30KAV-ZE
30KAVIZE

VARIABLE-SPEED SCREW LIQUID CHILLER WITH GREENSPEED® INTELLIGENCE

greenspeed AQUAFORCE PUREtec

Nominal cooling capacity
30KAV-ZE-A : 372 - 1344 kW
Nominal cooling capacity
30KAVIZE- : 532 - 1307 kW

OUTSTANDING PERFORMANCE
LOW SOUND LEVELS
INTELLIGENCE AND CONNECTIVITY
ENVIRONMENTAL RESPONSIBILITY
WIDE RANGE OF APPLICATIONS
SIMPLE INSTALLATION AND MAINTENANCE

The AquaForce® Vision with Greenspeed® intelligence and PUREtec™ refrigerant is the premium solution with variable speed screw compressor and with ultra-low GWP R-1234ze(E) refrigerant for commercial and industrial applications where installers, consultants and building owners require superior reliability and optimal energy performances, especially at part load.

All units are designed to exceed European Ecodesign directive requirements in terms of energy efficiency, versatility and operating sound levels. This result is achieved through the optimised combination of proven best-in-class technologies that include:

- Refrigerant R-1234ze(E).
- 2nd generation of high-efficiency variable-speed twin screw compressors with built in volume index control (Vi) valve for optimal full and part load performance and Integrated Resonator Array (IRA) for low sound operation.
- 30KAVIZE is a range dedicated to Industry and eligible to comfort applications.
- 6th generation of Carrier Flying Bird™ fans with AC or EC motor depending on options.
- Carrier flooded shell-and-tube evaporator with new copper tubes for low pressure drops
- 3rd generation of “W” profile Carrier Novation™ microchannel heat exchangers with optional Enviro-Shield coatings.
- Carrier SmartVu™ control with color touch screen user interface that includes 10 languages and new smart energy monitoring function.

AHRI CERTIFIED® www.ahridirectory.org
Air-Cooled Chillers
AHRI Standards 550/590 and 551/591

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

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

Original document

AQUAFORCE® VISION WITH PURETEC™ REFRIGERANT

SUSTAINABILITY

PUREtec™: the environmental excellence solution

■ GWP<2(1)

Carrier has selected HFO R-1234ze(E) as the best refrigerant to replace HFC R-134a on screw chillers and heat pumps.

HFO R-1234ze(E) **offers a Global Warming Potential (GWP) index below 2**, similar to that of natural substances (CO_2 GWP=1).

(1) According to AR6 from the IPCC (International Panel on Climate change)

■ High efficiency

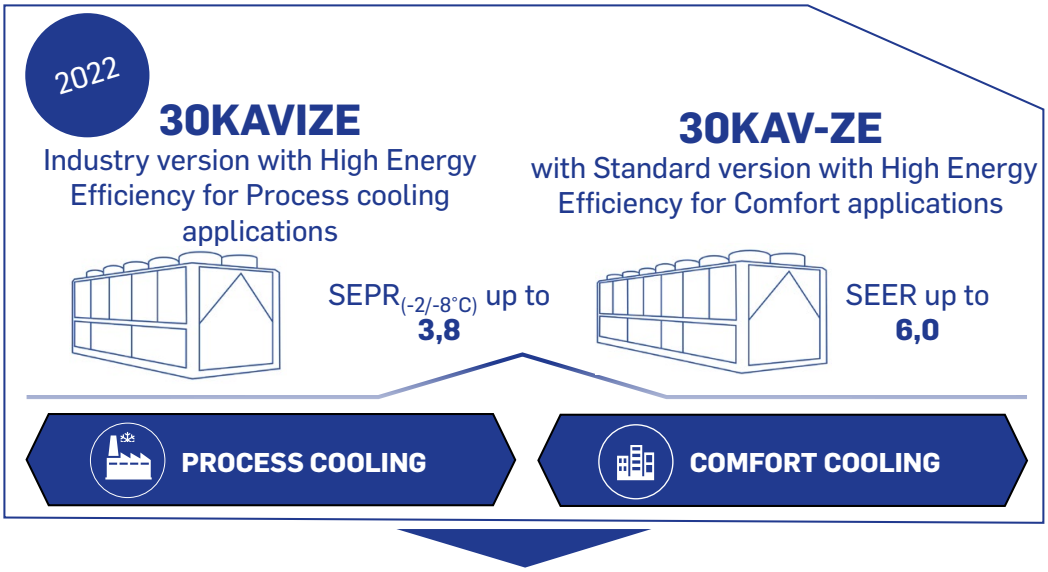
This excellent efficiency performance in turn means a **lower total carbon footprint**, with a reduction of 10% compared to HFC R-134a and HFC blends such as R-513A.

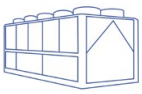
■ Regulation compliance

Carrier has made the strategic decision to choose a long-term solution for its new chiller and heat-pump ranges using screw compressors: HFO R-1234ze(E), **with a GWP<2, is not impacted by the F-gas Regulation.**

AQUAFORCE® VISION THE RIGHT SOLUTION FOR EVERY APPLICATION

Carrier's AquaForce® Vision range is available in three levels of efficiency to perfectly match each customer application and meet the European Ecodesign directive requirements.



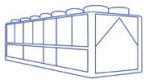


30KAVIZE

The AquaForce® 30KAVIZE dedicated to Industry is equipped with variable-speed screw compressor and a reduced condensing surface.

The 30KAVIZE offers an economical solution with a high SEPR level in industrial process cooling. 30KAVIZE is compliant with the EU Ecodesign SEPR -2/-8 °C and 12/7 °C requirements for medium and high temperature process chillers.

The 30KAVIZE is also suitable for comfort applications thanks to its reduced dimensions (1/3 smaller than the 30KAV-ZE), and its energy performance that meets the Ecodesign requirements SEER 12/7 °C in comfort.



30KAV-ZE

The AquaForce® 30KAV-ZE with Greenspeed™ intelligence is equipped with variable speed screw compressor. It offers an economical solution to enhance seasonal energy efficiency levels for comfort applications. The 30KAV-ZE with Greenspeed™ intelligence meets the 2021 EU Ecodesign SEER 12/7 °C requirements.

AQUAFORCE® VISION 30KAVIZE CUSTOMER BENEFITS

■ Designed for Industry

The 30KAVIZE has been specially developed with an optimised condenser surface for medium process cooling applications down to -12 °C with ethylene glycol or down to -10 °C with propylene glycol.

The wide operating map of the 30KAVIZE also allows high process cooling temperature, up to +24 °C water outlet temperature. The 30KAVIZE range is available with specific options for the industry:

Ultra-Fast Capacity Recovery at Full Power in less than 1 minute.

Low noise and Very low noise options, EC fans, Total heat recovery, Electric Energy Meter, etc.

■ High energy performance

Equipped with variable speed screw compressors, fans, 30KAVIZE chiller automatically adjusts the cooling capacity to adapt perfectly to the load variations of the industrial process.

The SEPR is 25% higher than the Ecodesign 2018 requirements.

■ Low sound levels

The new generation of Carrier 06Z variable-speed twin screw compressor with integrated resonance attenuator and the 6th generation of Flying Bird™ fans with new fan blade design inspired by nature help to significantly reduce compressor and fan noise. As an option, the 30KAVIZE chiller can be fitted with an acoustic cover for the screw compressor to achieve very low noise levels.

■ Intelligence and connectivity

The advanced SmartVu™ intelligent control displays the service parameters in real time, for an intuitive and particularly user-friendly use. The 30KAVIZE range is also characterized by an innovative intelligent energy monitoring function, which provides users with intelligent data such as real-time electrical energy consumption, cooling capacity, as well as instantaneous and average values of the real energy efficiency of the machine. To go further in terms of energy savings, the 30KAVIZE range can be monitored remotely by Carrier experts, in order to carry out a diagnosis and optimize electricity consumption.

SEPR (-2°C/-8°C)
Up to **3,8**

90 dB(A)

SMART ENERGY MONITORING

■ Environmental responsibility

AquaForce® 30KAVIZE uses ultra-low global warming potential (GWP <2) HFO R-1234ze(E) refrigerant. Combining reduced refrigerant charge and exceptional energy efficiency, it significantly lowers energy consumption while reducing CO_2 emissions throughout its life cycle.

■ Extensive scope of applications

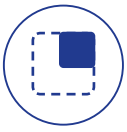
AquaForce® 30KAVIZE adapts effortlessly to a wide variety of applications. Extended operating temperatures from -20 °C to +48 °C for air temperatures outdoor, and water temperatures from +24 °C to -12 °C make it the ideal solution for various applications in industry but also in comfort. AquaForce® 30KAVIZE meets the highest requirements in terms of energy efficiency and energy savings, whatever the climate and geographical location, to meet the needs of the food, chemical, paper, metal, plastic and pharmaceutical industries.

■ Easy installation & maintenance

AquaForce® 30KAVIZE offers very compact dimensions, one third less than the 30KAVZE range, facilitating the replacement of machines in tight spaces. AquaForce® 30KAVIZE offers intelligent automatic refrigerant leak detection and continuous energy performance monitoring to facilitate remote maintenance of equipment.

HFO R-1234ze(E) refrigerant with direct CO_2 impact reduced by 99.9 % compared to R-134a and 99.8 % compared to R-513A

FROM
+24 °C
down to **-12 °C**



1/3
SMALLER

AQUAFORCE® VISION 30KAVZE CUSTOMER BENEFITS

■ High Energy Efficiency

Equipped with variable-speed screw compressors and EC fans, Carrier's AquaForce® Vision 30KAV-ZE chiller with Greenspeed™ intelligence automatically adjusts the cooling capacity and the water flow to perfectly match the needs of the building or the process load variations.

■ Low sound levels

The new generation of Carrier 06Z variable-speed twin screw compressor with integrated resonator array and the 6th generation of Flying Bird™ fans with new fan blade design inspired by nature help reduce compressor and airflow noise down to as little as 90 dB(A). This range is 6 dB(A) quieter than the previous AquaForce® 30XAV generation.

■ Intelligence and connectivity

The advanced SmartVu™ intelligent control system displays operating parameters in real time, making it intuitive and particularly user-friendly. 30KAV ranges also features innovative smart energy monitoring, providing users with smart data such as real time electric energy consumption, cooling energy output and instantaneous and average seasonal energy efficiency ratios. For further energy savings, 30KAV ranges can be monitored remotely by Carrier experts for energy consumption diagnosis and optimization.

SEER
up to 6,0

90 dB(A)

SMART ENERGY MONITORING

■ Environmentally responsible

Carrier's AquaForce® Vision is a boost for green cities and contributes to a sustainable future. Combining a reduced load refrigerant and exceptional energy efficiency it significantly lowers energy consumption while reducing carbon dioxide emissions by 25% throughout its life cycle.

■ Extensive scope of application

Carrier's AquaForce® Vision adapts effortlessly to a wide range of applications. Extended operating temperatures from -20 °C to 55 °C outdoor air temperatures and negative water temperatures make it ideal for various sectors of activity. From high-end office buildings and hotels to healthcare facilities, data centers and industrial projects, AquaForce® Vision meets the most demanding expectations in terms of energy efficiency and savings, whatever the climate and wherever the location.

■ Easy installation & maintenance

Built-in variable-speed pumps up to 600kW, automatic nominal water flow adjustment through electronic control, automatic unit energy performance measurement under real conditions, in units that are 25% smaller than the previous 30XAV generation, all these new features provide peace of mind for installers and service companies alike.

UP TO
25% less
CO_2 EMISSION

FROM
-20°C
to **55°C**

25%
SMALLER

AQUAFORCE® VISION CUSTOMER BENEFITS

AquaForce® Vision liquid chillers with Greenspeed® Intelligence adapt effortlessly to a wide range of applications. An extended operating range covering ambient temperatures from -20 °C to +55 °C makes it ideal for all areas of activity. From high-end office buildings and hotels to healthcare facilities, data centers and industrial projects, 30KAV ranges meets the most demanding expectations in terms of energy efficiency and savings, whatever the climate and wherever the location.

Furthermore, the advanced SmartVu™ intelligent control system displays operating parameters in real time, making it intuitive and particularly user-friendly. 30KAV ranges also features innovative smart energy monitoring, providing users with smart data such as real time electric energy consumption, cooling capacity, and instantaneous and average seasonal energy efficiency ratios as well as smart refrigerant leak alert that can indicate significant loss of refrigerant at any point of the system.

For further energy savings, AquaForce® Vision can be monitored remotely by Carrier experts for energy consumption diagnosis and optimization.

AquaForce® Vision is available in 5 versions.

- 30KAVIZE is a cost effective dedicated range designed to meet industrial expectations while being eligible to comfort applications

  (Average SEPR (-2/-8) of 3,6, average SEER of 5,0, average EER of 2.8)

- 30KAV-ZE standard unit

  30KAV-ZE is equipped with variable-speed screw compressor and variable-speed fans with AC motors.The 30KAV-ZE is optimised to meet the most demanding technical and economic requirements while offering high seasonal energy efficiency levels.

  (Average SEER of 5.2, average EER of 3.1)

- 30KAV-ZE with EC fans (option 17)

  The 30KAV-ZE with EC fans option enhances the seasonal energy efficiency and offers state of the art EC fan technology as standard.

  (Average SEER of 5.3, average EER of 3.1)

- 30KAV-ZE with High Energy Efficiency (option 119)

  The 30KAV-ZE with High Energy Efficiency option is equipped with variable-speed fans with AC motor and additional heat exchange surface to deliver optimum performance at both full load and part load.

  (Average SEER of 5.4, average EER of 3.4)

- 30KAV-ZE with High Energy Efficiency+ (option 119+)

  The 30KAV-ZE with High Energy Efficiency+ option is equipped with EC fans and additional heat exchange surface to provide the highest possible seasonal energy efficiency.

  (Average SEER of 5.5, average EER of 3.4)

Outstanding energy performance

- The 30KAV-ZE with “High energy efficiency+” is designed for very high performance both at full and part load: average SEER 5.5, average EER 3.4 as per EN14825 & EN14511.
- The high energy efficiency is achieved through:
  - 2nd generation of Carrier high-efficiency variable-speed twin-screw compressors with built in volume index control (Vi) valve for both optimal full and part load performance
  - Variable-speed Flying Bird™ fans with EC motor minimising power consumption while delivering optimum air flow
  - Novation™ aluminum condenser with high-efficiency micro-channel coils technology
  - New Carrier flooded shell-and-tube evaporator with new copper tubes for low pressure drops
  - Electronic expansion device permitting operation at a lower condensing pressure and improved utilisation of the evaporator heat exchange surface (superheat control)
  - Economiser system with electronic expansion device for increased cooling capacity.
- Optimised electrical performance:
  - Negligible start-up current (value is lower than the maximum unit current draw)
  - High displacement power factor (above 0.98)
  - EMC compliance with Class 3 requirements of the EU standard EN61800-3 (Class 2 is possible as an option).
- Hydraulic module with variable-speed dual pump
  - Variable-speed, dual pumps which automatically adjust the water flow to match the needs of the building or process load variations.
  - 3 pump control modes available: constant water flow with possibility to reduce the pump speed when there is no cooling demand, variable water flow with constant delta T or constant delta P control.
- Smart energy monitoring
  - Innovative smart energy monitoring providing users with smart data such as real time electric energy consumption, cooling cooling capacity, and instantaneous and average seasonal energy efficiency ratios (Electricity metering accuracy: +/-5%. Cooling capacity metering accuracy: +/-5% at nominal rated conditions).
  - For further energy savings, 30KAV ranges can be monitored remotely by Carrier experts for energy consumption diagnosis and optimization.

Built-in reliability and easy servicing

The AquaForce® Vision offer enhanced performances as well as Carrier’s acclaimed product quality and reliability. Major components were chosen, selected and tested to minimise the possibility of failure.

- 2nd generation of variable-speed twin-screw compressors:
  - The screw compressors are industrial-type with oversized bearings and motor cooled by suction gas, with a proven failure rate lower than 0.1%.
  - Motor is synchronous and spins at supplied frequency, without any slip and rotor losses to induce magnetic field. There is a benefit of +1% in full load efficiency and of +4% in part load efficiency compared to induction motors.
  - Air-cooled compressor variable-speed drive (VSD) to ensure reliable operation and easy maintenance. (Glycol-cooled variable-speed drive (VSD) types are subject to higher failure rates due to glycol pump issue. Refrigerant-cooled variable-speed drive (VSD) types are subject to higher compressor vibration levels causing possible failures in the long term).
  - Compressor bearing life exceeding 100 000 hours
  - All components related to the compressor assembly are easily accessible on site minimising down-time.

AQUAFORCE® VISION CUSTOMER BENEFITS

- Variable-speed fans:

30KAV-ZE and 30KAVIZE are fitted with variable-speed asynchronous fan-motors as standard. One variable-speed drive (VSD) is sized to manage a group of fans per refrigerant circuit reducing first cost while ensuring high part-load efficiency.

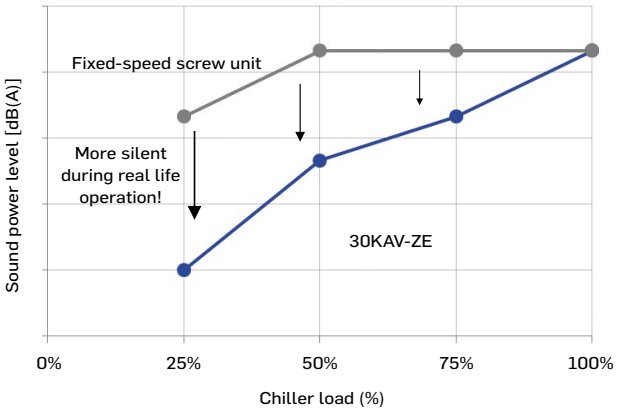
30KAV-ZE and 30KAVIZE + option 17 are equipped with variable speed EC fan motors. Each EC fan is controlled independently ensuring continuous chiller operation in case of motor or drive failure.

- Air-cooled condenser:
  - Novation™ aluminum micro-channel heat exchanger (MCHE) with high corrosion resistance. The all aluminum design eliminates the formation of galvanic currents between aluminum and copper that cause coil corrosion in saline or corrosive environments.
  - Enviro-shield™ coating for MCHE used in standard and mildly corrosive environments with superior durability confirmed through 5000 hours testing in constant neutral salt spray per ASTM B117 and superior heat transfer performances confirmed through 2000 hours testing per CM1 (Carrier proprietary testing).
  - Super Enviro-shield™ coating for MCHE used in highly corrosive environments (industry or marine applications) with superior durability confirmed through 5000 hours testing in constant neutral salt spray per ASTM B117 and superior heat transfer performances confirmed through 2000 hours testing per CM1 (Carrier proprietary testing).
- Evaporator:
  - Carrier designed flooded evaporator with mechanically cleanable water tubes
  - Electronic paddle-free flow switch to ensure prompt alarm in case of poor liquid flow rate
  - Thermal insulation with aluminum sheet finish (option) improved resistance to mechanical and UV damage.
- Refrigerant circuits:
  - Two independent refrigerant circuits to secure partial cooling, if one of the two develops a fault.
- Auto-adaptive control:
  - Control algorithm prevents excessive compressor cycling (Carrier patent)
  - Automatic compressor unloading in case of abnormally high condensing pressure. If condenser coil fouling or fan failure occurs, the Aquaforce continues to operate, but at reduced capacity.
- Exceptional endurance tests:
  - To design critical components and sub-assemblies to minimise the risk of failure on site, Carrier uses specialised laboratories and advanced dynamic simulation tools.
  - To ensure that the units reach customer sites in the same condition as they are when tested in the factory, Carrier tests the machine behavior while being moved along a 250 km trial. The test-route is based on a military standard and is the equivalent to 5000 km by truck in a normal road.
  - To ensure coils corrosion resistance, salt mist corrosion resistance test are performed in Carrier's laboratory.

In addition, to maintain unit performance throughout its operating life, whilst minimising maintenance costs, end users can access the "Carrier Connect" remote monitoring service.

Minimised operating sound levels

- The Greenspeed® Intelligence, featuring variable-speed screw compressors and condenser fans, minimises noise levels at part load operation.



- Standard unit features include:
  - The new generation of Carrier 06Z variable-speed twin screw compressor with integrated resonator array to reduce the noise level by 6 dB(A) compared with 06T twin screw compressor previous generation.
  - The 6th generation of silent Flying Bird™ fans with new fan blade design inspired by nature, help reduce airflow noise.
- AquaForce® Vision is available with 3 sound levels to match the most sensitive environments:
  - Standard: standard unit configuration with new generation of low sound screw compressor and fans
  - Low noise option: addition of high-performance compressor sound enclosure
  - Very low noise option: addition of high-performance compressor sound enclosure and fan operation at lower rotational speed.

Easy and fast installation

- Built-in variable speed pumps up to 600kW
  - Full hydraulic module with dual pumps (low or high pressure as required) and optional expansion tank
  - Automatic nominal water flow adjustment through electronic control on the user display
- Compact units for easy transportation and installation.
  - Dimensions 25% smaller than the previous 30XAV generation
  - Similar dimensions as the old 30GX chillers for easy replacement of the installed base.
- Simplified electrical connections:
  - Main disconnect switch
  - Transformer supply to the integrated control circuit (400/24 V)
  - Single electrical point of connection
- Simplified water connections:
  - Victaulic connections on the evaporator
  - Clearly identified entering and practical reference marks for entering and leaving water connections
  - Possibility to choose different evaporator configurations, 1 or 2 passes.
- Fast commissioning:
  - Systematic factory operating test before shipment
  - Functional test for main components, expansion devices, fans and compressors.

