# XStream™ Water-cooled screw chillers and Water/Water Heat pumps

## Refrigerant R1234ze
## Model RTWF 95 G - 420 G (355 to 1420 kW)
## Model RTHF 250 G - 780 G (750 to 2760 kW)


January 2021

**RLC-PRC060D-GB**

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# Introduction

The new **Trane XStream™ RTWF G and RTHF G** series is the result of a search for higher reliability and higher energy efficiency, for today's environment.

EcoWise™

XStream™ RTWF G and RTHF G chillers with **R1234ze** low GWP refrigerants are part of the **EcoWise™** portfolio of products that are designed to lower their environmental impact with next-generation, low global warming potential (GWP) refrigerants and high-efficiency operation.

In an effort to reduce energy consumed by cooling and heating equipment and to continually operate, Trane has developed the **XStream RTWF G and RTHF G** chillers and heat pumps with higher efficiencies and a more reliable design than any other water-to-water equipment available on the market today.

The **XStream RTWF G and RTHF G** uses the proven design of the Trane helical-rotary compressors, which embraces all of the design features that have made the Trane helical-rotary compressor liquid chillers such a success since 1987.

The industrial-grade design of this helical rotary chillers and heat pumps is ideal for both industrial and commercial markets, in applications such as office buildings, hospitals, schools, retail buildings, and industrial facilities.

The major advantages of the **XStream RTWF G and RTHF G** are:

- Very low environmental impact thanks to near zero GWP (<1) R1234ze refrigerant
- High efficiencies both in cooling and heating
- 99.5% reliability rate
- Suitable with high condensing temperature and heat pump applications with possible delivery of hot water up to 85°C (RTWF G).
- Great versatility to adapt to varying applications requirements

**XStream RTWF G and RTHF G** come in several versions and efficiency levels, to allow customers to make the best choice according to his main criteria, whether they are economical or environmental.

Trane **XStream™ RTWF G and RTHF G** offer 4 efficiency levels:

RTWF G:

- Standard Efficiency (SE)
- High Efficiency (HE)
- High Seasonal Efficiency (HSE)

RTHF G:

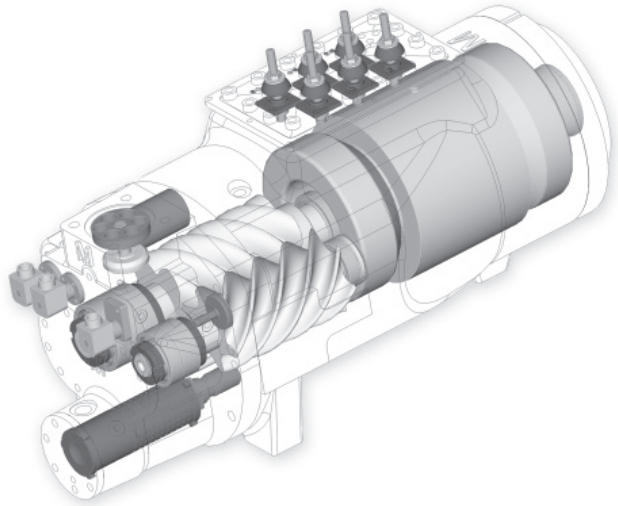
- Extra High Efficiency (XE)
- High Seasonal Efficiency (HSE)

High Seasonal Efficiency (HSE) versions feature Trane Adaptive Frequency Drive (AFD) to reach High Part Load Efficiencies (ESEER).

# Features and benefits

## Trane Helical-Rotary Compressors

- **Unequaled-reliability.** Trane helical-rotary compressor are designed, built, and tested to the same demanding and rugged standards as the previous generation helical-rotary compressors used in both air- and water-cooled chillers for more than 27 years.
- **Years of research and testing.** The Trane helical-rotary compressors have amassed thousands of hours of testing, much of it at severe operating conditions beyond normal commercial air- conditioning applications.
- **Proven track record.** The Trane Company is the world's largest manufacturer of large helical-rotary compressors used for refrigeration. Over 400 000 compressors worldwide have proven that the Trane helical- rotary compressors have a reliability rate of greater than 99.5% in the first year of operation — unequalled in the industry.
- **Resistance to liquid slugging.** The robust design of the Trane Series R™ compressor can ingest amounts of liquid refrigerant that normally would severely damage compressor.
- **Fewer moving parts.** The helical- rotary compressor has only two rotating parts: the male rotor and the female rotor.
- **Direct-drive, low-speed**, semi- hermetic compressor for high efficiency and high reliability.
- **Field-serviceable compressor** for easy maintenance.
- **Suction-gas-cooled motor.** The motor operates at lower temperatures for longer motor life.
- **Five minute** start-to-start and two minute stop-to-start anti-recycle timer allows for closer water-loop temperature control.



Trane GP2 compressor

## Capacity Control and Load Matching

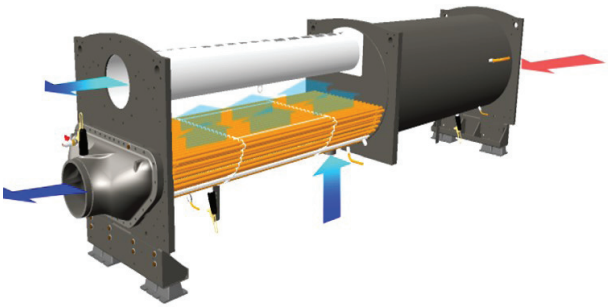
The combination patented unloading system on Trane helical- rotary compressors uses the variable unloading valve for the majority of the unloading function. This allows the compressor to modulate infinitely, to exactly match building load and to maintain chilled-water supply temperatures within ± 0.3°C of the set point. Helical-rotary chillers that rely on stepped capacity control must run at a capacity equal to or greater than the load, and typically can only maintain water temperature to around ± 1°C. Much of this excess capacity is lost because overcooling goes toward removing building latent heat, causing the building to be dried beyond normal comfort requirements.

On **RTWF G and RTHF HSE G** version, the combination of the variable unloading valve plus the Adaptive Frequency™ drive allows exactly matching building load and getting excellent efficiencies at full load and part load.

HSE units (AFD equipped) are fully compliant with Class C3 (Industrial environment) requirements of EN61800-3 standard.

## CHIL evaporator

Trane developed an evaporator specially designed for **XStream RTWF G and RTHF G** chillers. Compact - High performance - Integrated design - Low charge (CHIL) evaporator optimizes the flow of the refrigerant to get an excellent heat exchange with water in every operating condition and minimize the quantity of refrigerant used.



## High Condensing temperatures applications

When considering heat pump or low leaving temperatures industrial process applications, compressor operates under severe pressure conditions, which, if not anticipated may be harmful for compressor or considerably decrease life and reliability of compressor. For high lift applications, **XStream RTWF G** units, feature a dedicated compressor design to keep up with those harsh operating conditions. Therefore, RTWF units can reach temperatures as low as -12°C on the evaporator side or as high as 85°C on the condensing side, yet keeping high efficiency and premier reliability.

## Variable Primary Flow

An attractive chilled-water system option may be a variable primary flow (VPF) system. VPF systems present building owners with several cost-saving benefits that are directly related to the pumps. The most obvious cost savings result from eliminating the secondary distribution pump, which in turn avoids the expense incurred with the associated piping connections (material, labor), electrical service, and variable-frequency drive.

Building owners often cite pump related energy savings as the reason that prompted them to install a VPF system. With the help of a TRANE software analysis tool, you can determine whether the anticipated energy savings justify the use of variable primary flow in a particular application. It may also be easier to apply variable primary flow in an existing chilled-water plant.

Unlike the “decoupled” design, the bypass can be positioned at various points in the chilled-water loop and an additional pump is unnecessary. The evaporator in the **XStream** series can withstand up to 50% percent water flow reduction as long as this flow is equal to or above the minimum flow-rate requirements. The microprocessor and capacity control algorithms are designed to handle a maximum of 10% change in water flow rate per minute in order to maintain ±0.3°C leaving evaporator temperature control. For applications in which system energy savings is most important and tight temperature control is classified as ±1.1°C, up to 30% changes in flow per minute are possible.

## Factory Testing Means Trouble-Free Start-up

All **XStream** chillers are given a complete functional test at the factory. This computer-based test program completely checks the sensors, wiring, electrical components, microprocessor function, communication capability, expansion valve performance, and fans. In addition, each compressor is run-tested to verify capacity and efficiency. Where applicable, each unit is factory preset to the customer’s design conditions. An example would be the leaving-liquid temperature set point. The result of this test program is that the chiller arrives at the job site fully tested and ready for operation.

## Factory-Installed and Tested Controls and Options Speed Installation

All **XStream** chiller options are factory installed and tested. Some manufacturers send accessories in pieces to be field installed. With Trane, the customer saves on installation expense and has assurance that ALL chiller controls and options have been tested and will function as expected.

# Features and benefits

## Superior Control with UC 800™ Chiller controls

The Adaptive Control™ microprocessor system enhances the **XStream** chiller by providing the very latest chiller control technology. With the Adaptive Control microprocessor, unnecessary service calls and unhappy tenants are avoided. The unit does not nuisance-trip or unnecessarily shut down. Only when the chiller controls have exhausted all possible corrective actions and the unit is still violating an operating limit, will the chiller shut down. Controls on other equipment typically shut down the chiller, usually just when it is needed the most.


## SmartFlow control

XStream series units are fully compatible with variable flow operation both on evaporator and condenser sides. The modulation of the pump speed is managed to ensure that chiller ΔT stays constant. Entering and leaving temperatures at the evaporator will be measured directly by the chiller controller, through the factory-supplied sensor. A ΔT setpoint will be present on the unit controller. The option for constant ΔT is intended to be used with 3-way valves on water systems, or 2-way valves on water system but constant flow at the by-pass.

## System option: Ice storage

UC 800 optimization software controls operation of the required equipment and accessories to easily move from one mode of operation to another. For example: even with ice-storage systems, there are numerous hours when ice is neither produced nor consumed, but saved.

In this mode, the chiller is the sole source of cooling. For example, to cool the building after all ice is produced but before high electrical demand charges take effect, UC 800 sets the chiller leaving- fluid set point to its most efficient setting and starts the chiller, chiller pump, and load pump.

When electrical demand is high, the ice pump is started and the chiller is either demand limited or shut down completely. UC 800 controls have the intelligence to optimally balance the contribution of the ice and the chiller in meeting the cooling load.

