



**AQUAFORCE**<sup>®</sup>

**30XW**

**Water-Cooled Liquid Chiller**

Cooling capacity: 250~3467kW



## Turn To The Experts

Carrier is a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies.

Supported by the iconic Carrier name, the company's portfolio includes industry-leading brands such as Carrier, Kidde, Edwards, LenelS2 and Automated Logic.

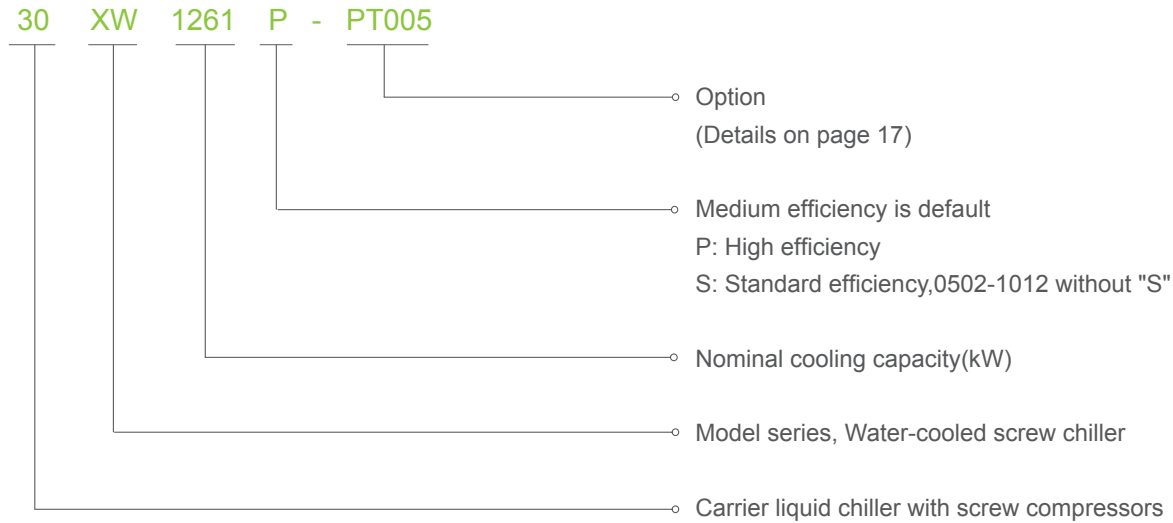
Carrier's businesses enable modern life, delivering efficiency, safety, security, comfort, productivity and sustainability across a wide range of residential, commercial and industrial applications.



In 1998, Time magazine named Dr. Carrier one of its 20 most influential builders and titans of the 20<sup>th</sup> century.



## Nomenclature



## Operating Range

| Cooling/Heating                                      |         |          |
|------------------------------------------------------|---------|----------|
| Evaporator                                           | Minimum | Maximum  |
| Entering temperature at start-up                     | -       | 35 °C    |
| Leaving temperature during operation                 | 3.3 °C* | 20 °C    |
| Entering/leaving temperature difference at full load | 2.8 °C  | 11.1 °C  |
| Condenser                                            | Minimum | Maximum  |
| Entering temperature at start-up                     | 13 °C   | -        |
| Leaving temperature during operation                 | 19 °C** | 50 °C*** |
| Entering/leaving temperature difference at full load | 2.8 °C  | 11.1 °C  |

\*If the leaving water temperature is below 3.3 °C, a frost protection solution must be used.

Please refer to option 05 and option 06 for application with low evaporator leaving water temperature (>-12 °C).

\*\*If the temperature leaving the condenser is below 19 °C, a water flow control valve must be used at the condenser (two or three-way valve). Please refer to option 152 to ensure the correct condensing temperature.

\*\*\*Please refer to option 150 for applications with high condenser leaving temperature (up to 63 °C). Refer to 30XW-S and 30XW0262/0312/0352/1012 standard chiller with condenser leaving temperature 48 °C. 30XW-P/S 1261-1601 with condenser leaving temperature 45 °C.

Note:  
Ambient temperature: During storage and transport of the 30XW units the minimum and maximum permissible temperatures are -20 °C and 60 °C. These temperatures should be taken into consideration for transport by container.

## Cooling Capacity

250~3467kW



All data over 200Tons in this catalogue is rated in accordance with AHRI Standard 550/590 and 551/591 as represented in the Packaged Chiller Builder Selection Program (E-Cat)

## Features

- ✔ The Aquaforce liquid chillers are the premium solution for industrial and commercial applications where installers, consultants and building owners require optimal performances and maximum quality.
- ✔ The Aquaforce liquid chillers are designed to meet current and future compactness. They use the most reliable technologies available today:
  - Twin-rotor screw compressors with a variable capacity valve.
  - Single refrigerant R134a.
  - Carrier SmartView™ Control system.
  - Flooded heat exchangers that are mechanically cleanable.
- ✔ To meet to all environmental and economic requirements, the 30XW is available in three efficiency classes:
  - Standard efficiency 30XW-S units that offer excellent quality with superior cost advantage, designed to maximize savings, it's the cost-effective choice, suitable for comfort cooling of hotels, office and industrial settings.
  - Medium-efficiency 30XW units that offer an optimized balance of technical and economical aspects, while at the same time boasting superior energy efficiency.
  - High-efficiency 30XW-P units that offer unequalled energy efficiency to satisfy the most stringent demands of building owners wanting to reduce operating costs to the minimum.
- ✔ The 30XW Aquaforce range is also split into two versions:
  - 30XW for air conditioning and refrigeration applications.
  - 30XW Heating for heating applications.
- ✔ These two versions provide the following performances:
  - High heating temperature, allowing the 30XW Heating Aquaforce to supply water with a condenser leaving water temperature of +63°C (option 150A)
  - Low temperature, allowing the 30XW Aquaforce to operate with an evaporator leaving glycol temperature down to -6°C (option 5) or -12°C (option 6).

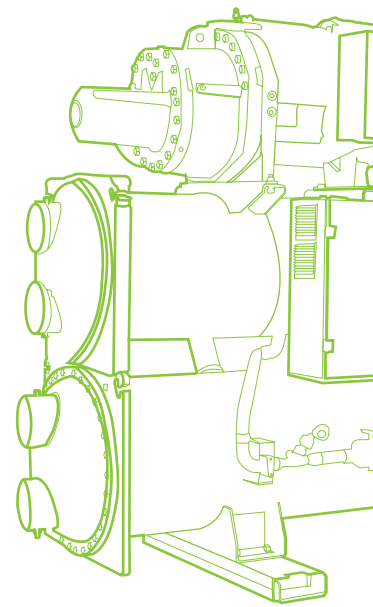
## Premium full load and part load performance

- ✔ New twin-rotor screw compressor specifically designed for HFC-134a equipped with a high-efficiency motor and a variable capacity valve that permits exact matching of the cooling capacity to the load.
- ✔ Flooded multi-pipe evaporator and condenser for increased heat exchange efficiency. The evaporator has a low pressure drop-which results in reduced cost of water pump.
- ✔ Electronic expansion device permitting operation at a lower condensing pressure and improved utilization of the evaporator heat exchange surface (superheat control).
- ✔ Economizer system with electronic expansion device for increased cooling capacity (30XW-P).



## Absolute reliability

- ✔ Screw compressors
  - Industrial-type screw compressors with oversized bearings and motor cooled by suction gas.
  - Patented line-design screw rotors and microprocessor-based control to guarantee accurate meshing and enhance service life.
  - Reduced number of moving parts, with compressor rotors directly driven by the motor, to lower the failure rate and enhance reliability.
  - All compressor components are easily accessible on site minimizing down-time.
  - Protection increased by an electronic board.
- ✔ Evaporator
  - Electronic paddle-free flow switch. Auto-setting according to cooler size and fluid type.
- ✔ Auto-adaptive control.
  - Control algorithm prevents excessive compressor cycling (Carrier patent).
  - Automatic compressor unloading in case of abnormally high condensing pressure.
  - Control system has comprehensive protection during operation, such as oil temperature control, overvoltage and overcurrent protection, discharge temperature overheat protection, heat exchanger anti-freeze protection etc. in order to ensure chiller long time reliable operation.
- ✔ Exceptional endurance tests
  - Partnerships with specialized laboratories and use of limit simulation tools (finite element calculation) for the design of critical components.
  - Transport simulation test in the laboratory on a vibrating table and then on an endurance circuit.



## Environmental care

- ✔ R134a refrigerant
  - Refrigerant of the HFC group with zero ozone depletion potential.
- ✔ Leak-tight refrigerant circuit
  - Reduction of leaks as no capillary tubes and are 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.

## Easy and fast installation

- ✔ Compact design
  - The 30XW units are designed to offer the most compact dimensions on the market.
  - With a width of approximately 1 m up to 1500 kW the units can pass through standard door openings and only require minimum floor space in the plant room.
- ✔ Simplified electrical connections
  - Main disconnect switch with high trip capacity.
  - Transformer to supply the integrated control circuit (400/24 V).
- ✔ Simplified hydronic connections
  - Victaulic connections on the evaporator and condenser.
  - Practical reference marks for entering and leaving water connections.
  - Possibility to reverse the heat exchanger water inlet and outlet at the factory.
- ✔ Fast commissioning
  - Systematic factory operation test before shipment.
  - Quick-test function for step-by-step verification of the instruments, expansion devices and compressors.

## Smart Control

- ✔ New innovative Carrier SmartView™ control system combines intelligence with operating simplicity which providing more comfortable operation experience. The control constantly monitors all machine parameters and precisely manages the operation of compressors, electronic expansion devices and of the evaporator water pump for optimum energy efficiency.
- ✔ Ease-of-use
  - An intuitive and user-friendly interface, the concise and clear information is available in local languages.
  - Complete menu which can be customized for different users (end user, service personnel or Carrier engineers).
  - Graphically dynamic display of the operation parameters in real time.
  - Up to 10 languages for choice.
  - The DCT (Data Collection Tool) records the alarms history and automatically pushes alarm mail to simplify and facilitate service operations.
- ✔ Energy management
  - Internal time schedule clock: controls chiller on/off times and operation at a second set-point.
  - Set-point reset based on the return water temperature.
  - Carrier Smart Service (optional) provides value added customer service which enhanced data management and analysis will help achieve continuous optimization of the chiller and system operation.



## Carrier SmartView™ Control System - Intelligent Colored Touch Screen

- ✦ 30XW chiller employs Carrier's most advanced Carrier SmartView™ controller that delivers distinct capabilities of controlling and monitoring the chiller operations.
- ✦ Equipped with high-resolution colorful touch screen, Carrier SmartView™ controller offers more user-friendly interface with intuitive graphical operational data in real time, adapts precisely the chiller capacity to building load and provides comprehensive protection.

