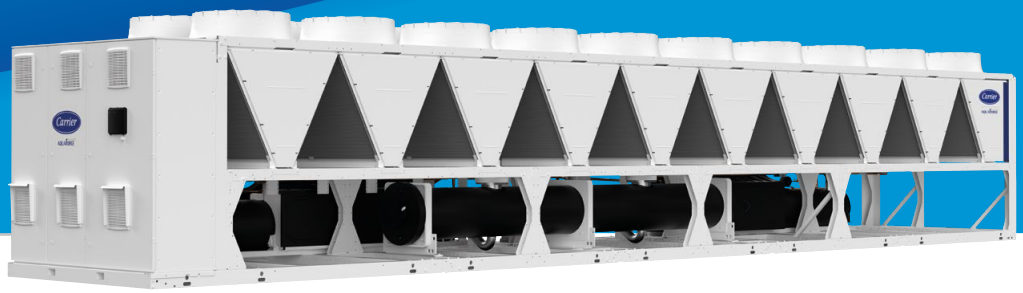
# 30XBV

## VARIABLE-SPEED SCREW LIQUID CHILLER WITH GREENSPEED® INTELLIGENCE



AQUAFORCE greenspeed

Nominal cooling capacity
140 - 512 Tons
Nominal cooling capacity
494 - 1800 kW

DESIGNED FOR HIGH AMBIANT TEMPERATURE CONDITIONS
BEST VALUE SOLUTION
OUTSTANDING PERFORMANCES & RELIABILITY
EXTENSIVE SCOPE OF APPLICATION
LOW SOUND LEVELS

HFC R-134a

The AquaForce® 30XBV liquid chillers with Greenspeed® Intelligence are the perfect solution for commercial applications where installers, consultants and building owners require superior reliability and optimal performances, especially at part load.

The 30XBV units are designed to provide outstanding performances, at both full load and part load operation, for high temperature environments (up to 55°C). This result is achieved through the optimised combination of proven best-in-class technologies that include:

- 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. Air-cooled compressor variable-speed drive (VSD) to ensure reliable operation and easy maintenance.
- 6th generation of Carrier Flying Bird® fans with AC motor.
- Carrier flooded shell-and-tube evaporator with new copper tubes for low pressure drops
- 2nd generation of "V" shape Carrier Novation® microchannel heat exchangers with optional Enviro-Shield coatings.
- Carrier SmartVu™ control with color touch screen user interface that includes 10 langages.

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

## 30XBV CUSTOMER BENEFITS

■ **Designed for high temperature conditions**

Carrier's AquaForce® adapts effortlessly to a wide range of applications. Extended operating temperatures up to 55°C outdoor air make it ideal for high temperature environments. From high-end office buildings and hotels to healthcare facilities, data centers and industrial projects, AquaForce® 30XBV meets the most demanding expectations in terms of energy efficiency and savings, whatever the climate and wherever the location.

UP to
**55°C**

■ **Outstanding performances**

Equipped with variable-speed screw compressors, AquaForce® 30XBV chiller with Greenspeed® intelligence automatically adjusts the cooling capacity to perfectly match the needs of the building or the process load variations. The result is optimum operation at both full load and part load.

IPLV
up to **5.7**

■ **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 to reduce compressor and airflow noise down to 96 dB(A).

**96** to **103**
dB(A)

■ **Absolute reliability**

Equipped with Carrier variable-speed twin screw compressors, reliable air-cooled variable frequency drive and fully aluminium Novation® microchannel heat exchangers with Super Enviroshield coatings (option) to deliver guaranteed long-term optimized performance.

Outstanding reliability

■ **Best value solution**

The 30XBV is the most advantageous solution combining price, quality and performances.

The range has been designed to offer a fully reliable and competitive unit with optimized part load performance.

Efficient & competitive

# CUSTOMER BENEFITS

AquaForce® 30XBV liquid chillers with Greenspeed® Intelligence adapt effortlessly to a wide range of applications. An extended operating range covering ambient temperatures up 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, 30XBV 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. 30XBV 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, 30XBV can be monitored remotely by Carrier experts for energy consumption diagnosis and optimization.

The AquaForce® 30XBV is equipped with variable-speed screw compressor and fixed-speed fans with AC motors (optional variable speed fans).The 30XBV is enhanced to meet the most demanding technical and economic requirements while offering high seasonal energy efficiency levels.

(Average EER of 2.9 (in accordance to EN14511), Average IPLV. SI of 5.50 (in accordance to AHRI standard 551/591 (SI))

## Outstanding energy performance

- The 30XBV standard unit is designed for high performances both at full & part load: average EER of 2.8 per
- EN14511-3:2022, Average IPLV.SI of 5.05 per AHRI standard (Air-Conditioning, Heating, and Refrigeration Institute ; U.S.A) 551/591 (SI).
- 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
  - 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.

## Built-in reliability and easy servicing

The 30XBV units 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%.
  - 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.
- 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 4000 hours testing in constant neutral salt spray per ASTM B117.
  - Super Enviro-shield® coating for MCHE used in highly corrosive environments (industry or marine applications) with superior durability confirmed through 6000 hours testing in constant neutral salt spray per ASTM B117.
- 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.

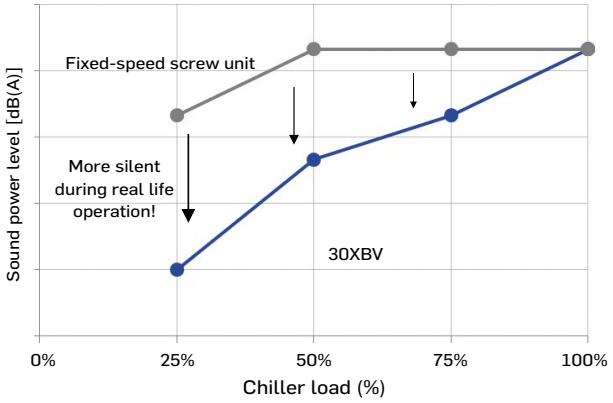
# CUSTOMER BENEFITS

- 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 5000km 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, 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.
- 30XBV is available with 2 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.

## Easy and fast installation

- Simplified electrical connections:
  - Main disconnect switch (option 70 & 70D)
  - Transformer supply to the integrated control circuit (400/24V)
  - 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.
- Fast commissioning:
  - Systematic factory operating test before shipment
  - Functional test for main components, expansion devices, fans and compressors.

## Environmental responsibility

- The AquaForce® 30XBV liquid chillers with Greenspeed® Intelligence is a boost for green cities and contributes to a sustainable future. Combining a reduced charge of R134a 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).
- R-134a: HFC 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.

## 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.

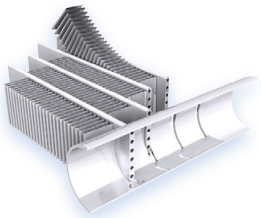
The air conditioning system can use between 30 and 40% of the annual building energy consumption. Selection of the right air conditioning system is one of the main aspects to consider when designing a green building. For buildings with a variable load throughout the year 30XBV units offer a solution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

# 30XBV TECHNICAL INSIGHTS

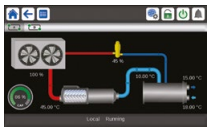
### 6TH GENERATION OF FLYING BIRD® FANS WITH AC

- Exclusive Carrier design
- Fan blade design inspired by nature
- Fixed or variable speed fans



### 2ND GENERATION OF "V" SHAPE NOVATION® MICRO CHANNEL HEAT EXCHANGERS

- Exclusive Carrier design
- High reliability with long-life aluminum alloy
- Significantly reduces refrigerant load (-40% vs cu/al coils)
- Enviro-shield® coating for mildly corrosive environments
- Super Enviro-shield® coating for highly corrosive environments (sandy, seaside or industrial environments)



### ADVANCED SMARTVU™ WITH 7 INCH COLOR TOUCH SCREEN INTERFACE

- Exclusive Carrier design
- Touch screen user interface BACnet, J -Bus or LON communication interfaces
- Web server capabilities- easy remote access via internet
- Trending capabilities

### 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

### 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

### IP54 ELECTRICAL CABINET AS STANDARD

- Air Cooled VSD system
- Single power connection point

# TECHNICAL INSIGHTS

**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:
  - 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)

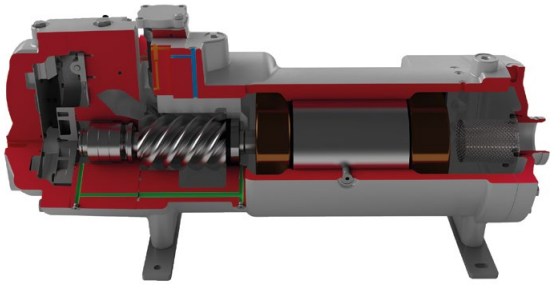
- Units with SmartVu™ control can be easily accessed from the internet, using a PC with an Ethernet connection. This makes remote control quick and easy and offers significant advantages for service operations.
- AquaForce® with Greenspeed® Intelligence is equipped with an RS485 serial port that offers 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).
- The 30XBV 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 156+)

- 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: Permits limitation of the maximum chiller capacity.
  - 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.

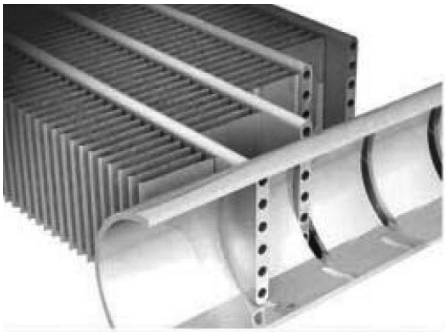
- New 06Z twin screw compressor optimized for variable speed operation: elimination of the slide valve, built in volume index control (Vi) valve for both optimal full and part load performance, high efficiency AC motor with stepless inverter control from 20% to 100%.
- Separate air-cooled inverter drive 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 | 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 | 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 AC motors

The 30XBV 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 30XBV air management system configuration and heat exchanger technology.

The 30XBV is equipped with variable-speed AC fan motors (option 17A). It offers an economical solution to enhance seasonal energy efficiency levels for comfort applications. (Application thermal load variation from 0% to 100%).

# TECHNICAL INSIGHTS

## Variable Frequency Drives (VFD)

The compressors of 30XBV are controlled by VFDs.

- VFDs electrical cabinet(s) has an IP54 rating as standard.
- Electrical cabinet(s) is capable of operating up to 55°C (with option 16 “High Ambient”).
- Unit controls is capable of withstanding storage temperatures in the control compartment from -20°C to 68°C.
- All VFDs on the chiller (compressors motors) are fully air cooled and shall not require an additional glycol cooling system, thus avoiding the maintenance associated with such cooling systems.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 0 | X | B | V | - | A | 1 | 1 | 0 | 0 | - | 1 | 2 | 3 | 4 | - | - |

Product codification

- Digit 1-3: Air cooled Screw Chiller
- Digit 4: “B” = “V” shape condenser coils
- Digit 5: “V” = Variable speed compressors
- Digits 6: “-” = Standard
- Digits 7: “A” = R-134a
- Digit 8 to 11: Cooling capacity (kW)
- Digit 12: Rev number (“A” first rev, “B” second rev, ...)
- Digit 13-16: Incremental number for production

## OPTIONS

| Option | N° | Description | Advantage | Use 30XBV-A |
|---|---|---|---|---|
| Low noise level | 15 | Aesthetic and sound absorbing compressor enclosure | Noise level reduction | 0500-1800 |
| 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 | 0500-1800 |
| Variable speed fans (AC) | 17A | Unit equipped with variable speed fans (AC) | Enhances the unit seasonal energy efficiency performance | 0500-1800 |
| Grilles and enclosure panels | 23 | Metallic protection grilles and side enclosure panels | Improves aesthetics, protection against intrusion to the unit interior, coil and piping protection against impacts. | 0500-1800 |
| Enclosure panels | 23A | Side enclosure panels | Improves aesthetics and piping protection against impacts. | 0500-1800 |
| Cooling mode operation down to -20°C | 28 | Electric resistance heater on water exchanger, water pipings and oil separator | Stable unit operation at air temperature down to -20°C, with vfd fan option | 0500-1800 |
| Lead/lag operation (sensor kit) | 58 | Unit equipped with supplementary water outlet temperature sensor kit (to be field installed) allowing lead/lag operation of two units connected in parallel | Optimised operation of two units connected in parallel operation with operating time equalisation | 0500-1450 |
| Main disconnect switch without fuse | 70 | Factory-installed main electric disconnect switch in the electrical cabinet | Ease-of-installation and compliance with local electrical | 0500-1800 |
| Main disconnect switch with short-circuit protection | 70D | Disconnector 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 | 0500-1800 |
| Service valve set | 92 | Liquid line valve, evaporator suction line valve and compressor discharge line valve | Allow isolation of various refrigerant circuit components for simplified service and maintenance | 0500-1800 |
| Compressor discharge valve | 93A | Shut-off valve on the compressor discharge piping | Simplified maintenance | 0500-1800 |
| 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 | 0500-1800 |
| 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 | 0500-1800 |
| Energy management module, & input contact for refrigerant leak detection | 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...) | 0500-1800 |
| Under voltage relay | 159A | Under voltage relay is required in some key markets like UAE to protect the unit against low voltage supply | Electrical protection | 0500-1800 |
| 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 | 0500-1800 |
| 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 | 0500-1800 |
| 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 | 0500-1800 |
| 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 | 0500-1800 |