The capacity of the chiller plant is extended by operating the chiller and ice in tandem. UC 800 rations the ice, augmenting chiller capacity while reducing cooling costs. When ice is produced, UC 800 will lower the chiller leaving-fluid set point and start the chiller, ice and chiller pumps, and other accessories. Any incidental loads that persist while producing ice can be addressed by starting the load pump and drawing spent cooling fluid from the ice storage tanks.

For specific information on ice storage applications, contact your local sales office.

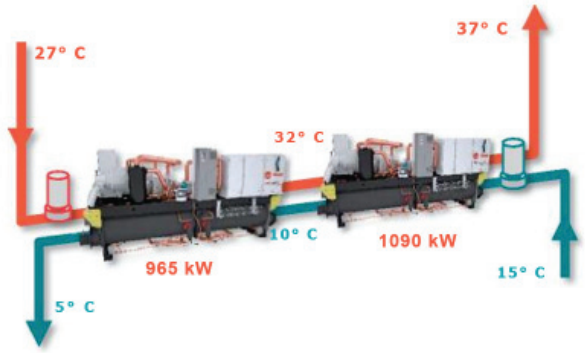
## Series counterflow chiller configuration

When considering multiple chillers plant, designers conventionally go for parallel-piped chillers configuration. Nevertheless, there are ways to bring more efficiency by using a different chiller lay-out.

An effective alternative to consider is to pipe the chillers in series. Larger ΔT and low flow design save energy on the pumping. Series chiller configuration allows as well, to get a better efficiency from the upstream chiller, more lightly loaded. Combining this configuration with Variable Primary Flow (VPF) will further increase system efficiency.

Series piping principle can also be applied to condenser side. This is called Series-Series counterflow configuration. This will result in similar advantages on the condenser side, enlarging the opportunity for savings on the overall system.

For more information on Series chillers arrangements, refer to Trane Application Engineering Manual about Multiple-Chiller system design and control (SYS-AP M001).




## Product certification

Trane as a Global leader in the HVAC industry participates to both Eurovent and AHRI chillers certification programs. Through this third party certifications, Trane commits to deliver units that comply with the declared performance.

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

AHRI CERTIFIED®
www.ahridirectory.org
Water-Cooled Water Chilling and Heat Pump Water-Heating Packages EN Standards 14511 and 14825

# Base unit description

| | RTWF 95 to 205 | | RTWF 220 to 420 | | | RTHF 250 to 780 | |
|---|---|---|---|---|---|---|---|
| | SE G | HE G | SE G | HE G | HSE G | XE G | HSE G |
| **Power Supply** | 400 V - 3 Ph - 50 Hz - Single point | | | | | | |
| **Compressor Type** | Trane CHHP/CHHW | | | | | Trane CHHC | |
| **Compressor Technology** | Fixed Speed | | Fixed Speed | | AFD | Fixed Speed | AFD |
| **Number of circuits** | 1 | | 2 | | | 2 | |
| **Compliance** | CE - PED | | | | | | |
| **Condenser application** | Cooling: Leaving Condenser Water Temp ≤ 50°C<br>Heating: Low temp Water to Water HP operation | | | | | Cooling: Leaving Condenser Water Temp ≤ 50°C | |
| **Evaporator application** | Cooling : Leaving Evaporator Water Temp ≥ 4.4°C | | | | | Cooling: Leaving Evaporator Water Temp ≥ 4.4°C | |
| **Refrigerant** | R1234ze | | | | | | |
| **Relief Valve** | Single relief valve on condenser | | | | | | |
| **Evaporator water connections** | Direct Connection - Grooved pipes | | | | | | |
| **Evaporator water side pressure** | 10 bar | | | | | | |
| **Condenser water connections** | Direct Connection - Grooved pipes | | | | | | |
| **Condenser water side pressure** | 10 bar | | | | | | |
| **Flow control** | Constant Flow - Pump signal On/Off (Condenser + Evaporator) | | | | | | |
| **Power protection** | Fused | | | | | | |
| **Electrical IP protection** | Enclosure with Dead Front protection | | | | | | |
| **Installation accessories** | Optional | | | | | | |

# Options description

| Option Description | | Application | Available for | |
|---|---|---|---|---|
| | | | RTWF G | RTHF G |
| 400 V - 3 Ph - 50 Hz - Dual point | 2 distinct power supplies, one per circuit | Renovation. Replacement of two smaller units by one only. | - | ● |
| **Condenser application** | | | | |
| Water to water HP operation | Condenser Leaving water temperature control | Heat pump applications with Leaving water up to 85°C | ● | - |
| 2 Pass condenser | Additional pass on condenser side | Condenser application with DeltaT > 7K (RTWF HE G and RTWF HSE G sizes 220 to 420 G ) | ● | - |
| **Evaporator Application** | | | | |
| Ice making | Dual setpoint (Comfort / Ice making) | Ice storage applications for Ice making temperatures as low as -7°C | ● | ● |
| Sound Attenuation Package | Additional compressor sound enclosure | Sound reduction of 3 dB(A) per Compressor | ● | - |
| **Relief Valve** | | | | |
| Single relief Valve on both condenser and evaporator | Additional relief valve on Low pressure side | Additional pressure safety device | ● | ● |
| Dual Relief valve on condenser only | 2 relief valve with by 3 way valve on high pressure side | Maintenance | ● | ● |
| Dual relief Valve on both evaporator and condenser | 2 relief valve with by 3 way valve on both high and low side | Maintenance | ● | ● |
| **Evaporator water connection** | | | | |
| Left hand Connection | RTWF RTWF 95 to 205 G: Location of water boxes on the left side of the unit (facing control panel)<br>RTWF RTWF 220 to 420 G and RTHF G: Additional pipe allowing connections on the left side of the unit (facing control panel) | Supply and return water on the same side of the unit | ● | ● |
| Right hand Connection | RTWF RTWF 95 to 205 G: Location of water boxes on the right side of the unit (facing control panel)<br>RTWF RTWF 220 to 420 G and RTHF G: Additional pipe allowing connections on the right side of the unit (facing control panel) | Supply and return water on the same side of the unit | ● | ● |
| No insulation on cold parts | Unit delivered without insulation on Evaporator and cold parts | For field supplied insulation by customer | ● | ● |
| **Condenser water connection** | | | | |
| Left hand Connection | RTWF RTWF 95 to 205 G: Location of water boxes on the left side of the unit (facing control panel)<br>RTWF RTWF 220 to 420 G and RTHF G: Additional pipe allowing connections on the left side of the unit (facing control panel) | Supply and return water on the same side of the unit | ● | ● |
| Right hand Connection | RTWF RTWF 95 to 205 G: Location of water boxes on the right side of the unit (facing control panel)<br>RTWF RTWF 220 to 420 G and RTHF G: Additional pipe allowing connections on the right side of the unit (facing control panel) | Supply and return water on the same side of the unit | ● | ● |
| Condenser thermal insulation | Thermal insulation of condenser | Heat Pump application to avoid wasted heat | ● | ● |
| **SmartFlow Control** | | | | |
| VPF Constant DeltaT Evaporator | Optional PC board delivering a 2-10 V modulating signal output to control a pump motor speed inverter | Evaporator variable speed pump control based on a constant DeltaT | ● | ● |
| VPF Constant DeltaT Condenser | Optional PC board delivering a 2-10 V modulating signal output to control a pump motor speed inverter | Condenser variable speed pump control based on a constant DeltaT | ● | ● |
| VPF Constant DeltaT Evaporator and Condenser | Optional PC board delivering a 2-10 V modulating signal output to control a pump motor speed inverter | Evaporator and Condenser variable speed pump control based on constant DeltaT's | ● | ● |
| Power protection | Unit protection by Circuit Breaker | Protection of compressors against over current | ● | ● |

# Options description

| Option Description | | Application | Available for | |
|---|---|---|---|---|
| | | | RTWF G | RTHF G |
| **Under/over voltage protection** | | | | |
| Under/Over voltage protection | Phase monitoring device | Protection of unit against voltage unbalance (Standard feature on HSE variable speed units) | ● | ● |
| Under/Over voltage protection + ground fault protection | Phase monitoring device + differential circuit breaker | Protection of unit against voltage unbalance and ground fault | ● | ● |
| **Smart Com protocole** | | | | |
| BACNet MSTP interface | Communication card | Communication with BMS through BACNet MSTP Protocol | ● | ● |
| BACNet IP interface | Communication card | Communication with BMS through BACNet IP Protocol | ● | ● |
| ModBus RTU interface | Communication card | Communication with BMS through Modbus Protocol | ● | ● |
| LonTalk Interface | Communication card | Communication with BMS through LonTalk Protocol | ● | ● |
| External setpoints & capacity outputs | Programmable Input/Output card and sensors | Remote Control or remote monitoring | ▲ | ▲ |
| Outdoor Air Temp Sensor | With Outdoor Air Temp Sensor | Measurement of Outdoor ambient air temp to perform water set point offset | ▲ | ▲ |
| Electrical IP Protection | IP 20 protection | Electrical safety | ● | ● |
| Master slave operation | Communication card | Operation of two chillers on a same water loop | ● | ● |
| Energy metering | Additional energy meter | Monitors electricity consumption (kWh) of the full unit | ● | ● |
| **Condenser Refrigerant Pressure Output** | | | | |
| Condenser Water Control Output | Communication card - 0-10 V Analog output | Allows to control a valve on condenser loop to perform proper unit start when condenser water loop is cold | ● | ● |
| Condenser Pressure (%HPC) Output | Communication card - 0-10 V Analog output | Allows control of cooling device based on condenser pressure (Ice.Cooling tower fan, 3-Way valve….) | ● | ● |
| Differential Pressure Output | Communication card - 0-10 V Analog output | Allows control of a 3-way valve on condenser water loop | ● | ● |
| Power socket | 230 V Power socket | Local Power source to connect an electrical device such as a Laptop | ● | ● |
| **Anti vibration accessories** | | | | |
| Neoprene isolators | | Eliminates vibration transmission risk to building | ▲ | ▲ |
| Neoprene pads | | Eliminates vibration transmission risk to building | ▲ | ▲ |
| Grooved pipe with coupling & pipe stub | 4 Grooved pipe adapters | Allows welded connection to unit | ▲ | ▲ |
| **Flow Switch** | | | | |
| Evap or Condenser Flow switch | One Flow Switch delivered to be installed either on Evaporator or Condenser side | Allows to check flow detection | ▲ | ▲ |
| Evap and Condenser Flow switch | Two Flow Switches delivered to be installed respectively on Evaporator and Condenser side | Allows to check flow detection | ▲ | ▲ |

