790 | 15720 | 15720 | 15720 | 15720 | 19650 | 19650 | 23580 | 23580 |
| Maximum rotation speed | r/s | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| **Evaporator** | | Dual-circuit plate heat exchanger | | | | | | | | |
| Water volume | l | 15 | 15 | 15 | 19 | 27 | 27 | 35 | 44 | 44 |
| Max. water-side operating pressure without hydraulic module | kPa | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| **Hydraulic module (option)** | | Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors | | | | | | | | |
| Pump | | Centrifugal pump, monocell, 48.3 r/s, low- or high-pressure (as required), single or dual (as required) | | | | | | | | |
| Expansion tank volume (Option) | l | 50 | 50 | 50 | 50 | 50 | 80 | 80 | 80 | 80 |
| Buffer tank volume (optional) | l | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 |
| Max. water-side operating pressure with hydraulic module | kPa | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| **Water connections with or without hydraulic module** | | Victaulic® type | | | | | | | | |
| Connections | inches | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| External diameter | mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 114,3 | 114,3 | 114,3 | 114,3 |
| **Casing paint colour** | | Colour code RAL 7035 & 7024 | | | | | | | | |

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.
(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).
(3) Values are guidelines only. Refer to the unit name plate.

# TECHNICAL SPECIFICATIONS - COOLING ONLY

| AQUACIATPOWER TM LD | | | | 1750R | 1800R | 2000R | 2200R | 2400R | 2650R | 2800R | 2950R | 3200R | 3500R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cooling** | | | | | | | | | | | | | |
| **Standard unit** Full load performances* | CA1 | Nominal capacity | kW | 428 | 458 | 523 | 586 | 645 | 688 | 743 | 765 | 836 | 889 |
| | | EER | kW/kW | 2,94 | 2,85 | 2,85 | 2,95 | 2,94 | 2,83 | 2,85 | 2,85 | 2,77 | 2,66 |
| Seasonal energy efficiency** | | **SEER 12/7 °C Comfort low temp.** | **kWh/kWh** | **5,10** | **5,05** | **4,97** | **5,10** | **5,18** | **5,06** | **5,19** | **5,14** | **5,00** | **4,87** |
| | | **ηs cool 12/7 °C** | **%** | **201** | **199** | **196** | **201** | **204** | **200** | **204** | **203** | **197** | **192** |
| | | **SEER 23/18 °C Comfort medium temp.** | **kWh/kWh** | **6,01** | **5,93** | **6,00** | **6,29** | **6,47** | **6,22** | **6,45** | **6,36** | **6,12** | **5,87** |
| | | SEPR 12/7 °C Process high temp. | kWh/kWh | 5,58 | 5,58 | 5,54 | 5,52 | 5,58 | 5,44 | 5,46 | 5,41 | 5,36 | 5,22 |
| | | SEPR -2/-8 °C Process medium temp. | kWh/kWh | 3,13 | 3,15 | 3,15 | 3,54 | 3,46 | 3,49 | 3,44 | 3,46 | 3,41 | 3,44 |
| Part Load integrated values | | IPLV.SI | kW/kW | 5,68 | 5,63 | 5,60 | 5,75 | 5,71 | 5,60 | 5,74 | 5,71 | 5,63 | 5,51 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | CA1 | Nominal capacity | kW | 451 | 484 | 553 | 616 | 677 | 726 | 782 | 807 | 882 | 944 |
| | | EER | kW/kW | 3,15 | 3,09 | 3,08 | 3,16 | 3,14 | 3,06 | 3,07 | 3,04 | 3,00 | 2,92 |
| Seasonal energy efficiency** | | **SEER 12/7 °C Comfort low temp.** | **kWh/kWh** | **5,28** | **5,24** | **5,29** | **5,32** | **5,32** | **5,20** | **5,33** | **5,30** | **5,31** | **5,18** |
| | | **ηs cool 12/7 °C** | **%** | **208** | **207** | **209** | **210** | **210** | **205** | **210** | **209** | **209** | **204** |
| | | **SEER 23/18 °C Comfort medium temp.** | **kWh/kWh** | **6,33** | **6,23** | **6,32** | **6,56** | **6,51** | **6,28** | **6,54** | **6,47** | **6,56** | **6,32** |
| | | SEPR 12/7 °C Process high temp. | kWh/kWh | 6,41 | 6,32 | 6,27 | 6,27 | 6,33 | 6,14 | 6,25 | 6,18 | 6,07 | 5,86 |
| | | SEPR -2/-8 °C Process medium temp. | kWh/kWh | 3,55 | 3,55 | 3,55 | 3,91 | 3,82 | 3,83 | 3,79 | 3,80 | 3,74 | 3,74 |
| **Sound levels** | | | | | | | | | | | | | |
| **Unit + High temperature option/Nominal high performance** | | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 94,0 | 94,0 | 94,5 | 97,5 | 97,5 | 98,0 | 98,0 | 98,5 | 98,5 | 99,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 61,5 | 61,5 | 62,0 | 65,0 | 65,0 | 66,0 | 65,0 | 66,0 | 66,0 | 66,5 |
| **Standard unit** | | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 91,5 | 91,5 | 92,0 | 96,5 | 96,5 | 97,0 | 97,0 | 97,5 | 97,5 | 98,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 59,5 | 59,0 | 60,0 | 64,0 | 64,0 | 64,5 | 65,0 | 65,0 | 65,0 | 65,5 |
| **Unit + Very Low Noise option** | | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 88,5 | 88,5 | 89,0 | 92,5 | 92,5 | 93,0 | 93,0 | 93,5 | 93,5 | 94,5 |
| Sound pressure at 10 m(2) | | | dB(A) | 56,0 | 56,5 | 57,0 | 60,5 | 60,0 | 60,5 | 60,0 | 61,0 | 60,5 | 61,5 |
| **Unit + Ultra Low Noise option** | | | | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 86,5 | 86,5 | 87,0 | 90,0 | 90,0 | 90,5 | 90,5 | 90,5 | 90,5 | 91,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 54,5 | 54,0 | 55,0 | 57,5 | 57,5 | 58,0 | 58,0 | 57,5 | 58,0 | 58,5 |

* In accordance with EN14511-3:2018.

** In accordance with EN14825:2018, average climate conditions

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m². k/W

**ηs cool12/7°C & SEER 12/7 °C** **Values in bold comply with Ecodesign Regulation (EU) No. 2016/2281 for Comfort applications**

**SEER 23/18 °C** **Values in bold comply with Ecodesign Regulation (EU) No. 2016/2281 for Comfort applications**

SEPR 12/7 °C Values calculated in accordance with EN 14825:2016

SEPR -2/-8 °C Values calculated in accordance with EN 14825:2016

IPLV.SI Calculated as per AHRI standard 551-591.

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

# TECHNICAL SPECIFICATIONS - COOLING ONLY

| AQUACIATPOWER TM LD | | 1750R | 1800R | 2000R | 2200R | 2400R | 2650R | 2800R | 2950R | 3200R | 3500R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | | | | | |
| **Standard unit** | | | | | | | | | | | |
| Length | mm | 4798 | 4798 | 4798 | 5992 | 5992 | 5992 | 7186 | 7186 | 7186 | 7186 |
| Width | mm | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 |
| Height | mm | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 |
| **Unit + water buffer tank module option** | | | | | | | | | | | |
| Length | mm | 5992 | 5992 | 5992 | 7186 | 7186 | 7186 | 8380 | 8380 | 8380 | 8380 |
| **Operating weight (3)** | | | | | | | | | | | |
| Standard unit | kg | 2697 | 2722 | 2927 | 3265 | 3511 | 3511 | 4042 | 4042 | 4291 | 4291 |
| Unit + Ultra Low Noise option | kg | 2904 | 2930 | 3158 | 3434 | 3703 | 3703 | 4260 | 4260 | 4535 | 4535 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module option | kg | 3138 | 3164 | 3430 | 3743 | 4013 | 4013 | 4650 | 4650 | 4925 | 4925 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module + Water buffer tank module option | kg | 4131 | 4156 | 4421 | 4750 | 5020 | 5020 | 5671 | 5671 | 5946 | 5946 |
| **Compressors** | | Hermetic Scroll 48.3 r/s | | | | | | | | | |
| Circuit A | | 3 | 3 | 4 | 2 | 3 | 3 | 3 | 3 | 4 | 4 |
| Circuit B | | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| Number of power stages | | 7 | 7 | 8 | 5 | 6 | 6 | 7 | 7 | 8 | 8 |
| **Unit PED category** | | IV | IV | IV | III | III | III | IV | IV | IV | IV |
| **Refrigerant(3)** | | R-32 / A2L/ GWP= 675 in accordance with ARI4 | | | | | | | | | |
| Circuit A | kg | 18,3 | 18,6 | 22,8 | 21,8 | 23,2 | 23,2 | 24,9 | 24,9 | 29,5 | 29,5 |
| | $tCO_2e$ | 12,4 | 12,6 | 15,4 | 14,7 | 15,7 | 15,7 | 16,8 | 16,8 | 19,9 | 19,9 |
| Circuit B | kg | 21,9 | 22,3 | 22,8 | 23,2 | 23,2 | 23,2 | 29,5 | 29,5 | 29,5 | 29,5 |
| | $tCO_2e$ | 14,8 | 15,1 | 15,4 | 15,7 | 15,7 | 15,7 | 19,9 | 19,9 | 19,9 | 19,9 |
| **Oil** | | | | | | | | | | | |
| Circuit A | l | 19,8 | 19,8 | 26,4 | 13,2 | 19,8 | 19,8 | 19,8 | 19,8 | 26,4 | 26,4 |
| Circuit B | l | 26,4 | 26,4 | 26,4 | 19,8 | 19,8 | 19,8 | 26,4 | 26,4 | 26,4 | 26,4 |
| **Capacity control** | | Connect'Touch | | | | | | | | | |
| Minimum capacity | % | 14 | 14 | 13 | 20 | 17 | 17 | 14 | 14 | 13 | 13 |
| **Condenser** | | All-aluminium micro-channel coils (MCHE) | | | | | | | | | |
| **Fans** | | Axial with rotating impeller | | | | | | | | | |
| **Standard unit** | | | | | | | | | | | |
| Quantity | | 7 | 7 | 8 | 9 | 10 | 10 | 11 | 11 | 12 | 12 |
| Maximum total air flow | l/s | 27510 | 27510 | 31440 | 35370 | 39300 | 39300 | 43230 | 43230 | 47160 | 47160 |
| Maximum rotation speed | r/s | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| **Evaporator** | | Dual-circuit plate heat exchanger | | | | | | | | | |
| Water volume | l | 44 | 47 | 53 | 73 | 73 | 73 | 84 | 84 | 84 | 84 |
| Max. water-side operating pressure without hydraulic module | kPa | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| **Hydraulic module (option)** | | Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors | | | | | | | | | |
| Pump | | Centrifugal pump, monocell, 48.3 r/s, low- or high-pressure (as required), single or dual (as required) | | | | | | | | | |
| Expansion tank volume (Option) | l | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Buffer tank volume (optional) | l | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 |
| Max. water-side operating pressure with hydraulic module | kPa | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| **Water connections with or without hydraulic module** | | Victaulic® type | | | | | | | | | |
| Connections | inches | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| External diameter | mm | 114,3 | 114,3 | 114,3 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 |
| **Casing paint colour** | | Colour code RAL 7035 & 7024 | | | | | | | | | |

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.
(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).
(3) Values are guidelines only. Refer to the unit name plate.

# TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

| AQUACIATPOWER TM ILD | | | | 0602R | 0700R | 0800R | 0900R | 1000R | 1150R |
|---|---|---|---|---|---|---|---|---|---|
| **Heating** | | | | | | | | | |
| **Standard unit** Full load performances* | HA1 | Nominal capacity | kW | 178 | 197 | 237 | 256 | 275 | 317 |
| | | COP | kW/kW | 3,88 | 3,80 | 3,84 | 3,84 | 3,82 | 3,82 |
| | HA2 | Nominal capacity | kW | 173 | 192 | 231 | 250 | 269 | 310 |
| | | COP | kW/kW | 3,16 | 3,09 | 3,14 | 3,12 | 3,11 | 3,10 |
| Seasonal energy efficiency** | HA1 | **$SCOP_{30/35\ °C}$** | **kWh/kWh** | **3,44** | **3,45** | **3,39** | **3,47** | **3,48** | **3,57** |
| | | **$\eta s\ heat_{30/35\ °C}$** | **%** | **135** | **135** | **133** | **136** | **136** | **140** |
| | | $P_{rated}$ | kW | 139 | 155 | 186 | 200 | 217 | 250 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | HA1 | Nominal capacity | kW | 178 | 197 | 237 | 256 | 275 | 317 |
| | | COP | kW/kW | 3,88 | 3,80 | 3,84 | 3,84 | 3,82 | 3,82 |
| Seasonal energy efficiency** | HA1 | **$SCOP_{30/35\ °C}$** | **kWh/kWh** | **3,67** | **3,66** | **3,74** | **3,77** | **3,80** | **3,87** |
| | | **$\eta s\ heat_{30/35\ °C}$** | **%** | **144** | **143** | **147** | **148** | **149** | **152** |
| | | $P_{rated}$ | kW | 138 | 155 | 185 | 200 | 216 | 250 |
| **Cooling** | | | | | | | | | |
| **Standard unit** Full load performances* | CA1 | Nominal capacity | kW | 155 | 171 | 204 | 223 | 239 | 285 |
| | | EER | | 2,73 | 2,55 | 2,73 | 2,63 | 2,56 | 2,66 |
| Seasonal energy efficiency** | | SEER $_{12/7\ °C}$ Comfort low temp. | kWh/kWh | 4,17 | 4,01 | 4,18 | 4,08 | 4,04 | 4,48 |
| | | SEPR $_{12/7\ °C}$ Process high temp. | kWh/kWh | 4,68 | 4,51 | 4,64 | 4,52 | 4,50 | 4,83 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | CA1 | Nominal capacity | kW | 164 | 181 | 215 | 236 | 254 | 302 |
| | | EER | kW/kW | 2,87 | 2,72 | 2,86 | 2,80 | 2,76 | 2,85 |
| Seasonal energy efficiency** | | SEER $_{12/7\ °C}$ Comfort low temp. | kWh/kWh | 4,41 | 4,23 | 4,48 | 4,41 | 4,34 | 4,78 |
| | | SEPR $_{12/7\ °C}$ Process high temp. | kWh/kWh | 5,47 | 5,23 | 5,41 | 5,23 | 5,15 | 5,49 |
| **Sound levels** | | | | | | | | | |
| **Unit + High temperature option/Nominal high performance** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 90,5 | 91,0 | 91,5 | 92,0 | 92,0 | 93,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 58,5 | 59,0 | 59,5 | 60,0 | 60,0 | 61,0 |
| **Standard unit** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 88,0 | 88,5 | 89,0 | 89,5 | 89,5 | 90,5 |
| Sound pressure at 10 m(2) | | | dB(A) | 55,5 | 56,0 | 56,5 | 57,0 | 57,0 | 58,0 |
| **Unit + Very Low Noise option(3)** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 85,0 | 86,0 | 86,5 | 87,0 | 87,0 | 88,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 53,0 | 53,5 | 54,0 | 54,5 | 54,5 | 55,5 |
| **Unit + Ultra Low Noise option(3)** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 83,0 | 84,0 | 84,5 | 85,0 | 85,0 | 86,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 51,0 | 52,0 | 52,5 | 53,0 | 53,0 | 54,0 |

* In accordance with EN14511-3:2018.