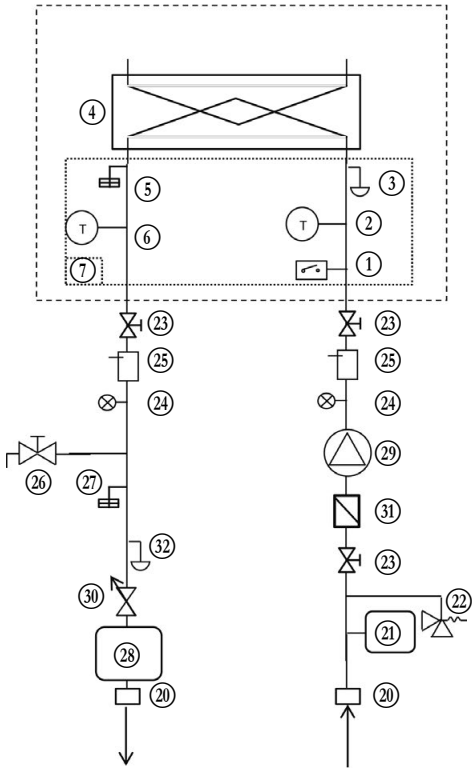
## OPTIONS

| Option | N° | Description | Advantage | Use 30XBV-A |
|---|---|---|---|---|
| Welded evaporator connection (kit) | 266 | Victaulic piping connections with welded joints | Easy installation | 0500-1800 |
| Evaporator with aluminum jacket | 281 | Evaporator covered with an aluminum sheet for thermal insulation protection | Improved resistance to aggressive climate conditions | 0500-1800 |
| Mexico screw compressor | 297 | Screw compressor made in Mexico | Mexico screw compressor | 0500-1800 |
| Compliance with UAE regulation | 318 | Additional label on the unit with rated power input, rated current and EER following AHRI 550/590 | Compliance with ESMA standard UAE.S 5010-5:2019. | 0500-1800 |
| Compliance with Qatar regulation | 319 | Specific nameplate on the unit with power supply 415 V+/-6% | Compliance with KAHRAMAA regulation in Qatar. | 0500-1800 |
| Compliance with Morocco regulation | 327 | Specifics documents according Morroco regulation | Conformance with Morocco regulations | 0500-1800 |
| Delivery with plastic tarp cover | 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 | 0500-1800 |
| Power supply 400-3-60Hz (compliance with SASO regulation) | 335 | 400-3-60Hz power supply | Permits unit connection to 400-3-60Hz power supply | 0500-1800 |

# HYDRAULIC MODULE

## Typical water circuit diagram

### 1 Module




**Legend**

**Unit Hydraulic Circuit - Components**

1. Low heat transfer medium flow rate switch
2. Temperature sensor
   **NOTE: Provides temperature measurement at the water exchanger inlet (see Control Manual)**
3. Heat transfer medium purge on water box
4. Heat transfer medium heat exchanger
5. Air bleed on water box
6. Temperature sensor
   **NOTE: Provides temperature measurement at the water exchanger outlet (see Control Manual)**
7. Water box

**Customer Hydraulic Circuit - Minimum Additional Components**

20. Flexible Connection
21. Expansion Vessel
22. Relief Valve
23. Shut-off valve
24. Pressure gauge
25. Well
26. Charge valve
27. Air bleed
28. Buffer tank (if whole hydraulic circuit volume under minimum required water volume enabling reaching full unit refrigerating capacity)
29. Pump
30. Heat transfer medium flow rate control valve (if fixed speed pump)
31. Screen filter (particle size of 1.2mm)
32. Heat transfer medium drain tap

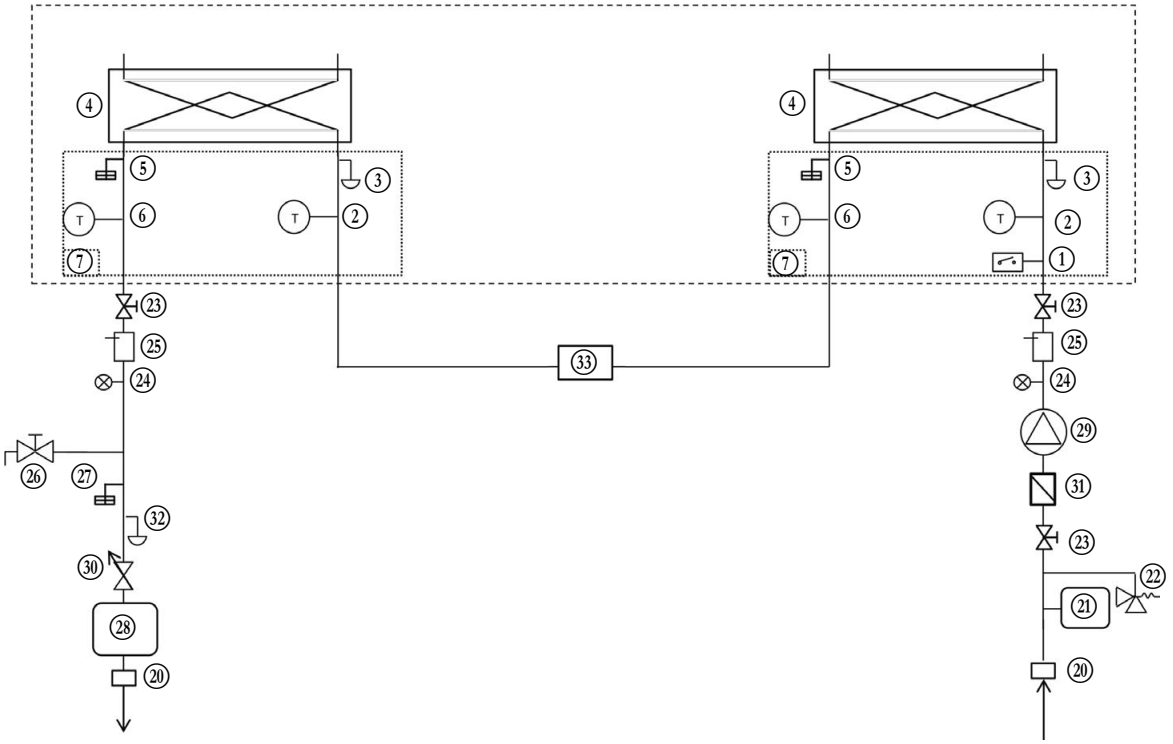
- - - - - Unit Hydraulic Components

**NOTES:**

- **The installation must be protected against frost.**

# HYDRAULIC MODULE

## 2 Modules



**Legend**

**Unit Hydraulic Circuit - Components**

1. Low heat transfer medium flow rate switch
2. Temperature sensor
   **NOTE: Provides temperature measurement at the water exchanger inlet (see Control Manual)**
3. Heat transfer medium purge on water box
4. Heat transfer medium heat exchanger
5. Air bleed on water box
6. Temperature sensor
   **NOTE: Provides temperature measurement at the water exchanger outlet (see Control Manual)**
7. Water box

**Customer Hydraulic Circuit - Minimum Additional Components**

20. Flexible Connection
21. Expansion Vessel
22. Relief Valve
23. Shut-off valve
24. Pressure gauge
25. Well
26. Charge valve
27. Air bleed
28. Buffer tank (if whole hydraulic circuit volume under minimum required water volume enabling reaching full unit refrigerating capacity)
29. Pump
30. Heat transfer medium flow rate control valve (if fixed speed pump)
31. Screen filter (particle size of 1.2mm)
32. Heat transfer medium drain tap
33. Piping between modules

- - - - - Unit Hydraulic Components

**NOTES:**

- **The installation must be protected against frost.**

# PHYSICAL DATA (50Hz VERSION)

## Physical data - Single units

| 30XBV-A - Single Units | | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Full Load Performances* | Nominal Capacity | kW \| Ton | 494 \| 140 | 576 \| 164 | 701 \| 199 | 799 \| 227 | 863 \| 245 | 1025 \| 291 | 1104 \| 314 | 1202 \| 342 | 1317 \| 374 | 1503 \| 427 |
| | EER | kW/kW \| Btu/Wh | 2,87 \| 9,76 | 2,87 \| 9,76 | 2,9 \| 9,86 | 2,94 \| 10 | 2,87 \| 9,76 | 2,87 \| 9,76 | 2,89 \| 9,83 | 2,89 \| 9,83 | 2,91 \| 9,89 | 2,9 \| 9,86 |
| Seasonal Energy Efficiency** | **$SEER_{12/7°C}$ Comfort low temp.** | **kWh/kWh** | **4,62** | **4,61** | **4,76** | **4,73** | **4,66** | **4,62** | **4,72** | **4,74** | **4,80** | **4,73** |
| | **$\eta s\ cool_{12/7°C}$** | **%** | **182** | **182** | **187** | **186** | **184** | **182** | **186** | **187** | **189** | **186** |
| | **$SEPR_{12/7°C}$ Process high temp.** | **kWh/kWh** | **5,81** | **5,73** | **5,75** | **5,95** | **5,76** | **5,81** | **5,90** | **5,72** | **5,78** | **5,51** |
| Integrated Part Load Values | **IPLV.SI** | **kW/kW** | **4,990** | **5,040** | **5,150** | **5,170** | **5,060** | **5,000** | **5,100** | **4,920** | **5,070** | **4,900** |
| | **IPLV.IP** | **Btu/Wh** | **17,03** | **17,26** | **17,63** | **17,73** | **17,35** | **17,15** | **17,55** | **17,03** | **17,34** | **16,75** |
| **Refrigerant** | | | R - 134a | | | | | | | | | |
| **Compressor type** | | | VARIABLE-SPEED DRIVEN, TWIN-SCREW COMPRESSOR | | | | | | | | | |
| **Nb of compressors / nb of circuits** | | | 2/2 | | | | | | | | | |
| **Structural and Acoustical Data** | | | | | | | | | | | | |
| **Dimensions** | | | | | | | | | | | | |
| Length | | mm \| in | 5591 \| 220 | 5591 \| 220 | 6785 \| 267 | 7979 \| 314 | 7979 \| 314 | 9175 \| 361 | 10369 \| 408 | 10363 \| 408 | 11561 \| 455 | 12755 \| 502 |
| Width | | mm \| in | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 |
| Height | | mm \| in | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 |
| **Weights - Standard Unit** | | | | | | | | | | | | |
| Operating weight(1) | | kg \| lb | 4890 \| 10781 | 4929 \| 10867 | 5268 \| 11614 | 6108 \| 13466 | 6204 \| 13677 | 7000 \| 15432 | 7385 \| 16281 | 7826 \| 17253 | 8141 \| 17948 | 9039 \| 19928 |
| **Sound levels - Standard Unit** | | | | | | | | | | | | |
| Sound Power(2) | | dB(A) | 95,0 | 98,5 | 100,0 | 102,5 | 100,5 | 104,0 | 102,0 | 104,0 | 103,0 | 104,0 |
| Sound Pressure at 10 m(3) | | dB(A) | 62,5 | 66,0 | 67,5 | 69,5 | 68,0 | 71,0 | 69,0 | 71,0 | 70,0 | 71,0 |
| **Weights + Option 15** | | | | | | | | | | | | |
| Operating weight(1) | | kg \| lb | 4930 \| 10869 | 4969 \| 10955 | 5308 \| 11702 | 6148 \| 13554 | 6244 \| 13765 | 7040 \| 15520 | 7425 \| 16369 | 7866 \| 17341 | 8181 \| 18036 | 9079 \| 20016 |
| **Sound levels + Option 15** | | | | | | | | | | | | |
| Sound Power(2) | | dB(A) | 94,5 | 96,0 | 98,0 | 98,0 | 97,5 | 98,5 | 98,5 | 99,5 | 99,5 | 100,0 |
| Sound Pressure at 10 m(3) | | dB(A) | 62,0 | 64,0 | 65,5 | 65,0 | 64,5 | 66,0 | 65,5 | 66,5 | 66,5 | 67,0 |
| **Frigorific Data** | | | | | | | | | | | | |
| **Refrigerant Charge(1)** | | | R134a (GWP = 1430 following AR4 ; ODP=0) | | | | | | | | | |
| Circuit A | | kg \| lb | 45 \| 99 | 45 \| 99 | 54 \| 119 | 73 \| 161 | 73 \| 161 | 84 \| 185 | 83 \| 183 | 110 \| 243 | 118 \| 260 | 113 \| 249 |
| | | $teqCO_2$ | 64 | 64 | 77 | 104 | 104 | 120 | 119 | 157 | 169 | 162 |
| Circuit B | | kg \| lb | 42 \| 93 | 45 \| 99 | 54 \| 119 | 65 \| 143 | 62 \| 137 | 84 \| 185 | 83 \| 183 | 86 \| 190 | 86 \| 190 | 113 \| 249 |
| | | $teqCO_2$ | 60 | 64 | 77 | 93 | 89 | 120 | 119 | 123 | 123 | 162 |

* In accordance with standard EN14511-3:2022.

** In accordance with standard EN14825:2022, average climate.

**$SEER_{12/7°C}$ & $\eta s\ cool_{12/7°C}$** **Bold values compliant with Ecodesign regulation (UE) N° 2016/2281 for Comfort Applications**

**$SEPR_{12/7°C}$** **Bold values compliant with Ecodesign regulation (UE) N° 2016/2281 for Process Applications**

**IPLV.SI** **Bold values compliant with AHRI standard (Air, Heating & Refrigeration Institute ; U.S.A) 551-591.**

**IPLV.IP** **Bold values compliant with AHRI standard (Air, Heating & Refrigeration Institute ; U.S.A) 550-590.**

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

(2) In dB ref $=10^{-12}$ W, 'A' weighted. Declared noise emission value dissociated in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measurement following ISO 9614-1 and certified by Eurovent.

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

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

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

AHRI certified values

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

# PHYSICAL DATA (50Hz VERSION)

| 30XBV-A - Single units | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Oil Charge**(1) | | Oil for R134a. Contact Carrier ERCD for supplying. | | | | | | | | | |
| Circuit A | L \| gal | 27 \| 7,1 | 24 \| 6,3 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 30 \| 7,9 | 30 \| 7,9 | 30 \| 7,9 |
| Circuit B | L \| gal | 27 \| 7,1 | 24 \| 6,3 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 20 \| 5,3 | 20 \| 5,3 | 30 \| 7,9 |
| **Unit Minimum Part Load**(4) | % | 13 | 13 | 13 | 13 | 14 | 12 | 12 | 14 | 13 | 12 |
| **PED Category** | | IV | IV | IV | IV | IV | IV | IV | IV | IV | IV |
| **Aeraulic Data** | | | | | | | | | | | |
| Fans Quantity | | 7 | 8 | 10 | 12 | 12 | 14 | 16 | 16 | 18 | 20 |
| Maximum Total Air Flow Rate | $m^3/s$ \| gpm | 36 \| 572845 | 41 \| 654680 | 52 \| 818350 | 62 \| 982020 | 62 \| 982020 | 72 \| 1145690 | 83 \| 1309360 | 83 \| 1309360 | 93 \| 1473030 | 103 \| 1636700 |
| Maximum Rotation Speed | rpm | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 |
| **Hydraulic Data** | | | | | | | | | | | |
| Volume in the unit | L \| gal | 85 \| 22 | 85 \| 22 | 99 \| 26 | 121 \| 32 | 131 \| 35 | 157 \| 41 | 157 \| 41 | 172 \| 45 | 172 \| 45 | 188 \| 50 |
| Max. operating pressure - hydraulic circuit | kPa \| psi | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 |
| Min. hydraulic flow rate | L/s \| gpm | 7 \| 111 | 7 \| 111 | 8 \| 127 | 10 \| 159 | 11 \| 174 | 17 \| 269 | 17 \| 269 | 18 \| 285 | 18 \| 285 | 18 \| 285 |
| Max. hydraulic flow rate | L/s \| gpm | 48 \| 761 | 48 \| 761 | 59 \| 935 | 68 \| 1078 | 76 \| 1205 | 125 \| 1981 | 125 \| 1981 | 133 \| 2108 | 133 \| 2108 | 133 \| 2108 |
| **Hydraulic Connections** | | | | | | | | | | | |
| Inlet Connection Diameter | mm \| in | 127 \| 5 | 127 \| 5 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| Outlet Connection Diameter | mm \| in | 127 \| 5 | 127 \| 5 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| **Chassis Paint Color** | | Color code RAL 7035 | | | | | | | | | |

(1) Values are guidelines only. Refer to the unit name plate.
(4) For standard conditions. Depending on operating conditions, units might have a different minimum part load or cycle.

