AQUACIAT POWER™ LD/ILD

Water chiller & heat pump

The high-performance packaged solution, now available for 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** | **Free Cooling** | ErP READY 2021 | **R-32**

Use

The new generation of **AQUACIAT POWER** 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 is optimised for the eco-responsible fluid with the lowest Global Warming Potential (GWP), R-32.

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** 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** units automatically adjust the cooling capacity by anticipating changes in load and only starting the number of compressors required to guarantee optimal 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** units reach a high level of seasonal efficiency in cooling mode (SEER) and in heating mode (SCOP).

Use

Acoustic comfort

With different levels of sound equipment available, the **AQUACIATPOWER** 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 **AQUACIATPOWER** 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

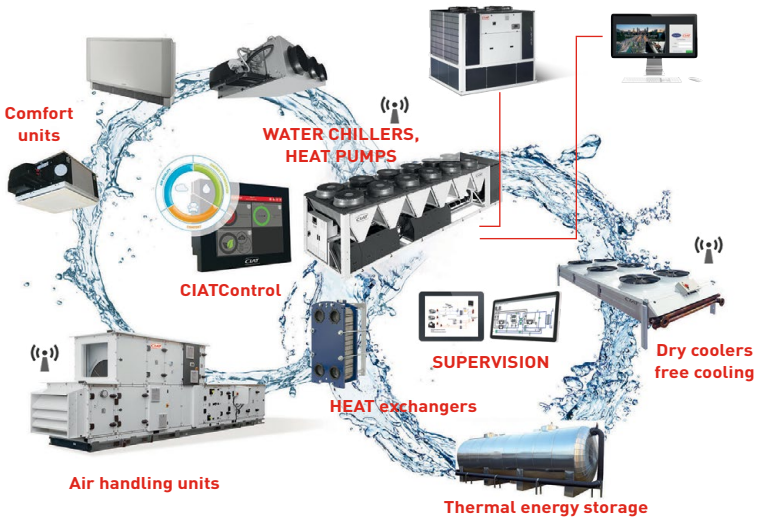
As an expert on customised HVAC solutions, CIAT works to improve the well-being of individuals in their living areas or places of work. Aware of the thermal, energy and air quality issues faced today by every sector of activity, CIAT has responded by developing global systems based on an adapted and 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 are 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 part load applications for which an optimum SEER and SCOP value are required. In this case, the machine is equipped with variable-speed fans, optimising the part load efficiency throughout the year.

Description

AQUACIATPOWER 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 **AQUACIATPOWER** 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 (Comfort cooler and high-temperature industrial cooler)
- Regulation (EU) No. 2015/1095 relating to Directive 2009/125/EC on Eco-design requirements (low and medium temperature industrial coolers)

Configuration

Energy versions		
Acoustic versions	**High outdoor temperature** option	**Rated high performance** option
	AQUACIATPOWER **Standard** (AC motor fans)	**AQUACIATPOWER** **Seasonal high-performance version** (Optional AC motor fans + Inverter or EC motor fans)
	Very Low Noise option	**Very Low Noise** option
	Ultra Low Noise option	**Ultra Low Noise** option

Type key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L	D	-	-	0	6	0	2	R	-	A	0	0	0	1	-	-	-

Product code

Legend

Digit 1 to 4	: Model series, LD-- = for air cooled cooling only, ILD-= for air to water heat pump
Digit 5 to 8	: Model size number
Digit 9	: R = R32 refrigerant
Digit 10	: Not used
Digit 11	: Major revision index
Digit 12 to 15	: Counter used to generate a one time product code
Digit 16	: Not used

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.

AQUACIAT POWER R-32 exceeds the requirements of Ecodesign 2021.

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

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.

User comfort

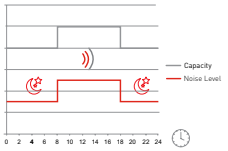
We guarantee acoustic comfort for your users.

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

ULTRA LOW NOISE LEVEL

-5 to -6 dB(A) reinforced noise insulation on the compressors and all of the components which generate noise

NIGHT MODE



Reliability

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

ABOUND HVAC Performance lets you track and monitor your CIAT equipment.

- Data extraction in real time via customised access to the ABOUND HVAC Performance website (controller control panel, 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.

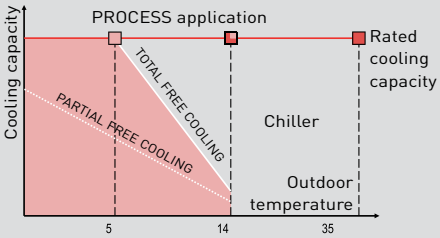
Heat recovery options can be used to produce free additional hot water at a high temperature. This hot water can be used to prepare domestic hot water for heating swimming pools, spas and hot tubs.

30% energy

❄ / ☀	100 %	Chilled or hot water production
+		
80°	25 %	Domestic hot water production
or		
65°	100 %	Hot water production

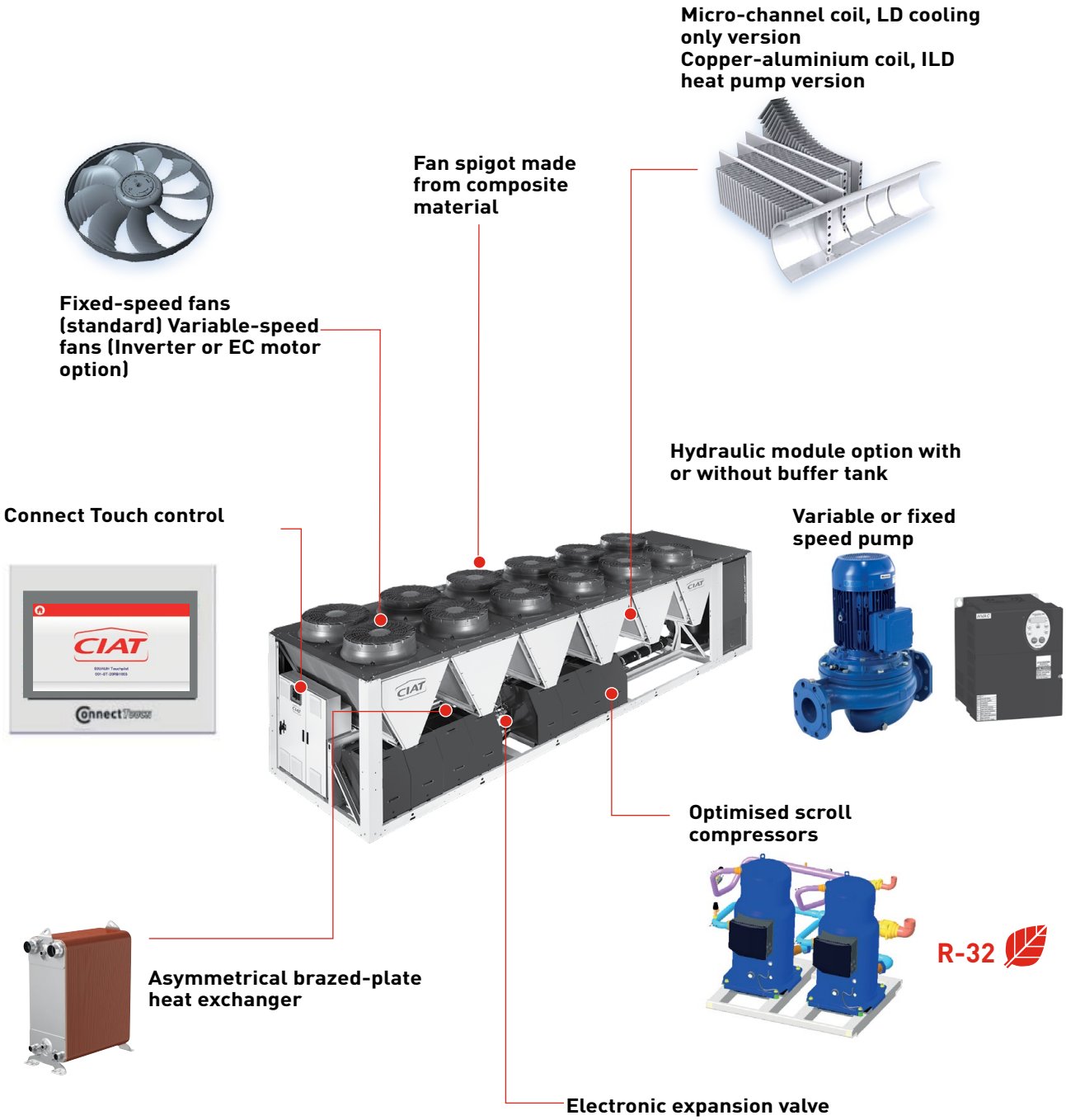
The free cooling option is used to provide significant energy savings for all for applications which require cooling all year round or during the night, particularly in cold regions.

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

Main components



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 depending on 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 relief 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 disconnect switch with handle
- Control circuit transformer
- 24 V control circuit
- Compressor and fan motor protection devices
- 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)

Description of the main components

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 operation time 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 operation time 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
- Lead/Lag management of the two machines in parallel with operation time 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), operation time.
- 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.

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

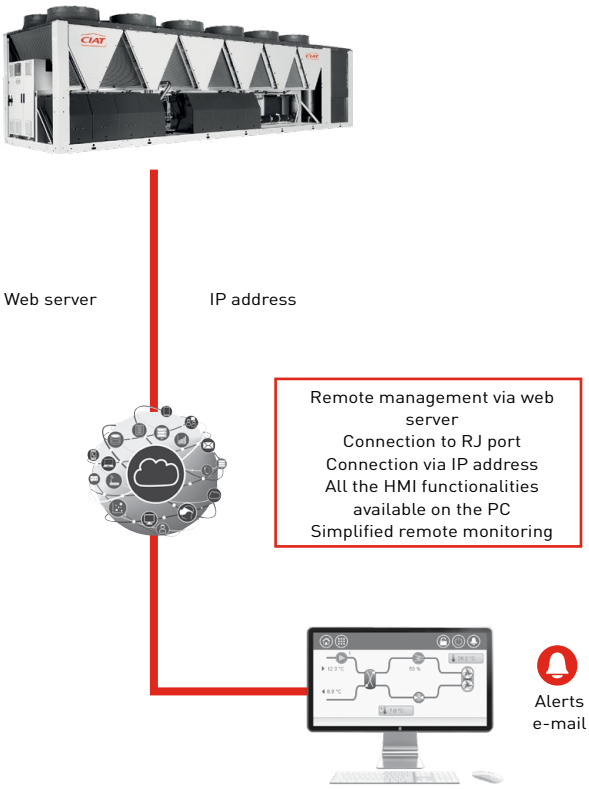
Several contacts are available as standard, enabling the machine to be controlled remotely by wired link:

- 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).

Description of the main components

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.

SGR Ready

Heat pump **AQUACIAT POWER ILD** are SGR ready certified, standardized and secured label for integration on the smart electrical networks.

The objective is to improve the management of the load of the electricity network as a function of the fluctuation of the power availability of the latter related to renewable energies (photovoltaic or wind turbine).

SG Ready
Smart Heat Pumps

Environmental responsibility

R-32

The **AQUACIATPOWER** 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.