## Reliable Start - up and Operation

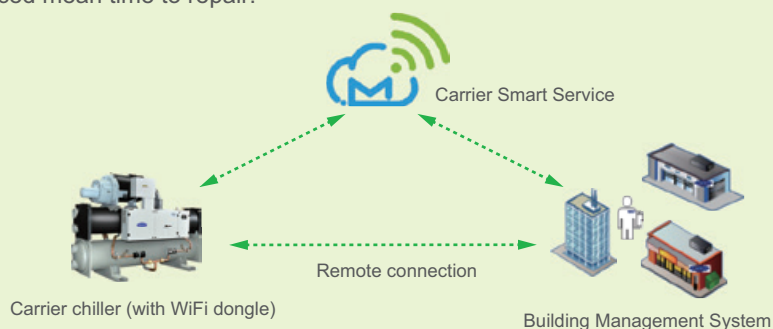
- ✦ Carrier SmartView™ controller offers password protection to avoid any unauthorized operation.
- ✦ When chiller starts, the controller will activate pre-start process to check parameters such as pressure, temperature, motor status, water flow etc.
- ✦ In addition to the function of monitoring the main operational parameters, trending function provide the visual dynamic parameter curves. The intelligent and dynamic algorithm ensures optimal, effective and reliable chiller operation.
- ✦ The control system provides following comprehensive protection, which guarantees steady chiller operation:
  - Overcurrent.
  - Discharge temperature overheat.
  - Motor temperature overheat.
  - Evaporator and condenser anti-freeze.
  - Low discharge superheat.

## Effective Failure Diagnostic

- ✦ Carrier SmartView™ control system has more than 100 failure diagnostic function. Users can easily access chiller operation parameters via touch screen. If control system detects failure the alarm will be initiated and related code will be recorded in alarm menu. The alarm records, up to 50, can be automatically saved by control system. Carrier service technician can read and delete alarm records by Carrier service/PCDCT tools.
- ✦ The control system can automatically send out email alarm to customer or service technician.

## Intelligent Remote Connection and Control

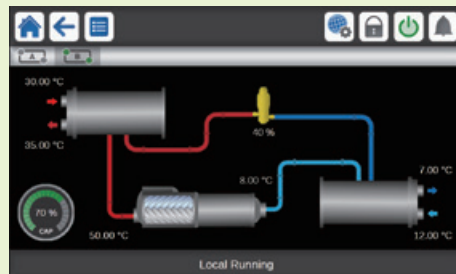
- Carrier SmartView™ control panel supports CCN, BACnet IP, Modbus TCP/IP and Modbus RTU protocols, with which chiller can seamlessly connect with the Building Automation System or the i-Vu®/WebCTRL control network. Moreover, LonWorks, J-Bus and BACnet MSTP is also supported with optional gateway.
- An industrial Internet intelligent protocol module WIFI dongle housed in electrical cabinet has the function of conversion and transmission of data and can connect the field chiller controllers through the wireless network. Chiller operational data can be transmitted to the remote server (Smart Service by Carrier) via wireless network, 4G, etc., so as to monitor chiller data and fault alarm.
- Carrier Smart Service (optional) based on “Big Data Processing” provides value added customer service such as online data management and analysis, daily and key performance reports, prognostics and preventative maintenance and graphic data trend. The enhanced data management and analysis will help achieve continuous optimization of the chiller and system operation.
- Carrier Smart Service changes how equipment is serviced and maintained. Carrier service technicians now utilize mobile devices with remote access to put real-time chiller data and service history in the palm of their hands. With advance notification of problems, technicians arrive at the jobsite more informed, which leads to faster problem resolution and reduced mean time to repair.



## Main Page

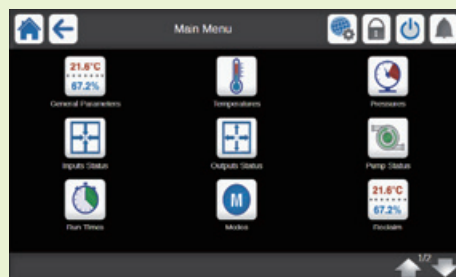
- Control system main page operation and primary parameters monitored:

- Main page button
- Menu page button
- Log in/Language button
- Start-up/Stop page button
- Alarm menu button
- Setting point
- Chiller load percentage
- Condensing water pump status
- Chilled water pump status
- Condenser water inlet/outlet temperature
- Evaporator water inlet/outlet temperature



- Customer can easily read following primary information of chiller, components status and access to other interfaces from this page:

- Temperature/Pressure page
- Input/Output parameter page
- Water system parameter page
- Operation time
- Mode



# Performance data 30XW-P

| Model              |                     |         | 30XW-P   |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |
|--------------------|---------------------|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                    |                     |         | 0312P    | 0352P | 0452P | 0532P | 0552P | 0612P | 0652P | 0702P | 0802P | 0852P | 0912P | 1002P | 1052P  | 1152P  | 1261P  | 1351P  | 1401P  | 1501P  | 1601P  | 1712P  | 1762P  |
| Capacity           |                     | kW      | 303.5    | 366.3 | 448.5 | 536.1 | 571.8 | 640.1 | 675.8 | 729.7 | 785.0 | 852.3 | 897.5 | 974.0 | 1075.0 | 1147.0 | 1245.0 | 1340.0 | 1410.0 | 1489.0 | 1589.0 | 1747.0 | 1762.0 |
|                    |                     | USRT    | 86       | 104   | 128   | 152   | 163   | 182   | 192   | 208   | 223   | 242   | 255   | 277   | 306    | 326    | 354    | 381    | 401    | 423    | 452    | 497    | 501    |
| COP                |                     | kW/kW   | 5.65     | 5.65  | 5.73  | 6.00  | 6.02  | 6.00  | 6.12  | 6.06  | 5.99  | 5.90  | 6.00  | 5.99  | 5.99   | 5.98   | 6.28   | 6.34   | 6.33   | 6.34   | 6.37   | 6.17   | 6.31   |
| Evaporator         | Flow rate           | L/s     | 13.1     | 15.8  | 19.3  | 23.1  | 24.6  | 27.5  | 29.1  | 31.4  | 33.8  | 36.7  | 38.6  | 41.9  | 46.2   | 49.3   | 53.5   | 57.6   | 60.6   | 64.0   | 68.3   | 75.1   | 75.8   |
|                    | Water Pressure drop | kPa     | 24.9     | 32.6  | 29.9  | 24.6  | 26.2  | 39.6  | 39.6  | 24.8  | 28.2  | 33.5  | 61.5  | 50.0  | 72.5   | 46.9   | 49.2   | 56.6   | 59.6   | 64.5   | 68.0   | 74.6   | 49.6   |
|                    | Water connection    | DN      | 125      | 125   | 125   | 150   | 150   | 200   | 200   | 200   | 200   | 200   | 200   | 200   | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 250    | 250    |
| Condenser          | Flow rate           | L/s     | 16.3     | 19.6  | 24.3  | 28.7  | 30.7  | 34.6  | 36.4  | 39.2  | 42.1  | 45.8  | 47.9  | 52.4  | 58.1   | 62.0   | 66.9   | 71.9   | 75.7   | 79.9   | 85.5   | 94.1   | 94.8   |
|                    | Water Pressure drop | kPa     | 51.8     | 66.8  | 41.5  | 38.6  | 43.1  | 34.6  | 40.7  | 34.1  | 38.9  | 46.4  | 33.9  | 26.8  | 34.0   | 36.8   | 43.4   | 49.5   | 51.8   | 60.1   | 68.8   | 61.2   | 41.2   |
|                    | Water connection    | DN      | 125      | 125   | 125   | 150   | 150   | 200   | 200   | 200   | 200   | 200   | 200   | 200   | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 250    | 250    |
| Compressor         | Circuit A           | No.     | 1        | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |
|                    | Circuit B           | No.     | -        | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 1     | 1      | 1      | -      | -      | -      | -      | -      | 1      | 1      |
|                    | Min. capacity       | %       | 15       | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 8     | 8      | 8      | 20     | 20     | 20     | 20     | 15     | 8      | 8      |
| Motor              | Power               | V-Ph-Hz | 400-3-50 |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |
|                    | Input power         | kW      | 53.8     | 64.8  | 78.3  | 89.4  | 94.9  | 106.6 | 110.4 | 120.5 | 131.0 | 144.5 | 149.6 | 162.5 | 179.6  | 191.9  | 198.3  | 211.3  | 222.8  | 234.9  | 249.5  | 283.3  | 279.3  |
| Refrigerant Charge |                     |         | HFC-134a |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |
|                    | Circuit A           | kg      | 78       | 78    | 100   | 135   | 135   | 176   | 176   | 200   | 200   | 200   | 233   | 115   | 115    | 130    | 365    | 365    | 365    | 365    | 365    | 187.5  | 250    |
|                    | Circuit B           | kg      | -        | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 125   | 125    | 140    | -      | -      | -      | -      | -      | 187.5  | 250    |
| Shipping weight*   |                     | kg      | 2301     | 2336  | 2866  | 3137  | 3177  | 4032  | 4012  | 4131  | 4149  | 4179  | 4260  | 5998  | 6067   | 6479   | 8114   | 8114   | 8165   | 8243   | 8333   | 9043   | 10348  |
| Operation weight   |                     | kg      | 2083     | 2118  | 2600  | 2994  | 3025  | 3999  | 3979  | 4155  | 4173  | 4204  | 4299  | 6069  | 6112   | 6684   | 8230   | 8230   | 8280   | 8355   | 8443   | 9368   | 10948  |
| Dimension          | Length              | mm      | 2740     | 2740  | 2763  | 3055  | 3055  | 3101  | 3080  | 3286  | 3286  | 3286  | 3142  | 4695  | 4695   | 4694   | 4515   | 4515   | 4515   | 4515   | 4515   | 4783   | 4809   |
|                    | Width               | mm      | 960      | 960   | 970   | 1008  | 1008  | 1135  | 1135  | 1135  | 1135  | 1135  | 1070  | 1070  | 1070   | 1070   | 1541   | 1541   | 1541   | 1541   | 1541   | 1985   | 2160   |
|                    | Height              | mm      | 1568     | 1568  | 1696  | 1743  | 1743  | 1950  | 1950  | 1949  | 1949  | 1949  | 2062  | 1947  | 1947   | 1998   | 2614   | 2614   | 2614   | 2614   | 2614   | 1520   | 1586   |

Operation condition: Evaporator leaving water temperature 6.7 C , water flow rate per capacity is 0.043 l/s-kW, fouling factor=0.018m<sup>2</sup>K/kW  
 Condenser entering water temperature 29.4 C , water flow rate per capacity is 0.054 l/s-kW, fouling factor=0.044m<sup>2</sup>K/kW  
 Above are recommended models. Carrier can offer more models and computer selections at required conditions. For details, please contact Carrier local agencies.  
 \*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.