# PHYSICAL DATA (50Hz VERSION)

## Physical data - Duplex units

| 30XBV-A - Duplex units | | | 1600 | | 1800 | |
|---|---|---|---|---|---|---|
| | | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| Full Load Performances* | Nominal Capacity | kW \| Ton | 1595 \| 454 | | 1800 \| 512 | |
| | EER | kW/kW \| Btu/Wh | 2,9 \| 9,86 | | 2,85 \| 9,69 | |
| Seasonal Energy Efficiency** | **$SEER_{12/7°C}$ Comfort low temp.** | **kWh/kWh** | **4,76** | | **4,64** | |
| | **$\eta s\ cool_{12/7°C}$** | **%** | **187** | | **183** | |
| | **$SEPR_{12/7°C}$ Process high temp.** | **kWh/kWh** | **5,94** | | **5,63** | |
| Integrated Part Load Values | **IPLV.SI** | **kW/kW** | **5,13** | | **4,93** | |
| | **IPLV.IP** | **Btu/Wh** | **17,62** | | **17,28** | |
| **Refrigerant** | | | R - 134a | | | |
| **Compressor type** | | | VARIABLE-SPEED DRIVEN, TWIN-SCREW COMPRESSOR | | | |
| **Nb of compressors / nb of circuits** | | | 4/4 | | | |
| **Structural and Acoustical Data** | | | | | | |
| **Dimensions** | | | | | | |
| Length | | mm \| in | 7979 \| 314 | 7979 \| 314 | 7979 \| 314 | 7979 \| 314 |
| Length - Module 1 + Module 2 | | mm \| in | 15958 \| 628 | | 15958 \| 628 | |
| Width | | mm \| in | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 |
| Height | | mm \| in | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 |
| **Weights - Standard Unit** | | | | | | |
| Operating weight(1) | | kg \| lb | 6110 \| 13470 | 6113 \| 13477 | 6119 \| 13490 | 6119 \| 13490 |
| **Sound levels - Standard Unit** | | | | | | |
| Sound Power(2) | | dB(A) | 102,0 | 102,0 | 103,5 | 103,5 |
| Sound Pressure at 10 m(3) | | dB(A) | 68,5 | 68,5 | 70,5 | 70,5 |
| **Weights + Option 15** | | | | | | |
| Operating weight(1) | | kg \| lb | 6150 \| 13558 | 6153 \| 13565 | 6159 \| 13578 | 6159 \| 13578 |
| **Sound levels + Option 15** | | | | | | |
| Sound Power(2) | | dB(A) | 100,0 | 100,0 | 101,0 | 101,0 |
| Sound Pressure at 10 m(3) | | dB(A) | 66,5 | 66,5 | 67,5 | 67,5 |
| **Frigorific Data** | | | | | | |
| **Refrigerant Charge(1)** | | | R134a (GWP = 1430 following AR4 ; ODP=0) | | | |
| Module 1 - Circuit A | | kg \| lb | 73 \| 161 | | 73 \| 161 | |
| | | $teqCO_2$ | 104 | | 104 | |
| Module 1 - Circuit B | | kg \| lb | 65 \| 143 | | 62 \| 137 | |
| | | $teqCO_2$ | 93 | | 89 | |
| Module 2 - Circuit A | | kg \| lb | 73 \| 161 | | 73 \| 161 | |
| | | $teqCO_2$ | 104 | | 104 | |
| Module 2 - Circuit B | | kg \| lb | 65 \| 143 | | 62 \| 137 | |
| | | $teqCO_2$ | 93 | | 89 | |

* In accordance with standard EN14511-3:2022.

** In accordance with standard EN14825:2022, average climate.

**$SEER_{12/7°C}$ & $\eta s\ cool_{12/7°C}$** **Bold values compliant with Ecodesign regulation (UE) N° 2016/2281 for Comfort Applications**

**$SEPR_{12/7°C}$** **Bold values compliant with Ecodesign regulation (UE) N° 2016/2281 for Process Applications**

**IPLV.SI** **Bold values compliant with AHRI standard (Air-Conditioning, Heating, and Refrigeration Institute ; U.S.A) 551/591 (SI).**

**IPLV.IP** **Bold values compliant with AHRI standard (Air-Conditioning, Heating, and Refrigeration Institute ; U.S.A) 550/590 (I-P).**

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

(2) In dB ref =$10^{-12}$ W, 'A' weighted. Declared noise emission value dissociated in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measurement following ISO 9614-1 and certified by Eurovent.

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

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

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

AHRI certified values

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

# PHYSICAL DATA (50Hz VERSION)

| 30XBV-A - Duplex units | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Oil Charge**(1) | | | | | |
| Module 1 - Circuit A | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| Module 1 - Circuit B | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| Module 2 - Circuit A | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| Module 2 - Circuit B | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| **Unit Minimum Part Load**(4) | % | 7 | | 7 | |
| **PED Category** | | IV | | IV | |
| **Aeraulic Data** | | | | | |
| Fans Quantity | | 24 | | 24 | |
| Maximum Total Air Flow Rate | $m^3/s$ \| gpm | 124 \| 1964040 | | 124 \| 1964040 | |
| Maximum Rotation Speed | rpm | 950 | | 950 | |
| **Hydraulic Data** | | | | | |
| Volume in the unit | L \| gal | 242 \| 64 | | 262 \| 70 | |
| Max. operating pressure - hydraulic circuit | kPa \| psi | 1000 \| 145 | | 1000 \| 145 | |
| Min. hydraulic flow rate | L/s \| gpm | 20 \| 317 | | 20 \| 317 | |
| Max. hydraulic flow rate | L/s \| gpm | 144 \| 2282 | | 161 \| 2552 | |
| **Hydraulic Connections** | | | | | |
| Inlet Connection Diameter | mm \| in | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| Outlet Connection Diameter | mm \| in | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| **Chassis Paint Color** | | Color code RAL 7035 | | | |

(1) Values are guidelines only. Refer to the unit name plate.
(4) For standard conditions. Depending on operating conditions, units might have a different minimum part load or cycle.

# PHYSICAL DATA (400V-3PH-60Hz POWER SUPPLY) - OPTION 335 + 16

### AHRI(1) capacity ratings (IP)

| Unit size | Capacity | | Total power (Btu/h) | Fan power (Btu/h) | Efficiency | |
|---|---|---|---|---|---|---|
| | Tons | kW | | | EER (Btu/W.h) | IPLV (Btu/W.h) |
| **0500** | 139 | 489 | 1668517 | 66536 | 9,7 | 16,1 |
| **0600** | 162 | 569 | 1941485 | 76090 | 9,7 | 16,4 |
| **0700** | 196 | 691 | 2357761 | 95198 | 9,7 | 16,6 |
| **0800** | 224 | 788 | 2688735 | 114305 | 9,8 | 16,7 |
| **0900** | 243 | 853 | 2910521 | 114305 | 9,7 | 16,4 |
| **1000** | 289 | 1016 | 3466694 | 133413 | 9,7 | 16,3 |
| **1100** | 311 | 1092 | 3726013 | 152180 | 9,7 | 16,6 |
| **1200** | 338 | 1190 | 4060399 | 152180 | 9,8 | 16,2 |
| **1300** | 370 | 1301 | 4439142 | 171287 | 9,8 | 16,5 |
| **1450** | 423 | 1486 | 5070381 | 190395 | 9,8 | 16,0 |
| **1600** | 448 | 1577 | 5380882 | 228269 | 9,8 | 16,5 |
| **1800** | 507 | 1783 | 6083774 | 228269 | 9,7 | 16,4 |

EER — Energy Efficiency Ratio
(1) Air-Conditioning, Heating, and Refrigeration Institute (U.S.A.).

**NOTES:**

1. **Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org**
2. **Standard rating conditions are as follows:**
   **Cooler Conditions:**
   **Leaving water temperature: 44.00°F (6.67°C) as per AHRI 550/590 (I-P) / 7°C as per AHRI 551/591 (SI)**
   **Entering water temperature: 54.00°F (12.22°C) as per AHRI 550/590 (I-P) / 12°C as per AHRI 551/591 (SI)**
   **Flow rate: Rated water flow is determined by the water temperatures at the rated capacity.**
   **Fouling Factor:**
   **0.000100 hr x sq ft °F/Btu (0.0176 m².K/kW) as per AHRI 550/590 (I-P) / 0.0180 m².K/kW as per AHRI 551/591 (SI)**
   **Condenser Conditions:**
   **Entering air temperature: 95.0°F (35.0°C)**

# PHYSICAL DATA (400V-3PH-60HZ POWER SUPPLY) - OPTION 335 + 16

### 30XBV-A Single units + Option 335 + 16

| 30XBV-A Single units + Option 335 + 16 | | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Full Load Performances* | Nominal Capacity | kW \| Ton | 489 \| 139 | 569 \| 162 | 691 \| 196 | 788 \| 224 | 853 \| 243 | 1016 \| 289 | 1092 \| 311 | 1190 \| 338 | 1301 \| 370 | 1486 \| 423 |
| | EER | kW/kW \| Btu/Wh | 2,84 \| 9,66 | 2,85 \| 9,69 | 2,85 \| 9,69 | 2,88 \| 9,79 | 2,85 \| 9,69 | 2,85 \| 9,69 | 2,85 \| 9,69 | 2,87 \| 9,76 | 2,88 \| 9,79 | 2,89 \| 9,83 |
| **Refrigerant** | | | R - 134a | | | | | | | | | |
| **Compressor type** | | | VARIABLE-SPEED DRIVEN, TWIN-SCREW COMPRESSOR | | | | | | | | | |
| **Nb of compressors / nb of circuits** | | | 2/2 | | | | | | | | | |
| **Structural and Acoustical Data** | | | | | | | | | | | | |
| **Dimensions** | | | | | | | | | | | | |
| Length | | mm \| in | 5591 \| 220 | 5591 \| 220 | 6785 \| 267 | 7979 \| 314 | 7979 \| 314 | 9175 \| 361 | 10369 \| 408 | 10363 \| 408 | 11561 \| 455 | 12755 \| 502 |
| Width | | mm \| in | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 |
| Height | | mm \| in | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 |
| **Weights** | | | | | | | | | | | | |
| Operating weight(1) | | kg \| lb | 4890 \| 10781 | 4929 \| 10867 | 5268 \| 11614 | 6108 \| 13466 | 6204 \| 13677 | 7000 \| 15432 | 7385 \| 16281 | 7826 \| 17253 | 8141 \| 17948 | 9039 \| 19928 |
| **Sound levels - Option 335 + 16** | | | | | | | | | | | | |
| Sound Power(2) | | dB(A) | 98,5 | 100,5 | 102,0 | 104,0 | 102,5 | 105,5 | 103,5 | 105,0 | 104,5 | 105,5 |
| Sound Pressure at 10 m(3) | | dB(A) | 66,0 | 68,0 | 69,5 | 71,5 | 70,0 | 72,5 | 71,0 | 72,0 | 71,5 | 72,5 |
| **Sound levels - Option 335 + 16 + 15** | | | | | | | | | | | | |
| Sound Power(2) | | dB(A) | 98,0 | 99,0 | 100,5 | 101,0 | 100,5 | 101,5 | 102,0 | 102,5 | 102,5 | 103,0 |
| Sound Pressure at 10 m(3) | | dB(A) | 65,5 | 66,5 | 68,0 | 68,0 | 68,0 | 69,0 | 69,0 | 69,5 | 69,5 | 70,0 |
| **Frigorific Data** | | | | | | | | | | | | |
| **Refrigerant Charge(1)** | | | R134a (GWP = 1430 following AR4 ; ODP=0) | | | | | | | | | |
| Circuit A | | kg \| lb | 45 \| 99 | 45 \| 99 | 54 \| 119 | 73 \| 161 | 73 \| 161 | 84 \| 185 | 83 \| 183 | 110 \| 243 | 118 \| 260 | 113 \| 249 |
| | | $teqCO_2$ | 64 | 64 | 77 | 104 | 104 | 120 | 119 | 157 | 169 | 162 |
| Circuit B | | kg \| lb | 42 \| 93 | 45 \| 99 | 54 \| 119 | 65 \| 143 | 62 \| 137 | 84 \| 185 | 83 \| 183 | 86 \| 190 | 86 \| 190 | 113 \| 249 |
| | | $teqCO_2$ | 60 | 64 | 77 | 93 | 89 | 120 | 119 | 123 | 123 | 162 |
| **Oil Charge(1)** | | | Oil for R134a. Contact Carrier ERCD for supplying. | | | | | | | | | |
| Circuit A | | L \| gal | 27 \| 7,1 | 24 \| 6,3 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 30 \| 7,9 | 30 \| 7,9 | 30 \| 7,9 |
| Circuit B | | L \| gal | 27 \| 7,1 | 24 \| 6,3 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 23 \| 6,1 | 20 \| 5,3 | 20 \| 5,3 | 20 \| 5,3 | 30 \| 7,9 |
| **Unit Minimum Part Load(4)** | | % | 13 | 13 | 13 | 13 | 14 | 12 | 12 | 14 | 13 | 12 |
| **PED Category** | | | IV | IV | IV | IV | IV | IV | IV | IV | IV | IV |

* In accordance with standard AHRI 550-590 (Entering/Leaving Heat Transfer Medium Temperature = 54°F/44°F / Outside Air Temperature = 95°F / Evaporator Fouling Factor = 0.0001 [hr.sqft.°F/BTU] / Heat Transfer Medium = Pure Water).