● Factory mounted ▲ Accessory (not fitted)

## RTWF SE G (Standard Efficiency)

| | | RTWF 95 SE G | RTWF 105 SE G | RTWF 125 SE G | RTWF 135 SE G | RTWF 155 SE G | RTWF 165 SE G |
|---|---|---|---|---|---|---|---|
| Net cooling capacity (1) (2) | (kW) | 358 | 389 | 471 | 515 | 555 | 618 |
| Net Power Input (1) (2) | (kW) | 73.4 | 81.0 | 100.0 | 113.9 | 121.7 | 132.6 |
| Net EER (1) (2) | | 4.88 | 4.80 | 4.71 | 4.52 | 4.56 | 4.66 |
| Eurovent Energy class - Cooling | | B | B | B | C | C | B |
| SEER (3) | | 6.75 | 6.75 | 6.48 | 6.45 | 6.55 | 6.68 |
| Space cooling efficiency ηs,c (3) | **(%)** | 267 | 267 | 256 | 255 | 259 | 264 |
| **Compressor** | | | | | | | |
| Circuit 1 | | 2 | 2 | 2 | 2 | 2 | 2 |
| Circuit 2 | | - | - | - | - | - | - |
| **Evaporator** | | | | | | | |
| Pass | | | | | 2 | | |
| Nominal Flow (1) | l/s | 16.9 | 18.5 | 22.2 | 23.8 | 26.0 | 28.8 |
| Pressure Drop (1) | kPa | 48 | 57 | 66 | 76 | 84 | 57 |
| Minimum Flow | l/s | 8.1 | 8.1 | 8.8 | 8.8 | 8.8 | 12.3 |
| Maximum Flow | l/s | 35.4 | 35.4 | 38.4 | 38.4 | 38.4 | 53.7 |
| Water Connection Type | | | | | Grooved end | | |
| Water Connection Size | in | 4 | 4 | 5 | 5 | 5 | 6 |
| **Condenser** | | | | | | | |
| Pass | | | | | 2 | | |
| Nominal Flow (1) | l/s | 20.7 | 22.7 | 27.0 | 28.9 | 31.6 | 34.9 |
| Pressure Drop (1) | kPa | 59 | 69 | 67 | 75 | 62 | 75 |
| Minimum Flow | l/s | 8.5 | 8.5 | 10.3 | 10.3 | 12.6 | 12.6 |
| Maximum Flow | l/s | 31.1 | 31.1 | 37.7 | 37.7 | 46.1 | 46.1 |
| Water Connection Type | | | | | Grooved end | | |
| Water Connection Size | in | 5 | 5 | 6 | 6 | 6 | 6 |
| **Refrigerant** | | | | | | | |
| Type | | | | | R1234ze | | |
| Charge Circuit 1 | kg | 84 | 84 | 77 | 77 | 106 | 112 |
| Charge Circuit 2 | kg | - | - | - | - | - | - |
| **Dimensions & Weight** | | | | | | | |
| Length | mm | 3080 | 3080 | 3160 | 3160 | 3160 | 3160 |
| Width | mm | 1190 | 1190 | 1225 | 1225 | 1250 | 1250 |
| Height | mm | 1900 | 1900 | 1935 | 1935 | 2035 | 2080 |
| Operating weight | kg | 2959 | 2959 | 3128 | 3164 | 3452 | 3579 |

(1) Evaporator 12/7°C and 0.0 $m^2K/kW$, and condenser at 30/35°C and 0.0 $m^2K/kW$.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

# General Data

## RTWF SE G (Standard Efficiency)

| | | RTWF 220 SE G | RTWF 240 SE G | RTWF 280 SE G | RTWF 300 SE G | RTWF 320 SE G | RTWF 360 SE G |
|---|---|---|---|---|---|---|---|
| Net cooling capacity (1) (2) | (kW) | 815 | 867 | 952 | 1087 | 1169 | 1268 |
| Net Power Input (1) (2) | (kW) | 165.7 | 175.5 | 194.3 | 223.2 | 244.1 | 261.4 |
| Net EER (1) (2) | | 4.92 | 4.94 | 4.90 | 4.87 | 4.79 | 4.85 |
| Eurovent Energy class - Cooling | | B | B | B | B | B | B |
| SEER (3) | | 6.23 | 6.35 | 6.30 | 7.03 | 6.98 | 7.13 |
| Space cooling efficiency ηs,c (3) | (%) | 246 | 251 | 249 | 278 | 276 | 282 |
| **Compressor** | | | | | | | |
| Circuit 1 | | 2 | 2 | 2 | 2 | 2 | 2 |
| Circuit 2 | | 1 | 1 | 1 | 2 | 2 | 2 |
| **Evaporator** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 35.1 | 37.6 | 41.8 | 47.5 | 51.7 | 56.6 |
| Pressure Drop (1) | kPa | 46 | 39 | 47 | 43 | 51 | 44 |
| Minimum Flow | l/s | 15.0 | 18.0 | 18.0 | 21.5 | 21.5 | 25.2 |
| Maximum Flow | l/s | 55.5 | 65.9 | 65.9 | 78.5 | 78.5 | 93.0 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 6 | 6 | 6 | 8 | 8 | 8 |
| **Condenser** | | | | | | | |
| Pass | | | | 2 | | | |
| Nominal Flow (1) | l/s | 42.0 | 45.1 | 50.3 | 56.5 | 61.6 | 67.5 |
| Pressure Drop (1) | kPa | 38 | 44 | 47 | 35 | 41 | 42 |
| Minimum Flow | l/s | 17.8 | 17.8 | 19.5 | 24.8 | 24.8 | 27.1 |
| Maximum Flow | l/s | 65.2 | 65.2 | 71.5 | 91.0 | 91.0 | 99.5 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 6 | 6 | 6 | 8 | 8 | 8 |
| **Refrigerant** | | | | | | | |
| Type | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 125 | 125 | 125 | 115 | 115 | 115 |
| Charge Circuit 2 | kg | 55 | 55 | 55 | 115 | 115 | 115 |
| **Dimensions & Weight** | | | | | | | |
| Length | mm | 4784 | 4784 | 4784 | 4784 | 4784 | 4784 |
| Width | mm | 1727 | 1727 | 1727 | 1823 | 1823 | 1823 |
| Height | mm | 2032 | 2032 | 2032 | 2135 | 2135 | 2135 |
| Operating weight | kg | 5135 | 5228 | 5373 | 6554 | 6676 | 6885 |

(1) Evaporator 12/7°C and 0.0 $m^2K/kW$, and condenser at 30/35°C and 0.0 $m^2K/kW$.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

## RTWF HE G (High Efficiency)

| | | RTWF 95 HE G | RTWF 105 HE G | RTWF 125 HE G | RTWF 135 HE G | RTWF 155 HE G | RTWF 165 HE G |
|---|---|---|---|---|---|---|---|
| Net cooling capacity (1) (2) | (kW) | 369 | 402 | 485 | 532 | 580 | 633 |
| Net Power Input (1) (2) | (kW) | 71.2 | 78.2 | 97.2 | 110.6 | 118.9 | 126.9 |
| Net EER (1) (2) | | 5.18 | 5.14 | 4.99 | 4.81 | 4.88 | 4.99 |
| Eurovent Energy class - Cooling | | A | A | B | B | B | B |
| SEER (3) | | 6.73 | 6.75 | 6.75 | 6.73 | 6.83 | 7.03 |
| Space cooling efficiency ηs,c (3) | (%) | 263 | 268 | 259 | 286 | 285 | 293 |
| **Compressor** | | | | | | | |
| Circuit 1 | | 2 | 2 | 2 | 2 | 2 | 2 |
| Circuit 2 | | - | - | - | - | - | - |
| **Evaporator** | | | | | | | |
| Pass | | | | | 2 | | |
| Nominal Flow (1) | l/s | 17.4 | 19.1 | 22.6 | 24.3 | 26.7 | 29.1 |
| Pressure Drop (1) | kPa | 24 | 29 | 36 | 41 | 37 | 34 |
| Minimum Flow | l/s | 11.8 | 11.8 | 12.6 | 12.6 | 14.4 | 16.5 |
| Maximum Flow | l/s | 51.5 | 51.5 | 55.0 | 55.0 | 62.9 | 72.0 |
| Water Connection Type | | | | | Grooved end | | |
| Water Connection Size | in | 5 | 5 | 5 | 5 | 5 | 6 |
| **Condenser** | | | | | | | |
| Pass | | | | | 2 | | |
| Nominal Flow (1) | l/s | 21.3 | 23.4 | 27.5 | 29.4 | 32.4 | 35.3 |
| Pressure Drop (1) | kPa | 35 | 42 | 48 | 54 | 48 | 43 |
| Minimum Flow | l/s | 11.6 | 11.6 | 12.6 | 12.6 | 15.0 | 17.8 |
| Maximum Flow | l/s | 42.4 | 42.4 | 46.1 | 46.1 | 54.9 | 65.1 |
| Water Connection Type | | | | | Grooved end | | |
| Water Connection Size | in | 6 | 6 | 6 | 6 | 6 | 6 |
| **Refrigerant** | | | | | | | |
| Type | | | | | R1234ze | | |
| Charge Circuit 1 | kg | 88 | 88 | 92 | 92 | 126 | 121 |
| Charge Circuit 2 | kg | - | - | - | - | - | - |
| **Dimensions & Weight** | | | | | | | |
| Length | mm | 3080 | 3080 | 3160 | 3160 | 3160 | 3160 |
| Width | mm | 1190 | 1190 | 1225 | 1225 | 1250 | 1250 |
| Height | mm | 1935 | 1935 | 1935 | 1935 | 2035 | 2080 |
| Operating weight | kg | 3176.1 | 3176.1 | 3271 | 3307 | 3622 | 3796 |

(1) Evaporator 12/7°C and 0.0 $m^2K/kW$, and condenser at 30/35°C and 0.0 $m^2K/kW$.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