AQUAFORCE® VISION CUSTOMER BENEFITS

Environmental care

- The AquaForce® Vision with PUREtec™ refrigerant liquid chillers with Greenspeed® Intelligence is a boost for green cities and contributes to a sustainable future. Combining a reduced charge of R-1234ze(E) refrigerant and exceptional energy efficiency it significantly lowers energy consumption while reducing carbon dioxide emissions by 25% throughout its life cycle (compared to previous fixed-speed screw liquid chiller generation).
- The AquaForce® Vision with PUREtec™ refrigerant liquid chiller is equipped with an automatic energy meter that provides estimated instantaneous and cumulative cooling energy output, instantaneous and cumulative electric energy consumption, instantaneous and average seasonal energy efficiency ratios (Accuracy: +/- 5% at nominal condition, +/-10% elsewhere) for unit performance monitoring and verification.
- R-1234ze(E): HFO refrigerant with zero ozone depletion potential
- 40% less refrigerant charge: The micro-channel technology used for condenser coils optimises heat transfer while minimising the refrigerant volume.
- Leak tight refrigerant circuits:
  - Reduction of leaks as no capillary tubes and flare connections are used
  - Verification of pressure transducers and temperature sensors without transferring refrigerant charge
  - Discharge line shut-off valve and liquid line service valve for simplified maintenance.
- Refrigerant leak alert: The AquaForce® Vision liquid chiller is equipped with an automatic refrigerant leak detection algorithm that can detect serious refrigerant loss at any point on the system (Sensitivity: 25% refrigerant charge loss per circuit, depending on the conditions). The automatic refrigerant leak detection system can help to achieve recognition within pollution prevention assessment programs, ideal for assisting in the design of sustainable buildings.
- Refrigerant leak detection: Available as an option, this additional dry-contact allows reporting of possible leaks. The leak detector (by others) should be mounted in the most likely leak location.

greenspeed AQUAFORCE® PUREtec

- R-1234ze(E) long-term refrigerant solution
  - HFO refrigerant with nearly zero global warming potential (GWP<2 following AR6) and zero ozone depletion potential (ODP = 0).
  - Not impacted by the HFC phase-down plan in Europe (79% HFC reduction in EU member states at 2030 horizon)
  - Compliant with refrigerant regulation in Switzerland that bans the use of HFC refrigerant in large capacity airconditioning equipment.
- Leak-tight refrigerant circuit
  - Reduction of leaks as no capillary tubes and flare connections are used
  - Verification of pressure transducers and temperature sensors without transferring refrigerant charge
  - Discharge line shut-off valve and liquid line service valve for simplified maintenance.

Designed to support Green Building Design

A green building is a building that is environmentally sustainable and has been designed, constructed and is operated to minimise the total impact on the environment.

The resulting building will be economical to operate, offer increased comfort and create a healthier environment for the people who live and work there, increasing productivity.

The air conditioning system can use between 30 and 40% of the annual building energy consumption. Selection of the right air conditioning system is one of the main aspects to consider when designing a green building. For buildings with a variable load throughout the year AquaForce® Vision offer a solution to this important challenge.

A number of green building certification programs exist in the market and offer third-party assessment of green building measures for a wide variety of building types.

The following example looks at how Carrier's new AquaForce® Vision range helps customers involved in LEED® building certification.

The other benefit of using the AQUAFORCE PUREtec™ products is the eligibility for BUILDING labeling programs like BREEAM, HQE in France or Green Building Council labelling, that are recognizing the use of sustainable heating and air-conditioning equipment.

Let's take the example of BREEAM assessment method for the sustainability of buildings.

Two credits can be awarded where the refrigerants used in air-conditioning systems have a Global Warming Potential below 10.

And one additional credit can be awarded where the systems have a low Total Equivalent Warming Impact.

AQUAFORCE PUREtec™ is not only a solution that is reducing the energy bill and the CO_2 footprint.

It also helps the green certification of your buildings!

Energy saving certificate

AquaForce® Vision with with PUREtec™ refrigerant is eligible to Energy savings certificates in France (CEE) in comfort, industrial and agriculture applications:

- Floating High pressure control (by modulating the air flow through fan activation and its speed)
- Floating Low pressure control
- Variable speed on asynchronous compressor motor
- Variable speed on asynchronous fan motor
- Variable speed on asynchronous pump motor

For more details about financial incentives in France, please refer to “Fiche produit CEE”

AQUAFORCE® VISION CUSTOMER BENEFITS

30KAV-ZE and LEED® certification

The LEED® (Leadership in Energy and Environmental Design) green building certification programme is a preeminent programme to rate the design, construction and operation of green buildings with points assigned in seven credit categories:

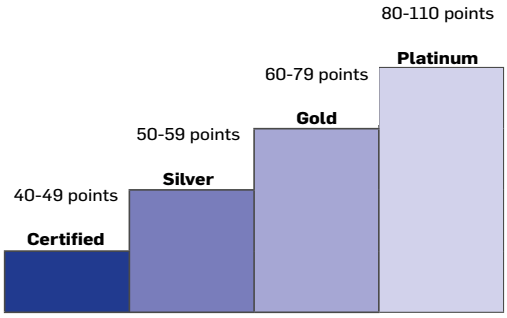
- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy & Atmosphere (EA)
- Materials & Resources (MR)
- Indoor Environmental Quality (IEQ)
- Innovation in Design (ID)
- Regional Priority (RP).

There are a number of different LEED® products.

While the strategies and categories assessed remain same, the point distribution varies to address different building types and application needs, for example according to New Construction, Schools, Core & Shell, Retail and Healthcare.

All programmes now use the same point scale:

110 Possible LEED® points

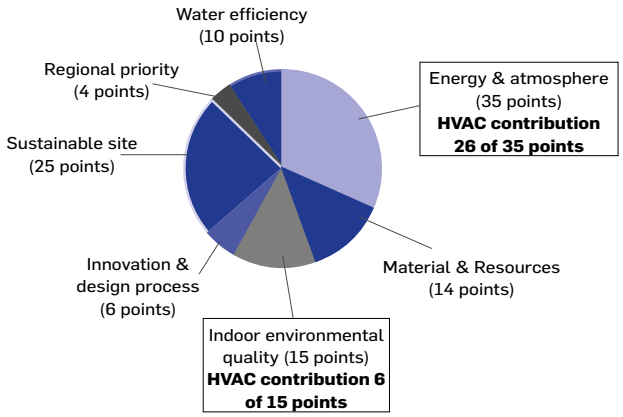


The majority of credits in LEED® rating systems are performance-based and achieving them is dependent on the impacts of each component or sub-system to the overall building.

While the LEED® green building certification programs do not certify products or services, the selection of the right products, systems or service programs is critical to obtain LEED® certification for a registered project, because the right products or service programmes can help meet the goals of green construction and ongoing operation and maintenance.

The choice of heating, ventilating and air conditioning (HVAC) products in particular can have a significant impact on LEED® certification, as the HVAC system directly impacts two categories that together influence 40% of the available points

Overview of LEED® for new construction and major renovations



The new AquaForce® Vision with with PUREtec™ refrigerant units from Carrier can assist building owners to earn LEED® points in particular in the Energy & Atmosphere (EA) credit category and help address the following prerequisites and credit requirements:

- EA prerequisite 2: Minimum energy Performance

  The AquaForce® Vision with with PUREtec™ refrigerant exceeds the energy efficiency requirements of ASHRAE 90,1-2007; therefore it complies with the presequisite standard.

- EA prerequisite 3: Fundamental Refrigerant Management

  The AquaForce® Vision with with PUREtec™ refrigerant does not use chlorofluorocarbon (CFC) refrigerants thus satisfying the prerequisite statement.

- EA credit 1: Optimise energy performance (1 to 19 points):

  Points for this credit are assigned depending on the energy cost reduction virtually achievable by the new building, compared to ASHRAE 90,1-2007 reference. The AquaForce® Vision with with PUREtec™ refrigerant, which is designed for high performance especially during part load operation, contributes to reducing the energy consumption of the building and therefore helps in gaining points within this credit. In addition, the Carrier HAP (Hourly Analyses Program) can be used as an energy analyses program complying with the modeling requirements for this credit and produce reports that are easily transferable to LEED® templates.

- EA credit 4: Enhanced refrigerant management (2 points):

  With this credit, LEED® awards systems that minimise the Ozone Depletion Potential (ODP) and Globlal Warming Potential (GWP) of the system. The AquaForce® Vision with with PUREtec™ refrigerant uses a reduced R-1234ze(E) charge and therefore contributes toward satisfying this credit under LEED®.

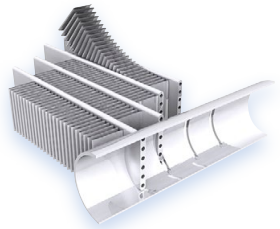
NOTE: This section describes the prerequisites and credit requirements in LEED® for New Construction and is directly related to the AquaForce® Vision. Other prerequisites and credit requirements are not directly and purely related to the air-conditioning unit itself, but more to the control of the complete HVAC system.

i-Vu®, Carrier's open control system, has features that can be valuable for:

- EA prerequisite 1: Fundamental commissioning of energy management system
- EA credit 3: Enhanced commissioning (2 points)
- EA credit 5: Measurements and verification (3 points).

NOTE: Products are not reviewed or certified under LEED®. LEED® credit requirements cover the performance of materials in aggregate, not the performance of individual products or brands. For more information on LEED®, visit www.usgbc.org.

30KAVIZE – TECHNICAL INSIGHTS



3RD GENERATION OF "W" SHAPE NOVATION® MICRO CHANNEL HEAT EXCHANGERS

- Exclusive Carrier design
- Increased reliability with new aluminum alloy
- Significantly reduces refrigerant charge (-40% vs cu/al coils)
- More compact units (-25% vs previous 30XAV generation)
- Enviro-shield™ coating for mildly corrosive environments
- Super Enviro-shield™ coating for highly corrosive environments (industry or marine applications)
- Easy cleaning with high pressure air or water washer

6TH GENERATION OF VARIABLE-SPEED FLYING BIRD™ FANS WITH AC OR EC MOTOR

- Exclusive Carrier design
- Fan blade design inspired by nature
- AC motor technology
- High efficiency version with EC motor technology (option)

ADVANCED SMARTVU™ WITH 7 INCH COLOR TOUCH SCREEN INTERFACE

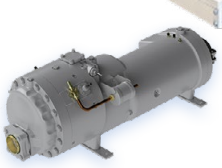
- Exclusive Carrier design
- 10 languages available: DE, EN, ES, FR, IT, NL, PT, TR, TU + one additional customer choice
- Touch screen user interface
- BACnet, J-Bus or LON communication interfaces
- Optional wireless connectivity

HFO R-1234ze

- HFO R-1234ze(E) with Global Warming Potential (GWP) below 1.
- Long-term solution to meet the the F-Gas regulation.

POWERFUL SMART ENERGY MONITORING FUNCTION

- Provides smart data based on intelligent algorithms
- Real time energy consumption measurement (kWh)
- Cooling energy output measurement (kWh)
- Instantaneous and average Energy Efficiency Ratio under real operating conditions
- Remote monitoring with Carrier Connect



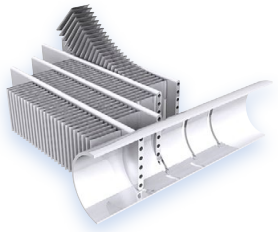
LATEST GENERATION CARRIER VARIABLE-SPEED 06Z TWIN SCREW COMPRESSOR WITH AC MOTOR

- Exclusive Carrier design
- Twin screw compressor designed for variable speed operation
- High efficiency AC motor
- Stepless variable-speed control (0%-100%)
- Integrated resonator array for compressor acoustic attenuation
- Integrated check valve for quiet shutdown
- Air-cooled inverter drive for increased reliability
- Bearing life exceeding 100.000 hours
- Twin screw compressor with permanent magnet motor as option

FLOODED SHELL AND TUBE EVAPORATOR

- Exclusive Carrier design
- Flooded technology for high energy efficiency
- New generation of copper tubes with specific profile to reduce pressure drops when operating with glycol

30KAV-ZE TECHNICAL INSIGHTS



3RD GENERATION OF "W" SHAPE NOVATION® MICRO CHANNEL HEAT EXCHANGERS

- Exclusive Carrier design
- Increased reliability with new aluminum alloy
- Significantly reduces refrigerant charge (-40% vs cu/al coils)
- More compact units (-25% vs previous 30XAV generation)
- Enviro-shield™ coating for mildly corrosive environments
- Super Enviro-shield™ coating for highly corrosive environments (industry or marine applications)
- Easy cleaning with high pressure air or water washer

6TH GENERATION OF VARIABLE-SPEED FLYING BIRD™ FANS WITH AC OR EC MOTOR

- Exclusive Carrier design
- Fan blade design inspired by nature
- AC motor technology
- High efficiency version with EC motor technology (option)

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- Touch screen user interface
- BACnet, J-Bus or LON communication interfaces
- Optional wireless connectivity

VARIABLE-SPEED DUAL PUMPS WITH AC MOTOR

- Dual pumps designed for variable speed operation
- High efficiency AC motor
- Low static pressure (~100 kPa) or high static pressure (~180 Kpa) available
- 3 pump control modes available: constant water flow with 2 speeds, variable water flow based on constant delta T or constant delta P
- Compatibility of chillers for variable primary flow operation

POWERFUL SMART ENERGY MONITORING FUNCTION

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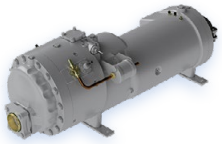
- Real time energy consumption measurement (kWh)
- Cooling energy output measurement (kWh)
- Instantaneous and average Energy Efficiency Ratio under real operating conditions
- Remote monitoring with Carrier Connect



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FLOODED SHELL AND TUBE EVAPORATOR

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- New generation of copper tubes with specific profile to reduce pressure drops when operating with glycol

TECHNICAL INSIGHTS

SmartVu™ Control (standard)

SmartVu™

- New innovative smart control features:
  - An intuitive and user-friendly, coloured, 7" interface
  - 10 languages available on choice: DE, EN, ES, FR, IT, NL, PT, TR, TU + one additional customer choice
  - Screen-shots with concise and clear information in local languages
  - Complete menu, customised for different users (end user, service personnel and Carrier-factory technicians)
  - Setpoint offset based on the outside air temperature
  - Safe operation and unit setting: Password protection ensures that unauthorised people cannot modify any advanced parameters
  - Simple and "smart" intelligence uses data collection from the constant monitoring of all machine parameters to optimise unit operation
  - Night-mode: Cooling capacity management for reduced noise level.
  - With hydraulic module: Water pressure display and water flow rate calculation.
- Energy management:
  - Innovative smart energy monitoring, providing users with smart data such as real time electric energy consumption, cooling capacity, and instantaneous and average seasonal energy efficiency ratios.
  - Internal time schedule clock controls chiller on/off times and operation at a second set-point
  - The DCT (Data Collection Tool) records the alarms history to simplify and facilitate service operations.
- Maintenance functions
  - F-Gas regulation leak check reminder alert
  - Maintenance alert can be configured to days, months or hours of operation
- Advanced communication features
  - Easy and high-speed communication technology over Ethernet (IP) to a centralised building management system
  - Access to multiple unit parameters.

Remote management (standard)

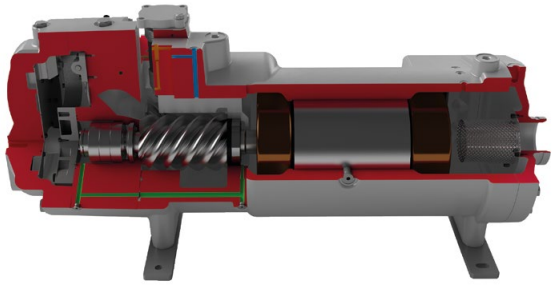
- Units with SmartVu™ control can be easily accessed from the internet, using a PC with an Ethernet connection. This makes remote control quick and easy and offers significant advantages for service operations.
- Aquaforce with Greenspeed® Intelligence is equipped with an RS485 serial port that offers multiple remote control, monitoring and diagnostic possibilities. When networked with other Carrier equipment through the CCN (Carrier Comfort Network - proprietary protocol), all components form a HVAC system fully-integrated and balanced through one of the Carrier's network system products, like the Chiller System Manager or the Plant System Manager (optional).
- Units also communicates with other building management systems via optional communication gateways (BACnet, LON or JBus).
- The following commands/visualisations are possible from remote connection:
  - Start/Stop of the machine
  - Dual set-point management: Through a dedicated contact is possible to activate a second set-point (example, unoccupied mode)
  - Demand limit setting: To limit the maximum chiller capacity to a predefined value
  - Water pump control: These outputs control the contactors of one/two evaporator water pumps.
  - Water pumps changeover (only with hydraulic module options): These contacts are used to detect a water pump operation fault and automatically change over to the other pump.
  - Operation visualisation: Indication if the unit is operating or if it is in stand-by (no cooling load)
  - Alarm visualisation.

Remote management (EMM option)

- The Energy Management Module (EMM) offers extended remote control possibilities:
  - Room temperature: Permits set-point reset based on the building indoor air temperature (if Carrier thermostats are installed)
  - Set-point reset: Allows reset of the cooling set-point based on a 4-20 mA.
  - Demand limit 1 and 2: Closing of these contacts limits the maximum chiller capacity to two predefined values.
  - User safety: This contact can be used for any customer safety loop; opening the contact generates a specific alarm.
  - Ice storage end: When ice storage has finished, this input permits return to the second set-point (unoccupied mode).
  - Time schedule override: Closing of this contact cancels the programmed time schedule.
  - Out of service: This signal indicates that the chiller is completely out of service.
  - Chiller capacity: This analogue output (0-10 V) gives an immediate indication of the chiller capacity.
  - Alert indication: This volt-free contact indicates the necessity to carry out a maintenance operation or the presence of a minor fault.
  - Compressors running status: Set of outputs (as many as the compressors number) indicating which compressors are running.

TECHNICAL INSIGHTS

New generation of Carrier 06Z variable-speed twin screw compressor



The new generation of 06Z variable-speed twin screw compressors benefits for Carrier's long experience in the development of twin-rotor screw compressors. The 06Z compressor design is based on the successful 06T screw compressor, core of the well-known Aquaforce series with a number of modifications to reduce noise level and improve the energy efficiency especially during part load operation.

- New 06Z twin screw compressor optimized for variable speed operation: elimination of the slide valve, built in volume index control (Vi) valve for both optimal full and part load performance, high efficiency AC motor with stepless inverter control from 20% to 100%.
- Separate air-cooled inverter drive for increased reliability
- New 06Z twin screw compressor design with Integrated Resonator Array (IRA) to reduce the sound level by up to 6 dB(A) when compared with previous 06T generation
- Integrated Check Valve for quiet shutdown
- Bearing life exceeding 100 000 hours.
- A dedicated oil separator is installed at the discharge of each compressor to ensure maximum oil return: Oil separates from refrigerant by gravity and returns to the low pressure side of the compressor without use of additional pumps.
- Volume index control (Vi) valve provides a reliable method of adjusting the compression ratio to better match system demand. It provides optimal performance regardless of operating condition
- Screw compressors work on the positive displacement principle to compress gas to a higher pressure. As a result, if there is an unusually high pressure in the condenser (due for example to coil fouling or operation in harsh climate) the compressor does not switch off, but continues operation at reduced capacity (unloaded mode).
- The silencer in the oil separator line (at the compressor outlet) considerably reduces discharge gas pulsations for much quieter operation.

TECHNICAL INSIGHTS

Novation® Heat Exchangers with Microchannel Coil Technology

Already utilised in the automobile and aeronautical industries for many years, the Novation™ Micro-Channel Heat Exchanger (MCHE) used in the Aquaforce is entirely made of aluminum. This one-piece concept significantly increases its corrosion resistance by eliminating the galvanic currents that are created when two different metals (copper and aluminum) come into contact in traditional heat exchangers.

- From the energy efficiency point-of-view the Novation® heat exchangers are approximately 10% more efficient than traditional coils and micro-channel coil technology allows a 40% reduction in the amount of refrigerant used in the chiller.
- The reduced depth of the Novation™ MCHE reduces air pressure losses by 50% and makes it much less susceptible to fouling (e.g. by sand). Cleaning of the Novation™ MCHE heat exchanger is very fast using a high pressure washer.
- To further enhance long-term performance, and protect coils from early deterioration, Carrier offers (as options) dedicated treatments for installations in corrosive environments.
  - The Novation™ MCHE with Enviro-Shield protection (option 262) is recommended for installations in moderately corrosive environments. The Enviro-Shield protection utilises corrosion inhibitors which actively arrest oxidation in case of mechanical damage.
  - The Novation™ MCHE with exclusive Super Enviro-Shield protection (option 263) is recommended for installations in corrosive environments. The Super Enviro-Shield protection consist of an extremely durable and flexible epoxy coating uniformly applied over all coil surfaces for complete isolation from the contaminated environment.
- After a total of more than 7 000 hours of testing following various test standards in Carrier laboratories, the Carrier Novation® MCHE with Super Enviro-shield® coating appears to be the best-suited customer choice to minimize the harmful effects of corrosive atmospheres and ensure long equipment life.
  - Best corrosion resistance per ASTM B117/D610 test
  - Best heat transfer performance per Carrier Marine 1 test
  - Proven reliability per ASTM B117 test

Coil Types (ranked by performance)	Visual Corrosion Evaluation	Heat Transfer Performance Degradation	Time to Failure	Test Campaign Conclusions
Super Enviro-shield® Novation™ MCHE	Very good	Very good	No coil leak	Best
Super Enviro-shield® Cu/Al coil	Very good	Very good	No coil leak	Very good
Enviro-shield® Novation™ MCHE	Very good	Good	No coil leak	Very good
Al/Al coil	Very good	Good	No coil leak	Very good
Novation™ MCHE	Good	Very good	No coil leak	Good
Cu/Cu coil	Good	Good	Leak before 5 000 h	Acceptable
Blygold® Cu/Al coil	Good	Good	No coil leak	Acceptable
Precoat Cu/Al coil	Bad	Bad	No coil leak	Bad
Cu/Al coil	Bad	Bad	No coil leak	Bad

TECHNICAL INSIGHTS

New generation of Flying Bird VI fans with EC motors

AquaForce® Vision utilizes Carrier's the 6th generation Flying Bird™ fan technology, engineered for maximum efficiency, super low noise, and wide operating range. The fan includes Carrier patented rotating shroud technology and back-swept blades with a unique wave-serration trailing edge inspired from nature.