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

(2) In dB ref =$10^{-12}$ W, 'A' weighted. Declared noise emission value dissociated in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measurement following ISO 9614-1.

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

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

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AHRI certified values

# PHYSICAL DATA (400V-3PH-60HZ POWER SUPPLY) - OPTION 335 + 16

| 30XBV-A Single units + Option 335 + 16 | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Aeraulic Data** | | | | | | | | | | | |
| Fans Quantity | | 7 | 8 | 10 | 12 | 12 | 14 | 16 | 16 | 18 | 20 |
| Maximum Total Air Flow Rate | $m^3/s$ \| gpm | 43 \| 687421 | 50 \| 785624 | 62 \| 982030 | 74 \| 1178436 | 74 \| 1178436 | 87 \| 1374842 | 99 \| 1571248 | 99 \| 1571248 | 112 \| 1767654 | 124 \| 1964060 |
| Maximum Rotation Speed | rpm | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 |
| **Hydraulic Data** | | | | | | | | | | | |
| Volume in the unit | L \| gal | 85 \| 22 | 85 \| 22 | 99 \| 26 | 121 \| 32 | 131 \| 35 | 157 \| 41 | 157 \| 41 | 172 \| 45 | 172 \| 45 | 188 \| 50 |
| Max. operating pressure - hydraulic circuit | kPa \| psi | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 | 1000 \| 145 |
| Min. hydraulic flow rate | L/s \| gpm | 7 \| 111 | 7 \| 111 | 8 \| 127 | 10 \| 159 | 11 \| 174 | 17 \| 269 | 17 \| 269 | 18 \| 285 | 18 \| 285 | 18 \| 285 |
| Max. hydraulic flow rate | L/s \| gpm | 48 \| 761 | 48 \| 761 | 59 \| 935 | 68 \| 1078 | 76 \| 1205 | 125 \| 1981 | 125 \| 1981 | 133 \| 2108 | 133 \| 2108 | 133 \| 2108 |
| **Hydraulic Connections** | | | | | | | | | | | |
| Inlet Connection Diameter | mm \| in | 127 \| 5 | 127 \| 5 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| Outlet Connection Diameter | mm \| in | 127 \| 5 | 127 \| 5 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| **Chassis Paint Color** | | Color code RAL 7035 | | | | | | | | | |

# PHYSICAL DATA (400V-3PH-60HZ POWER SUPPLY) - OPTION 335 + 16

## Physical data - Duplex units + option 335 + 16

| 30XBV-A - Duplex units + option 335 + 16 | | | 1600 | | 1800 | |
|---|---|---|---|---|---|---|
| | | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| Full Load Performances* | Nominal Capacity | kW | 1577 \| 448 | | 1783 \| 507 | |
| | EER | kW/kW | 2,87 \| 9,76 | | 2,86 \| 9,72 | |
| **Refrigerant** | | | R - 134a | | | |
| **Compressor type** | | | VARIABLE-SPEED DRIVEN, TWIN-SCREW COMPRESSOR | | | |
| **Nb of compressors / nb of circuits** | | | 4/4 | | | |
| **Structural and Acoustical Data** | | | | | | |
| **Dimensions** | | | | | | |
| Length | | mm \| in | 7979 \| 314 | 7979 \| 314 | 7979 \| 314 | 7979 \| 314 |
| Length - Module 1 + Module 2 | | mm \| in | 15958 \| 628 | | 15958 \| 628 | |
| Width | | mm \| in | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 | 2258 \| 89 |
| Height | | mm \| in | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 | 2325 \| 92 |
| **Weights** | | | | | | |
| Operating weight(1) | | kg \| lb | 6110 \| 13470 | 6113 \| 13477 | 6119 \| 13490 | 6119 \| 13490 |
| **Sound levels - Standard Unit** | | | | | | |
| Sound Power(2) | | dB(A) | 104,5 | | 105,5 | |
| Sound Pressure at 10 m(3) | | dB(A) | 71,0 | | 72,0 | |
| **Sound levels + Option 15** | | | | | | |
| Sound Power(2) | | dB(A) | 103,0 | | 104,0 | |
| Sound Pressure at 10 m(3) | | dB(A) | 69,5 | | 70,5 | |
| **Frigorific Data** | | | | | | |
| **Refrigerant Charge(1)** | | | R134a (GWP = 1430 following AR4 ; ODP=0) | | | |
| Module 1 - Circuit A | | kg \| lb | 73 \| 161 | | 74 \| 163 | |
| | | $teqCO_2$ | 104 | | 106 | |
| Module 1 - Circuit B | | kg \| lb | 59 \| 130 | | 60 \| 132 | |
| | | $teqCO_2$ | 84 | | 86 | |
| Module 2 - Circuit A | | kg \| lb | 73 \| 161 | | 74 \| 163 | |
| | | $teqCO_2$ | 104 | | 106 | |
| Module 2 - Circuit B | | kg \| lb | 59 \| 130 | | 60 \| 132 | |
| | | $teqCO_2$ | 84 | | 86 | |
| **Oil Charge(1)** | | | | | | |
| Module 1 - Circuit A | | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| Module 1 - Circuit B | | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| Module 2 - Circuit A | | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| Module 2 - Circuit B | | L \| gal | 23 \| 6,1 | | 20 \| 5,3 | |
| **Unit Minimum Part Load(4)** | | % | 7 | | 7 | |
| **PED Category** | | | IV | | IV | |

* In accordance with standard 550/590 (I-P) 54/44 95F + ff 0,0001.
(1) Values are guidelines only. Refer to the unit name plate.
(2) In dB ref $=10^{-12}$ W, 'A' weighted. Declared noise emission value dissociated in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measurement following ISO 9614-1.
(3) In dB ref =20 µPa, 'A' weighted. Declared noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).
(4) For standard conditions. Depending on operating conditions, units might have a different minimum part load or cycle.

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AHRI certified values

## PHYSICAL DATA (400V-3PH-60HZ POWER SUPPLY) - OPTION 335 + 16

| 30XBV-A - Duplex units + option 335 + 16 | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Aeraulic Data** | | | | | |
| Fans Quantity | | 24 | | 24 | |
| Maximum Total Air Flow Rate | $m^3/s$ \| gpm | 149 \| 2356872 | | 149 \| 2356872 | |
| Maximum Rotation Speed | rpm | 1140 | | 1140 | |
| **Hydraulic Data** | | | | | |
| Volume in the unit | L \| gal | 242 \| 64 | | 262 \| 70 | |
| Max. operating pressure - hydraulic circuit | kPa \| psi | 1000 \| 145 | | 1000 \| 145 | |
| Min. hydraulic flow rate | L/s \| gpm | 20 \| 317 | | 20 \| 317 | |
| Max. hydraulic flow rate | L/s \| gpm | 144 \| 2282 | | 161 \| 2552 | |
| **Hydraulic Connections** | | | | | |
| Inlet Connection Diameter | mm \| in | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| Outlet Connection Diameter | mm \| in | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 | 152,4 \| 6 |
| **Chassis Paint Color** | | Color code RAL 7035 | | | |

# PHYSICAL DATA - VARIABLE SPEED FANS (AC) - OPTION 17A

| 30XBV-A Units - Option 17A | | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 | 1600 | 1800 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Full Load Performances* | Nominal Capacity | kW I Ton | 498 I 142 | 580 I 165 | 705 I 200 | 803 I 228 | 869 I 247 | 1034 I 294 | 1112 I 316 | 1212 I 345 | 1327 I 377 | 1516 I 431 | 1605 I 456 | 1816 I 516 |
| | EER | kW/kW I Btu/Wh | 2,88 I 9,79 | 2,88 I 9,79 | 2,89 I 9,83 | 2,94 I 10 | 2,88 I 9,79 | 2,88 I 9,79 | 2,89 I 9,83 | 2,9 I 9,86 | 2,91 I 9,89 | 2,9 I 9,86 | 2,9 I 9,86 | 2,86 I 9,72 |
| Seasonal Energy Efficiency** | **$SEER_{12/7°C}$ Comfort low temp.** | **kWh/kWh** | **4,97** | **5,00** | **5,17** | **5,16** | **5,07** | **5,02** | **5,05** | **4,99** | **5,08** | **4,96** | **5,10** | **4,91** |
| | **$\eta s\ cool_{12/7°C}$** | **%** | **196** | **197** | **204** | **204** | **200** | **198** | **199** | **197** | **200** | **196** | **201** | **193** |
| | **$SEPR_{12/7°C}$ Process high temp.** | **kWh/kWh** | **6,07** | **6,04** | **6,08** | **6,26** | **6,06** | **6,15** | **6,22** | **5,82** | **5,87** | **5,56** | **6,22** | **5,83** |
| Integrated Part Load Values | **IPLV.SI** | **kW/kW** | **5,474** | **5,539** | **5,665** | **5,689** | **5,568** | **5,514** | **5,614** | **5,434** | **5,528** | **5,377** | **5,624** | **5,393** |
| | **IPLV.IP** | **Btu/Wh** | **18,61** | **18,83** | **19,26** | **19,34** | **18,93** | **18,75** | **19,09** | **18,48** | **18,8** | **18,28** | **19,12** | **18,34** |
| **30XBV-A Units - Options 335 + 16 + 17A** | | | **0500** | **0600** | **0700** | **0800** | **0900** | **1000** | **1100** | **1200** | **1300** | **1450** | **1600** | **1800** |
| Full Load Performances*** | Nominal Capacity | kW I Ton | 489 I 139 | 569 I 162 | 691 I 196 | 787 I 224 | 853 I 243 | 1015 I 289 | 1091 I 310 | 1189 I 338 | 1300 I 370 | 1486 I 423 | 1575 I 448 | 1782 I 507 |
| | EER | kW/kW I Btu/Wh | 2,86 I 9,72 | 2,86 I 9,72 | 2,87 I 9,76 | 2,92 I 9,93 | 2,86 I 9,72 | 2,86 I 9,72 | 2,87 I 9,76 | 2,88 I 9,79 | 2,89 I 9,83 | 2,89 I 9,83 | 2,9 I 9,86 | 2,87 I 9,76 |
| **30XBV-A Units - Options 335 + 16 + 17A + 263** | | | **0500** | **0600** | **0700** | **0800** | **0900** | **1000** | **1100** | **1200** | **1300** | **1450** | **1600** | **1800** |
| Full Load Performances*** | Nominal Capacity | kW I Ton | 472 I 134 | 552 I 157 | 676 I 192 | 786 I 223 | 832 I 237 | 993 I 282 | 1064 I 303 | 1164 I 331 | 1298 I 369 | 1484 I 422 | 1572 I 447 | 1756 I 499 |
| | EER | kW/kW I Btu/Wh | 2,87 I 9,76 | 2,86 I 9,72 | 2,87 I 9,76 | 2,89 I 9,83 | 2,87 I 9,76 | 2,86 I 9,72 | 2,88 I 9,79 | 2,87 I 9,76 | 2,87 I 9,76 | 2,87 I 9,76 | 2,87 I 9,76 | 2,86 I 9,72 |
| **Sound levels** | | | | | | | | | | | | | | |
| Sound Power(1) | | dB(A) | 97,5 | 100,0 | 101,5 | 103,0 | 102,0 | 105,0 | 103,0 | 105,0 | 104,5 | 105,5 | 103,0 | 105,5 |
| Sound Pressure at 10 m(2) | | dB(A) | 65,0 | 67,5 | 69,0 | 70,5 | 69,0 | 72,0 | 70,0 | 72,0 | 71,5 | 72,5 | 69,5 | 72,0 |
| **Sound levels + Option 15** | | | | | | | | | | | | | | |
| Sound Power(1) | | dB(A) | 97,0 | 98,5 | 100,0 | 99,5 | 100,0 | 100,5 | 100,5 | 102,0 | 102,0 | 103,0 | 101,5 | 103,5 |
| Sound Pressure at 10 m(2) | | dB(A) | 64,5 | 66,0 | 67,5 | 67,0 | 67,0 | 68,0 | 67,5 | 69,0 | 69,0 | 70,0 | 68,0 | 70,0 |

* In accordance with standard EN14511-3:2022.

** In accordance with standard EN14825:2022, average climate.

*** In accordance with standard AHRI 550-590 (Entering/Leaving Heat Transfer Medium Temperature = 54°F/44°F / Outside Air Temperature = 95°F / Evaporator Fouling Factor = 0.0001 [hr.sqft.°F/BTU] / Heat Transfer Medium = Pure Water).

**$SEER_{12/7°C}$ & $\eta s\ cool_{12/7°C}$** **Bold values compliant with Ecodesign regulation (UE) N° 2016/2281 for Comfort Applications**

**$SEPR_{12/7°C}$** **Bold values compliant with Ecodesign regulation (UE) N° 2016/2281 for Process Applications**

**IPLV.SI** **Bold values compliant with AHRI standard (Air, Heating & Refrigeration Institute ; U.S.A) 551-591.**

**IPLV.IP** **Bold values compliant with AHRI standard (Air, Heating & Refrigeration Institute ; U.S.A) 550-590.**

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

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

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

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

AHRI certified values

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

# PHYSICAL DATA - VARIABLE SPEED FANS (AC) - OPTION 17A

### AHRI(1) capacity ratings (IP) options 335 + 16 + 17A

| Unit size | Capacity | | Total power (Btu/h) | Fan power (Btu/h) | Efficiency | |
|---|---|---|---|---|---|---|
| | Tons | kW | | | EER (Btu/W.h) | IPLV (Btu/W.h) |
| **0500** | 139 | 489 | 1668517 | 59712 | 9,7 | 18,6 |
| **0600** | 162 | 569 | 1941485 | 71654 | 9,7 | 18,8 |
| **0700** | 196 | 691 | 2357761 | 82914 | 9,8 | 19,1 |
| **0800** | 224 | 787 | 2685323 | 92468 | 9,9 | 19,2 |
| **0900** | 243 | 853 | 2910521 | 102022 | 9,7 | 18,8 |
| **1000** | 289 | 1015 | 3463282 | 120447 | 9,7 | 18,7 |
| **1100** | 310 | 1091 | 3722601 | 127613 | 9,8 | 19,1 |
| **1200** | 338 | 1189 | 4056987 | 149109 | 9,8 | 18,5 |
| **1300** | 370 | 1300 | 4435730 | 160369 | 9,8 | 18,8 |
| **1450** | 423 | 1486 | 5070381 | 193125 | 9,8 | 18,3 |
| **1600** | 448 | 1575 | 5374058 | 194490 | 9,9 | 19,0 |
| **1800** | 507 | 1782 | 6080362 | 223834 | 9,8 | 18,2 |

EER — Energy Efficiency Ratio

(1) Air-Conditioning, Heating, and Refrigeration Institute (U.S.A.).