** In accordance with EN14825:2018, average climate conditions

HA1 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30 °C/35 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 $m^2$. k/W

HA2 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40 °C/45 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 $m^2$. k/W

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 $m^2$. k/W

**$\eta s\ heat_{30/35\ °C}$ & $SCOP_{30/35\ °C}$** **Values in bold comply with Ecodesign Regulation (EU) No. 813/2013 for Heating applications**

SEER $_{12/7\ °C}$ & SEPR $_{12/7\ °C}$ Applicable Ecodesign regulation (EU) No. 2016/2281

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent. Cooling mode operation.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

## TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

| AQUACIAT POWER TM ILD | | 0602R | 0700R | 0800R | 0900R | 1000R | 1150R |
|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | |
| **Standard unit** | | | | | | | |
| Length | mm | 2410 | 2410 | 2410 | 2410 | 2410 | 3604 |
| Width | mm | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 |
| Height | mm | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 |
| **Unit + water buffer tank module option(3)** | mm | 3604 | 3604 | 3604 | 3604 | 3604 | 4798 |
| Length | mm | 3604 | 3604 | 3604 | 3604 | 3604 | 4798 |
| **Operating weight (3)** | | | | | | | |
| Standard unit | kg | 1569 | 1575 | 1784 | 1811 | 1817 | 2394 |
| Unit + Ultra Low Noise option | kg | 1672 | 1678 | 1918 | 1946 | 1952 | 2552 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module option | kg | 1808 | 1814 | 2065 | 2092 | 2098 | 2747 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module + Water buffer tank module option | kg | 2791 | 2797 | 3048 | 3075 | 3081 | 3756 |
| **Compressors** | | Hermetic Scroll 48.3 r/s | | | | | |
| Circuit A | | 1 | 1 | 2 | 2 | 2 | 2 |
| Circuit B | | 2 | 2 | 2 | 2 | 2 | 3 |
| Number of power stages | | 3 | 3 | 4 | 4 | 4 | 5 |
| **Unit PED category** | | III | III | III | III | III | III |
| **Refrigerant(3)** | | R-32 / A2L/ GWP= 675 in accordance with ARI4 | | | | | |
| Circuit A | kg | 10,5 | 10,5 | 16,0 | 16,0 | 16,0 | 16,0 |
| | $tCO_2e$ | 7,1 | 7,1 | 10,8 | 10,8 | 10,8 | 10,8 |
| Circuit B | kg | 16,0 | 16,0 | 16,0 | 16,0 | 16,0 | 28,5 |
| | $tCO_2e$ | 10,8 | 10,8 | 10,8 | 10,8 | 10,8 | 19,2 |
| **Oil** | | | | | | | |
| Circuit A | l | 6,6 | 6,6 | 13,2 | 13,2 | 13,2 | 13,2 |
| Circuit B | l | 13,2 | 13,2 | 13,2 | 13,2 | 13,2 | 19,8 |
| **Capacity control** | | Connect'Touch | | | | | |
| Minimum capacity | % | 33 | 33 | 25 | 25 | 25 | 20 |
| **Condenser** | | Grooved copper tubes and aluminium fins | | | | | |
| **Fans** | | Axial with rotating impeller | | | | | |
| **Standard unit** | | | | | | | |
| Quantity | | 3 | 3 | 4 | 4 | 4 | 5 |
| Maximum total air flow (cooling mode) | l/s | 11790 | 11790 | 15720 | 15720 | 15720 | 19650 |
| Maximum rotation speed (heating mode) | r/s | 12 | 12 | 12 | 12 | 12 | 12 |
| Maximum total air flow (heating mode) | l/s | 14460 | 14460 | 19280 | 19280 | 19280 | 24100 |
| Maximum rotation speed (heating mode) | r/s | 16 | 16 | 16 | 16 | 16 | 16 |
| **Evaporator** | | Dual-circuit plate heat exchanger | | | | | |
| Water volume | l | 16,2 | 16,2 | 16,2 | 20,7 | 20,7 | 38,7 |
| Max. water-side operating pressure without hydraulic module | kPa | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| **Hydraulic module (option)** | | Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors | | | | | |
| Pump | | Centrifugal pump, monocell, 48.3 r/s, low- or high-pressure (as required), single or dual (as required) | | | | | |
| Expansion tank volume (Option) | l | 50 | 50 | 50 | 50 | 50 | 80 |
| Buffer tank volume (optional) | l | 550 | 550 | 550 | 550 | 550 | 550 |
| Max. water-side operating pressure with hydraulic module | kPa | 400 | 400 | 400 | 400 | 400 | 400 |
| **Water connections with or without hydraulic module** | | Victaulic® type | | | | | |
| Connections | inches | 3 | 3 | 3 | 3 | 3 | 4 |
| External diameter | mm | 88,5 | 88,6 | 88,7 | 88,8 | 88,9 | 114,3 |
| **Casing paint colour** | | Colour code RAL 7035 & 7024 | | | | | |

(3) Values are guidelines only. Refer to the unit name plate.

# TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

| AQUACIAT POWER TM ILD | | | | 1250R | 1400R | 1500R | 1600R | 1750R | 2000R |
|---|---|---|---|---|---|---|---|---|---|
| **Heating** | | | | | | | | | |
| **Standard unit** Full load performances* | HA1 | Nominal capacity | kW | 336 | 387 | 406 | 441 | 467 | 537 |
| | | COP | kW/kW | 3,81 | 3,82 | 3,81 | 3,80 | 3,73 | 3,80 |
| | HA2 | Nominal capacity | kW | 329 | 378 | 397 | 431 | 458 | 526 |
| | | COP | kW/kW | 3,09 | 3,10 | 3,09 | 3,10 | 3,03 | 3,09 |
| Seasonal energy efficiency** | HA1 | **$SCOP_{30/35\ °C}$** | **kWh/kWh** | **3,58** | **3,55** | **3,57** | **3,54** | **3,53** | **3,57** |
| | | **$\eta s\ heat_{30/35\ °C}$** | **%** | **140** | **139** | **140** | **139** | **138** | **140** |
| | | $P_{rated}$ | kW | 266 | 305 | 321 | 349 | 371 | 425 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | HA1 | Nominal capacity | kW | 336 | 387 | 406 | 441 | 467 | 537 |
| | | COP | kW/kW | 3,81 | 3,82 | 3,81 | 3,80 | 3,73 | 3,80 |
| Seasonal energy efficiency** | HA1 | **$SCOP_{30/35\ °C}$** | **kWh/kWh** | **3,86** | **3,90** | **3,91** | **3,92** | **3,89** | **3,96** |
| | | **$\eta s\ heat_{30/35\ °C}$** | **%** | **151** | **153** | **153** | **154** | **153** | **155** |
| | | $P_{rated}$ | kW | 265 | 305 | 320 | 348 | 370 | 424 |
| **Cooling** | | | | | | | | | |
| **Standard unit** Full load performances* | CA1 | Nominal capacity | kW | 305 | 341 | 358 | 389 | 414 | 470 |
| | | EER | | 2,59 | 2,64 | 2,57 | 2,64 | 2,55 | 2,55 |
| Seasonal energy efficiency** | | SEER $_{12/7\ °C}$ Comfort low temp. | kWh/kWh | 4,50 | 4,46 | 4,33 | 4,44 | 4,38 | 4,32 |
| | | SEPR $_{12/7\ °C}$ Process high temp. | kWh/kWh | 4,76 | 4,93 | 4,79 | 4,94 | 4,82 | 4,83 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | CA1 | Nominal capacity | kW | 324 | 362 | 381 | 413 | 439 | 500 |
| | | EER | kW/kW | 2,80 | 2,82 | 2,76 | 2,81 | 2,74 | 2,73 |
| Seasonal energy efficiency** | | SEER $_{12/7\ °C}$ Comfort low temp. | kWh/kWh | 4,81 | 4,88 | 4,87 | 4,81 | 4,75 | 4,81 |
| | | SEPR $_{12/7\ °C}$ Process high temp. | kWh/kWh | 5,34 | 5,60 | 5,40 | 5,60 | 5,43 | 5,47 |
| **Sound levels** | | | | | | | | | |
| **Unit + High temperature option/Nominal high performance** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 93,5 | 94,0 | 94,0 | 94,5 | 94,5 | 95,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 61,5 | 62,0 | 62,0 | 62,0 | 62,0 | 62,5 |
| **Standard unit** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 91,0 | 91,5 | 91,5 | 92,0 | 92,5 | 93,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 58,5 | 59,5 | 59,5 | 60,0 | 60,0 | 60,5 |
| **Unit + Very Low Noise option(3)** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 88,0 | 89,0 | 89,0 | 89,5 | 90,0 | 90,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 55,5 | 56,5 | 56,5 | 57,0 | 57,5 | 57,5 |
| **Unit + Ultra Low Noise option(3)** | | | | | | | | | |
| Sound power(1) | | | dB(A) | 86,0 | 86,5 | 87,0 | 87,5 | 87,5 | 88,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 54,0 | 54,5 | 55,0 | 55,5 | 55,5 | 56,0 |

* In accordance with EN14511-3:2018.

** In accordance with EN14825:2018, average climate conditions

HA1 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30 °C/35 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 $m^2$. k/W

HA2 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40 °C/45 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 $m^2$. k/W

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 $m^2$. k/W

**$\eta s\ heat_{30/35\ °C}$ & $SCOP_{30/35\ °C}$** **Values in bold comply with Ecodesign Regulation (EU) No. 813/2013 for Heating applications**

SEER $_{12/7\ °C}$ & SEPR $_{12/7\ °C}$ Applicable Ecodesign regulation (EU) No. 2016/2281

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent. Cooling mode operation.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

## TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

| AQUACIATPOWER TM ILD | | 1250R | 1400R | 1500R | 1600R | 1750R | 2000R |
|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | |
| **Standard unit** | | | | | | | |
| Length | mm | 3604 | 3604 | 3604 | 4798 | 4798 | 4798 |
| Width | mm | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 |
| Height | mm | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 |
| **Unit + water buffer tank module option(3)** | mm | 4798 | 4798 | 4798 | 5992 | 5992 | 5992 |
| Length | mm | 4798 | 4798 | 4798 | 5992 | 5992 | 5992 |
| **Operating weight (3)** | | | | | | | |
| Standard unit | kg | 2452 | 2672 | 2678 | 3154 | 3180 | 3430 |
| Unit + Ultra Low Noise option | kg | 2611 | 2855 | 2861 | 3361 | 3387 | 3661 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module option | kg | 2806 | 3089 | 3095 | 3595 | 3658 | 3932 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module + Water buffer tank module option | kg | 3815 | 4098 | 4104 | 4595 | 4658 | 4932 |
| **Compressors** | | Hermetic Scroll 48.3 r/s | | | | | |
| Circuit A/C | | 2 | 2 | 2 | 3 | 3 | 4 |
| Circuit B/D | | 3 | 4 | 4 | 4 | 4 | 4 |
| Number of power stages | | 5 | 6 | 6 | 7 | 7 | 8 |
| **Unit PED category** | | IV | IV | IV | IV | IV | IV |
| **Refrigerant(3)** | | R-32 / A2L/ GWP= 675 in accordance with ARI4 | | | | | |
| Circuit A/C | kg | 18,0 | 18,0 | 18,0 | 29,0 | 29,0 | 35,0 |
| | $tCO_2e$ | 12,2 | 12,2 | 12,2 | 19,6 | 19,6 | 23,6 |
| Circuit B/D | kg | 28,5 | 34,0 | 34,0 | 34,5 | 35,0 | 35,0 |
| | $tCO_2e$ | 19,2 | 23,0 | 23,0 | 23,3 | 23,6 | 23,6 |
| **Oil** | | | | | | | |
| Circuit A/C | l | 13,2 | 13,2 | 13,2 | 22,8 | 22,8 | 30,4 |
| Circuit B/D | l | 19,8 | 26,4 | 26,4 | 30,4 | 30,4 | 30,4 |
| **Capacity control** | | Connect'Touch | | | | | |
| Minimum capacity | % | 20 | 17 | 17 | 14 | 14 | 13 |
| **Condenser** | | Grooved copper tubes and aluminium fins | | | | | |
| **Fans** | | Axial with rotating impeller | | | | | |
| **Standard unit** | | | | | | | |
| Quantity | | 5 | 6 | 6 | 7 | 7 | 8 |
| Maximum total air flow (cooling mode) | l/s | 19650 | 23580 | 23580 | 27510 | 27510 | 31440 |
| Maximum rotation speed (heating mode) | r/s | 12 | 12 | 12 | 12 | 12 | 12 |
| Maximum total air flow (heating mode) | l/s | 24100 | 28920 | 28920 | 33740 | 33740 | 38560 |
| Maximum rotation speed (heating mode) | r/s | 16 | 16 | 16 | 16 | 16 | 16 |
| **Evaporator** | | Dual-circuit plate heat exchanger | | | | | |
| Water volume | l | 48,6 | 48,6 | 48,6 | 48,6 | 52,2 | 58,5 |
| Max. water-side operating pressure without hydraulic module | kPa | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| **Hydraulic module (option)** | | Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors | | | | | |
| Pump | | Centrifugal pump, monocell, 48.3 r/s, low- or high-pressure (as required), single or dual (as required) | | | | | |
| Expansion tank volume (Option) | l | 80 | 80 | 80 | 80 | 80 | 80 |
| Buffer tank volume (optional) | l | 550 | 550 | 550 | 550 | 550 | 550 |
| Max. water-side operating pressure with hydraulic module | kPa | 400 | 400 | 400 | 400 | 400 | 400 |
| **Water connections with or without hydraulic module** | | Victaulic® type | | | | | |
| Module 1/Module 2 connections (a) | inches | 4 | 4 | 4 | 4 | 4 | 4 |
| Module 1/Module 2 external diameter (a) | mm | 114,4 | 114,5 | 114,6 | 114,7 | 114,8 | 114,9 |
| **Casing paint colour** | | Colour code RAL 7035 & 7024 | | | | | |

(3) Values are guidelines only. Refer to the unit name plate.
(a) Modules 1 and 2 only relate to sizes 2300R to 4000R.

## TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

| AQUACIATPOWER TM ILD | | | | 2300R | 2500R | 2800R | 3000R | 3200R | 3500R | 4000R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Heating** | | | | | | | | | | |
| **Standard unit** Full load performances* | HA1 | Nominal capacity | kW | 635 | 673 | 774 | 812 | 883 | 935 | 1075 |
| | | COP | kW/kW | 3,82 | 3,81 | 3,82 | 3,81 | 3,80 | 3,73 | 3,80 |
| | HA2 | Nominal capacity | kW | 620 | 658 | 757 | 795 | 863 | 915 | 1052 |
| | | COP | kW/kW | 3,10 | 3,09 | 3,10 | 3,09 | 3,10 | 3,03 | 3,09 |
| Seasonal energy efficiency** | HA1 | **$SCOP_{30/35\ °C}$** | **kWh/kWh** | **3,57** | **3,58** | **3,55** | **3,57** | **3,54** | **3,53** | **3,57** |
| | | **$\eta s\ heat_{30/35\ °C}$** | **%** | **140** | **140** | **139** | **140** | **139** | **138** | **140** |
| | | $P_{rated}$ | kW | 499 | 530 | 609 | 641 | 696 | 741 | 849 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | HA1 | Nominal capacity | kW | 635 | 673 | 774 | 812 | 883 | 935 | 1075 |
| | | COP | kW/kW | 3,82 | 3,81 | 3,82 | 3,81 | 3,80 | 3,73 | 3,80 |
| Seasonal energy efficiency** | HA1 | **$SCOP_{30/35\ °C}$** | **kWh/kWh** | **3,87** | **3,86** | **3,90** | **3,91** | **3,92** | **3,89** | **3,96** |
| | | **$\eta s\ heat_{30/35\ °C}$** | **%** | **152** | **151** | **153** | **153** | **154** | **153** | **155** |
| | | $P_{rated}$ | kW | 499 | 530 | 609 | 641 | 696 | 741 | 849 |
| **Cooling** | | | | | | | | | | |
| **Standard unit** Full load performances* | CA1 | Nominal capacity | kW | 569 | 610 | 682 | 716 | 778 | 827 | 941 |
| | | EER | | 2,67 | 2,60 | 2,64 | 2,57 | 2,65 | 2,56 | 2,55 |
| Seasonal energy efficiency** | | $SEER_{12/7\ °C}$ Comfort low temp. | kWh/kWh | 4,48 | 4,49 | 4,45 | 4,32 | 4,43 | 4,37 | 4,30 |
| | | $SEPR_{12/7\ °C}$ Process high temp. | kWh/kWh | 4,86 | 4,76 | 4,91 | 4,75 | 4,90 | 4,80 | 4,78 |
| **Unit + Rated & Seasonal high performance options** Full load performances* | CA1 | Nominal capacity | kW | 604 | 648 | 723 | 761 | 825 | 878 | 999 |
| | | EER | kW/kW | 2,85 | 2,80 | 2,82 | 2,76 | 2,81 | 2,74 | 2,73 |
| Seasonal energy efficiency** | | $SEER_{12/7\ °C}$ Comfort low temp. | kWh/kWh | 4,77 | 4,81 | 4,88 | 4,87 | 4,81 | 4,75 | 4,81 |
| | | $SEPR_{12/7\ °C}$ Process high temp. | kWh/kWh | 5,49 | 5,34 | 5,60 | 5,40 | 5,60 | 5,43 | 5,47 |
| **Sound levels** | | | | | | | | | | |
| **Unit + High temperature option/Nominal high performance** | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 96,0 | 96,5 | 97,0 | 97,0 | 97,5 | 97,5 | 98,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 64,0 | 64,0 | 64,5 | 65,0 | 65,0 | 65,0 | 65,0 |
| **Standard unit** | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 93,5 | 94,0 | 94,5 | 94,5 | 95,0 | 95,5 | 96,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 61,0 | 61,5 | 62,5 | 62,5 | 63,0 | 63,0 | 63,5 |
| **Unit + Very Low Noise option(3)** | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 91,0 | 91,0 | 92,0 | 92,0 | 92,5 | 93,0 | 93,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 58,5 | 58,5 | 59,5 | 59,5 | 60,0 | 60,5 | 60,5 |
| **Unit + Ultra Low Noise option(3)** | | | | | | | | | | |
| Sound power(1) | | | dB(A) | 89,0 | 89,0 | 89,5 | 90,0 | 90,5 | 90,5 | 91,0 |
| Sound pressure at 10 m(2) | | | dB(A) | 57,0 | 57,0 | 57,5 | 58,0 | 58,5 | 58,5 | 59,0 |

* In accordance with EN14511-3:2018.

** In accordance with EN14825:2018, average climate conditions

HA1 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30 °C/35 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 $m^2$. k/W

HA2 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40 °C/45 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 $m^2$. k/W

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 $m^2$. k/W

**$\eta s\ heat_{30/35\ °C}$ & $SCOP_{30/35\ °C}$** **Values in bold comply with Ecodesign Regulation (EU) No. 813/2013 for Heating applications**

$SEER_{12/7\ °C}$ & $SEPR_{12/7\ °C}$ Applicable Ecodesign regulation (EU) No. 2016/2281

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent. Cooling mode operation.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

## TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

| AQUACIAT POWER TM ILD | | 2300R | 2500R | 2800R | 3000R | 3200R | 3500R | 4000R |
|---|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | | |
| **Standard unit** | | | | | | | | |
| Length | mm | 7708 | 7708 | 7708 | 7708 | 10096 | 10096 | 10096 |
| Width | mm | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 | 2253 |
| Height | mm | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 | 2324 |
| **Unit + water buffer tank module option(3)** | mm | 5992 | 5992 | 5992 | 5992 | 5992 | 5992 | 5992 |
| Length | mm | - | - | - | - | - | - | - |
| **Operating weight (3)** | | | | | | | | |
| Standard unit | kg | 4787 | 4905 | 5344 | 5356 | 6308 | 6360 | 6859 |
| Unit + Ultra Low Noise option | kg | 5104 | 5222 | 5710 | 5722 | 6722 | 6774 | 7322 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module option | kg | 5494 | 5611 | 6178 | 6190 | 7191 | 7317 | 7865 |
| Unit + Ultra Low Noise + HP dual-pump hydraulic module + Water buffer tank module option | kg | - | - | - | - | - | - | - |
| **Compressors** | | Hermetic Scroll 48.3 r/s | | | | | | |
| Circuit A/C | | 2/2 | 2/2 | 2/2 | 2/2 | 3/3 | 3/3 | 4/4 |
| Circuit B/D | | 3/3 | 3/3 | 4/4 | 4/4 | 4/4 | 4/4 | 4/4 |
| Number of power stages | | 10 | 10 | 12 | 12 | 14 | 14 | 16 |
| **Unit PED category** | | III | IV | IV | IV | IV | IV | IV |
| **Refrigerant(3)** | | R-32 / A2L/ GWP= 675 in accordance with ARI4 | | | | | | |
| Circuit A/C | kg | 16,0 / 16,0 | 18,0 / 18,0 | 18,0 / 18,0 | 18,0 / 18,0 | 29,0 / 29,0 | 29,0 / 29,0 | 35,0 / 35,0 |
| | $tCO_2e$ | 10,8 / 10,8 | 12,2 / 12,2 | 12,2 / 12,2 | 12,2 / 12,2 | 19,6 / 19,6 | 19,6 / 19,6 | 23,6 / 23,6 |
| Circuit B/D | kg | 28,5 / 28,5 | 28,5 / 28,5 | 34,0 / 34,0 | 34,0 / 34,0 | 34,5 / 34,5 | 35,0 / 35,0 | 35,0 / 35,0 |
| | $tCO_2e$ | 19,2 / 19,2 | 19,2 / 19,2 | 23,0 / 23,0 | 23,0 / 23,0 | 23,3 / 23,3 | 23,6 / 23,6 | 23,6 / 23,6 |
| **Oil** | | | | | | | | |
| Circuit A/C | l | 13,2 / 13,2 | 13,2 / 13,2 | 13,2 / 13,2 | 13,2 / 13,2 | 22,8 / 22,8 | 22,8 / 22,8 | 30,4 / 30,4 |
| Circuit B/D | l | 22,8 / 22,8 | 22,8 / 22,8 | 30,4 / 30,4 | 30,4 / 30,4 | 30,4 / 30,4 | 30,4 / 30,4 | 30,4 / 30,4 |
| **Capacity control** | | Connect'Touch | | | | | | |
| Minimum capacity | % | 10 | 10 | 8 | 8 | 7 | 7 | 6 |
| **Condenser** | | Grooved copper tubes and aluminium fins | | | | | | |
| **Fans** | | Axial with rotating impeller | | | | | | |
| **Standard unit** | | | | | | | | |
| Quantity | | 10 | 10 | 12 | 12 | 14 | 14 | 16 |
| Maximum total air flow (cooling mode) | l/s | 39300 | 39300 | 47160 | 47160 | 55020 | 55020 | 62880 |
| Maximum rotation speed (heating mode) | r/s | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Maximum total air flow (heating mode) | l/s | 48200 | 48200 | 57840 | 57840 | 67480 | 67480 | 77120 |
| Maximum rotation speed (heating mode) | r/s | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| **Evaporator** | | Dual-circuit plate heat exchanger | | | | | | |
| Water volume | l | 77,4 | 97,2 | 97,2 | 97,2 | 97,2 | 104,4 | 117 |
| Max. water-side operating pressure without hydraulic module | kPa | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| **Hydraulic module (option)** | | Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors | | | | | | |
| Pump | | Centrifugal pump, monocell, 48.3 r/s, low- or high-pressure (as required), single or dual (as required) | | | | | | |
| Expansion tank volume (Option) | l | - | - | - | - | - | - | - |
| Buffer tank volume (optional) | l | - | - | - | - | - | - | - |
| Max. water-side operating pressure with hydraulic module | kPa | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| **Water connections with or without hydraulic module** | | Victaulic® type | | | | | | |
| Module 1/Module 2 connections (a) | inches | 4 / 4 | 4 / 4 | 4 / 4 | 4 / 4 | 4 / 4 | 4 / 4 | 4 / 4 |
| Module 1/Module 2 external diameter (a) | mm | 114,3 / 114,3 | 114,3 / 114,3 | 114,3 / 114,3 | 114,3 / 114,3 | 114,3 / 114,3 | 114,3 / 114,3 | 114,3 / 114,3 |
| **Casing paint colour** | | Colour code RAL 7035 & 7024 | | | | | | |

(3) Values are guidelines only. Refer to the unit name plate.
(a) Modules 1 and 2 only relate to sizes 2300R to 4000R.

# ELECTRICAL SPECIFICATIONS

## Basic unit (excluding pump)

| AQUACIAT POWER TM LD | | 0602R | 0650R | 0750R | 0900R | 1100R | 1200R | 1350R | 1400R | 1600R | 1750R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Control circuit supply** | | 24 V via internal transformer | | | | | | | | | |
| **Maximum operating input power(1) or (2)** | | | | | | | | | | | |
| Circuit A&B | kW | 71,6 | 77,2 | 86,8 | 95,4 | 114,6 | 128,9 | 143,3 | 157,5 | 171,9 | 186,2 |
| **Power factor at maximum power(1) or (2)** | | | | | | | | | | | |
| Displacement Power Factor (Cos Phi), standard unit | | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 |
| **Maximum operating current draw (Un)(1) or (2)** | | | | | | | | | | | |
| Standard unit | A | 123,9 | 134,4 | 151,0 | 165,2 | 198,4 | 223,1 | 248,0 | 272,7 | 297,6 | 322,3 |
| **Maximum current (Un-10%)(1) or (2)** | | | | | | | | | | | |
| Standard unit | A | 132,6 | 143,8 | 161,8 | 176,8 | 212,8 | 239 | 266 | 292,2 | 319,2 | 345,4 |
| **Maximum start-up current (Un)(2) + (3)** | | | | | | | | | | | |
| Standard unit | A | 300 | 347 | 364 | 341 | 411 | 436 | 461 | 485 | 510 | 535 |
| Unit + Electronic soft starter option | A | 257 | 295 | 312 | 298 | 359 | 384 | 409 | 433 | 458 | 483 |

| AQUACIAT POWER TM LD | | 1800R | 2000R | 2200R | 2400R | 2650R | 2800R | 2950R | 3200R | 3500R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | |
| **Control circuit supply** | | 24 V via internal transformer | | | | | | | | |
| **Maximum operating input power(1) or (2)** | | | | | | | | | | |
| Circuit A&B | kW | 200,6 | 229,2 | 246,7 | 271,9 | 295,3 | 316,7 | 328,4 | 361,4 | 392,6 |
| **Power factor at maximum power(1) or (2)** | | | | | | | | | | |
| Displacement Power Factor (Cos Phi), standard unit | | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 |
| **Maximum operating current draw (Un)(1) or (2)** | | | | | | | | | | |
| Standard unit | A | 347,2 | 396,8 | 432,3 | 478,0 | 517,0 | 556,2 | 575,7 | 634,4 | 686,4 |
| **Maximum current (Un-10%)(1) or (2)** | | | | | | | | | | |
| Standard unit | A | 372,4 | 425,6 | 464,8 | 514 | 556 | 598,2 | 619,2 | 682,4 | 738,4 |
| **Maximum start-up current (Un)(2) + (3)** | | | | | | | | | | |
| Standard unit | A | 560 | 609 | 763 | 815 | 848 | 893 | 906 | 971 | 1017 |
| Unit + Electronic soft starter option | A | 508 | 557 | 680 | 732 | 765 | 811 | 824 | 889 | 934 |

(1) Values at the unit's permanent maximum operating condition (as shown on the unit's nameplate).
(2) Values at the unit's maximum operating condition (as shown on the unit's nameplate).
(3) Maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor.