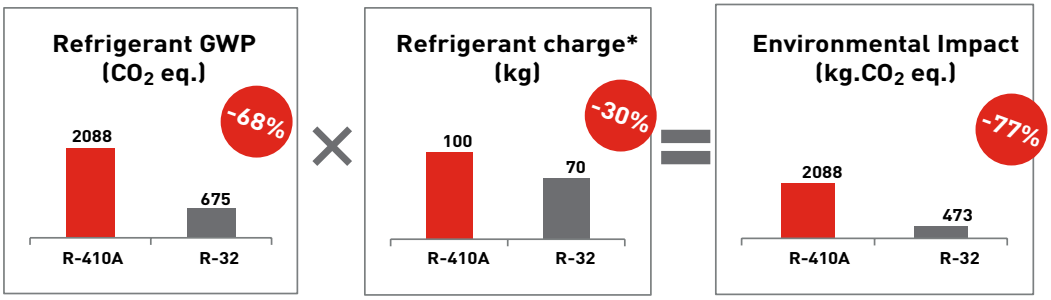
The impact of an air conditioning system on global warming of the planet is in large part caused by CO_2 emissions released into the atmosphere when the electricity required to power the unit is produced (indirect effect) and in small part by CO_2 emissions linked to uncontrolled emissions of refrigerant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

With the **AQUACIATPOWER** , 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 the AQUACIATPOWER on the environment with R-32 refrigerant is reduced by 77% compared to the previous generation R-410A .

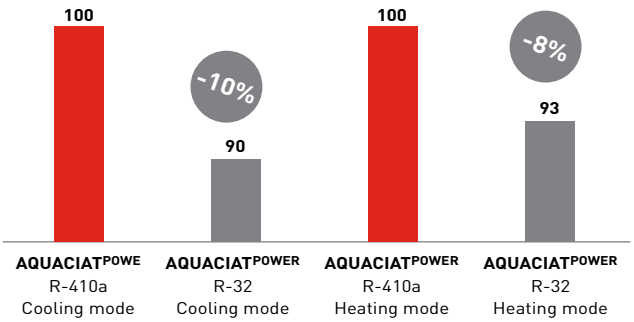
Reduced indirect environmental impact (Energy)

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

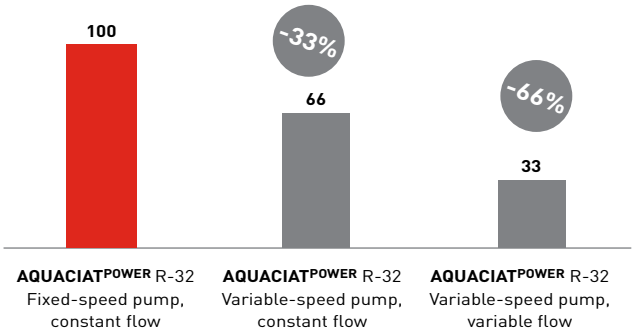
The seasonal efficiency of the **AQUACIATPOWER** R-32 in cooling mode is 10% greater than the previous version with R-410A and 6% greater in heating mode.

In addition, the **AQUACIATPOWER** 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 level (kWh index)



Environmental responsibility

R-32

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/

AVAILABLE OPTIONS

Options	Description	Advantages	LD	ILD
Corrosion protection, traditional coils	Aluminium fins pre-treated by chemical conversion	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	•	•
Water manifold antifreeze protection	Electric heater and insulation on the water collection vessel pipes	Water collection vessel frost protection down to an outdoor temperature of -20°C	No	2800R-4000R
Recovery condenser frost protection	Electric heater on the heat recovery exchanger	Heat recovery exchanger frost protection down to an outside temperature of -20°C	•	No
Frost protection with glycol-free free cooling option	Electric resistance heater on the water type heat exchanger, and the hydraulic module	Water exchanger and hydraulic module frost protection down to -20°C outside temperature	•	No
Frost protection on the evaporator and hydraulic module with the Free Cooling Glycol Free option	Electric resistance heater on the water type heat exchanger and hydraulic module	Water type heat exchanger and hydraulic module frost protection down to -20°C outside temperature	•	No
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 frost protection with buffer tank	Electrical heaters on the water type heat exchanger, water pipes, hydraulic module, optional expansion tank and buffer tank	Water type heat exchanger and hydraulic module frost protection down to an outdoor air temperature of -20°C	•	•
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
Lead/Lag operation	Unit equipped with supplementary water outlet temperature sensor kit (to be field installed) allowing Lead/Lag operation of two units connected in parallel	Optimised operation of two units connected in parallel operation with operation time balancing	•	•

- ALL MODELS

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

AVAILABLE OPTIONS

Options	Description	Advantages	LD	ILD
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	High pressure fixed speed water pump. (optional expansion vessel and built-in hydraulic safety components available)	Quick and easy installation (plug & play)	0602R-1400R	0602R-2000R
Evaporator dual HP pump	Dual high pressure fixed speed water pump. (optional expansion vessel and built-in hydraulic safety components available)	Quick and easy installation (plug & play)	0602R-1400R	0602R-2000R
Evaporator single LP pump	Single low pressure fixed speed water pump. (optional expansion vessel and built-in hydraulic safety components available)	Quick and easy installation (plug & play)	0602R-1400R	0602R-2000R
LP dual-pump hydraulic module	Dual low pressure water pump, fixed speed. (optional expansion vessel and built-in hydraulic safety components available)	Quick and easy installation (plug & play)	0602R-1400R	0602R-2000R
HP single-pump (variable speed)	Single high-pressure water pump, water filter, electronic water flow control, pressure sensors. Multiple variable water flow control options (optional expansion vessel and 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	•	•
Dual HP pump (variable speed)	Dual high pressure water pump with variable speed drive (VSD), pressure transducers. Multiple options for water flow control. For more details, refer to the relevant 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.	•	•
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...)	•	•
Smart Grid Ready (SGR)	Standardized and secured label for integration on the smart electrical networks (DE, AUT, CH).	Optimizing the energy efficiency of the installation and helping to reduce the carbon footprint	No	•
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	•	•
Phase controller	Phase controller on the power supply	Reinforced protection of the unit by monitoring rotation, the absence and asymmetry of the phases, and the over- or under-voltage of the electrical network	•	•
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 (or equivalent)	Protect2 Improved corrosion resistance of the MCHE coils by 2, recommended for use in moderately corrosive environments	•	No
Anti-corrosion protection on FreeCooling coils	Same anticorrosion treatment as on MCHE condenser coils	Improved corrosion resistance, 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 (or equivalent), improved impact resistance as per ASTM D2794 (or equivalent)	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.	•	•
Ultra-fast full capacity recovery	Built-in capacity module to allow an ultra-rapid restart whilst maintaining the unit's reliability.	Full capacity recovery in less than 10 minutes 30 seconds after a power failure of less than 10 minutes. Matches requirements of typical critical mission applications. (process, data centres)	•	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

- ALL MODELS

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

AVAILABLE OPTIONS

Options	Description	Advantages	LD	ILD
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
Free Cooling Glycol Free (Total)	Free cooling hydraulic coils on both refrigerant circuits and decoupling exchanger.	Energy savings for applications which require cooling all year round (e.g.: industrial processes, data centres, etc.) Glycol-free operation	•	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	•	•
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	Eliminates dust in the water network	•	•
Free cooling dry cooler management	Control and connections to an Opera or Vextra free cooling dry cooler fitted with optional FC control box	Easy system management, extended control capabilities to a dry cooler 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	2800R-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	Unit wrapped in a plastic cover and strapped onto a wooden pallet.	Protects against dust and external soiling of the unit during storage and transport.	•	•
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).	•	•

- ALL MODELS

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

TECHNICAL SPECIFICATIONS - COOLING ONLY

AQUACIATPOWER LD				0602R-A	0650R-A	0750R-A	0900R-A	1100R-A	1200R-A	1350R-A	1400R-A	1600R-A
Cooling												
Standard unit Full load performances*	CA1	Rated 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**	**4,89**
		ns cool$_{12/7°C}$	**%**	**169**	**181**	**178**	**176**	**171**	**185**	**183**	**183**	**193**
		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**	**5,80**
		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	Rated 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**
		ns 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/Rated 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 EN14511-3:2022.
**	In accordance with EN14825:2022.
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 cool$_{12/7°C}$ & SEER$_{12/7°C}$	**Values in bold comply with Ecodesign Regulation (EU) 2016/2281 for Comfort applications**
SEER$_{23/18°C}$	**Values in bold comply with Ecodesign Regulation (UE) 2016/2281 for Comfort applications**
SEPR$_{12/7°C}$	Values calculated in accordance with EN 14825:2022
SEPR$_{-2/-8°C}$	Values calculated in accordance with EN 14825:2022
IPLV.SI	Calculated as per AHRI standard 551-591 (SI).
(1)	In dB ref=10^{-12} W, 'A' weighted. 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).

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CARRIER participates in the ECP programme for LCP-HP. Check ongoing validity of certificate: www.eurovent-certification.com

TECHNICAL SPECIFICATIONS - COOLING ONLY

AQUACIATPOWER LD		0602R-A	0650R-A	0750R-A	0900R-A	1100R-A	1200R-A	1350R-A	1400R-A	1600R-A
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	6,3	9,4	9,4	11,1	11,5	12,2	13,0	17,7	18,5
	tCO_2e	4,2	6,3	6,3	7,5	7,8	8,2	8,8	11,9	12,5
Circuit B	kg	11,1	11,1	11,1	11,1	11,5	17,1	17,9	18,5	19,3
	tCO_2e	7,5	7,5	7,5	7,5	7,8	11,5	12,0	12,5	13,0
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	33	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' weighted. 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 LD				1750R-A	1800R-A	2000R-A	2200R-A	2400R-A	2650R-A	2800R-A	2950R-A	3200R-A	3500R-A
Cooling													
Standard unit Full load performances*	CA1	Rated capacity	kW	428	458	523	586	645	688	743	765	836	889
		EER	kW/kW	2,94	2,85	2,85	2,94	2,94	2,83	2,85	2,81	2,77	2,66
Seasonal energy efficiency**		**$SEER_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,08**	**5,03**	**4,95**	**5,08**	**5,16**	**5,05**	**5,17**	**5,13**	**4,98**	**4,86**
		ns $cool_{12/7°C}$	**%**	**200**	**198**	**195**	**200**	**204**	**199**	**204**	**202**	**196**	**191**
		$SEER_{23/18°C}$ Comfort medium temp.	**kWh/kWh**	**5,99**	**5,91**	**5,98**	**6,26**	**6,44**	**6,20**	**6,43**	**6,34**	**6,10**	**5,85**
		$SEPR_{12/7°C}$ 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	Rated 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**
		ns $cool_{12/7°C}$	**%**	**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/ Rated 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 EN14511-3:2022.
**	In accordance with EN14825:2022.
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 $cool_{12/7°C}$ & $SEER_{12/7°C}$	**Values in bold comply with Ecodesign Regulation (EU) 2016/2281 for Comfort applications**
$SEER_{23/18°C}$	**Values in bold comply with Ecodesign Regulation (EU) 2016/2281 for Comfort applications**
$SEPR_{12/7°C}$	Values calculated in accordance with EN 14825:2022
$SEPR_{-2/-8°C}$	Values calculated in accordance with EN 14825:2022
IPLV.SI	Calculated as per AHRI standard 551-591 (SI).
(1)	In dB ref=10^{-12} W, 'A' weighted. 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).