## Performance data 30XW

| Model              |                     |         | 30XW     |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--------------------|---------------------|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    |                     |         | 0262     | 0312  | 0352  | 0412  | 0422  | 0452  | 0552  | 0622  | 0652  | 0702  | 0812  | 0852  | 0902  | 0922  |
| Capacity           |                     | kW      | 249.5    | 303.6 | 366.9 | 424.0 | 452.7 | 468.9 | 540.2 | 621.0 | 662.3 | 715.3 | 784.5 | 826.1 | 852.4 | 890.6 |
|                    |                     | USRT    | 71       | 86    | 104   | 121   | 129   | 133   | 154   | 177   | 188   | 203   | 223   | 235   | 242   | 253   |
| COP                |                     | kW/kW   | 5.28     | 5.31  | 5.30  | 5.29  | 5.29  | 5.45  | 5.59  | 5.60  | 5.51  | 5.61  | 5.60  | 5.52  | 5.83  | 5.66  |
| Evaporator         | Flow rate           | L/s     | 10.7     | 13.1  | 15.8  | 18.2  | 19.5  | 20.2  | 23.2  | 26.7  | 28.5  | 30.8  | 33.7  | 35.5  | 36.7  | 38.3  |
|                    | Water Pressure drop | kPa     | 16.4     | 22.8  | 29.5  | 34.5  | 36.7  | 27.6  | 36.1  | 34.0  | 33.7  | 38.3  | 39.9  | 48.3  | 54.3  | 62.2  |
|                    | Water connection    | DN      | 125      | 125   | 125   | 125   | 125   | 125   | 125   | 150   | 150   | 150   | 200   | 150   | 150   | 200   |
| Condenser          | Flow rate           | L/s     | 13.5     | 16.4  | 19.6  | 22.7  | 24.4  | 25.1  | 28.9  | 33.3  | 35.4  | 38.1  | 41.8  | 44.4  | 45.7  | 47.8  |
|                    | Water Pressure drop | kPa     | 32.4     | 43.4  | 54.6  | 34.7  | 36.4  | 36.4  | 46.1  | 47.0  | 51.8  | 54.3  | 29.6  | 36.2  | 42.2  | 50.6  |
|                    | Water connection    | DN      | 125      | 125   | 125   | 125   | 125   | 125   | 125   | 150   | 150   | 150   | 200   | 200   | 200   | 200   |
| Compressor         | Circuit A           | No.     | 1        | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
|                    | Circuit B           | No.     | -        | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
|                    | Min. capacity       | %       | 15       | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    | 15    |
| Motor              | Power               | V-Ph-Hz | 400-3-50 |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                    | Input power         | kW      | 47.2     | 57.2  | 69.2  | 80.1  | 85.6  | 86.1  | 96.6  | 110.8 | 120.3 | 127.6 | 140.2 | 149.7 | 146.1 | 157.4 |
| Refrigerant Charge |                     |         | HFC-134a |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                    | Circuit A           | kg      | 78       | 78    | 78    | 100   | 85    | 100   | 110   | 150   | 150   | 140   | 160   | 150   | 150   | 176   |
|                    | Circuit B           | kg      | -        | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Shipping weight*   |                     | kg      | 2220     | 2281  | 2316  | 2692  | 2707  | 2846  | 2934  | 3637  | 3620  | 3647  | 3774  | 3808  | 3827  | 4012  |
| Operation weight   |                     | kg      | 2002     | 2063  | 2098  | 2518  | 2518  | 2580  | 2684  | 3509  | 3486  | 3509  | 3688  | 3711  | 3923  | 3979  |
| Dimension          | Length              | mm      | 2742     | 2742  | 2742  | 2746  | 2746  | 2746  | 2763  | 3084  | 3056  | 3084  | 2780  | 2780  | 3080  | 3080  |
|                    | Width               | mm      | 960      | 960   | 960   | 970   | 970   | 970   | 970   | 1119  | 1119  | 1119  | 1085  | 1085  | 1135  | 1135  |
|                    | Height              | mm      | 1568     | 1568  | 1568  | 1694  | 1694  | 1693  | 1693  | 1873  | 1849  | 1873  | 1950  | 1900  | 1900  | 1950  |

Operation condition: Evaporator leaving water temperature 6.7 C , water flow rate per capacity is 0.043 l/s-kW, fouling factor=0.018m<sup>2</sup>K/kW

Condenser entering water temperature 29.4 C , water flow rate per capacity is 0.054 l/s-kW, fouling factor=0.044m<sup>2</sup>K/kW

Above are recommended models. Carrier can offer more models and computer selections at required conditions. For details, please contact Carrier local agencies.

\*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

# Performance data 30XW

| Model              |                     |         | 30XW     |        |        |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
|--------------------|---------------------|---------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
|                    |                     |         | 1002     | 1052   | 1152   | 1261   | 1351   | 1401   | 1501   | 1601   | 1712   | 1762   | 2052   | 2302    | 2602    | 2902    | 3052    | 3302    | 3452    |
| Capacity           | kW                  |         | 1003.0   | 1075.0 | 1135.0 | 1258.0 | 1327.0 | 1434.0 | 1498.0 | 1589.0 | 1709.0 | 1745.0 | 2037.0 | 2288.0  | 2594.0  | 2887.0  | 3046.0  | 3323.0  | 3467.0  |
|                    | USRT                |         | 285      | 306    | 323    | 357    | 377    | 407    | 426    | 451    | 486    | 496    | 579    | 651     | 738     | 821     | 866     | 945     | 986     |
| COP                | kW/kW               |         | 5.60     | 5.64   | 5.64   | 5.88   | 5.88   | 5.93   | 5.93   | 5.90   | 5.75   | 5.80   | 5.83   | 5.83    | 5.87    | 5.90    | 5.83    | 5.83    | 5.83    |
| Evaporator         | Flow rate           | L/s     | 43.1     | 46.2   | 48.8   | 54.1   | 57.1   | 61.6   | 64.4   | 68.3   | 73.5   | 75.0   | 87.6   | 98.4    | 111.6   | 124.1   | 131.0   | 142.9   | 149.1   |
|                    | Water Pressure drop | kPa     | 55.9     | 68.0   | 54.4   | 36.9   | 39.5   | 52.5   | 51.7   | 58.3   | 80.8   | 61.4   | 68.7   | 67.3    | 66.9    | 72.2    | 79.8    | 82.9    | 85.4    |
|                    | Water connection    | DN      | 150      | 150    | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200     | 300     | 300     | 300     | 300     | 300     |
| Condenser          | Flow rate           | L/s     | 54.0     | 58.0   | 61.4   | 67.7   | 71.4   | 76.6   | 80.1   | 85.1   | 91.9   | 93.3   | 109.2  | 123.9   | 140.5   | 156.0   | 164.7   | 179.1   | 186.7   |
|                    | Water Pressure drop | kPa     | 33.2     | 43.4   | 41.2   | 38.6   | 40.5   | 56.8   | 52.1   | 62.7   | 61.9   | 58.3   | 58.3   | 52.6    | 60.4    | 52.4    | 58.6    | 62.0    | 66.6    |
|                    | Water connection    | DN      | 200      | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 250    | 250     | 300     | 300     | 300     | 300     | 300     |
| Compressor         | Circuit A           | No.     | 1        | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1/1    | 1/1    | 1/1     | 1/1     | 1/1     | 1/1     | 1/1     | 1/1     |
|                    | Circuit B           | No.     | 1        | 1      | 1      | -      | -      | -      | -      | -      | 1      | 1      | 1/1    | 1/1     | 1/1     | 1/1     | 1/1     | 1/1     | 1/1     |
|                    | Min. capacity       | %       | 8        | 8      | 8      | 20     | 20     | 20     | 20     | 15     | 15     | 8      | 4      | 4       | 4       | 4       | 4       | 4       | 4       |
| Motor              | Power               | V-Ph-Hz | 400-3-50 |        |        |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
|                    | Input power         | kW      | 179.0    | 190.7  | 201.1  | 214.0  | 225.8  | 241.9  | 252.7  | 269.2  | 297.3  | 301.0  | 349.3  | 392.3   | 442.2   | 489.2   | 522.3   | 570.0   | 594.9   |
| Refrigerant Charge |                     |         | HFC-134a |        |        |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
|                    | Circuit A           | kg      | 85       | 85     | 100    | 300    | 300    | 340    | 350    | 360    | 140    | 140    | 85/85  | 100/100 | 130/130 | 130/130 | 130/130 | 140/140 | 140/140 |
|                    | Circuit B           | kg      | 95       | 95     | 110    | -      | -      | -      | -      | -      | 160    | 160    | 95/95  | 110/110 | 140/140 | 140/140 | 140/140 | 160/160 | 160/160 |
| Shipping weight*   | kg                  | 5334    | 5349     | 5571   | 7312   | 7358   | 7704   | 7736   | 7831   | 9073   | 8994   | 10886  | 11454  | 14338   | 15494   | 15454   | 18667   | 18695   |         |
| Operation weight   | kg                  | 5255    | 5259     | 5553   | 7296   | 7341   | 7717   | 7781   | 7883   | 8953   | 8934   | 10870  | 11648  | 14842   | 16140   | 16100   | 18729   | 18757   |         |
| Dimension          | Length              | mm      | 4008     | 4029   | 4008   | 4088   | 4088   | 4488   | 4488   | 4488   | 4761   | 4787   | 4593   | 4602    | 5321    | 5359    | 5358    | 5422    | 5422    |
|                    | Width               | mm      | 1050     | 1050   | 1050   | 1526   | 1526   | 1526   | 1526   | 1524   | 1338   | 1258   | 2570   | 2570    | 2846    | 2932    | 2932    | 3066    | 3066    |
|                    | Height              | mm      | 1845     | 1845   | 1896   | 2563   | 2563   | 2563   | 2563   | 2563   | 2307   | 2307   | 1846   | 1896    | 2064    | 2064    | 2064    | 2307    | 2307    |

Operation condition: Evaporator leaving water temperature 6.7 C , water flow rate per capacity is 0.043 l/s-kW, fouling factor=0.018m<sup>2</sup>K/kW

Condenser entering water temperature 29.4 C , water flow rate per capacity is 0.054 l/s-kW, fouling factor=0.044m<sup>2</sup>K/kW

Above are recommended models. Carrier can offer more models and computer selections at required conditions. For details, please contact Carrier local agencies.

