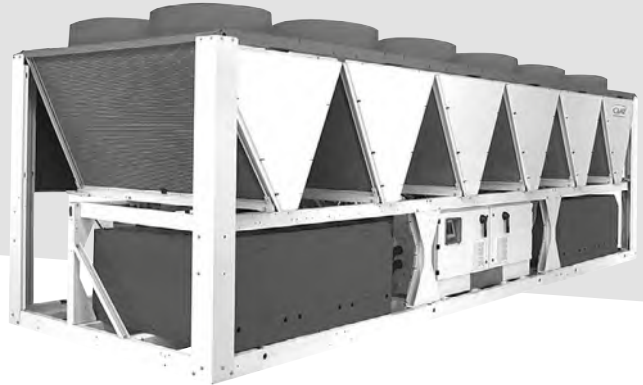




## POWERCIAT™ LX

Water chillers



### *Energy excellence !*

*Eurovent-certified*

*SEER up to 4,7, SEPR up to 6,2*

*Operating range from -20 °C to +55 °C*

*Compact and silent*

*High-efficiency flooded shell and tube evaporator*

*Aluminium micro-channel condenser*

*Hydraulic module & heat recovery*

*Cooling capacity: 271 to 1512 kW*



**Cooling  
only**



**Hydraulic  
module**



**Heat  
recovery**

## USE

The latest generation of **POWERCIAT** high-efficiency air-to-water water chillers are the perfect solution for all cooling applications in the Offices, Healthcare, Industry, Administration,

Shopping Centres and Collective Housing markets.

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

**POWERCIAT** is optimised to use ozone-friendly HFC R-134a refrigerant.

This range guarantees compliance with the most demanding requirements for increased seasonal energy efficiency (SEER and SEPR) and CO<sub>2</sub> reduction to comply with the various applicable European directives and regulations.

## RANGE

### ■ **POWERCIAT series LX HE**

Cooling only version High seasonal energy efficiency.

The product is optimised for part load applications and fulfils the provisions of the new Ecodesign regulation governing comfort and process applications. In this case, the machine is equipped as standard with variable-speed fans with AC motor and external speed regulator, allowing for optimisation of the part load efficiency throughout the year.

### DESCRIPTION

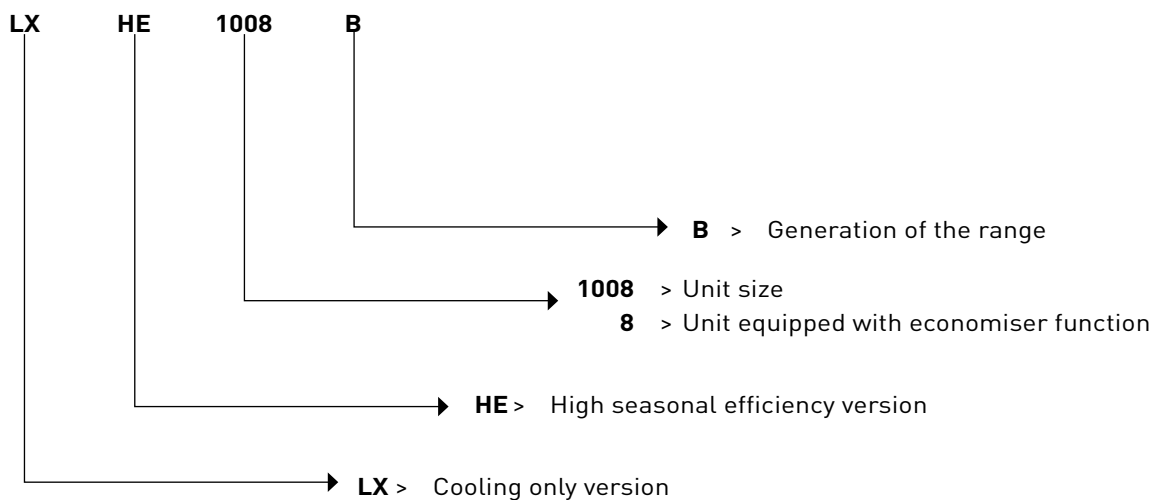
**POWERCIAAT** units are packaged machines supplied as standard with the following components:

- Twin-screw semi-hermetic compressors
- Flooded shell and tube type chilled-water evaporator
- Air-cooled exchanger, all-aluminium micro-channel coil with 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 **POWERCIAAT** range complies with the following EC directives and standards:

- Machinery directive 2006/42/EC.
- Electromagnetic compatibility directive 2014/30/EU.
- EMC immunity and emissions EN 61800-3 'C3'
- Low voltage directive 2014/35/EU.
- RoHS 2011/65/EU
- Pressure equipment directive (PED) 2014/68/EU
- Machinery directive EN 60-204 - 1
- Refrigeration systems and heat pumps EN 378-2
- Regulation (EU) no. 2016/2281 implementing directive 2009/125/EC with regard to Ecodesign requirements

### DESCRIPTION



### CONFIGURATION

<b>HE</b>	High Seasonal Efficiency
<b>HE LN option</b>	High Seasonal Efficiency Low Noise
<b>HE XLN option</b>	High Seasonal Efficiency Xtra Low Noise

## DESCRIPTION OF THE MAIN COMPONENTS

### ■ Compressors

- Twin-screw semi-hermetic type
- 2 screws fitted on ball and roller bearings
- Continuous powerCTRL
- Built-in electric motor, cooled by intake gases
- Integral electronic protection of the motor against thermal and electrical overloads
- Monitoring of rotation direction, absence of phase, over and under voltage, and power supply failure
- Monitoring of lubrication under differential pressure
- Built-in oil filter
- Internal pressure surge valve and valve to prevent reverse rotation during shutdown phases
- Monitoring of maximum head pressure
- Oil separator with integrated silencer to reduce pulses from the discharged gas
- Star-delta start limiting the in-rush current

### ■ Shell and tube evaporator

- High performance glandless technology
- Copper tube bundle with internal and external grooves
- 19-mm thermal insulation
- Victaulic type coupling
- Maximum pressure, water side, of 10 bar **(21 bar as option)**

### ■ Condenser

- Air-cooled exchanger, all-aluminium micro-channel coil
- Propeller fans with composite blades offering an optimised profile, variable speed
- Motors – IP 54, class F

### ■ Refrigerating accessories

- Dehumidifier filters with rechargeable cartridges
- Hygroscopic sight glasses
- Electronic expansion valves
- Service valves on the liquid line

### ■ Control and safety instruments

- Low and high pressure sensors
- Safety valves on refrigerant circuit
- Water temperature control sensors
- Evaporator antifreeze protection sensor
- Factory-fitted evaporator water flow controller

### ■ Electrical cabinet

- Electrical cabinet protection rating: IP 44 (IP 54 optional)
- A connection point without neutral for sizes 808B to 3028B
- Two connection points without neutral for sizes 3428B to 4608B (one connection point optional)
- Front-mounted main safety switch with handle
- Control circuit transformer
- 24 V control circuit
- Fan and compressor motor circuit breaker
- Fan and compressor motor contactors
- Connect Touch microprocessor-controlled electronic control module
- Wire numbering
- Marking of the main electrical components

### ■ Chassis

Frame made from RAL 7035 light grey & RAL 7024 graphite grey painted panels

### ■ Connect Touch control module

- User interface with 5-inch touchscreen
- Intuitive, user - friendly navigation using icons
- Clear text display of information available in 9 languages (F-GBD- NL-E-I-P-RU +Chinese)



The electronic control module performs the following main functions:

- Regulation of the chilled water temperature (at the return or at the outlet)
- Regulation of the water temperature based on the outdoor temperature (water law)
- Regulation for low temperature energy storage
- Second setpoint management
- Complete management of compressors with start-up sequence, timer and operating time balancing
- Self-regulating and proactive functions with adjustment of the control to counter parameter drift

## DESCRIPTION OF THE MAIN COMPONENTS

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- In-series staged powerCTRL system on the compressors according to the thermal requirements
- Management of compressor short-cycle protection
- Frost protection (exchanger heater option)
- Phase reversal protection
- Management of occupied/unoccupied modes (according to the time schedule)
- Compressor and pump operating time balancing
- Management of the machine operating 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 operating readings taken when the fault occurs
- Blackbox memory
- Lead/Lag management of the two machines in parallel with operating 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)
- Display of all machine parameters (3 access levels, User/ Maintenance/Factory, password-protected): temperature, setpoints, pressures, water flow rate (hydraulic version), runtime.
- Display of trend curves for the main values
- Storage of maintenance manual, wiring diagram and spare parts list.

### ■ 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 as an option, enabling most CMS/BMS to be integrated

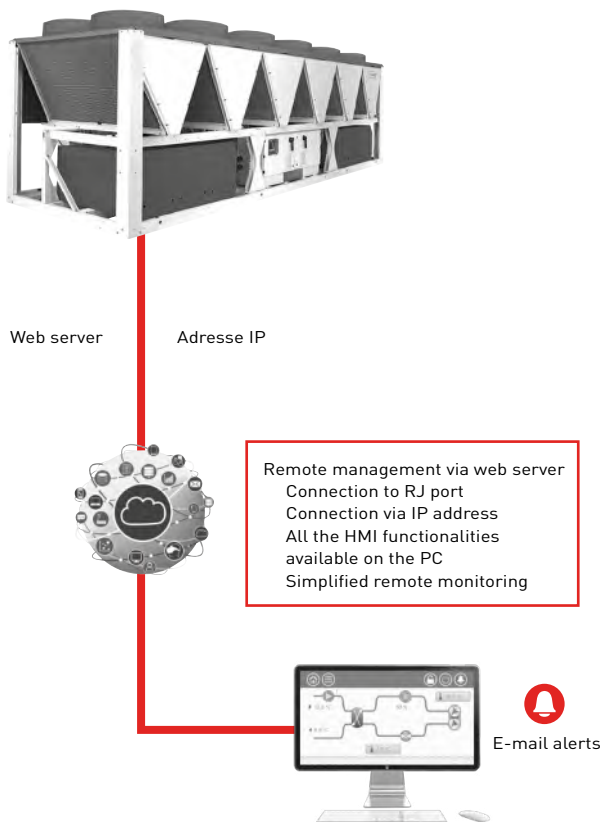
Several contacts are available as standard, enabling the machine to be controlled remotely by wired link:

- Automatic operation control: when this contact is open, the machine stops
- Setpoint 1/setpoint 2 selector: when this contact is closed, a second cooling setpoint is activated (energy storage or unoccupied 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.
- Switch control for the customer pump, external to the machine (on/off).

Contacts available as an option:

- Setpoint adjustable via 4-20 mA signal: this input is used to adjust the setpoint in COOLING mode
- 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.

## DESCRIPTION OF THE MAIN COMPONENTS



### ■ 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.

### DESCRIPTION OF THE MAIN COMPONENTS

#### ■ **ABOUND HVAC PERFORMANCE, the CIAT supervision solution**

ABOUND HVAC PERFORMANCE is a remote supervision solution dedicated to monitoring and controlling several CIAT machines in real time.

#### Advantages

- Access to the operating trend curves for analysis
- Improved energy performance
- Improved availability rate for the machines

#### Functions

ABOUND HVAC PERFORMANCE will send data in real time to the supervision.

The machine operating data can be accessed from any PC, smartphone or tablet.

Any event can be configured to trigger a mail alert.

Parameters monitored:

- Overview
- Control panel for the controllers
- Events
- Temperature curves

Monthly and annual reports are available to analyse:

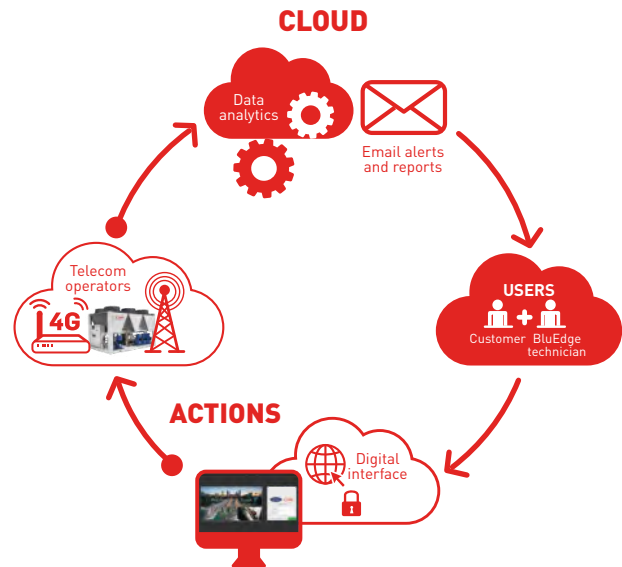
- The performance and operation of the machine  
Example: operating curves and time, number of compressor start-ups, events, preventive maintenance actions to be performed, etc.

Incidents such as a drift in the measurements on a temperature sensor, incorrectly set control parameters, or even incorrect settings between one compressor stage and the other are immediately detected, and the corrective actions put in place.

#### Equipment

This kit can be used on both machines which are already in use (existing inventory), and on new machines which do not have sufficient space in their electrical cabinets.