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TECHNICAL SPECIFICATIONS - COOLING ONLY

AQUACIATPOWER LD		1750R-A	1800R-A	2000R-A	2200R-A	2400R-A	2650R-A	2800R-A	2950R-A	3200R-A	3500R-A
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	18,8	19,1	24,4	23,0	24,5	24,5	27,3	27,3	30,4	30,4
	tCO_2e	12,7	12,9	16,5	15,5	16,5	16,5	18,4	18,4	20,5	20,5
Circuit B	kg	24,5	24,9	25,4	24,5	24,5	24,5	30,4	30,4	30,4	30,4
	tCO_2e	16,5	16,8	17,1	16,5	16,5	16,5	20,5	20,5	20,5	20,5
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' weighted. 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

AQUACIAT POWER ILD				0602R	0700R	0800R	0900R	1000R	1150R
Heating									
Standard unit Full load performances*	HA1	Rated capacity	kW	178	197	237	256	275	317
		COP	kW/kW	3,88	3,80	3,84	3,84	3,82	3,82
	HA2	Rated capacity	kW	173	192	231	250	269	310
		COP	kW/kW	3,16	3,09	3,14	3,12	3,11	3,10
Energy efficiency efficiency**	HA1	**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,44**	**3,45**	**3,39**	**3,47**	**3,48**	**3,57**
		ns $heat_{30/35°C}$	**%**	**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	Rated capacity	kW	178	197	237	256	275	317
		COP	kW/kW	3,88	3,80	3,84	3,84	3,82	3,82
Energy efficiency efficiency**	HA1	**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,67**	**3,66**	**3,74**	**3,77**	**3,80**	**3,87**
		ns $heat_{30/35°C}$	**%**	**144**	**143**	**147**	**148**	**149**	**152**
		P_{rated}	kW	138	155	185	200	216	250
Cooling									
Standard unit Full load performances*	CA1	Rated capacity	kW	155	171	204	223	239	285
		EER		2,73	2,55	2,73	2,63	2,56	2,66
Energy efficiency 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	Rated capacity	kW	164	181	215	236	254	302
		EER	kW/kW	2,87	2,72	2,86	2,80	2,76	2,85
Energy efficiency 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/Rated 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 EN14511-3:2022.
**	In accordance with EN14825:2022, average climate conditions
HA1	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30°C/35°C, outside air temperature tdb/twb= 7°C db/6°C wb, condenser fouling factor 0 m² k/W
HA2	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40°C/45°C, outside air temperature tdb/twb= 7°C db/6°C wb, condenser fouling factor 0 m² k/W
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 $heat_{30/35°C}$ & $SCOP_{30/35°C}$	**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) 2016/2281
(1)	In dB ref=10^{-12} W, 'A' weighted. 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).

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TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

AQUACIATPOWER 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)							
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	l/s	11790	11790	15720	15720	15720	19650
Maximum rotation speed	r/s	12	12	12	12	12	12
Maximum total air flow with high rated energy efficiency option	l/s	14460	14460	19280	19280	19280	24100
Maximum rotation speed with high rated energy efficiency option	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

AQUACIATPOWER ILD				1250R	1400R	1500R	1600R	1750R	2000R
Heating									
Standard unit Full load performances*	HA1	Rated capacity	kW	336	387	406	441	467	537
		COP	kW/kW	3,81	3,82	3,81	3,80	3,73	3,80
	HA2	Rated capacity	kW	329	378	397	431	458	526
		COP	kW/kW	3,09	3,10	3,09	3,10	3,03	3,09
Energy efficiency efficiency**	HA1	**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,58**	**3,55**	**3,57**	**3,54**	**3,53**	**3,57**
		ns $heat_{30/35°C}$	**%**	**140**	**139**	**140**	**139**	**138**	**140**
		P_{rated}	kW	266	305	321	349	371	400
Unit + Rated & Seasonal high performance options Full load performances*	HA1	Rated capacity	kW	336	387	406	441	467	537
		COP	kW/kW	3,81	3,82	3,81	3,80	3,73	3,80
Energy efficiency efficiency**	HA1	**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,86**	**3,90**	**3,91**	**3,92**	**3,89**	**3,96**
		ns $heat_{30/35°C}$	**%**	**151**	**153**	**153**	**154**	**153**	**155**
		P_{rated}	kW	265	305	320	348	370	400
Cooling									
Standard unit Full load performances*	CA1	Rated capacity	kW	305	341	358	389	414	470
		EER		2,59	2,64	2,57	2,64	2,55	2,55
Energy efficiency 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	Rated capacity	kW	324	362	381	413	439	500
		EER	kW/kW	2,80	2,82	2,76	2,81	2,74	2,73
Energy efficiency 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/Rated 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 EN14511-3:2022.
**	In accordance with EN14825:2022, average climate conditions
HA1	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30°C/35°C, outside air temperature tdb/twb= 7°C db/6°C wb, condenser fouling factor 0 m² k/W
HA2	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40°C/45°C, outside air temperature tdb/twb= 7°C db/6°C wb, condenser fouling factor 0 m² k/W
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 $heat_{30/35°C}$ & $SCOP_{30/35°C}$	**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) 2016/2281
(1)	In dB ref=10^{-12} W, 'A' weighted. 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).

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TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

AQUACIATPOWER 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]							
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	l/s	19650	23580	23580	27510	27510	31440
Maximum rotation speed	r/s	12	12	12	12	12	12
Maximum total air flow with high rated energy efficiency option	l/s	24100	28920	28920	33740	33740	38560
Maximum rotation speed with high rated energy efficiency option	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 2800R to 4000R.

TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

AQUACIATPOWER ILD				2200R	2400R	2650R	2800R	3000R	3200R	3500R	4000R
Heating											
Standard unit Full load performances*	HA1	Rated capacity	kW	590	632	680	774	812	883	935	1075
		COP	kW/kW	3,86	3,69	3,70	3,82	3,81	3,80	3,73	3,80
	HA2	Rated capacity	kW	579	623	671	757	795	863	915	1052
		COP	kW/kW	3,18	3,06	3,06	3,10	3,09	3,10	3,03	3,09
Energy efficiency efficiency**	HA1	**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,92**	**3,76**	**3,80**	**3,55**	**3,57**	**3,54**	**3,53**	**3,57**
		ns $heat_{30/35°C}$	**%**	**154**	**147**	**149**	**139**	**140**	**139**	**138**	**140**
		P_{rated}	kW	449	483	523	609	641	696	741	800
Unit + Rated & Seasonal high performance options Full load performances*	HA1	Rated capacity	kW	590	632	680	774	812	883	935	1075
		COP	kW/kW	3,86	3,69	3,70	3,82	3,81	3,80	3,73	3,80
Energy efficiency efficiency**	HA1	**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,92**	**3,76**	**3,80**	**3,90**	**3,91**	**3,92**	**3,89**	**3,96**
		ns $heat_{30/35°C}$	**%**	**154**	**147**	**149**	**153**	**153**	**154**	**153**	**155**
		P_{rated}	kW	449	483	523	609	641	696	741	800
Cooling											
Standard unit Full load performances*	CA1	Rated capacity	kW	530	592	637	682	716	778	827	941
		EER		2,73	2,83	2,75	2,64	2,57	2,65	2,56	2,55
Energy efficiency efficiency**		$SEER_{12/7°C}$ Comfort low temp.	kWh/kWh	5,27	5,29	5,23	4,45	4,32	4,43	4,37	4,30
		$SEPR_{12/7°C}$ Process high temp.	kWh/kWh	6,17	6,33	6,21	4,91	4,75	4,90	4,80	4,78
Unit + Rated & Seasonal high performance options Full load performances*	CA1	Rated capacity	kW	566	630	680	723	761	825	878	999
		EER	kW/kW	2,91	2,97	2,92	2,82	2,76	2,81	2,74	2,73
Energy efficiency efficiency**		$SEER_{12/7°C}$ Comfort low temp.	kWh/kWh	5,24	5,25	5,19	4,88	4,87	4,81	4,75	4,81
		$SEPR_{12/7°C}$ Process high temp.	kWh/kWh	6,10	6,24	6,12	5,60	5,40	5,60	5,43	5,47
Sound levels											
Unit + High temperature option/Rated high performance											
Sound power(1)			dB(A)	97,0	97,0	97,5	97,0	97,0	97,5	97,5	98,0
Sound pressure at 10 m(2)			dB(A)	64,0	64,5	65,0	64,5	65,0	65,0	65,0	65,0
Standard unit											
Sound power(1)			dB(A)	-	-	-	94,5	94,5	95,0	95,5	96,0
Sound pressure at 10 m(2)			dB(A)	-	-	-	62,5	62,5	63,0	63,0	63,5
Unit + Very Low Noise option(3)											
Sound power(1)			dB(A)	92,5	92,5	93,5	92,0	92,0	92,5	93,0	93,0
Sound pressure at 10 m(2)			dB(A)	60,0	59,5	61,0	59,5	59,5	60,0	60,5	60,5
Unit + Ultra Low Noise option(3)											
Sound power(1)			dB(A)	90,0	90,0	90,5	89,5	90,0	90,5	90,5	91,0
Sound pressure at 10 m(2)			dB(A)	57,5	57,5	58,0	57,5	58,0	58,5	58,5	59,0

*	In accordance with EN14511-3:2022.
**	In accordance with EN14825:2022, average climate conditions
HA1	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30°C/35°C, outside air temperature tdb/twb= 7°C db/6°C wb, condenser fouling factor 0 m² k/W
HA2	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40°C/45°C, outside air temperature tdb/twb= 7°C db/6°C wb, condenser fouling factor 0 m² k/W
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 $heat_{30/35°C}$ & $SCOP_{30/35°C}$	**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) 2016/2281
(1)	In dB ref=10^{-12} W, 'A' weighted. 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).

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TECHNICAL SPECIFICATIONS - REVERSIBLE HEAT PUMP

AQUACIATPOWER ILD		2200R	2400R	2650R	2800R	3000R	3200R	3500R	4000R
Dimensions									
Standard unit									
Length	mm	5992	7186	7186	7708	7708	10096	10096	10096
Width	mm	2253	2253	2253	2253	2253	2253	2253	2253
Height	mm	2324	2324	2324	2324	2324	2324	2324	2324
Unit + water buffer tank module option[3]	mm								
Length	mm	7186	8380	8380	-	-	-	-	-
Operating weight[3]									
Standard unit	kg	4105	4728	4728	5344	5356	6308	6360	6859
Unit + Ultra Low Noise option	kg	4244	4888	4888	5710	5722	6722	6774	7322
Unit + Ultra Low Noise + HP dual-pump hydraulic module option	kg	4536	5181	5181	6178	6190	7191	7317	7865
Unit + Ultra Low Noise + HP dual-pump hydraulic module + Water buffer tank module option	kg	5543	6202	6202	-	-	-	-	-
Compressors		Hermetic Scroll 48.3 r/s							
Circuit A/C		2	3	3	2/2	2/2	3/3	3/3	4/4
Circuit B/D		3	3	3	4/4	4/4	4/4	4/4	4/4
Number of power stages		5	6	6	12	12	14	14	16
Unit PED category		IV	IV	IV	IV	IV	IV	IV	IV
Refrigerant[3]		R-32 / A2L/ GWP= 675 in accordance with ARI4							
Circuit A/C	kg	38,0	48,0	48,0	18,0/18,0	18,0/18,0	29,0/29,0	29,0/29,0	35,0/35,0
	tCO_2e	25,7	32,4	32,4	12,2/12,2	12,2/12,2	19,6/19,6	19,6/19,6	23,6/23,6
Circuit B/D	kg	48,0	48,0	48,0	34,0/34,0	34,0/34,0	34,5/34,5	35,0/35,0	35,0/35,0
	tCO_2e	32,4	32,4	32,4	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	15,2	22,8	22,8	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	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	%	20	17	17	8	8	7	7	6
Condenser		Grooved copper tubes and aluminium fins							
Fans		Axial with rotating impeller							
Standard unit									
Quantity		10	12	12	12	12	14	14	16
Maximum total air flow	l/s	48200	57840	57840	47160	47160	55020	55020	62880
Maximum rotation speed	r/s	16	16	16	12	12	12	12	12
Maximum total air flow with high rated energy efficiency option	l/s	48200	57840	57840	57840	57840	67480	67480	77120
Maximum rotation speed with high rated energy efficiency option	r/s	16	16	16	16	16	16	16	16
Evaporator		Dual-circuit plate heat exchanger							
Water volume	l	73	84	84	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	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	-	-	-	-	-
Buffer tank volume (optional)	l	550	550	550	-	-	-	-	-
Max. water-side operating pressure with hydraulic module	kPa	400	400	400	400	400	400	400	400
Water connections with or without hydraulic module		Victaulic® type							
Module 1/Module 2 connections[a]	inches	5	5	5	4 / 4	4 / 4	4 / 4	4 / 4	4 / 4
Module 1/Module 2 external diameter[a]	mm	139,7	139,7	139,7	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 2800R to 4000R.