\*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

# Performance data 30XW-S

| Model              |                     |         | 30XW-S   |       |       |       |       |        |        |        |        |        |        |        |         |         |         |         |
|--------------------|---------------------|---------|----------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
|                    |                     |         | 0502     | 0612  | 0692  | 0802  | 0912  | 1012   | 1261S  | 1401S  | 1601S  | 1712S  | 1762S  | 2052S  | 2602S   | 2902S   | 3302S   | 3452S   |
| Capacity           |                     | kW      | 520.2    | 610.2 | 697.4 | 772.1 | 881.4 | 1051.0 | 1229.0 | 1414.0 | 1571.0 | 1696.0 | 1727.0 | 2121.0 | 2478.0  | 2854.0  | 3185.0  | 3433.0  |
|                    |                     | USRT    | 148      | 174   | 198   | 220   | 251   | 299    | 350    | 402    | 447    | 482    | 491    | 603    | 705     | 812     | 906     | 976     |
| COP                |                     | kW/kW   | 5.29     | 5.30  | 5.30  | 5.33  | 5.35  | 5.30   | 5.38   | 5.44   | 5.47   | 5.40   | 5.35   | 5.38   | 5.39    | 5.39    | 5.40    | 5.48    |
| Evaporator         | Flow rate           | L/s     | 22.4     | 26.2  | 30.0  | 33.2  | 37.9  | 45.2   | 52.9   | 60.8   | 67.5   | 72.9   | 74.3   | 91.2   | 106.6   | 122.7   | 137.0   | 147.6   |
|                    | Water Pressure drop | kPa     | 34.6     | 61.9  | 72.5  | 45.6  | 58.1  | 55.4   | 59.9   | 57.8   | 48.1   | 80.0   | 82.9   | 61.8   | 70.6    | 87.8    | 73.1    | 88.5    |
|                    | Water connection    | DN      | 125      | 150   | 150   | 150   | 150   | 150    | 200    | 200    | 200    | 200    | 200    | 200    | 200     | 300     | 300     | 300     |
| Condenser          | Flow rate           | L/s     | 27.9     | 32.8  | 37.4  | 41.4  | 47.0  | 56.6   | 66.1   | 75.7   | 84.2   | 92.1   | 93.2   | 112.2  | 131.3   | 149.8   | 167.4   | 180.5   |
|                    | Water Pressure drop | kPa     | 44.5     | 50.9  | 58.9  | 68.5  | 45.1  | 65.9   | 47.2   | 69.1   | 67.6   | 91.4   | 94.7   | 72.8   | 88.0    | 93.0    | 93.0    | 98.6    |
|                    | Water connection    | DN      | 125      | 150   | 150   | 150   | 200   | 200    | 200    | 200    | 200    | 200    | 200    | 250    | 250     | 300     | 300     | 300     |
| Compressor         | Circuit A           | No.     | 1        | 1     | 1     | 1     | 1     | 1      | 1      | 1      | 1      | 1      | 1      | 1/1    | 1/1     | 1/1     | 1/1     | 1/1     |
|                    | Circuit B           | No.     | -        | -     | -     | -     | -     | 1      | -      | -      | -      | 1      | 1      | 1/1    | 1/1     | 1/1     | 1/1     | 1/1     |
|                    | Min. capacity       | %       | 15       | 15    | 15    | 15    | 15    | 8      | 20     | 20     | 15     | 8      | 8      | 4      | 4       | 4       | 4       | 4       |
| Motor              | Power               | V-Ph-Hz | 400-3-50 |       |       |       |       |        |        |        |        |        |        |        |         |         |         |         |
|                    | Input power         | kW      | 98.3     | 115.1 | 131.5 | 144.9 | 164.8 | 198.2  | 228.3  | 260.0  | 287.2  | 314.0  | 323.1  | 394.3  | 459.9   | 529.8   | 590.1   | 626.4   |
| Refrigerant Charge |                     |         | HFC-134a |       |       |       |       |        |        |        |        |        |        |        |         |         |         |         |
|                    | Circuit A           | kg      | 100      | 140   | 140   | 150   | 155   | 85     | 272    | 285    | 320    | 130    | 130    | 85/85  | 110/110 | 115/115 | 130/130 | 130/130 |
|                    | Circuit B           | kg      | -        | -     | -     | -     | -     | 95     | -      | -      | -      | 140    | 140    | 95/95  | 115/115 | 120/120 | 140/140 | 140/140 |
| Shipping weight*   |                     | kg      | 2883     | 3560  | 3560  | 3628  | 3845  | 5222   | 6705   | 7203   | 7312   | 7207   | 7207   | 10835  | 13153   | 14040   | 14370   | 14752   |
| Operation weight   |                     | kg      | 2617     | 3426  | 3426  | 3493  | 3946  | 5109   | 6521   | 7101   | 7292   | 7379   | 7379   | 10740  | 13193   | 14354   | 14958   | 15340   |
| Dimension          | Length              | mm      | 2746     | 3056  | 3056  | 3056  | 3080  | 4008   | 3947   | 4097   | 4097   | 4693   | 4693   | 4591   | 5251    | 5329    | 5356    | 5356    |
|                    | Width               | mm      | 970      | 1119  | 1119  | 1119  | 1135  | 1050   | 1526   | 1526   | 1524   | 1231   | 1231   | 2570   | 2761    | 2932    | 2932    | 2932    |
|                    | Height              | mm      | 1693     | 1849  | 1849  | 1849  | 1900  | 1846   | 2481   | 2563   | 2563   | 2064   | 2064   | 1846   | 2013    | 2013    | 2064    | 2064    |

Operation condition: Evaporator leaving water temperature 6.7 C , water flow rate per capacity is 0.043 l/s-kW, fouling factor=0.018m<sup>2</sup>K/kW

Condenser entering water temperature 29.4 C , water flow rate per capacity is 0.054 l/s-kW, fouling factor=0.044m<sup>2</sup>K/kW

Above are recommended models. Carrier can offer more models and computer selections at required conditions. For details, please contact Carrier local agencies.

\*The shipment weight is only base unit and wooden crating, excluding refrigerant and water inside.

# Electrical parameters 30XW-P (including option 81)

| High efficiency units 30XW-P     |         | 0312P                            | 0352P | 0452P | 0532P | 0552P | 0612P | 0652P | 0702P | 0802P | 0852P | 0912P | 1002P | 1052P | 1152P | 1261P | 1351P | 1401P | 1501P | 1601P | 1712P | 1762P |
|----------------------------------|---------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Power circuit                    |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Rated Voltage                    | V-ph-Hz | 400-3-50                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Voltage Range                    | V       | 360-440                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Control circuit                  |         | 24 V per internal transformateur |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Nominal start-up current*        |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Circuit A                        | A       | 233                              | 303   | 414   | 450   | 450   | 587   | 587   | 587   | 587   | 587   | 587   | 450   | 450   | 450   | 812   | 812   | 812   | 812   | 812   | 587   | 587   |
| Circuit B                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 450   | 450   | 450   | -     | -     | -     | -     | -     | 587   | 587   |
| Option 81                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 594   | 612   | 612   | -     | -     | -     | -     | -     | 819   | 819   |
| Maximum start-up current **      |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Circuit A                        | A       | 233                              | 303   | 414   | 450   | 450   | 587   | 587   | 587   | 587   | 587   | 587   | 450   | 450   | 450   | 812   | 812   | 812   | 812   | 812   | 587   | 587   |
| Circuit B                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 450   | 450   | 450   | -     | -     | -     | -     | -     | 587   | 587   |
| Option 81                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 667   | 692   | 692   | -     | -     | -     | -     | -     | 938   | 938   |
| Cosine Phi                       |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Nominal ***                      |         | 0.86                             | 0.86  | 0.86  | 0.87  | 0.87  | 0.89  | 0.89  | 0.89  | 0.89  | 0.90  | 0.90  | 0.86  | 0.87  | 0.87  | 0.91  | 0.91  | 0.91  | 0.91  | 0.91  | 0.90  | 0.90  |
| Maximum †                        |         | 0.89                             | 0.89  | 0.89  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.91  | 0.92  | 0.92  | 0.89  | 0.90  | 0.90  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Maximum power draw ††            |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Circuit A                        | kW      | 94                               | 104   | 134   | 151   | 151   | 184   | 184   | 184   | 200   | 223   | 242   | 134   | 151   | 151   | 275   | 275   | 276   | 340   | 340   | 223   | 223   |
| Circuit B                        | kW      | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 134   | 134   | 151   | -     | -     | -     | -     | -     | 223   | 223   |
| Option 81                        | kW      | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 268   | 285   | 302   | -     | -     | -     | -     | -     | 446   | 446   |
| Nominal current draw ***         |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Circuit A                        | A       | 97                               | 116   | 144   | 162   | 162   | 193   | 193   | 193   | 214   | 232   | 266   | 144   | 162   | 162   | 317   | 339   | 354   | 376   | 398   | 232   | 232   |
| Circuit B                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 144   | 144   | 162   | -     | -     | -     | -     | -     | 232   | 232   |
| Option 81                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 288   | 306   | 324   | -     | -     | -     | -     | -     | 464   | 464   |
| Maximum current draw (Un) ††     |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Circuit A                        | A       | 153                              | 168   | 217   | 242   | 242   | 295   | 295   | 295   | 317   | 351   | 379   | 217   | 242   | 242   | 432   | 432   | 434   | 535   | 535   | 351   | 351   |
| Circuit B                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 217   | 217   | 242   | -     | -     | -     | -     | -     | 351   | 351   |
| Option 81                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 434   | 459   | 484   | -     | -     | -     | -     | -     | 702   | 702   |
| Maximum current draw (Un -10%) † |         |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Circuit A                        | A       | 162                              | 178   | 230   | 260   | 260   | 304   | 304   | 304   | 340   | 358   | 402   | 230   | 260   | 260   | 475   | 475   | 477   | 588   | 588   | 358   | 358   |
| Circuit B                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 230   | 230   | 260   | -     | -     | -     | -     | -     | 358   | 358   |
| Option 81                        | A       | -                                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 460   | 490   | 520   | -     | -     | -     | -     | -     | 716   | 716   |

\* Instantaneous start-up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)

Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leavewater = 30 C/35 C

\*\* Instantaneous start-up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)

Values obtained at operation with maximum unit power input

\*\*\* Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leavewater = 30 C/35 C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input

Values given on the name plate

## Electrical parameters 30XW (including option 81)

| Medium efficiency units 30XW     |             | 0262                             | 0312 | 0352 | 0412 | 0422 | 0452 | 0552 | 0622 | 0652 | 0702 | 0812 | 0852 | 0902 | 0922 |     |
|----------------------------------|-------------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| Power circuit                    |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Rated Voltage                    | V-ph<br>-Hz | 400-3-50                         |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Voltage Range                    | V           | 360-440                          |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Control circuit                  |             | 24 V per internal transformateur |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Nominal start-up current*        |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Circuit A                        | A           | 233                              | 233  | 303  | 414  | 414  | 414  | 450  | 587  | 587  | 587  | 587  | 587  | 587  | 587  | 587 |
| Circuit B                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   |
| Option 81                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   |
| Maximum start-up current **      |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Circuit A                        | A           | 233                              | 233  | 303  | 414  | 414  | 414  | 450  | 587  | 587  | 587  | 587  | 587  | 587  | 587  | 587 |
| Circuit B                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   |
| Option 81                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   |
| Cosine Phi                       |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Nominal ***                      |             | 0.86                             | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 |     |
| Maximum †                        |             | 0.89                             | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.91 | 0.92 | 0.92 | 0.92 | 0.92 |     |
| Maximum power draw ††            |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Circuit A                        | kW          | 80                               | 94   | 104  | 134  | 134  | 134  | 151  | 184  | 184  | 200  | 223  | 223  | 223  | 242  |     |
| Circuit B                        | kW          | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Option 81                        | kW          | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Nominal current draw ***         |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Circuit A                        | A           | 81                               | 97   | 116  | 144  | 144  | 144  | 162  | 193  | 193  | 214  | 232  | 232  | 232  | 266  |     |
| Circuit B                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Option 81                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Maximum current draw (Un) ††     |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Circuit A                        | A           | 130                              | 153  | 168  | 217  | 217  | 217  | 242  | 295  | 295  | 317  | 351  | 351  | 351  | 379  |     |
| Circuit B                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Option 81                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Maximum current draw (Un -10%) † |             |                                  |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
| Circuit A                        | A           | 138                              | 162  | 178  | 230  | 230  | 230  | 260  | 304  | 304  | 340  | 358  | 358  | 358  | 402  |     |
| Circuit B                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |
| Option 81                        | A           | -                                | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |     |