It was designed and optimized for the AquaForce® Vision air management system configuration and heat exchanger technology. On 30KAV-ZE and on 30KAVIZE with option 17 , fans are propelled by an EC motor, also known as brushless DC, with a unique electronics to manage commutation. This provides a great accuracy for fans that require higher efficiencies and variable speed. The fan meets the latest European eco-design requirements for fan efficiency. The fan uses Carrier's robust and proven injection molded composite-thermoplastic construction.

EC fan

TECHNICAL INSIGHTS

Variable Frequency Drives (VFD)

The compressors, AC fans and the pumps of AquaForce® Vision are controlled by VFDs.

- Electrical box is capable of operating up to 55 °C (with option 16 “High Ambient”).
- Unit regulation is designed to withstanding storage temperatures in the control compartment from -20 °C to 68 °C.
- All VFDs on the chiller (compressors, fans and pumps motors) are fully air cooled this differentiating from cooling systems on a glycol water loop and shall not require an additional glycol cooling system, thus avoiding the maintenance associated with such cooling systems.

Frequency converters fan drives + Pump drives + electronic boards

Frequency converters compressor drives + main power connection

TECHNICAL INSIGHTS

Actual Major product modification KAVZE : A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3	0	K	A	V	-	Z	E	0	8	0	0	A	-	-	-	-	-

Product codification

- Digit 5: Model series 30KAV
- Digit 6: Not used
- Digits 7 & 8: Unit using R-1234ze(E) refrigerant
- Digit 9 to 12: Number based on the cooling capacity in kW
- Digit 13: Major product modification
- Digit 14 to 17: Counter used to generate a one time product code
- Digit 18: '-' for single piece

Actual Major product modification KAVIZE : -

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3	0	K	A	V	I	Z	E	0	8	0	0	-	-	-	-	-	-

Product codification

- Digit 5: Model series 30KAV
- Digit 6: I for Industrial
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- Digit 9 to 12: Number based on the cooling capacity in kW
- Digit 13: Major product modification
- Digit 14 to 17: Counter used to generate a one time product code
- Digit 18: '-' for single piece

OPTIONS

Option	No.	Description	Advantage	Use 30KAV-ZE	Use 30KAVIZE
Medium Brine down to -6 °C	5	Redesigned evaporator to allow chilled brine solution production down to -6 °C (including different number of tubes in the evaporator, extra insulation, specific sensors and algorithms).	Covers specific applications such as ice storage and industrial processes.	0350-1300	0500-1250
Low Brine with turbulators down to -12 °C	6	Redesigned evaporator including turbulators to allow chilled brine solution production with low pressure drops on the entire negative application range, down to -12 °C (including turbulators, extra insulation, specific sensors and algorithms).	Covers specific applications such as ice storage and industrial processes.	0350-1300	0500-1250
Low noise level	15	Aesthetic and sound absorbing compressor enclosure	Noise level reduction	0350-1300	0500-1250
Very low noise level	15LS	Sound absorbing & aesthetic compressor enclosure and oil separator, evaporator and suction line acoustic treatment, combined with low-speed fans	Noise level reduction for sensitive site	0350-1300	0500-1250
High ambient temperature	16	Electrical components sized for part load operation up to 55 °C air ambient	Extended unit part-load operation up to 55 °C ambient temperature	0350-1300	NO
EC fans	17	Unit equipped with EC fans	Enhances the unit energy efficiency	0350-1300	0500-1250
IP54 control box	20A	Increased leak tightness of the unit	Protects the inside of the electrical box from dust, water and sand. In general this option is recommended for installations in polluted environments	0350-1300	0500-1250
Grilles and enclosure panels	23	Metal protection grilles and side enclosure panels	Improves aesthetics, protection against intrusion to the unit interior, coil and piping protection against impacts.	0350-1300	0500-1250
Enclosure panels	23A	Side enclosure panels	Improves aesthetics and piping protection against impacts.	0350-1300	0500-1250
Water exchanger frost protection	41A	Electric resistance heater on the water exchanger and discharge valve	Water exchanger frost protection down to -20 °C outside temperature	0350-1300	0500-1250
Evaporator and hydraulic module frost protection	41B	Electric resistance heater on water exchanger, discharge valve and hydraulic module	Water exchanger and hydraulic module frost protection down to -20 °C outside temperature	0350-0600	NO
Evaporator & recovery condenser frost protection	41C	Electric resistance heater on evaporator exchanger, discharge valve and add heaters and insulation on hydraulic connection (option 325)	Water exchanger module frost protection between 0 °C and -20 °C outside air temperature	0350-1300	0500-1250
Partial heat recovery	49	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)	0350-0800	NO
Total heat recovery	50	Unit equipped with an additional heat exchanger in series with the condenser coils (Each heat exchanger is equipped with electrical heaters and insulation)	Production of free hot-water with variable heat reclaim	0350-1300	0500-1250
Boosted Total Heat Recovery	50+	Unit equipped with additional heat exchanger in series with the condenser coils, and valves to isolate part of the coils.	Production of free hot-water simultaneously with chilled water production. Coils isolation reduce the condensing area leading to improve heat recovery efficiency.	0900-1300	0500-1250
Lead/lag operation	58	Unit equipped with supplementary leaving water temperature sensor kit (to be field installed) allowing Lead/Lag operation of two units connected in parallel	Optimised operation of two units connected in parrallel operation with operating time equalisation	0350-1300	0500-1250
Main disconnect switch with short-circuit protection	70D	Circuit breaker equipped with an external disconnect switch handle	Ensure protection of main disconnect switch and associated cables against short-circuits when building devices are not compliant	0350-1300	0500-1250
Evap. and pumps with aluminium jacket	88A	Evaporator and pumps covered with an aluminium sheet for thermal insulation protection	Improved resistance to aggressive climate conditions	0350-0600	NO
Service valve set	92	Liquid line valve (evaporator inlet) and compressor suction line valve	Allow isolation of various refrigerant circuit components for simplified service and maintenance	0350-1300	0500-1250

OPTIONS

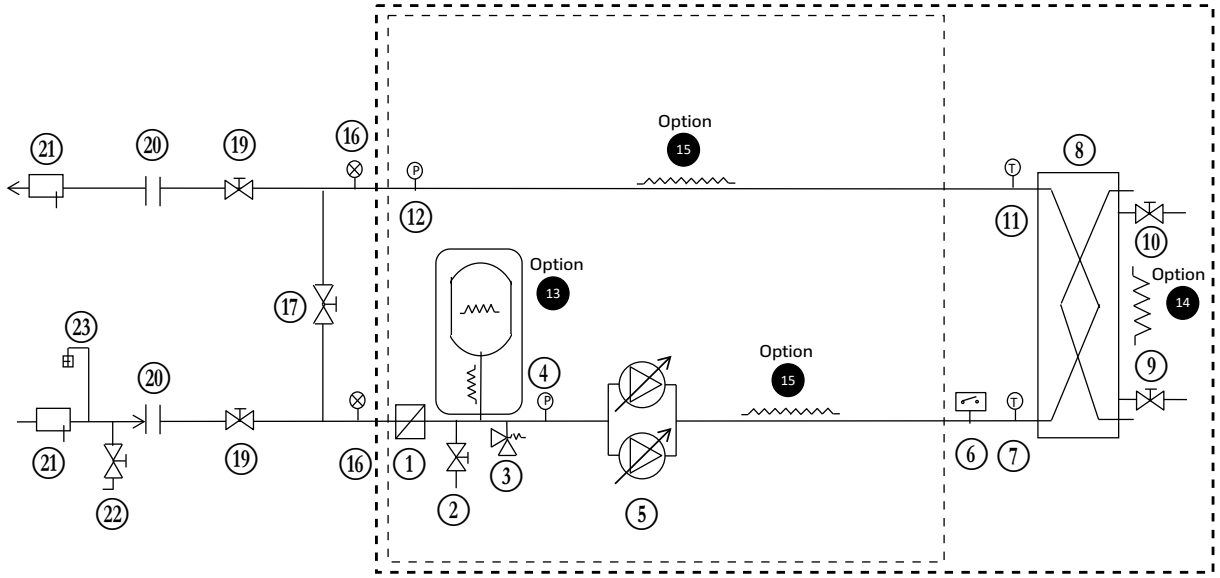
Option	No.	Description	Advantage	Use 30KAV-ZE	Use 30KAVIZE
Compressor discharge valves	93A	Shut-off valve on the compressor discharge piping	Simplified maintenance	0350-1300	0500-1250
21 bar evaporator	104	Reinforced evaporator for extension of the maximum water-side service pressure to 21 bar (standard 10 bar)	Covers applications with a high water column on the condenser side (typically high buildings)	0350-1300	0500-1250
LP VSD dual-pump hydraulic mod.	116A	Dual low-pressure water pump with variable speed drive (VSD), pressure transducers. Multiple possibilities of water flow control. For more details, refer to the dedicated chapter.	Easy and fast installation (plug & play), significant pumping energy cost savings (more than two-thirds), tighter water flow control, improved sytem reliability	0350-0600	NO
HP VSD dual-pump hydraulic mod.	116W	Dual high-pressure water pump with variable speed drive (VSD), pressure transducers. Multiple possibilities of water flow control (expansion tank with built-in safety hydraulic components available in option)	Easy and fast installation (plug & play), significant pumping energy cost savings (up to two-thirds), tighter water flow control, improved sytem reliability	0350-0600	NO
High Energy Efficiency	119	Additional condenser coil to improve unit energy efficiency	Enhances the unit energy efficiency performance	0350-1100	NO
High Energy Efficiency+	119+	Additional condenser coil plus EC fans to improve unit energy efficiency	Enhances the unit energy efficiency performance	0350-1100	NO
Lon gateway	148D	Bi-directional communication board complying with Lon Talk protocol	Connects the unit by communication bus to a building management system	0350-1300	0500-1250
Bacnet over IP	149	Bi-directional high-speed communication using BACnet protocol over Ethernet network (IP)	Easy and high-speed connection by ethernet line to a building management system. Allows access to multiple unit parameters	0350-1300	0500-1250
Modbus over IP and RS485	149B	Bi-directional high-speed communication using Modbus protocol over Ethernet network (IP)	Easy and high-speed connection by ethernet line to a building management system. Allows access to multiple unit parameters	0350-1300	0500-1250
Energy Management Module	156	EMM Control board with additional inputs/outputs. See Energy Management Module option chapter	Extended remote control capabilities (Set-point reset, ice storage end, demand limits, boiler on/off command...)	0350-1300	0500-1250
Input contact for Refrigerant leak detection	159	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	0350-1300	0500-1250
Dual relief valves on 3-way valve	194	Three-way valve upstream of dual relief valves on the shell and tubes evaporator	Valve replacement and inspection facilitated without refrigerant loss. Comforms to European standard EN378/BGVD4	0350-1300	0500-1250
Compliance with Swiss regulations	197	Additional tests on the water heat exchangers: supply (additional of PED documents) supplementary certificates and test certifications	Conformance with Swiss regulations	0350-1300	0500-1250
Compliance with Russian regulations	199	EAC certification	Conformance with Russian regulations	0350-1300	0500-1250
Compliance with Australian regulations	200	Unit approved to Australian code	Conformance with Australian regulations	0350-1300	0500-1250
Insulation of the evap. in/out ref.lines	256	Thermal insulation of the evaporator entering/leaving refrigerant lines with flexible, UV resistant insulation	Prevents condensation on the evaporator entering/leaving refrigerant lines	0350-1300	0500-1250
Enviro-Shield anti-corrosion protection	262	Coating by conversion process which modifies the surface of the aluminum producing a coating that is integral to the coil. Complete immersion in a bath to ensure 100% coverage. Minimal heat transfer variation, tested 4000 hours salt spray per ASTM B117	Improved corrosion resistance, recommended for use in moderately corrosive environments	0350-1300	0500-1250
Super Enviro-Shield anti-corrosion protection	263	Extremely durable and flexible epoxy polymer coating applied on micro channel heat exchangers 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	Improved corrosion resistance, recommended for use in extremely corrosive environments	0350-1300	0500-1250

OPTIONS

Option	No.	Description	Advantage	Use 30KAV-ZE	Use 30KAVIZE
Welded evaporator connection (kit)	266	Victaulic piping connections with welded joints	Easy installation	0350-1300	0500-1250
Welded heat recovery condenser connection (kit)	267	Victaulic piping connection with welded joints	Easy installation	0350-1300	0500-1250
Evaporator with aluminum jacket	281	Evaporator covered with an aluminum sheet for thermal insulation protection	Improved resistance to aggressive climate conditions	0350-1300	0500-1250
EMC class. C2, as per EN 61800-3	282	Additional RFI filters on the unit power line	Reduces electromagnetic interferences for compliance with emission level category C2 in order to allow the units to operate in the first environment (so called, residential environment)	0350-1300	0500-1250
230 V electrical plug	284	230 VAC power supply source provided with plug socket and transformer (180 VA, 0,8 Amps)	Permits connection of a laptop or an electrical device during unit commissioning or servicing	0350-1300	0500-1250
Expansion tank	293	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	0350-0600	NO
Electric energy meter	294	Electricity meter . Display of energy consumption, instantaneous (U, V, I) and cumulated (kWh) on the unit user interface datas available on communication bus	Permits the acquisition, (remote) monitoring of energy used.	0350-1300	0500-1250
Fast Capacity Recovery	295	New software algorithms to allow quick restart and fast loading while preserving unit-reliability	Full capacity recovery in approximately 6 minutes after power failure. Matches requirements of typical critical missions applications	0350-1300	0500-1250
Ultra Fast Capacity Recovery	295+	Electrical capacity module to enable quick restart and fast loading preserving unit reliability	Ultra Fast full capacity recovery after power failure. Matches requirements of typical critical missions applications. (process, data centers)	0350-1300	0500-1250
Mexico screw compressor	297	Screw compressor made in Mexico	Mexico screw compressor	0350-1300	0500-1250
Connected Services	298A	Transmit the machine's operating data in real time via a 4G LTEM network.	Monitor and control machine status remotely.	0350-1300	0500-1250
Variable Water Flow control	299	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	0350-1300	0500-1250
Free-cooling dry cooler control	313	Control & connections to a Free Cooling Dry cooler 09PE or 09VE fitted with option FC control box	Easy system managment, Extended control capabilities to a dry cooler used in Free Cooling mode	0350-1300	0500-1250
Compliance with UAE regulation	318	Additional label on the unit with rated power input, rated current and EER following AHRI 550/590 (I-P)	Compliance with ESMA standard UAE.S 5010-5:2019.	0350-1300	0500-1250
Compliance with Qatar regulation	319	Specific nameplate on the unit with power supply 415 V+/-6%	Compliance with KAHRAMAA regulation in Qatar.	0350-1300	0500-1250
Hydraulic connection kit	325	Water piping on condenser and evaporator side	Easy installation	0350-1300	0800-1250
Compliance with Morocco regulation	327	Specifics documents according Morroco regulation	Conformance with Morocco regulations	0350-1300	0500-1250
Compressor with permanent magnet	329	Screw compressor equipped with permanent magnet motor	Permanent magnet motor improves significantly compressor efficiency	0350-0800	0500-0800
Delivery with plastic tarp	331	Plastic sheeting covering the units, with strapping securing it on the wooden pallet.	Allow unit to avoid dust and dirt from the outside environment during stocking and shipping	0350-1300	0500-1250
400-3-60Hz power supply	335	400V - 3PH - 60Hz power supply	Permits unit connection to 400-3-60Hz power supply	0350-1300	0500-1250

HYDRAULIC MODULE

Typical water circuit diagram



Legend
Components of the unit and hydraulic module

1. Screen filter (particle size of 1.2 mm)
2. Water drain tap
3. Relief valve
4. Pressure sensor

   Note: Provides pressure information for the pump inlet (see Control manual)
5. Variable-speed dual pump (low or high pressure)
6. Water exchanger flow rate sensor
7. Temperature probe

   Note: Provides temperature information for the water exchanger inlet (see Control manual)
8. Heat exchanger
9. Water purge (evaporator)
10. Air bleed (evaporator)
11. Temperature probe

    Note: Provides temperature information for the water exchanger outlet (see Control manual)
12. Pressure sensor

    Note: Provides pressure information for the water exchanger outlet (see Control manual)
- o 13. Expansion tank (Option 293)
- o 14. Electric resistance heater for heat exchanger frost protection (option 41A & 41B)
- o 15. Electric resistance heater for hydraulic module frost protection(option 41B)

System components

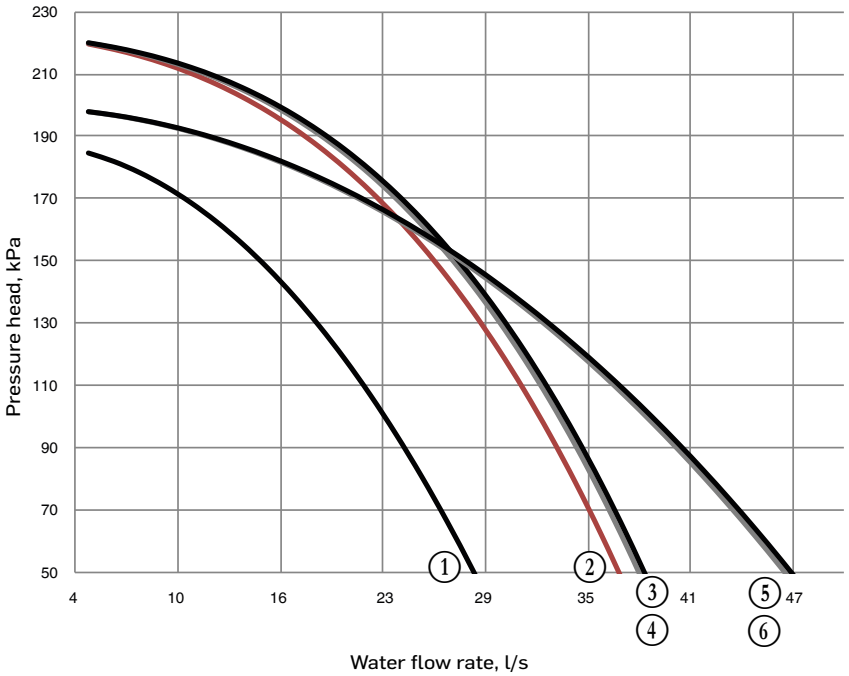
16. Pressure gauge
17. Bypass valve for frost protection (if shut-down valves (item 19) are closed in winter)
18. Water flow control valve
19. Shut-off valve
20. Sleeve
21. Flexible connection
22. Charge valve
23. Air bleed

..... Included with the unit
- - - - - hydraulic Module (unit with hydraulic module option (116A & 116W))

Notes:
- **The system must be protected against frost.**
- **The unit's hydraulic module and the water heat exchanger may be protected against freezing using electric heaters and heat trace cables (factory-fitted options 41A & 41B)**
- **The pressure sensors are assembled on connections without Schrader. Depressurise and drain the system before any work.**

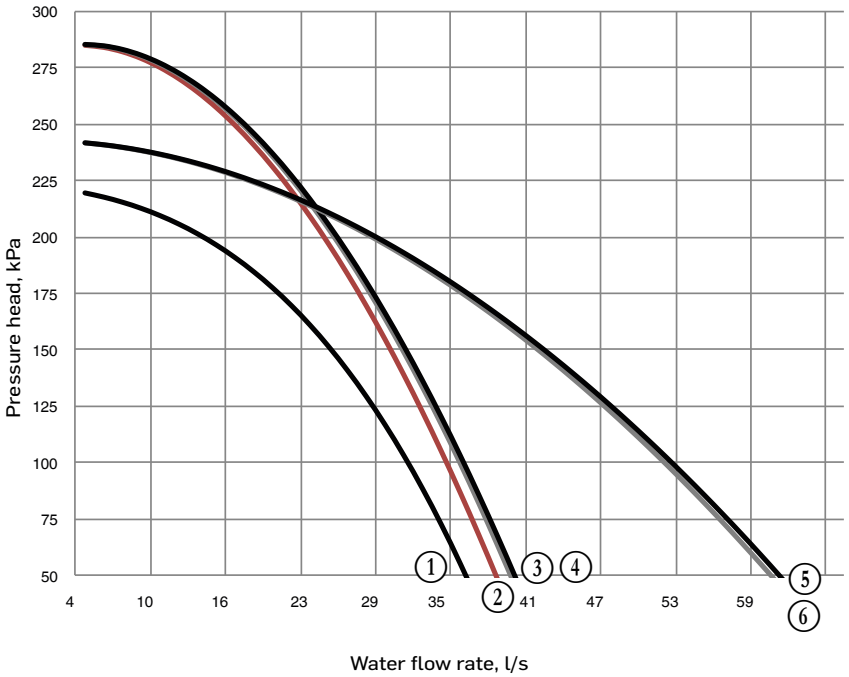
AVAILABLE STATIC PRESSURE (OPTIONS 116A, 116W)

Low-pressure variable-speed dual pump
(Hydraulic module option 116A)



1. 30KAV-ZE 350A
2. 30KAV-ZE 400A
3. 30KAV-ZE 450A
4. 30KAV-ZE 500A
5. 30KAV-ZE 550A
6. 30KAV-ZE 600A

High-pressure variable-speed dual pump
(Hydraulic module option 116W)



1. 30KAV-ZE 350A
2. 30KAV-ZE 400A
3. 30KAV-ZE 450A
4. 30KAV-ZE 500A
5. 30KAV-ZE 550A
6. 30KAV-ZE 600A

LOW TEMPERATURE BRINE SOLUTION (OPTION 6)

This option allows to reach very low brine temperatures according to values below and to maintain delta temperaure in case of variable flow.