- 1 transportable cabinet
- 1 wall-mounted antenna

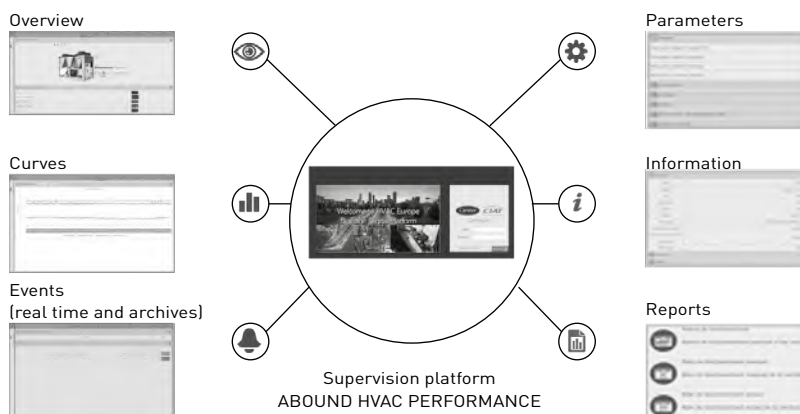


#### ABOUND HVAC PERFORMANCE kit contents

- 1 GPRS/3G modem
- 1 SIM card
- 1 power supply (24 VDC)
- 1 power protection device
- 1 GSM antenna
- Rail mounting
- Enclosed casing to protect the equipment during transport
- Packing box for cable routing (bus, power supply, Ethernet)

#### Compatibility

Up to three machines per ABOUND HVAC PERFORMANCE kit



## AVAILABLE OPTIONS

Options	Description	Advantages	LX HE
Medium-temperature brine solution	Implementation of new algorithms of control and evaporator redesign to allow chilled brine solution production down to -12 °C when ethylene glycol is used (-8 °C with propylene glycol)	Covers specific applications such as ice storage and industrial processes	•
Low-temperature brine solution	Implementation of new algorithms of control and evaporator redesign to allow chilled brine solution production down to -15 °C when ethylene glycol is used (-10 °C with propylene glycol)	Covers specific applications such as ice storage and industrial processes	•
Light-brine solution, down to -3 °C	Implementation of new algorithms of control to allow chilled brine solution production down to -3 °C when ethylene glycol is used (0 °C with propylene glycol)	Matches with most application requirements for ground-sourced heat pumps and fits with many industrial processes requirements	•
Unit equipped for air discharge ducting	Fans equipped with discharge connection flanges - maximum available pressure 60 Pa	Facilitates connections to the discharge ducts	•
Low Noise	Aesthetic and sound absorbing compressor enclosure	Noise level reduction	•
Xtra Low Noise	Acoustic compressor enclosure and low-speed fans	Noise emission reduction at reduced fan speed	•
IP54 control box	Increased leak tightness of the unit	Protects the inside of the electrical box from dust, water and sand. As a rule, this option is recommended for installations located in polluted environments	•
Tropicalisation of the electrical box	Electrical box equipped with an electrical heater and a fan. Electrical connections on the compressors painted with a special varnish.	Grant safe operation in typical "tropical" climate. This option is recommended for all applications where humidity inside the electrical box can reach 80% at 40°C and unit can remain in stand-by for a long time under this conditions.	•
Protection grilles	Metal grilles on the 4 unit sides.	Improves protection against intrusion to the unit interior, and protects the coil and piping against impacts.	•
230 V electrical plug	230 VAC power supply source provided with plug socket and transformer (180 VA, 0.8 A)	Permits connection of a laptop or an electrical device during unit commissioning or servicing	•
Water exchanger frost protection	Electric resistance heater on the water exchanger and discharge valve	Water exchanger frost protection down to -20 °C outside temperature	•
Evaporator & hydraulic module frost protection	Electric resistance heater on water exchanger, discharge valve and hydraulic module	Water exchanger and hydraulic module frost protection down to -20 °C outside temperature	Sizes 808B to 1108B
Total heat recovery	Unit equipped with additional heat exchanger in parallel with the condenser coils.	Production of free hot-water simultaneously with chilled water production	Sizes 808B to 3028B
Evaporator with one pass less	Evaporator with one pass more on the water	Optimise chiller operation when the chilled water circuit is designed with low waterflows (high delta T evaporator inlet/ outlet)	Sizes 808B-3028B
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 operating time equalisation	•
21 bar evaporator	Reinforced evaporator for extension of the maximum water-side service pressure to 21 bar (standard 10 bar)	Covers applications with a high water column evaporator side (typically high buildings)	•

- ALL MODELS

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

## AVAILABLE OPTIONS

Options	Description	Advantages	LX HE
Single power connection point	Unit power connection via one main supply connection	Quick and easy installation	Sizes 3428B to 4608B
Evap. and pumps with aluminum jacket	Evaporator and pumps covered with an aluminum sheet for thermal insulation protection	Improved resistance to aggressive climate conditions	Sizes 808B-1108B
Reversed evaporator water connections	Evaporator with reversed water inlet/outlet	Easy installation on sites with specific requirements	•
Service valve set	Liquid line valve (evaporator inlet), compressor suction and discharge line valves and economiser line valve	Allow isolation of various refrigerant circuit components for simplified service and maintenance	•
Evaporator with one pass more	Evaporator with one pass more on the water side	Optimise chiller operation when the chilled water circuit is designed with low waterflows (high delta T evaporator inlet/outlet)	•
Set point adjustment by 4-20 mA signal	Connections to allow a 4-20 mA signal input	Easy energy management, allow to adjust set point by a 4-20 mA external signal	•
Lon gateway	Two-directional communication board complying with Lon Talk protocol	Connects the unit by communication bus to a building management system	•
HP single-pump hydraulic module	Complete hydraulic module equipped with water filter, relief valve, one high pressure pump and drain valve. For more details, refer to the dedicated chapter (expansion tank not included; option with built-in safety hydraulic components available).	Quick and easy installation (plug & play)	Sizes 808B to 1108B
HP dual-pump hydraulic module	Dual high pressure water pump, water filter, electronic water flow control, pressure transducers. For more details, refer to the dedicated chapter (expansion tank not included; option with built-in safety hydraulic components available)	Quick and easy installation (plug & play)	Sizes 808B to 1108B
Dual relief valves on 3-way valve	Three-way valve upstream of dual relief valves on the shell and tubes evaporator	Valve replacement and inspection facilitated without refrigerant loss. Conforms to European standard EN378/BGVD4	Sizes 808B to 3028B
Compliance with Swiss regulations	Additional tests on the water heat exchangers: supply (additional of PED documents) supplementary certificates and test certifications	Compliance with Swiss regulations	•
Compliance with Russian regulations	EAC certification	Compliance with Russian regulations	•
Bacnet over IP	Bi-directional high-speed communication using BACnet protocol over Ethernet network (IP)	Easy, high-speed connection by Ethernet line to a building management system. Allows access to multiple unit parameters	•
Energy Management Module	Control board with additional inputs/outputs. See Contacts available in option on control description	Extended remote control capabilities (setpoint reset by 0-20 mA input, ice storage end, demand limits, boiler on/off command...)	•
7" user interface	Control supplied with a 7 inch colour touch screen user interface	Enhanced ease of use	•
Input contact for Refrigerant leak detection	0-10 V signal to report any refrigerant leakage in the unit directly on the controller (the leak detector itself must be supplied by the customer)	Immediate customer notification of refrigerant losses to the atmosphere, allowing timely corrective actions	•
Compliance with Australian regulations	Unit approved to Australian code	Compliance with Australian regulations	•

- ALL MODELS

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



## AVAILABLE OPTIONS

Options	Description	Advantages	LX HE
Insulation of the evap. in/ out ref.lines	Thermal insulation of the evaporator entering/leaving refrigerant lines with flexible, UV resistant insulation	Prevents condensation on the evaporator entering/ leaving refrigerant lines	•
MCHE anti-corosion protection Protect2	Coating by 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. Minimal heat transfer variation, salt spray resistance test for 4000 hours (ASTM B117)	Protect2 Improved corrosion resistance of the MCHC coils by 2, recommended for use in moderately corrosive environments	•
MCHE anti-corosion protection Protect4	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 6000 hours constant neutral salt spray per ASTM B117, superior impact resistance per ASTM D2794	Protect4 Improved corrosion resistance of the MCHC coils by 4, recommended for use in corrosive environments	•
Evaporator with aluminium jacket	Evaporator covered with an aluminium sheet for thermal insulation protection	Improved resistance to aggressive climate conditions	•
Expansion tank	6 bar expansion tank integrated in the hydraulic module (requires hydraulic module option)	Easy and fast installation (plug & play), & protection of closed water systems from excessive pressure	Sizes 808B to 1108B
Anti-vibration mounts	Elastomer anti-vibration mounts to be placed under the unit (material classified B2 fire class according to DIN 4102).	Isolate the unit from the building, avoid transmission of vibrations and associated noise to the building. Must be used in conjunction with a flexible connection on the water side	•
Free cooling dry cooler management	Control & connections to a free cooling dry cooler Opera or Vextra fitted with the FC control box option	Easy system management, extended control capabilities to a dry cooler used in free cooling mode	•
Variable Water Flow control	Hydraulic control function package that permits control of the water flow rate based on different possible logics (at customer choice): constant $\Delta T$ , constant outlet pressure and fixed-speed control	When variable-speed pumps on the primary circuit, the VWF control modulates flow rate through the evaporator, minimising pump consumption while ensuring safe/optimised chiller operation	Sizes 808B to 1108B
Delivery with plastic tarp	Plastic tarp covering units with strapping and campled on the wooden pallet	Allow unit to avoid dust and dirt from the outside environment during stocking and shipping	•

- ALL MODELS

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

## SEASONAL PERFORMANCE

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Most central air conditioning systems installed in the tertiary sector in Europe use water chillers to provide refrigeration.

Analyses of installed systems show that the heat load varies from season to season and that a water chiller operates at reduced capacity for the majority of the time.

The efficiency under partial load is therefore essential when choosing a water chiller. It is with this in mind that the new **POWERCIAI** range was designed. In particular, the entire range uses R-134a refrigerant which, thanks to its thermodynamic performance, makes it possible to obtain much higher seasonal performance ratings.

Thanks to its system continuously regulating the power of each compressor, the **POWERCIAI** easily and efficiently adjusts the cooling capacity to the system's needs. The self-adjusting Connect Touch control anticipates variations in load and starts only the number of compressors needed. This ensures optimum operation of the compressors and guarantees energy efficiency for the majority of the system's life.

The **Seasonal Energy Efficiency Ratio (SEER)** measures the seasonal energy efficiency of liquid chillers **for comfort applications** by calculating the ratio between the annual cooling demand of the building and the chiller's annual energy demand. It takes into account the energy efficiency for each outdoor temperature weighted by the number of hours observed for each of these temperatures, using actual climate data. The **SEER** is a new way of measuring the energy efficiency of liquid chillers **for comfort applications** over an entire year. The new indicator provides a more realistic overview of the cooling system's energy efficiency and its actual impact on the environment. (Ecodesign regulation 2016/2281).

The **Seasonal Energy Performance Ratio (SEPR)** measures the seasonal energy efficiency of liquid chillers **for process applications** by calculating the ratio between the annual process cooling demand and the chiller's annual energy demand. It takes into account the energy efficiency at each outdoor temperature for the average European climate weighted by the number of hours observed for each of these temperatures.

The **SEPR** is a new way of measuring the energy efficiency of liquid chillers **for process applications** over an entire year. The new indicator provides a more realistic overview of the cooling system's energy efficiency and its actual impact on the environment (Ecodesign regulation 2015/1095 or 2016/2281).



## HYDRAULIC MODULE

### ■ The “ALL IN ONE” solution

#### The PLUG & COOL solution offered by POWERCAT

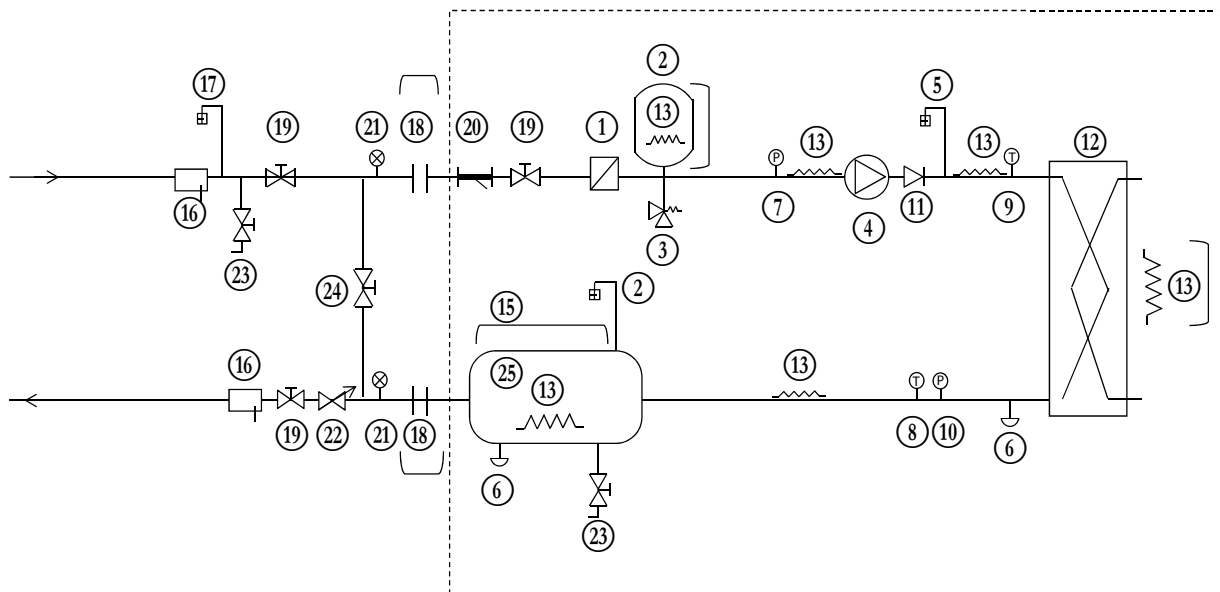
The hydraulic module available for models 808B to 1528B contains all the water circuit components needed for the system to operate correctly:

- Expansion vessel (option):
  - 50 litres for models 808B to 1358B.
  - 80 litres for model 1528B.
- Wide choice of pumps:
  - Single or dual pumps with operating time balancing and backup.
  - Fixed-speed high or low pressure pumps.
- Water temperature and pressure sensors.
- Water filter.
- Relief valve.
- Drain circuit.
- Air bleed valve.
- Frost protection (option).

The components in the hydraulic system are carefully selected and factory assembled and tested to make the installation of the units simple and economical.

This ensures conditioning times, implementation times and space requirements are kept to a minimum.

### ■ POWERCAT hydraulic module diagram



#### Key

##### Components of the unit and hydraulic module

- A Pressure sensor (A-B =  $\Delta P$  evaporator)
- B Pressure sensor
- C Pressure sensor (C-D =  $\Delta P$  water filter)
- D Pressure sensor
- ① Victaulic screen filter
- ② Expansion tank (optional)
- ③ Relief valve
- ④ Available pressure pump
- ⑤ Drain valve
- ⑥ Flow control valve
- ⑦ Evaporator
- ⑧ Evaporator antifreeze heater (optional)
- ⑨ Hydraulic module defrost heater (option)
- ⑩ Air vent (evaporator)
- ⑪ Water drain (evaporator)
- ⑫ Expansion compensator (flexible connections)
- ⑬ Flow rate sensor
- ⑭ Water temperature sensor

##### System components

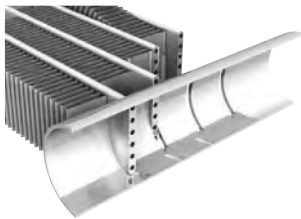
- ⑮ Air vent
- ⑯ Flexible
- ⑰ Stop valve
- ⑱ Charge valve

---- Hydraulic module (supplied as an option)

## ENVIRONMENTAL RESPONSIBILITY

The **POWERCIA™** 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 highly efficient performance it offers enables energy consumption to be greatly reduced, thereby reducing the unit's carbon footprint throughout its service life.



This performance is the result of the high quality components used, which have all been rigorously selected:

- The latest generation screw compressors

- Highly efficient R-134a refrigerant, which has a low environmental impact: zero ODP (Ozone Depletion Potential), low GWP (Global Warming Potential).
- MCHE micro-channel coils
  - Energy efficiency increased by 10% compared to a conventional coil
  - 40 % reduction in the refrigerant charge.
  - Reduction in the unit weight, reducing the environmental impact during transportation
  - Simplified end of life recycling thanks to the all-aluminium construction.