\* Instantaneous start-up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)  
Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leave water = 30 C/35 C

\*\* Instantaneous start-up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)  
Values obtained at operation with maximum unit power input

\*\*\* Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leave water = 30 C/35 C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input

Values given on the name plate

## Electrical parameters 30XW (including option 81)

| Standard efficiency units 30XW   |         | 1002                             | 1052 | 1152 | 1261 | 1351 | 1401 | 1501 | 1601 | 1712 | 1762 |
|----------------------------------|---------|----------------------------------|------|------|------|------|------|------|------|------|------|
| Power circuit                    |         |                                  |      |      |      |      |      |      |      |      |      |
| Rated Voltage                    | V-ph-Hz | 400-3-50                         |      |      |      |      |      |      |      |      |      |
| Voltage Range                    | V       | 360-440                          |      |      |      |      |      |      |      |      |      |
| Control circuit                  |         | 24 V per internal transformateur |      |      |      |      |      |      |      |      |      |
| Nominal start-up current*        |         |                                  |      |      |      |      |      |      |      |      |      |
| Circuit A                        | A       | 450                              | 450  | 414  | 812  | 812  | 812  | 812  | 812  | 587  | 587  |
| Circuit B                        | A       | 450                              | 450  | 414  | -    | -    | -    | -    | -    | 587  | 587  |
| Option 81                        | A       | 612                              | 612  | 576  | -    | -    | -    | -    | -    | 819  | 853  |
| Maximum start-up current **      |         |                                  |      |      |      |      |      |      |      |      |      |
| Circuit A                        | A       | 450                              | 450  | 414  | 812  | 812  | 812  | 812  | 812  | 587  | 587  |
| Circuit B                        | A       | 450                              | 450  | 414  | -    | -    | -    | -    | -    | 587  | 587  |
| Option 81                        | A       | 692                              | 692  | 656  | -    | -    | -    | -    | -    | 938  | 966  |
| Cosine Phi                       |         |                                  |      |      |      |      |      |      |      |      |      |
| Nominal ***                      |         | 0.87                             | 0.87 | 0.87 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 |
| Maximum †                        |         | 0.90                             | 0.90 | 0.90 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Maximum power draw ††            |         |                                  |      |      |      |      |      |      |      |      |      |
| Circuit A                        | kW      | 151                              | 151  | 151  | 275  | 276  | 340  | 340  | 340  | 223  | 242  |
| Circuit B                        | kW      | 134                              | 151  | 151  | -    | -    | -    | -    | -    | 223  | 223  |
| Option 81                        | kW      | 285                              | 302  | 302  | -    | -    | -    | -    | -    | 446  | 465  |
| Nominal current draw ***         |         |                                  |      |      |      |      |      |      |      |      |      |
| Circuit A                        | A       | 162                              | 162  | 162  | 343  | 362  | 387  | 404  | 433  | 232  | 266  |
| Circuit B                        | A       | 144                              | 162  | 162  | -    | -    | -    | -    | -    | 232  | 232  |
| Option 81                        | A       | 306                              | 324  | 324  | -    | -    | -    | -    | -    | 464  | 498  |
| Maximum current draw (Un) ††     |         |                                  |      |      |      |      |      |      |      |      |      |
| Circuit A                        | A       | 242                              | 242  | 242  | 432  | 434  | 535  | 535  | 535  | 351  | 379  |
| Circuit B                        | A       | 217                              | 242  | 242  | -    | -    | -    | -    | -    | 351  | 351  |
| Option 81                        | A       | 459                              | 484  | 484  | -    | -    | -    | -    | -    | 702  | 730  |
| Maximum current draw (Un -10%) † |         |                                  |      |      |      |      |      |      |      |      |      |
| Circuit A                        | A       | 260                              | 260  | 260  | 475  | 477  | 588  | 588  | 588  | 358  | 402  |
| Circuit B                        | A       | 230                              | 260  | 260  | -    | -    | -    | -    | -    | 358  | 358  |
| Option 81                        | A       | 490                              | 520  | 520  | -    | -    | -    | -    | -    | 716  | 760  |

\* Instantaneous start-up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)

Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leavewater = 30 C/35 C

\*\* Instantaneous start-up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)

Values obtained at operation with maximum unit power input

\*\*\* Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leavewater = 30 C/35 C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input

Values given on the name plate

# Electrical parameters 30XW (including option 81)

| Medium efficiency units 30XW     |         | 2052                             | 2302 | 2602 | 2902 | 3052 | 3302 | 3452 |
|----------------------------------|---------|----------------------------------|------|------|------|------|------|------|
| Power circuit                    |         |                                  |      |      |      |      |      |      |
| Rated Voltage                    | V-ph-Hz | 400-3-50                         |      |      |      |      |      |      |
| Voltage Range                    | V       | 360-440                          |      |      |      |      |      |      |
| Control circuit                  |         | 24 V per internal transformateur |      |      |      |      |      |      |
| Nominal start-up current*        |         |                                  |      |      |      |      |      |      |
| Module1 Circuit A                | A       | 414                              | 414  | 587  | 587  | 587  | 587  | 587  |
| Module1 Circuit B                | A       | 414                              | 414  | 414  | 587  | 587  | 587  | 587  |
| Module1 Option 81                | A       | 576                              | 576  | 749  | 780  | 801  | 819  | 819  |
| Module2 Circuit A                | A       | 414                              | 414  | 587  | 587  | 587  | 587  | 587  |
| Module2 Circuit B                | A       | 414                              | 414  | 414  | 587  | 587  | 587  | 587  |
| Module2 Option 81                | A       | 576                              | 576  | 749  | 780  | 801  | 819  | 819  |
| Maximum start-up current **      |         |                                  |      |      |      |      |      |      |
| Module1 Circuit A                | A       | 414                              | 414  | 587  | 587  | 587  | 587  | 587  |
| Module1 Circuit B                | A       | 414                              | 414  | 414  | 587  | 587  | 587  | 587  |
| Module1 Option 81                | A       | 656                              | 656  | 829  | 882  | 904  | 938  | 938  |
| Module2 Circuit A                | A       | 414                              | 414  | 587  | 587  | 587  | 587  | 587  |
| Module2 Circuit B                | A       | 414                              | 414  | 414  | 587  | 587  | 587  | 587  |
| Module2 Option 81                | A       | 656                              | 656  | 829  | 882  | 904  | 938  | 938  |
| Cosine Phi                       |         |                                  |      |      |      |      |      |      |
| Nominal ***                      |         | 0.87                             | 0.87 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 |
| Maximum †                        |         | 0.90                             | 0.90 | 0.90 | 0.90 | 0.90 | 0.92 | 0.92 |
| Maximum power draw ††            |         |                                  |      |      |      |      |      |      |
| Module1 Circuit A                | kW      | 151                              | 151  | 184  | 184  | 200  | 223  | 223  |
| Module1 Circuit B                | kW      | 134                              | 151  | 151  | 184  | 184  | 202  | 223  |
| Module1 Option 81                | kW      | 285                              | 302  | 335  | 368  | 384  | 425  | 446  |
| Module2 Circuit A                | kW      | 151                              | 151  | 184  | 184  | 200  | 223  | 223  |
| Module2 Circuit B                | kW      | 134                              | 151  | 151  | 184  | 184  | 202  | 223  |
| Module2 Option 81                | kW      | 285                              | 302  | 335  | 368  | 384  | 425  | 446  |
| Nominal current draw ***         |         |                                  |      |      |      |      |      |      |
| Module1 Circuit A                | A       | 162                              | 162  | 193  | 193  | 214  | 232  | 232  |
| Module1 Circuit B                | A       | 144                              | 162  | 162  | 193  | 193  | 214  | 232  |
| Module1 Option 81                | A       | 306                              | 324  | 355  | 386  | 407  | 446  | 464  |
| Module2 Circuit A                | A       | 162                              | 162  | 193  | 193  | 214  | 232  | 232  |
| Module2 Circuit B                | A       | 144                              | 162  | 162  | 193  | 193  | 214  | 232  |
| Module2 Option 81                | A       | 306                              | 324  | 355  | 386  | 407  | 446  | 464  |
| Maximum current draw (Un) ††     |         |                                  |      |      |      |      |      |      |
| Module1 Circuit A                | A       | 242                              | 242  | 295  | 295  | 317  | 351  | 351  |
| Module1 Circuit B                | A       | 217                              | 242  | 242  | 295  | 295  | 317  | 351  |
| Module1 Option 81                | A       | 459                              | 484  | 537  | 590  | 612  | 668  | 702  |
| Module2 Circuit A                | A       | 242                              | 242  | 295  | 295  | 317  | 351  | 351  |
| Module2 Circuit B                | A       | 217                              | 242  | 242  | 295  | 295  | 317  | 351  |
| Module2 Option 81                | A       | 459                              | 484  | 537  | 590  | 612  | 668  | 702  |
| Maximum current draw (Un -10%) † |         |                                  |      |      |      |      |      |      |
| Module1 Circuit A                | A       | 260                              | 260  | 304  | 304  | 340  | 358  | 358  |
| Module1 Circuit B                | A       | 230                              | 260  | 260  | 304  | 304  | 340  | 358  |
| Module1 Option 81                | A       | 490                              | 520  | 564  | 608  | 644  | 698  | 716  |
| Module2 Circuit A                | A       | 260                              | 260  | 304  | 304  | 340  | 358  | 358  |
| Module2 Circuit B                | A       | 230                              | 260  | 260  | 304  | 304  | 340  | 358  |
| Module2 Option 81                | A       | 490                              | 520  | 564  | 608  | 644  | 698  | 716  |

\* Instantaneous start-up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)  
Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leave water = 30 C/35 C

\*\* Instantaneous start-up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)  
Values obtained at operation with maximum unit power input

\*\*\* Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leave water = 30 C/35 C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input