# ELECTRICAL SPECIFICATIONS

| AQUACIAT POWER ™ ILD | | 0602R | 0700R | 0800R | 0900R | 1000R | 1150R | 1250R | 1400R | 1500R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Control circuit supply** | | 24 V via internal transformer | | | | | | | | | |
| **Maximum operating input power(1) or (2)** | | | | | | | | | | | |
| Circuit A&B (Module 1/Module 2) (a) | kW | 71,6 | 81,2 | 95,4 | 105,0 | 114,6 | 133,7 | 143,3 | 162,3 | 171,9 | 186,2 |
| **Power factor at maximum power(1) or (2)** | | | | | | | | | | | |
| Standard unit power factor | | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 | 0,83 |
| **Maximum operating current draw (Un)(1) or (2)** | | | | | | | | | | | |
| Standard unit (Module 1/Module 2) (a) | A | 123,9 | 140,5 | 165,2 | 181,8 | 198,4 | 231,4 | 248,0 | 281,0 | 297,6 | 322,3 |
| **Maximum current (Un-10%)(1) or (2)** | | | | | | | | | | | |
| Standard unit (Module 1/Module 2) (a) | A | 135,6 | 151,6 | 180,8 | 196,8 | 212,8 | 250,0 | 266,0 | 303,2 | 319,2 | 348,4 |
| **Maximum start-up current (Un)(2) + (3)** | | | | | | | | | | | |
| Standard unit (Module 1/Module 2) (a) | A | 299,8 | 355,3 | 341,1 | 394,4 | 411 | 444 | 460,6 | 493,6 | 510,2 | 534,9 |
| Unit + Soft starter option (Module 1 / Module 2) (a) | A | 256,8 | 303 | 298 | 342 | 359 | 392 | 409 | 442 | 458 | 483 |

| AQUACIAT POWER ™ ILD | | 1750R | 2000R | 2300R | 2500R | 2800R | 3000R | 3200R | 3500R | 4000R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | |
| **Control circuit supply** | | 24 V via internal transformer | | | | | | | | |
| **Maximum operating input power(1) or (2)** | | | | | | | | | | |
| Circuit A&B (Module 1/Module 2) (a) | kW | 200,6 | 229,2 | 139,2 / 139,2 | 148,7 / 148,7 | 169,0 / 169,0 | 178,6 / 178,6 | 193,7 / 193,7 | 208,1 / 208,1 | 237,8 / 237,8 |
| **Power factor at maximum power(1) or (2)** | | | | | | | | | | |
| Standard unit power factor | | 0,83 | 0,83 | 0,85 | 0,85 | 0,85 | 0,85 | 0,85 | 0,85 | 0,85 |
| **Maximum operating current draw (Un)(1) or (2)** | | | | | | | | | | |
| Standard unit (Module 1/Module 2) (a) | A | 347,2 | 396,8 | 235,4 / 235,4 | 252 / 252 | 285,8 / 285,8 | 302,4 / 302,4 | 327,9 / 327,9 | 352,8 / 352,8 | 403,2 / 403,2 |
| **Maximum current (Un-10%)(1) or (2)** | | | | | | | | | | |
| Standard unit (Module 1/Module 2) (a) | A | 372,4 | 425,6 | 254 / 254 | 270 / 270 | 308 / 308 | 324 / 324 | 354 / 354 | 378 / 378 | 432 / 432 |
| **Maximum start-up current (Un)(2) + (3)** | | | | | | | | | | |
| Standard unit (Module 1/Module 2) (a) | A | 559,8 | 609,4 | 448 / 448 | 465 / 465 | 498 / 498 | 515 / 515 | 541 / 541 | 565 / 565 | 616 / 616 |
| Unit + Soft starter option (Module 1 / Module 2) (a) | A | 508 | 557 | 396 / 396 | 413 / 413 | 446 / 446 | 463 / 463 | 489 / 489 | 513 / 513 | 564 / 564 |

(1) Values at the unit's permanent maximum operating condition (as shown on the unit's nameplate).
(2) Values at the unit's maximum operating condition (as shown on the unit's nameplate).
(3) Maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor.
(a) Modules 1 and 2 only relate to sizes 2300R to 4000R.

# ELECTRICAL SPECIFICATIONS

## Short circuit current withstand capability (TN system(1))

| AQUACIAT POWER TM LD | | 0602R | 0650R | 0750R | 0900R | 1100R | 1200R | 1350R | 1400R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Rated short-circuit withstand currents** | | | | | | | | | | |
| Rated short time (1s) current - Icw | kA eff | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 20 | 20 | 20 | 20 |
| Rated peak current - Ipk | kA pk | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 |
| **Value with upstream protection (1)** | | | | | | | | | | |
| Rated conditional short circuit current Icc | kA eff | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Associated protection - type | | INS250 | INS250 | INS250 | INS250 | INS250 | INS400 | INS400 | INS400 | INS400 |
| Associated protection - rating/reference | | TM160D / LV430840 | TM200D / LV431831 | TM200D / LV431831 | TM250D / LV431831 | TM250D / LV431831 | TM250D / LV431831 | Micrologic 2.3 400 A / LV432693 | Micrologic 2.3 400 A / LV432693 | Micrologic 2.3 400 A / LV432693 |

| AQUACIAT POWER TM LD | | 1750R | 1800R | 2000R | 2200R | 2400R | 2650R | 2800R | 2950R | 3200R | 3500R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated short-circuit withstand currents** | | | | | | | | | | | |
| Rated short time (1s) current - Icw | kA eff | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 35 | 35 | 35 |
| Rated peak current - Ipk | kA pk | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 |
| **Value with upstream protection (1)** | | | | | | | | | | | |
| Rated conditional short circuit current Icc | kA eff | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Associated protection - type | | INS400 | INS500 | INS500 | INS630 | INS630 | INS630 | INS800 | INS800 | INS800 | INS800 |
| Associated protection - rating/reference | | Micrologic 2.3 400 A / LV432693 | Micrologic 2.3 630 A / LV432893 | Micrologic 2.3 630 A / LV432893 | Micrologic 2.3 630 A / LV432893 | Micrologic 2.3 630 A / LV432893 | Micrologic 2.3 630 A / LV432893 | Micrologic 5.0 800 A / 34426 | Micrologic 5.0 800 A / 34426 | Micrologic 5.0 800 A / 34426 | Micrologic 5.0 800 A / 34426 |

(1) If another current limitation protection device is used, its time-current and thermal constraint ($I^2t$) trip characteristics must be at least equivalent to those of the recommended protection.

**Note: The short-circuit withstand current capability values above have been established for the TN system.**

# ELECTRICAL SPECIFICATIONS

## Short circuit current withstand capability (TN system(1))

| AQUACIAT POWER TM ILD | | 0602R | 0700R | 0800R | 0900R | 1000R | 1150R | 1250R | 1400R | 1500R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated short-circuit withstand currents** | | | | | | | | | | | |
| Rated short time (1s) current - Icw (Module 1 / Module 2) (a) | kA eff | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 20 | 20 | 20 | 20 | 20 |
| Allowable rated peak current - Ipk (Module 1 / Module 2) (a) | kA pk | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 |
| **Value with upstream protection (1)** | | | | | | | | | | | |
| Rated conditional short circuit current Icc (Module 1 / Module 2) (a) | kA eff | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Associated protection - type (Module 1/Module 2) (a) | | INS250 | INS250 | INS250 | INS250 | INS250 | INS400 | INS400 | INS400 | INS400 | INS400 |
| Associated protection (rating/reference) | Module 1 (a) | TM160D / LV430840 | TM200D / LV431831 | TM250D / LV431831 | TM250D / LV431831 | TM250D / LV431831 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 |
| | Module 2 (a) | - | - | - | - | - | - | - | - | - | - |

| AQUACIAT POWER TM ILD | | 1750R | 2000R | 2300R | 2500R | 2800R | 3000R | 3200R | 3500R | 4000R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Rated short-circuit withstand currents** | | | | | | | | | | |
| Rated short time (1s) current - Icw (Module 1 / Module 2) (a) | kA eff | 20 | 20 | 20 / 20 | 20 / 20 | 20 / 20 | 20 / 20 | 20 / 20 | 20 / 20 | 20 / 20 |
| Allowable rated peak current - Ipk (Module 1 / Module 2) (a) | kA pk | 330 | 330 | 330 / 330 | 330 / 330 | 330 / 330 | 330 / 330 | 330 / 330 | 330 / 330 | 330 / 330 |
| **Value with upstream protection(1)** | | | | | | | | | | |
| Rated conditional short circuit current Icc (Module 1 / Module 2) (a) | kA eff | 50 | 50 | 50 / 50 | 50 / 50 | 50 / 50 | 50 / 50 | 50 / 50 | 50 / 50 | 50 / 50 |
| Associated protection - type (Module 1/Module 2) (a) | | INS500 | INS500 | INS400 / INS400 | INS400 / INS400 | INS400 / INS400 | INS400 / INS400 | INS400 / INS400 | INS500 / INS500 | INS500 / INS500 |
| Associated protection (rating/reference) | Module 1 (a) | Micrologic 2.3 630 A/ LV432893 | Micrologic 2.3 630 A/ LV432893 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 630 A/ LV432893 | Micrologic 2.3 630 A/ LV432893 |
| | Module 2 (a) | - | - | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 400 A/ LV432693 | Micrologic 2.3 630 A/ LV432893 | Micrologic 2.3 630 A/ LV432893 |

(1) If another current limitation protection device is used, its time-current and thermal constraint ($I^2t$) trip characteristics must be at least equivalent to those of the recommended protection.
(a) Modules 1 and 2 only relate to sizes 2300R to 4000R.
**Note: The short-circuit withstand current capability values above have been established for the TN system.**

# FREE COOLING SYSTEM

Reducing operating costs and protecting the environment have become the key concerns, both for air conditioning applications, and for industrial processes and cooling data centres.

The free cooling option allows significant energy savings to be made in all applications that require cooling throughout the year, particularly when used in colder climates. In these regions, free cooling can be used to fulfil a large proportion of the cooling requirements both economically and in a way that respects the environment

In free cooling mode, the compressors are stopped, and only the fans are in operation. The Connect Touch control automatically switches from compressor cooling mode to free cooling mode depending on the cooler heat load and the temperature differential between the chilled water outlet and the ambient air.

***Important: to optimise cooler performance, you are recommended to use the leaving water temperature setpoint offset function.***

## Operating principle

The unit's Connect Touch control maximises the use of the free cooling based on the needs of the application and the climate conditions. Once the chilled water/ambient air temperature differential exceeds the threshold value by 1K, the Connect Touch control activates free cooling and adjusts the air flow rate to optimise the unit's energy performance. If the operating conditions permit the free cooling to operate on its own to meet the requirements, the compressors are stopped. Two motorised valves direct the chilled water to the free cooling coils.

**Three operating modes are possible:**

Summer (warm weather season): Mechanical cooling mode

The liquid chiller meets the needs traditionally using the refrigerant circuit. The fluid bypasses the free cooling coils and is cooled by the evaporator.

Mid-season: Combination mode

It is possible to operate in combination Free Cooling and mechanical cooling mode. This helps optimise Free Cooling operations while covering the system's cooling requirements. The fluid is pre-cooled by the free cooling coils positioned in series with the refrigerant circuit evaporator which finalises cooling of the fluid.

Winter (cold weather season): Free cooling mode

Depending on the capacity requested and the setpoint, all of the requirements may be fulfilled by the Free Cooling in this operating mode without the fans running, thereby ensuring optimum energy efficiency.

## Adaptations to requirements

Depending on the requirements of the user, the **AQUACIAT POWER TM** LD free cooling is available with 2 performance levels:

- Total hydraulic free cooling on the 2 circuits, specifically designed for installations which have major cooling requirements all year round (industrial processes, data centres)
- Partial hydraulic free cooling on 1 circuit, designed for installations which have limited cooling requirements during the winter (offices, hospitals, etc.)

## Advantages of the built-in free cooling system

- The free cooling function is independent of the refrigerant circuit, which increases reliability and facilitates maintenance compared to free cooling built into the refrigerant circuit (DX FC).
- The Hydraulic Free Cooling design is intended to expand the scope of application compared to the Free Cooling refrigerant concept (DX FC) by enabling Free Cooling mode to be activated by a higher outdoor temperature, thereby allowing for greater energy savings.
- The built-in Hydraulic Free Cooling version developed based on the **AQUACIAT POWER TM** range allows all of the advantages of a free cooling solution to be combined with the compact design of the base units.