# General Data

## RTWF HE G (High Efficiency)

| | | RTWF 220 HE G | RTWF 240 HE G | RTWF 280 HE G | RTWF 300 HE G | RTWF 320 HE G | RTWF 360 HE G |
|---|---|---|---|---|---|---|---|
| Net cooling capacity (1) (2) | (kW) | 823 | 876 | 963 | 1099 | 1184 | 1284 |
| Net Power Input (1) (2) | (kW) | 159.2 | 168.1 | 185.2 | 212.2 | 231.3 | 248.4 |
| Net EER (1) (2) | | 5.17 | 5.21 | 5.20 | 5.18 | 5.12 | 5.17 |
| Eurovent Energy class - Cooling | | A | A | A | A | A | A |
| SEER (3) | | 6.65 | 6.78 | 6.55 | 7.23 | 7.20 | 7.40 |
| Space cooling efficiency ηs,c (3) | **(%)** | 263 | 268 | 259 | 286 | 285 | 293 |
| **Compressor** | | | | | | | |
| Circuit 1 | | 2 | 2 | 2 | 2 | 2 | 2 |
| Circuit 2 | | 1 | 1 | 1 | 2 | 2 | 2 |
| **Evaporator** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 35.6 | 38.2 | 42.6 | 48.1 | 52.5 | 57.5 |
| Pressure Drop (1) | kPa | 47 | 40 | 49 | 44 | 52 | 45 |
| Minimum Flow | l/s | 15.0 | 18.0 | 18.0 | 21.5 | 21.5 | 25.2 |
| Maximum Flow | l/s | 55.5 | 65.9 | 65.9 | 78.5 | 78.5 | 93.0 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 6 | 6 | 6 | 8 | 8 | 8 |
| **Condenser** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 42.3 | 45.4 | 50.6 | 56.7 | 62.0 | 67.9 |
| Pressure Drop (1) | kPa | 16 | 18 | 18 | 14 | 17 | 18 |
| Minimum Flow | l/s | 29.9 | 29.9 | 34.2 | 41.4 | 41.4 | 44.0 |
| Maximum Flow | l/s | 111.0 | 111.0 | 125.2 | 151.8 | 151.8 | 161.4 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 6 | 6 | 6 | 8 | 8 | 8 |
| **Refrigerant** | | | | | | | |
| Type | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 155 | 155 | 155 | 145 | 145 | 145 |
| Charge Circuit 2 | kg | 70 | 70 | 70 | 145 | 145 | 145 |
| **Dimensions & Weight** | | | | | | | |
| Length | mm | 4784 | 4784 | 4784 | 4784 | 4784 | 4784 |
| Width | mm | 1727 | 1727 | 1727 | 1823 | 1823 | 1823 |
| Height | mm | 2032 | 2032 | 2032 | 2135 | 2135 | 2135 |
| Operating weight | kg | 5517 | 5610 | 5804 | 7007 | 7129 | 7353 |

(1) Evaporator 12/7°C and 0.0 $m^2K/kW$, and condenser at 30/35°C and 0.0 $m^2K/kW$.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

## RTWF HSE G (High Seasonal Efficiency)

| | | RTWF 095 HSE G | RTWF 105 HSE G | RTWF 125 HSE G | RTWF 135 HSE G | RTWF 155 HSE G | RTWF 165 HSE G | RTWF 185 HSE G | RTWF 205 HSE G* |
|---|---|---|---|---|---|---|---|---|---|
| Net cooling capacity (1) (2) | (kW) | 369 | 402 | 482 | 529 | 580 | 633 | 690 | 695 |
| Net Power Input (1) (2) | (kW) | 73.1 | 79.0 | 96.6 | 110.0 | 119.8 | 127.9 | 142.3 | 151.1 |
| Net EER (1) (2) | | 5.05 | 5.09 | 4.99 | 4.81 | 4.84 | 4.95 | 4.85 | 4.60 |
| Eurovent Energy class - Cooling | | A | A | B | B | B | B | B | B |
| SEER (3) | | 6.93 | 7.13 | 6.88 | 6.75 | 7.05 | 7.08 | 6.83 | 6.08 |
| Space cooling efficiency ηs,c (3) | **(%)** | 274 | 282 | 272 | 267 | 279 | 280 | 270 | 235 |
| **Compressor** | | | | | | | | | |
| Circuit 1 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Circuit 2 | | - | - | - | - | - | - | - | - |
| **Evaporator** | | | | | | | | | |
| Pass | | | | | | 2 | | | |
| Nominal Flow (1) | l/s | 17.4 | 19.1 | 22.6 | 24.3 | 26.7 | 29.1 | 30.8 | 33.3 |
| Pressure Drop (1) | kPa | 24 | 28 | 36 | 41 | 37 | 34 | 30.2 | 35.2 |
| Minimum Flow | l/s | 11.8 | 11.8 | 12.6 | 12.6 | 14.4 | 16.5 | 18.2 | 18.2 |
| Maximum Flow | l/s | 41.5 | 51.5 | 55.0 | 55.0 | 62.9 | 72.0 | 79.4 | 79.4 |
| Water Connection Type | | | | | | Grooved end | | | |
| Water Connection Size | | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 |
| **Condenser** | | | | | | | | | |
| Pass | | | | | | 2 | | | |
| Nominal Flow (1) | l/s | 21.3 | 23.4 | 27.5 | 29.4 | 32.4 | 35.3 | 37.7 | 40.5 |
| Pressure Drop (1) | kPa | 35 | 42 | 48 | 54 | 48 | 43 | 39.1 | 45.0 |
| Minimum Flow | l/s | 11.6 | 11.6 | 12.6 | 12.6 | 15 | 17.8 | 20.8 | 20.8 |
| Maximum Flow | l/s | 42.4 | 42.4 | 46.1 | 46.1 | 54.9 | 65.1 | 76.1 | 76.1 |
| Water Connection Type | | | | | | Grooved end | | | |
| Water Connection Size | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| **Refrigerant** | | | | | | | | | |
| Type | | | | | | R1234ze | | | |
| Charge Circuit 1 | | 88 | 88 | 92 | 92 | 126 | 121 | 147 | 147 |
| Charge Circuit 2 | | - | - | - | - | - | - | - | - |
| **Dimensions & Weight** | | | | | | | | | |
| Length | mm | 3080 | 3080 | 3160 | 3160 | 3160 | 3160 | 3160 | 3160 |
| Width | mm | 1260 | 1260 | 1350 | 1350 | 1380 | 1380 | 1380 | 1380 |
| Height | mm | 1935 | 1935 | 1935 | 1935 | 2035 | 2080 | 2080 | 2080 |
| Operating weight | kg | 3276 | 3276 | 3371 | 3407 | 3722 | 3896 | 4025 | 4025 |

(1) Evaporator 12/7°C and 0.0 m²K/kW, and condenser at 30/35°C and 0.0 m²K/kW.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

* Featuring a High Vi Compressor.

# General Data

## RTWF HSE G (High Seasonal Efficiency)

| | | RTWF 220 HSE G | RTWF 240 HSE G | RTWF 280 HSE G | RTWF 300 HSE G | RTWF 320 HSE G | RTWF 360 HSE G | RTWF 380 HSE G | RTWF 420 HSE G* |
|---|---|---|---|---|---|---|---|---|---|
| Net cooling capacity (1) (2) | (kW) | 816 | 869 | 962 | 1092 | 1177 | 1283 | 1387 | 1435 |
| Net Power Input (1) (2) | (kW) | 157.8 | 166.8 | 187.2 | 210.8 | 229.9 | 250.1 | 283.1 | 297.7 |
| Net EER (1) (2) | | 5.17 | 5.21 | 5.14 | 5.18 | 5.12 | 5.13 | 4.90 | 4.82 |
| Eurovent Energy class - Cooling | | A | A | A | A | A | A | B | B |
| SEER (3) | | 7.00 | 7.00 | 7.40 | 7.18 | 7.15 | 7.30 | 7.15 | 6.60 |
| Space cooling efficiency ηs,c (3) | (%) | 277 | 277 | 293 | 284 | 283 | 289 | 183 | 261 |
| **Compressor** | | | | | | | | | |
| Circuit 1 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Circuit 2 | | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| **Evaporator** | | | | | | | | | |
| Pass | | | | | | 1 | | | |
| Nominal Flow (1) | l/s | 35.6 | 38.3 | 42.8 | 48.1 | 52.5 | 57.7 | 62 | 68 |
| Pressure Drop (1) | kPa | 48 | 40 | 50 | 44 | 52 | 45 | 53 | 51 |
| Minimum Flow | l/s | 15.0 | 18.0 | 18.0 | 21.5 | 21.5 | 25.2 | 25.2 | 25.2 |
| Maximum Flow | l/s | 55.5 | 65.9 | 65.9 | 78.5 | 78.5 | 93.0 | 93.0 | 93.0 |
| Water Connection Type | | | | | | Grooved end | | | |
| Water Connection Size | in | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 8 |
| **Condenser** | | | | | | | | | |
| Pass | | | | | | 1 | | | |
| Nominal Flow (1) | l/s | 42.2 | 45.3 | 50.7 | 56.8 | 62.0 | 68.2 | 74.0 | 80.4 |
| Pressure Drop (1) | kPa | 16 | 18 | 18 | 14 | 17 | 18 | 24 | 23 |
| Minimum Flow | l/s | 29.9 | 29.9 | 34.2 | 41.4 | 41.4 | 44.0 | 44.0 | 44.0 |
| Maximum Flow | l/s | 111.0 | 111.0 | 125.2 | 151.8 | 151.8 | 161.4 | 161.4 | 161.4 |
| Water Connection Type | | | | | | Grooved end | | | |
| Water Connection Size | in | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 8 |
| **Refrigerant** | | | | | | | | | |
| Type | | | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 155 | 155 | 155 | 145 | 145 | 145 | 145 | 145 |
| Charge Circuit 2 | kg | 70 | 70 | 70 | 145 | 145 | 145 | 145 | 145 |
| **Dimensions & Weight** | | | | | | | | | |
| Length | mm | 4784 | 4784 | 4784 | 4784 | 4784 | 4784 | 4784 | 4784 |
| Width | mm | 1727 | 1727 | 1727 | 1823 | 1823 | 1823 | 1823 | 1823 |
| Height | mm | 2032 | 2032 | 2032 | 2135 | 2135 | 2135 | 2135 | 2135 |
| Operating weight | kg | 5731 | 5824 | 6018 | 7221 | 7343 | 7567 | 7567 | 7653 |

(1) Evaporator 12/7°C and 0.0 m²K/kW, and condenser at 30/35°C and 0.0 m²K/kW.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

* Featuring a High Vi Compressor.