**NOTES:**

1. **Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org**
2. **Standard rating conditions are as follows:**
   **Cooler Conditions:**
   **Leaving water temperature: 44.00°F (6.67°C) as per AHRI 550/590 (I-P) / 7°C as per AHRI 551/591 (SI)**
   **Entering water temperature: 54.00°F (12.22°C) as per AHRI 550/590 (I-P) / 12°C as per AHRI 551/591 (SI)**
   **Flow rate: Rated water flow is determined by the water temperatures at the rated capacity.**
   **Fouling Factor:**
   **0.000100 hr x sq ft °F/Btu (0.0176 m².K/kW) as per AHRI 550/590 (I-P) / 0.0180 m².K/kW as per AHRI 551/591 (SI)**
   **Condenser Conditions:**
   **Entering air temperature: 95.0°F (35.0°C)**

# ELECTRICAL DATA (50Hz VERSION)

## Electrical data - Standard units

| 30XBV-A Single Units | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Input power(1)** | | | | | | | | | | | |
| Maximum operating input power(2) | kW | 225 | 277 | 314 | 359 | 395 | 453 | 494 | 528 | 568 | 642 |
| **Operating current draw(1)** | | | | | | | | | | | |
| Maximum Current (Un)(2) | A | 350 | 431 | 488 | 558 | 614 | 704 | 768 | 820 | 882 | 998 |
| Maximum Current (Un-10%) | A | 374 | 471 | 513 | 599 | 646 | 768 | 807 | 888 | 916 | 1027 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | | | | | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | | | | | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | | | | | | | |
| **Start-up current(1)** | | | | | | | | | | | |
| Maximum Current (Un)(5) | A | 193 | 252 | 280 | 275 | 290 | 396 | 427 | 436 | 457 | 570 |

| 30XBV-A Duplex Units | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Power circuit supply** | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | |
| Voltage range | V | 360-440 | | | |
| **Input power(1)** | | | | | |
| Maximum operating input power(2) | kW | 359 | 359 | 395 | 395 |
| **Operating current draw(1)** | | | | | |
| Maximum Current (Un)(2) | A | 558 | 558 | 614 | 614 |
| Maximum Current (Un-10%) | A | 599 | 599 | 646 | 646 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | |
| **Start-up current(1)** | | | | | |
| Maximum Current (Un)(5) | A | 275 | 275 | 290 | 290 |

(1) Values obtained at operation with maximum operating input power.
(2) Values given on the unit nameplate.
(3) Values decrease when load lowers.
(4) May vary according to the installation's short circuit ratio. The exact values depend on the short-circuit ratio (Rsce).
THDi increases when load lowers. It's necessary to consider a degradation of the values when the input power drops.
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.
(5) Starting current of the smallest compressor + Operating current of the biggest compressor + Fan current.

**Note :**
**Control circuit is supplied with 24V via internal transformer.**

# ELECTRICAL DATA (50Hz VERSION)

## Electrical Data of Units + Option 16

| 30XBV-A Single Units + Option 16 | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Input power(1)** | | | | | | | | | | | |
| Maximum operating input power(2) | kW | 238 | 294 | 332 | 382 | 419 | 481 | 525 | 559 | 601 | 678 |
| **Operating current draw(1)** | | | | | | | | | | | |
| Maximum Current (Un)(2) | A | 370 | 457 | 516 | 593 | 651 | 747 | 815 | 868 | 934 | 1054 |
| Maximum Current (Un-10%) | A | 396 | 499 | 543 | 637 | 685 | 816 | 857 | 940 | 977 | 1098 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | | | | | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | | | | | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | | | | | | | |
| **Start-up current(1)** | | | | | | | | | | | |
| Maximum Current (Un)(5) | A | 203 | 265 | 294 | 292 | 308 | 417 | 451 | 460 | 483 | 598 |

| 30XBV-A Duplex Units + Option 16 | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Power circuit supply** | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | |
| Voltage range | V | 360-440 | | | |
| **Input power(1)** | | | | | |
| Maximum operating input power(2) | kW | 382 | 382 | 419 | 419 |
| **Operating current draw(1)** | | | | | |
| Maximum Current (Un)(2) | A | 593 | 593 | 651 | 651 |
| Maximum Current (Un-10%) | A | 637 | 637 | 685 | 685 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | |
| **Start-up current(1)** | | | | | |
| Maximum Current (Un)(5) | A | 292 | 292 | 308 | 308 |

(1) Values obtained at operation with maximum operating input power.
(2) Values given on the unit nameplate.
(3) Values decrease when load lowers.
(4) May vary according to the installation's short circuit ratio. The exact values depend on the short-circuit ratio (Rsce).
THDi increases when load lowers. It's necessary to consider a degradation of the values when the input power drops.
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.
(5) Starting current of the smallest compressor + Operating current of the biggest compressor + Fan current.

# ELECTRICAL DATA (400V-3PH-60Hz POWER SUPPLY) - OPTION 335 + 16

### Electrical Data of Units + Option 335 + 16

| 30XBV-A Single Units + Options 335 + 16 | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-60 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Input power(1)** | | | | | | | | | | | |
| Maximum operating input power(2) | kW | 251 | 309 | 351 | 403 | 441 | 507 | 554 | 588 | 635 | 716 |
| **Operating current draw(1)** | | | | | | | | | | | |
| Maximum Current (Un)(2) | A | 390 | 480 | 545 | 626 | 685 | 788 | 861 | 914 | 987 | 1112 |
| Maximum Current (Un-10%) | A | 415 | 522 | 571 | 671 | 718 | 856 | 902 | 986 | 1029 | 1156 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | | | | | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | | | | | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | | | | | | | |
| **Start-up current(1)** | | | | | | | | | | | |
| Maximum Current (Un)(5) | A | 213 | 276 | 308 | 309 | 325 | 438 | 473 | 483 | 509 | 627 |

| 30XBV-A - Duplex Units + Options 335 + 16 | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Power circuit supply** | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-60 | | | |
| Voltage range | V | 360-440 | | | |
| **Input power(1)** | | | | | |
| Maximum operating input power(2) | kW | 403 | 403 | 441 | 441 |
| **Operating current draw(1)** | | | | | |
| Maximum Current (Un)(2) | A | 626 | 626 | 685 | 685 |
| Maximum Current (Un-10%) | A | 671 | 671 | 718 | 718 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | |
| **Start-up current(1)** | | | | | |
| Maximum Current (Un)(5) | A | 309 | 309 | 325 | 325 |

(1) Values obtained at operation with maximum operating input power.
(2) Values given on the unit nameplate.
(3) Values decrease when load lowers.
(4) May vary according to the installation's short circuit ratio. The exact values depend on the short-circuit ratio (Rsce).
THDi increases when load lowers. It's necessary to consider a degradation of the values when the input power drops.
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.
(5) Starting current of the smallest compressor + Operating current of the biggest compressor + Fan current.

# ELECTRICAL DATA - VARIABLE SPEED FANS (AC) - OPTION 17A

### Electrical Data of Units + Option 17A

| 30XBV-A - Single Units - Option 17A | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Input power(1)** | | | | | | | | | | | |
| Maximum operating input power(2) | kW | 230 | 283 | 320 | 368 | 405 | 465 | 507 | 539 | 580 | 655 |
| **Operating current draw(1)** | | | | | | | | | | | |
| Maximum Current (Un)(2) | A | 365 | 451 | 509 | 584 | 643 | 738 | 804 | 857 | 922 | 1040 |
| Maximum Current (Un-10%) | A | 391 | 494 | 536 | 628 | 676 | 806 | 845 | 929 | 965 | 1084 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | | | | | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | | | | | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | | | | | | | |
| **Start-up current(1)** | | | | | | | | | | | |
| Maximum Current (Un)(5) | A | 200 | 262 | 290 | 288 | 304 | 412 | 445 | 455 | 477 | 591 |

| 30XBV-A - Duplex Units - Option 17A | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Power circuit supply** | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | |
| Voltage range | V | 360-440 | | | |
| **Input power(1)** | | | | | |
| Maximum operating input power(2) | kW | 368 | 368 | 405 | 405 |
| **Operating current draw(1)** | | | | | |
| Maximum Current (Un)(2) | A | 584 | 584 | 643 | 643 |
| Maximum Current (Un-10%) | A | 628 | 628 | 676 | 676 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | |
| **Start-up current(1)** | | | | | |
| Maximum Current (Un)(5) | A | 288 | 288 | 304 | 304 |

(1) Values obtained at operation with maximum operating input power.
(2) Values given on the unit nameplate.
(3) Values decrease when load lowers.
(4) May vary according to the installation's short circuit ratio. The exact values depend on the short-circuit ratio (Rsce).
THDi increases when load lowers. It's necessary to consider a degradation of the values when the input power drops.
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.
(5) Starting current of the smallest compressor + Operating current of the biggest compressor + Fan current.

# ELECTRICAL DATA - VARIABLE SPEED FANS (AC) - OPTION 17A

### Electrical Data of Units + Options 16 + 17A

| 30XBV-A - Single Units - Options 16 + 17A | | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Power circuit supply** | | | | | | | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | | | | | | | |
| Voltage range | V | 360-440 | | | | | | | | | |
| **Input power(1)** | | | | | | | | | | | |
| Maximum operating input power(2) | kW | 243 | 299 | 338 | 390 | 428 | 492 | 537 | 569 | 613 | 690 |
| **Operating current draw(1)** | | | | | | | | | | | |
| Maximum Current (Un)(2) | A | 385 | 477 | 537 | 619 | 680 | 781 | 851 | 905 | 974 | 1096 |
| Maximum Current (Un-10%) | A | 410 | 517 | 564 | 662 | 709 | 846 | 890 | 975 | 1017 | 1142 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | | | | | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | | | | | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | | | | | | | |
| **Start-up current(1)** | | | | | | | | | | | |
| Maximum Current (Un)(5) | A | 210 | 275 | 304 | 305 | 322 | 433 | 469 | 479 | 503 | 619 |

| 30XBV-A - Duplex Units - Options 16 + 17A | | 1600 | | 1800 | |
|---|---|---|---|---|---|
| | | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
| **Power circuit supply** | | | | | |
| Nominal voltage | V-ph-Hz | 400-3-50 | | | |
| Voltage range | V | 360-440 | | | |
| **Input power(1)** | | | | | |
| Maximum operating input power(2) | kW | 390 | 390 | 428 | 428 |
| **Operating current draw(1)** | | | | | |
| Maximum Current (Un)(2) | A | 619 | 619 | 680 | 680 |
| Maximum Current (Un-10%) | A | 662 | 662 | 709 | 709 |
| **Power factor at maximum input power(1)** | | 0,91-0,93 | | | |
| Displacement Power Factor (Cos. Phi)(3) | | >0,98 | | | |
| Total current harmonic distortion rate (THDi)(4) | % | 35-45% | | | |
| **Start-up current(1)** | | | | | |
| Maximum Current (Un)(5) | A | 305 | 305 | 322 | 322 |

(1) Values obtained at operation with maximum operating input power.
(2) Values given on the unit nameplate.
(3) Values decrease when load lowers.
(4) May vary according to the installation's short circuit ratio. The exact values depend on the short-circuit ratio (Rsce).
THDi increases when load lowers. It's necessary to consider a degradation of the values when the input power drops.
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.
(5) Starting current of the smallest compressor + Operating current of the biggest compressor + Fan current.

# ELECTRICAL DATA (50Hz & 60Hz)

## Distribution of compressors per circuit

| Compressor | Circuit | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1450 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **06ZCE1H3AA06013** | A | 1 | - | - | - | - | - | - | - | - | - |
| | B | 1 | - | - | - | - | - | - | - | - | - |
| **06ZCE1T3AA06013** | A | - | 1 | 1 | - | - | - | - | - | - | - |
| | B | - | 1 | 1 | 1 | 1 | - | - | - | - | - |
| **06ZFC2T3AA06013** | A | - | - | - | 1 | 1 | 1 | 1 | - | - | - |
| | B | - | - | - | - | - | 1 | 1 | 1 | 1 | - |
| **06ZJG3H3AA06013** | A | - | - | - | - | - | - | - | 1 | 1 | 1 |
| | B | - | - | - | - | - | - | - | - | - | 1 |

| Compressor | Circuit | 1600_1 | 1600_2 | 1800_1 | 1800_2 |
|---|---|---|---|---|---|
| **06ZCE1H3AA06013** | A | - | - | - | - |
| | B | - | - | - | - |
| **06ZCE1T3AA06013** | A | - | - | - | - |
| | B | 1 | 1 | 1 | 1 |
| **06ZFC2T3AA06013** | A | 1 | 1 | 1 | 1 |
| | B | - | - | - | - |
| **06ZJG3H3AA06013** | A | - | - | - | - |
| | B | - | - | - | - |

# ELECTRICAL DATA (50Hz & 60Hz)

## Electrical notes

**Compliance of electrical 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.
The 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.
It was specifically taken into account when the electrical equipment was designed.

**Note : The standard EN60204-1 also enables to meet the requirements of the Machinery Directive.**
Annex B of EN 60204-1 is intended to define the electrical characteristics used for the operation of the units.
Those described below apply alongside the other information provided in this document.

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

**Overcurrent Protections**
Overcurrent protection of the power supply conductors is not provided with the unit.

***WARNING: A part of the short circuit protection must be carried out on the customer installation, in compliance with the instructions given in this document.***

**Leakage Currents Protections**
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 using variable frequency drives in the unit must be considered.
It is especially recommended that the differential 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.

**Unit's Power Connection Point**
The units are equipped with one electrical power connection point as standard.
For duplex units, each module has its own power connection point.
When the option 70/70D is selected, the power connection point is located immediatly upstream of the main disconnect switch.