# FREE COOLING SYSTEM

## Physical characteristics of AQUACIAT POWER ™ LD units with free cooling option

| AQUACIAT POWER ™ LD | | | | 0602R | 0650R | 0750R | 0900R | 1100R | 1200R | 1350R | 1400R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cooling** | | | | | | | | | | | | |
| **Unit + High energy efficiency option** | CA1 | Nominal capacity | kW | 181 | 198 | 220 | 239 | 288 | 328 | 366 | 401 | 440 |
| Full load performances* | | EER | kW/kW | 3,28 | 3,46 | 3,31 | 3,25 | 3,12 | 3,23 | 3,16 | 3,21 | 3,16 |
| **FREE COOLING** | | | | | | | | | | | | |
| Total free cooling option | CFC1 | Nominal capacity | kW | 182 | 243 | 243 | 243 | 243 | 303 | 303 | 364 | 364 |
| | | Free cooling EER | kW/kW | 25,86 | 25,43 | 25,43 | 25,43 | 25,76 | 25,76 | 25,94 | 25,55 | 25,71 |
| | | Pressure drops | kPa | 94 | 112 | 112 | 112 | 102 | 107 | 101 | 117 | 112 |
| | | Sound power(1) | dB(A) | 88,0 | 89,0 | 89,0 | 89,0 | 89,0 | 90,0 | 90,0 | 90,5 | 91,0 |
| | | Sound pressure at 10 m(2) | dB(A) | 69,0 | 70,5 | 70,5 | 70,5 | 70,5 | 70,5 | 70,5 | 71,0 | 71,5 |
| Partial free cooling option | CFC1 | Nominal capacity | kW | 121 | 121 | 121 | 121 | 121 | 121 | 121 | 145 | 145 |
| | | Free cooling EER | kW/kW | 25,78 | 25,78 | 25,78 | 25,78 | 25,87 | 25,97 | 26,00 | 19,15 | 19,14 |
| | | Pressure drops | kPa | 80 | 80 | 80 | 80 | 77 | 75 | 74 | 81 | 79 |
| | | Sound power(1) | dB(A) | 86,0 | 86,0 | 86,0 | 86,0 | 86,0 | 86,0 | 86,0 | 87,5 | 88,0 |
| | | Sound pressure at 10 m(2) | dB(A) | 67,5 | 67,5 | 67,5 | 67,5 | 67,5 | 66,5 | 66,5 | 68,0 | 68,5 |
| **Unit + ultra low noise level option** | CA1 | Nominal capacity | kW | 171 | 189 | 208 | 226 | 270 | 309 | 343 | 377 | 413 |
| Full load performances* | | EER | kW/kW | 3,06 | 3,29 | 3,08 | 3,03 | 2,82 | 2,96 | 2,85 | 2,94 | 2,86 |
| **FREE COOLING** | | | | | | | | | | | | |
| Total free cooling option | CFC1 | Nominal capacity | kW | 148 | 197 | 197 | 197 | 197 | 247 | 247 | 296 | 296 |
| | | Free cooling EER | kW/kW | 39,92 | 39,76 | 39,76 | 39,76 | 40,28 | 40,58 | 41,01 | 40,14 | 40,52 |
| | | Pressure drops | kPa | 65 | 77 | 77 | 77 | 71 | 73 | 70 | 80 | 77 |
| | | Sound power(1) | dB(A) | 79,5 | 80,5 | 80,5 | 80,5 | 81,0 | 82,0 | 82,0 | 82,0 | 82,5 |
| | | Sound pressure at 10 m(2) | dB(A) | 60,5 | 62,0 | 62,0 | 62,0 | 62,5 | 63,0 | 63,0 | 62,5 | 63,0 |
| Partial free cooling option | CFC1 | Nominal capacity | kW | 98 | 98 | 98 | 98 | 99 | 99 | 99 | 118 | 118 |
| | | Free cooling EER | kW/kW | 42,39 | 42,39 | 42,39 | 42,39 | 42,73 | 43,05 | 43,17 | 30,35 | 30,48 |
| | | Pressure drops | kPa | 55 | 55 | 55 | 55 | 54 | 52 | 51 | 56 | 55 |
| | | Sound power(1) | dB(A) | 77,5 | 77,5 | 77,5 | 77,5 | 78,0 | 78,0 | 78,0 | 79,0 | 79,5 |
| | | Sound pressure at 10 m(2) | dB(A) | 59,0 | 59,0 | 59,0 | 59,0 | 59,5 | 59,0 | 59,0 | 59,5 | 60,0 |

* In accordance with EN14511-3:2018.

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 17 °C/10 °C, outdoor air temperature at 35 °C, 30% Mono-Ethylene-Glycol, evaporator fouling factor 0 m². k/W

CFC1 Free cooling mode conditions: evaporator water inlet/outlet temperature 17 °C/10 °C, outdoor air temperature at 0 °C, 30% Mono-Ethylene-Glycol, evaporator fouling factor 0 m². k/W

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

# FREE COOLING SYSTEM

| AQUACIAT POWER ™ LD | | 0602R | 0650R | 0750R | 0900R | 1100R | 1200R | 1350R | 1400R | 1600R |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total free cooling** | | | | | | | | | | |
| **Free cooling coil** | | All-aluminium micro-channel coils (MCHE) | | | | | | | | |
| Quantity | | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| **Hydraulic connection** | | | | | | | | | | |
| Connection | in | 3" | 3" | 3" | 3" | 3" | 4" | 4" | 4" | 4" |
| External diameter | mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 114,3 | 114,3 | 114,3 | 114,3 |
| Additional water volume | l | 60 | 72 | 72 | 72 | 72 | 113 | 113 | 126 | 126 |
| **Weight** (3) | | | | | | | | | | |
| Additional weight (without water) | kg | 225 | 266 | 266 | 266 | 266 | 357 | 359 | 395 | 397 |
| Additional weight (during operation) | kg | 287 | 341 | 341 | 341 | 341 | 475 | 477 | 526 | 528 |
| **Operation** | | | | | | | | | | |
| Max. operating pressure, water side | bar | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| **Partial free cooling** | | | | | | | | | | |
| **Free cooling coil** | | All-aluminium micro-channel coils (MCHE) | | | | | | | | |
| Quantity | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| **Hydraulic connection** | | | | | | | | | | |
| Connection | in | 3" | 3" | 3" | 3" | 3" | 4" | 4" | 4" | 4" |
| External diameter | mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 114,3 | 114,3 | 114,3 | 114,3 |
| Additional water volume | l | 48 | 48 | 48 | 48 | 48 | 58 | 58 | 75 | 75 |
| **Weight** (3) | | | | | | | | | | |
| Additional weight (without water) | kg | 178 | 178 | 178 | 178 | 179 | 210 | 212 | 248 | 250 |
| Additional weight (during operation) | kg | 227 | 227 | 227 | 227 | 228 | 271 | 273 | 326 | 328 |
| **Operation** | | | | | | | | | | |
| Max. operating pressure, water side | bar | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |

(3) Values are guidelines only. Refer to the unit name plate.

# FREE COOLING SYSTEM

| AQUACIAT POWER ™ LD | | | | 1750R | 1800R | 2000R | 2200R | 2400R | 2650R | 2800R | 2950R | 3200R | 3500R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cooling** | | | | | | | | | | | | | |
| **Unit + High energy efficiency option** Full load performances* | CA1 | Nominal capacity | kW | 475 | 512 | 585 | 652 | 718 | 767 | 827 | 852 | 932 | 994 |
| | | EER | kW/kW | 3,22 | 3,16 | 3,15 | 3,23 | 3,22 | 3,12 | 3,14 | 3,10 | 3,06 | 2,96 |
| **FREE COOLING** | | | | | | | | | | | | | |
| Total free cooling option | CFC1 | Nominal capacity | kW | 425 | 425 | 485 | 546 | 607 | 607 | 667 | 667 | 728 | 728 |
| | | Free cooling EER | kW/kW | 26,07 | 26,12 | 25,96 | 25,99 | 25,77 | 25,77 | 25,65 | 25,65 | 25,41 | 25,41 |
| | | Pressure drops | kPa | 103 | 102 | 110 | 111 | 120 | 120 | 126 | 126 | 136 | 136 |
| | | Sound power(1) | dB(A) | 91,0 | 91,0 | 91,5 | 92,5 | 93,0 | 93,0 | 93,0 | 93,0 | 93,5 | 94,0 |
| | | Sound pressure at 10 m(2) | dB(A) | 71,0 | 71,0 | 71,5 | 72,0 | 72,5 | 72,5 | 72,0 | 72,0 | 72,5 | 73,0 |
| Partial free cooling option | CFC1 | Nominal capacity | kW | 182 | 182 | 242 | 204 | 262 | 262 | 303 | 303 | 364 | 364 |
| | | Free cooling EER | kW/kW | 26,46 | 26,46 | 26,58 | 20,36 | 20,91 | 20,91 | 26,66 | 26,66 | 26,57 | 26,57 |
| | | Pressure drops | kPa | 75 | 75 | 79 | 77 | 82 | 82 | 80 | 80 | 86 | 86 |
| | | Sound power(1) | dB(A) | 87,5 | 87,5 | 88,5 | 89,0 | 90,0 | 90,0 | 89,5 | 89,5 | 90,5 | 91,0 |
| | | Sound pressure at 10 m(2) | dB(A) | 67,5 | 67,5 | 68,5 | 68,5 | 69,5 | 69,5 | 68,5 | 68,5 | 69,5 | 70,0 |
| **Unit + ultra low noise level option** Full load performances* | CA1 | Nominal capacity | kW | 447 | 481 | 549 | 613 | 677 | 719 | 777 | 798 | 873 | 925 |
| | | EER | kW/kW | 2,94 | 2,85 | 2,85 | 2,94 | 2,94 | 2,82 | 2,84 | 2,79 | 2,76 | 2,63 |
| **FREE COOLING** | | | | | | | | | | | | | |
| Total free cooling option | CFC1 | Nominal capacity | kW | 345 | 345 | 395 | 444 | 493 | 493 | 543 | 543 | 592 | 592 |
| | | Free cooling EER | kW/kW | 41,39 | 41,49 | 41,14 | 41,23 | 40,73 | 40,73 | 40,47 | 40,47 | 39,92 | 39,92 |
| | | Pressure drops | kPa | 71 | 70 | 75 | 76 | 82 | 82 | 86 | 86 | 93 | 93 |
| | | Sound power(1) | dB(A) | 82,5 | 83,0 | 83,5 | 85,0 | 85,0 | 85,0 | 85,5 | 84,5 | 85,5 | 86,0 |
| | | Sound pressure at 10 m(2) | dB(A) | 62,5 | 63,0 | 63,5 | 64,0 | 64,5 | 64,5 | 64,5 | 63,5 | 64,5 | 65,0 |
| Partial free cooling option | CFC1 | Nominal capacity | kW | 148 | 148 | 197 | 166 | 213 | 213 | 247 | 247 | 296 | 296 |
| | | Free cooling EER | kW/kW | 43,20 | 43,24 | 43,63 | 32,85 | 34,02 | 34,02 | 44,19 | 44,19 | 44,26 | 44,26 |
| | | Pressure drops | kPa | 52 | 52 | 55 | 53 | 56 | 56 | 56 | 56 | 59 | 59 |
| | | Sound power(1) | dB(A) | 79,0 | 79,5 | 80,5 | 81,0 | 82,0 | 82,0 | 82,0 | 81,0 | 82,5 | 83,0 |
| | | Sound pressure at 10 m(2) | dB(A) | 59,0 | 59,5 | 60,5 | 60,5 | 61,5 | 61,5 | 61,0 | 60,0 | 61,5 | 62,0 |

* In accordance with EN14511-3:2018.

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 17 °C/10 °C, outdoor air temperature at 35 °C, 30% Mono-Ethylene-Glycol, evaporator fouling factor 0 m². k/W

CFC1 Free cooling mode conditions: evaporator water inlet/outlet temperature 17 °C/10 °C, outdoor air temperature at 0 °C, 30% Mono-Ethylene-Glycol, evaporator fouling factor 0 m². k/W

(1) In dB ref=$10^{-12}$ W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

# FREE COOLING SYSTEM

| AQUACIAT POWER ™ LD | | 1750R | 1800R | 2000R | 2200R | 2400R | 2650R | 2800R | 2950R | 3200R | 3500R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total free cooling** | | | | | | | | | | | |
| **Free cooling coil** | | All-aluminium micro-channel coils (MCHE) | | | | | | | | | |
| Quantity | | 7 | 7 | 8 | 9 | 10 | 10 | 11 | 11 | 12 | 12 |
| **Hydraulic connection** | | | | | | | | | | | |
| Connection | in | 4" | 4" | 4" | 5" | 5" | 5" | 5" | 5" | 5" | 5" |
| External diameter | mm | 114,3 | 114,3 | 114,3 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 |
| Additional water volume | l | 200 | 200 | 213 | 298 | 310 | 310 | 351 | 351 | 364 | 364 |
| **Weight** (3) | | | | | | | | | | | |
| Additional weight (without water) | kg | 516 | 515 | 556 | 662 | 700 | 700 | 814 | 814 | 851 | 851 |
| Additional weight (during operation) | kg | 725 | 724 | 778 | 972 | 1023 | 1023 | 1180 | 1180 | 1230 | 1230 |
| **Operation** | | | | | | | | | | | |
| Max. operating pressure, water side | bar | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| **Partial free cooling** | | | | | | | | | | | |
| **Free cooling coil** | | All-aluminium micro-channel coils (MCHE) | | | | | | | | | |
| Quantity | | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 |
| **Hydraulic connection** | | | | | | | | | | | |
| Connection | in | 4" | 4" | 4" | 5" | 5" | 5" | 5" | 5" | 5" | 5" |
| External diameter | mm | 114,3 | 114,3 | 114,3 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 | 139,7 |
| Additional water volume | l | 101 | 101 | 120 | 186 | 198 | 198 | 205 | 205 | 224 | 224 |
| **Weight** (3) | | | | | | | | | | | |
| Additional weight (without water) | kg | 306 | 305 | 346 | 406 | 443 | 443 | 499 | 499 | 536 | 536 |
| Additional weight (during operation) | kg | 411 | 410 | 471 | 600 | 650 | 650 | 713 | 713 | 770 | 770 |
| **Operation** | | | | | | | | | | | |
| Max. operating pressure, water side | bar | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |

(3) Values are guidelines only. Refer to the unit name plate.