## RTHF XE G (Extra High Efficiency)

| | | RTHF 250 XE G | RTHF 270 XE G | RTHF 305 XE G | RTHF 335 XE G | RTHF 370 XE G | RTHF 400 XE G |
|---|---|---|---|---|---|---|---|
| Gross Cooling Capacity (1) | (kW) | 853 | 943 | 1087 | 1170 | 1313 | 1401 |
| Gross Power Input (1) | (kW) | 145 | 161 | 187 | 202 | 228 | 242 |
| Gross EER (1) | | 5.87 | 5.85 | 5.82 | 5.80 | 5.77 | 5.79 |
| Net cooling capacity (1) (2) | (kW) | 853 | 943 | 1087 | 1170 | 1313 | 1400 |
| Net Power Input (1) (2) | (kW) | 147.2 | 163.3 | 189.2 | 204.7 | 231.4 | 246.9 |
| Net EER (1) (2) | | 5.79 | 5.77 | 5.74 | 5.71 | 5.67 | 5.67 |
| Eurovent Energy class - Cooling | | A | A | A | A | A | A |
| SEER (3) | | 7.25 | 7.13 | 7.15 | 7.26 | 7.06 | 7.17 |
| Space cooling efficiency ηs,c (3) | **(%)** | 287 | 282 | 283 | 287 | 279 | 284 |
| **Compressor** | | | | | | | |
| Circuit 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| Circuit 2 | | 1 | 1 | 1 | 1 | 1 | 1 |
| **Evaporator** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 40.6 | 44.9 | 51.8 | 55.7 | 62.6 | 66.7 |
| Pressure Drop (1) | kPa | 12 | 15 | 15 | 18 | 23 | 26 |
| Minimum Flow | l/s | 34.6 | 34.6 | 39.4 | 39.4 | 39.4 | 39.4 |
| Maximum Flow | l/s | 127 | 127 | 145 | 145 | 145 | 145 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 8 | 8 | 8 | 8 | 8 | 8 |
| **Condenser** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 48.2 | 53.3 | 61.5 | 66.3 | 74.4 | 79.4 |
| Pressure Drop (1) | kPa | 9 | 8 | 9 | 11 | 14 | 16 |
| Minimum Flow | l/s | 44.1 | 50.3 | 56.7 | 56.7 | 56.7 | 56.7 |
| Maximum Flow | l/s | 161.6 | 184.2 | 207.7 | 207.7 | 207.7 | 207.7 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 8 | 8 | 8 | 8 | 8 | 8 |
| **Refrigerant** | | | | | | | |
| Type | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 200 | 200 | 205 | 205 | 205 | 205 |
| Charge Circuit 2 | kg | 200 | 200 | 210 | 210 | 210 | 210 |
| **Dimensions & Weight** | | | | | | | |
| Length | mm | 4586 | 4586 | 4586 | 4586 | 4586 | 4586 |
| Width | mm | 1840 | 1840 | 1840 | 1840 | 1840 | 1840 |
| Height | mm | 2395 | 2395 | 2395 | 2395 | 2395 | 2395 |
| Operating weight | kg | 7508 | 7560 | 8745 | 8745 | 9679 | 9679 |

(1) Evaporator 12/7°C and 0.0 m²K/kW, and condenser at 30/35°C and 0.0 m²K/kW.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

# General Data

## RTHF XE G (Extra High Efficiency) (continued)

| | | RTHF 445 XE G | RTHF 490 XE G | RTHF 520 XE G | RTHF 560 XE G | RTHF 595 XE G | RTHF 630 XE G |
|---|---|---|---|---|---|---|---|
| Gross Cooling Capacity (1) | (kW) | 1580 | 1685 | 1883 | 1964 | 2070 | 2178 |
| Gross Power Input (1) | (kW) | 251 | 275 | 296 | 317 | 344 | 370 |
| Gross EER (1) | | 6.29 | 6.12 | 6.37 | 6.20 | 6.02 | 5.88 |
| Net cooling capacity (1) (2) | (kW) | 1579 | 1685 | 1882 | 1964 | 2070 | 2178 |
| Net Power Input (1) (2) | (kW) | 254.7 | 279.7 | 300.2 | 321.8 | 350.1 | 377.3 |
| Net EER (1) (2) | | 6.20 | 6.02 | 6.27 | 6.10 | 5.91 | 5.77 |
| Eurovent Energy class - Cooling | | A | A | A | A | A | A |
| SEER (3) | | 7.75 | 7.23 | 7.76 | 7.54 | 7.54 | 7.32 |
| Space cooling efficiency ηs,c (3) | **(%)** | 307 | 286 | 308 | 298 | 299 | 293 |
| **Compressor** | | | | | | | |
| Circuit 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| Circuit 2 | | 1 | 1 | 1 | 1 | 1 | 1 |
| **Evaporator** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 75.2 | 80.3 | 89.7 | 93.6 | 98.6 | 103.8 |
| Pressure Drop (1) | kPa | 13 | 14 | 18 | 19 | 22 | 24 |
| Minimum Flow | l/s | 63.8 | 63.8 | 63.8 | 63.8 | 63.8 | 63.8 |
| Maximum Flow | l/s | 234 | 234 | 234 | 234 | 234 | 234 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 10 | 10 | 10 | 10 | 10 | 10 |
| **Condenser** | | | | | | | |
| Pass | | | | 1 | | | |
| Nominal Flow (1) | l/s | 88.4 | 94.7 | 105.2 | 110.2 | 116.6 | 123.1 |
| Pressure Drop (1) | kPa | 16 | 11 | 13 | 15 | 16 | 18 |
| Minimum Flow | l/s | 63.1 | 63.1 | 90.9 | 90.9 | 90.9 | 90.9 |
| Maximum Flow | l/s | 231.4 | 231.4 | 333.2 | 333.2 | 333.2 | 333.2 |
| Water Connection Type | | | | Grooved end | | | |
| Water Connection Size | in | 10 | 10 | 10 | 10 | 10 | 10 |
| **Refrigerant** | | | | | | | |
| Type | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 295 | 295 | 295 | 295 | 285 | 285 |
| Charge Circuit 2 | kg | 305 | 290 | 290 | 290 | 290 | 285 |
| **Dimensions & Weight** | | | | | | | |
| Length | mm | 5521 | 5521 | 5521 | 5521 | 5521 | 5521 |
| Width | mm | 2088 | 2088 | 2088 | 2088 | 2088 | 2088 |
| Height | mm | 2457 | 2457 | 2457 | 2457 | 2457 | 2457 |
| Operating weight | kg | 12881 | 13356 | 13356 | 13356 | 13456 | 13566 |

(1) Evaporator 12/7°C and 0.0 $m^2K/kW$, and condenser at 30/35°C and 0.0 $m^2K/kW$.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

## RTHF HSE G (High Seasonal Efficiency)

| | | RTHF 270 HSE G | RTHF 295 HSE G | RTHF 320 HSE G | RTHF 355 HSE G | RTHF 405 HSE G | RTHF 440 HSE G | RTHF 480 HSE G |
|---|---|---|---|---|---|---|---|---|
| Gross Cooling Capacity (1) | (kW) | 928 | 1017 | 1105 | 1213 | 1396 | 1523 | 1658 |
| Gross Power Input (1) | (kW) | 165 | 188 | 211 | 245 | 264 | 284 | 319 |
| Gross EER (1) | | 5.61 | 5.40 | 5.23 | 4.94 | 5.28 | 5.36 | 5.20 |
| Net cooling capacity (1) (2) | (kW) | 928 | 1016 | 1104 | 1212 | 1396 | 1523 | 1657 |
| Net Power Input (1) (2) | (kW) | 168 | 191 | 214 | 248 | 267 | 289 | 325 |
| Net EER (1) (2) | | 5.54 | 5.32 | 5.15 | 4.88 | 5.21 | 5.27 | 5.10 |
| Eurovent Energy class - Cooling | | A | A | A | B | A | A | A |
| SEER (3) | | 7.38 | 7.36 | 7.29 | 7.23 | 7.99 | 8.08 | 7.98 |
| Space cooling efficiency ηs,c (3) | (%) | 292 | 291 | 289 | 286 | 316 | 320 | 316 |
| **Compressor** | | | | | | | | |
| Circuit 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Circuit 2 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Evaporator** | | | | | | | | |
| Pass | | | | | 1 | | | |
| Nominal Flow (1) | l/s | 44.20 | 48.40 | 52.60 | 57.80 | 66.50 | 72.60 | 79.00 |
| Pressure Drop (1) | kPa | 14 | 17 | 20 | 24 | 25 | 30 | 36 |
| Minimum Flow | l/s | 34.6 | 34.6 | 34.6 | 34.6 | 39.4 | 39.4 | 39.4 |
| Maximum Flow | l/s | 127 | 127 | 127 | 127 | 145 | 145 | 145 |
| Water Connection Type | | | | | Grooved end | | | |
| Water Connection Size | in | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| **Condenser** | | | | | | | | |
| Pass | | | | | 1 | | | |
| Nominal Flow (1) | l/s | 52.6 | 58.0 | 63.4 | 70.2 | 79.9 | 87.0 | 95.2 |
| Pressure Drop (1) | kPa | 8 | 10 | 12 | 15 | 16 | 19 | 22 |
| Minimum Flow | l/s | 50.3 | 50.3 | 50.3 | 50.3 | 56.7 | 56.7 | 56.7 |
| Maximum Flow | l/s | 184.2 | 184.2 | 184.2 | 184.2 | 207.7 | 207.7 | 207.7 |
| Water Connection Type | | | | | Grooved end | | | |
| Water Connection Size | in | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| **Refrigerant** | | | | | | | | |
| Type | | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 200 | 195 | 195 | 195 | 200 | 200 | 200 |
| Charge Circuit 2 | kg | 200 | 195 | 195 | 195 | 210 | 205 | 205 |
| **Dimensions & Weight** | | | | | | | | |
| Length | mm | 4586 | 4586 | 4586 | 4586 | 4586 | 4586 | 4586 |
| Width | mm | 1940 | 1940 | 1940 | 1940 | 1940 | 1940 | 1940 |
| Height | mm | 2395 | 2395 | 2395 | 2395 | 2395 | 2395 | 2395 |
| Operating weight | kg | 7730 | 7720 | 7720 | 7720 | 8960 | 9959 | 9959 |

(1) Evaporator 12/7°C and 0.0 m²K/kW, and condenser at 30/35°C and 0.0 m²K/kW.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