Variable water allows to adapt chilled water production to the real need and helps to save energy.

Lowest acceptable water flow must be validated with selection software.

MEG35% : -12 °C (@ delta T 4 K)

MPG35% : -10 °C (@ delta T 3 K)

MPG35% : -8 °C (@ delta T 4 K)

MEG (Mono-Ethylene glycol)
MPG (Mono-Propylene glycol)

PARTIAL HEAT RECOVERY USING DESUPERHEATERS (OPTION 49)

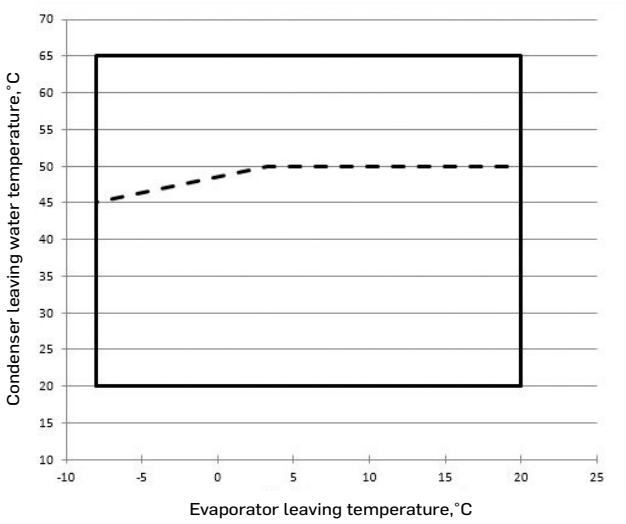
This option enables free hot water to be produced using heat recovery by desuperheating the compressor discharge gases. The option is available for the whole 30KAV-ZE range.

Each refrigerant circuit is equipped with a plate heat exchanger in serie with the air-cooled condenser on the discharge line.

Operating limits

Desuperheater		Minimum	Maximum
Leaving water temperature during operation	°C	20	65
Air condenser		**Minimum**	**Maximum**
Outside operating temperature	°C	0(1)	46

(1) The maximum outside temperature is 0°C. With the winter operation option it is -20 °C.



TOTAL HEAT RECLAIM (OPTION 50)

Suitable for heating, domestic hot water production, agriculture and food industry, industrial processes and other hot-water requirements.

With the total heat reclaim option it is possible to reduce the energy consumption bill considerably, when compared to conventional heating equipment such as fossil fuel boilers or electric water tanks.

Operating principle

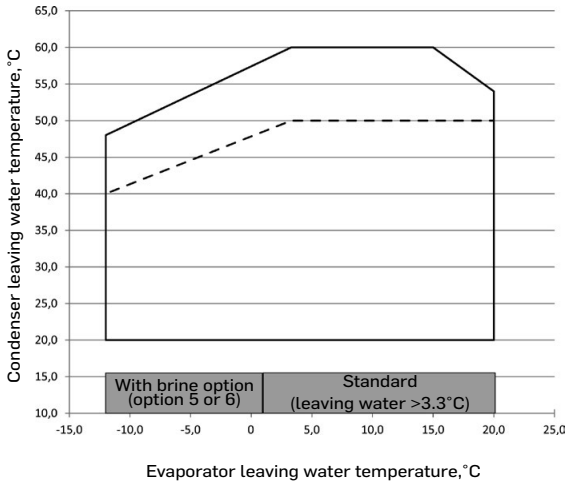
If hot water production is required, the compressor discharge gases are directed towards the heat reclaim condenser. The refrigerant releases its heat to the hot water that leaves the condenser at a temperature of up to 60 °C. In this way 100% of the heat rejected by the liquid chiller can be used to produce hot water. Hot water temperature control is ensured by the chiller SmartVu™ control that independently controls the reclaim operation of each refrigerant circuit.

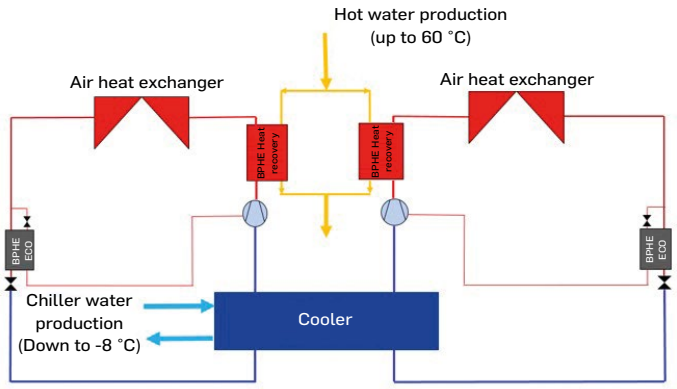
Note: Heat reclaim is only possible, possible if the unit is producing cooling at the same time.

Condenser water temperature (°C)	Minimum	Maximum
Entering temperature during operation	18	57
Leaving temperature during operation	20	60

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

In part-load operation, the limitation of the condenser leaving water temperature is due to the operating range of the screw compressor.





ULTRA FAST CAPACITY RECOVERY (OPTION 295+)

Full load recovery time after 400 V supply loss

30KAV-ZE		350A	400A	450A	500A	550A	600A	650A	750A	800A
Full load recovery time after 400 V supply loss	s	90								

30KAV-ZE		900A	1000A	1100A	1200A	1300A
Full load recovery time after 400 V supply loss	s	150				

30KAVIZE		500	800	1100	1250
Full load recovery time after 400 V supply loss	s	90		150	

PHYSICAL DATA

Standard units - Units 350 - 800 kW

30KAV-ZE			350A	400A	450A	500A	550A	600A	650A	750A	800A
Cooling											
Standard unit Full load performances* CA1	Nominal capacity	kW	372	404	458	483	533	606	673	749	822
	EER	kW/kW	3,10	3,02	3,13	3,09	3,15	3,15	3,18	3,17	3,20
Standard unit Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**4,97**	**4,94**	**5,16**	**5,14**	**5,29**	**5,19**	**5,18**	**5,15**	**5,29**
	ηs cool $_{12/7°C}$	**%**	**196**	**195**	**203**	**203**	**209**	**205**	**204**	**203**	**209**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,50**	**6,37**	**6,56**	**6,53**	**6,71**	**6,53**	**6,64**	**6,51**	**6,60**
Unit + option 17 Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,13**	**5,09**	**5,32**	**5,30**	**5,45**	**5,36**	**5,35**	**5,32**	**5,46**
	ηs cool $_{12/7°C}$	**%**	**202**	**201**	**210**	**209**	**215**	**211**	**211**	**210**	**215**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,68**	**6,54**	**6,77**	**6,73**	**6,92**	**6,73**	**6,83**	**6,69**	**6,79**
Unit + option 329 Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,23**	**5,19**	**5,38**	**5,35**	**5,49**	**5,43**	**5,40**	**5,38**	**5,51**
	ηs cool $_{12/7°C}$	**%**	**206**	**204**	**212**	**211**	**217**	**214**	**213**	**212**	**217**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,71**	**6,55**	**6,72**	**6,67**	**6,84**	**6,70**	**6,78**	**6,68**	**6,76**
Unit + option 17 + option 329 Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,40**	**5,35**	**5,56**	**5,53**	**5,66**	**5,62**	**5,58**	**5,57**	**5,70**
	ηs cool $_{12/7°C}$	**%**	**213**	**211**	**219**	**218**	**223**	**222**	**220**	**220**	**225**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,91**	**6,74**	**6,93**	**6,88**	**7,06**	**6,90**	**6,99**	**6,87**	**6,95**
Sound levels											
Standard unit											
Sound power(1)		dB(A)	95	95	96	98	99	98	99	98	100
Sound pressure at 10 m(2)		dB(A)	63	63	64	65	66	65	67	65	67
Sound pressure at 1 m (2)		dB(A)	75	75	76	78	78	77	78	77	78
Dimensions											
Standard unit											
Length		mm	4387	4387	5578	5578	6772	6772	7962	7962	9155
Width		mm	2261	2261	2261	2261	2261	2261	2261	2261	2261
Height		mm	2324	2324	2324	2324	2324	2324	2324	2324	2324
Operating weight(4)											
Standard unit		kg	4782	4796	5170	5184	5647	6088	6529	6993	7402
Compressors											
Standard unit			06Z twin screw variable speed with AC induction motor and variable frequency drive								
Unit + option 329(3)(6)			06Z twin screw variable speed with AC permanent magnet motor and variable frequency drive								
Circuit A		Quantity	1	1	1	1	1	1	1	1	1
Circuit B		Quantity	1	1	1	1	1	1	1	1	1
Unit minimum part load(5)		%	13	13	13	13	13	13	13	12	12

* In accordance with standard EN14511-3:2022.

** In accordance with standard EN14825:2022

CA1 Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C / 7 °C, outside air temperature 35 °C, evaporator fooling factor 0 m².K/W

ηs cool $_{12/7°C}$ & SEER $_{12/7°C}$ **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**

SEPR $_{12/7°C}$ **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Process application High Temperature**

(1) In dB ref=10^{-12} 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).

(3) Options: 17=Fans motors EC type ; 329=Compressors motors PM type

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

(5) For standard conditions. Depending on operating conditions, unit might have a different minimum part load or cycle.

(6) Option 329 is not available on units 0900 to 1300.

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Eurovent certified values

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PHYSICAL DATA

Standard units - Units 350 - 800 kW

30KAV-ZE		350A	400A	450A	500A	550A	600A	650A	750A	800A
Unit PED Category		III	III	III	III	III	IV	IV	IV	IV
Refrigerant(4)		R-1234ze(E) A2L (GWP = 1,37 following AR6, ODP=0)								
Circuit A	kg	49	47	53	56	64	77	86	81	87
	$teqCO_2$	0,07	0,06	0,07	0,08	0,09	0,11	0,12	0,11	0,12
Circuit B	kg	50	48	54	57	65	58	68	82	88
	$teqCO_2$	0,07	0,07	0,07	0,08	0,09	0,08	0,09	0,11	0,12
Oil		Oil for R-1234ze(E) Contact Carrier ERCD for supplying.								
Circuit A	l	27	26	25	23	20	23	20	23	20
Circuit B	l	27	26	25	23	20	23	20	23	20
Unit control		SmartVu™ with 7 inch coloured touch screen interface								
Languages		10 languages (DE, EN, ES, FR, IT, NL, PT, TR, TU + one on customer choice)								
Smart energy metering		Standard feature								
Wireless connectivity		Option								
Expansion valve		Electronic expansion valve								
Air heat exchanger		Novation™ Micro Channel Heat Exchanger								
Fans										
Standard unit		Flying Bird™ VI impeller variable speed with AC motor and variable frequency drive								
Unit + option 17(3)		Flying Bird™ VI impeller variable speed with EC motor								
Quantity		6	6	8	8	10	10	12	12	14
Maximum total air flow	l/s	35580	35580	47440	47440	59300	59300	71160	71160	83020
Maximum rotation speed	r/s	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0
Water heat exchanger		Flooded shell and tube heat exchanger								
Water volume	l	83	88	96	100	115	126	144	165	183
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
Water connections		Victaulic® type								
Standard unit										
Connections	inches	5	5	6	6	6	6	8	8	8
Outside tube diameter	mm	141,3	141,3	168,3	168,3	168,3	168,3	219,1	219,1	219,1
Casing paint		Colour code RAL 7035								

(3) Options: 17=Fans motors EC type
(4) Values are guidelines only. Refer to the unit name plate.

PHYSICAL DATA

Standard units - Units 900 - 1300 kW

30KAV-ZE			900A	1000A	1100A	1200A	1300A
Cooling							
Standard unit Full load performances* CA1	Nominal capacity	kW	935	1030	1140	1250	1344
	EER	kW/kW	3,07	3,14	3,24	3,20	2,93
Standard unit Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,35**	**5,47**	**5,52**	**5,55**	**5,43**
	ηs cool $_{12/7°C}$	**%**	**211**	**216**	**218**	**219**	**214**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,20**	**6,27**	**6,37**	**6,26**	**6,09**
Unit + option 17 Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,49**	**5,62**	**5,67**	**5,70**	**5,57**
	ηs cool $_{12/7°C}$	**%**	**217**	**222**	**224**	**225**	**220**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,35**	**6,43**	**6,52**	**6,40**	**6,23**
Unit + option 329 Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,68**	**5,79**	**5,82**	**5,83**	**5,68**
	ηs cool $_{12/7°C}$	**%**	**224**	**229**	**230**	**230**	**224**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,45**	**6,51**	**6,58**	**6,44**	**6,25**
Unit + option 17 + option 329 Seasonal energy efficiency **	**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,85**	**5,96**	**5,99**	**5,99**	**5,84**
	ηs cool $_{12/7°C}$	**%**	**231**	**235**	**236**	**237**	**231**
	SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**6,62**	**6,67**	**6,74**	**6,59**	**6,38**
Sound levels							
Standard unit							
Sound power(1)		dB(A)	100	102	100	103	104
Sound pressure at 10 m(2)		dB(A)	67	69	67	69	71
Sound pressure at 1 m (2)		dB(A)	78	80	78	80	81
Dimensions							
Standard unit							
Length		mm	9157	10347	11541	12731	12731
Width		mm	2261	2261	2261	2261	2261
Height		mm	2324	2324	2324	2324	2324
Operating weight(4)							
Standard unit		kg	8760	9241	9880	10267	10318
Compressors							
Standard unit			06Z twin screw variable speed with AC induction motor and variable frequency drive				
Unit + option 329(3)(6)			06Z twin screw variable speed with AC permanent magnet motor and variable frequency drive				
Circuit A		Quantity	1	1	1	1	1
Circuit B		Quantity	1	1	1	1	1
Unit minimum part load(5)		%	15	14	13	12	10

* In accordance with standard EN14511-3:2022.

** In accordance with standard EN14825:2022

CA1 Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C / 7 °C, outside air temperature 35 °C, evaporator fooling factor 0 m².K/W

ηs cool $_{12/7°C}$ & SEER $_{12/7°C}$ **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**

SEPR $_{12/7°C}$ **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Process application High Temperature**

(1) In dB ref=10^{-12} 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).

(3) Options: 17=Fans motors EC type ; 329=Compressors motors PM type

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

(5) For standard conditions. Depending on operating conditions, unit might have a different minimum part load or cycle.

(6) Option 329 is not available on units 0900 to 1300.

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PHYSICAL DATA

Standard units - Units 900 - 1300 kW

30KAV-ZE		900A	1000A	1100A	1200A	1300A
Unit PED Category		IV	IV	IV	IV	IV
Refrigerant(4)		R-1234ze(E) A2L (GWP = 1,37 following AR6, ODP=0)				
Circuit A	kg	109	111	119	125	129
	$teqCO_2$	0,15	0,15	0,16	0,17	0,18
Circuit B	kg	108	110	117	123	127
	$teqCO_2$	0,15	0,15	0,16	0,17	0,17
Oil		Oil for R-1234ze(E) Contact Carrier ERCD for supplying.				
Circuit A	l	30	30	30	30	30
Circuit B	l	30	30	30	30	30
Unit control		SmartVu™ with 7 inch coloured touch screen interface				
Languages		10 languages (DE, EN, ES, FR, IT, NL, PT, TR, TU + one on customer choice)				
Smart energy metering		Standard feature				
Wireless connectivity		Option				
Expansion valve		Electronic expansion valve				
Air heat exchanger		Novation™ Micro Channel Heat Exchanger				
Fans						
Standard unit		Flying Bird™ VI impeller variable speed with AC motor and variable frequency drive				
Unit + option 17(3)		Flying Bird™ VI impeller variable speed with EC motor				
Quantity		14	16	18	20	20
Maximum total air flow	l/s	83020	94880	106740	118600	118600
Maximum rotation speed	r/s	16,0	16,0	16,0	16,0	16,0
Water heat exchanger		Flooded shell and tube heat exchanger				
Water volume	l	178	224	243	261	270
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000
Water connections		Victaulic® type				
Standard unit						
Connections	inches	8	8	8	8	8
Outside tube diameter	mm	219,1	219,1	219,1	219,1	219,1
Casing paint		Colour code RAL 7035				

(3) Options: 17=Fans motors EC type
(4) Values are guidelines only. Refer to the unit name plate.

PHYSICAL DATA

Standard units - option 15&15LS

Units 350 - 1300 kW

30KAV-ZE		0350A	0400A	0450A	0500A	0550A	0600A	0650A	0750A
Sound levels									
Unit + option 15									
Sound power(1)	dB(A)	94	94	94	96	97	96	97	97
Sound pressure at 10 m(2)	dB(A)	62	62	61	64	64	63	65	64
Sound pressure at 1m (2)	dB(A)	74	74	74	76	76	75	76	76
Unit + option 15LS									
Sound power(1)	dB(A)	90	90	90	92	94	92	94	93
Sound pressure at 10 m(2)	dB(A)	57	58	58	59	61	60	62	60
Sound pressure at 1m (2)	dB(A)	70	70	70	72	73	71	73	72
Fans									
Quantity		6	6	8	8	10	10	12	12
Maximum total air flow + option 15LS	l/s	28920	26100	41600	43200	56000	50000	67200	57840
Maximum rotation speed + option 15LS	r/s	13,2	12,0	14,2	14,7	15,2	13,7	15,2	13,2

30KAV-ZE		0800A	0900A	1000A	1100A	1200A	1300A
Sound levels							
Unit + option 15							
Sound power(1)	dB(A)	98	98	100	98	100	99
Sound pressure at 10 m(2)	dB(A)	65	65	67	65	67	66
Sound pressure at 1m (2)	dB(A)	76	76	78	75	77	76
Unit + option 15LS							
Sound power(1)	dB(A)	94	96	96	97	98	98
Sound pressure at 10 m(2)	dB(A)	61	63	74	64	65	65
Sound pressure at 1m (2)	dB(A)	72	74	74	75	75	75
Fans							
Quantity		14	14	16	18	20	20
Maximum total air flow + option 15LS	l/s	72800	74200	84800	95400	106000	106000
Maximum rotation speed + option 15LS	r/s	14,2	14,4	14,4	14,4	14,4	14,4

(1) In dB ref=10^{-12} 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).

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PHYSICAL DATA

30KAV-ZE option 119

30KAV-ZE option 119				350A	400A	450A	500A	550A	600A	650A	750A	800A	900A	1000A	1100A
Cooling															
Unit + option 119 + 17 Full load performances**	CA1	Nominal capacity	kW	380	421	464	491	541	625	683	767	836	952	1046	1149
		EER	kW/kW	3,41	3,38	3,31	3,23	3,22	3,34	3,26	3,33	3,29	3,29	3,33	3,33
Unit + option 119 Seasonal energy efficiency **		**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,13**	**5,16**	**5,27**	**5,28**	**5,34**	**5,24**	**5,19**	**5,17**	**5,30**	**5,60**	**5,70**	**5,64**
		ηs cool $_{12/7°C}$	**%**	**202**	**203**	**208**	**208**	**210**	**206**	**205**	**204**	**209**	**221**	**225**	**222**
		SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**7,26**	**7,09**	**6,96**	**6,88**	**6,97**	**6,94**	**6,84**	**6,88**	**6,76**	**6,54**	**6,58**	**6,47**
Unit + option 119 + 17 Seasonal energy efficiency **		**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,30**	**5,33**	**5,44**	**5,45**	**5,50**	**5,41**	**5,36**	**5,34**	**5,47**	**5,76**	**5,87**	**5,79**
		ηs cool $_{12/7°C}$	**%**	**209**	**210**	**215**	**215**	**217**	**213**	**211**	**211**	**216**	**228**	**232**	**229**
		SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**7,45**	**7,28**	**7,16**	**7,09**	**7,17**	**7,13**	**7,04**	**7,07**	**6,95**	**6,70**	**6,74**	**6,62**

30KAV-ZE option 119 (7)		350A	400A	450A	500A	550A	600A	650A	750A	800A	900A	1000A	1100A
Sound levels													
Unit													
Sound power(1)	dB(A)	96	96	97	98	99	98	100	98	100	100	102	100
Sound pressure at 10 m(2)	dB(A)	63	63	64	66	66	65	67	65	67	67	69	67
Sound pressure at 1 m (2)	dB(A)	76	76	76	78	78	77	78	77	78	78	79	77
Dimensions													
Unit													
Length	mm	6772	6772	6772	6772	7962	9155	9120	10346	10346	11541	12731	12731
Width	mm	2261	2261	2261	2261	2261	2261	2261	2261	2261	2261	2261	2261
Height	mm	2324	2324	2324	2324	2324	2324	2324	2324	2324	2324	2324	2324
Operating weight(4)													
Unit	kg	5490	5503	5523	5530	5972	6780	6906	7679	7726	9473	9942	10193
Compressors													
30KAV-ZE option 119 (7)		06Z twin screw variable speed with AC induction motor and variable frequency drive											
30KAV-ZE option 119 (7) + option 329 (6)		06Z twin screw variable speed with AC permanent magnet motor and variable frequency drive											
Circuit A	Quantity	1	1	1	1	1	1	1	1	1	1	1	1
Circuit B	Quantity	1	1	1	1	1	1	1	1	1	1	1	1
Unit minimum part load(5)	%	13	13	13	13	13	13	13	12	12	15	14	13

*	In accordance with standard EN14511-3:2022.
**	In accordance with standard EN14825:2022
CA1	Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C / 7 °C, outside air temperature 35 °C, evaporator fooling factor 0 m².K/W
ηs cool $_{12/7°C}$ & SEER $_{12/7°C}$	**Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**
SEPR $_{12/7°C}$	**Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Process application High Temperature**
(1)	In dB ref=10^{-12} 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).
(4)	Values are guidelines only. Refer to the unit name plate.
(5)	For standard conditions. Depending on operating conditions, unit might have a different minimum part load or cycle.
(6)	Option 329 is not available on units 0900 to 1300.
(7)	Option 119 is not available with units 1200 to 1300.