## Free cooling operating limits

**LD 602R to 3500R units**

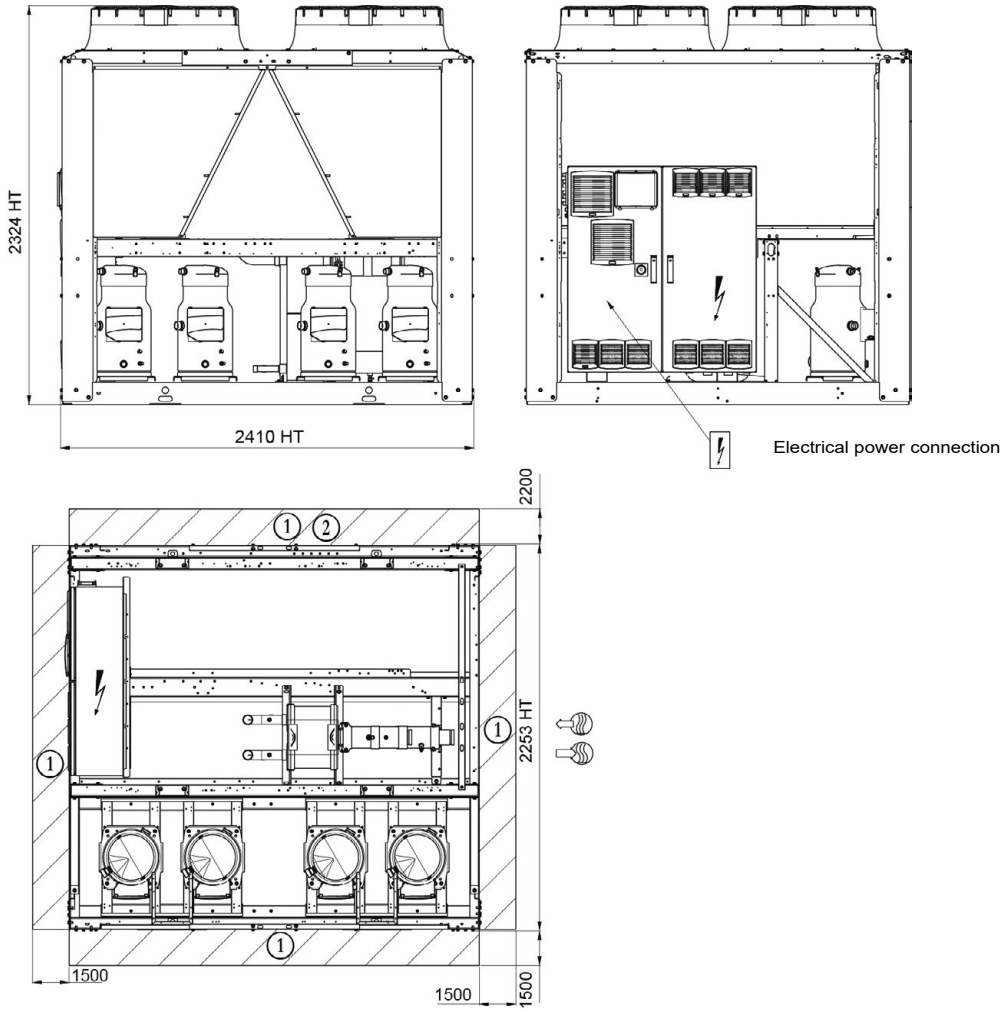
| Water type heat exchanger | | Minimum | Maximum |
|---|---|---|---|
| Water inlet temperature at start-up | °C | 8 | 40 |
| Water outlet temperature during operation | °C | 5 | 20 |
| **Air-cooled exchanger** | | **Minimum** | **Maximum** |
| **Outdoor ambient operating temperature** | | | |
| LD units - Full load | °C | -20 | 47 |
| LD units - Part load | °C | -20 | 52(1) |

(1) Part load operation permitted above an outdoor air temperature of 47 °C. Contact the manufacturer to select a unit using the electronic catalogue.

All the free cooling units must be protected against freezing with 30% ethylene glycol in the cooling loop circuit (recommended value).

# DIMENSIONS

## AQUACIAT POWER TM LD 602R to 1100R/ILD 602R to 1000R Without buffer tank




**Key**
All dimensions in mm

① Clearance required for maintenance and air flow
② Clearance recommended for coil removal
Water inlet
Water outlet
Air outlet, do not obstruct
Electrical cabinet

**Notes:**

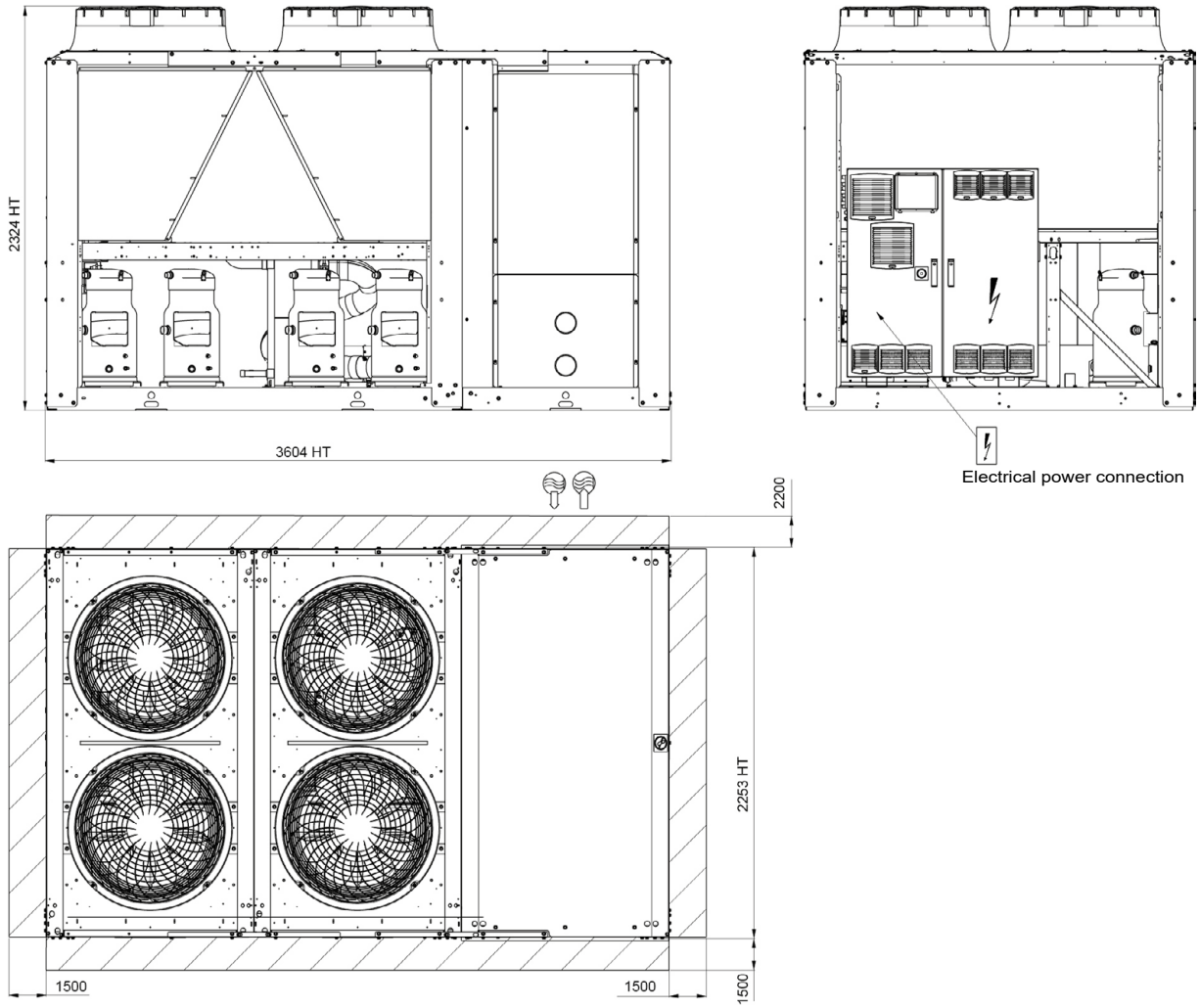
**Non-contractual drawings.**

**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIAT POWER TM LD 602R to 1100R/ILD 602R to 1000R With buffer tank




**Key**
All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

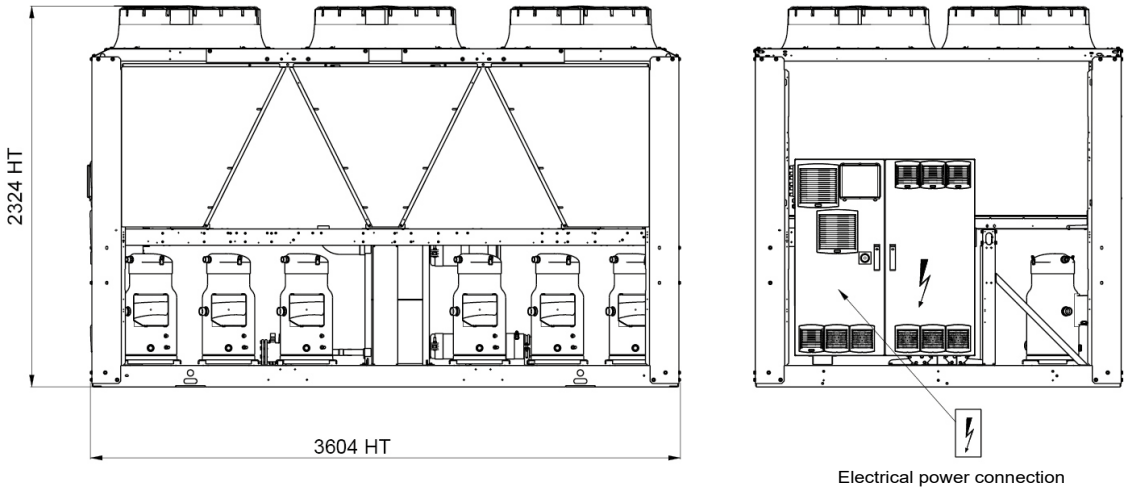
**Non-contractual drawings.**

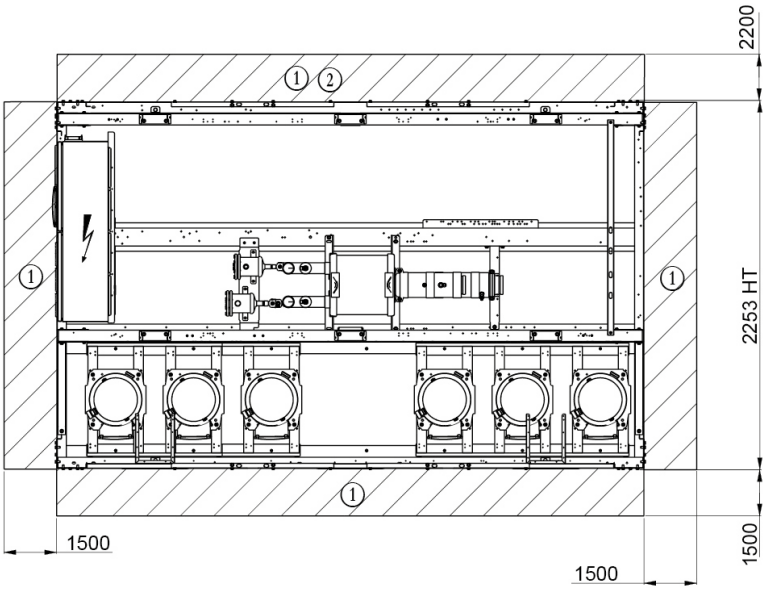
**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIAT POWER TM LD 1200R to 1600R/ILD 1150R to 1500R Without buffer tank




**Key**
All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

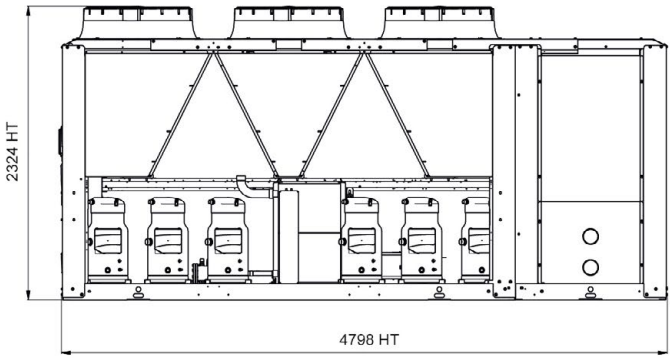
**Non-contractual drawings.**

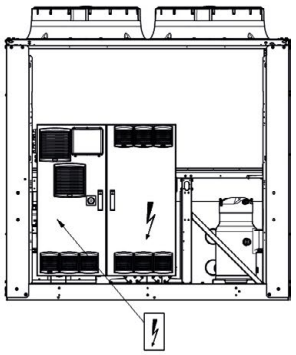
**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