ELECTRICAL SPECIFICATIONS

Basic unit (excluding pump)

AQUACIATPOWER LD		0602R	0650R	0750R	0900R	1100R	1200R	1350R	1400R	1600R	1750R
Power circuit supply											
Rated 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

AQUACIATPOWER LD		1800R	2000R	2200R	2400R	2650R	2800R	2950R	3200R	3500R
Power circuit supply										
Rated 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

AQUACIATPOWER ILD		0602R	0700R	0800R	0900R	1000R	1150R	1250R	1400R	1500R	1600R
Power circuit supply											
Rated 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)											
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 (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 + Electronic soft starter option (Module 1/Module 2)(a)	A	256,8	303	298	342	359	392	409	442	458	483

AQUACIATPOWER ILD		1750R	2000R	2200R	2400R	2650R	2800R	3000R	3200R	3500R	4000R
Power circuit supply											
Rated 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	258,0	286,0	310,0	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)											
Displacement Power Factor (Cos Phi), standard unit		0,83	0,83	0,85	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	442	497	530	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	475	528	570	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	690	810	837	498 / 498	515 / 515	541 / 541	565 / 565	616 / 616
Unit + Soft Starter option (Module 1/Module 2)(a)	A	508	557	631	751	778	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 2800R to 4000R.

ELECTRICAL SPECIFICATIONS

Short circuit current withstand capability (TN system[1])

AQUACIATPOWER LD		0602R	0650R	0750R	0900R	1100R	1200R
Rated short-circuit withstand currents							
Rated short time (1s) current - Icw	kA eff	8,5	8,5	8,5	8,5	8,5	20
Rated peak current - Ipk	kA pk	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
Associated protection - type		INS250	INS250	INS250	INS250	INS250	INS400
Associated protection - rating/reference		TM160D / LV430840	TM200D / LV431831	TM200D / LV431831	TM250D / LV431831	TM250D / LV431831	TM250D / LV431831

AQUACIATPOWER LD		1350R	1400R	1600R	1750R	1800R	2000R
Rated short-circuit withstand currents							
Rated short time (1s) current - Icw	kA eff	20	20	20	20	20	20
Rated peak current - Ipk	kA pk	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
Associated protection - type		INS400	INS400	INS400	INS400	INS500	INS500
Associated protection - rating/reference		Micrologic 2,3 400A / LV432693	Micrologic 2,3 400A / LV432693	Micrologic 2,3 400A / LV432693	Micrologic 2,3 400A / LV432693	Micrologic 2,3 630A / LV432893	Micrologic 2,3 630A / LV432893

AQUACIATPOWER LD		2200R	2400R	2650R	2800R	2950R	3200R	3500R
Rated short-circuit withstand currents								
Rated short time (1s) current - Icw	kA eff	20	20	20	35	35	35	35
Rated peak current - Ipk	kA pk	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
Associated protection - type		INS630	INS630	INS630	INS800	INS800	INS800	INS800
Associated protection - rating/reference		Micrologic 2,3 630A / LV432893	Micrologic 2,3 630A / LV432893	Micrologic 2,3 630A / LV432893	Micrologic 5,0 800A / 34426	Micrologic 5,0 800A / 34426	Micrologic 5,0 800A / 34426	Micrologic 5,0 800A / 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])

AQUACIATPOWER ILD		0602R	0700R	0800R	0900R	1000R	1150R
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
Allowable rated peak current - Ipk (Module 1 / Module 2)[a]	kA pk	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
Associated protection - type (Module 1/Module 2)[a]		INS250	INS250	INS250	INS250	INS250	INS400
Associated protection (rating/reference)	Module 1[a]	TM160D / LV430840	TM200D / LV431831	TM250D / LV431831	TM250D / LV431831	TM250D / LV431831	Micrologic 2.3 400A / LV432693
	Module 2[a]	-	-	-	-	-	-

AQUACIATPOWER ILD		1250R	1400R	1500R	1600R	1750R	2000R	2200R
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
Allowable rated peak current - Ipk (Module 1 / Module 2)[a]	kA pk	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
Associated protection - type (Module 1/Module 2)[a]		INS400	INS400	INS400	INS400	INS500	INS500	INS630
Associated protection (rating/reference)	Module 1[a]	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 630A / LV432893	Micrologic 2.3 630A / LV432893	Micrologic 2.3 630A / LV432893
	Module 2[a]	-	-	-	-	-	-	-

AQUACIATPOWER ILD		2400R	2650R	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
Allowable rated peak current - Ipk (Module 1 / Module 2)[a]	kA pk	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
Associated protection - type (Module 1/Module 2)[a]		INS630	INS630	INS400 / INS400	INS400 / INS400	INS400 / INS400	INS500 / INS500	INS500 / INS500
Associated protection (rating/reference)	Module 1[a]	Micrologic 2.3 630A / LV432893	Micrologic 2.3 630A / LV432893	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 630A / LV432893	Micrologic 2.3 630A / LV432893
	Module 2[a]	-	-	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 400A / LV432693	Micrologic 2.3 630A / LV432893	Micrologic 2.3 630A / 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 2800R 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 (2K on the Glycol Free version), 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

The **AQUACIATPOWER LD** Free Cooling is available with different performance levels depending on the user's needs:

- Total hydraulic free cooling on the 2 circuits, specifically designed for installations which have major cooling requirements all year round (industrial processes, data centres)
- Total hydraulic free cooling, Glycol Free version, enables the use of pure water in the cooling circuit.
- 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 **AQUACIATPOWER** range offers all of the advantages of a Free Cooling solution combined with the compact design of the base units.

Advantage of the Free Cooling Glycol Free system

- In applications or countries in which the use of glycol is strictly regulated or banned, the Free Cooling Glycol Free option is equipped with a separation heat exchanger, and only the circuit inside the unit contains glycol, while the user circuit contains pure water.
- This solution with an intermediate exchanger shifts the Free Cooling mode activation thresholds by a few degrees, and the heat exchangers selected by CIAT help to minimise this shift.

FREE COOLING SYSTEM

Physical characteristics of AQUACIATPOWER LD units with Free Cooling option

AQUACIATPOWER LD				0602R	0650R	0750R	0900R	1100R	1200R	1350R	1400R	1600R
Cooling												
Unit + High energy efficiency option Full load performances*	CA1	Maximum rated capacity	kW	181	198	220	239	288	328	366	401	440
		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	Maximum rated capacity	kW	182	243	243	243	243	303	303	364	364
		Free cooling EER	kW/kW	25,9	25,4	25,4	25,4	25,8	25,8	25,9	25,6	25,7
		Rate of coverage by free cooling	%	101%	122%	110%	102%	84%	93%	83%	91%	83%
		Outdoor temperature for 100% coverage by free cooling	°C	0,1	2,3	1,2	0,2	-2,3	-1,0	-2,6	-1,3	-2,6
		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	Maximum rated capacity	kW	121	121	121	121	121	121	121	145	145
		Free cooling EER	kW/kW	25,8	25,8	25,8	25,8	25,9	26,0	26,0	19,2	19,1
		Rate of coverage by free cooling	%	67%	61%	55%	51%	42%	37%	33%	36%	33%
		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 Full load performances*	CA1	Maximum rated capacity	kW	171	189	208	226	270	309	343	377	413
		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	Maximum rated capacity	kW	148	197	197	197	197	247	247	296	296
		Free cooling EER	kW/kW	39,9	39,8	39,8	39,8	40,3	40,6	41,0	40,1	40,5
		Rate of coverage by free cooling	%	87%	104%	95%	87%	73%	80%	72%	79%	72%
		Outdoor temperature for 100% coverage by free cooling	°C	-2,0	0,5	-0,8	-1,9	-4,8	-3,3	-5,1	-3,6	-5,1
		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	Maximum rated capacity	kW	98	98	98	98	99	99	99	118	118
		Free cooling EER	kW/kW	42,4	42,4	42,4	42,4	42,7	43,1	43,2	30,4	30,5
		Rate of coverage by free cooling	%	58%	52%	47%	44%	37%	32%	29%	31%	29%
		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 EN14511-3:2022.

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' weighted. 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.

(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

AQUACIATPOWER 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	262	316	316	316	316	444	447	496	498
Additional weight (during operation)	kg	324	391	391	391	391	562	565	627	629
Operation										
Max. operating pressure, water side (without pump)	kPa	600	600	600	600	600	600	600	600	600
Max. operating pressure, water side (with pump)	kPa	400	400	400	400	400	400	400	400	400
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	204	204	204	204	205	260	261	310	312
Additional weight (during operation)	kg	253	253	253	253	254	321	322	388	390
Operation										
Max. operating pressure, water side (without pump)	kPa	600	600	600	600	600	600	600	600	600
Max. operating pressure, water side (with pump)	kPa	400	400	400	400	400	400	400	400	400

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

FREE COOLING SYSTEM

AQUACIATPOWER LD				1750R	1800R	2000R	2200R	2400R	2650R	2800R	2950R	3200R	3500R
Cooling													
Unit + High energy efficiency option Full load performances*	CA1	Maximum rated 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	Maximum rated capacity	kW	425	425	485	546	607	607	667	667	728	728
		Free cooling EER	kW/kW	26,1	26,1	26,0	26,0	25,8	25,8	25,7	25,7	25,4	25,4
		Rate of coverage by free cooling	%	89%	83%	83%	84%	84%	79%	81%	78%	78%	73%
		Outdoor temperature for 100% coverage by free cooling	°C	-1,5	-2,6	-2,6	-2,4	-2,3	-3,3	-3,0	-3,5	-3,5	-4,6
		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	Maximum rated capacity	kW	182	182	242	204	262	262	303	303	364	364
		Free cooling EER	kW/kW	26,5	26,5	26,6	20,4	20,9	20,9	26,7	26,7	26,6	26,6
		Rate of coverage by free cooling	%	38%	35%	41%	31%	36%	34%	37%	36%	39%	37%
		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	Maximum rated 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	Maximum rated capacity	kW	345	345	395	444	493	493	543	543	592	592
		Free cooling EER	kW/kW	41,4	41,5	41,1	41,2	40,7	40,7	40,5	40,5	39,9	39,9
		Rate of coverage by free cooling	%	77%	72%	72%	72%	73%	69%	70%	68%	68%	64%
		Outdoor temperature for 100% coverage by free cooling	°C	-3,8	-5,1	-5,1	-5,0	-4,8	-5,9	-5,6	-6,1	-6,2	-7,3
		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	Maximum rated capacity	kW	148	148	197	166	213	213	247	247	296	296
		Free cooling EER	kW/kW	43,2	43,2	43,6	32,8	34,0	34,0	44,2	44,2	44,3	44,3
		Rate of coverage by free cooling	%	33%	31%	36%	27%	31%	30%	32%	31%	34%	32%
		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 EN14511-3:2022.

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' weighted. 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.