Only 20% of a unit's impact on the ozone layer comes from the refrigerant (direct effect), with 80% coming from the CO<sub>2</sub> released into the atmosphere when the electricity required to power the unit is produced (indirect effect). With **POWERCIA™**, it's a win-win situation: its low refrigerant charge minimises the risk of emissions, and its low energy consumption limits its indirect impact.

The choice of technology used in the **POWERCIA™** range means that the TEWI, which covers the unit's environmental impact (both direct and indirect) throughout its service life, is greatly reduced.

## INTEGRATION INTO THE MOST DEMANDING ENVIRONMENTS

The **POWERCIA™** has standard and optional equipment which enables it to be integrated into any one of a diverse range of environments.

In the micro-channel (MCH) coil, the rate of corrosion is less than in a conventional coil with copper tube and aluminium fins. Indeed, its all-aluminium design limits the galvanic couples in the coil, thereby providing increased corrosion resistance.

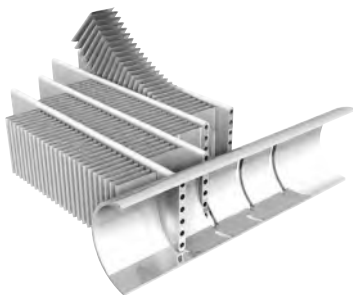
The Protect2 anti-corrosion post-treatment option doubles its resistance to corrosion. This treatment is applied by immersing the coil, ensuring complete protection as the aluminium surface undergoes a chemical change.

This treatment is recommended for moderately corrosive environments.

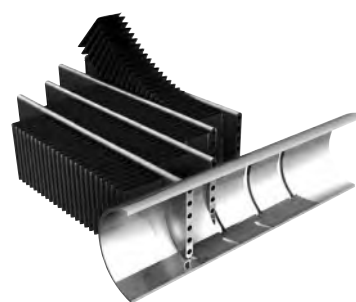
The Protect4 anti-corrosion post-treatment option provides a fourfold increase in resistance to corrosion. An e-coating process is used to electro-coat the coil in polymer epoxy, and then a top layer of anti-UV protection is applied.

This treatment is recommended for highly corrosive industrial and marine environments.

**Protect2**



**Protect4**



In a polluted atmosphere, the **POWERCIA™** can be equipped with an IP54 protection option that protects the electrical components from the ingress of dust, sand and water.



## TECHNICAL SPECIFICATIONS

POWERCAT LX HE			808B	908B	1008B	1108B	1358B	1528B	1858B	2008B	2158B	
<b>Cooling</b>												
<b>LX HE standard</b> Full load performances*	CA1	Nominal capacity	kW	277	300	322	392	444	494	623	676	730
		EER	kW/kW	3,15	3,12	3,08	3,18	3,11	3,08	3,22	3,28	3,10
<b>LX HE with Xtra Low Noise option</b> Full load performances*	CA1	Nominal capacity	kW	271	293	313	384	432	478	607	659	709
		EER	kW/kW	3,13	3,08	3,00	3,16	3,03	2,93	3,13	3,20	2,97
<b>LX HE standard</b> Seasonal energy efficiency**	<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>		kWh/kWh	<b>4,47</b>	<b>4,46</b>	<b>4,40</b>	<b>4,33</b>	<b>4,56</b>	<b>4,55</b>	<b>4,55</b>	<b>4,62</b>	<b>4,56</b>
	<b>ns cool<sub>12/7°C</sub></b>		%	<b>176</b>	<b>175</b>	<b>173</b>	<b>170</b>	<b>179</b>	<b>179</b>	<b>179</b>	<b>182</b>	<b>179</b>
	<b>SEPR<sub>12/7°C</sub> Process high temp.</b>		kWh/kWh	<b>5,70</b>	<b>5,69</b>	<b>5,65</b>	<b>5,78</b>	<b>5,72</b>	<b>5,74</b>	<b>5,68</b>	<b>5,79</b>	<b>5,63</b>
<b>LX HE with medium-temperature brine solution option</b> Seasonal energy efficiency**	<b>SEPR<sub>-2/-8°C</sub> Process medium temp.***</b>		kWh/kWh	<b>2,72</b>	<b>3,02</b>	<b>3,18</b>	<b>2,81</b>	<b>3,51</b>	<b>3,56</b>	<b>3,65</b>	<b>3,67</b>	<b>3,44</b>
	<b>LX HE with variable water flow control option</b> Seasonal energy efficiency**	<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>		kWh/kWh	<b>4,47</b>	<b>4,47</b>	<b>4,43</b>	<b>4,49</b>	-	-	-	-
<b>ns cool<sub>12/7°C</sub></b>		%	<b>176</b>	<b>176</b>	<b>174</b>	<b>177</b>	-	-	-	-	-	
<b>SEPR<sub>12/7°C</sub> Process high temp.</b>		kWh/kWh	<b>5,72</b>	<b>5,71</b>	<b>5,68</b>	<b>5,83</b>	-	-	-	-	-	
<b>LX HE with low-temperature brine solution option</b> Seasonal energy efficiency**	<b>SEPR<sub>-2/-8°C</sub> Process medium temp.***</b>		kWh/kWh	<b>3,29</b>	<b>3,46</b>	<b>3,52</b>	<b>3,26</b>	<b>3,42</b>	<b>3,50</b>	<b>3,50</b>	<b>3,62</b>	<b>3,38</b>
	<b>LX HE with Xtra Low Noise option</b> Seasonal energy efficiency**	<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>		kWh/kWh	<b>4,49</b>	<b>4,48</b>	<b>4,41</b>	<b>4,33</b>	<b>4,56</b>	<b>4,57</b>	<b>4,56</b>	<b>4,62</b>
<b>ns cool<sub>12/7°C</sub></b>		%	<b>176</b>	<b>176</b>	<b>173</b>	<b>170</b>	<b>179</b>	<b>180</b>	<b>179</b>	<b>182</b>	<b>179</b>	
<b>SEPR<sub>12/7°C</sub> Process high temp.</b>		kWh/kWh	<b>5,82</b>	<b>5,88</b>	<b>5,79</b>	<b>5,57</b>	<b>5,70</b>	<b>5,79</b>	<b>5,92</b>	<b>5,93</b>	<b>5,79</b>	
<b>LX HE with medium-temperature brine solution, Xtra Low Noise options</b> Seasonal energy efficiency**	<b>SEPR<sub>-2/-8°C</sub> Process medium temp.***</b>		kWh/kWh	<b>2,75</b>	<b>3,10</b>	<b>3,29</b>	<b>2,83</b>	<b>3,54</b>	<b>3,67</b>	<b>3,79</b>	<b>3,82</b>	<b>3,55</b>
	<b>LX HE with variable water flow control option &amp; Xtra Low Noise</b> Seasonal energy efficiency**	<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>		kWh/kWh	<b>4,47</b>	<b>4,47</b>	<b>4,42</b>	<b>4,47</b>	-	-	-	-
<b>ns cool<sub>12/7°C</sub></b>		%	<b>176</b>	<b>176</b>	<b>174</b>	<b>176</b>	-	-	-	-	-	
<b>SEPR<sub>12/7°C</sub> Process high temp.</b>		kWh/kWh	<b>5,84</b>	<b>5,91</b>	<b>5,82</b>	<b>5,61</b>	-	-	-	-	-	
<b>LX HE with low-temperature brine solution, Xtra Low Noise options</b> Seasonal energy efficiency**	<b>SEPR<sub>-2/-8°C</sub> Process medium temp.***</b>		kWh/kWh	<b>3,35</b>	<b>3,58</b>	<b>3,71</b>	<b>3,38</b>	<b>3,64</b>	<b>3,61</b>	<b>3,63</b>	<b>3,78</b>	<b>3,50</b>
	<b>Sound levels</b>											
<b>LX HE</b>												
Sound power <sup>(1)</sup>		dB(A)	99	99	99	99	101	99	101	99	103	
Sound pressure at 10 m <sup>(2)</sup>		dB(A)	67	67	67	67	69	67	68	66	70	
<b>LX HE + Low Noise option</b>												
Sound power <sup>(1)</sup>		dB(A)	93	93	94	95	95	95	97	96	97	
Sound pressure at 10 m <sup>(2)</sup>		dB(A)	61	61	62	63	63	63	64	63	64	
<b>LX HE + Xtra low noise option</b>												
Sound power <sup>(1)</sup>		dB(A)	87	87	87	90	91	91	93	92	94	
Sound pressure at 10 m <sup>(2)</sup>		dB(A)	55	55	55	58	59	59	60	59	61	

\* In accordance with standard EN14511-3:2022.  
 \*\* In accordance with standard EN14825:2022  
 \*\*\* 30 % brine solution  
 CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m<sup>2</sup>. kW/W  
**ns cool<sub>12/7°C</sub> & SEER<sub>12/7°C</sub>** **Bold values compliant to Ecodesign Regulation (EU) No. 2016/2281 for Comfort application**  
**SEPR<sub>12/7°C</sub>** **Bold values compliant to Ecodesign Regulation (EU) No. 2016/2281 for Process application High Temperature**  
**SEPR<sub>-2/-8°C</sub>** **Bold values compliant to Ecodesign Regulation (EU) No. 2015/1095 for Process application Medium Temperature**  
 - Non applicable  
 (1) In dB ref=10<sup>-12</sup> W, 'A' weighted. Declared dual-number noise emission values in accordance with ISO 4871 with an associated uncertainty of +/-3dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 (2) In dB ref 20µPa, 'A' weighted. Declared dual-number noise emission values in accordance with ISO 4871 with an associated uncertainty of +/-3dB(A). For information, calculated from the sound power Lw(A).



Eurovent certified values



## TECHNICAL SPECIFICATIONS

POWERCAT LX HE		808B	908B	1008B	1108B	1358B	1528B	1858B	2008B	2158B
<b>Dimensions</b>										
<b>LX HE</b>										
Length	mm	3604	3604	3604	4798	4798	4798	7186	7186	7186
Width	mm	2253	2253	2253	2253	2253	2253	2253	2253	2253
Height	mm	2322	2322	2322	2322	2322	2322	2322	2322	2322
<b>Operating weight<sup>(3)</sup></b>										
<b>LX HE standard</b>										
	kg	3081	3112	3132	3729	3791	3852	4878	5024	5282
<b>LX HE Unit + Low noise option</b>										
	kg	3349	3380	3400	4028	4090	4151	5209	5355	5613
<b>Compressors</b>										
06T semi-hermetic screw, 50 r/s										
Circuit A		1	1	1	1	1	1	1	1	1
Circuit B		1	1	1	1	1	1	1	1	1
<b>Refrigerant<sup>(3)</sup></b>										
R-134a (GWP=1430 following AR4)										
Circuit A	kg	39	37	37	52	53	55	60	61	69
	tCO <sub>2e</sub>	55,8	52,9	52,9	74,4	75,8	77,9	85,8	87,2	98,0
Circuit B	kg	40,0	38	39	40,0	40	37,0	61	64	61
	tCO <sub>2e</sub>	57,2	54,3	55,8	57,2	57,2	52,9	87,2	91,5	86,5
<b>Oil</b>										
Circuit A	l	20,8	20,8	20,8	23,5	23,5	23,5	23,5	23,5	27,6
Circuit B	l	20,8	20,8	20,8	20,8	20,8	20,8	23,5	23,5	23,5
<b>Capacity control</b>										
Connect Touch, electronic expansion valve (EXV)										
Minimum capacity	%	15	15	15	15	15	15	15	15	15
<b>Air-cooled exchanger</b>										
Aluminium micro-channel coils (MCHE)										
<b>Fans</b>										
<b>LX HE</b>										
Axial type, with rotating impeller, FLYING-BIRD 6										
Quantity		6	6	6	8	8	8	11	12	12
Maximum total air flow	l/s	28920	28920	28920	38560	38560	38560	53020	57840	57840
Maximum rotation speed	r/s	15,7	15,7	15,7	15,7	15,7	15,7	15,7	15,7	15,7
<b>LX HE Unit + Xtra Low Noise option</b>										
Maximum total air flow	l/s	23580	23580	23580	31440	31440	31440	43230	47160	47160
Maximum rotation speed	r/s	11,7	11,7	11,7	11,7	11,7	11,7	11,7	11,7	11,7
<b>Exchanger</b>										
Flooded multi-pipe type										
Water volume	l	58	61	61	66	70	77	79	94	98
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Hydraulic module (option)</b>										
Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors										
Centrifugal pump, monocell, 48.3 r/s, low- or high-pressure (as required), single or dual (as required)										
Pump										
Expansion vessel volume	l	50	50	50	50	50	80	-	-	-
Max. water-side operating pressure with hydraulic module	kPa	400	400	400	400	400	400	-	-	-
<b>Water connections with or without hydraulic module</b>										
Victaulic® type										
Connections	in	5 or 4	5 or 4	5 or 4	5 or 4	5 or 4	5 or 4	5	6	6
External diameter <sup>(4)</sup>	mm	114,3 or 141,3	114,3 or 141,3	114,3 or 141,3	114,3 or 141,3	114,3 or 141,3	114,3 or 141,3	141,3	168,3	168,3
<b>Casing paintwork</b>										
Colour code RAL 7035 & RAL 7024										