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PHYSICAL DATA

30KAV-ZE option 119

30KAV-ZE option 119 (7)		350A	400A	450A	500A	550A	600A	650A	750A	800A	900A	1000A	1100A
Unit PED Category		III	III	III	III	III	IV	IV	IV	IV	IV	IV	IV
Refrigerant(4)		R-1234ze(E) A2L (GWP = 1,37 following AR6, ODP=0)											
Circuit A	kg	65	62	63	61	68	88	92	92	93	121	123	125
	teqCO_2	0,09	0,08	0,09	0,08	0,09	0,12	0,13	0,13	0,13	0,17	0,17	0,17
Circuit B	kg	66	63	63	62	69	69	74	93	94	120	122	123
	teqCO_2	0,09	0,09	0,09	0,08	0,09	0,09	0,10	0,13	0,13	0,16	0,17	0,17
Oil		Oil for R-1234ze(E). Contact Carrier ERCD for supplying.											
Circuit A	l	27	26	25	23	20	23	20	23	20	30	30	30
Circuit B	l	27	26	25	23	20	23	20	23	20	30	30	30
Unit control		SmartVu™ with 7 inch colored touch screen interface											
Languages		10 languages (DE, EN, ES, FR, IT, NL, PT, TR, TU + one on customer choice)											
Smart energy metering		Standard feature											
Wireless connectivity		Option											
Expansion valve		Electronic expansion valve											
Air heat exchanger		Novation™ Micro Channel Heat Exchanger											
Fans													
30KAV-ZE option 119 (7)		Flying Bird™ VI impeller variable speed with AC motor and variable frequency drive											
30KAV-ZE option 119(7) + option 17		Flying Bird™ VI impeller variable speed with EC motor											
Quantity		10	10	10	10	12	14	14	16	16	18	20	20
Maximum total air flow	l/s	59300	59300	59300	59300	71160	83020	83020	94880	94880	106740	118600	118600
Maximum rotation speed	tr/s	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16	16	16
Water heat exchanger		Flooded shell and tube heat exchanger											
Water volume	l	83	88	96	100	115	126	144	165	183	178	224	243
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Water connections		Victaulic® type											
Standard unit													
Connections	inches	5	5	6	6	6	6	8	8	8	8	8	8
Outside tube diameter	mm	141,3	141,3	168,3	168,3	168,3	168,3	219,1	219,1	219,1	219,1	219,1	219,1
Casing paint		Colour code RAL 7035											

(4) Values are guidelines only. Refer to the unit name plate.
(7) Option 119 is not available with units 1200 to 1300.

PHYSICAL DATA

30KAV-ZE option 119 - option 15&15LS

30KAV-ZE option 119		0350A	0400A	0450A	0500A	0550A	0600A	0650A
Sound levels								
Unit + option 15								
Sound power(1)	dB(A)	95	95	94	96	97	96	98
Sound pressure at 10 m(2)	dB(A)	62	62	62	64	64	64	65
Sound pressure at 1m (2)	dB(A)	74	74	74	76	76	76	76
Unit + option 15LS								
Sound power(1)	dB(A)	90	91	91	92	94	92	94
Sound pressure at 10 m(2)	dB(A)	57	58	58	59	61	60	61
Sound pressure at 1m (2)	dB(A)	69	70	70	72	73	71	72
Fans								
Quantity		10	10	10	10	12	14	14
Maximum total air flow + option 15LS	l/s	44700	43500	52000	52000	64800	67480	75600
Maximum rotation speed + option 15LS	r/s	12,3	12,0	14,2	14,2	14,7	13,2	14,7

30KAV-ZE option 119		0750A	0800A	0900A	1000A	1100A
Sound levels						
Unit + option 15						
Sound power(1)	dB(A)	98	98	98	100	98
Sound pressure at 10 m(2)	dB(A)	65	65	65	67	65
Sound pressure at 1m (2)	dB(A)	76	76	76	77	75
Unit + option 15LS						
Sound power(1)	dB(A)	93	94	96	97	97
Sound pressure at 10 m(2)	dB(A)	60	61	63	63	64
Sound pressure at 1m (2)	dB(A)	71	72	74	74	74
Fans						
Quantity		16	16	18	20	20
Maximum total air flow + option 15LS	l/s	74080	83200	95220	105800	105800
Maximum rotation speed + option 15LS	r/s	12,7	14,2	14,4	14,4	14,4

(1) In dB ref=10^{-12} 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).

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PHYSICAL DATA

30KAVIZE

30KAVIZE				500	800	1100	1250
Cooling							
Standard unit Full load performances*	CA1	Nominal capacity	kW	532	781	1120	1307
		EER	kW/kW	2,79	2,85	3,02	2,59
	***	Nominal capacity	kW	283	454	682	804
		EER	kW/kW	1,83	1,82	2,05	1,90
Standard unit Seasonal energy efficiency **		**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**4,73**	**5,00**	**5,22**	**5,02**
		ηs cool $_{12/7°C}$	**%**	**186**	**197**	**206**	**198**
		SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**5,62**	**6,03**	**5,95**	**5,55**
		SEPR $_{-2/-8°C}$ Process medium temp.	**kWh/kWh**	**3,55**	**3,61**	**3,74**	**3,57**
Unit + option 17 Seasonal energy efficiency **		**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**4,84**	**5,14**	**5,35**	**5,13**
		ηs cool $_{12/7°C}$	**%**	**191**	**202**	**211**	**202**
		SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**5,75**	**6,20**	**6,08**	**5,66**
		SEPR $_{-2/-8°C}$ Process medium temp.	**kWh/kWh**	**3,61**	**3,68**	**3,82**	**3,64**
Unit + option 329 Seasonal energy efficiency **		**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**4,90**	**5,22**	**-**	**-**
		ηs cool $_{12/7°C}$	**%**	**193**	**206**	**-**	**-**
		SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**5,73**	**6,18**	**-**	
		SEPR $_{-2/-8°C}$ Process medium temp.	**kWh/kWh**	**3,62**	**3,69**	**-**	**-**
Unit + option 17 + option 329 Seasonal energy efficiency **		**SEER $_{12/7°C}$ Comfort low temp.**	**kWh/kWh**	**5,02**	**5,36**	**-**	**-**
		ηs cool $_{12/7°C}$	**%**	**198**	**211**	**-**	**-**
		SEPR $_{12/7°C}$ Process high temp.	**kWh/kWh**	**5,87**	**6,35**	**-**	**-**
		SEPR $_{-2/-8°C}$ Process medium temp.	**kWh/kWh**	**3,69**	**3,77**	**-**	**-**
Sound levels							
Standard unit							
Sound power(1)			dB(A)	102	103	101	105
Sound pressure at 10 m(2)			dB(A)	70	70	68	72
Sound pressure at 1 m (2)			dB(A)	82	82	79	83
Dimensions							
Standard unit							
Length			mm	4350	6735	9157	9157
Width			mm	2261	2261	2261	2261
Height			mm	2324	2324	2324	2324
Operating weight(4)							
Standard unit			kg	4877	6679	9143	9266

* In accordance with standard EN14511-3:2022.

** In accordance with standard EN14825:2022

*** Cooling mode conditions: Evaporator with turbulators (option Brine 6), MEG 30%, entering/leaving temperature -4°C/8°C, outside air temperature 35°C, evaporator fooling factor 0 m².K/W

CA1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, outside air temperature 35°C, evaporator fooling factor 0 m².K/W

ηs cool $_{12/7°C}$ & SEER $_{12/7°C}$ **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**

SEPR $_{12/7°C}$ **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**

(1) In dB ref=10^{-12} 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).

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

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PHYSICAL DATA

30KAVIZE		500	800	1100	1250
Compressors					
Standard unit		06Z twin screw variable speed with AC induction motor and variable frequency drive			
Unit + option 329 (3) (6)		06Z twin screw variable speed with AC permanent magnet motor and variable frequency drive			
Circuit A	Quantity	1	1	1	1
Circuit B	Quantity	1	1	1	1
Unit minimum part load(5)	%	13	12	13	10
Unit PED Category		III	IV	IV	IV
Refrigerant(4)		R-1234ze(E) A2L (GWP = 1,37 following AR6, ODP=0)			
Circuit A	kg	54	77	124	118
	$teqCO_2$	0,07	0,11	0,17	0,16
Circuit B	kg	55	78	125	116
	$teqCO_2$	0,08	0,11	0,17	0,16
Oil		Oil for R-1234ze(E) Contact Carrier ERCD for supplying.			
Circuit A	l	20	20	30	30
Circuit B	l	20	20	30	30
Unit control		SmartVu™ with 7 inch coloured touch screen interface			
Languages		10 languages (DE, EN, ES, FR, IT, NL, PT, TR, TU + one on customer choice)			
Smart energy metering		Standard feature			
Wireless connectivity		Option			
Expansion valve		Electronic expansion valve			
Air heat exchanger		Novation™ Micro Channel Heat Exchanger			
Fans					
Standard unit		Flying Bird™ VI impeller variable speed with AC motor and variable frequency drive			
Unit + option 17 (3)		Flying Bird™ VI impeller variable speed with EC motor			
Quantity		6	10	14	14
Maximum total air flow	l/s	35580	59300	83020	83020
Maximum rotation speed	r/s	16,0	16,0	16,0	16,0
Water heat exchanger		Flooded shell and tube heat exchanger			
Water volume	l	115	183	243	270
Max. water-side operating pressure without hydraulic module	kPa	1000	1000	1000	1000
Water connections		Victaulic® type			
Standard unit					
Connections	inches	6	8	8	8
Outside tube diameter	mm	168,3	219,1	219,1	219,1
Casing paint		Colour code RAL 7035			

(3) Options : 17=Moteurs de ventilateurs de type EC ; 329=Moteurs de compresseurs de type PM.
(4) Valeur données à titre indicatif. Se référer à la plaque signalétique de l'unité.
(5) Pour les conditions standard. Selon les conditions de fonctionnement, l'unité peut avoir une charge partielle ou un cycle minimum différent.
(6) L'option 329 n'est pas disponible sur les unités 0900 à 1300.

PHYSICAL DATA

30KAVIZE - option 15&15LS

30KAVIZE		500	800	1100	1250
Sound levels					
Unit + option 15					
Sound power(1)	dB(A)	98	100	98	101
Sound pressure at 10 m(2)	dB(A)	66	67	65	68
Sound pressure at 1m (2)	dB(A)	78	79	76	79
Unit + option 15LS					
Sound power(1)	dB(A)	94	95	97	99
Sound pressure at 10 m(2)	dB(A)	62	62	64	66
Sound pressure at 1m (2)	dB(A)	74	74	75	77
Fans					
Quantity		6	10	14	14
Maximum total air flow + option 15LS	l/s	31800	53000	74200	74200
Maximum rotation speed + option 15LS	r/s	14,4	14,4	14,4	14,4

(1) In dB ref=10^{-12} 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).

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ELECTRICAL DATA

Electrical data - Standard units

30KAV-ZE		350A	400A	450A	500A	550A	600A	650A	750A	800A	900A	1000A	1100A	1200A	1300A
Power circuit supply															
Nominal voltage	V-ph-Hz	400-3-50													
Voltage range	V	360-440													
Control circuit supply		24 V via internal transformer													
Maximum operating input power(1)															
Standard unit	kW	176	192	214	232	252	288	316	353	380	418	459	499	550	608
Power factor at maximum power(1) (2)		0,91-0,93													
Displacement Power Factor (Cos Phi)		>0,98													
Total harmonic distortion (THDi)(1) (3)	%	35-45%													
Maximum operating current draw (Un)(1)															
Standard unit	A	274	298	333	361	391	447	491	549	591	649	713	775	854	945
Maximum operating current draw (Un-10%) (1)															
Standard unit	A	299	325	363	384	416	484	522	585	629	709	778	825	919	1006
Start-up current (4)															
Standard unit	A	175	186	203	217	232	300	327	320	340	399	430	461	535	544

(1) Values obtained at operation with maximum operating power input (data given on the unit nameplate)
(2) Value decreases when load lowers
(3) May vary according to the installation's short circuit ratio
THDi increases when load lowers. But the highest impact on the installation occurs when the current is maximum. Therefore compliance of the installation regarding voltage harmonic distortion at PCC (per IEC61000-2-4 or other standard) shall be usually checked at max load in order to cover all load conditions
(4) Operating current of the biggest compressor + fan current + starting current of the smallest compressor. Starting current values used for the compressor are : 06ZCE1-H3AA06013 = 40A ; 06ZFC2-3AA06013 = 50A ; 06ZJG3-3AA06013 = 80A.

Electrical data - Units + option 16

30KAV-ZE		350A	400A	450A	500A	550A	600A	650A	750A	800A	900A	1000A	1100A	1200A	1300A
Maximum operating input power(1)															
Unit + option 16	kW	187	204	226	246	268	307	337	377	406	444	487	529	581	640
Maximum operating current draw (Un)(1)															
Unit + option 16	A	291	317	352	382	416	476	524	586	631	689	756	822	902	995
Maximum operating current draw (Un-10%)(1)															
Unit + option 16	A	318	346	385	407	443	515	557	624	672	753	825	874	971	1060

(1) Values obtained at operation with maximum operating power input (data given on the unit nameplate)

ELECTRICAL DATA

Electrical data - Units with combination of options High energy efficiency (119), Permanent magnet motor (329), EC motor (17)

30KAV-ZE + option 119		350A	400A	450A	500A	550A	600A	650A	750A	800A
Power circuit supply										
Nominal voltage	V-ph-Hz	400-3-50								
Voltage range	V	360-440								
Control circuit supply		24 V via internal transformer								
Maximum unit power input(1)										
Unit + option 119	kW	177	197	209	226	245	284	306	347	368
Unit + option 119 + option 17	kW	175	195	206	223	242	281	302	343	363
Unit + option 329	kW	173	189	204	222	247	278	309	342	370
Unit + option 329 + option 119	kW	174	194	199	216	240	274	299	336	358
Power factor at maximum power(1) (2)		0,91-0,93								
Displacement Power Factor (Cos Phi)		>0,98								
Total harmonic distortion (THDi)(1) (3)	%	35-45%								
Maximum operating current draw (Un)(1)										
Unit + option 119	A	276	305	325	351	380	441	476	539	572
Unit + option 119 + option 17	A	273	302	321	347	375	436	470	533	565
Unit + option 329	A	269	294	318	346	384	432	480	532	576
Unit + option 329 + option 119	A	271	301	310	336	373	426	465	522	557
Maximum operating current draw (Un-10%)(1)										
Unit + option 119	A	299	324	353	373	404	476	505	573	608
Unit + option 119 + option 17	A	296	321	349	369	399	471	499	567	601
Unit + option 329	A	294	321	348	369	409	469	511	568	614
Unit + option 329 + option 119	A	294	320	338	358	397	461	494	556	593
Start-up current(4)										
Unit + option 119	A	175	189	199	212	226	296	319	314	330
Unit + option 119 + option 17	A	174	187	197	210	224	294	316	311	326
Unit + option 329	A	160	168	191	205	223	278	316	293	327

(1) Values obtained at operation with maximum operating power input (data given on the unit nameplate)
(2) Value decreases when load lowers
(3) May vary according to the installation's short circuit ratio
THDi increases when load lowers. But the highest impact on the installation occurs when the current is maximum. Therefore compliance of the installation regarding voltage harmonic distortion at PCC (per IEC61000-2-4 or other standard) shall be usually checked at max load in order to cover all load conditions.
(4) Operating current of the biggest compressor + fan current + starting current of the smallest compressor. Starting current values used for the compressor are : 06ZCE1-H3AA06013 = 40A ; 06ZFC2-3AA06013 = 50A ; 06ZJG3-3AA06013 = 80A.

ELECTRICAL DATA

Electrical data - Units with combination of options High energy efficiency (119), Permanent magnet motor (329), EC motor (17)

30KAV-ZE + option 119		900A	1000A	1100A	1200A	1300A
Power circuit supply						
Nominal voltage	V-ph-Hz	400-3-50				
Voltage range	V	360-440				
Control circuit supply		24 V via internal transformer				
Maximum unit power input(1)						
Unit + option 119	kW	408	447	480	-	-
Unit + option 119 + option 17	kW	403	442	475	-	-
Unit + option 329	kW	-	-	-	-	-
Unit + option 329 + option 119	kW	-	-	-	-	-
Power factor at maximum power(1) (2)		0,91-0,93				
Displacement Power Factor (Cos Phi)		>0,98				
Total harmonic distortion (THDi)(1) (3)	%	35-45%				
Maximum operating current draw (Un)(1)						
Unit + option 119	A	634	694	746	-	-
Unit + option 119 + option 17	A	627	687	738	-	-
Unit + option 329	A	-	-	-	-	-
Unit + option 329 + option 119	A	-	-	-	-	-
Maximum operating current draw (Un-10%)(1)						
Unit + option 119	A	691	756	794	-	-
Unit + option 119 + option 17	A	684	749	786	-	-
Unit + option 329	A	-	-	-	-	-
Unit + option 329 + option 119	A	-	-	-	-	-
Start-up current (4)						
Unit + option 119	A	391	420	446	-	-
Unit + option 119 + option 17	A	388	417	442	-	-
Unit + option 329	A	-	-	-	-	-

(1) Values obtained at operation with maximum operating power input (data given on the unit nameplate)
(2) Value decreases when load lowers
(3) May vary according to the installation's short circuit ratio
THDi increases when load lowers. But the highest impact on the installation occurs when the current is maximum. Therefore compliance of the installation regarding voltage harmonic distortion at PCC (per IEC61000-2-4 or other standard) shall be usually checked at max load in order to cover all load conditions.
(4) Operating current of the biggest compressor + fan current + starting current of the smallest compressor. Starting current values used for the compressor are : 06ZCE1-H3AA06013 = 40A ; 06ZFC2-3AA06013 = 50A ; 06ZJG3-3AA06013 = 80A.

ELECTRICAL DATA

Electrical data - Units with combination of options High energy efficiency (119), compressor with PM motor (329), fans with EC motor (17)

30KAV-ZE + option 119		0350A	0400A	0450A	0500A	0550A	0600A	0650A
Maximum operating input power(1)								
Unit + option 119 + option 16	kW	188	209	221	240	261	303	327
Unit + option 119 + option 17 + option 16	kW	186	207	218	237	258	300	323
Unit + option 329 + option 16	kW	184	201	216	236	263	297	330
Unit + option 329 + option 119 + option 16	kW	185	206	211	230	256	293	320
Maximum operating current draw (Un)(1)								
Unit + option 119 + option 16		293	324	344	372	405	470	509
Unit + option 119 + option 17 + option 16	A	290	321	340	368	400	465	503
Unit + option 329 + option 16	A	286	313	337	367	409	461	513
Unit + option 329 + option 119 + option 16	A	288	320	329	357	398	455	498
Maximum operating current draw (Un-10%)(1)								
Unit + option 119 + option 16	A	318	345	375	396	431	507	540
Unit + option 119 + option 17 + option 16	A	313	341	360	381	424	492	529
Unit + option 329 + option 16	A	313	342	370	392	436	500	546
Unit + option 329 + option 119 + option 16	A	313	341	360	381	424	492	529

30KAV-ZE + option 119		0750A	0800A	0900A	1000A	1100A	1200A	1300A
Maximum operating input power(1)								
Unit + option 119 + option 16	kW	371	394	434	475	510	-	-
Unit + option 119 + option 17 + option 16	kW	367	389	429	470	505	-	-
Unit + option 329 + option 16	kW	366	396	-	-	-	-	-
Unit + option 329 + option 119 + option 16	kW	360	384	-	-	-	-	-
Maximum operating current draw (Un)(1)								
Unit + option 119 + option 16		576	612	674	737	793	-	-
Unit + option 119 + option 17 + option 16	A	570	605	667	730	785	-	-
Unit + option 329 + option 16	A	569	616	-	-	-	-	-
Unit + option 329 + option 119 + option 16	A	559	597	-	-	-	-	-
Maximum operating current draw (Un-10%)(1)								
Unit + option 119 + option 16	A	612	651	735	803	843	-	-
Unit + option 119 + option 17 + option 16	A	595	636	721	788	824	-	-
Unit + option 329 + option 16	A	607	657	-	-	-	-	-
Unit + option 329 + option 119 + option 16	A	595	636	-	-	-	-	-

(1) Values obtained at operation with maximum operating power input (data given on the unit nameplate)

ELECTRICAL DATA

Electrical data - 30KAVIZE

30KAVIZE		500	800	1100	1250
Power circuit supply					
Nominal voltage	V-ph-Hz	400-3-50			
Voltage range	V	360-440			
Control circuit supply		24 V via internal transformer			
Maximum operating input power(1)					
Standard unit	kW	261	404	520	626
Power factor at maximum power (1) (2)		0,91-0,93			
Displacement Power Factor (Cos Phi)		>0,98			
Total harmonic distortion (THDi) (1) (3)	%	35-45			
Maximum operating current draw (Un)(1)					
Standard unit	A	405	628	808	973
Maximum operating current draw (Un-10%)(1)					
Standard unit	A	430	668	860	1038
Start-up current (4)					
Standard unit		239	249	477	558

(1) Values obtained at operation with maximum operating power input (data given on the unit nameplate)
(2) Value decreases when load lowers
(3) May vary according to the installation's short circuit ratio
THDi increases when load lowers. But the highest impact on the installation occurs when the current is maximum. Therefore compliance of the installation regarding voltage harmonic distortion at PCC (per IEC61000-2-4 or other standard) shall be usually checked at max load in order to cover all load conditions.
(4) Operating current of the biggest compressor + fan current + starting current of the smallest compressor.Starting current values used for the compressor are : 06ZCE1-H3AA06013 = 40A ; 06ZFC2-3AA06013 = 50A ; 06ZJG3-3AA06013 = 80A.