**Neutral Regime**
The units are designed for connection to TN networks (IEC 60364).
The neutral wire (N) must not be connected directly to the unit.

**Note :**

**In IT networks, the use of filters integrated into the variable frequency drives is not suitable.**

**In addition, the equipment's short circuit holding current characteristics are modified.**

**Unit's Disconnect Switch**
The absence of the main disconnect switch is an exception that shall be considered at the building installation level.
The unit has no CE marking. To install the unit into EU, it is mandatory to select the option 70 or 70D.
With the option 70 or 70D, the main disconnect switch is of a type suitable for power interruption, in compliance with EN 60947-3 (equivalent to IEC 60947-3).

**Environment Classification following IEC 60364**

| Environment Criteria | Environment Class |
|---|---|
| Ambient atmosphere | Outdoor(1) |
| Altitude | up to 1000 m (2000 m)(2) |
| Ambient temperature range | from -20 °C to +48 °C (55 °C)(3) |
| Presence of solid foreign bodies | Class AE3 (no significant dust present)(1) |
| Presence of water | Class AD4 (projection in all directions without pressure)(1) |
| Presence of corrosive and polluting substances: | Class AF1 (negligible) |
| Competence of personnel: | BA4 (trained personnel). |

(1) The required protection level for this class is IP43-W minimum (according to the reference standard IEC 60529). All units are classified as IP54-W and fulfil this protection condition.
(2) Above 1000m, the maximum temperature must be reduced by 0.5K for every additional 100m up to 2000m.
(3) The value in brackets corresponds to operation with degraded thermal performances.

**Electromagnetic (High frequency) conducted disturbances**
Compatibility levels for electromagnetic (high frequency) conducted disturbances following EN 61800-3:

| Disturbance Criteria | Disturbance Level |
|---|---|
| Immunity to external interference | Defined by the second environment(1) |
| Interference emissions | Defined in category C3(2) |

(1) Examples of installations included in the first / second electromagnetic environments:

| First Environment | Second Environment |
|---|---|
| § commercial buildings | § Industrial zones |
| § residential buildings | § Technical premises powered from a dedicated transformer. |

(2) 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.

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

**Note : EN 61800-3 is equivalent to IEC 61800-3.**

**Low frequency conducted disturbances**
Compatibility levels for low frequency conducted disturbances as per the class 2 levels from IEC 61000-2-4:

| Disturbance Criteria | Disturbance Level |
|---|---|
| Power supply frequency variation | ±1Hz |
| Voltage Phase imbalance | 2% |
| Voltage Total Harmonic Distortion (THDu) | 8% |
| Rated impulse voltage Uw (IEC60664-1) | 2,5 kV |

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.

**Note : 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.**

***WARNING: If the phase imbalance exceeds the limit specified above, contact your local electricity supplier and ensure that the chiller is not switched on until corrective measures have been taken.***

**Voltage Phase Imbalance Calculation [%]**

$$\frac{(100 \times \text{max.deviation from average voltage})}{\text{Average voltage}}$$

**Example:**
On a 400 V - 3 ph - 50 Hz supply, the individual phase voltages were measured with the following values:
AB = 406 V;
BC = 399 V;
AC = 394 V
Average voltage = (406 + 399 + 394)/3 = 1199/3 = 399.7 (rounded up to 400 V).
Calculate the maximum deviation from the 400 V average:
(AB) = 406 - 400 = 6
(BC) = 400 - 399 = 1
(CA) = 400 - 394 = 6
The maximum deviation from the average is 6 V.
The greatest percentage deviation is: 100 x 6/400 = 1.5%
This is less than the permissible 2% and therefore acceptable.

# OPERATING RANGE

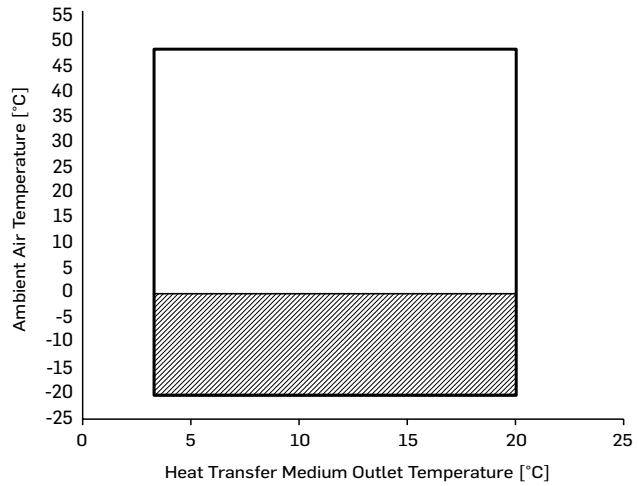
## Operating Range of Standard Units

| Heat Transfer Medium Heat Exchanger | | Minimum | Maximun |
|---|---|---|---|
| Heat Transfer Medium Inlet Temperature at start-up | °C \| °F | - | 45(1) \| 113 |
| Heat Transfer Medium Inlet Temperature during operation | °C \| °F | 6,8 \| 44,2 | 36 \| 96,8 |
| Heat Transfer Medium Outlet Temperature during operation | °C \| °F | 3,3(2) \| 37,9 | 20 \| 68 |
| **Air Heat Exchanger** | | **Minimum** | **Maximun** |
| Ambient Air Temperature during operation - standard unit | °C \| °F | 0 \| 32 | 48 \| 118,4 |
| Ambient Air Temperature during operation - option 28 | °C \| °F | -20 \| -4 | 48 \| 118,4 |

(1) Operating at partial load.
(2) According to the type of installation and air temperature.

**Notes:**
- **If the air temperature is to fall below 0 °C, option 28 must be selected.**
- **If the air temperature is to fall below -10 °C, option 28 must be selected, and water circuit(s) must be protected against freezing (glycol, drain, or constant temperature waterflow).**

### Units Operating Range




**NOTES:**
- **These ranges are given for indicative purpose. Check the operating range from Carrier electronic catalogue.**

**Legend**

Operating range, standard units

If the air temperature is to fall below 0 °C, option 28 must be selected. Below -10 °C, water circuit(s) must be protected against freezing (glycol, drain, or constant temperature waterflow).

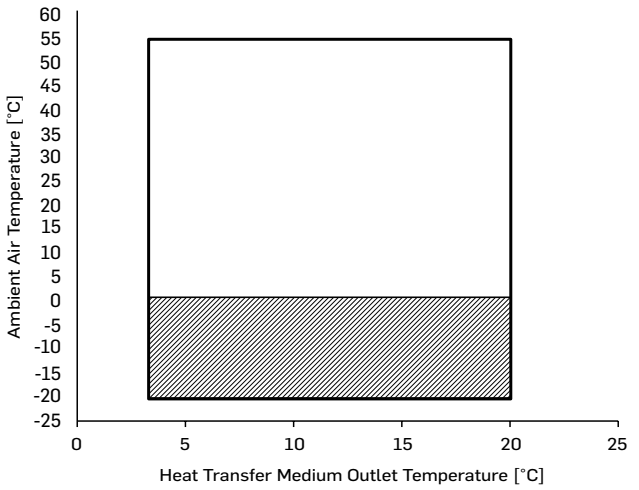
## Operating Range of Units + Option16

| Heat Transfer Medium Heat Exchanger | | Minimum | Maximun |
|---|---|---|---|
| Heat Transfer Medium Inlet Temperature at start-up | °C \| °F | - | 45(1) \| 113 |
| Heat Transfer Medium Inlet Temperature during operation | °C \| °F | 6,8 \| 44,2 | 36 \| 96,8 |
| Heat Transfer Medium Outlet Temperature during operation | °C \| °F | 3,3(2) \| 37,9 | 20 \| 68 |
| **Air Heat Exchanger** | | **Minimum** | **Maximun** |
| Ambient Air Temperature during operation - standard unit + option 16 | °C \| °F | 0 \| 32 | 55 \| 131 |
| Ambient Air Temperature during operation - option 28 + option 16 | °C \| °F | -20 \| -4 | 55 \| 131 |

(1) Operating at partial load.
(2) According to the type of installation and air temperature.

**Notes:**
- **If the air temperature is to fall below 0 °C, option 28 must be selected.**
- **If the air temperature is to fall below -10 °C, option 28 must be selected, and water circuit(s) must be protected against freezing (glycol, drain, or constant temperature waterflow).**

### Units Operating Range (with option 16)




**NOTES:**
- **These ranges are given for indicative purpose. Check the operating range from Carrier electronic catalogue.**

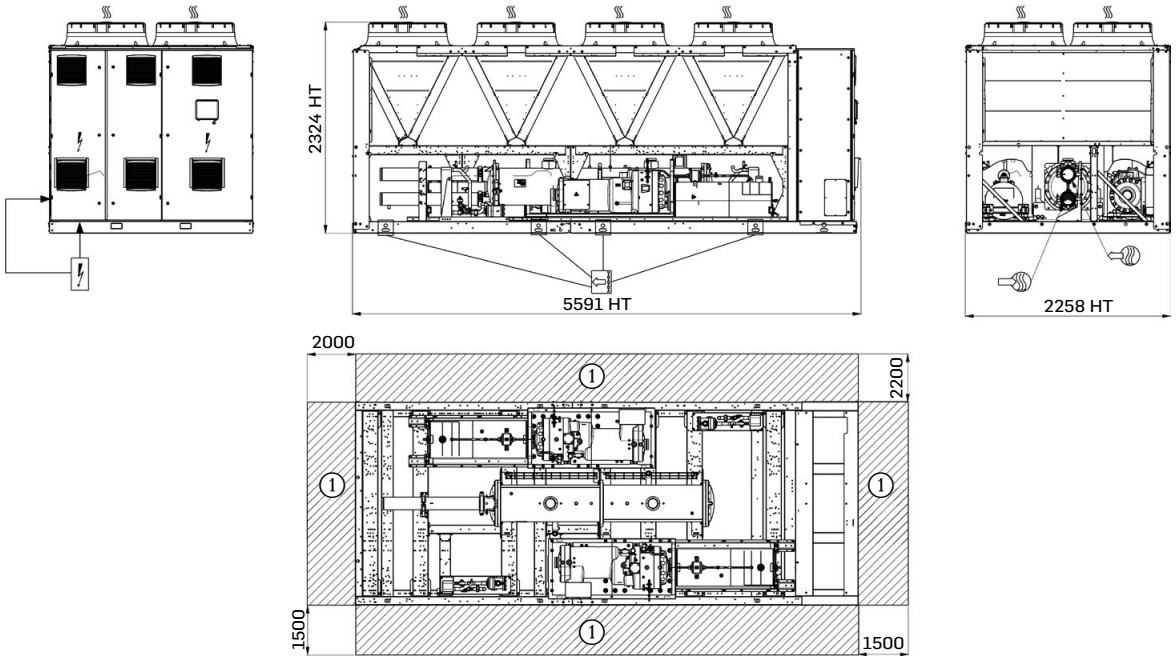
**Legend**

Operating range, standard units

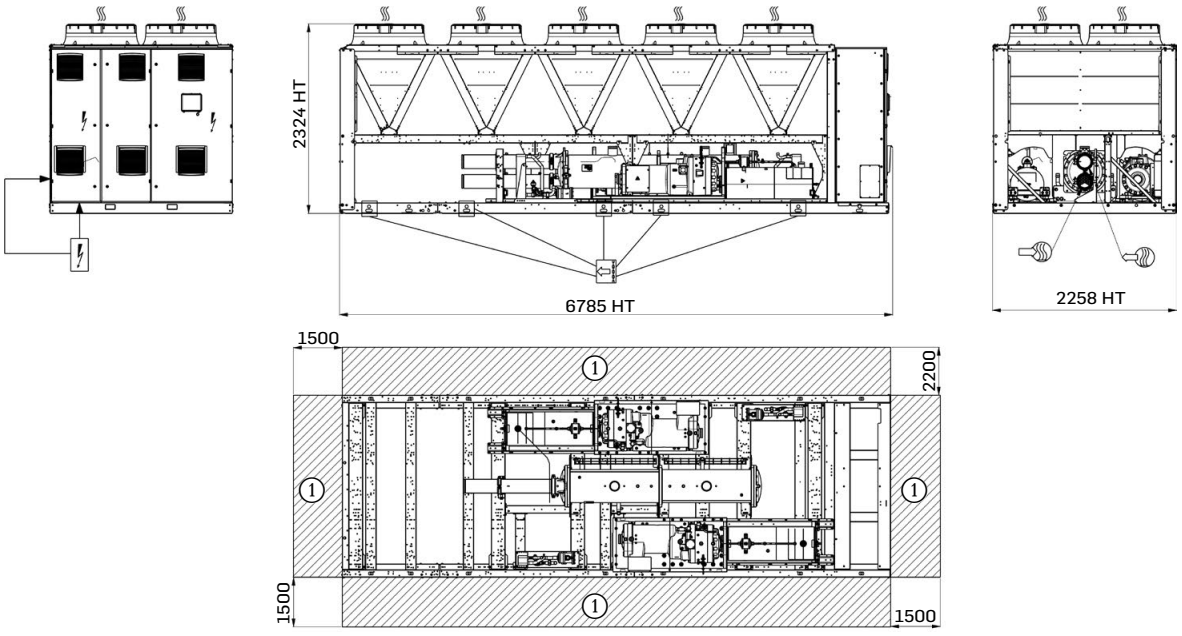
If the air temperature is to fall below 0 °C, option 28 must be selected. Below -10 °C, water circuit(s) must be protected against freezing (glycol, drain, or constant temperature waterflow).

# DIMENSIONS/CLEARANCES

## 30XBV 0500 & 0600




## 30XBV 0700




**Legend**

All dimensions are given in mm.