Values given on the name plate

# Electrical parameters 30XW-S (including option 81)

| Standard efficiency units<br>30XW |             | 0502                             | 0612 | 0692 | 0802 | 0912 | 1012 | 1261S | 1401S | 1262S | 1402S | 1601S | 1712S | 1762S |
|-----------------------------------|-------------|----------------------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Power circuit                     |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Rated Voltage                     | V-ph<br>-Hz | 400-3-50                         |      |      |      |      |      |       |       |       |       |       |       |       |
| Voltage Range                     | V           | 360-440                          |      |      |      |      |      |       |       |       |       |       |       |       |
| Control circuit                   |             | 24 V per internal transformateur |      |      |      |      |      |       |       |       |       |       |       |       |
| Nominal start-up current*         |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Circuit A                         | A           | 414                              | 587  | 587  | 587  | 587  | 414  | 812   | 812   | 587   | 587   | 812   | 587   | 587   |
| Circuit B                         | A           | -                                | -    | -    | -    | -    | 414  | -     | -     | 414   | 587   | -     | 587   | 587   |
| Option 81                         | A           | -                                | -    | -    | -    | -    | 576  | -     | -     | 749   | 801   | -     | 819   | 853   |
| Maximum start-up current **       |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Circuit A                         | A           | 414                              | 587  | 587  | 587  | 587  | 414  | 812   | 812   | 587   | 587   | 812   | 587   | 587   |
| Circuit B                         | A           | -                                | -    | -    | -    | -    | 414  | -     | -     | 414   | 587   | -     | 587   | 587   |
| Option 81                         | A           | -                                | -    | -    | -    | -    | 656  | -     | -     | 829   | 904   | -     | 938   | 966   |
| Cosine Phi                        |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Nominal ***                       |             | 0.87                             | 0.88 | 0.89 | 0.90 | 0.90 | 0.87 | 0.91  | 0.91  | 0.88  | 0.89  | 0.91  | 0.90  | 0.90  |
| Maximum †                         |             | 0.90                             | 0.90 | 0.91 | 0.92 | 0.92 | 0.90 | 0.92  | 0.92  | 0.90  | 0.91  | 0.92  | 0.92  | 0.92  |
| Maximum power draw ††             |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Circuit A                         | kW          | 151                              | 184  | 200  | 223  | 242  | 151  | 275   | 340   | 200   | 200   | 340   | 223   | 242   |
| Circuit B                         | kW          | -                                | -    | -    | -    | -    | 151  | -     | -     | 151   | 200   | -     | 223   | 223   |
| Option 81                         | kW          | -                                | -    | -    | -    | -    | 302  | -     | -     | 351   | 400   | -     | 446   | 465   |
| Nominal current draw ***          |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Circuit A                         | A           | 162                              | 193  | 214  | 232  | 266  | 162  | 371   | 420   | 214   | 214   | 468   | 232   | 266   |
| Circuit B                         | A           | -                                | -    | -    | -    | -    | 162  | -     | -     | 162   | 214   | -     | 232   | 232   |
| Option 81                         | A           | -                                | -    | -    | -    | -    | 324  | -     | -     | 376   | 428   | -     | 464   | 498   |
| Maximum current draw (Un) ††      |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Circuit A                         | A           | 242                              | 295  | 317  | 351  | 351  | 242  | 432   | 535   | 317   | 317   | 535   | 351   | 379   |
| Circuit B                         | A           | -                                | -    | -    | -    | -    | 242  | -     | -     | 242   | 317   | -     | 351   | 351   |
| Option 81                         | A           | -                                | -    | -    | -    | -    | 484  | -     | -     | 559   | 634   | -     | 702   | 730   |
| Maximum current draw (Un -10%) †  |             |                                  |      |      |      |      |      |       |       |       |       |       |       |       |
| Circuit A                         | A           | 260                              | 304  | 340  | 358  | 402  | 260  | 475   | 588   | 340   | 340   | 588   | 358   | 402   |
| Circuit B                         | A           | -                                | -    | -    | -    | -    | 260  | -     | -     | 260   | 340   | -     | 358   | 358   |
| Option 81                         | A           | -                                | -    | -    | -    | -    | 520  | -     | -     | 600   | 680   | -     | 716   | 760   |

\* Instantaneous start-up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)  
 Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leave water = 30 C/35 C

\*\* Instantaneous start-up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)  
 Values obtained at operation with maximum unit power input

\*\*\* Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leave water = 30 C/35 C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input  
 Values given on the name plate



## Electrical parameters 30XW-S (including option 81)

| mid efficiency units 30XW-S      |         | 2052S    | 2602S | 2902S | 3302S | 3452S |
|----------------------------------|---------|----------|-------|-------|-------|-------|
| Power circuit                    |         |          |       |       |       |       |
| Rated Voltage                    | V-ph-Hz | 400-3-50 |       |       |       |       |
| Voltage Range                    | V       | 360-440  |       |       |       |       |
| Control circuit                  |         |          |       |       |       |       |
| 24 V per internal transformateur |         |          |       |       |       |       |
| Nominal start-up current*        |         |          |       |       |       |       |
| Module1 Circuit A                | A       | 414      | 587   | 587   | 587   | 587   |
| Module1 Circuit B                | A       | 414      | 414   | 587   | 587   | 587   |
| Module1 Option 81                | A       | 576      | 749   | 801   | 819   | 819   |
| Module2 Circuit A                | A       | 414      | 587   | 587   | 587   | 587   |
| Module2 Circuit B                | A       | 414      | 414   | 587   | 587   | 587   |
| Module2 Option 81                | A       | 576      | 749   | 801   | 819   | 819   |
| Maximum start-up current **      |         |          |       |       |       |       |
| Module1 Circuit A                | A       | 414      | 587   | 587   | 587   | 587   |
| Module1 Circuit B                | A       | 414      | 414   | 587   | 587   | 587   |
| Module1 Option 81                | A       | 656      | 829   | 904   | 938   | 938   |
| Module2 Circuit A                | A       | 414      | 587   | 587   | 587   | 587   |
| Module2 Circuit B                | A       | 414      | 414   | 587   | 587   | 587   |
| Module2 Option 81                | A       | 656      | 829   | 904   | 938   | 938   |
| Cosine Phi                       |         |          |       |       |       |       |
| Nominal ***                      |         | 0.87     | 0.88  | 0.89  | 0.90  | 0.90  |
| Maximum †                        |         | 0.90     | 0.90  | 0.91  | 0.92  | 0.92  |
| Maximum power draw ††            |         |          |       |       |       |       |
| Module1 Circuit A                | kW      | 151      | 200   | 200   | 223   | 223   |
| Module1 Circuit B                | kW      | 151      | 151   | 200   | 223   | 223   |
| Module1 Option 81                | kW      | 302      | 351   | 400   | 446   | 446   |
| Module2 Circuit A                | kW      | 151      | 200   | 200   | 223   | 223   |
| Module2 Circuit B                | kW      | 151      | 151   | 200   | 223   | 223   |
| Module2 Option 81                | kW      | 302      | 351   | 400   | 446   | 446   |
| Nominal current draw ***         |         |          |       |       |       |       |
| Module1 Circuit A                | A       | 162      | 214   | 214   | 232   | 232   |
| Module1 Circuit B                | A       | 162      | 162   | 214   | 232   | 232   |
| Module1 Option 81                | A       | 324      | 376   | 428   | 464   | 464   |
| Module2 Circuit A                | A       | 162      | 214   | 214   | 232   | 232   |
| Module2 Circuit B                | A       | 162      | 162   | 214   | 232   | 232   |
| Module2 Option 81                | A       | 324      | 376   | 428   | 464   | 464   |
| Maximum current draw (Un) ††     |         |          |       |       |       |       |
| Module1 Circuit A                | A       | 242      | 317   | 317   | 351   | 351   |
| Module1 Circuit B                | A       | 242      | 242   | 317   | 351   | 351   |
| Module1 Option 81                | A       | 484      | 559   | 634   | 702   | 702   |
| Module2 Circuit A                | A       | 242      | 317   | 317   | 351   | 351   |
| Module2 Circuit B                | A       | 242      | 242   | 317   | 351   | 351   |
| Module2 Option 81                | A       | 484      | 559   | 634   | 702   | 702   |
| Maximum current draw (Un -10%) † |         |          |       |       |       |       |
| Module1 Circuit A                | A       | 260      | 340   | 340   | 358   | 358   |
| Module1 Circuit B                | A       | 260      | 260   | 340   | 358   | 358   |
| Module1 Option 81                | A       | 520      | 600   | 680   | 716   | 716   |
| Module2 Circuit A                | A       | 260      | 340   | 340   | 358   | 358   |
| Module2 Circuit B                | A       | 260      | 260   | 340   | 358   | 358   |
| Module2 Option 81                | A       | 520      | 600   | 680   | 716   | 716   |

\* Instantaneous start -up current (locked rotor current of the largest compressor + the rated load current of other smaller motors at nominal operating conditions)  
Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leavewater = 30 C/35 C

\*\* Instantaneous start -up current (locked rotor current of the largest compressor + the maximum load current of other smaller motors at maximum unit conditions)  
Values obtained at operation with maximum unit power input

\*\*\* Values obtained at operating condition: evaporator temperature entry/leave water = 12 C/7 C, condenser temperature entry/leavewater = 30 C/35 C