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## RTHF HSE G (High Seasonal Efficiency) (continued)

| | | RTHF 535 HSE G | RTHF 560 HSE G | RTHF 595 HSE G | RTHF 630 HSE G | RTHF 680 HSE G | RTHF 720 HSE G | RTHF 780 HSE G |
|---|---|---|---|---|---|---|---|---|
| Gross Cooling Capacity (1) | (kW) | 1811 | 1965 | 2110 | 2255 | 2414 | 2588 | 2759 |
| Gross Power Input (1) | (kW) | 372 | 316 | 347 | 379 | 434 | 487 | 540 |
| Gross EER (1) | | 4.87 | 6.23 | 6.08 | 5.95 | 5.56 | 5.32 | 5.11 |
| Net cooling capacity (1) (2) | (kW) | 1810 | 1964 | 2109 | 2254 | 2414 | 2587 | 2758 |
| Net Power Input (1) (2) | (kW) | 379 | 316 | 348 | 380 | 431 | 482 | 535 |
| Net EER (1) (2) | | 4.77 | 6.12 | 5.97 | 5.82 | 5.48 | 5.23 | 5.01 |
| Eurovent Energy class - Cooling | | B | A | A | A | A | A | A |
| SEER (3) | | 7.87 | 8.15 | 8.11 | 8.08 | 8.29 | 8.10 | 8.02 |
| Space cooling efficiency ηs,c (3) | **(%)** | 312 | 323 | 321 | 320 | 329 | 321 | 318 |
| **Compressor** | | | | | | | | |
| Circuit 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Circuit 2 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Evaporator** | | | | | | | | |
| Pass | | | | | 1 | | | |
| Nominal Flow (1) | l/s | 86.30 | 93.60 | 100.50 | 107.40 | 115.00 | 123.30 | 131.40 |
| Pressure Drop (1) | kPa | 42 | 19 | 22 | 25 | 29 | 33 | 38 |
| Minimum Flow | l/s | 39.4 | 63.8 | 63.8 | 63.8 | 63.8 | 63.8 | 63.8 |
| Maximum Flow | l/s | 145 | 234 | 234 | 234 | 234 | 234 | 234 |
| Water Connection Type | | | | | Grooved end | | | |
| Water Connection Size | in | 8 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Condenser** | | | | | | | | |
| Pass | | | | | 1 | | | |
| Nominal Flow (1) | l/s | 105.1 | 109.8 | 118.3 | 126.8 | 137.1 | 148.0 | 158.9 |
| Pressure Drop (1) | kPa | 27 | 14 | 17 | 19 | 23 | 27 | 31 |
| Minimum Flow | l/s | 56.7 | 90.9 | 90.9 | 90.9 | 90.9 | 90.9 | 90.9 |
| Maximum Flow | l/s | 207.7 | 333.2 | 333.2 | 333.2 | 333.2 | 333.2 | 333.2 |
| Water Connection Type | | | | | Grooved end | | | |
| Water Connection Size | in | 8 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Refrigerant** | | | | | | | | |
| Type | | | | | R1234ze | | | |
| Charge Circuit 1 | kg | 200 | 295 | 285 | 285 | 285 | 285 | 285 |
| Charge Circuit 2 | kg | 205 | 290 | 290 | 285 | 285 | 285 | 285 |
| **Dimensions & Weight** | | | | | | | | |
| Length | mm | 4586 | 5521 | 5521 | 5521 | 5521 | 5521 | 5521 |
| Width | mm | 1940 | 2088 | 2088 | 2088 | 2088 | 2088 | 2088 |
| Height | mm | 2395 | 2457 | 2457 | 2457 | 2457 | 2457 | 2457 |
| Operating weight | kg | 9959 | 13676 | 13816 | 13926 | 13926 | 13926 | 13926 |

(1) Evaporator 12/7°C and 0.0 $m^2K/kW$, and condenser at 30/35°C and 0.0 $m^2K/kW$.

(2) Net performances calculated as per EN 14511-2013.

(3) ηs,c / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016.

# Heating Performance

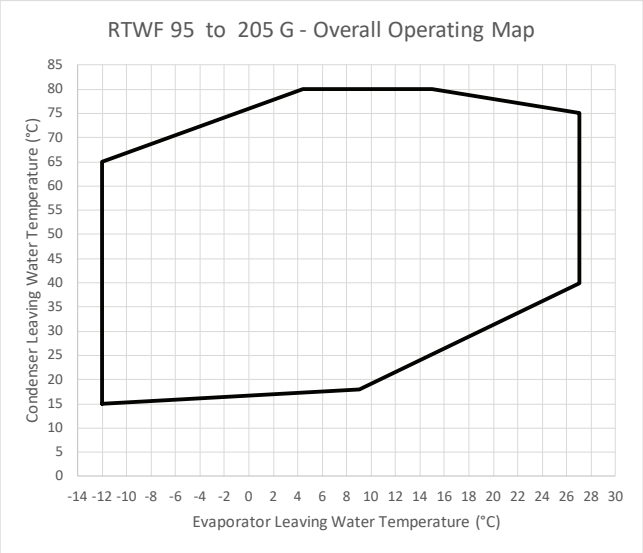
| | 40/45°C Entering / Leaving Condenser<br>10/7°C Entering / Leaving Evaporator | | 47/55°C Entering / Leaving Condenser<br>10/7°C Entering / Leaving Evaporator | | | | 55/65°C Entering / Leaving Condenser<br>10/7°C Entering / Leaving Evaporator | |
|---|---|---|---|---|---|---|---|---|
| | Net Heating Cap (kW) (1) | Net COP (1) | Net Heating Cap (kW) (1) | Net COP (1) | SCOP (2) | Space Heating efficiency ηs,h (%) (2) | Net Heating Cap (kW) (1) | Net COP (1) |
| RTWF 095 SE G | 386 | 4.20 | 363 | 3.50 | 4.65 | 178 | - | - |
| RTWF 105 SE G | 423 | 4.17 | 397 | 3.49 | 4.75 | 182 | - | - |
| RTWF 125 SE G | 498 | 4.27 | 474 | 3.59 | 5.03 | 193 | - | - |
| RTWF 135 SE G | 532 | 4.27 | 507 | 3.60 | 5.05 | 194 | - | - |
| RTWF 155 SE G | 593 | 4.36 | 555 | 3.60 | 5.00 | 192 | - | - |
| RTWF 165 SE G | 648 | 4.37 | 612 | 3.73 | 5.18 | 199 | - | - |
| RTWF 220 SE G | 822 | 4.63 | 777 | 3.87 | 5.15 | 198 | - | - |
| RTWF 240 SE G | 881 | 4.63 | 832 | 3.87 | 5.20 | 200 | - | - |
| RTWF 280 SE G | 984 | 4.59 | 930 | 3.85 | 5.15 | 198 | - | - |
| RTWF 300 SE G | 1095 | 4.60 | 1035 | 3.83 | 5.20 | 200 | - | - |
| RTWF 320 SE G | 1196 | 4.53 | 1132 | 3.79 | 5.33 | 205 | - | - |
| RTWF 360 SE G | 1308 | 4.56 | 1237 | 3.81 | 5.18 | 199 | - | - |
| RTWF 095 HE G | 393 | 4.40 | 372 | 3.64 | 4.70 | 180 | - | - |
| RTWF 105 HE G | 432 | 4.39 | 408 | 3.65 | 4.83 | 185 | - | - |
| RTWF 125 HE G | 507 | 4.48 | 479 | 3.72 | 5.10 | 196 | - | - |
| RTWF 135 HE G | 542 | 4.50 | 514 | 3.74 | 5.13 | 197 | - | - |
| RTWF 155 HE G | 597 | 4.54 | 566 | 3.77 | 5.13 | 197 | - | - |
| RTWF 165 HE G | 655 | 4.60 | 616 | 3.87 | 5.23 | 201 | - | - |
| RTWF 220 HE G | 826 | 4.70 | 781 | 3.91 | 5.13 | 197 | 741 | 3.16 |
| RTWF 240 HE G | 884 | 4.74 | 837 | 3.94 | 5.20 | 200 | 794 | 3.18 |
| RTWF 280 HE G | 988 | 4.69 | 935 | 3.91 | 5.15 | 198 | 889 | 3.17 |
| RTWF 300 HE G | 1098 | 4.76 | 1039 | 3.95 | 5.23 | 201 | 989 | 3.18 |
| RTWF 320 HE G | 1201 | 4.70 | 1137 | 3.92 | 5.35 | 206 | 1084 | 3.17 |
| RTWF 360 HE G | 1313 | 4.74 | 1243 | 3.94 | 5.25 | 202 | 1185 | 3.19 |
| RTWF 095 HSE G | 392 | 4.37 | 370 | 3.61 | 4.80 | 184 | - | - |
| RTWF 105 HSE G | 432 | 4.36 | 408 | 3.61 | 4.90 | 188 | - | - |
| RTWF 125 HSE G | 507 | 4.44 | 480 | 3.69 | 5.08 | 195 | - | - |
| RTWF 135 HSE G | 543 | 4.46 | 514 | 3.71 | 5.10 | 196 | - | - |
| RTWF 155 HSE G | 600 | 4.48 | 568 | 3.71 | 5.10 | 196 | - | - |
| RTWF 165 HSE G | 658 | 4.54 | 731 | 3.7 | 5.10 | 196 | - | - |
| RTWF 185 HSE G | 717 | 4.48 | 618 | 3.82 | 5.20 | 200 | - | - |
| RTWF 205 HSE G | 777 | 4.38 | 674 | 3.77 | 5.10 | 196 | - | - |
| RTWF 220 HSE G | 823 | 4.68 | 779 | 3.9 | 5.25 | 202 | 739 | 3.14 |
| RTWF 240 HSE G | 882 | 4.74 | 834 | 3.94 | 5.33 | 205 | 792 | 3.17 |
| RTWF 280 HSE G | 989 | 4.65 | 934 | 3.86 | 5.23 | 201 | 885 | 3.11 |
| RTWF 300 HSE G | 1099 | 4.77 | 1040 | 3.96 | 5.40 | 208 | 989 | 3.18 |
| RTWF 320 HSE G | 1201 | 4.71 | 1137 | 3.93 | 5.40 | 208 | 1084 | 3.17 |
| RTWF 360 HSE G | 1319 | 4.72 | 1247 | 3.92 | 5.43 | 209 | 1185 | 3.16 |
| RTWF 380 HSE G | 1453 | 4.67 | 1363 | 3.85 | 5.33 | 205 | 1302 | 3.12 |
| RTWF 420 HSE G | 1562 | 4.55 | 1481 | 3.8 | 5.35 | 206 | 1415 | 3.08 |

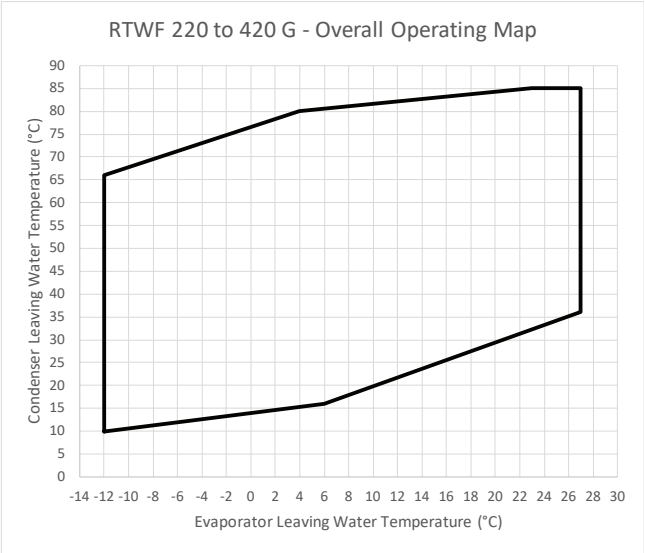
Shaded area requires the 2 pass condenser option.