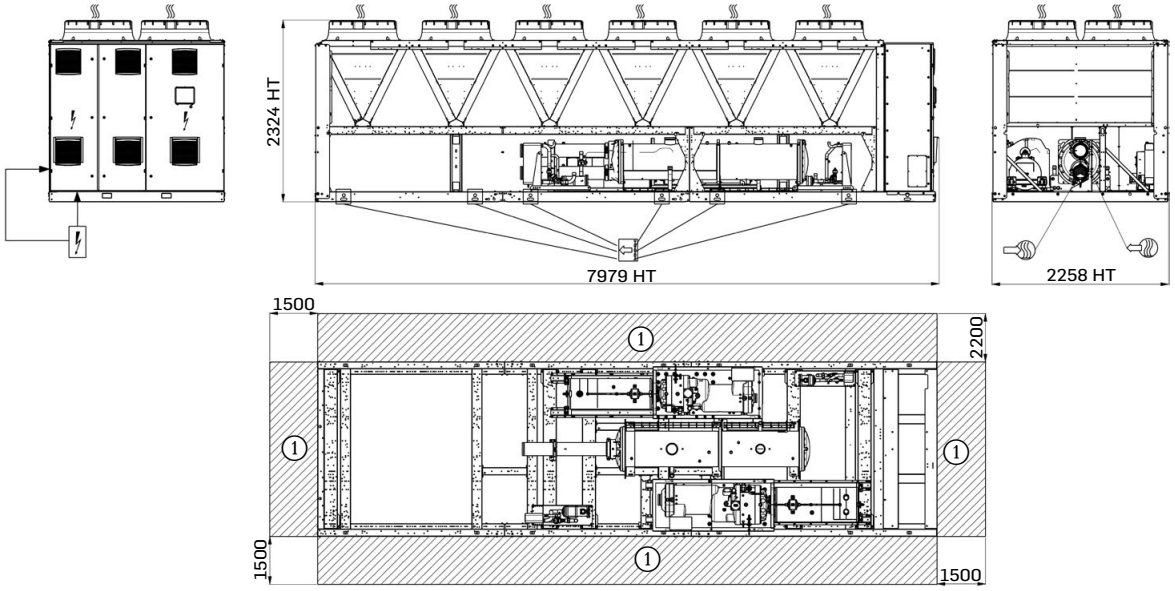
| | |
|---|---|
| ① | Cooler water inlet and outlet |
| | Inlet water |
| | Outlet water |
| | Air outlet, do not obstruct |
| | Electrical supply entry |

**NOTES:**

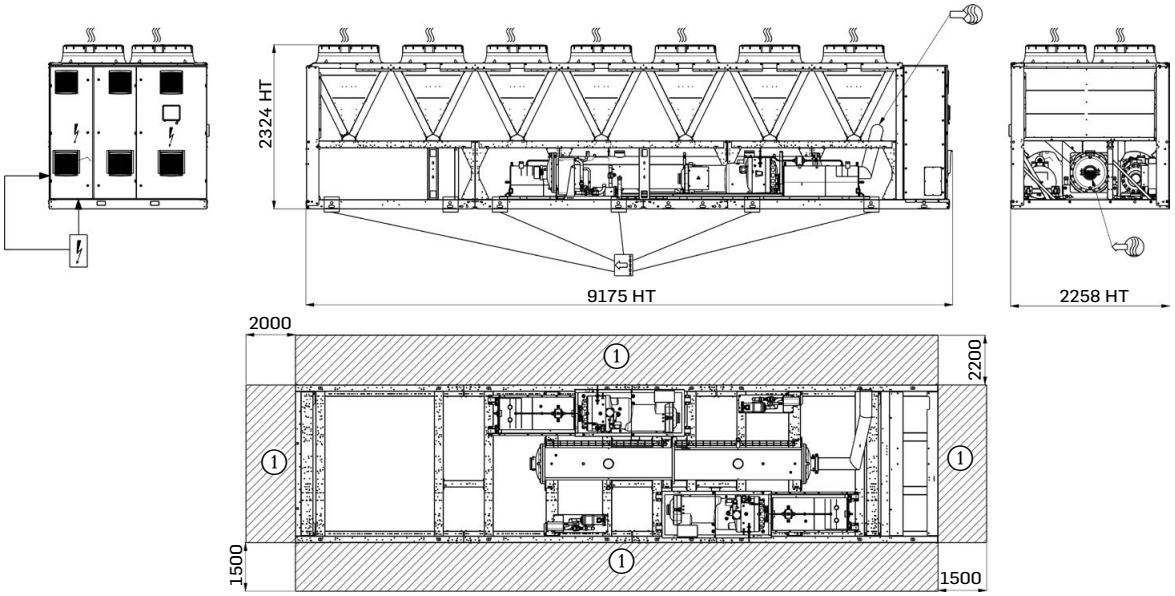
**Drawings are not contractually binding.**

# DIMENSIONS/CLEARANCES

## 30XBV 0800 & 0900




## 30XBV 1000




**Legend**

All dimensions are given in mm.

① Cooler water inlet and outlet

Inlet water

Outlet water

Air outlet, do not obstruct

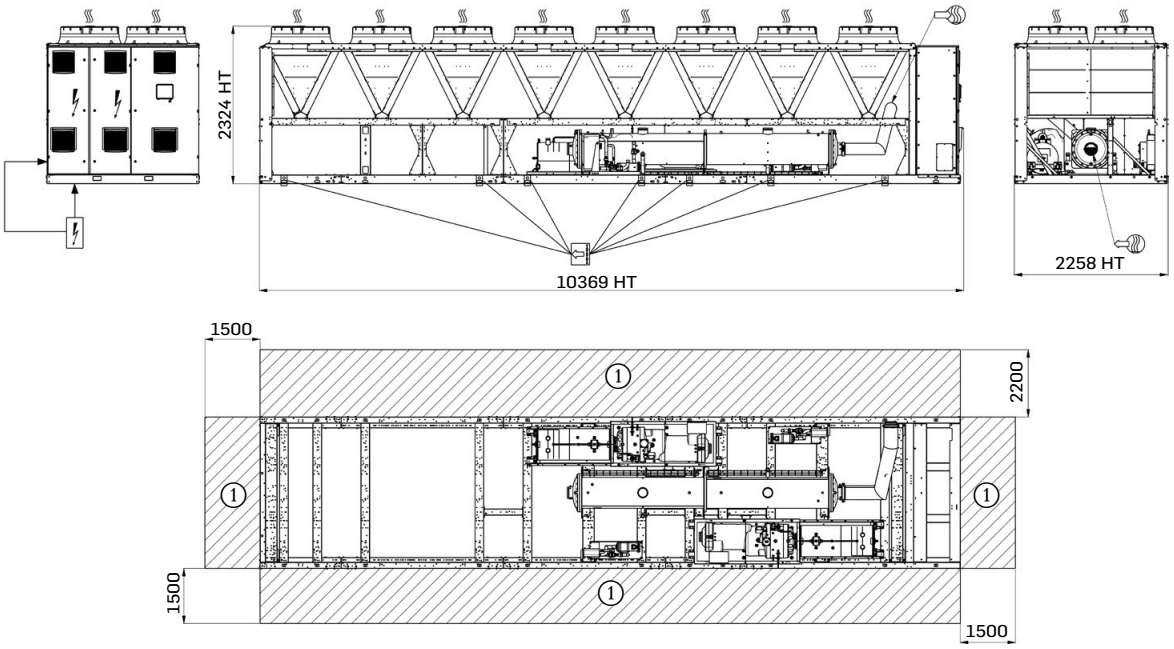
Electrical supply entry

**NOTES:**

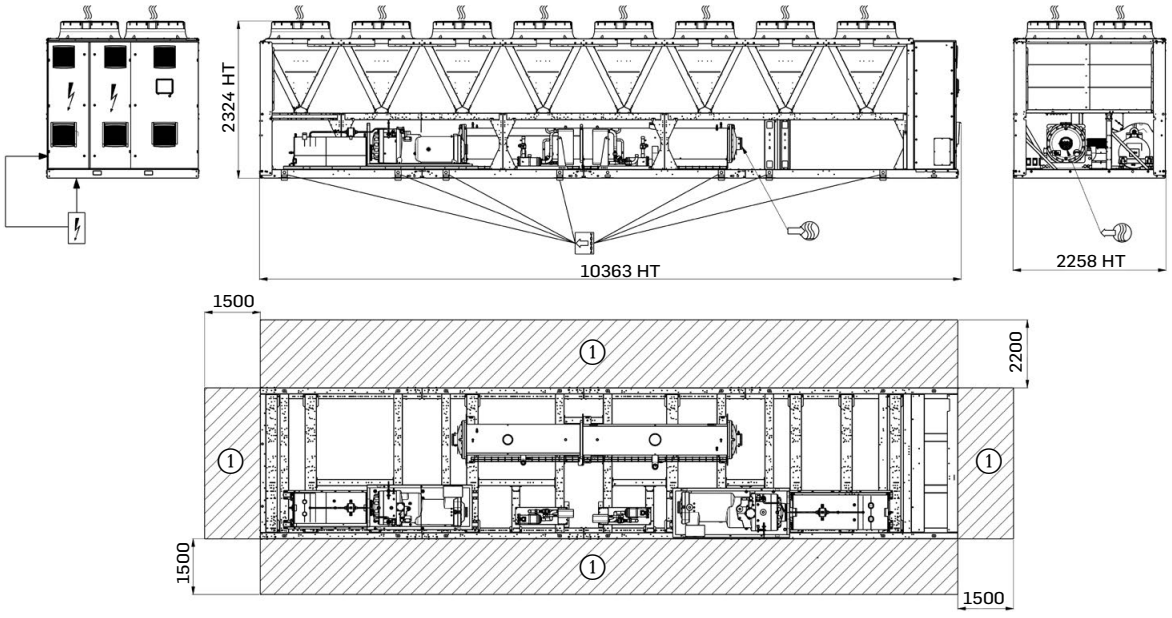
**Drawings are not contractually binding.**

# DIMENSIONS/CLEARANCES

## 30XBV 1100




## 30XBV 1200




**Legend**

All dimensions are given in mm.

① Cooler water inlet and outlet

Inlet water

Outlet water

Air outlet, do not obstruct

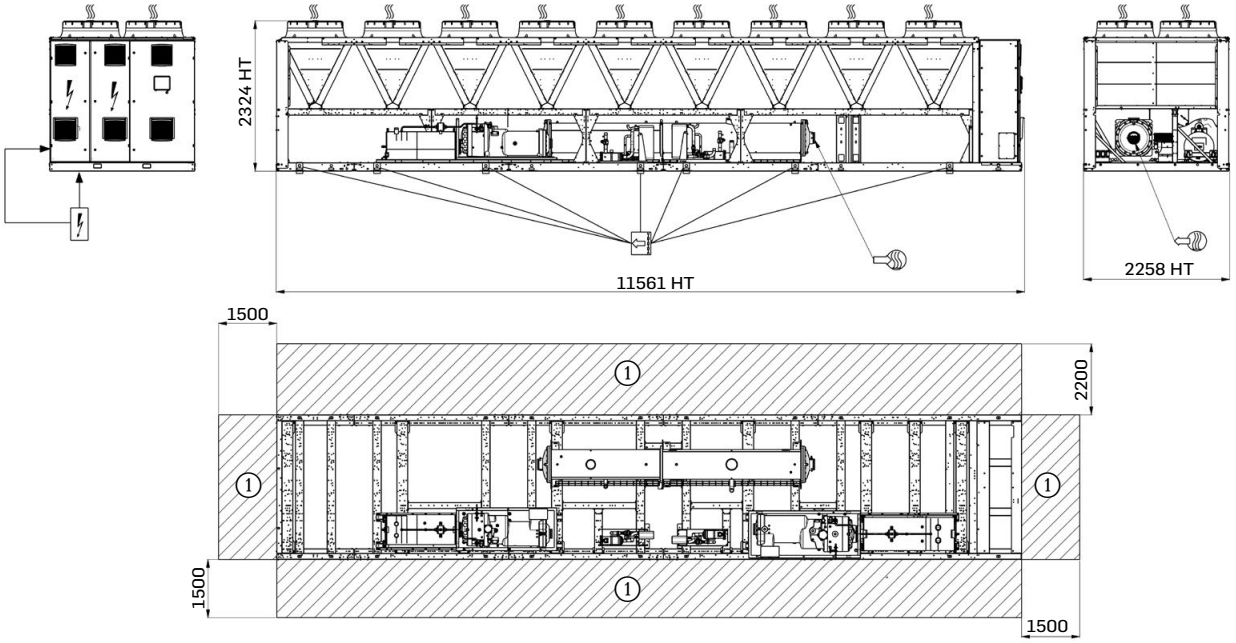
Electrical supply entry

**NOTES:**

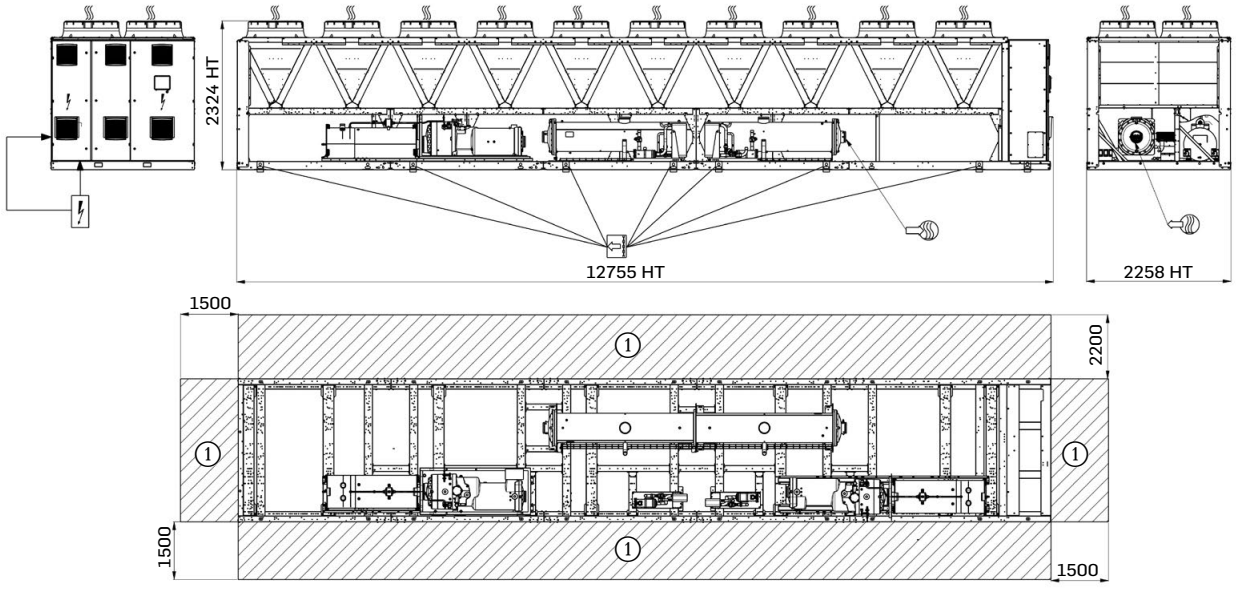
**Drawings are not contractually binding.**

# DIMENSIONS/CLEARANCES

## 30XBV 1300




## 30XBV 1450




**Legend**

All dimensions are given in mm.