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

(4) Depends on the number of passes on the evaporator



## TECHNICAL SPECIFICATIONS

POWERCAT LX HE			2308B	2528B	2628B	3028B	3428B	3828B	4008B	4408B	4608B	
<b>Cooling</b>												
<b>LX HE standard</b> Full load performances*	CA1	Nominal capacity	kW	782	825	899	983	1143	1262	1330	1441	1512
		EER	kW/kWh	3,10	3,08	3,12	3,17	3,22	3,19	3,16	3,05	3,07
<b>LX HE with Xtra Low Noise option</b> Full load performances*	CA1	Nominal capacity	kW	757	795	878	969	1113	1226	1290	1392	1464
		EER	kW/kWh	2,93	2,89	2,99	3,03	3,11	3,05	2,98	2,82	2,89
<b>LX HE standard</b> Seasonal energy efficiency**		<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	<b>4,55</b>	<b>4,56</b>	<b>4,56</b>	<b>4,60</b>	<b>4,58</b>	<b>4,61</b>	<b>4,55</b>	<b>4,55</b>	<b>4,55</b>
		<b>ns cool<sub>12/7°C</sub></b>	<b>%</b>	<b>179</b>	<b>179</b>	<b>179</b>	<b>181</b>	<b>180</b>	<b>181</b>	<b>179</b>	<b>179</b>	<b>179</b>
		<b>SEPR<sub>12/7°C</sub> Process high temp.</b>	<b>kWh/kWh</b>	NA	<b>5,55</b>	<b>5,54</b>	<b>5,83</b>	<b>5,76</b>	<b>5,71</b>	<b>5,68</b>	<b>5,56</b>	NA
<b>LX HE with medium-temperature brine solution option</b> Seasonal energy efficiency**		<b>SEPR-2/-8°C Process medium temp.***</b>	<b>kWh/kWh</b>	<b>3,35</b>	<b>3,53</b>	<b>3,44</b>	<b>3,55</b>	<b>3,52</b>	<b>3,47</b>	<b>3,60</b>	<b>3,63</b>	NA
		<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	-	-	-	-	-	-	-	-	-
<b>LX HE with variable water flow control option</b> Seasonal energy efficiency**		<b>ns cool<sub>12/7°C</sub></b>	<b>%</b>	-	-	-	-	-	-	-	-	-
		<b>SEPR<sub>12/7°C</sub> Process high temp.</b>	<b>kWh/kWh</b>	-	-	-	-	-	-	-	-	-
		<b>SEPR-2/-8°C Process medium temp.***</b>	<b>kWh/kWh</b>	<b>3,34</b>	<b>3,47</b>	<b>3,39</b>	<b>3,47</b>	<b>3,29</b>	<b>2,63</b>	<b>3,45</b>	<b>3,53</b>	NA
<b>LX HE with Xtra Low Noise option</b> Seasonal energy efficiency**		<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	<b>4,58</b>	<b>4,56</b>	<b>4,57</b>	<b>4,56</b>	<b>4,60</b>	<b>4,62</b>	<b>4,59</b>	<b>4,56</b>	<b>4,55</b>
		<b>ns cool<sub>12/7°C</sub></b>	<b>%</b>	<b>180</b>	<b>179</b>	<b>180</b>	<b>179</b>	<b>181</b>	<b>182</b>	<b>181</b>	<b>179</b>	<b>179</b>
		<b>SEPR<sub>12/7°C</sub> Process high temp.</b>	<b>kWh/kWh</b>	<b>5,72</b>	<b>5,80</b>	<b>5,76</b>	<b>5,88</b>	<b>5,90</b>	<b>5,81</b>	<b>5,71</b>	<b>5,68</b>	<b>5,52</b>
<b>LX HE with medium-temperature brine solution, Xtra Low Noise options</b> Seasonal energy efficiency**		<b>SEPR-2/-8°C Process medium temp.***</b>	<b>kWh/kWh</b>	<b>3,57</b>	<b>3,66</b>	<b>3,55</b>	<b>3,78</b>	<b>3,61</b>	<b>3,31</b>	<b>3,22</b>	<b>3,27</b>	<b>3,28</b>
		<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	-	-	-	-	-	-	-	-	-
<b>LX HE with variable water flow control option &amp; Xtra Low Noise</b> Seasonal energy efficiency**		<b>ns cool<sub>12/7°C</sub></b>	<b>%</b>	-	-	-	-	-	-	-	-	-
		<b>SEPR<sub>12/7°C</sub> Process high temp.</b>	<b>kWh/kWh</b>	-	-	-	-	-	-	-	-	-
		<b>SEPR-2/-8°C Process medium temp.***</b>	<b>kWh/kWh</b>	<b>3,55</b>	<b>3,59</b>	<b>3,47</b>	<b>3,70</b>	<b>3,58</b>	<b>3,44</b>	<b>3,67</b>	<b>3,67</b>	<b>3,45</b>
<b>Sound levels</b>												
<b>LX HE</b>												
Sound power <sup>[1]</sup>		dB(A)		103	101	104	102	103	102	104	104	104
Sound pressure at 10 m <sup>[2]</sup>		dB(A)		70	68	71	69	70	69	71	71	71
<b>LX HE + Low Noise option</b>												
Sound power <sup>[1]</sup>		dB(A)		98	97	99	98	98	98	100	99	99
Sound pressure at 10 m <sup>[2]</sup>		dB(A)		65	64	66	65	65	65	67	66	66
<b>LX HE + Xtra low noise option</b>												
Sound power <sup>[1]</sup>		dB(A)		94	94	95	94	94	94	99	95	96
Sound pressure at 10 m <sup>[2]</sup>		dB(A)		61	61	62	61	61	61	66	62	63

\* In accordance with standard EN14511-3:2022.  
 \*\* In accordance with standard EN14825:2022  
 \*\*\* 30 % brine solution  
 CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m<sup>2</sup>. k/W  
**ns cool<sub>12/7°C</sub> & SEER<sub>12/7°C</sub>** **Bold values compliant to Ecodesign Regulation (EU) No. 2016/2281 for Comfort application**  
**SEPR<sub>12/7°C</sub>** **Bold values compliant to Ecodesign Regulation (EU) No. 2016/2281 for Process application High Temperature**  
**SEPR-2/-8°C** **Bold values compliant to Ecodesign Regulation (EU) No. 2015/1095 for Process application Medium Temperature**  
 NA Not authorised for the specific application for the CEE market  
 - Non applicable  
 [1] In dB ref=10<sup>-12</sup>W, 'A' weighted. Declared dual-number noise emission values in accordance with ISO 4871 with an associated uncertainty of +/-3dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 [2] In dB ref 20µPa, 'A' weighted. Declared dual-number noise emission values in accordance with ISO 4871 with an associated uncertainty of +/-3dB(A). For information, calculated from the sound power Lw(A).



Eurovent certified values



## TECHNICAL SPECIFICATIONS

POWERCIAAT LX HE		2308B	2528B	2628B	3028B	3428B	3828B	4008B	4408B	4608B
<b>Dimensions</b>										
<b>LX HE</b>										
Length	mm	7186	7186	8380	9574	11962	11962	11962	11962	13157
Width	mm	2253	2253	2253	2253	2253	2253	2253	2253	2253
Height	mm	2322	2322	2322	2322	2322	2322	2322	2322	2322
<b>Operating weight<sup>(3)</sup></b>										
<b>LX HE standard</b>	kg	5594	5643	6262	6772	8061	8202	8793	8868	9218
<b>LX HE Unit + Low noise option</b>	kg	5925	5974	6593	7103	8435	8576	9167	9242	9592
<b>Compressors</b>										
06T semi-hermetic screw, 50 r/s										
Circuit A		1	1	1	1	1	1	1	1	1
Circuit B		1	1	1	1	1	1	1	1	1
<b>Refrigerant<sup>(3)</sup></b>										
R-134a (GWP=1430 following AR4)										
Circuit A	kg	69	69	72	79	82	84	115	121	124
	tCO <sub>2e</sub>	98,7	98,7	103,0	113,0	117,3	120,1	164,5	173,0	177,3
Circuit B	kg	67	67	74	83	118	130	121	127	130
	tCO <sub>2e</sub>	95,8	95,8	105,8	118,7	168,7	185,9	173,0	181,6	185,9
<b>Oil</b>										
Circuit A	l	27,6	27,6	27,6	27,6	27,6	27,6	36,0	36,0	36,0
Circuit B	l	23,5	23,5	27,6	27,6	36,0	36,0	36,0	36,0	36,0
<b>Capacity control</b>										
Connect Touch, electronic expansion valve (EXV)										
Minimum capacity	%	15	15	15	15	15	15	15	15	15
<b>Air-cooled exchanger</b>										
Aluminium micro-channel coils (MCHÉ)										
<b>Fans</b>										
Axial type, with rotating impeller, FLYING-BIRD 6										
<b>LX HE</b>										
Quantity		12	12	14	16	20	20	20	20	22
Maximum total air flow	l/s	57840	57840	67480	77120	96400	96400	96400	96400	106040
Maximum rotation speed	r/s	15,7	15,7	15,7	15,7	15,7	15,7	15,7	15,7	15,7
<b>LX HE Unit + Xtra Low Noise option</b>										
Maximum total air flow	l/s	47160	47160	55020	62880	78600	78600	78600	78600	86460
Maximum rotation speed	r/s	11,7	11,7	11,7	11,7	11,7	11,7	11,7	11,7	11,7
<b>Exchanger</b>										
Flooded multi-pipe type										
Water volume	l	119	119	130	140	164	174	180	189	189
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Water connections with or without hydraulic module</b>										
Victaulic® type										
Connections	in	6	6	6	8	6	6	6	6	6
External diameter	mm	168,3	168,3	168,3	219,1	168,3	168,3	168,3	168,3	168,3
<b>Casing paintwork</b>										
Colour code RAL 7035 & RAL 7024										

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



## TECHNICAL SPECIFICATIONS

### Basic unit (excluding pump)

POWERCIAAT LX HE		808B	908B	1008B	1108B	1358B	1528B	1858B	2008B	2158B	2308B	2528B	2628B	3028B
<b>Power circuit supply</b>														
Nominal voltage	V-ph-Hz	400-3-50												
Voltage range	V	360-440												
Control circuit supply		24 V via internal transformer												
<b>Maximum operating input power<sup>(1)</sup> - LX HE</b>														
Standard unit	kW	127	138	148	174	194	212	260	280	310	329	359	381	446
Unit + Xtra Low Noise option	kW	122	132	143	166	186	205	250	269	300	318	349	369	432
<b>Power factor at maximum power<sup>(2)</sup> - LX HE</b>														
Displacement Power Factor (Cos Phi)		0,90	0,90	0,89	0,90	0,90	0,90	0,90	0,90	0,89	0,89	0,89	0,88	0,89
Displacement Power Factor (Cos Phi) unit + Xtra Low Noise option		0,90	0,90	0,89	0,90	0,90	0,90	0,90	0,90	0,89	0,89	0,89	0,88	0,89
<b>Nominal unit current draw<sup>(3)</sup> - LX HE</b>														
Standard unit	A	148	164	180	207	238	259	320	345	396	417	433	495	533
Unit + Xtra Low Noise option	A	138	154	170	195	226	247	304	326	377	398	414	473	509
<b>Maximum operating current draw (Un)<sup>(1)</sup> - LX HE</b>														
Standard unit	A	204	222	240	279	312	342	417	449	504	534	580	625	723
Unit + Xtra Low Noise option	A	195	213	231	267	300	330	401	432	487	517	563	605	700
<b>Maximum current (Un-10 %)<sup>(2)</sup> - LX HE</b>														
Standard unit	A	216	235	254	295	330	362	441	475	534	566	615	663	767
Unit + Xtra Low Noise option	A	207	226	245	283	318	350	425	458	517	549	598	643	744
<b>Start-up current<sup>(3) + (4)</sup> - LX HE</b>														
Standard unit	A	246	246	262	379	480	480	539	564	738	759	759	839	858
Unit + Xtra Low Noise option	A	241	241	257	374	475	475	531	555	730	751	751	828	846
<b>Maximum start-up current (Un)<sup>(2) + (4)</sup> - LX HE</b>														
Standard unit	A	275	293	293	408	511	511	618	618	783	813	813	906	955
Unit + Xtra Low Noise option	A	270	288	288	403	506	506	610	609	775	805	805	895	943

(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.

(4) Standardised EUROVENT conditions, water-cooled exchanger inlet/outlet = 12 °C / 7 °C, outdoor air temperature = 35 °C.

## TECHNICAL SPECIFICATIONS

POWERCAT LX HE		3428B	3828B	4008B	4408B	4608B
<b>Power circuit supply</b>						
Nominal voltage	V-ph-Hz	400-3-50				
Voltage range	V	360-440				
Control circuit supply		24 V via internal transformer				
<b>Maximum operating input power<sup>(1)</sup> - LX HE</b>						
<b>Standard unit</b>						
Circuit 1 <sup>(a)</sup>	kW	194	223	264	284	307
Circuit 2 <sup>(a)</sup>	kW	284	308	282	305	307
Single power connection point option	kW	478	532	546	588	614
<b>Unit with Xtra Low Noise option</b>						
Circuit 1 <sup>(a)</sup>	kW	187	216	255	274	297
Circuit 2 <sup>(a)</sup>	kW	275	298	273	296	297
Single power connection point option	kW	461	514	528	570	594
<b>Power factor at maximum power<sup>(1)</sup> - LX HE</b>						
<b>Standard unit</b>						
Displacement Power Factor (Cos Phi)		0,89	0,89	0,89	0,89	0,89
<b>Unit + Xtra Low Noise option</b>						
Displacement Power Factor (Cos Phi)		0,89	0,89	0,89	0,89	0,89
<b>Nominal unit current draw<sup>(2)</sup> - LX HE</b>						
<b>Standard unit</b>						
Circuit 1 <sup>(a)</sup>	A	251	267	334	347	382
Circuit 2 <sup>(a)</sup>	A	350	386	347	379	382
Single power connection point option	A	601	652	681	726	764
<b>Unit + Xtra Low Noise option</b>						
Circuit 1 <sup>(a)</sup>	A	239	255	319	332	366
Circuit 2 <sup>(a)</sup>	A	334	367	332	364	366
Single power connection point option	A	572	621	650	695	731
<b>Maximum operating current draw (Un)<sup>(1)</sup> - LX HE</b>						
<b>Standard unit</b>						
Circuit 1 <sup>(a)</sup>	A	316	362	430	460	498
Circuit 2 <sup>(a)</sup>	A	463	500	460	495	498
Single power connection point option	A	778	862	889	954	995
<b>Unit with Xtra Low Noise option</b>						
Circuit 1 <sup>(a)</sup>	A	304	350	415	445	482
Circuit 2 <sup>(a)</sup>	A	447	483	445	480	482
Single power connection point option	A	751	833	860	925	963
<b>Maximum current (Un-10 %)<sup>(1)</sup> - LX HE</b>						
<b>Standard unit</b>						
Circuit 1 <sup>(a)</sup>	A	335	384	466	498	529
Circuit 2 <sup>(a)</sup>	A	501	531	498	526	529
Single power connection point option	A	835	915	963	1023	1057
<b>Unit with Xtra Low Noise option</b>						
Circuit 1 <sup>(a)</sup>	A	323	372	451	483	513
Circuit 2 <sup>(a)</sup>	A	485	514	483	511	513
Single power connection point option	A	808	886	934	994	1025

(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).

(a) When the machines are equipped with two power supplies, circuit 1 is intended to supply refrigerant circuit A and circuit 2 supplies refrigerant circuit B.  
For units LX 3428B to 4608B: circuit 1 supplies circuit A, circuit 2 supplies circuit B.

## TECHNICAL SPECIFICATIONS

POWERCAT LX HE		3428B	3828B	4008B	4408B	4608B
<b>Start-up current<sup>(3)</sup> - LX HE</b>						
<b>Standard unit</b>						
Circuit 1 <sup>(a)</sup>	A	587	587	629	629	629
Circuit 2 <sup>(a)</sup>	A	629	629	629	629	629
Single power connection point option	A	687	702	729	744	744
<b>Unit + Xtra Low Noise option</b>						
Circuit 1 <sup>(a)</sup>	A	587	587	629	629	629
Circuit 2 <sup>(a)</sup>	A	629	629	629	629	629
Single power connection point option	A	671	684	714	729	727
<b>Maximum start-up current (Un)<sup>(2)</sup> - LX HE</b>						
<b>Standard unit</b>						
Circuit 1 <sup>(a)</sup>	A	587	587	629	629	629
Circuit 2 <sup>(a)</sup>	A	629	629	629	629	629
Single power connection point option	A	802	820	844	862	862
<b>Unit + Xtra Low Noise option</b>						
Circuit 1 <sup>(a)</sup>	A	587	587	629	629	629
Circuit 2 <sup>(a)</sup>	A	629	629	629	629	629
Single power connection point option	A	786	802	829	847	845

(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) When the machines are equipped with two power supplies, circuit 1 is intended to supply refrigerant circuit A and circuit 2 supplies refrigerant circuit B.  
For units LX 3428B to 4608B: circuit 1 supplies circuit A, circuit 2 supplies circuit B.