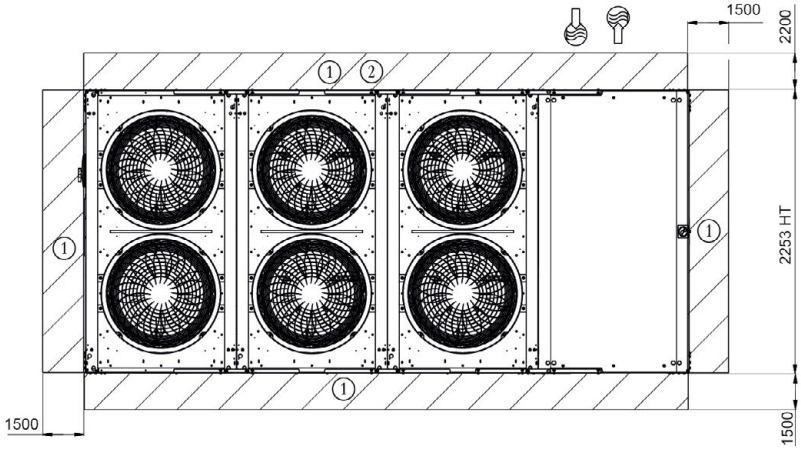
# DIMENSIONS

## AQUACIAT POWER TM LD 1200R to 1600R/ILD 1150R to 1500R With buffer tank



Electrical power connection




**Key**

All dimensions in mm

(1) Clearance required for maintenance and air flow

(2) Clearance recommended for coil removal

Water inlet

Water outlet

Air outlet, do not obstruct

Electrical cabinet

**Notes:**

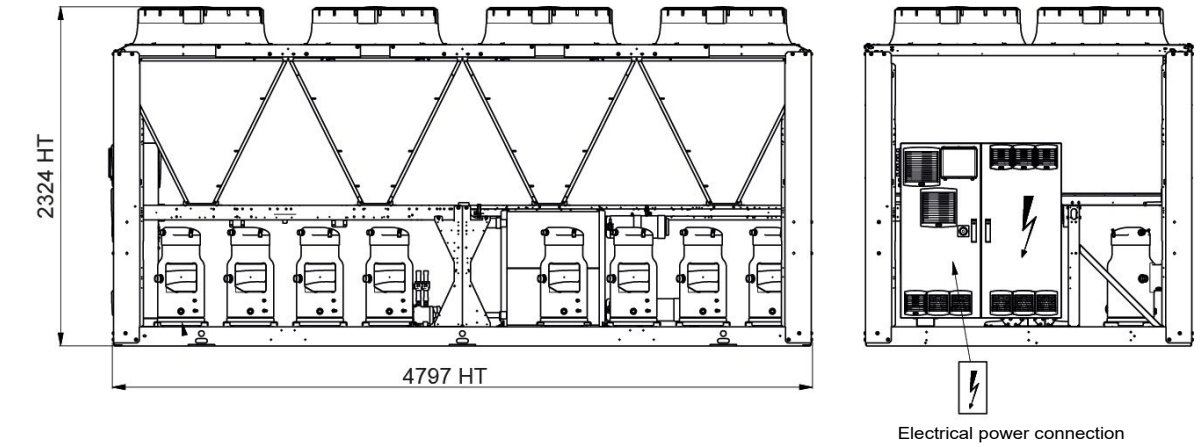
**Non-contractual drawings.**

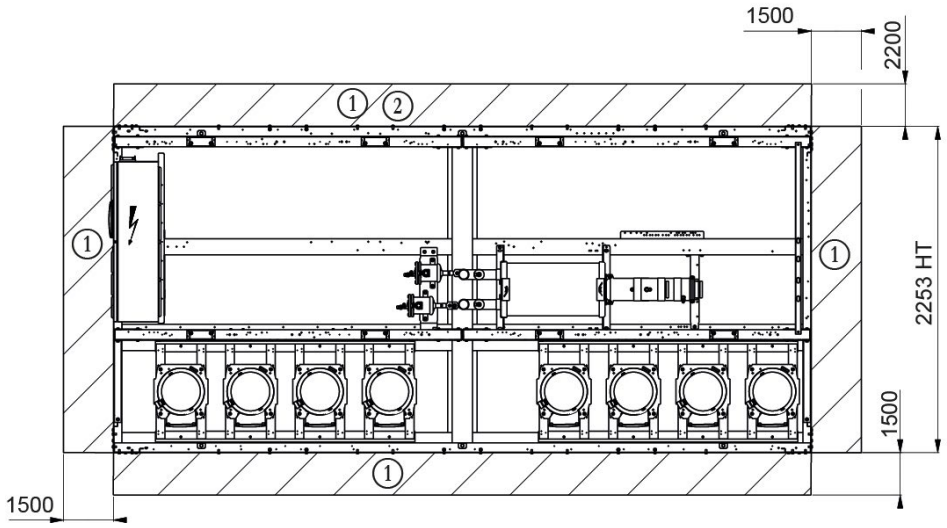
**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIAT POWER TM LD 1750R to 2000R/ILD 1600R to 2000R Without buffer tank




**Key**

All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

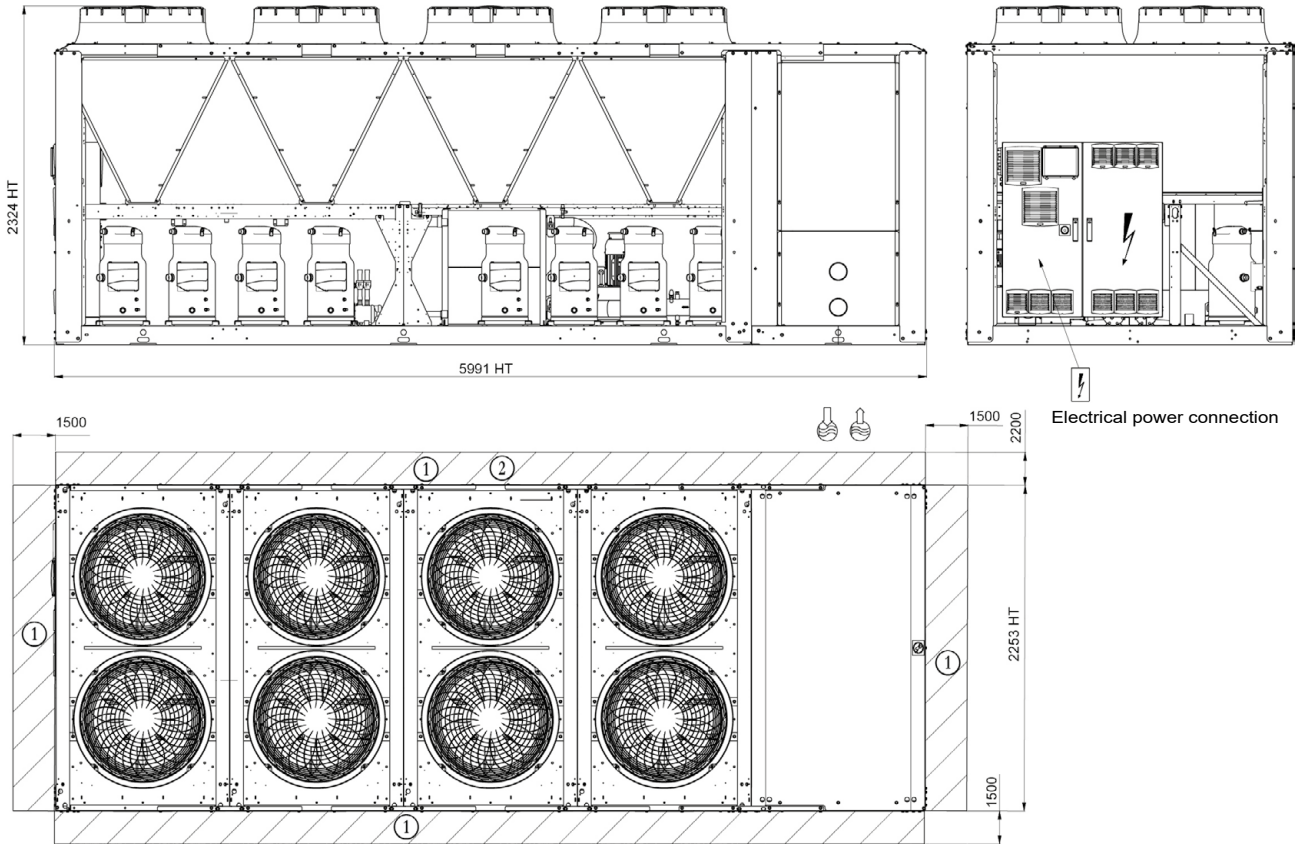
**Non-contractual drawings.**

**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIAT POWER TM LD 1750R to 2000R/ILD 1600R to 2000R With buffer tank




**Key**
All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

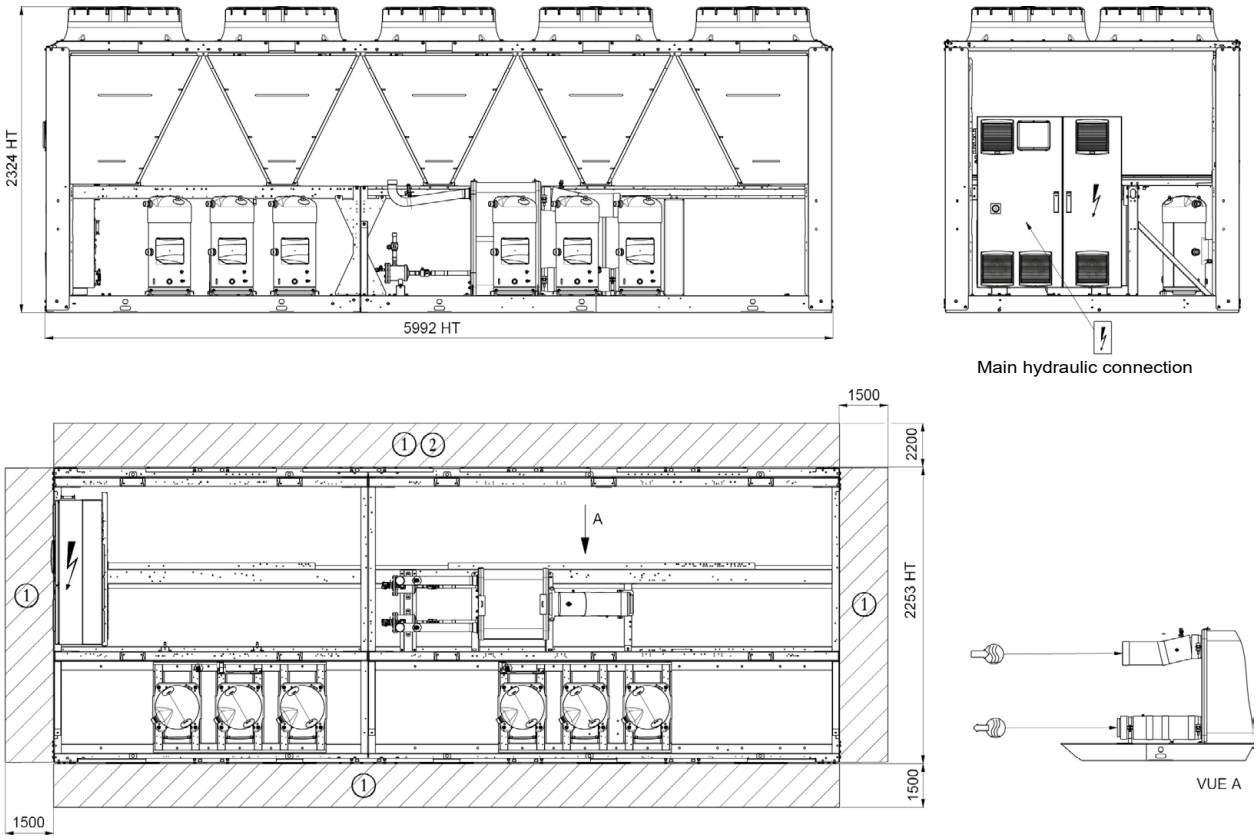
**Non-contractual drawings.**

**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIAT POWER TM LD 2200R to 2650R/Without buffer tank




**Key**

All dimensions in mm

(1) Clearance required for maintenance and air flow

(2) Clearance recommended for coil removal

Water inlet

Water outlet

Air outlet, do not obstruct

Electrical cabinet

**Notes:**

**Non-contractual drawings.**

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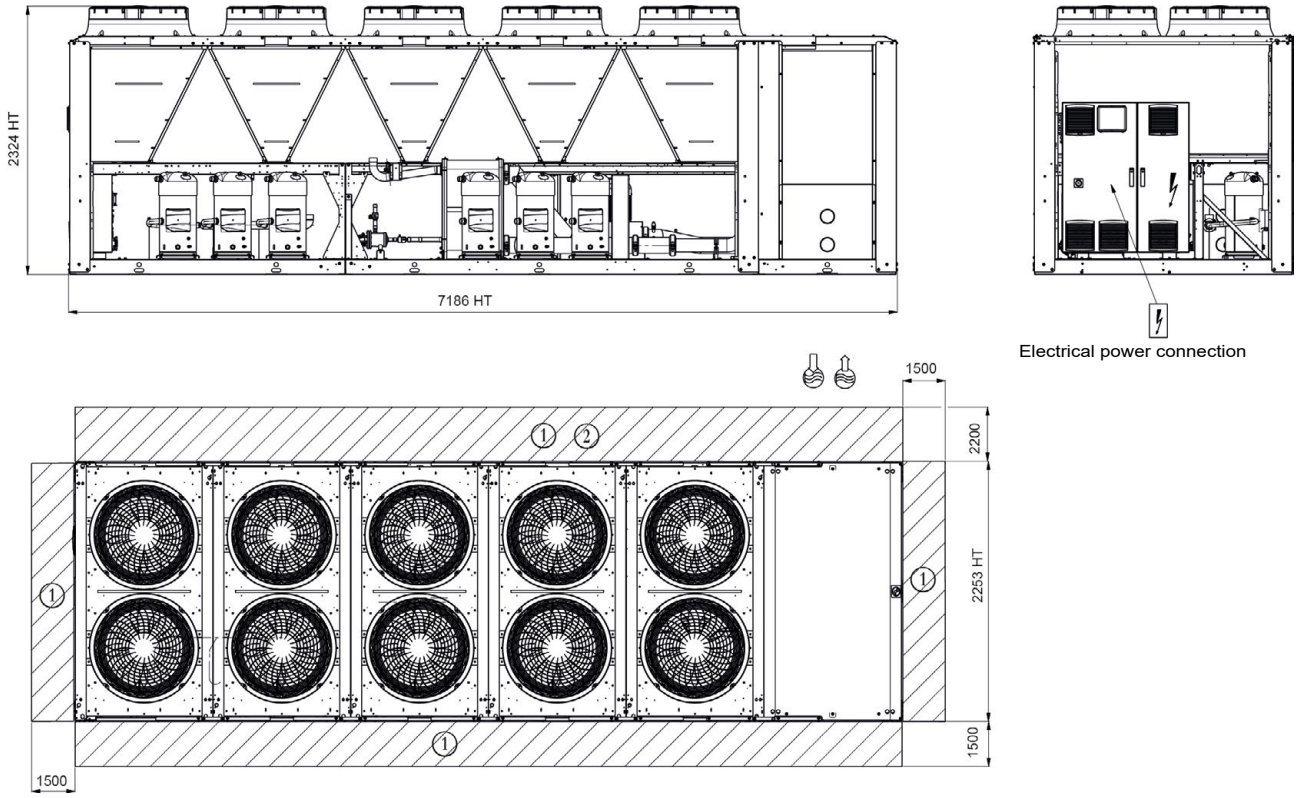
**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIATPOWER TM LD 2200R to 2650R/With buffer tank