(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

AQUACIATPOWER 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	652	652	704	861	911	911	1044	1044	1093	1093
Additional weight (during operation)	kg	861	861	926	1171	1234	1234	1410	1410	1472	1472
Operation											
Max. operating pressure, water side (without pump)	kPa	600	600	600	600	600	600	600	600	600	600
Max. operating pressure, water side (with pump)	kPa	400	400	400	400	400	400	400	400	400	400
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	380	380	432	527	577	577	636	636	686	686
Additional weight (during operation)	kg	485	485	557	721	784	784	850	850	920	920
Operation											
Max. operating pressure, water side (without pump)	kPa	600	600	600	600	600	600	600	600	600	600
Max. operating pressure, water side (with pump)	kPa	400	400	400	400	400	400	400	400	400	400

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

FREE COOLING SYSTEM GLYCOL FREE

Physical characteristics of AQUACIATPOWER LD units with Free Cooling option - Glycol Free

AQUACIATPOWER LD				0602R	0650R	0750R	0900R	1100R	1200R	1350R	1400R	1600R
Cooling												
Standard unit Full load performances*	CA2	Maximum rated capacity	kW	226	247	277	298	364	409	461	502	553
		EER	kW/kW	3,65	3,87	3,64	3,60	3,35	3,52	3,39	3,49	3,38
FREE COOLING												
Glycol-free total free cooling option	CFC2	Maximum rated capacity	kW	264	342	342	342	342	440	440	516	516
		Free cooling EER	kW/kW	25,8	25,0	25,0	25,0	25,6	24,9	25,2	24,7	25,0
		Rate of coverage by free cooling	%	117%	139%	123%	115%	94%	108%	96%	103%	93%
		Outdoor temperature for 100% coverage by free cooling	°C	3,30	6,40	4,40	3,00	-1,50	1,60	-1,00	0,70	-1,60
		Pressure drops	kPa	87,2	141,2	141,2	141,2	121,6	113,5	102,0	140,8	130,7
		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)	69,5	70,5	70,5	70,5	70,5	70,5	70,5	71,0	71,5
Unit + ultra low noise level option Full load performances*	CA2	Maximum rated capacity	kW	205	227	253	270	328	370	415	454	500
		EER	kW/kW	3,12	3,43	3,13	3,08	2,76	2,96	2,79	2,92	2,78
FREE COOLING												
Glycol-free total free cooling option	CFC2	Maximum rated capacity	kW	216	282	282	282	282	359	359	424	424
		Free cooling EER	kW/kW	27,6	28,1	28,1	28,1	29,0	26,4	26,8	27,2	27,6
		Rate of coverage by free cooling	%	105%	124%	111%	104%	86%	97%	86%	93%	85%
		Outdoor temperature for 100% coverage by free cooling	°C	1,10	4,50	2,30	0,90	-3,90	-0,70	-3,60	-1,70	-4,20
		Pressure drops	kPa	59,8	98,4	98,4	98,4	84,6	77,2	69,3	96,9	89,9
		Sound power(1)	dB(A)	80,0	81,0	81,0	81,0	81,5	82,5	82,5	82,5	83,0
		Sound pressure at 10 m(2)	dB(A)	61,0	62,5	62,5	62,5	63,0	63,0	63,0	62,5	63,0
Total glycol-free free cooling												
Free cooling coil				All-aluminium micro-channel coils (MCHE)								
Coil quantity				3	4	4	4	4	5	5	6	6
Volume of brine in the intermediate loop			l	87	101	101	101	101	137	137	151	151
Hydraulic connection												
Connection			in	3"	3"	3"	3"	3"	3"	3"	3"	3"
External diameter			mm	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9	88,9
Additional water volume			l	51	51	51	51	51	82	82	80	80
Dimensions												
Additional length			mm	1194	1194	1194	1194	1194	1194	1194	1194	1194
Weight(3)												
Additional weight (without water)			kg	750	804	804	804	804	945	945	995	993
Additional weight (during operation)			kg	905	972	972	972	977	1192	1201	1260	1268
Operation												
Pression max. de fonctionnement côté eau (sans pompe)			kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
Pression max. de fonctionnement côté eau (avec pompe)			kPa	400	400	400	400	400	400	400	400	400

* In accordance with EN14511-3:2022.
CA2 Cooling mode conditions: evaporator water inlet/outlet temperature 26°C/20°C, outdoor air temperature at 35°C, 30%, evaporator fouling factor 0 m². k/W
CFC2 Free cooling mode conditions: evaporator water inlet/outlet temperature 26°C/20°C, outdoor air temperature at 0°C, evaporator fouling factor 0 m². k/W
(1) In dB ref=10^{-12} W, 'A' weighted. 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.
(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.

FREE COOLING SYSTEM GLYCOL FREE

AQUACIATPOWER LD				1750R	1800R	2000R	2200R	2400R	2650R	2800R	2950R	3200R	3500R
Cooling													
Standard unit Full load performances*	CA2	Maximum rated capacity	kW	598	646	738	798	883	935	1013	1040	1136	1204
		EER	kW/kW	3,52	3,41	3,40	3,41	3,42	3,26	3,28	3,22	3,16	3,00
FREE COOLING													
Glycol-free total free cooling option	CFC2	Maximum rated capacity	kW	634	634	716	800	878	878	968	968	1046	1046
		Free cooling EER	kW/kW	26,2	26,3	26,4	24,9	24,8	24,8	23,1	23,1	22,9	22,9
		Rate of coverage by free cooling	%	106%	98%	97%	100%	99%	94%	96%	93%	92%	87%
		Outdoor temperature for 100% coverage by free cooling	°C	1,30	-0,40	-0,70	0,00	-0,10	-1,50	-1,00	-1,70	-1,90	-3,40
		Pressure drops	kPa	93,1	90,2	108,5	109,3	130,6	130,6	148,8	148,8	172,4	172,4
		Sound power(1)	dB(A)	91,0	91,0	92,0	93,0	93,5	93,5	93,5	93,5	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
Unit + ultra low noise level option Full load performances*	CA2	Maximum rated capacity	kW	541	583	666	719	797	840	826	924	850	900
		EER	kW/kW	2,93	2,80	2,79	2,84	2,86	2,70	3,06	2,69	3,28	3,09
FREE COOLING													
Glycol-free total free cooling option	CFC2	Maximum rated capacity	kW	514	514	583	650	717	717	788	788	854	854
		Free cooling EER	kW/kW	27,6	27,7	28,6	26,0	26,5	26,5	23,7	23,7	24,0	24,0
		Rate of coverage by free cooling	%	95%	88%	87%	90%	90%	85%	95%	85%	100%	95%
		Outdoor temperature for 100% coverage by free cooling	°C	-1,20	-3,00	-3,30	-2,40	-2,60	-4,00	-1,10	-3,90	0,10	-1,20
		Pressure drops	kPa	62,4	60,4	73,2	73,9	88,8	88,8	100,5	100,5	117,1	117,1
		Sound power(1)	dB(A)	83,0	83,5	84,0	85,5	86,0	86,0	87,0	86,0	87,0	87,5
		Sound pressure at 10 m(2)	dB(A)	63,0	63,5	64,0	65,0	65,5	65,5	66,0	65,0	66,0	66,5
Total glycol-free free cooling													
Free cooling coil				All-aluminium micro-channel coils (MCHE)									
Coil quantity				7	7	8	9	10	10	11	11	12	12
Volume of brine in the intermediate loop			l	229	229	244	293	302	302	348	348	362	362
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	135	135	133	172	172	172	199	199	199	199
Dimensions													
Additional length			mm	1194	1194	1194	1194	1194	1194	1194	1194	1194	1194
Weight(3)													
Additional weight (without water)			kg	1223	1224	1277	1430	1480	1480	1599	1599	1650	1650
Additional weight (during operation)			kg	1655	1660	1731	1977	2037	2037	2230	2230	2295	2295
Operation													
Pression max. de fonctionnement côté eau (sans pompe)			kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Pression max. de fonctionnement côté eau (avec pompe)			kPa	400	400	400	400	400	400	400	400	400	400

* In accordance with EN14511-3:2022.
CA2 Cooling mode conditions: evaporator water inlet/outlet temperature 26°C/20°C, outdoor air temperature at 35°C, 30%, evaporator fouling factor 0 m². k/W
CFC2 Free cooling mode conditions: evaporator water inlet/outlet temperature 26°C/20°C, outdoor air temperature at 0°C, evaporator fouling factor 0 m². k/W
(1) In dB ref=10^{-12} W, 'A' weighted. 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.
(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.

FREE COOLING SYSTEM

Free cooling operating limits

LD 602R to 3500R units

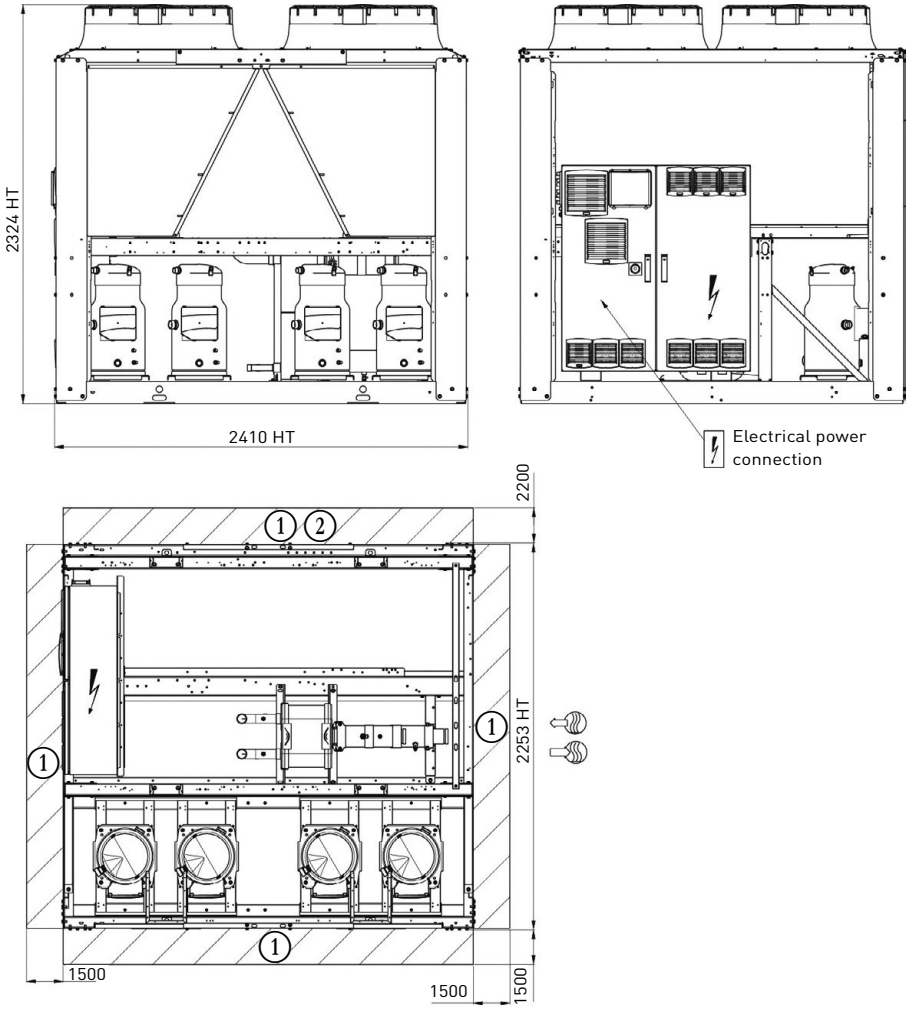
Water type heat exchanger		Minimum	Maximum
Water inlet temperature at start-up	°C	8	40
Water outlet temperature during operation	°C	5	20
Air-cooled exchanger		**Minimum**	**Maximum**
Outdoor ambient operating temperature			
LD units - Full load	°C	-20	47
LD units - Part load	°C	-20	52[1]

(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

■ AQUACIATPOWER 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:

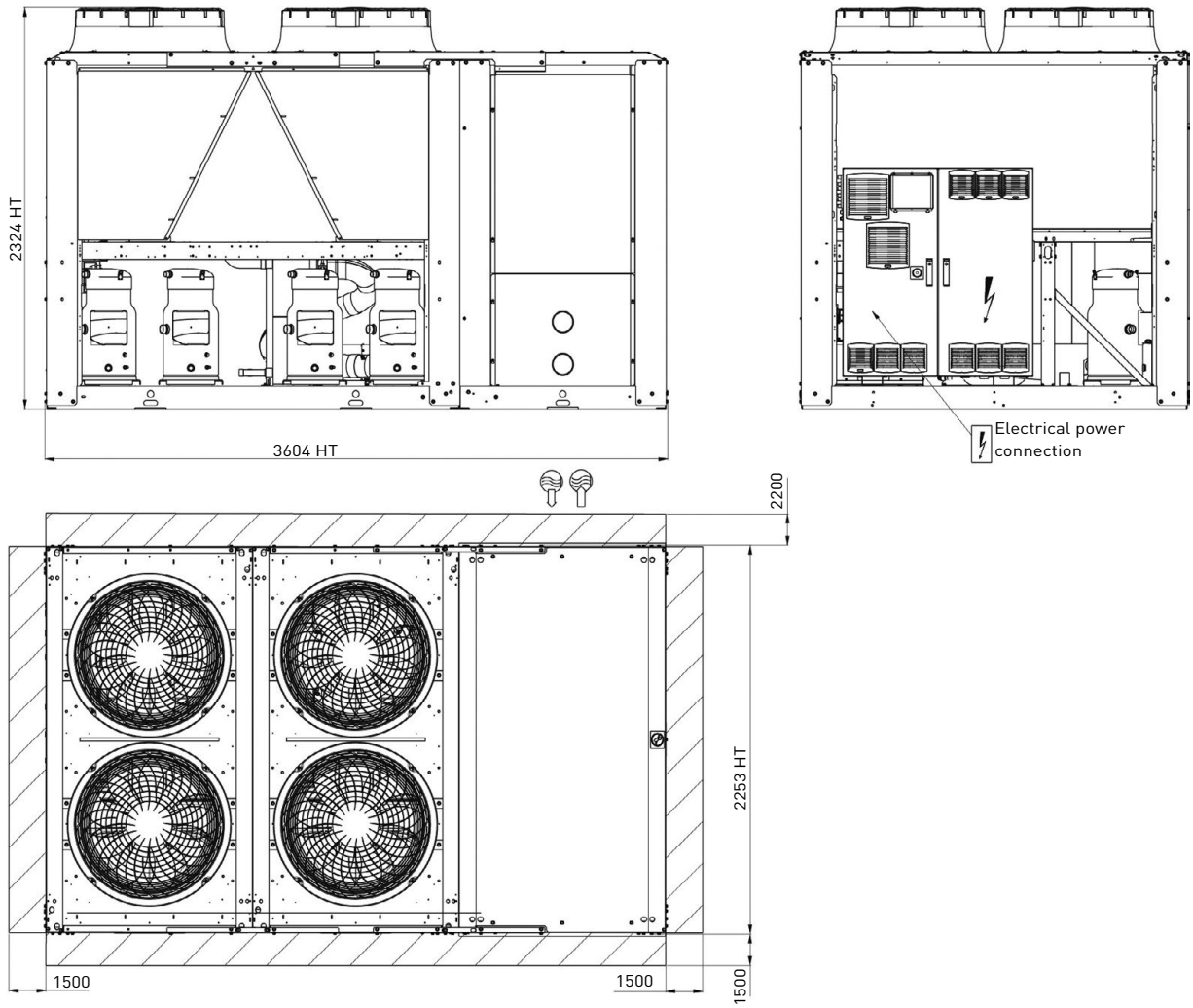
Non-contractual drawings.

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

■ AQUACIATPOWER 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:

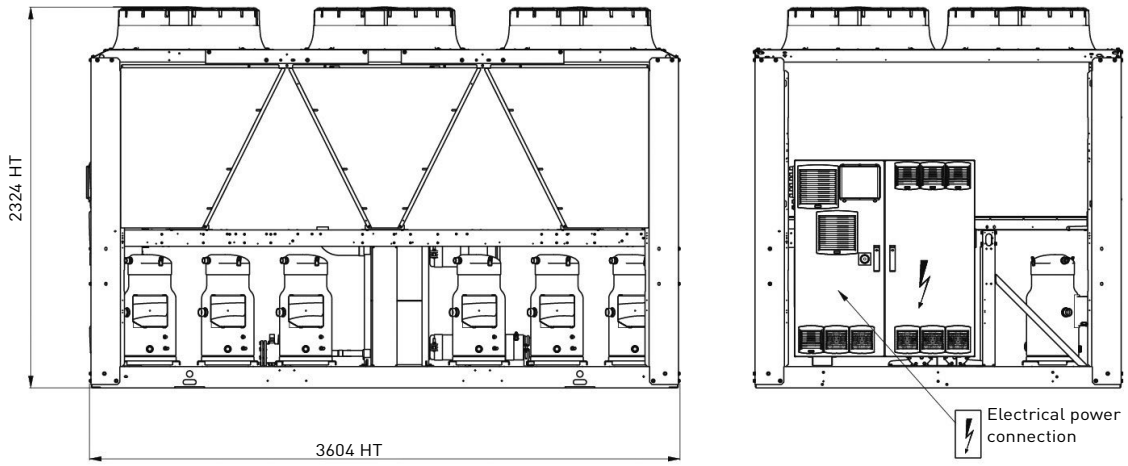
Non-contractual drawings.

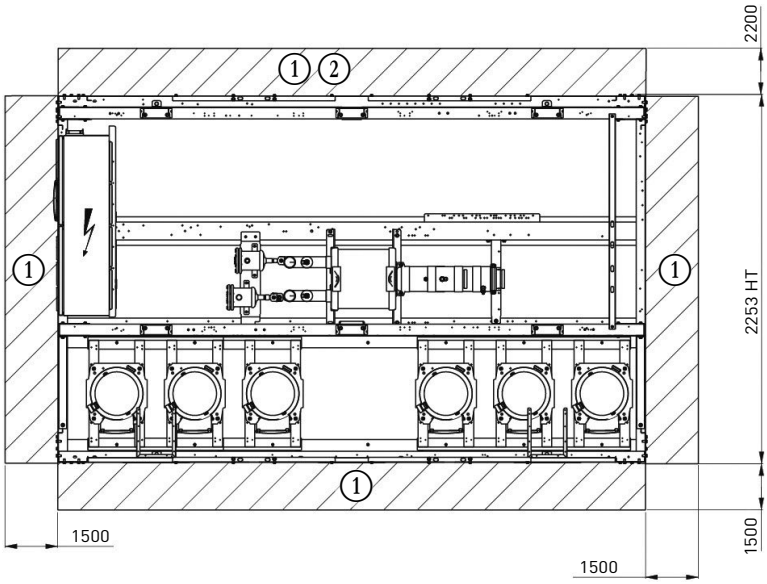
When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

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

Dimensions

■ AQUACIATPOWER 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:

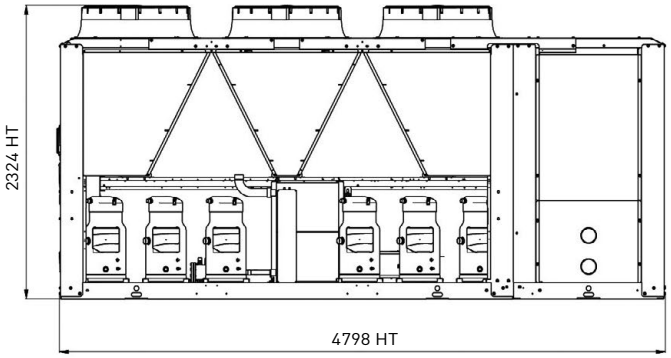
Non-contractual drawings.

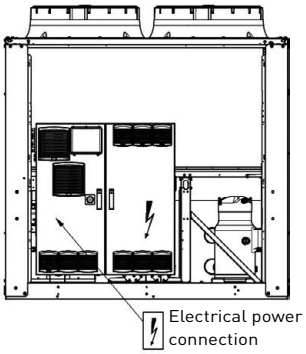
When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

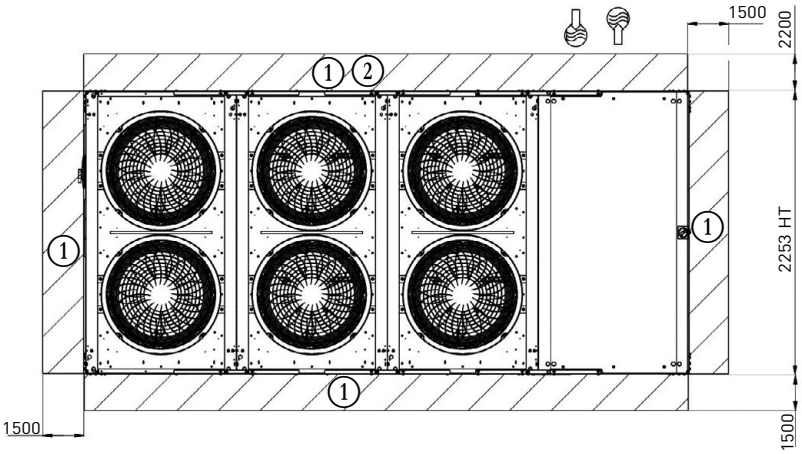
Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.

Dimensions

AQUACIATPOWER LD 1200R to 1600R/ILD 1150R to 1500R 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:

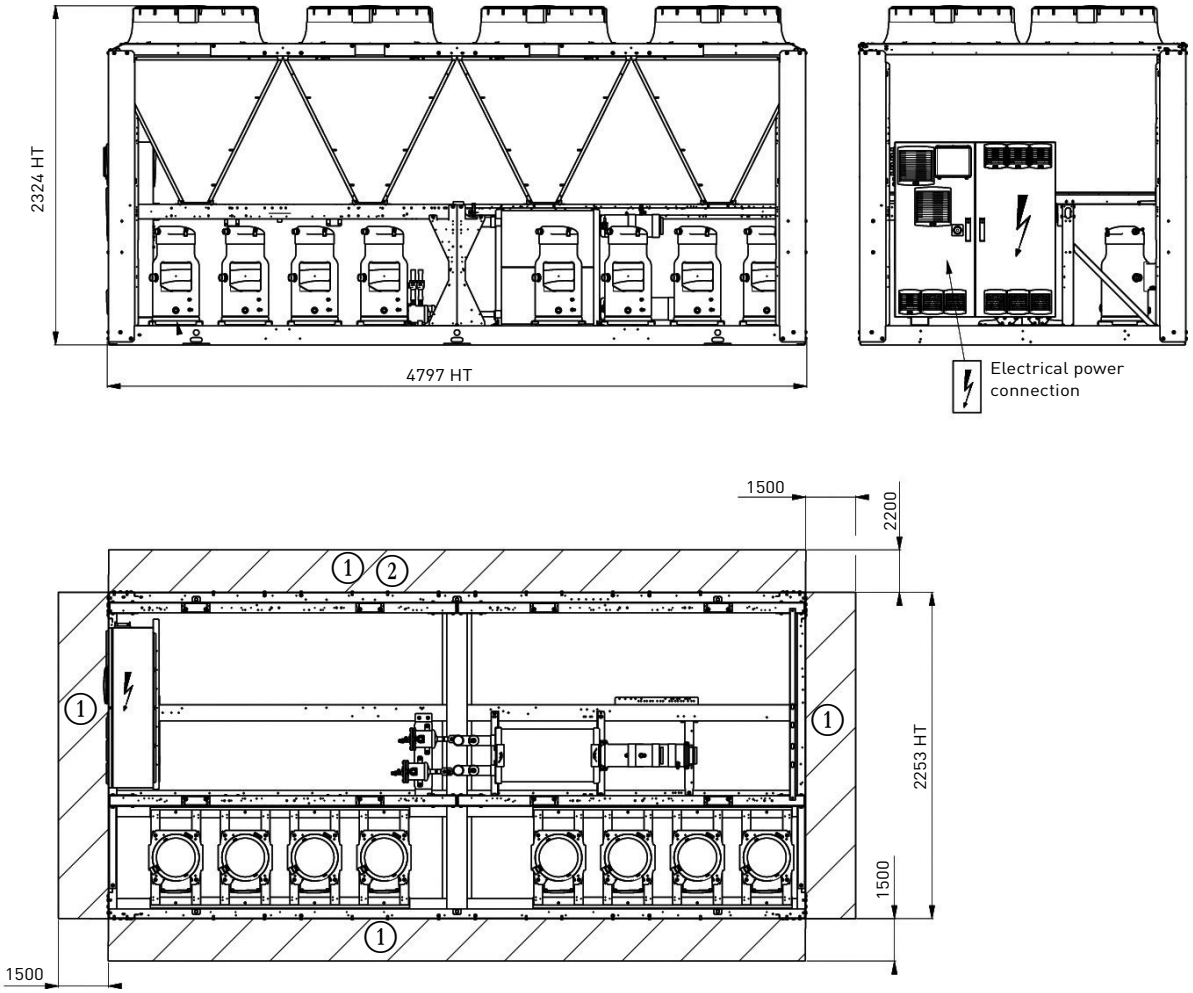
Non-contractual drawings.