### Short circuit current withstand capability (TN system<sup>(1)</sup>)

POWERCAT LX HE		808B to 1528B	1858B to 3028B	3428B to 4608B
<b>Short-circuit withstand current (TN system)</b>				
Circuit A+B	kA	38	50	50
Circuit C+D	kA	NA	NA	50
Unit + single power connection point option	A	NA	NA	50

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

**Note: The short-circuit stability current values above are suitable with the TN system.**



## TOTAL HEAT RECOVERY

The **POWERCAT** range can be equipped with a total heat recovery function as an option

Free, additional hot water is produced at a temperature of up to 60 °C by adding a water-cooled condenser to each refrigerant circuit (sizes 1858B to 3028B) or by adding a double-circuit condenser (sizes 808B to 1528B) to recover all the heat released by the unit.

This optional configuration requires assembly in our factories and is by order only.

This option is available for models 808B to 3028B.

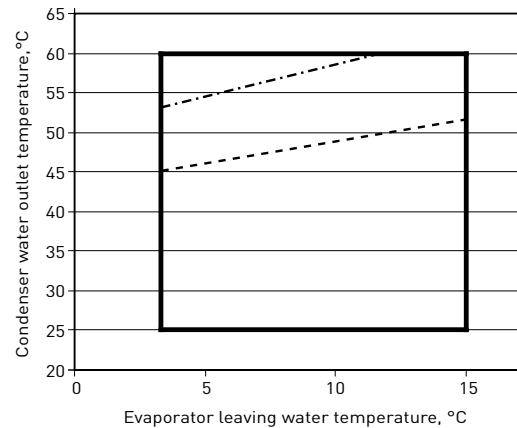
### ■ Operating principle

If hot water production is required, the compressor discharge gases are directed towards the heat recovery condenser. The refrigerant releases its heat to the hot water that leaves the condenser at a temperature of up to 60 °C. In this way 100% of the heat rejected by the liquid chiller can be used to produce hot water. When the demand for heat is satisfied, the hot gas is again directed towards the air condenser where the heat is rejected to the outside air by the fans.

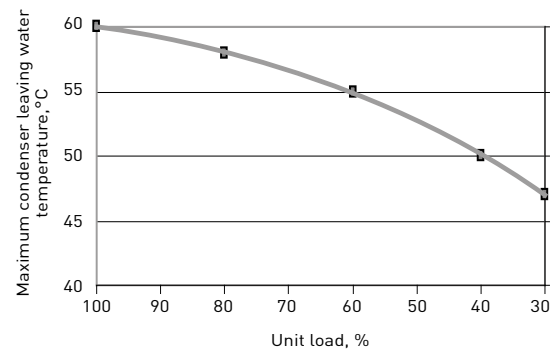
Hot water temperature control is ensured by the machine's Connect Touch control that independently controls the recovery operation of each refrigerant circuit.

**Note: Heat recovery is only possible if the machine produces cold water at the same time.**

In part load operation, the limitation of the condenser water outlet temperature is due to the operating range of the screw compressor. If the condenser water outlet temperature is above the limit value given in the curves below, the unit will automatically change over to the mode without heat recovery



— Full load  
 - - - Part load limit, approx. 60%  
 ····· Minimum load limit, approx. 30%



### ■ Operating limits

Condenser water temperature [°C]		Minimum	Maximum
Inlet temperature at start-up	°C	12,5 <sup>(1)</sup>	55
Inlet temperature during operation	°C	20	55
Outlet temperature during operation	°C	25	60
Evaporator water temperature [°C]		Minimum	Maximum
Inlet temperature at start-up	°C	-	45
Inlet temperature during operation	°C	6,8	21

(1) The water inlet temperature at start-up must not fall below 12.5 °C. For installations with a lower temperature a three-way valve must be used.

**Note: If the evaporator water outlet temperature is below 4 °C, a brine solution or the frost protection option must be used..**



## TOTAL HEAT RECOVERY

### ■ Technical specifications

POWERCAT LX HE heat recovery mode		808B	908B	1008B	1108B	1358B	1528B	1858B	2008B	2158B	2308B	2528B	2628B	3028B
Operating weight <sup>(1)</sup>	kg	3426	3458	3478	4161	4302	4644	5630	5776	6137	6448	6807	7224	7726
Condenser diameter	in	10	10	10	12	14	14	12+12	12+12	14+12	14+12	14+12	14+14	14+14
<b>Refrigerant charge</b>														
Circuit A	kg	37	35	35	51	52	59	58	58	65	69	72	69	91
Circuit B	kg	39	37	37	37	37	36	59	62	58	65	63	76	89
<b>Heat recovery condenser</b>		Shell and tube condenser												
Water volume	l	38	38	38	55	68	68	55+55	55+55	68+55	68+55	68+55	68+68	68+68
<b>Water connections</b>		Type Victaulic												
Nominal diameter	in	3	3	3	4	4	4	4	4	4	4	4	4	4
Actual outside diameter	mm	88,9	88,9	88,9	114,3	114,3	114,3	114,3	114,3	114,3	114,3	114,3	114,3	114,3

(1) Weights are for guidance only

## OPERATING PRESSURE VENTILATION

The **POWERCAT** range can be equipped as an option with operating pressure ventilation.

### ■ Functions

This option allows a duct connection at the discharge side of the condenser fan. The unit is equipped with axial flow fans with connection flange. The water chiller can operate with an available static pressure of up to 60 Pa with reduced performance. The performance can be estimated using the coefficients below, which apply within the application limit conditions (see chart showing application limits for correction factors)

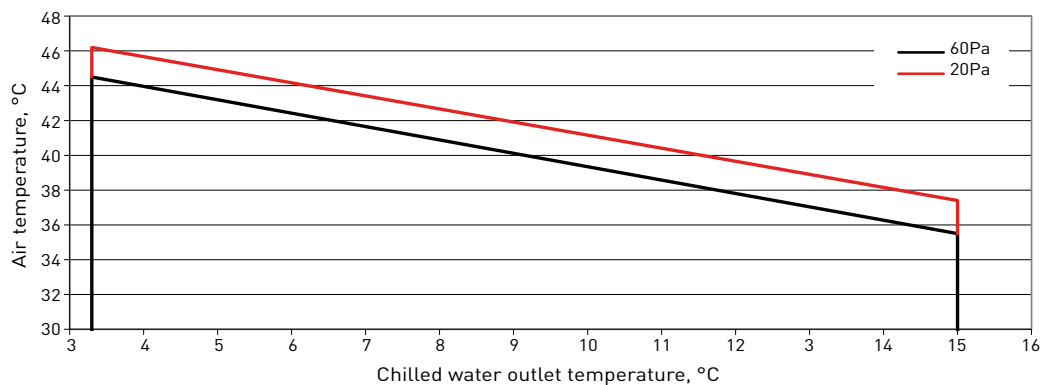
Operating pressure fan		Correction factors			
Operating pressure	Pa	0	20	40	60
Air flow rate	%	0	-3,5	-7,5	-12,1
Cooling capacity	%	0	-0,5	-1,0	-1,5
EER	%	0	-1,5	-3,5	-5,0
Power input	%	0	+1,0	+2,5	+3,5

### ■ Precautions for installation

If an air discharge duct is installed on site, its weight must not be supported by the roof of the unit. Each fan must be connected independently.

The duct must be connected to the unit using a supply air connection flange, included in the option

Application limit for correction factors for high air temperatures



## INTELLIGENTLY DESIGNED ACOUSTICS

To comply with the various integration restrictions, the **POWERCIAT** has three sound finish levels enabling it to be easily integrated into a number of zones without causing disruption to users or their neighbours.

### ■ Basic version

The distinguishing feature of the **POWERCIAT** range is its rigorous design incorporating “noiseless” assembly techniques to reduce vibrations and sources of noise:

- Low-pulse screw compressors with silencer integrated into the oil separator
- Silencer on the economiser return line
- Condenser coils with a V-shaped design featuring an open angle, for quieter air flow across the coil
- Quiet latest generation fans that produce no intrusive noise at low frequencies
- The Connect Touch controller automatically adjusts the fan air flow rate according to the outdoor air temperature and the unit’s load rate which enables the sound level to be significantly reduced, particularly at night, mid-season, morning and evening, which totals more than 75 % of the time the unit is used.

### ■ Low Noise option

In this version, in addition to the basic equipment, the compressors are placed in soundproof boxes equipped with absorbent materials limiting the level of noise radiated by the machine.

### ■ Xtra Low Noise option

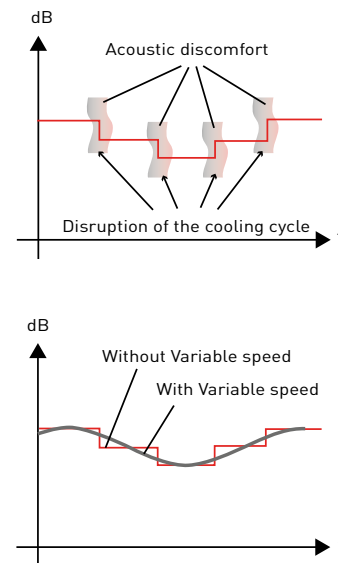
In this version, the compressors are housed in sound boxes identical to those in the Low Noise version and the fan rotation speed is reduced whilst ensuring the output and thermal performance remain optimised.

### ■ Night mode

The **POWERCIAT** has a Night Mode enabling the sound level to be limited at night or when the building is unoccupied (according to the user programming) by controlling the output and the fan rotation speed.

### ■ Acoustic signature

As important as the sound power level, the acoustic signature reflects the noise disturbance generated by the unit.



In addition to electrical performance, the EC motor also enables soft start for the fans. It avoids the increases in noise linked to the on/off sequences, thereby improving the unit’s acoustic signature.

With all these benefits and its four acoustic finish levels (Standard, Low Noise et Xtra Low Noise), the **POWERCIAT** can be integrated into any site, ensuring any constraints in terms of the sound environment can be met.

## SOUND LEVELS

### HE versions

#### ■ Sound power levels ref $10^{-12}$ W $\pm$ 3 dB (L<sub>w</sub>)

At nominal EN 14511-3: 2022 operating conditions in cooling mode

POWERCAT LX HE	SOUND POWER LEVEL SPECTRUM (dB)						Overall power level dB(A)
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
808B	94	94	91	98	86	80	99
908B	94	94	91	98	86	80	99
1008B	95	94	92	98	86	80	99
1108B	95	94	93	97	87	83	99
1358B	103	106	94	96	88	83	101
1528B	94	93	95	96	91	86	99
1858B	102	105	96	96	91	85	101
2008B	95	93	95	96	91	85	99
2158B	103	107	97	99	91	86	103
2308B	98	101	98	101	93	88	103
2528B	98	98	98	98	92	89	101
2628B	99	103	98	102	92	87	104
3028B	100	101	98	99	91	90	102
3428B	99	103	100	99	93	88	103
3828B	99	102	99	98	93	88	102
4008B	99	102	102	101	93	87	104
4408B	99	102	102	101	93	87	104
4608B	99	102	102	101	93	87	104

#### ■ Sound pressure level ref $2 \times 10^{-5}$ Pa $\pm$ 3 dB (L<sub>p</sub>)

Measurement conditions: free field, 10 metres from machine, 1.50 metres above floor level, directivity 2

POWERCAT LX HE	SOUND PRESSURE SPECTRUM (dB)						Overall pressure level dB(A)
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
808B	62	62	59	66	54	48	67
908B	62	62	59	66	54	48	67
1008B	62	62	60	66	54	48	67
1108B	63	62	61	65	55	50	67
1358B	71	74	62	64	56	51	69
1528B	62	61	62	64	59	53	67
1858B	69	73	63	63	58	53	68
2008B	62	60	62	63	59	53	66
2158B	71	74	64	67	58	53	70
2308B	65	68	65	68	60	55	70
2528B	65	65	65	65	59	56	68
2628B	66	70	65	69	59	55	71
3028B	67	68	65	66	58	57	69
3428B	66	69	67	66	60	55	70
3828B	66	69	66	65	60	54	69
4008B	66	69	69	68	60	54	71
4408B	65	69	69	68	60	54	71
4608B	66	69	68	68	60	54	71

## SOUND LEVELS

### HE versions with LOW NOISE option

#### ■ Sound power levels ref $10^{-12} \text{ W} \pm 3 \text{ dB (Lw)}$

At nominal EN 14511-3: 2022 operating conditions in cooling mode

POWERCAT LX HE	SOUND POWER LEVEL SPECTRUM (dB)						Overall power level dB(A)
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
808B	92	92	89	90	82	77	93
908B	92	92	89	90	82	77	93
1008B	94	93	91	91	83	78	94
1108B	94	93	92	92	85	79	95
1358B	94	92	92	92	87	80	95
1528B	94	92	93	91	86	80	95
1858B	94	95	94	93	89	82	97
2008B	95	93	94	92	87	81	96
2158B	99	98	93	94	86	80	97
2308B	97	95	95	95	87	82	98
2528B	97	94	95	94	87	82	97
2628B	97	96	95	97	88	82	99
3028B	98	94	95	95	88	83	98
3428B	100	97	95	93	90	87	98
3828B	100	97	95	93	90	87	98
4008B	100	97	98	95	91	88	100
4408B	100	98	97	94	90	87	99
4608B	100	98	96	94	91	87	99

#### ■ Sound pressure levels ref $2 \times 10^{-5} \text{ Pa} \pm 3 \text{ dB (Lp)}$

Measurement conditions: free field, 10 metres from machine, 1.50 metres above floor level, directivity 2

POWERCAT LX HE	SOUND PRESSURE SPECTRUM (dB)						Overall pressure level dB(A)
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
808B	60	60	57	58	50	45	61
908B	60	60	57	58	50	45	61
1008B	61	61	58	59	51	46	62
1108B	61	61	60	59	53	47	63
1358B	61	60	59	59	54	47	63
1528B	62	59	61	59	53	48	63
1858B	61	63	61	61	56	49	64
2008B	62	60	61	60	54	48	63
2158B	67	65	61	61	53	48	64
2308B	64	62	62	63	55	49	65
2528B	64	61	62	61	54	49	64
2628B	64	63	63	64	55	49	66
3028B	65	61	62	62	55	50	65
3428B	66	64	62	60	57	54	65
3828B	66	64	62	60	57	54	65
4008B	66	64	65	62	58	54	67
4408B	66	65	63	61	57	54	66
4608B	67	65	63	61	57	54	66