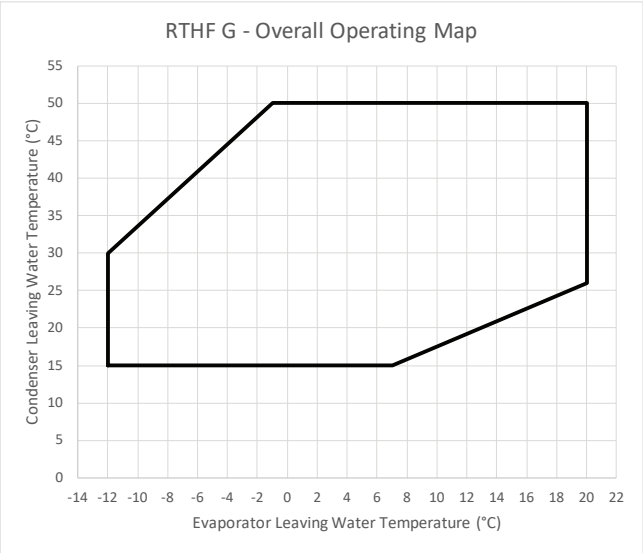
(1) Net performances calculated as per EN 14511-2013.

(2) ηs,h / SCOP as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for space heaters with 400 kW maximum rated capacity - COMMISSION REGULATION (EU) N° 813/2013/EU of 2 August 2013.

# Operating Map



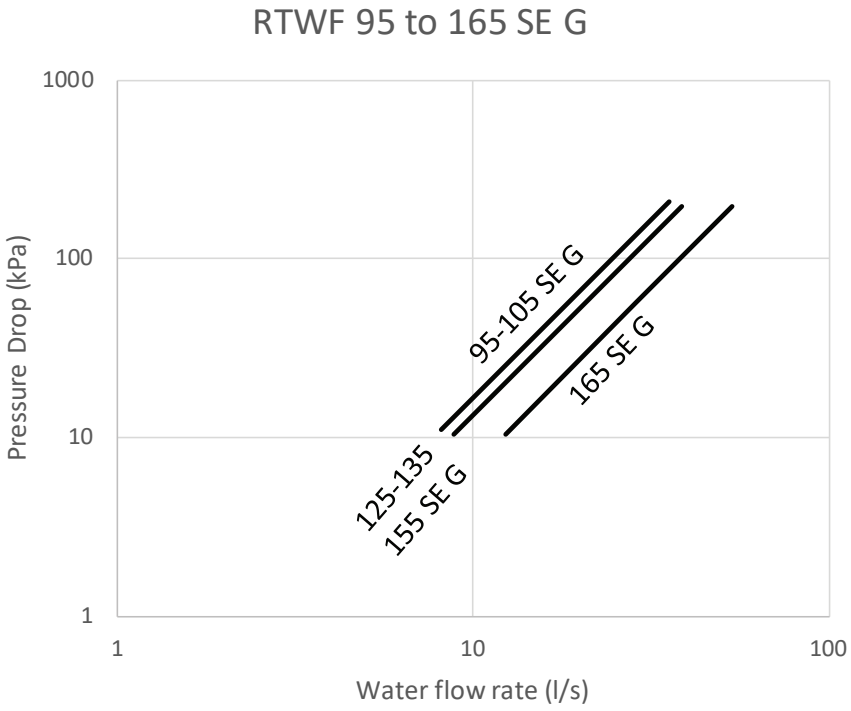



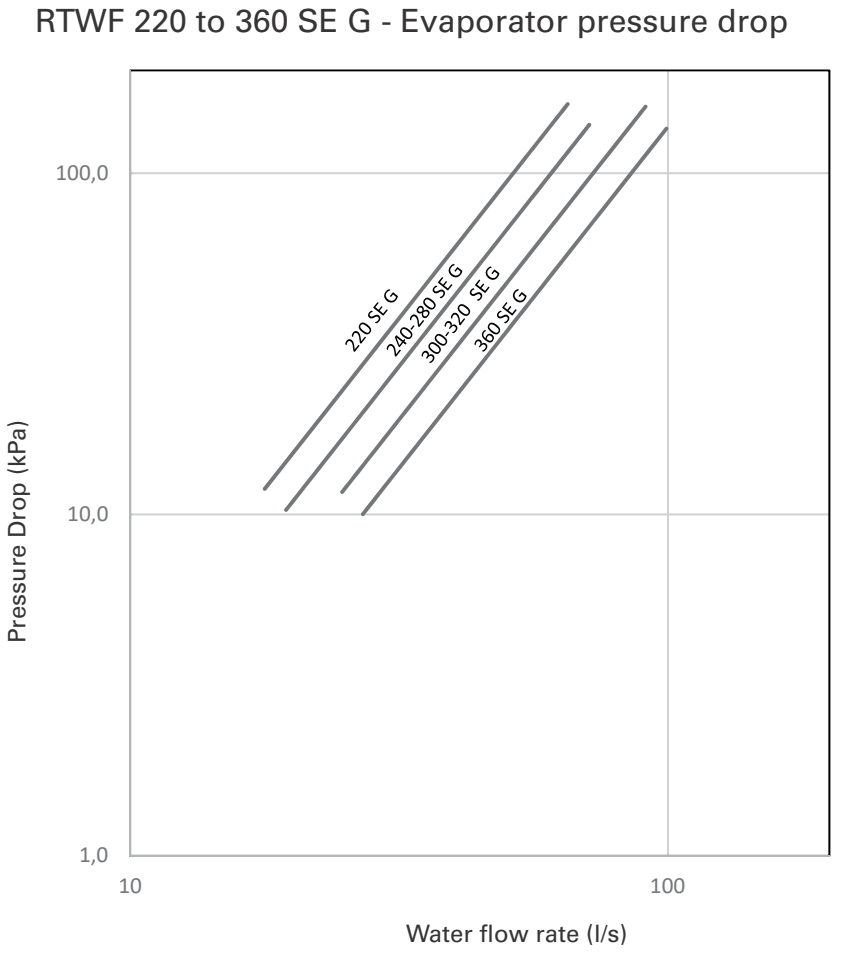




The charts above represent the overall operating limits of the unit, that is to say the limits within which unit will remain in operation. Some capacity limitations may occur depending on model and size when getting close to those limits. Always refer to Trane Official Product Selection Software output for actual operation limits of the selected unit.