† Values obtained at operation with maximum unit power input

†† Values obtained at operation with maximum unit power input

Values given on the name plate

## Options & accessories

| Options                                                                           | NO     | Description                                                                                                                                                                                                                                        | Advantages                                                                                                                                                                              | Use                                                                         |
|-----------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Medium Brine                                                                      | 5      | Brine application down to -6°C leaving fluid temperature                                                                                                                                                                                           | Covers specific application such as ice storage and industrial processes                                                                                                                | 30XW0262-3452/S (except 30XW-P and 30XW0502/0652/0802)                      |
| Low Brine                                                                         | 6      | Brine application down to -12°C leaving fluid temperature<br>* Use of air-cooled unit compressors<br>* Increase size of electrical componts according to compressor motor electrical characteristics                                               | Covers specific application such as ice storage and industrial processes                                                                                                                | 30XW1152/0552P/1002P                                                        |
| Single power connection                                                           | 81     | This option is required to allow to connect on single power supply line to one single location where std machine require two                                                                                                                       | Quick and easy installation                                                                                                                                                             | 30XW1052-3452/-S<br>30XW1002P-1712P<br>Each module of duplex with PT081     |
| Closed Y-delta start                                                              | 91     | Closed Y-delta start built in conrtro box                                                                                                                                                                                                          | Low the inrush current                                                                                                                                                                  | 30XW0652P/0702P/0802P/0912P                                                 |
| Evaporator & Condenser water pressue 1.6MPa                                       | 104    | Reinforced evaporator & condenser for extension of the maximum water-side service pressure to 1.6MPa                                                                                                                                               | Covers applications with a high water column(high buildings)                                                                                                                            | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Evaporator & Condenser water pressue 2.1MPa                                       | 104A16 | Reinforced evaporator & condenser for extension of the maximum water-side service pressure to 2.1MPa                                                                                                                                               | Covers applications with a high water column(high buildings)                                                                                                                            | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Evaporator with reversed water connection                                         | 107E   | Evaporator with reversed water inlet/outlet                                                                                                                                                                                                        | Simplification of the water piping                                                                                                                                                      | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Condenser with reversed water connection                                          | 107C   | Condenser with reversed water inlet/outlet                                                                                                                                                                                                         | Simplification of the water piping                                                                                                                                                      | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| CCN to J bus gateway                                                              | 148B   | Two way protocol converter board between CCN and J-Bus for easy connection to BMS.<br>Consist of:<br>- Electronic board mounted in the unit electrical cabinet<br>- Automatic configuration at start up                                            | Easy connection by communication bus to a building management system                                                                                                                    | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| CCN to BAC Net/ Modbus gateway                                                    | 148C   | Two way protocol converter board between CCN and BAC Net/ Modbus for easy connection to BMS.<br>Consist of:<br>- Electronic board mounted in the unit electrical cabinet<br>- Automatic configuration at start up                                  | Easy connection by communication bus to a building management system                                                                                                                    | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| CCN to Lon work gateway                                                           | 148D   | Two way protocol converter board between CCN and Lon work for easy connection to BMS.<br>Consist of:<br>- Electronic board mounted in the unit electrical cabinet<br>- Automatic configuration at start up                                         | Easy connection by communication bus to a building management system                                                                                                                    | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| High condensing temperature unit (up to 63 C leaving condenser water temperature) | 150    | Increased condenser leaving water temperature up to 63 C .<br>* Use of air-cooled unit compressors<br>* Increase size of electrical componts according to compressor motor electrical characteristics                                              | Allows applications with high condensing temperature(for heat reclaim or dry cooler applications)                                                                                       | 30XW0262-3452/S<br>30XW0532P-1712P (except 0912P/1002P/0622/0812/0922/1762) |
| Condenser maxium leaving temperature limited to 45 C                              | 150B   | Control configuration to limit operation at 45°C maximum condenser leaving temperature                                                                                                                                                             | Avoids oversizing of the protection elements and the power cables                                                                                                                       | 30XW0262-3452/S<br>30XW0532P-1712P                                          |
| Heat pump (Max condenser leaving temp 63 C )                                      | 150A   | Heat pump control logic to control condenser LWT<br>* Use of air-cooled unit compressors<br>* Increase size of electrical componts according to compressor motor electrical characteristics<br>* Heat pump control logic<br>* Condenser insulation | Allows heating applications with max condenser leaving temp 63 C                                                                                                                        | 30XW0262-3452/S<br>30XW0532P-1712P                                          |
| Condenser maxium leaving temperature 50°C                                         | 150E   | Increase condenser LWT to 50°C                                                                                                                                                                                                                     | Allows application with high condensing temperature                                                                                                                                     | 30XW/-P/-S 1261-1601                                                        |
| Heat pump (Max condenser leaving temp 50 C )                                      | 150D   | Heat pump control logic to control condenser LWT<br>* Condenser insulation<br>* Heat pump Control logic                                                                                                                                            | Allows heating applications with max condenser leaving temp 50 C                                                                                                                        | 30XW0262-3452/S<br>30XW0532P-1712P                                          |
| Condenser water valve control (0-10V signal)                                      | 152    | Output signal (0-10V) to control the condenser water inlet valve<br>Consist of:<br>- One 8DO+4AI/2AO Board<br>- Connector for 3 way valve<br>Note: Power supply for water valve is not included                                                    | Used for applications with cold water at the condenser inlet (well water). In this case the valve controls the water entering temperature to maintain an acceptable condensing pressure | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Energy management module                                                          | 156    | Remote control module. Additional contacts for an extension of the unit control functions (without communication bus)<br>Consist of:<br>- Electrinoc board mounted in the unit electrical cabniet                                                  | Easy connection by wired connection to a building management system                                                                                                                     | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Touch screen Interface                                                            | 158A   | 7" TouchScreen Interface                                                                                                                                                                                                                           | Easy operation                                                                                                                                                                          | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Evaporator flanged connections                                                    | 314E   | Victaulic to Flange water connections                                                                                                                                                                                                              | Easy installation                                                                                                                                                                       | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Condenser flanged connections                                                     | 314C   | Victaulic to Flange water connections                                                                                                                                                                                                              | Easy installation                                                                                                                                                                       | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Nitrogen charge                                                                   | 320    | Unit nitrogen factory charged.                                                                                                                                                                                                                     | Less weight. No refrigerant charged                                                                                                                                                     | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Discharge shut off valve                                                          | 321    | Allows referigerant to be stored inside the chiller during servicing                                                                                                                                                                               | Reducing refrigerant loss and eliminating time-consuming transfer procedures                                                                                                            | 30XW0262-3452/S<br>30XW0312P-1712P                                          |
| Australia code                                                                    | 312A   | Meets Australia government pressure vessel code AS 1210 and AS 4343                                                                                                                                                                                | Meets Australia government pressure vessel code AS 1210 and AS 4343                                                                                                                     | 30XW0262-3452/S<br>30XW0312P-1712P                                          |

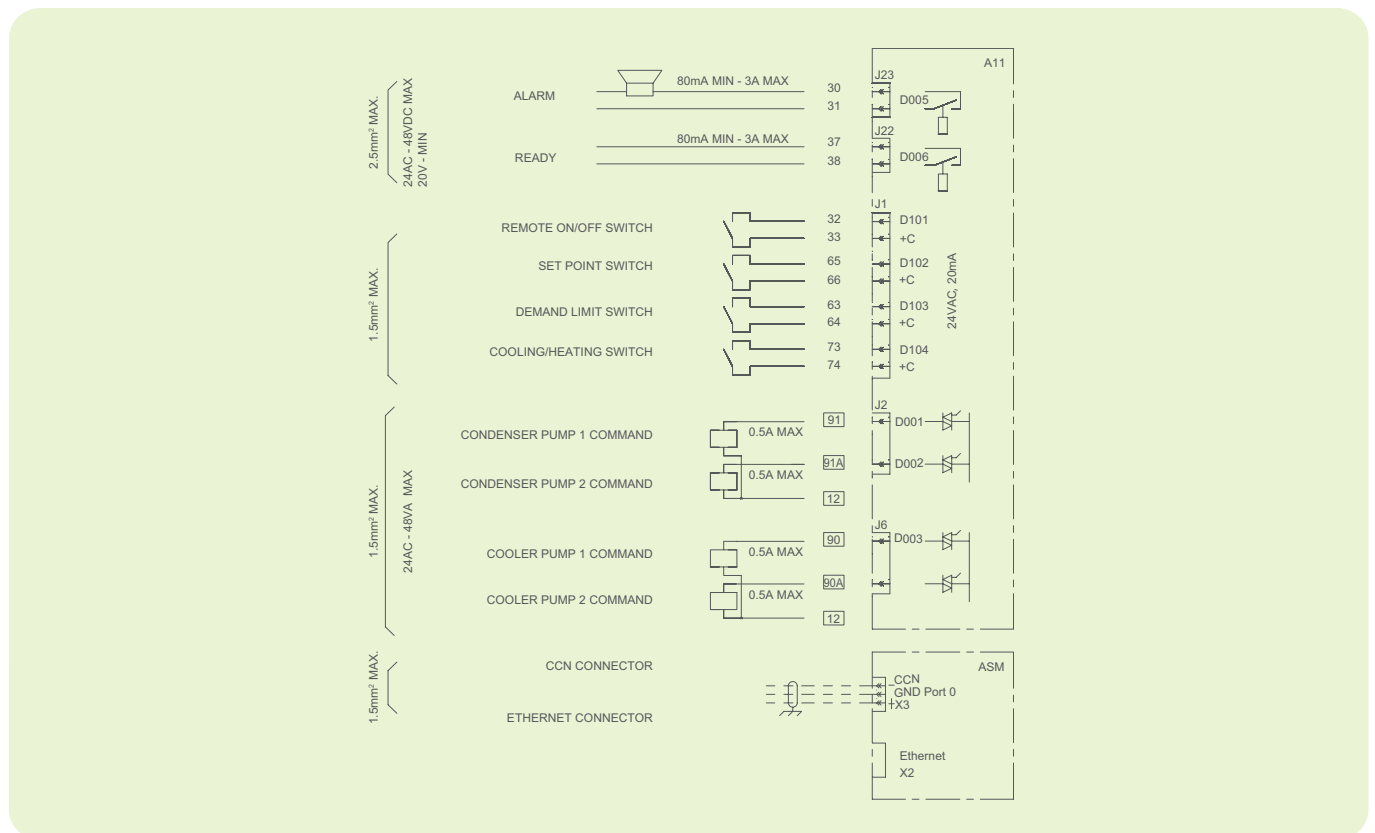
# Options & accessories

|                                |      |                                                                                                                                                                                                                        |                                                                                                                                                                                  |                                    |
|--------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Multi-piece shipment           | 51   | "Side-by-side" Units only. Unit shipped in two parts bolted together, flanges on piping connections, no refrigerant charge (Nitrogen holding charge)                                                                   | Easy installation                                                                                                                                                                | 30XW1712P                          |
| Low noise                      | 257  | Provide 2 to 4 dBA sound attenuation vs std to meet low noise application<br>* Innovative lagging used                                                                                                                 | Lower operating sound levels                                                                                                                                                     | 30XW0262-3452/S<br>30XW0312P-1712P |
| Super low noise                | 258A | Provide 6 to 8 dBA sound attenuation vs std to meet super low noise application<br>* Sound enclosure used<br>* Waterproof, rust prevention features                                                                    | Lower operating sound levels with waterproof                                                                                                                                     | 30XW0262-3452/S<br>30XW0312P-1712P |
| Super low noise                | 258C | Provide 8 to 10 dBA sound attenuation vs std to meet super low noise application<br>* Sound enclosure used<br>* Waterproof, rust prevention features                                                                   | Lower operating sound levels                                                                                                                                                     | 30XW0262-3452/S<br>30XW0312P-1712P |
| Soft starter                   | 25   | Provide unit soft starting, uninterrupted changeover without current peak that would stress power supply<br>* Using a soft starter instead of Wye-Delta starter                                                        | Lower peak start-up current                                                                                                                                                      | 30XW0262-3452/S<br>30XW0312P-1712P |
| IP44 Enclosure                 | 20   | IP44 Enclosure(Control box & Terminal box)                                                                                                                                                                             | Higher water & rust protection level for control box & terminal box                                                                                                              | 30XW0262-3452/S<br>30XW0312P-1712P |
| Condenser CuNi tubes           | 841C | 90/10 CuNi tubes used on condenser                                                                                                                                                                                     | Suitable for river water and sewage water                                                                                                                                        | 30XW0262-3452/S<br>30XW0312P-1712P |
| Evaporator CuNi tubes          | 841E | 90/10 CuNi tubes used on evaporator                                                                                                                                                                                    | Suitable for river water and sewage water                                                                                                                                        | 30XW0262-3452/S<br>30XW0312P-1712P |
| Hot gas Bypass                 | 866  | Hot gas bypass minimum load down to 10%                                                                                                                                                                                | Extend capacity operating range to match minimum load requirement                                                                                                                | 30XW/-P/-S 1261-1601               |
| Terminal box condensation free | 322  | Recommended for tropical environments (hot and humid).<br>Consist of:<br>-Slope bottom of terminal box.<br>-A water drain tube from the bottom of terminal box.<br>-Thermal insulation on the surface of terminal box. | Avoid the condensation appearing on the surface of terminal box and accumulating internally. Also prevent condensation dropping on the control box where below the terminal box. | 30XW0262-3452/S<br>30XW0312P-1712P |

**Notes:**

1. Medium brine option PT005 is not compatible with PT150/PT150A/PT312A.
2. Low Brine options PT006 is not compatible with PT150/PT150A/PT150D/PT312A.
3. Australia code PT312A is not compatible with PT005/PT006/PT104/PT104A16/PT150/PT150A/841E/841C.
4. PT150 and PT150A is not compatible with 30XW0312P-0652P, 30XW0912P/1002P/0622/0812/0922/1762, 30XW/-P/-S 1261-1601.
5. IP44 enclosure PT020 is not compatible with PT025/PT258/PT322.
6. 30XW/-P/-S 1261-1601 are standard equipped with closed Y-delta start and not compatible with PT841C/841E.
7. Condenser water valve control option is not include 3 way valve and power supply for water valve.