**Key**
All dimensions in mm

- (1) Clearance required for maintenance and air flow
- (2) Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

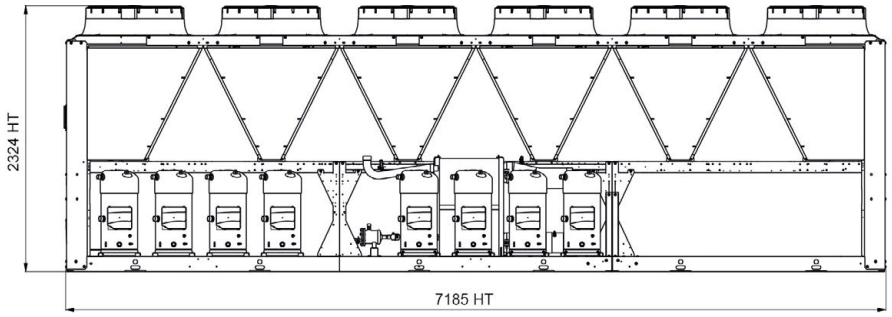
**Non-contractual drawings.**

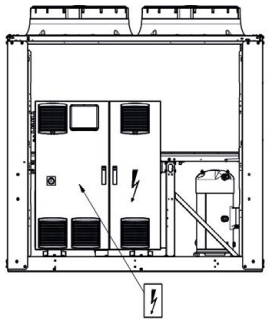
**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

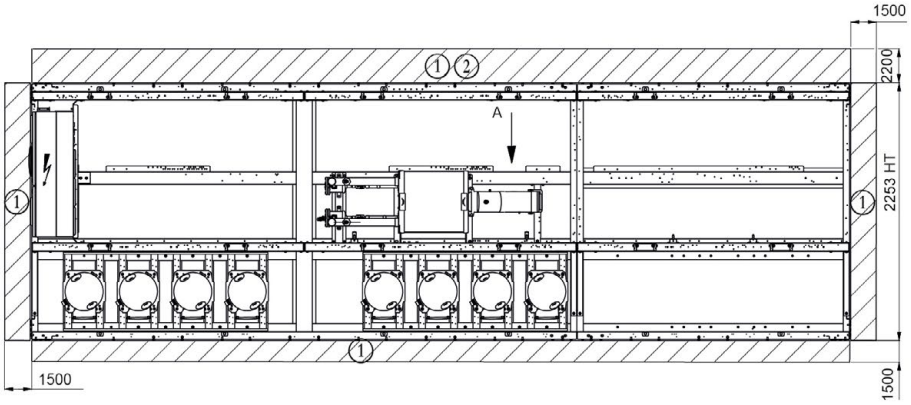
**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

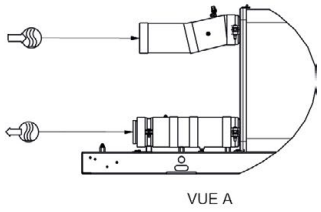
# DIMENSIONS

## AQUACIAT POWER TM LD 2800R to 3500R/Without buffer tank




**Key**
All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

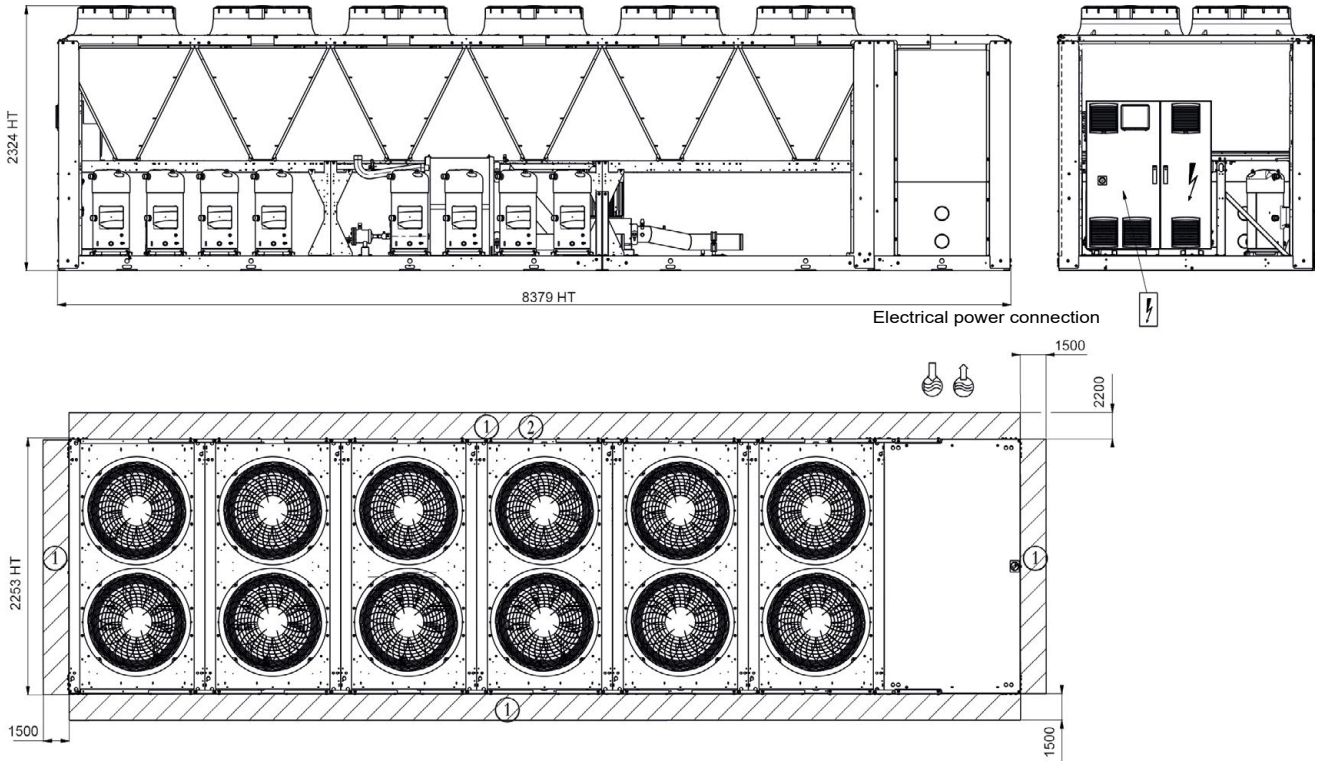
**Non-contractual drawings.**

**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

# DIMENSIONS

## AQUACIATPOWER TM LD 2800R to 3500R/With buffer tank




**Key**
All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

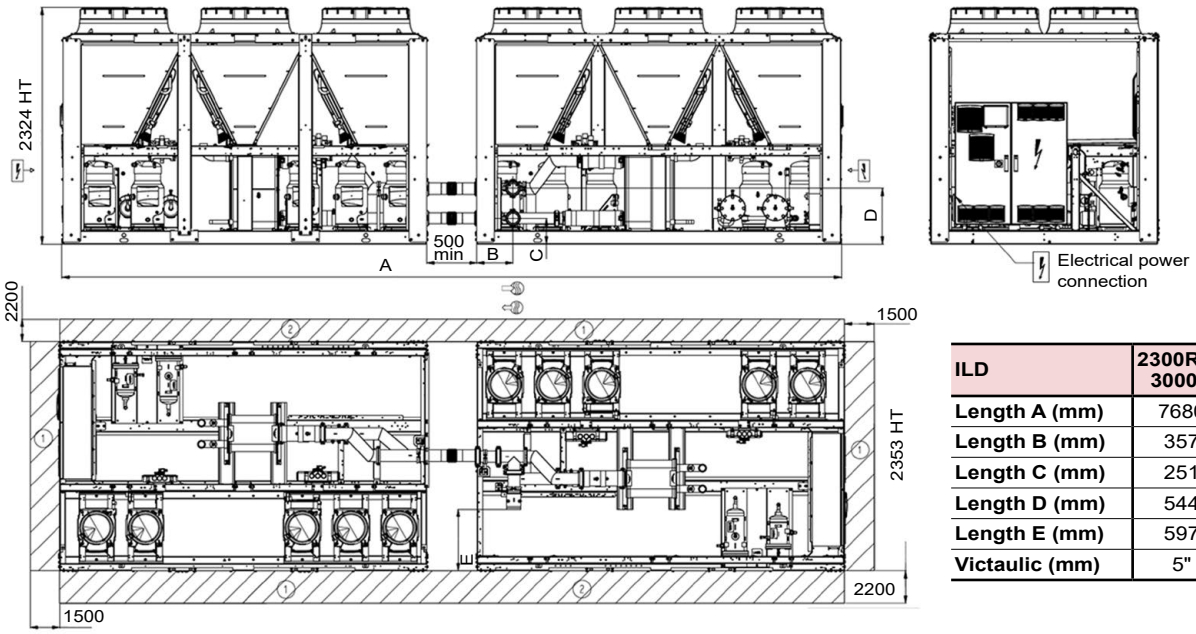
**Non-contractual drawings.**

**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**

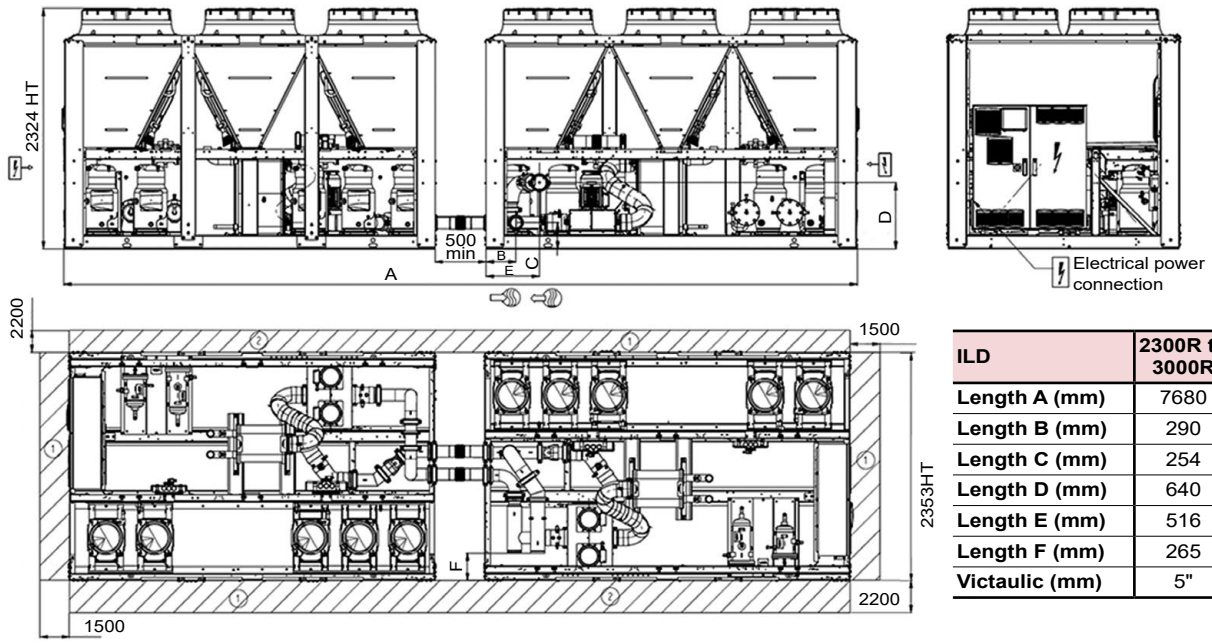
# DIMENSIONS

## AQUACIAT POWER TM LD 2300R to 4000R/Without hydraulic module




| ILD | 2300R to 3000R | 3200R to 4000R |
|---|---|---|
| Length A (mm) | 7680 | 10068 |
| Length B (mm) | 357 | 357 |
| Length C (mm) | 251 | 251 |
| Length D (mm) | 544 | 544 |
| Length E (mm) | 597 | 597 |
| Victaulic (mm) | 5" | 5" |

## AQUACIAT POWER TM LD 2300R to 4000R/With hydraulic module




| ILD | 2300R to 3000R | 3200R to 4000R |
|---|---|---|
| Length A (mm) | 7680 | 10068 |
| Length B (mm) | 290 | 251 |
| Length C (mm) | 254 | 254 |
| Length D (mm) | 640 | 640 |
| Length E (mm) | 516 | 509 |
| Length F (mm) | 265 | 265 |
| Victaulic (mm) | 5" | 5" |

**Key**

All dimensions in mm

1. Clearance required for maintenance and air flow
2. Clearance recommended for coil removal
- Water inlet
- Water outlet
- Air outlet, do not obstruct
- Electrical cabinet

**Notes:**

**Non-contractual drawings.**

**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

**Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.**