## SOUND LEVELS

### HE versions with XTRA LOW NOISE option

#### ■ Sound power levels ref $10^{-12} \text{ W} \pm 3 \text{ dB (Lw)}$

At nominal EN 14511-3: 2022 operating conditions in cooling mode

POWERCAT LX HE	SOUND POWER LEVEL SPECTRUM (dB)						Overall power level dB(A)
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
808B	85	89	83	84	76	65	87
908B	85	89	83	84	76	65	87
1008B	85	89	83	84	76	65	87
1108B	86	92	87	86	80	68	90
1358B	87	96	87	85	80	66	91
1528B	90	93	88	87	81	69	91
1858B	87	96	91	88	81	76	93
2008B	89	94	90	87	82	70	92
2158B	89	97	92	90	81	68	94
2308B	90	94	92	91	81	70	94
2528B	95	96	93	89	81	73	94
2628B	90	94	94	92	80	69	95
3028B	96	95	93	89	79	73	94
3428B	96	94	91	88	86	85	94
3828B	96	94	91	88	86	85	94
4008B	96	97	99	92	90	87	99
4408B	96	94	91	89	88	86	95
4608B	97	95	93	91	88	86	96

#### ■ Sound pressure level ref $2 \times 10^{-5} \text{ Pa} \pm 3 \text{ dB (Lp)}$

Measurement conditions: free field, 10 metres from machine, 1.50 metres above floor level, directivity 2

POWERCAT LX HE	SOUND PRESSURE SPECTRUM (dB)						Overall pressure level dB(A)
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
808B	53	56	51	52	44	33	55
908B	53	56	51	52	44	33	55
1008B	53	56	51	52	44	33	55
1108B	54	60	55	54	47	36	58
1358B	55	64	55	53	47	34	59
1528B	57	61	56	54	48	37	59
1858B	55	63	58	55	48	43	60
2008B	57	61	57	55	49	38	59
2158B	56	64	59	57	48	36	61
2308B	57	61	60	58	49	37	61
2528B	62	63	60	56	49	40	61
2628B	57	61	61	59	47	36	62
3028B	63	63	60	56	46	40	61
3428B	63	61	58	55	53	52	61
3828B	63	61	58	55	53	52	61
4008B	63	64	66	59	56	54	66
4408B	63	61	58	56	54	52	62
4608B	64	62	59	57	55	53	63

## SYSTEM WATER VOLUME - EVAPORATOR WATER FLOW RATE

The Connect Touch control is equipped with anticipation logic making it highly flexible in adjusting operation to parameter drift, particularly on hydraulic systems with low water volumes. By adjusting compressor running times, it prevents short cycle protection cycles from starting and, in most cases, eliminates the need for a buffer tank.

**Note: The minimum volumes of chilled water are calculated for EUROVENT rated conditions:**

■ Chilled water temperature = 12 °C / 7 °C

■ Condenser air inlet temperature = 35 °C

**This value is applicable for most air conditioning applications (unit with fan coil units).**

**Note:**

**For installations operating on low water volumes (assembly with air handling unit) or for industrial processes, the addition of a buffer tank is essential.**

POWERCAT LX HE	808B	908B	1008B	1108B	1358B	1528B	1858B	2008B	2158B
Minimum water volume/Comfort application	887	969	1056	1271	1437	1622	1989	2207	2350
Minimum water volume/Process application	1775	1937	2113	2542	2873	3244	3978	4414	4700
Minimum flow rate <sup>(1)</sup> [l/s]	4,6	5,0	5,4	6,5	7,4	8,3	10,4	11,3	12,2
Maximum flow rate <sup>(2)</sup> [l/s]	37,5	40,5	40,5	34,1	36,9	42,0	45,0	56,1	59,1

POWERCAT LX HE	2308B	2528B	2628B	3028B	3428B	3828B	4008B	4408B	4608B
Minimum water volume/Comfort application	2551	2733	2880	3172	3718	4053	4310	4657	4826
Minimum water volume/Process application	5103	5467	5759	6344	7436	8106	8619	9315	9653
Minimum flow rate <sup>(1)</sup> [l/s]	13,1	13,8	15,0	16,4	19,1	21,1	22,2	24,0	25,2
Maximum flow rate <sup>(2)</sup> [l/s]	67,1	67,1	73,9	83,9	87,8	126,5	92,9	132,1	107,4

(1) Minimum flow rate for optimal efficiency in variable flow configuration

(2) Maximum flow rate for a pressure drop of 100 kPa in the exchanger

## OPERATING RANGE

**POWERCIAT** units have a broad field of application, enabling them to meet a range of requirements in the most varied of climates.

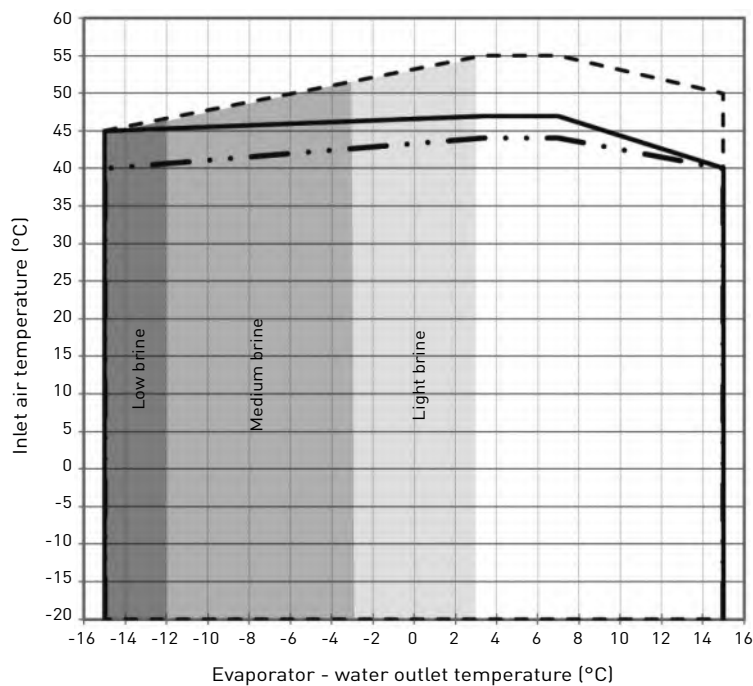
### Multi-climate: -20 °C to +55 °C

The **POWERCIAT** LX HE series are equipped as standard with all the management devices and algorithms to enable allseason operation in all climates. The **POWERCIAT** LX HE series are therefore able to operate in conditions ranging from the heat of the Mediterranean basin to the chill of Scandinavia, the humid Atlantic coast to the dry climate of Central Europe.

### Multi-application: air conditioning, industrial processes

The **POWERCIAT** can be used for all traditional air conditioning applications in sectors as varied as collective housing, hotels, shopping centres and offices.

Operating range LX HE



Ranges given as a guide using ethylene glycol for an evaporator  $\Delta T = 3$  K. Refer to the electronic catalogue.

- Low-temperature brine solution, [-15 °C ethylene glycol / -8 °C propylene glycol]
- Medium-temperature brine solution, [-12 °C ethylene glycol / -8 °C propylene glycol]
- Light-brine solution, down to -3 °C, [-3 °C ethylene glycol / 0 °C propylene glycol]
- Full load operation
- - - Part load operation
- ⋯ Operating limit for units equipped with the Xtra low noise option

### Power factor correction option available for an inlet air temperature up to +40 °C

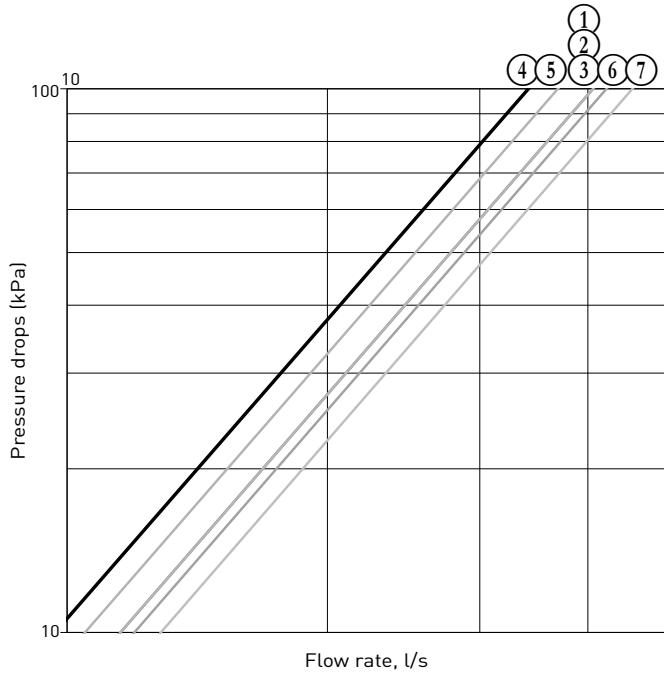
For operation in pure water at an inlet air temperature below 0°C, the frost protection option must be provided

**HYDRAULIC SPECIFICATIONS**

■ **Water pressure drop in the evaporator**

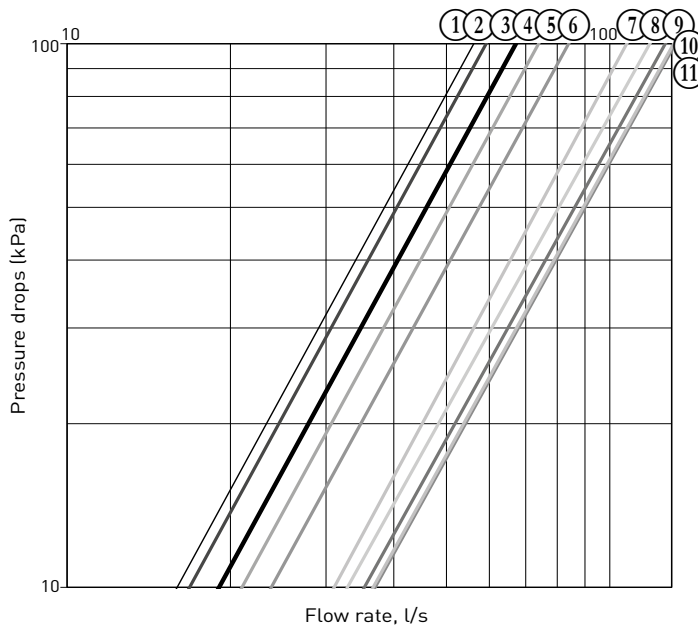
Data applicable for pure water at 20 °C

**Sizes 808B to 1858B**



- ① LX 808B
- ② LX 908B
- ③ LX 1008B
- ④ LX 1108B
- ⑤ LX 1358B
- ⑥ LX 1528B
- ⑦ LX 1858B

**Sizes 2008B to 4608B**



- ① LX 2008B
- ② LX 2158B
- ③ LX 2308B
- ④ LX 2528B
- ⑤ LX 2628B
- ⑥ LX 3028B
- ⑦ LX 3428B
- ⑧ LX 3828B
- ⑨ LX 4008B
- ⑩ LX 4408B
- ⑪ LX 4608B

## HYDRAULIC SPECIFICATIONS

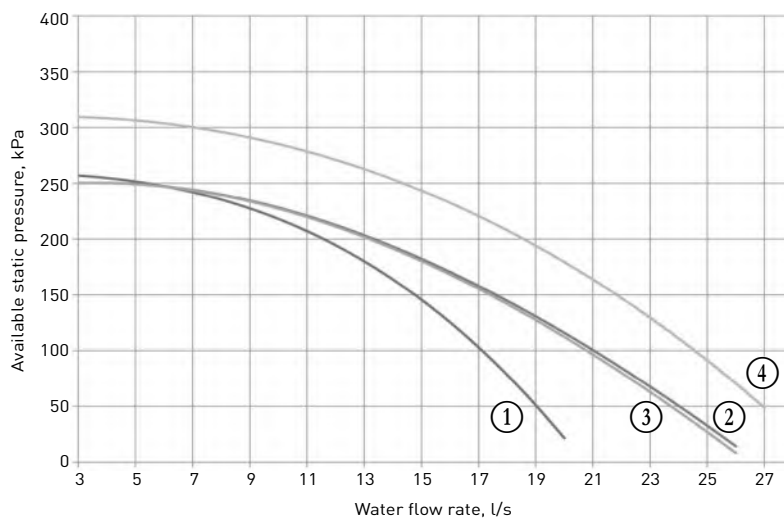
### ■ Available static pressure for the installation

Data applicable for:

- Pure water at 20 °C
- Refer to the section "Evaporator water flow rate" for the minimum and maximum water flow rate values
- If a brine solution is used, the maximum water flow rate is reduced

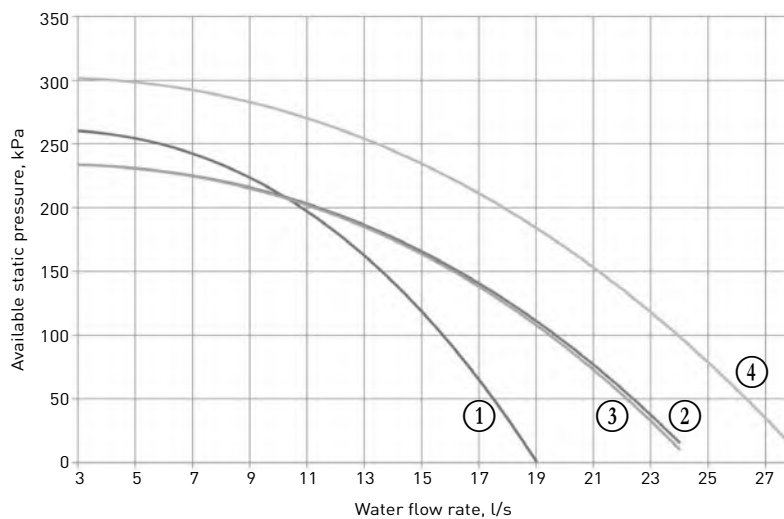
### ■ High pressure pumps LX HE (fixed speed)