Compressor electrical data

Compressor	I Max (A) (1) Standard	I Max (A) (1) Option 16	F max (Hz) (2)	Inverter type (3)
06ZCE1H3AA06013	146	156	82	D3h
06ZCE1T3AA06013	184	195	105	D3h
06ZFC2T3AA06013	280	301	95	D3h/D4h
06ZJG3H3AA06013	370	392	77	D4h
06ZJG3T3AA06013	452	478	95	D4h
06ZCEAT3AA06013	169	180	103	D3h
06ZFCBT3AA06013	258	277	93	D3h

(1) Maximum compressor operating current draw over the entire range when powered at rated voltage. May be lower depending on the unit size.
(2) Maximum compressor frequency other the entire range. This frequency can be limited to a lower value depending on the unit size.
(3) Mechanical inverter type : defines inverter weight and dimensions.

ELECTRICAL DATA

Distribution of compressors per circuit

30KAV-ZE	Circuit	350A	400A	450A	500A	550A	600A	650A	750A	800A	900A	1000A	1100A	1200A	1300A
06ZCE1H3AA06013	A	1	1	-	-	-	-	-	-	-	-	-	-	-	-
	B	1	1	-	-	-	-	-	-	-	-	-	-	-	-
06ZCE1T3AA06013	A	-	-	1	1	1	-	-	-	-	-	-	-	-	-
	B	-	-	1	1	1	1	1	-	-	-	-	-	-	-
06ZFC2T3AA06013	A	-	-	-	-	-	1	1	1	1	-	-	-	-	-
	B	-	-	-	-	-	-	-	1	1	-	-	-	-	-
06ZJG3H3AA06013	A	-	-	-	-	-	-	-	-	-	1	1	1	1	-
	B	-	-	-	-	-	-	-	-	-	1	1	1	-	-
06ZJG3T3AA06013	A	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	B	-	-	-	-	-	-	-	-	-	-	-	-	1	1

30KAVIZE	Circuit	500	800	1100	1250
06ZCE1H3AA06013	A	1	-	-	-
	B	1	-	-	-
06ZFC2T3AA06013	A	-	1	-	-
	B	-	1	-	-
06ZJG3H3AA06013	A	-	-	1	-
	B	-	-	1	-
06ZJG3T3AA06013	A	-	-	-	1
	B	-	-	-	1

ELECTRICAL DATA

Electrical notes

- The units have a single power connection point located immediately upstream of the main disconnect switch.
- The two electrical cabinets contain:
  - A power supply disconnecting component : disconnect switch or circuit breaker if option 70D was chosen.
  - All or part of the equipment protecting the circuits inside the machine from short circuits.(1)
  - Variable frequency drives to manage and protect against overload the compressors, fans, and pumps motors,
  - The switching equipment for the heaters and fans for the electrical equipment
  - The control devices.
- Connections to the building installation:
  Electrical installation and all the connections to the network must be carried out in compliance with all standards applicable to the installation location. Generally, the recommendations of the International Electrotechnical Commission document (IEC60364) are accepted as compliance with the requirements of the installation guidelines. 30KAV(P)-ZE and 30KAVIZE units are designed and built to ensure compliance with these guidelines. The European standard EN 60204-1 (corresponds to IEC 60204-1: Machine safety - Electrical equipment of machines - Part 1: General requirements) was specifically taken into account when the electrical equipment was designed.

Notes

- The standard EN 60204-1 enables the requirements of the Machinery Directive to be met.
- Annex B of standard EN 60204-1 is intended to define the electrical characteristics used for the operation of the machines. Those described below apply alongside the other information provided in this document:

1. Environment
   The classification of the environment is specified in standard IEC60364:
   - Outdoor installation (2),
   - Ambient temperature range for the standard machine: from -20°C to +44°C (48°C) (3)
   - Ambient temperature range for the machine with option 16: from -20 °C to +48 °C (55 °C) (3),
   - Altitude: up to 1000 m (2000 m) (4)
   - Presence of solid foreign bodies: Class AE3 (no significant dust present) (2),
   - Presence of water: class AD4 (projection in all directions without pressure) (2)
   - Presence of corrosive and polluting substances, class AF1 (negligible),
   - Competence of personnel: BA4 (trained personnel).
2. Compatibility for low-frequency conducted disturbances according to class 2 levels as per IEC61000-2-4 standard:
   - Power supply frequency variation: +/-1Hz
   - Phase imbalance: 2%
   - Total Voltage Harmonic Distortion (THDV) : 8%
   - Rated impulse voltage Uw (IEC60664-1) :
     Units without option 16: 4kV
     Units with option 16: 2.5kV.
3. The neutral wire (N) must not be connected directly to the unit (if necessary, use a transformer).
4. Overcurrent protection of the power supply conductors is not provided with the unit.
5. The factory-fitted disconnect switch is of a type suitable for power interruption in compliance with EN 60947-3 (equivalent to IEC 60947-3).
6. The units are designed for connection to TN networks (IEC 60364). In IT networks, the use of filters integrated into the variable frequency drive(s) prevents the machines from fulfilling their intended purpose. In addition, the equipment characteristics in case of insulation failure have been modified. Provide a local earth, consult competent local organisations to complete the electrical installation.
7. Electromagnetic environment: the classification of the electromagnetic environment is described in the standard EN61800-3 (equivalent to IEC 61800-3):
   - Immunity to external interference defined by the second environment (5)
   - Interference emissions as defined in category C3 (6)

- The units integrate variable frequency drives which have harmonic currents which are a source of interference. An analysis may be required to verify if this interference exceeds the compatibility limits of the other devices connected to the same power supply network. The compatibility levels inside an electrical installation, that must be met at the in-plant coupling point (IPC) to which other loads are connected, are described in standard IEC 61000-2-4.
- Leakage currents: if protection by monitoring the leakage currents is necessary to ensure the safety of the installation, the presence of DC voltage component as well as additional derived currents introduced by the use of variable frequency drive(s) in the unit must be considered. In particular it is recommended that the differentiel protection devices are:
  - Suitable for protection of DC and AC circuitry
  - Of reinforced immunity protection types and/or set at a threshold value not lower than 150 mA

Note: If particular aspects of an installation require different specifications from those listed above (or which are not listed), always contact your Carrier representative.

(1) With the exception of machines equipped with option 70D, a part of the short circuit protection is not provided and must be carried out on the installation, in compliance with the instructions given in this document.

(2) The required protection level for this class is IP43BW minimum (according to the reference standard IEC 60529). All units are classified as IP44CW, and fulfil this protection condition.

(3) The values in brackets correspond to operation with degraded thermal performances.

(4) Above 1000m, the maximum temperature must be reduced by 0.5K for every additional 100m up to 2000m,

(5) - Example of installations included in the first environment: commercial and residential buildings.
- Example of installations of the second environment: Industrial zones, technical premises powered from a dedicated transformer.

(6) Category C3 is suitable for use in an industrial environment and is not designed for use in a public low-voltage system that supplies residential or commercial locations. As an option, conformity with category C2 permits this type of installation.

Warning: In a residential or commercial environment, this product may cause radio interference in which case additional mitigation measures could be required.

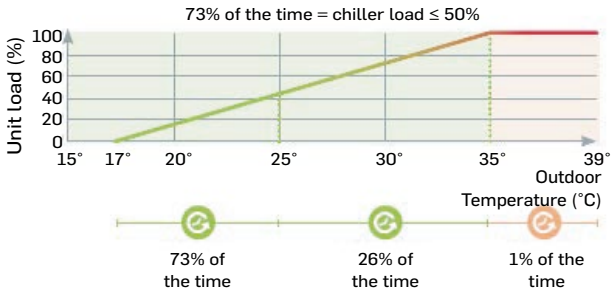
PART LOAD PERFORMANCES

SEER for comfort chillers (in accordance with EU ECODESIGN)

The SEER (Seasonal energy efficiency ratio) permits the evaluation of the average energy efficiency of comfort chillers, based on multiple operating conditions (load variation from 0% to 100%). From 1st January 2021, Tier 2, European member states impose minimum SEER values to meet the requirements of Eco-design directive for ENER Lot 21 comfort cooling chillers. The Ecodesign Directive aims at minimizing the environmental impact of energy-related products under consideration of their full lifecycle.

EU ECODESIGN MEPS(1) for air-cooled chillers		Tier 2 (from 01/01/2021)
SEER for comfort Chillers =< 400 kW	kWh/kWh	4,09
SEER for comfort Chillers > 400 kW	kWh/kWh	4,55

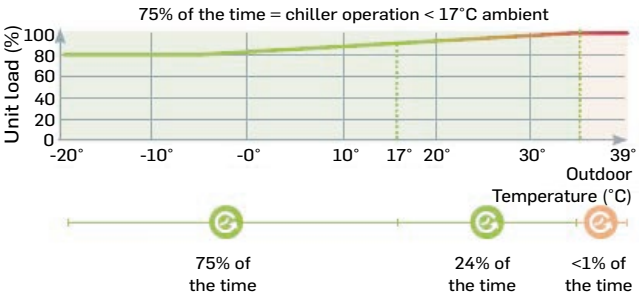
SEER is : the new metric for chillers in comfort cooling applications.



SEPR for process chillers (in accordance with EU ECODESIGN)

The SEPR (Seasonal energy performance ratio) permits the evaluation of the average energy efficiency of process chillers, based on multiple operating conditions (load variation from 80% to 100%). From 1st January 2021, Tier 2, European member states impose minimum SEPR values for process chillers to meet the requirements of Eco-design directive for ENER Lot 21 for high temperature process chillers (2°C to 12°C) and from 1st July 2018, for ENTR Lot 1 for low temperature process chillers (=< -25°C) and medium temperature process chillers (-24°C to -8°C). The Ecodesign Directive aims at minimizing the environmental impact of energy-related products under consideration of their full lifecycle. All process chillers marked with a CE label must meet the determined SEPR (Seasonal Energy Performance Ratio) value stipulated in EU Directive.

SEPR is the new metric for chillers in industrial process cooling applications.



EU ECODESIGN MEPS(1) for air-cooled chillers		Tier 2 (from 01/07/2018)
SEPR for medium temperature chillers =< 300 kW	kWh/kWh	2,58
SEPR for medium temperature chillers > 300 kW	kWh/kWh	3,22

EU ECODESIGN MEPS(1) for air-cooled chillers		Tier 2 (from 01/01/2021)
SEPR for high temperature Process Chillers =< 400 kW	kWh/kWh	5,00
SEPR for high temperature Process Chillers > 400 kW	kWh/kWh	5,50

(1) Minimum Efficiency Performance Standards set by EU member states to comply with EU Ecodesign directive.

SOUND SPECTRUM

Acoustic spectrum and power of the standard unit

30KAV-ZE Standard unit		Octave bands (Hz) (1)							Sound power (2)	
			250	500	1k	2k	4k	8k		
350A	dB	86	87	90	92	85	83	83	dB(A)	95
400A	dB	86	86	92	92	86	80	82	dB(A)	95
450A	dB	88	89	91	94	87	84	79	dB(A)	96
500A	dB	90	90	96	90	92	86	81	dB(A)	98
550A	dB	90	87	95	91	95	83	78	dB(A)	99
600A	dB	90	93	97	91	91	84	80	dB(A)	98
650A	dB	90	95	99	92	93	84	80	dB(A)	99
750A	dB	90	94	98	92	89	81	78	dB(A)	98
800A	dB	90	98	101	92	91	84	82	dB(A)	100
900A	dB	78	90	98	93	90	85	80	dB(A)	100
1000A	dB	77	90	98	96	95	87	81	dB(A)	102
1100A	dB	76	88	98	93	91	88	81	dB(A)	100
1200A	dB	82	92	100	94	94	90	83	dB(A)	103
1300A	dB	85	94	101	94	96	92	85	dB(A)	104

Acoustic spectrum and power of the unit + option 15 (Low noise level)

30KAV-ZE Unit + option 15		Octave bands (Hz) (1)							Sound power (2)	
			250	500	1k	2k	4k	8k		
350A	dB	88	87	89	92	83	79	80	dB(A)	94
400A	dB	87	87	92	90	85	78	81	dB(A)	94
450A	dB	89	88	92	91	83	80	78	dB(A)	94
500A	dB	89	88	97	88	88	81	78	dB(A)	96
550A	dB	93	89	95	90	91	82	77	dB(A)	97
600A	dB	91	89	94	91	87	84	80	dB(A)	96
650A	dB	93	91	94	93	90	87	82	dB(A)	97
750A	dB	93	92	92	94	88	88	83	dB(A)	97
800A	dB	94	93	93	95	89	89	85	dB(A)	98
900A	dB	79	90	95	91	88	82	76	dB(A)	98
1000A	dB	75	88	97	96	93	85	78	dB(A)	101
1100A	dB	77	88	94	92	90	84	77	dB(A)	98
1200A	dB	78	93	96	93	91	87	80	dB(A)	100
1300A	dB	76	94	94	92	90	88	81	dB(A)	99

(1) In dB ref=10^{-12} W, as a guideline. Measured in accordance with ISO 9614-1.
(2) In dB ref=10^{-12} W, weighting (A), with uncertainty +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

SOUND SPECTRUM

Acoustic spectrum and power of the unit + option 15LS (Very low noise level)

30KAV-ZE Unit + option 15LS		Octave bands (Hz) (1)							Sound power (2)	
			250	500	1k	2k	4k	8k		
350A	dB	85	85	85	86	81	78	82	dB(A)	90
400A	dB	79	83	86	88	78	72	81	dB(A)	90
450A	dB	82	87	88	87	80	78	77	dB(A)	90
500A	dB	85	87	90	86	85	79	79	dB(A)	92
550A	dB	93	90	89	90	85	84	79	dB(A)	94
600A	dB	86	89	90	87	84	81	79	dB(A)	92
650A	dB	93	91	90	91	85	83	80	dB(A)	94
750A	dB	88	91	90	89	82	83	80	dB(A)	93
800A	dB	85	91	91	90	83	83	80	dB(A)	94
900A	dB	74	89	93	89	85	82	77	dB(A)	96
1000A	dB	77	88	94	89	85	82	78	dB(A)	96
1100A	dB	75	86	94	90	89	83	78	dB(A)	97
1200A	dB	76	92	94	91	90	87	81	dB(A)	98
1300A	dB	73	94	92	90	90	87	81	dB(A)	98

Acoustic spectrum and power of 30KAV-ZE option 119

30KAV-ZE option 119		Octave bands (Hz) (1)							Sound power (2)	
		125	250	500	1k	2k	4k	8k		
350A	dB	88	88	91	93	86	84	83	dB(A)	96
400A	dB	88	88	93	93	87	80	82	dB(A)	96
450A	dB	89	89	92	94	87	84	79	dB(A)	97
500A	dB	91	90	97	91	92	86	81	dB(A)	98
550A	dB	90	88	95	92	95	83	78	dB(A)	99
600A	dB	91	93	98	92	91	84	80	dB(A)	98
650A	dB	90	95	99	92	93	84	81	dB(A)	100
750A	dB	91	95	99	93	89	82	78	dB(A)	98
800A	dB	91	98	101	93	91	84	82	dB(A)	100
900A	dB	78	91	98	94	91	86	80	dB(A)	100
1000A	dB	77	90	98	96	95	87	81	dB(A)	102
1100A	dB	77	88	98	93	92	88	81	dB(A)	100

(1) In dB ref=10^{-12} W, as a guideline. Measured in accordance with ISO 9614-1.
(2) In dB ref=10^{-12} W, weighting (A), with uncertainty +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

SOUND SPECTRUM

Acoustic spectrum and power of units with option 15 (Low noise level) and option 119 (High energy efficiency)

30KAV-ZE option 119 + option 15		Octave bands (Hz) (1)							Sound power (2)	
		125	250	500	1k	2k	4k	8k		
350A	dB	90	89	90	93	84	80	81	dB(A)	95
400A	dB	89	88	93	91	86	79	81	dB(A)	95
450A	dB	89	88	92	91	84	81	78	dB(A)	94
500A	dB	90	88	97	89	88	81	78	dB(A)	96
550A	dB	93	90	95	91	91	82	77	dB(A)	97
600A	dB	92	90	95	92	88	84	80	dB(A)	96
650A	dB	94	92	94	93	90	87	82	dB(A)	98
750A	dB	93	92	93	94	89	88	83	dB(A)	98
800A	dB	94	93	93	95	90	89	85	dB(A)	98
900A	dB	79	90	96	92	89	83	77	dB(A)	99
1000A	dB	76	89	98	96	93	85	78	dB(A)	101
1100A	dB	77	88	94	92	90	84	77	dB(A)	98

Acoustic spectrum and power of units with option 15LS (Very low noise level) and option 119 (High energy efficiency)

30KAV-ZE option_119 + option 15LS		Octave bands (Hz) (1)							Sound power (2)	
		125	250	500	1k	2k	4k	8k		
350A	dB	82	85	86	86	81	78	82	dB(A)	90
400A	dB	81	84	87	88	79	72	81	dB(A)	91
450A	dB	83	87	88	87	81	78	78	dB(A)	91
500A	dB	85	87	90	86	85	79	79	dB(A)	92
550A	dB	92	90	89	90	85	84	79	dB(A)	94
600A	dB	89	90	90	88	84	81	80	dB(A)	92
650A	dB	90	91	90	90	84	83	80	dB(A)	94
750A	dB	85	91	90	89	82	83	80	dB(A)	93
800A	dB	86	91	91	90	84	83	80	dB(A)	94
900A	dB	74	89	93	89	86	82	77	dB(A)	96
1000A	dB	77	88	94	90	86	82	78	dB(A)	97
1100A	dB	75	86	94	90	90	83	78	dB(A)	97

(1) In dB ref=10^{-12} W, as a guideline. Measured in accordance with ISO 9614-1.
(2) In dB ref=10^{-12} W, weighting (A), with uncertainty +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

SOUND SPECTRUM

Acoustic spectrum and power of the standard unit

30KAVIZE Standard unit		Octave bands (Hz) (1)							Sound power (2)	
		125	250	500	1k	2k	4k	8k		
500	dB	76	77	95	93	100	88	81	dB(A)	102
800	dB	73	92	100	94	95	88	84	dB(A)	103
1100	dB	75	93	98	93	91	87	81	dB(A)	101
1250	dB	85	94	104	94	93	91	87	dB(A)	105

(1) In dB ref=10^{-12} W, as a guideline. Measured in accordance with ISO 9614-1.
(2) In dB ref=10^{-12} W, weighting (A), with uncertainty +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

Acoustic spectrum and power of the unit + option 15 (Low noise level)

30KAVIZE Unit + option 15		Octave bands (Hz) (1)							Sound power (2)	
		125	250	500	1k	2k	4k	8k		
500	dB	79	81	93	90	94	84	78	dB(A)	98
800	dB	79	86	91	96	92	92	86	dB(A)	100
1100	dB	75	92	93	90	89	83	76	dB(A)	98
1250	dB	79	95	97	93	92	88	83	dB(A)	101

(1) In dB ref=10^{-12} W, as a guideline. Measured in accordance with ISO 9614-1.
(2) In dB ref=10^{-12} W, weighting (A), with uncertainty +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

Acoustic spectrum and power of the unit + option 15LS (Very low noise level)

30KAVIZE Unit + option 15LS		Octave bands (Hz) (1)							Sound power (2)	
		125	250	500	1k	2k	4k	8k		
500	dB	77	82	85	91	86	87	80	dB(A)	94
800	dB	70	84	89	91	86	86	81	dB(A)	95
1100	dB	75	91	93	89	89	82	77	dB(A)	97
1250	dB	74	95	94	91	91	87	82	dB(A)	99

(1) In dB ref=10^{-12} W, as a guideline. Measured in accordance with ISO 9614-1.
(2) In dB ref=10^{-12} W, weighting (A), with uncertainty +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

OPERATING RANGE

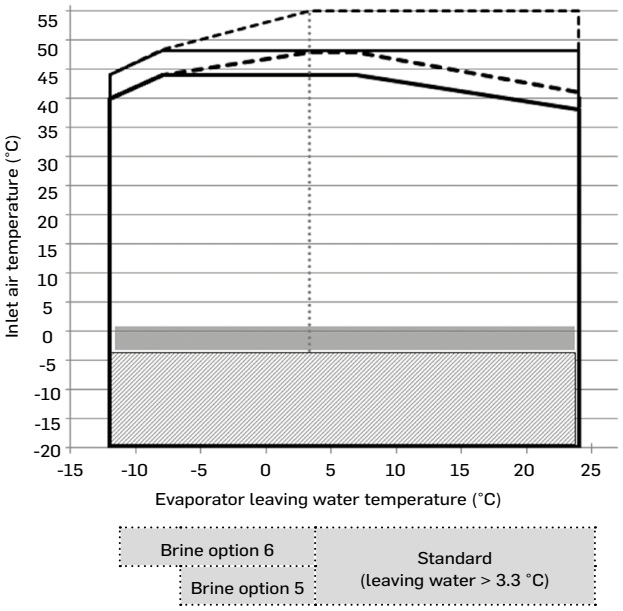
30KAV-ZE / 30KAVIZE

Evaporator water temperature		Minimum	Maximun
Entering temperature at start-up	°C	-	45(1)
Entering temperature during operation	°C	6,8	34
Leaving temperature during operation			
Standard unit	°C	3,3(2)	24
Condenser air temperature		**Minimum**	**Maximun**
Storage	°C	-20	68
Operation			
Standard unit	°C	-20(3)	48(1)

Notes:
- The use of brine or antifreeze protection option is required if the water outlet temperature is below 4 °C.
- If the air temperature is below 0 °C, a glycol/water solution or the freeze protection option must be used.