# Wiring Diagram



## Recommendations on heat exchange fluids

Filters are required to be installed in water entering side, and water quality analysis periodically implement.

Water quality should be maintained within the limits indicated in below table.

| Water Characteristics              | Quality Limitation |
|------------------------------------|--------------------|
| NH <sub>3</sub>                    | <2 ppm             |
| NH <sup>4+</sup>                   | <2 ppm             |
| Cl <sub>2</sub>                    | <1 ppm             |
| Cl <sup>-</sup>                    | < 300 ppm          |
| H <sub>2</sub> S*                  | <0.05 ppm          |
| SO <sub>4</sub> <sup>2-</sup>      | < 70 ppm           |
| CO <sub>2</sub> †                  | <5 ppm             |
| Fe <sup>2+</sup> /Fe <sup>3+</sup> | <0.2 ppm           |
| O <sub>2</sub>                     | < 5 ppm            |

| Water Characteristics | Quality Limitation                   |
|-----------------------|--------------------------------------|
| NO <sub>3</sub>       | <100 ppm                             |
| Si                    | < 0.1 ppm                            |
| Al                    | <0.2 ppm                             |
| Mn                    | <0.1 ppm                             |
| Hardness              | 71.2<...<151.3mg/l CaCO <sub>3</sub> |
| Resistance            | >3000ohm.cm                          |
| Conductivity          | 200<...<600µS/cm                     |
| Ph                    | 7.5<...<9                            |

## System minimum water volume

Whichever the system, the water loop minimum capacity is given by the formula:

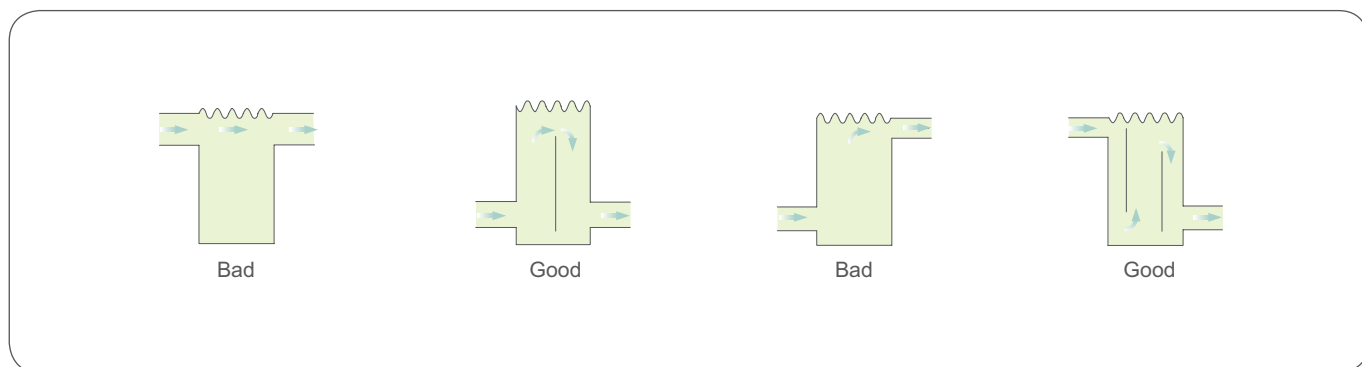
$$\text{Capacity} = \text{Cap(kW)} \times \text{N Liters}$$

Where Cap is the nominal system cooling capacity (kW) at the nominal operating conditions of the installation.

This volume is necessary for stable operation and accurate temperature control.

| Application             | N   |
|-------------------------|-----|
| Normal air conditioning | 3.5 |
| Process type cooling    | 6.5 |

It is often necessary to add a buffer water tank to the circuit in order to achieve the required volume. The tank must itself be internally baffled in order to ensure proper mixing of the liquid (water or brine). Refer to the examples below.



# Guide Specifications

## General description

Factory assembled single piece water-cooled liquid chiller. Contained within the unit shall be all factory wiring, piping, controls, refrigerant charge (HFC-134a), refrigeration circuits set, screw compressors, electronic expansion valves and equipment required prior to field start-up.

## Quality assurance

1. Unit construction shall comply with standard including the following:
  - A. Code of design of heating, ventilation and air conditions (GBJ 19-87, GB50019-2003).
  - B. GB/T 18430.1-2007, AHRI Standard 550/590 and 551/591.
  - C. ISO3746-1996 and ARI575-1987.
2. Unit shall be designed, manufactured and tested in a facility with a quality management system certified ISO 9001 and environmental management system ISO 14001.
3. Unit shall be run tested at the factory.
4. Unit components shall be capable of withstanding 60°C (66°C for PT150A) storage without damage, failure, refrigerant loss, or safety risks.

## Product features

1. Compressors:
  - A. Unit shall have semi-hermetic twin-screw compressors with internal relief valve and check valve to avoid reverse rotation on shut down.
  - B. Each compressor shall be equipped with a discharge shut-off valve (option).
  - C. The discharge shall also be equipped with a muffler to reduce discharge gas pulsations.
  - D. Capacity control shall be provided by a variable control slide valve capable of reducing compressor capacity down to 15% of full load. Compressor shall start in unloaded condition.
  - E. Motor shall be cooled by suction gas and protected by internal winding temperature sensors. Compressor bearings shall be designed for minimum 73000 hours at maximum operating conditions.
  - F. Lubrication oil system shall include pre-filter and external filter capable of filtration to 5 microns.
2. Evaporator:
  - A. Unit shall be equipped with a single evaporator.
  - B. Evaporator shall be manufactured, tested and stamped in accordance with the GB150-1999.
  - C. The maximum refrigerant-side working pressure will be 1500kPa (1750kPa for PT150A), and the maximum waterside pressure will be 1000kPa (1600kPa, 2100kPa as an option).
  - D. The evaporator shall be mechanically cleanable, shell-and-tube type with removable heads. Tubes shall be internally and externally grooved, seamless-copper, and shall be rolled into tube sheets. Shell shall be insulated with 19mm closed-cell foam with a maximum K factor of 0.28. Evaporator thermal insulation shall be factory fitted.
  - E. The evaporator shall have a drain and vent in each head.
  - F. The evaporator shall incorporate an active refrigerant level control system to ensure optimum heat transfer performance under all load conditions.
  - G. Design shall incorporate either 1 or 2 independent refrigerant circuits.
  - H. Chiller shall have only one water inlet & outlet connection with victaulic couplings to avoid vibrations transmission and accept small misalignment (water connection kit on demand).
  - I. Evaporator shall be fitted with electronic auto setting water flow switch. Paddle switches or differential pressure switches shall not be acceptable.
3. Condenser:
  - A. Unit shall be equipped with a single condenser.
  - B. Condenser shall be manufactured, tested and stamped in accordance with the GB150-1999.
  - C. The maximum refrigerant-side working pressure will be 1500kPa (2350kPa for PT150A), and the maximum waterside pressure will be 1000kPa (1600kPa, 2100kPa as an option).
  - D. The condenser shall be mechanically cleanable shell-and-tube type with removable heads.
  - E. Tubes shall be internally and externally grooved, seamless-copper, and shall be rolled into tube sheets.
  - F. Design shall incorporate either 1 or 2 independent refrigerant circuits and the oil separator.
  - G. The condenser shall have a drain and vent in each head.
  - H. Chiller shall have only one water inlet & outlet connection with victaulic couplings to avoid vibrations transmission and accept small misalignment (water connection kit on demand).

#### 4. Refrigeration circuits:

- A. Refrigerant circuit components shall include, compressor, oil separator, high and low side pressure relief devices, compressor discharge (option) and liquid line shutoff valves, refrigerant economizer, filter driers, moisture indicating sight glasses, long stroke electronic expansion device, and complete operating charge of both refrigerant HFC-134a and compressor oil.
- B. To facilitate service and maintenance and avoid refrigerant charge transfers, it must be possible to isolate the following components and systems independently: filter driers, oil filters, expansion devices and compressor (with service valves option).

#### 5. Controls:

- A. Unit controls shall include as a minimum: microprocessor with non-volatile memory, picture guided unit/operator interface, the LOCAL/OFF/REMOTE/CCN selector and a touch-screen display with with multiple language capability.
- B. Pressure sensors shall be installed to measure suction, discharge, and oil pressure.
- C. Thermistors shall be installed to measure cooler entering and leaving water temperatures (on cooler and condenser side).
- D. Unit shall be capable of performing the following functions:
  - Automatic change-over and cycling of compressors to equalize running hours and number of starts.
  - EXV control, based on throttling optimizes evaporator charging, ensuring condenser superheat and sub-cooling.
  - Capacity control based on leaving chilled fluid temperature with return fluid temperature sensing.
  - Limit the chilled fluid temperature pull-down rate at start-up to an adjustable range of 0.1°C to 1.1°C per minute to prevent excessive demand spikes at start-up.
  - Enable reset of leaving chilled water temperature according to the return water temperature or by means of a 0-10V signal.
  - Provide a dual set point for the leaving chilled water temperature activated by a remote contact closure signal or by the built in time clock.
  - Enable a 2-level demand limit control (between 0 and 100%) or a maximum current drawn limit activated by a remote contact closure or by the built in time clock.
  - Control evaporator water pump and the condenser pump.
  - Allow two time scheduling programs to enable unit start-up control, demand limit and set-point changes.
  - Enable lead lag control of two chillers running in series or parallel.

#### 6. Diagnostics:

- A. Display module shall be capable of displaying set points, system status including temperatures, pressures, current for each compressor, run time and percent loading.
- B. The control system shall allow a quick test of all machine elements to verify the correct operation of every switch, circuit breaker, contactor etc. before the chiller is started.

#### 7. Safeties:

- A. Unit shall be equipped with all necessary components, and in conjunction with the control system shall provide the unit with protection against the following:
  - Reverse rotation.
  - Low chilled water temperature.
  - Low oil pressure (per compressor).
  - Current imbalance.
  - Compressor thermal overload.
  - Automatic compressor unloading in case of excessive condensing temperature.
  - High pressure.
  - Electrical overload.
  - Loss of phase.
- B. Control shall provide separate general alert (minor incident) and alarm (circuit down) remote indication.

#### 8. Operating characteristics:

- A. Unit shall be capable of starting with 13°C entering water temperature to the condenser.
- B. Unit shall be capable of starting with 35°C entering water temperature to the evaporator.

#### 9. Electrical characteristics:

- A. Unit shall operate on 3-phase power supply without neutral.
- B. Control voltage shall be supplied by a factory-installed transformer.
- C. Unit shall be supplied with factory-installed electrical disconnect/isolator switch integrating main fuses.
- D. Unit shall have a factory installed star/delta starter as standard to limit electrical inrush current.





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|-----------------|--------------------|
| Version:        | CAT_30XW_E-1911_13 |
| Supersede:      | CAT_30XW_E-1709_12 |
| Effective date: | Oct, 2019          |