Single pump high pressure



- ① LX 808B
- ② LX 908B
- ③ LX 1008B
- ④ LX 1108B

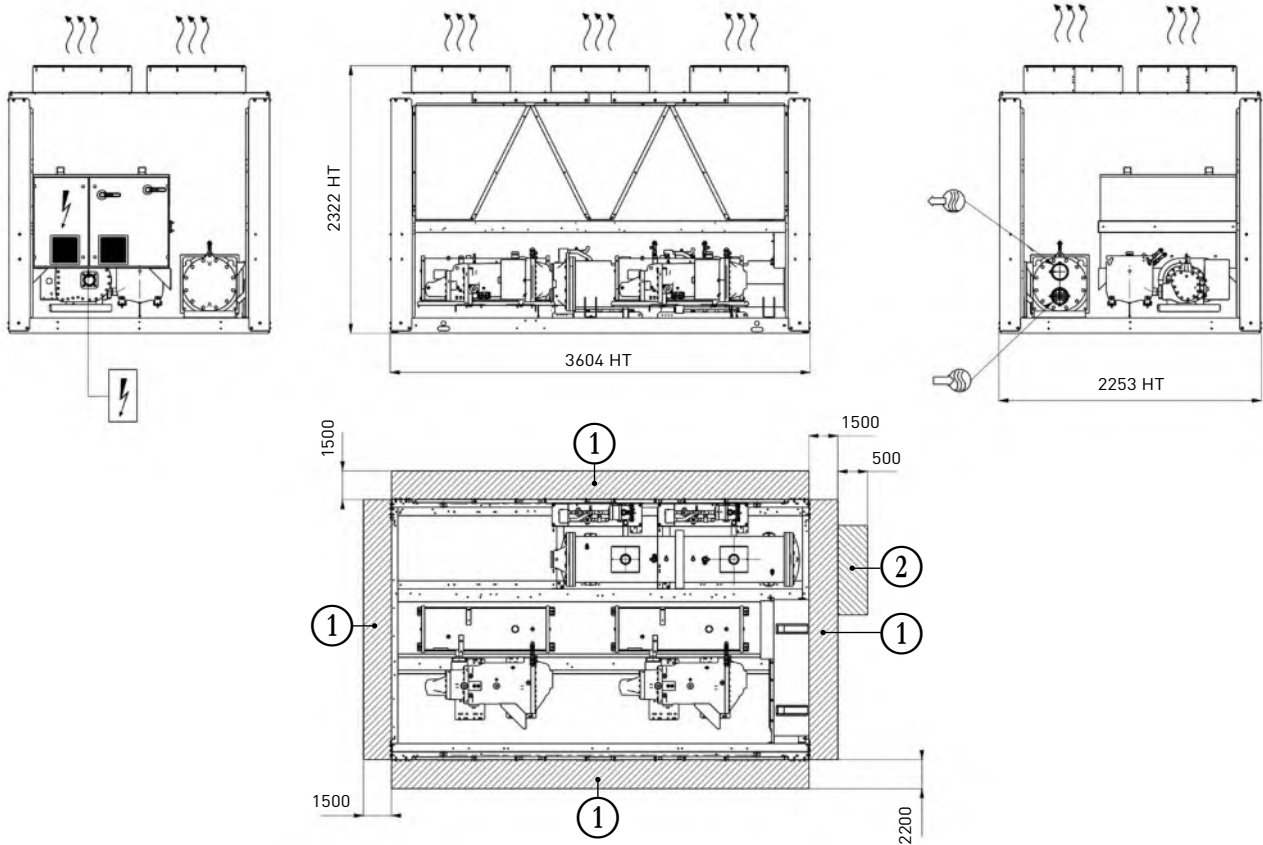
Dual pump high pressure



- ① LX 808B
- ② LX 908B
- ③ LX 1008B
- ④ LX 1108B

## DIMENSIONS

### ■ POWERCIAT LX HE 808B to 1008B



**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:**

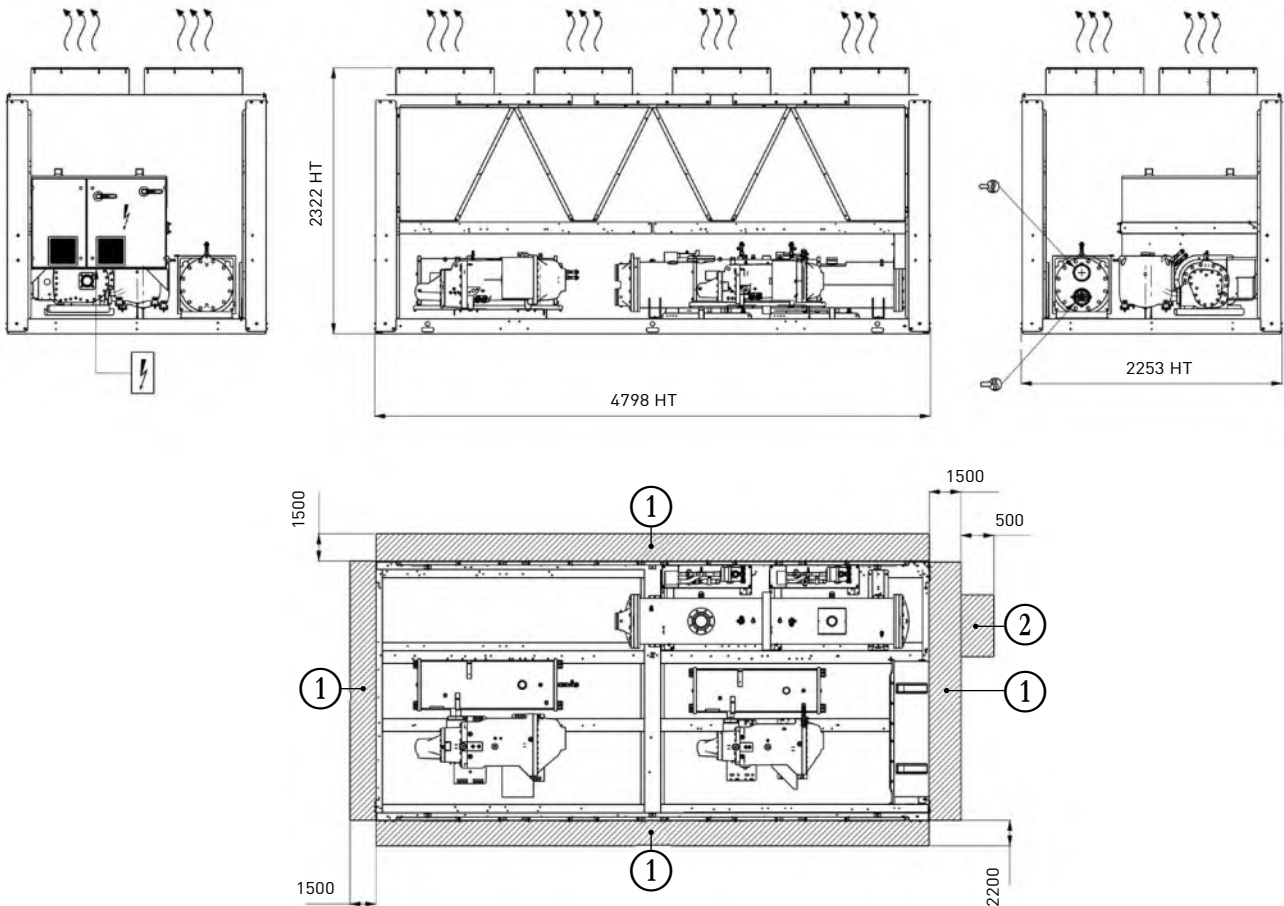
**Non-contractual drawings.**

**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**

■ **POWERCAT LX HE 1108B to 1528B**



**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:**

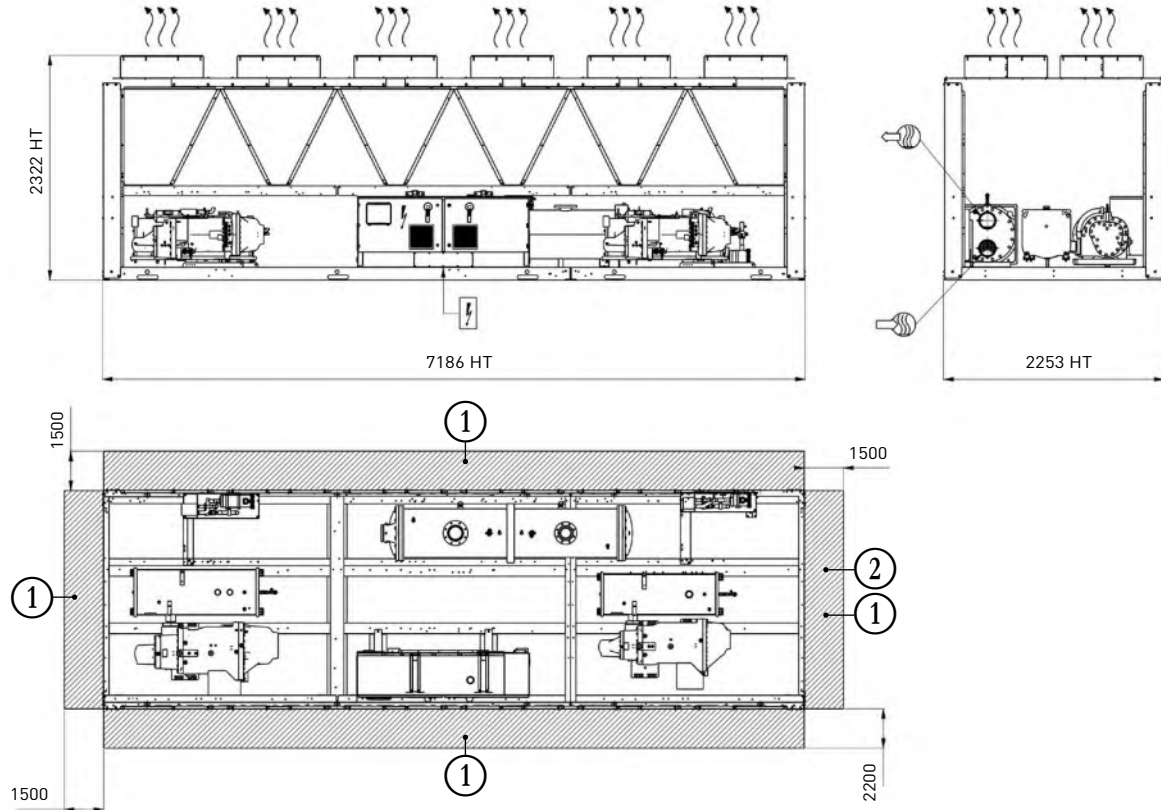
**Non-contractual drawings.**

**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**

■ **POWERCAT LX HE 1858B to 2528B**



**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.**

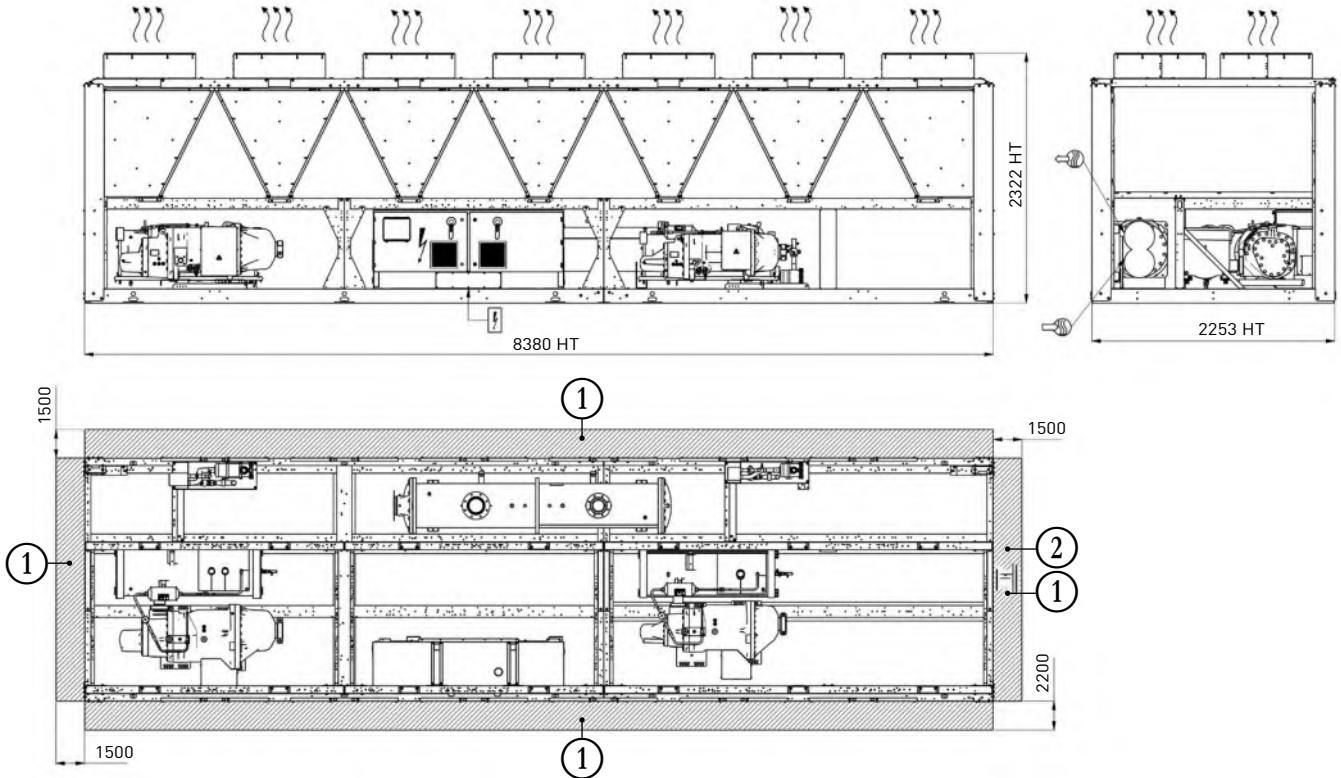
**When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.**

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



**DIMENSIONS**

■ **POWERCAT LX HE 2628B**



**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:**

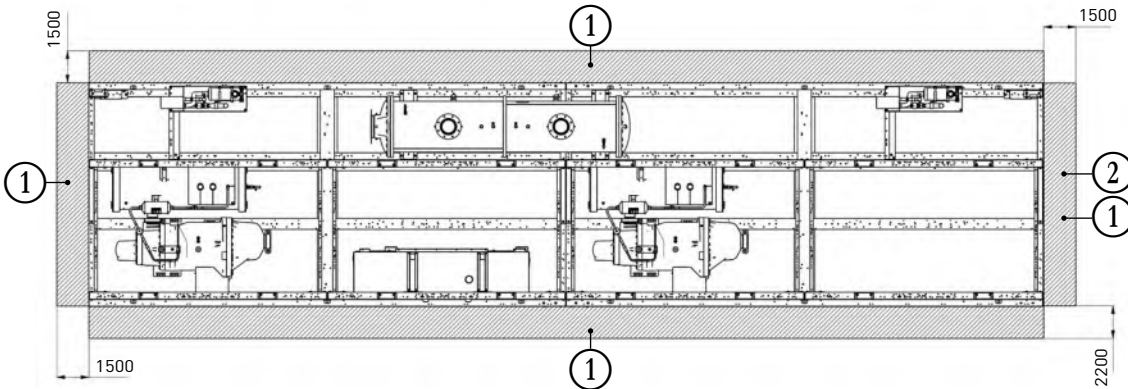
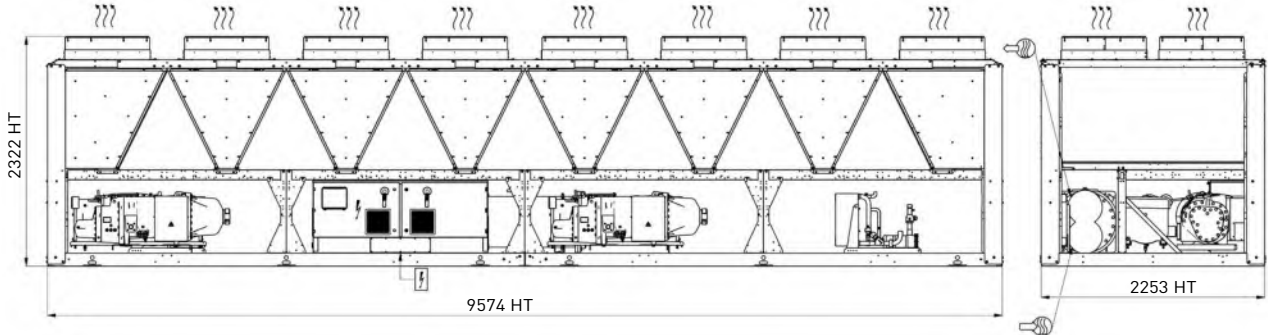
**Non-contractual drawings.**