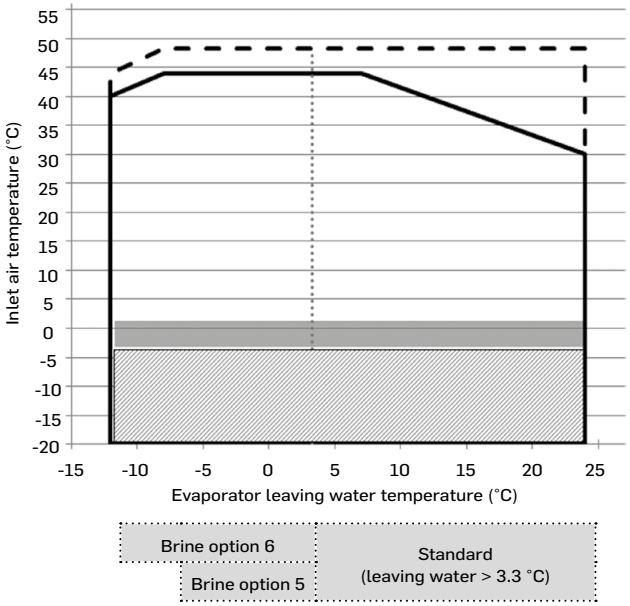
(1) Operating at partial load
(2) According to the type of installation and air temperature
(3) Option 41A mandatory for start-ups below -5 °C

30KAV-ZE



Full load
Part load
Opt. 16 Full load
Opt. 16 Part load
Brine

30KAVIZE



Full load
Part load
Brine

Note:
- Evaporator ΔT = 4 K
- These ranges are given for indicative purpose. Check the operating range from Carrier electronic catalogue.

Légende:

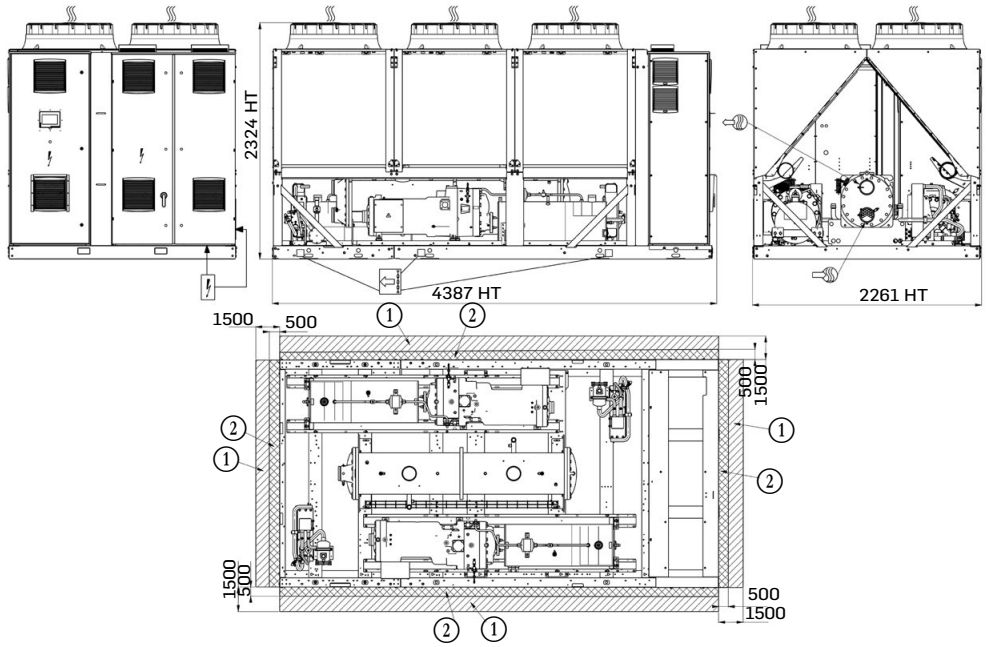
Operating range, standard units

Below 0 °C air temperature the unit must either be equipped with the evaporator frost protection option 41A, or the water loop must be protected against frost by using a frost protection solution (by the installer).

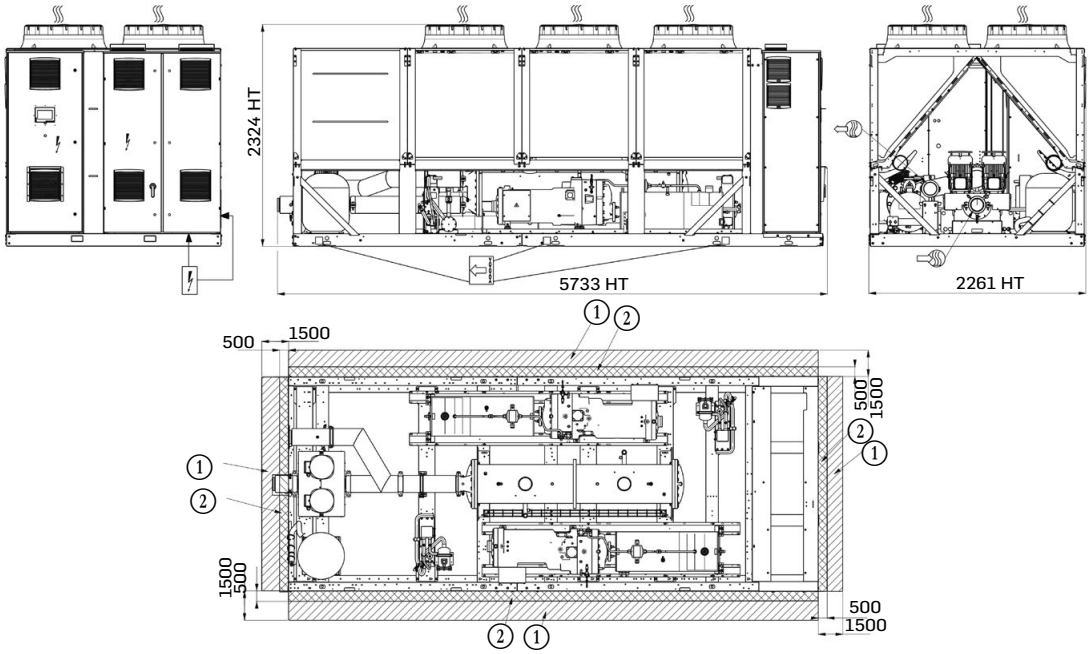
For start-ups with air temperature below -5 °C, the machine must be equipped with option 41A.

DIMENSIONS/CLEARANCES

30KAV-ZE 350A & 400A ; 30KAVIZE 500; without hydraulic module



30KAV-ZE 350A & 400A with Hydraulic module



Legend

All dimensions are given in mm.

(1) Required clearances for maintenance (see note)

(2) Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

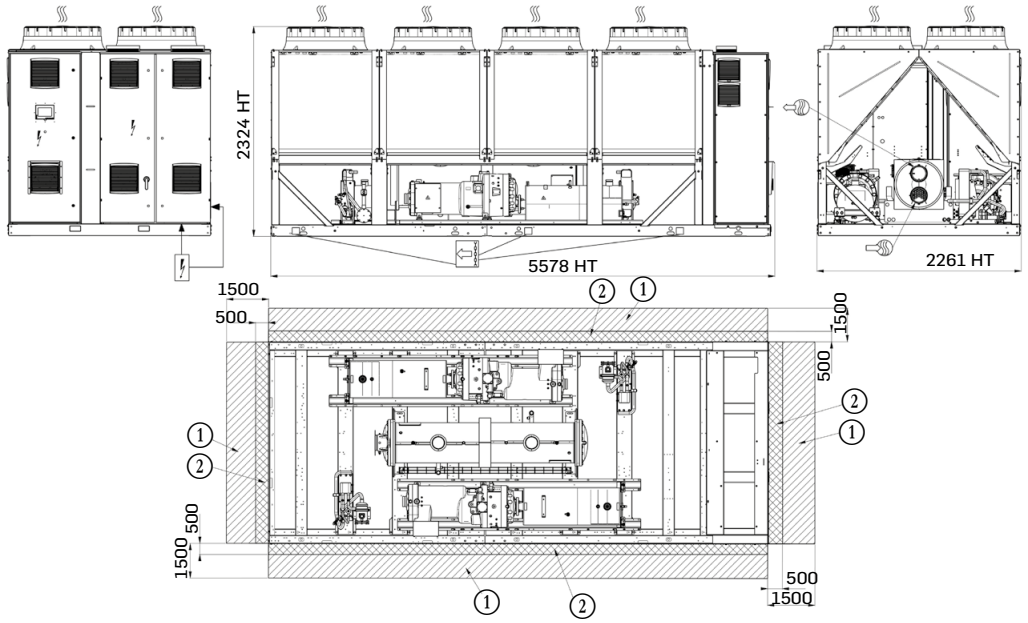
Sling points

NOTES:

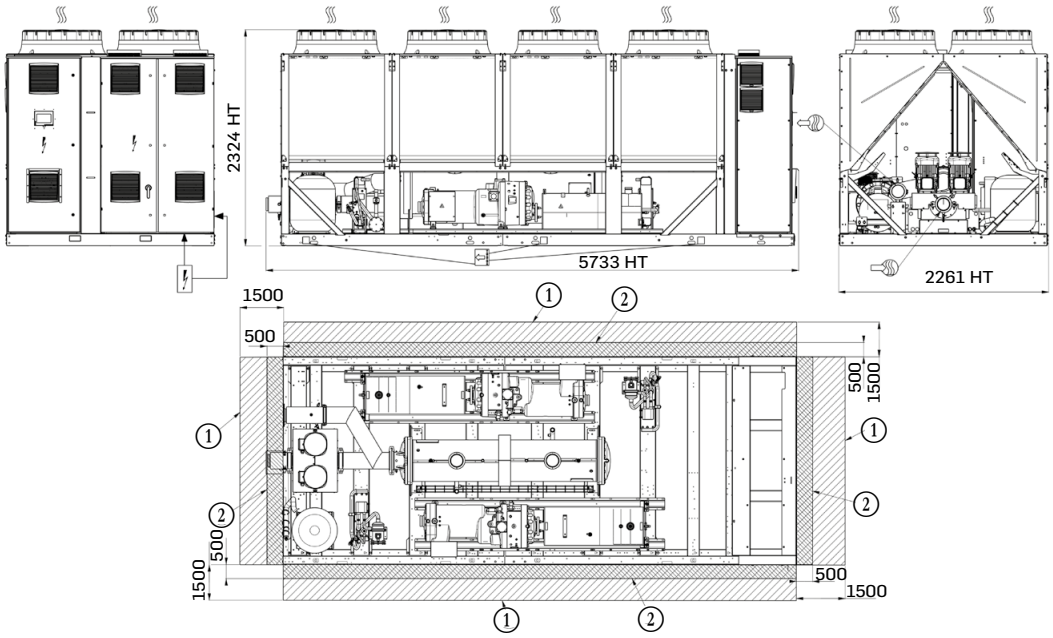
Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 450A & 500A, without hydraulic module



30KAV-ZE 450A & 500A with Hydraulic module



Legend

All dimensions are given in mm.

① Required clearances for maintenance (see note)

② Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

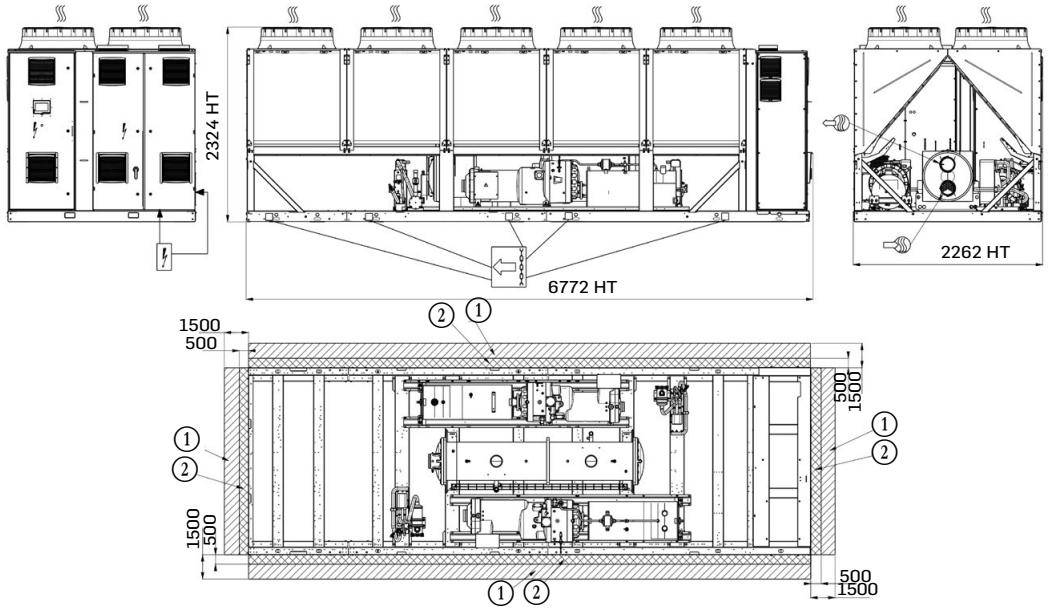
Sling points

NOTES:

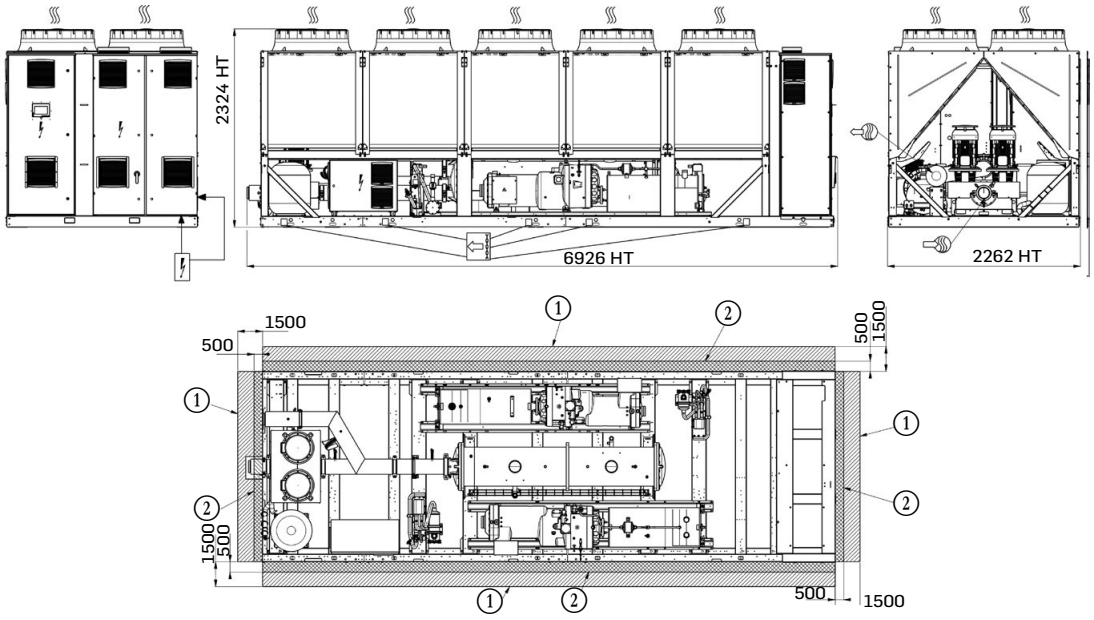
Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 550A & 600A ; 30KAV-ZE 350A, 400A, 450A, 500A - opt 119 ; 30KAVIZE 800 ; without hydraulic module



30KAV-ZE 550A & 600A ; 30KAV-ZE 350A, 400A, 450A, 500A - opt 119 ; 30KAVIZE 800 ; with hydraulic module



Legend

All dimensions are given in mm.

(1) Required clearances for maintenance (see note)

(2) Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

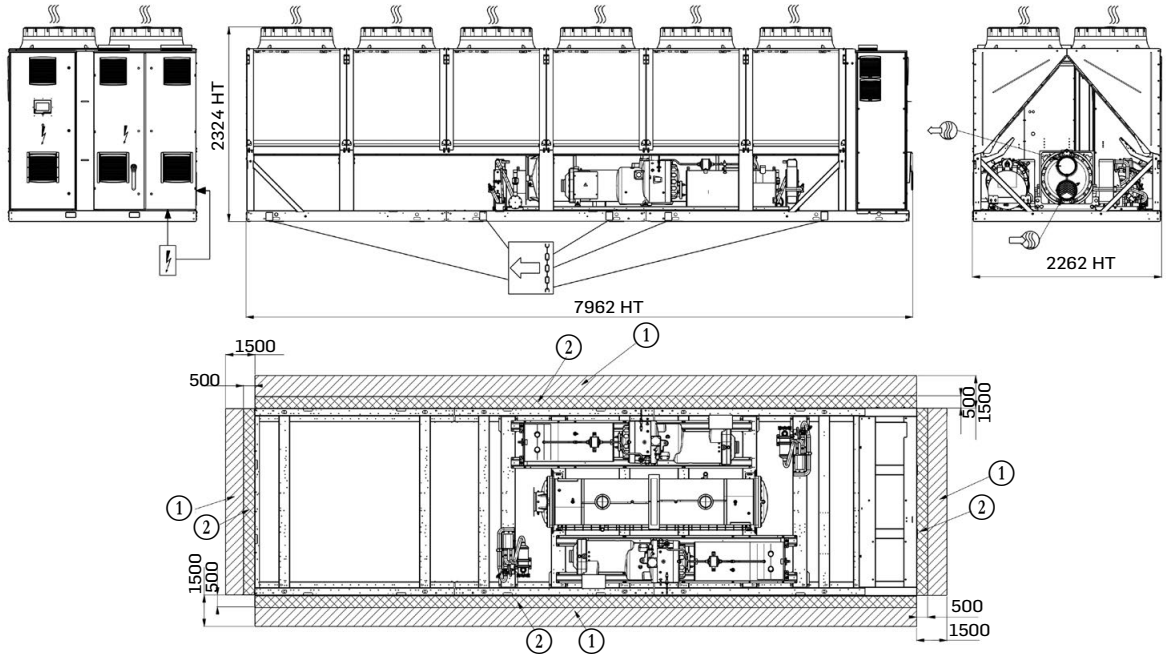
Sling points

NOTES:

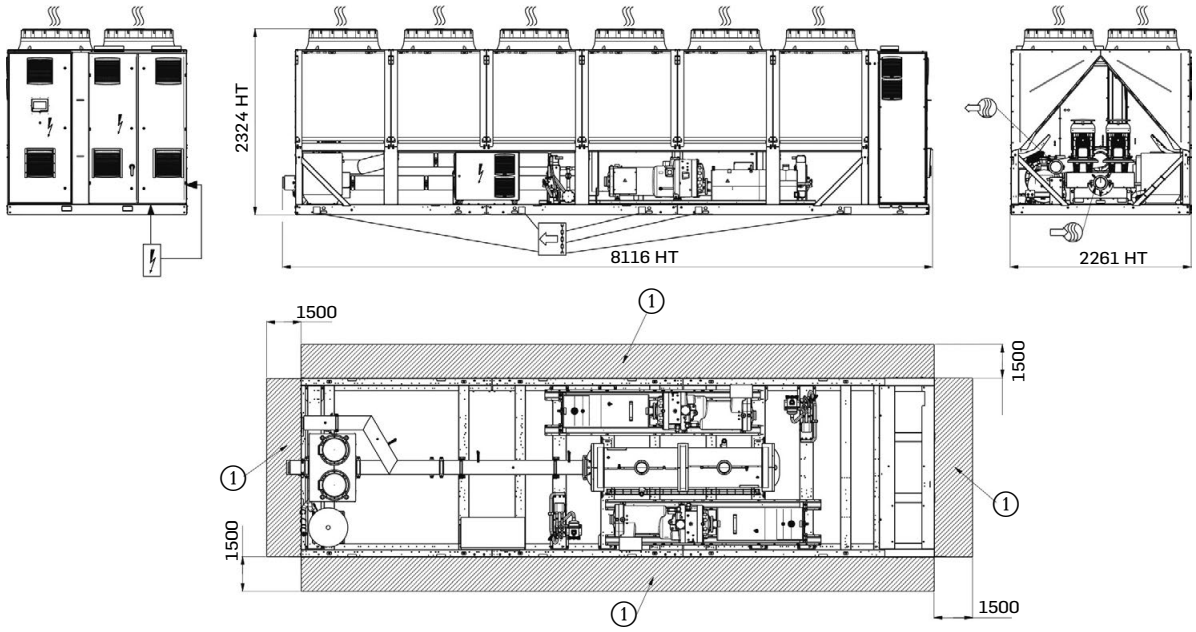
Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 650A & 750A ; 30KAV-ZE 550A - opt 119 ; without hydraulic module



30KAV-ZE 550A - opt 119 ; with hydraulic module



Legend

All dimensions are given in mm.