① Cooler water inlet and outlet

Inlet water

Outlet water

Air outlet, do not obstruct

Electrical supply entry

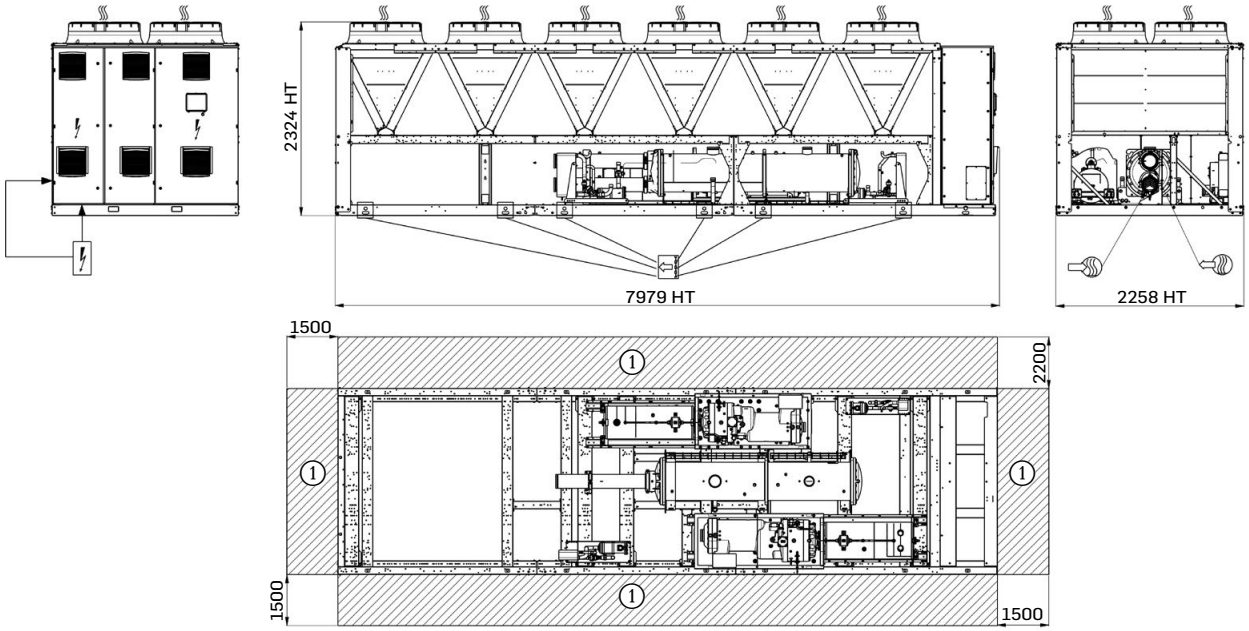
**NOTES:**

**Drawings are not contractually binding.**

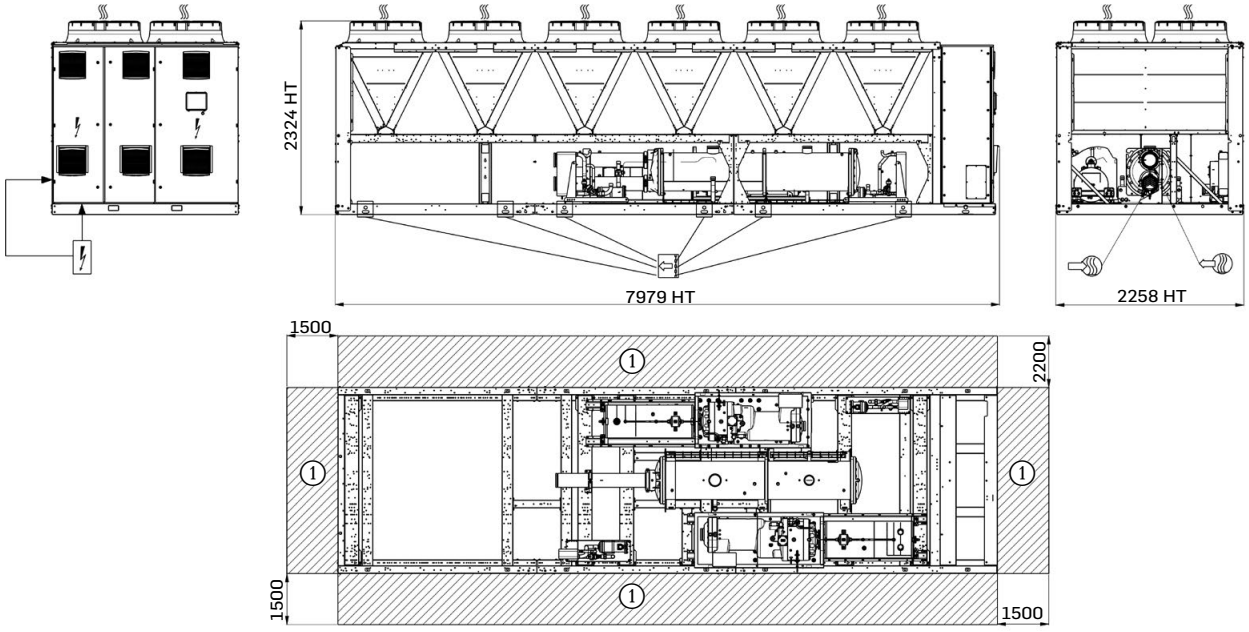
# DIMENSIONS/CLEARANCES

## 30XBV 1600

### Module 1




### Module 2




**Legend**

All dimensions are given in mm.

| | |
|---|---|
| ① | Cooler water inlet and outlet |
| | Inlet water |
| | Outlet water |
| | Air outlet, do not obstruct |
| | Electrical supply entry |

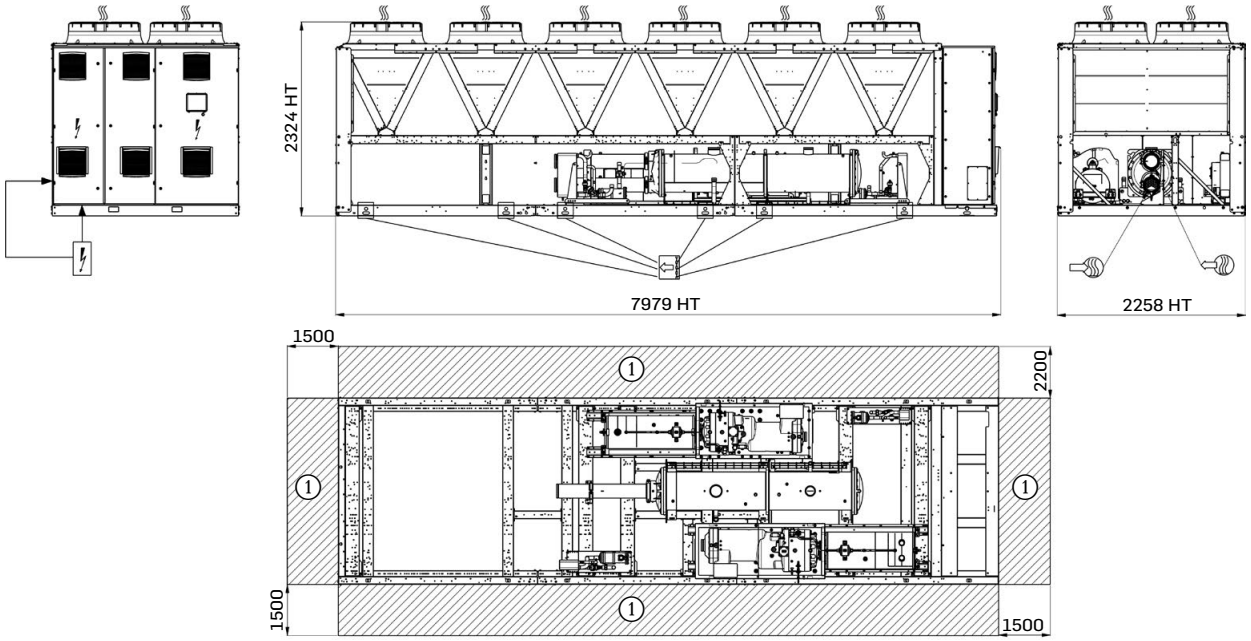
**NOTES:**

**Drawings are not contractually binding.**

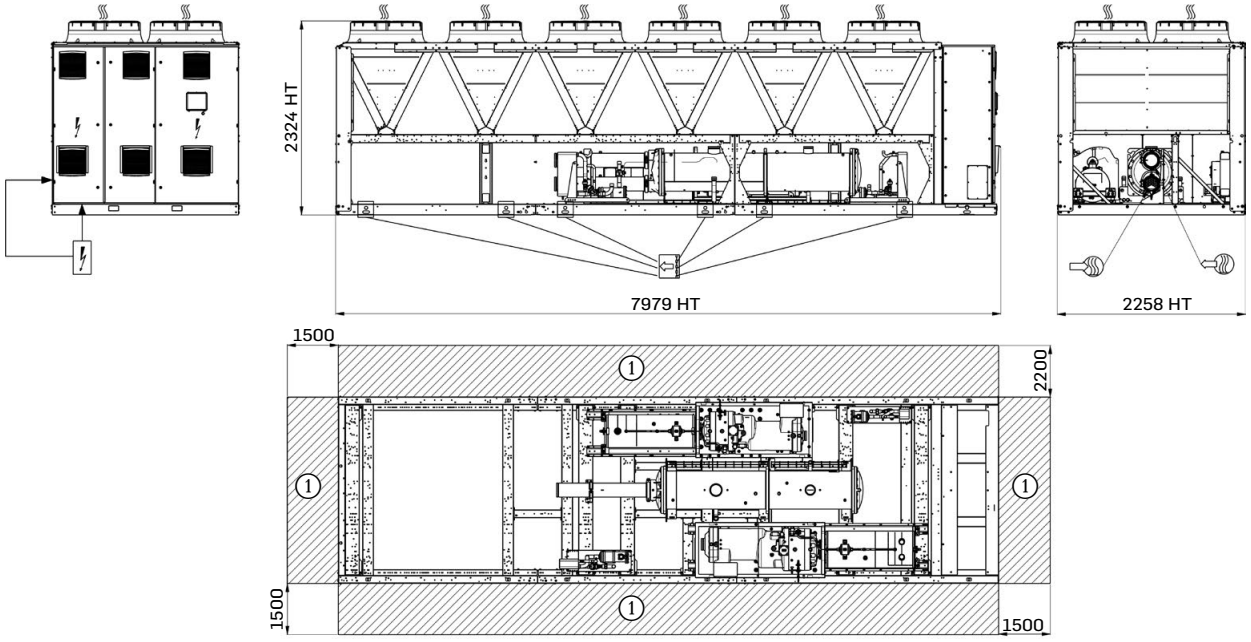
# DIMENSIONS/CLEARANCES

## 30XBV 1800

### Module 1




### Module 2




**Legend**

All dimensions are given in mm.

① Cooler water inlet and outlet

Inlet water

Outlet water

Air outlet, do not obstruct

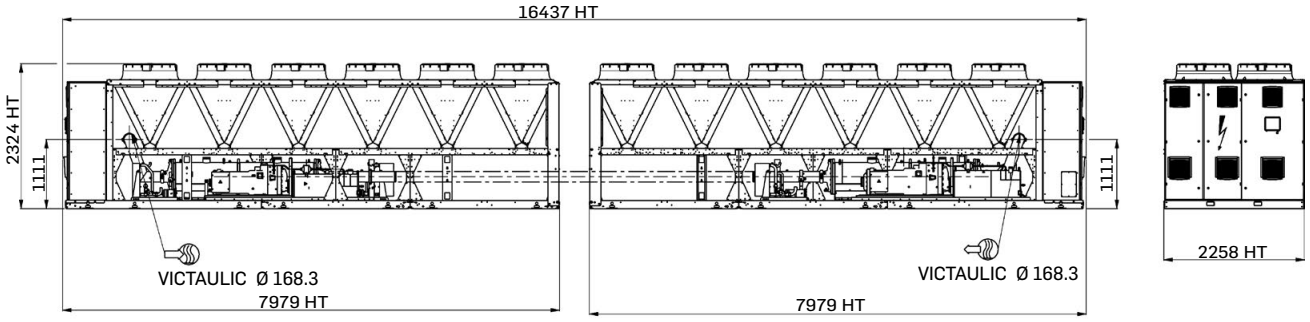
Electrical supply entry

**NOTES:**

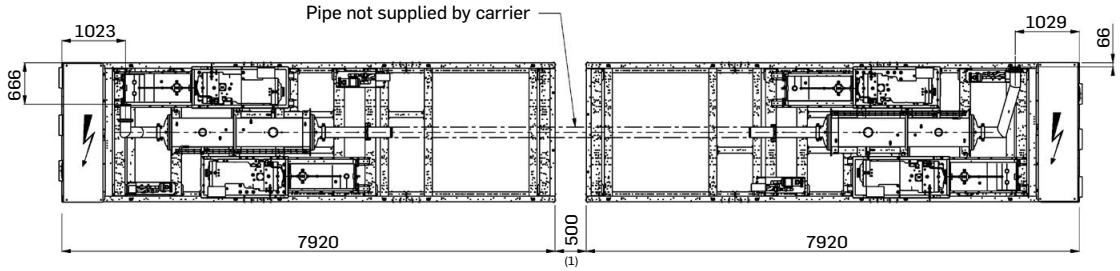
**Drawings are not contractually binding.**

# DIMENSIONS/CLEARANCES

## 30XBV 1600 & 1800 recommended installation




**MODULE 1** **MODULE 2**




Space required between Module 1
and Module 2 for coil service

(1) For maintenance, if the distance is below 500 mm, the extraction of the final coils between modules is carried out by dismounting the roof of cover of the module corresponding “V“ coils.


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.: 10820, 12.2024. Supersedes order No.: 10820, 05.2024. Carrier, Route de Thil - BP49 01120 Montluel Cedex, France.