**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**

■ **POWERCAT LX HE 3028B**



**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:**

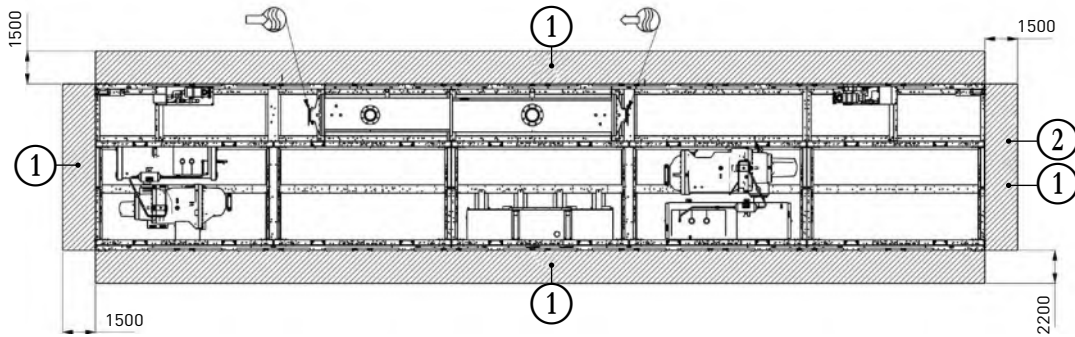
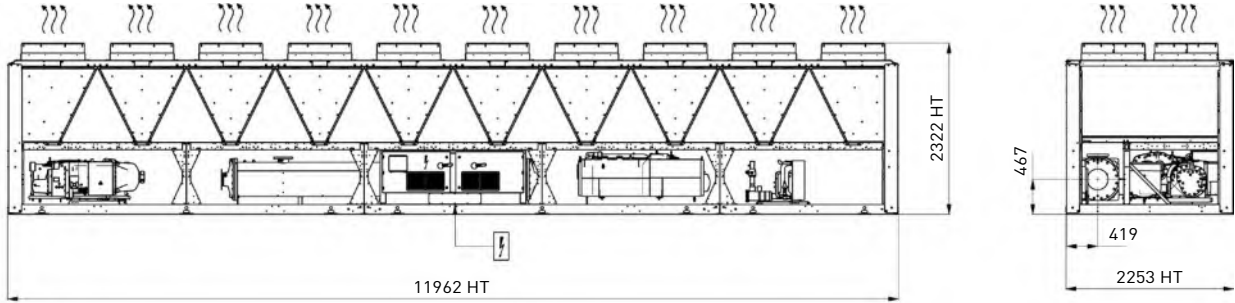
**Non-contractual drawings.**

**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**

■ **POWERCAT LX HE 3428B to 4408B**



**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:**

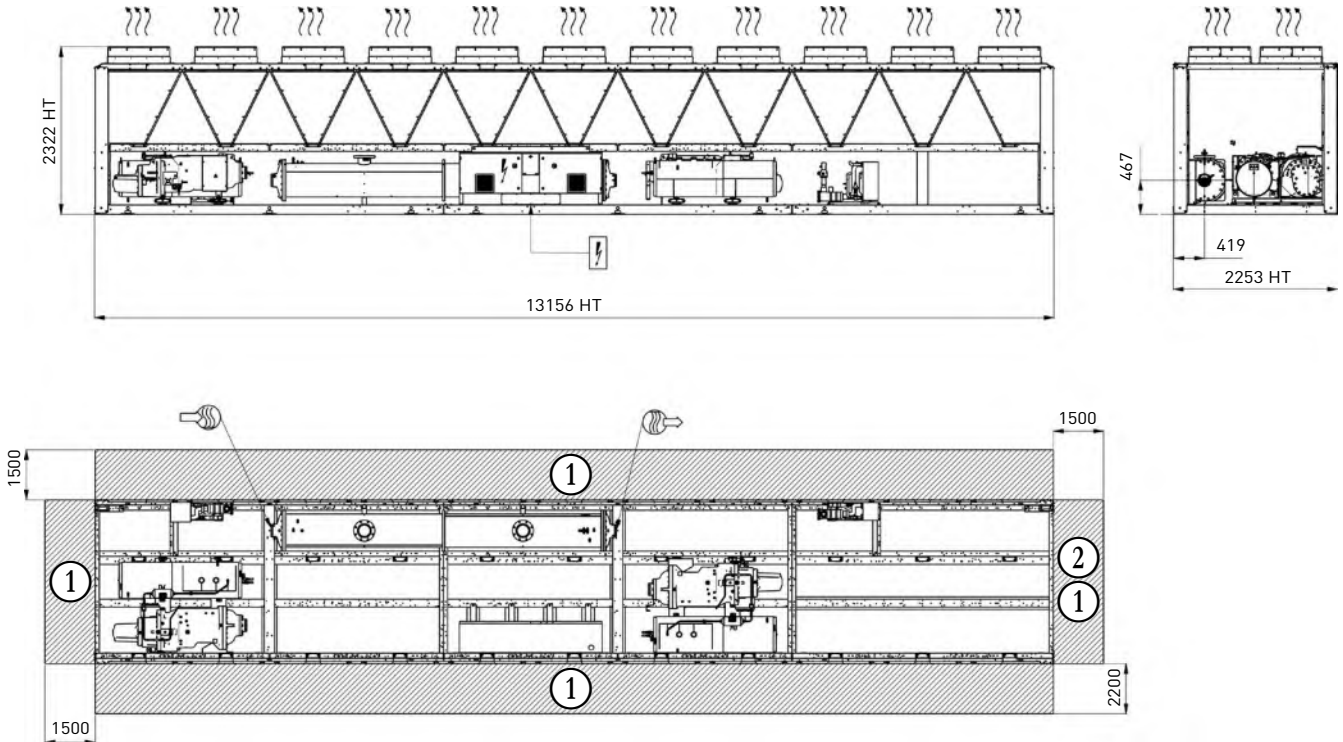
**Non-contractual drawings.**

**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**

■ **POWERCAT LX HE 4608B**



**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.**

## INSTALLATION RECOMMENDATIONS

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### ■ Water quality criteria to be respected

The quality of the water used has a direct impact on the correct and compliant operation of the machine and its service life. This is particularly true if the water used clogs or corrodes components or promotes the growth of algae or micro-organisms. The water must be tested to determine whether it is suitable for the unit. It is also tested to determine whether chemical treatment is necessary and will suffice to make it of acceptable quality. This analysis should confirm whether or not the various machine components are compatible with the water they come into contact with on-site.

**Warning: failure to follow these instructions will result in the immediate voiding of the unit's warranty.**

### ■ Lifting and handling

The utmost safety precautions must be taken when lifting and handling the unit.

Always follow the lifting diagram on the unit and in the instruction manual.

Before attempting to lift the unit, make sure the path leading to its intended location is free from obstacles. Always keep the unit vertical when moving it. Never tip it or lie it on its side.

### ■ Choosing a location for the unit

**POWERCAT** units are designed for outdoor installation. Precautions should be taken to protect the unit from freezing temperatures. Special attention should be paid to ensure sufficient free space (including at the top) to allow maintenance.

The unit must be placed on a perfectly level, fireproof surface strong enough to support it when ready for operation. Noise pollution from auxiliary equipment such as pumps should be studied thoroughly.

Potential noise transmission routes should be studied, with assistance from an acoustical engineer if necessary, before installing the unit. It is strongly recommended that flexible couplings are placed over pipes and anti-vibration mounts are fitted underneath the unit (equipment available as an option) to reduce vibrations, and the noise this causes, as much as possible.

### ■ Fitting accessories supplied separately

A number of optional accessories may be delivered separately and installed on the unit on site.

You must follow the instructions in the manual.

### ■ Electrical connections

You must follow the instructions in the manual. All information concerning electrical connections is stated on the wiring diagrams provided with the unit. Always follow this information to the letter.

Electrical connections must be made in accordance with best current practices and applicable standards and regulations.

Electrical cable connections to be made on-site:

- Electrical power supply to the unit
- Contacts available as standard enabling the machine to be controlled remotely (optional)

It should be noted that the unit's electrical system is not protected against lightning strikes.

Therefore devices to protect against transient voltage surges must be installed on the system and inside the power supply unit.

### ■ Pipe connections

You must follow the instructions in the manual. All pipes must be correctly aligned and slope towards the system's drain valve. Pipes must be installed to allow sufficient access to the panels for maintenance, and must be fitted with heat insulation.

Pipe fixings and brackets must be separate to avoid vibrations and ensure no pressure is placed on the unit. Water flow shutoff and control valves must be fitted when the unit is installed.

Pipe connections to be made on site:

- Water supply with pressure-reducing valve
- Evaporator, condenser and drain
- Accessories essential to any hydraulic circuit must also be installed, such as:
  - Water expansion vessel
  - Drain nozzles at pipe low points
  - Exchanger shut-off valves equipped with filters
  - Air vents at pipe high points
- Check the system's water capacity (install a buffer tank if necessary)
- Flexible couplings on exchanger inlets and outlets

## INSTALLATION RECOMMENDATIONS

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### **Warning:**

- **Pressure in the water circuits below 4 bar for units equipped with the hydraulic module**
- **Place the expansion vessel upstream of the pump.**
- **Do not place any valves on the expansion vessel.**
- **Make sure the water circulation pumps are placed directly at the exchanger inlets.**
- **Make sure the pressure of the water drawn in by the circulation pumps is greater than or equal to the required minimum pressure (NPSH), particularly if the water circuits are "open".**
- **Test the water quality in accordance with the relevant technical specifications.**
- **Take the necessary precautions to protect the unit and hydraulic system from freezing temperatures (e.g. allow for the possibility of draining the unit). If glycol is added to prevent freezing, check its type and concentration before system start-up.**
- **Before making any final hydraulic connections, flush the pipes with clean water to remove any debris in the network.**

### ■ **Start-up**

System start-up for these machines must be performed by CIAT or a CIAT-authorized firm.

You must follow the instructions in the manual.

List of system start-up checks (non-exhaustive):

- Correct positioning of the unit
- Power supply protections
- Phases and direction of rotation
- Wiring connections on the unit
- Direction of water flow in the unit
- Cleanliness of the water circuit
- Water flow rate at the specified value
- Pressure in the refrigerant circuit
- Direction of rotation of the compressors
- Water pressure drops and flow rates
- Operating readings

### ■ **Maintenance operations**

Specific preventive maintenance operations are required at regular intervals and should be performed by CIAT-approved contractors.

The operating parameters are read and noted on a "CHECK LIST" form to be returned to CIAT.

To do this, you must refer to and comply with the instruction manual.

You must take out a maintenance contract with a CIAT-approved refrigeration equipment specialist. Such a contract is required even during the warranty period.

## CONTROL

### USER-FRIENDLY INTERFACE CONSOLE

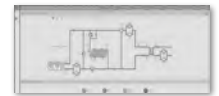
- Ergonomic 5-inch touch screen.
- Information displayed in a choice of languages.
- Temperature and pressure readings.
- Operating and fault status diagnostics.
- Lead/Lag control of two machines in parallel.
- Fault memory management.
- Pump management.
- Time schedule.
- IP web server
- Programmable maintenance
- Preventive maintenance
- F-GAS maintenance
- E-mail alert



### REMOTE ABOUND HVAC PERFORMANCE MACHINE SUPERVISION

#### Two years of Full Serenity with:

- Monitoring of machine operation (operation overviews and curves, alarm logs).
- E-mail alerts for alarms (optional SMS alerts).
- Remote update of the ABOUND HVAC PERFORMANCE.
- Access to a log of machine operation data.
- Remote advice for using ABOUND HVAC PERFORMANCE.
- System start-up and operating readings.



### PRODUCT FUNCTIONALITY

#### POTENTIAL-FREE (DRY) CONTACTS AVAILABLE AS STANDARD

##### Inputs:

- Automatic operation control
- Selection of setpoints 1 / 2
- Power limitation.

##### Outputs:

- General fault reporting
- Operational status reporting.

##### Additional inputs available as options:

- Setpoint adjustable by 4-20 mA signal
- Power limitation adjustable by 4-20 mA signal
- Second power limitation level
- End of storage signal
- User fault reporting
- Time schedule override

##### Additional outputs available as options:

- Indication of the power level by 0-10 V signal
- Minor alert reporting
- Unit shut down general fault reporting

Via potential-free (dry) contact

### COMMUNICATION Customer CMS

Via BUS  
BUS

### CIAT SYSTEM FUNCTIONALITY

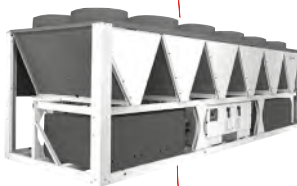
#### CMS CONNECTIONS

- MODBUS-JBUS RTU (RS485) or TC/IP (standard) open protocol
- LONWORKS protocol (option)
- BACNET IP protocol (option)

Communication with CIAT Energy pool controlled by Power'Control.

#### Built-in Power'Control:

- Energy optimisation of refrigeration and heating using several generators,
- Manages free cooling capacity
- Uses heat recovery to supply domestic hot water.



The quality management system of this product's assembly site has been certified in accordance with the requirements of the ISO 9001 standard (latest current version) after an assessment conducted by an authorized independent third party.

The environmental management system of this product's assembly site has been certified in accordance with the requirements of the ISO 14001 standard (latest current version) after an assessment conducted by an authorized independent third party.

The occupational health and safety management system of this product's assembly site has been certified in accordance with the requirements of the ISO 45001 standard (latest current version) after an assessment conducted by an authorized independent third party.

Please contact your sales representative for more information.

Order No: NA24.765A, 10.2024. Supersedes order No: NA20.765A, 09.2020.

Carrier, Montluel, France.

Manufacturer reserves the right to change any product specifications without notice.

The illustrations in this document are for illustrative purposes only and not part of any offer for sale or contract.

The manufacturer reserves the right to change the design at any time without notice.