① Required clearances for maintenance (see note)

② Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

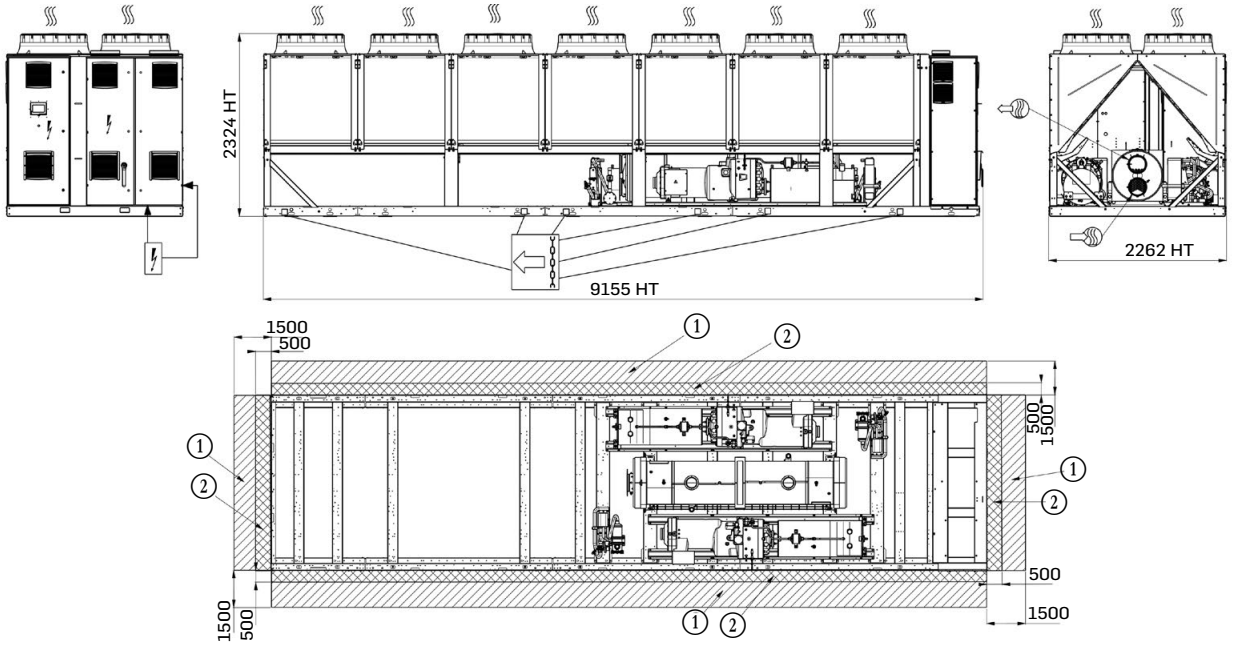
Sling points

NOTES:

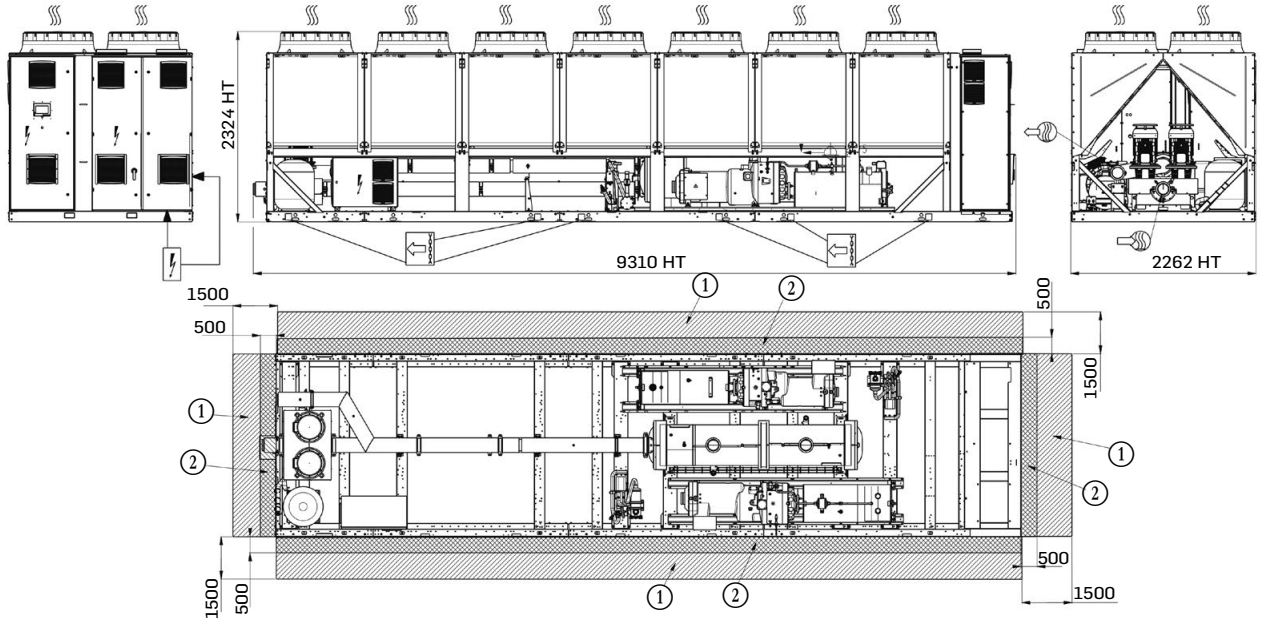
Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 800A ; 30KAV-ZE 600A & 650A - opt 119 ; without hydraulic module



30KAV-ZE 600A- opt 119 ; with hydraulic module



Legend

All dimensions are given in mm.

(1) Required clearances for maintenance (see note)

(2) Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

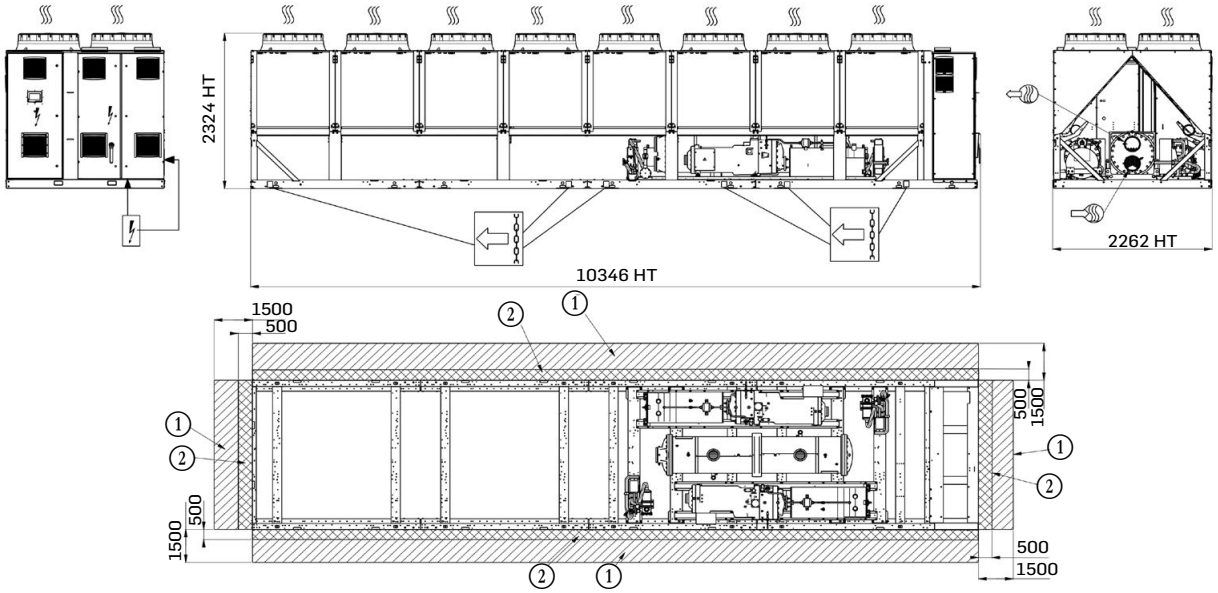
Sling points

NOTES:

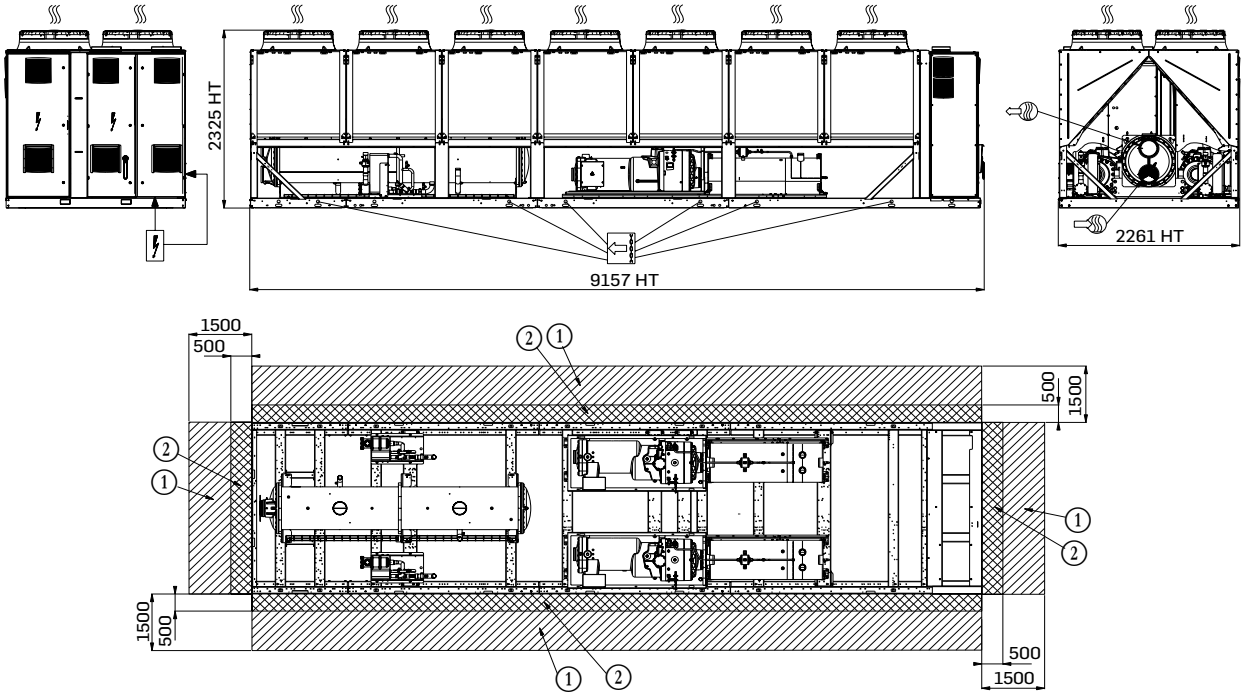
Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 750A & 800A - opt 119



30KAV-ZE 900A ; 30KAVIZE 1100 ; 30KAVIZE 1250



Legend

All dimensions are given in mm.

① Required clearances for maintenance (see note)

② Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

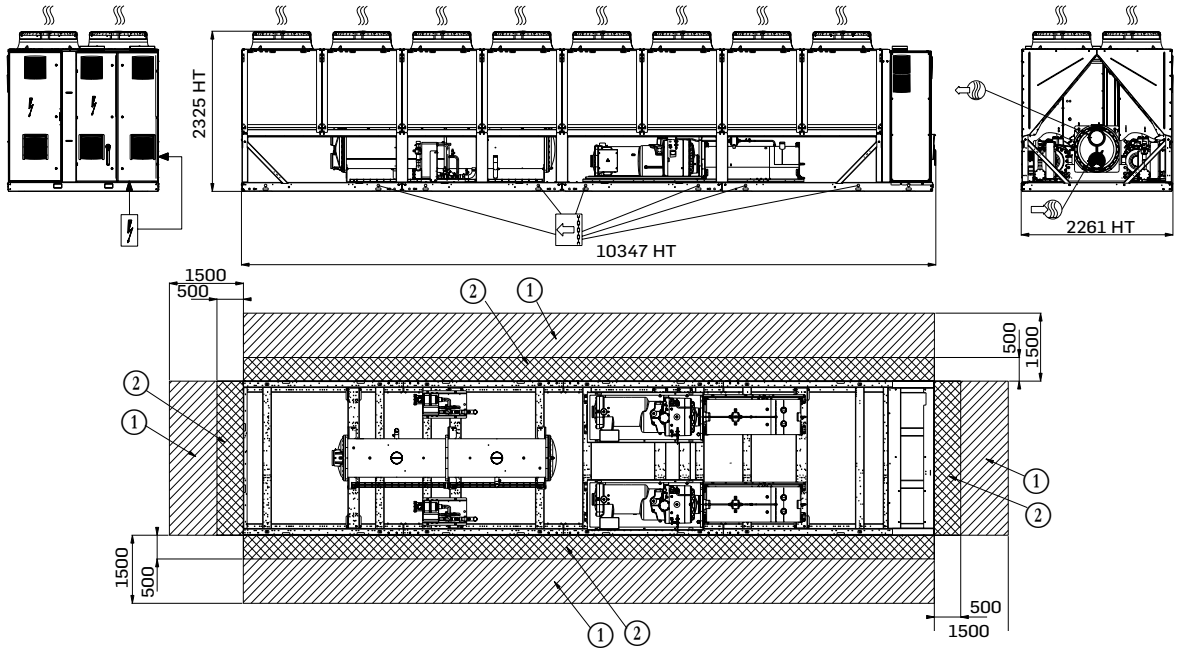
Sling points

NOTES:

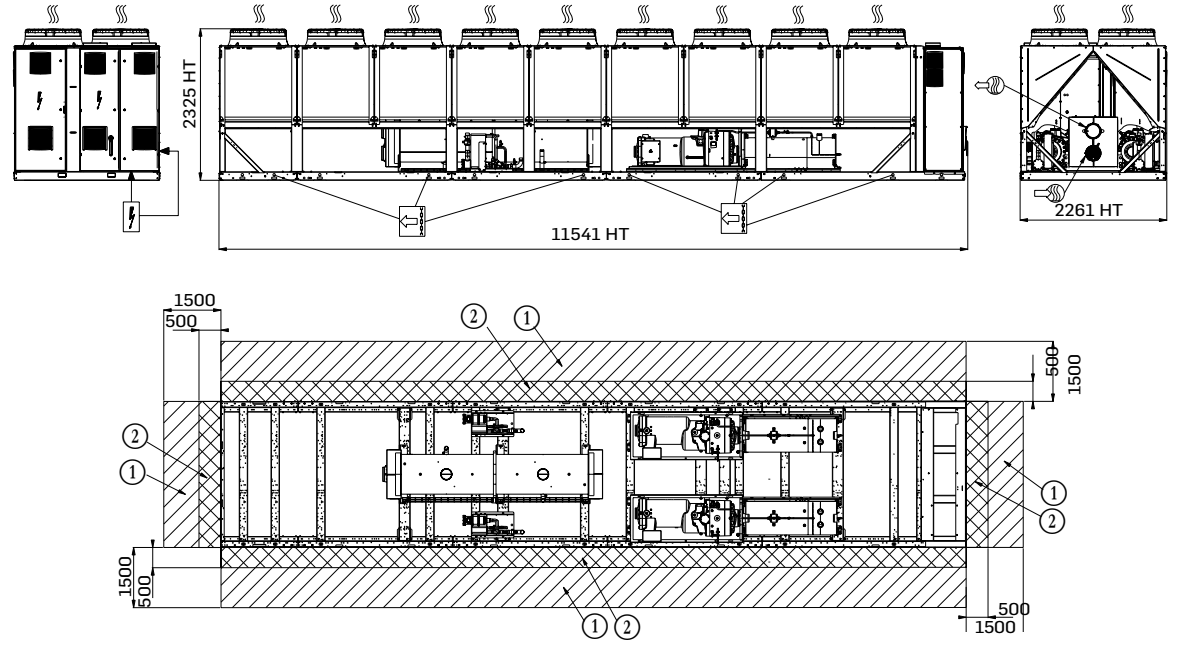
Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 1000A



30KAV-ZE 1100A ; 30KAV-ZE 900A - opt 119



Legend

All dimensions are given in mm.

① Required clearances for maintenance (see note)

② Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

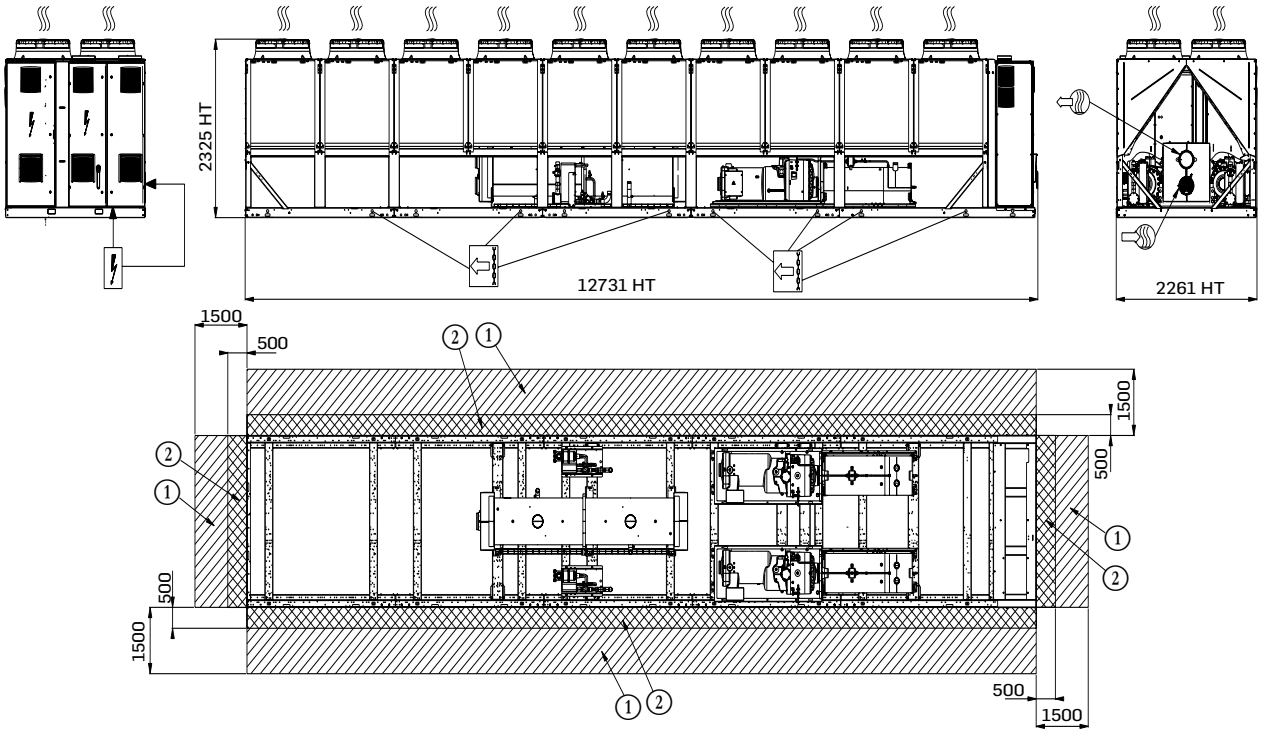
Sling points

NOTES:

Non-contractual drawings.

DIMENSIONS/CLEARANCES

30KAV-ZE 1200A & 1300A ; 30KAV-ZE 1000A & 1100A - opt 119



Legend

All dimensions are given in mm.

① Required clearances for maintenance (see note)

② Potentially flammable zone around the machine

Water inlet for standard unit

Water outlet for standard unit

Air outlet – do not obstruct

Power supply connection

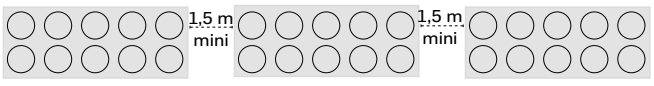
Sling points

NOTES:

Non-contractual drawings.

Installation of multiple chillers

It is recommended to install multiple chillers in a single row, arranged as shown in the example below, to avoid recycling of warm air from one unit to another.

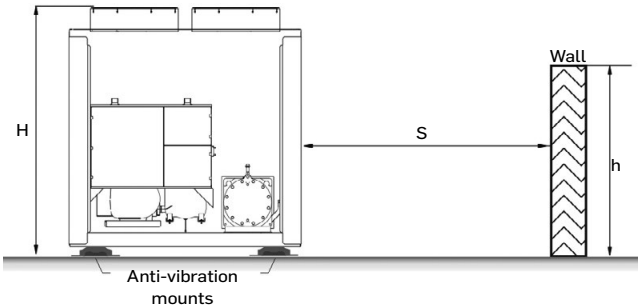


If the floor space does not allow this arrangement, contact your Carrier distributor to assess the various installation options.

Proximity to walls

To guarantee correct operation in most cases:

- If h < H (2,3 m), S minimum = 3 m
- If h > H or S < 3 m, contact your Carrier distributor to assess the various installation options.



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.: 10516, 09.2024. Supersedes order No.: 10516, 10.2023. Carrier Route de Thil - BP49 01120 Montluel Cedex, France.