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

■ AQUACIATPOWER 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:

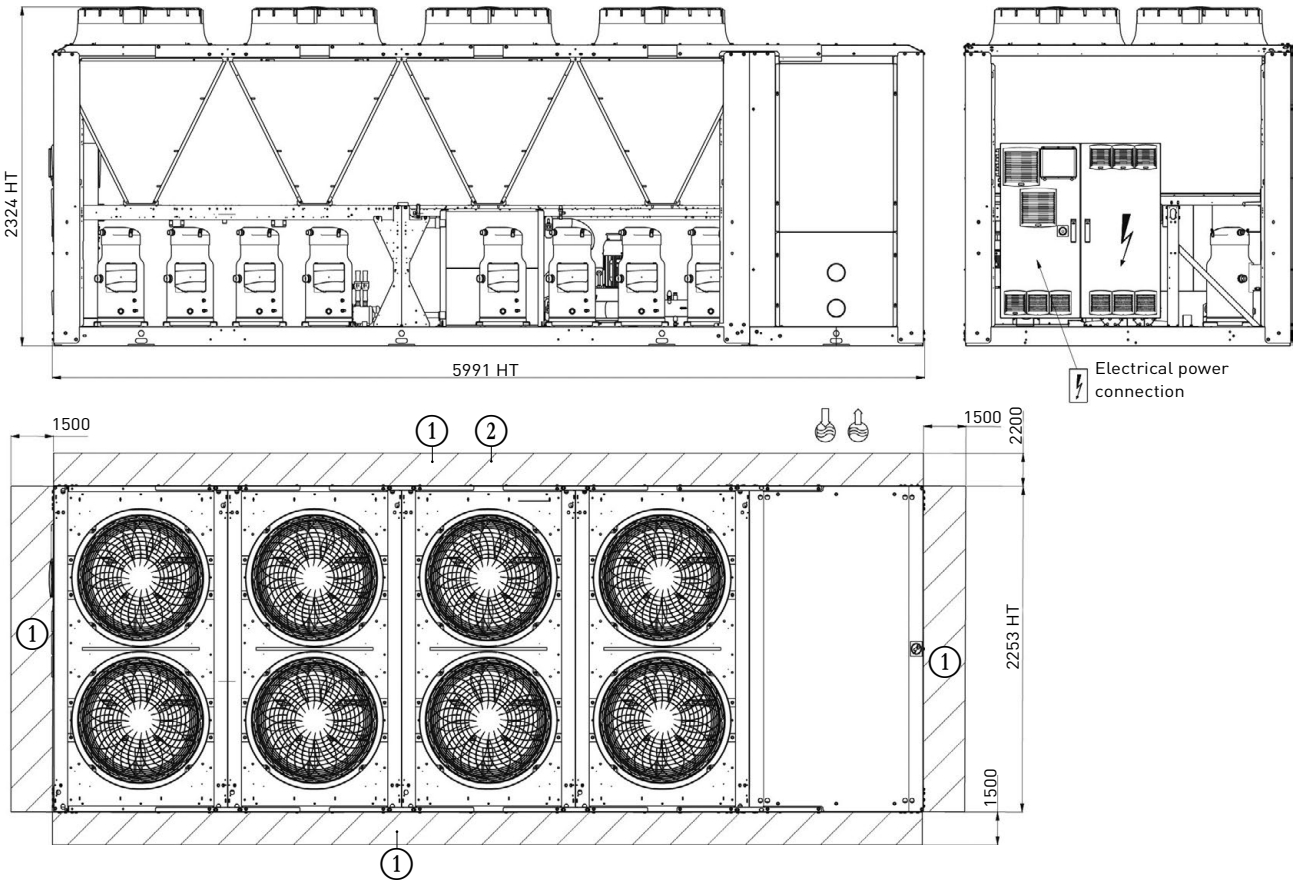
Non-contractual drawings.

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 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:

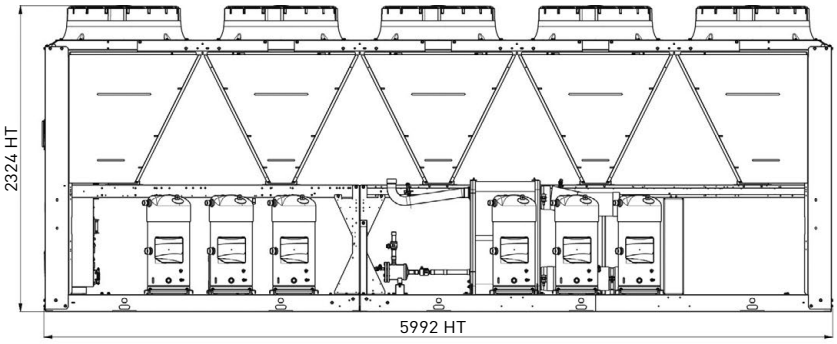
Non-contractual drawings.

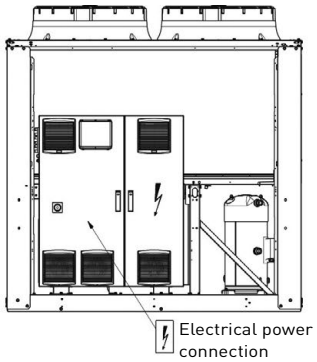
When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

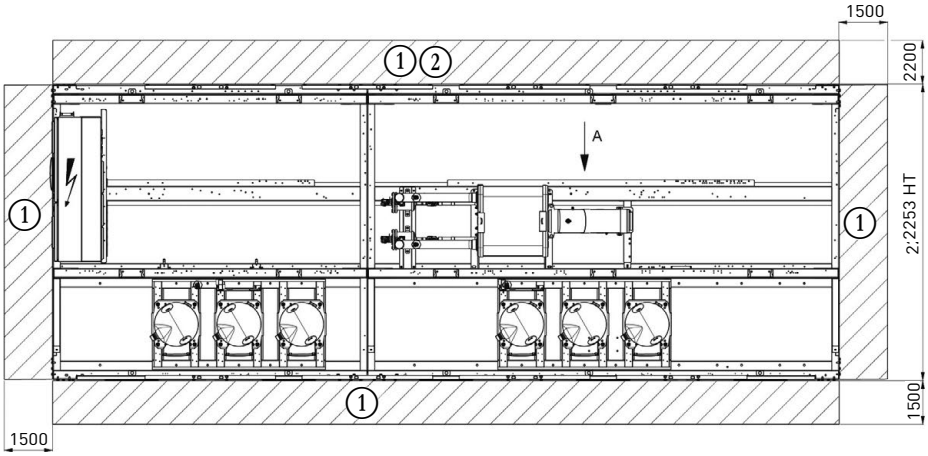
Please refer to the certified dimensional drawings for the positioning of the fixing points, weight distribution points and centre of gravity coordinates.

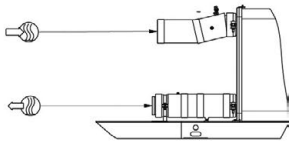
Dimensions

■ AQUACIAT POWER LD 2200R to 2650R / ILD 2200R / 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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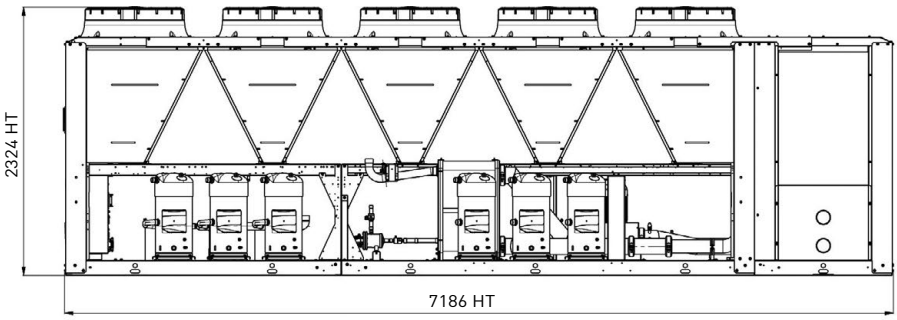
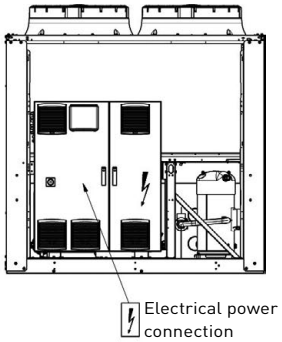
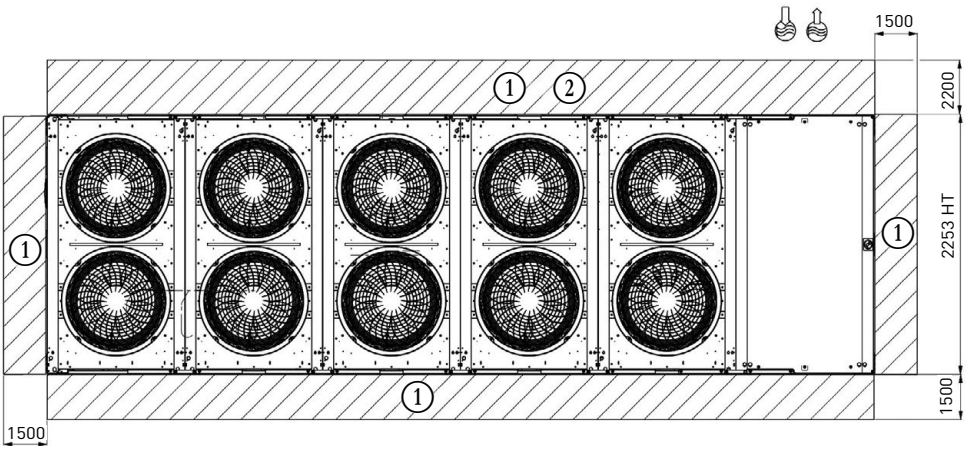
Dimensions

AQUACIATPOWER LD 2200R to 2650R / ILD 2200R / 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:

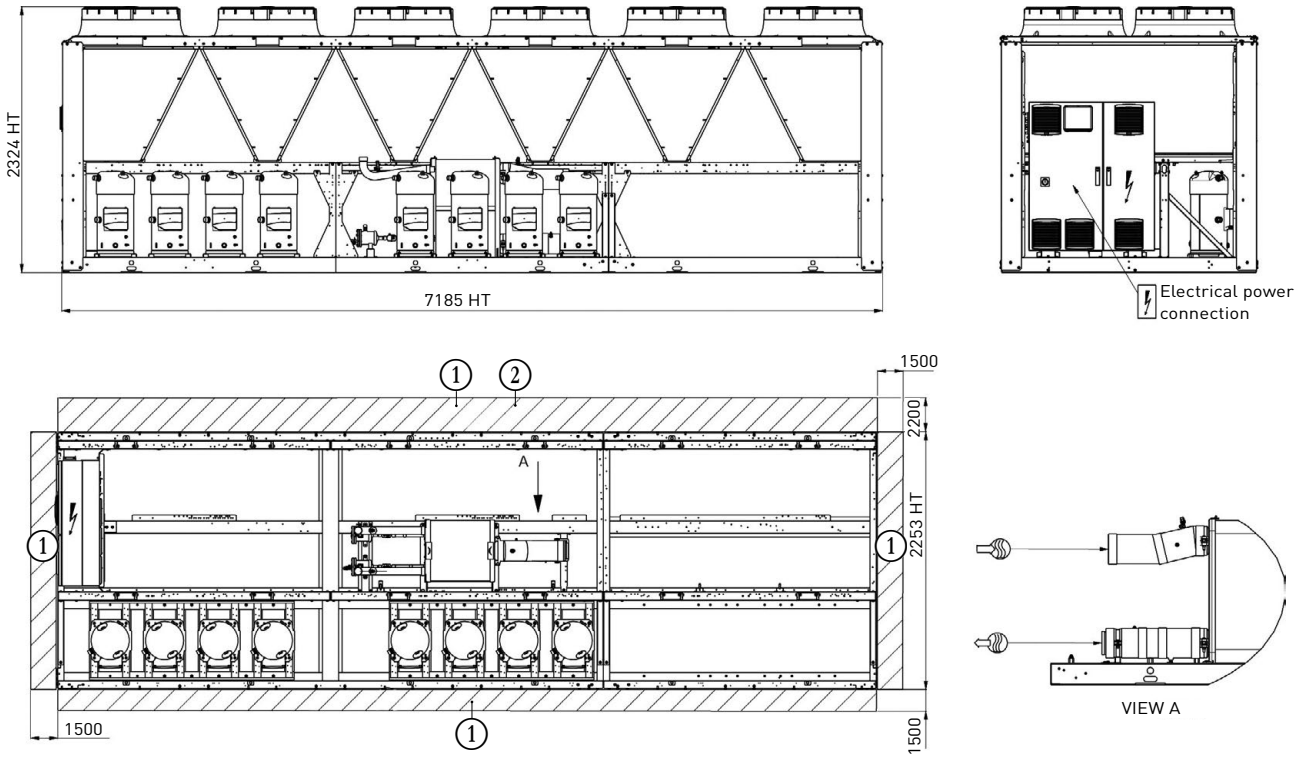
Non-contractual drawings.

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 LD 2800R to 3500R / ILD 2400R 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:

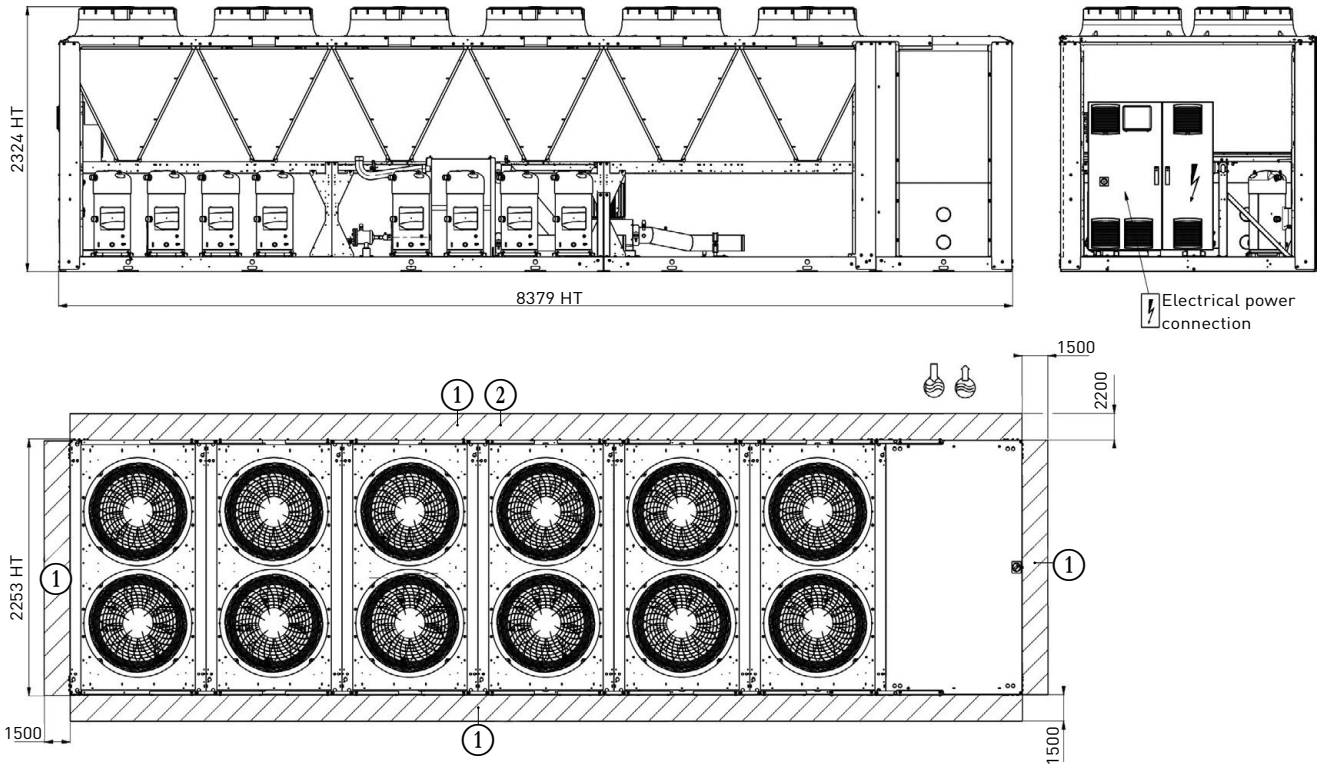
Non-contractual drawings.

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 LD 2800R to 3500R / ILD 2400R 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:

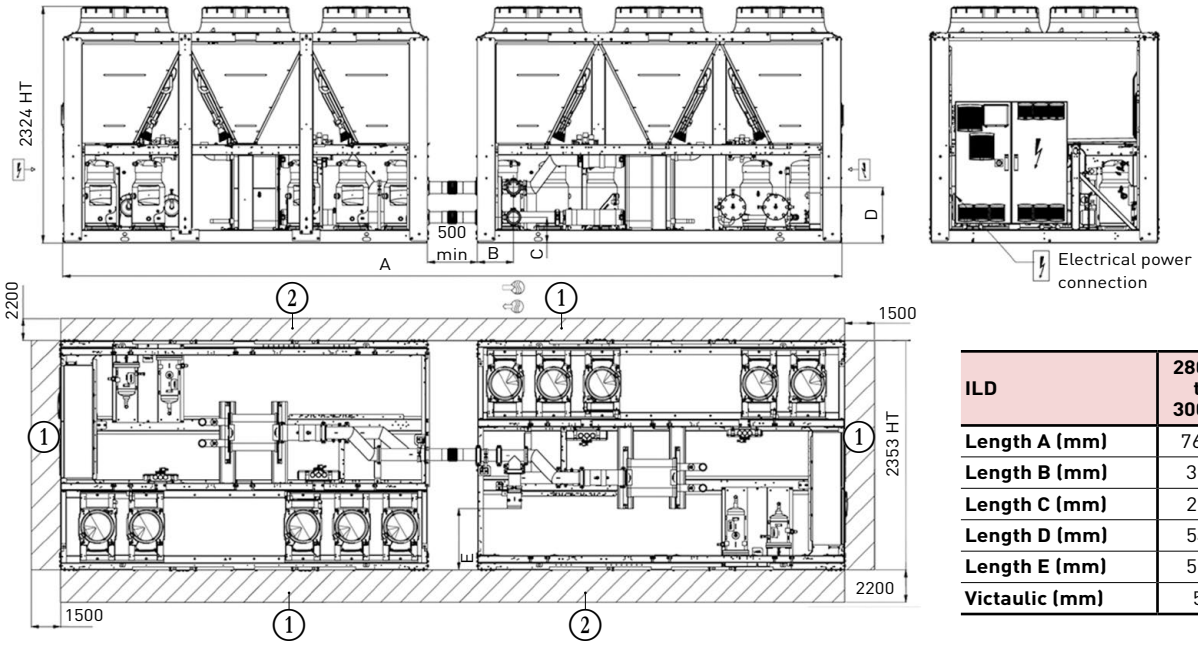
Non-contractual drawings.

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.

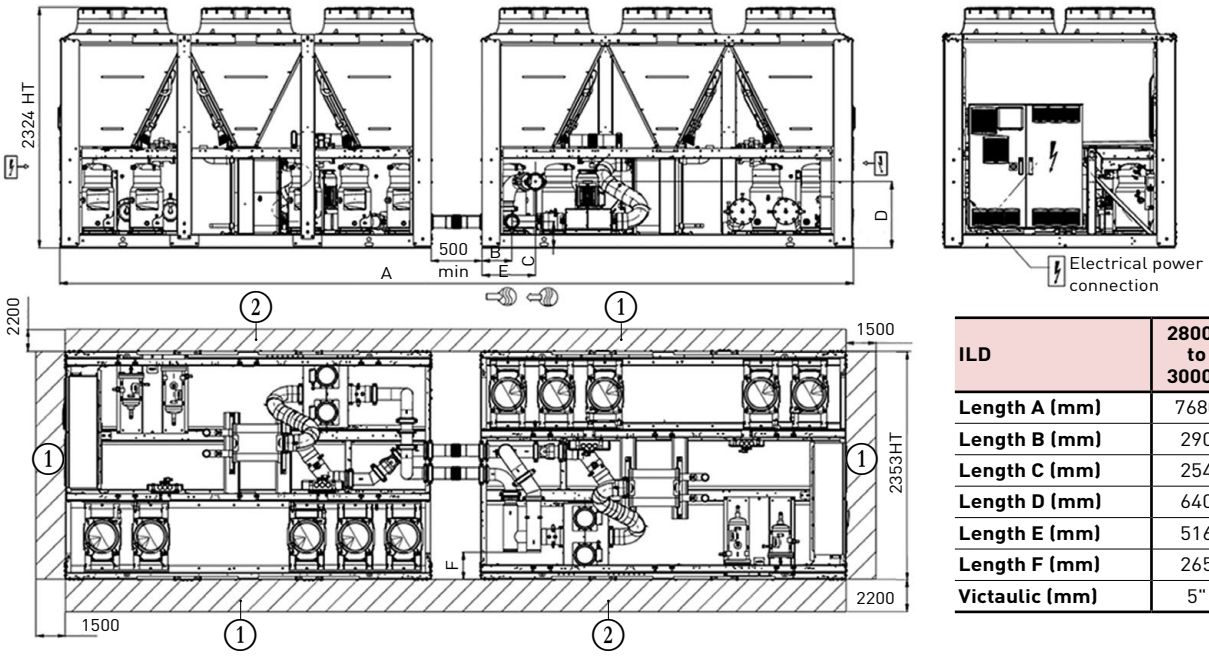
Dimensions

AQUACIAT POWER ILD 2800R to 4000R/Without hydraulic module



ILD	2800R 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 ILD 2800R to 4000R/With hydraulic module



ILD	2800R 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.