## Evaporator pressure drop

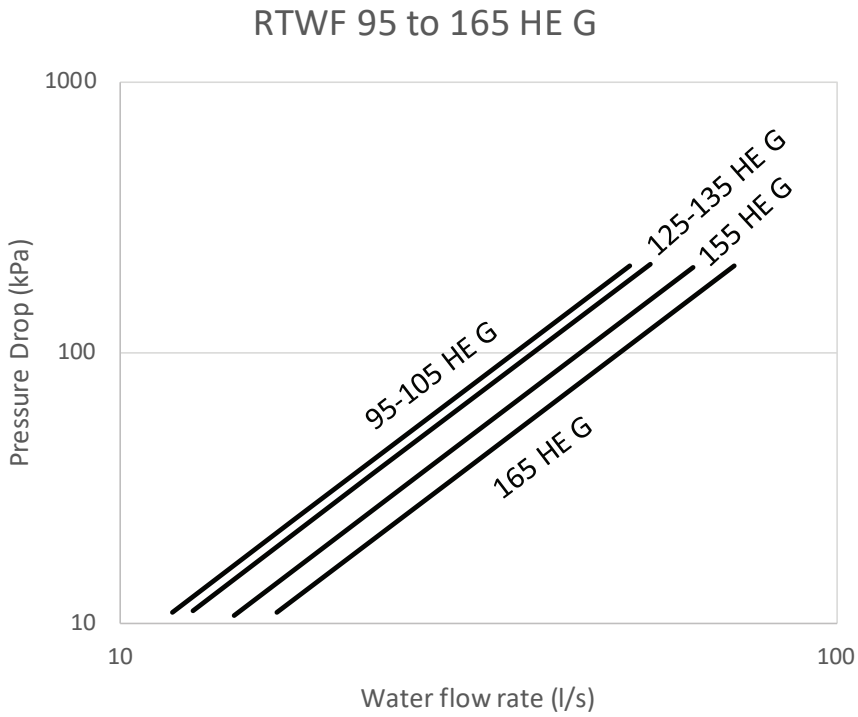
RTWF SE G - Evaporator pressure drop

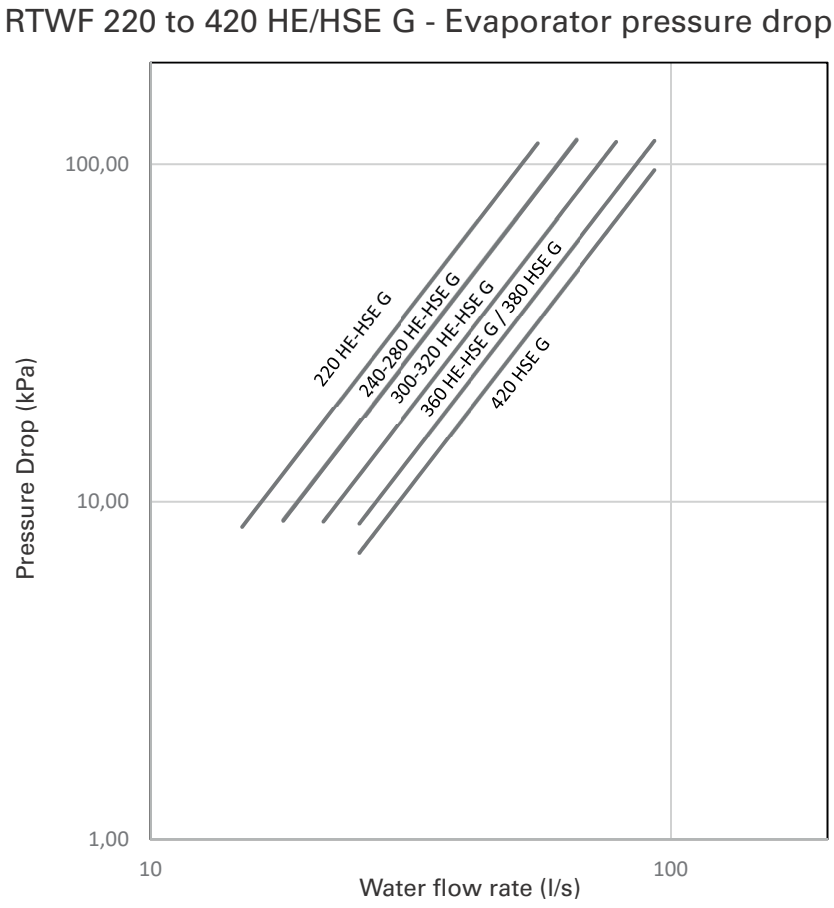


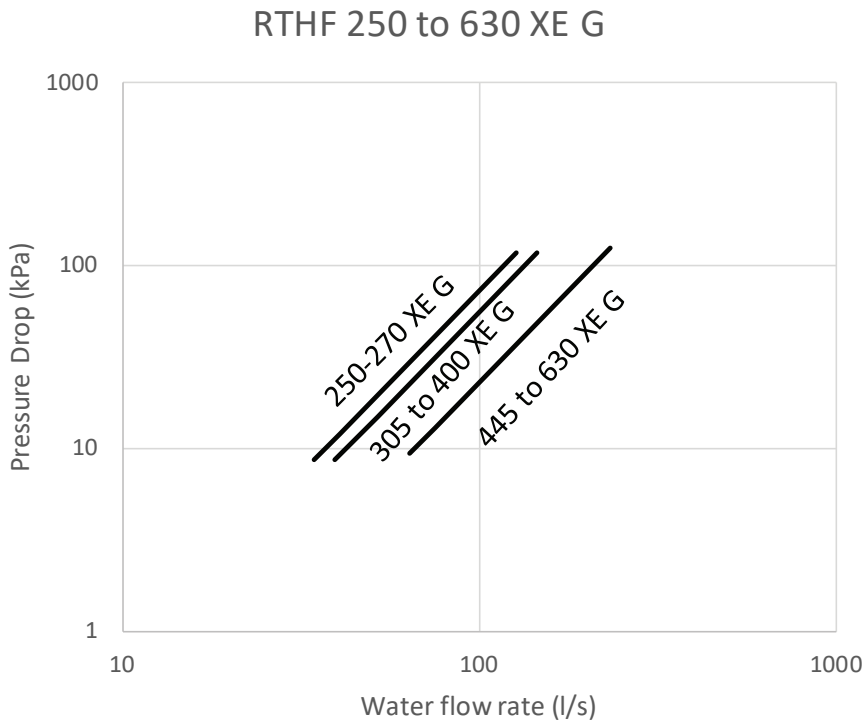
# Pressure drop

## RTWF HE G / HSE G - Evaporator pressure drop



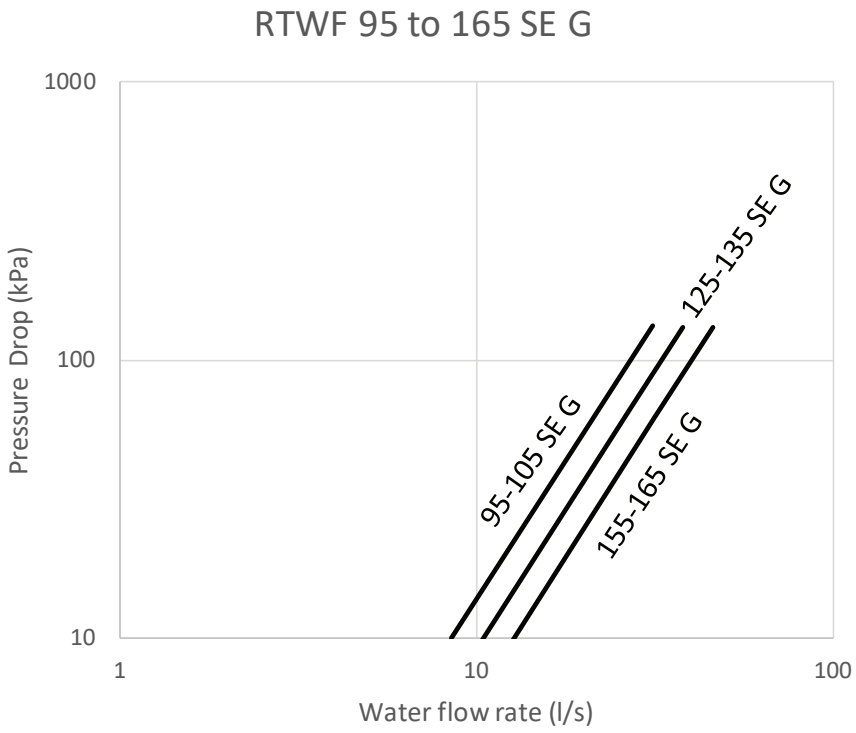



## RTHF XE G - Evaporator pressure drop

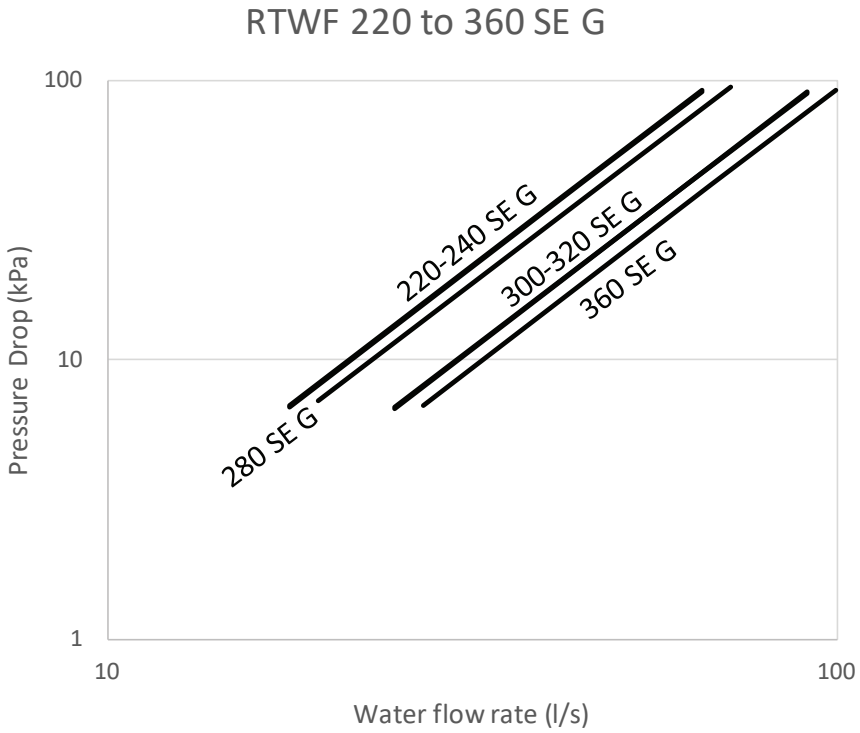


## Pressure drop

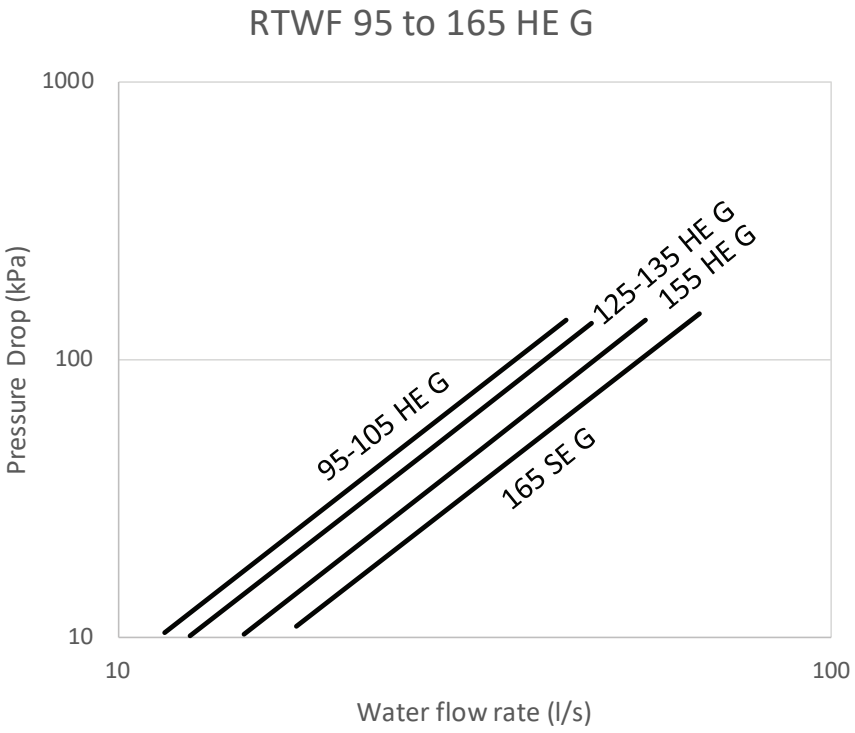
### RTWF 95 to 165 SE G - Condenser pressure drop



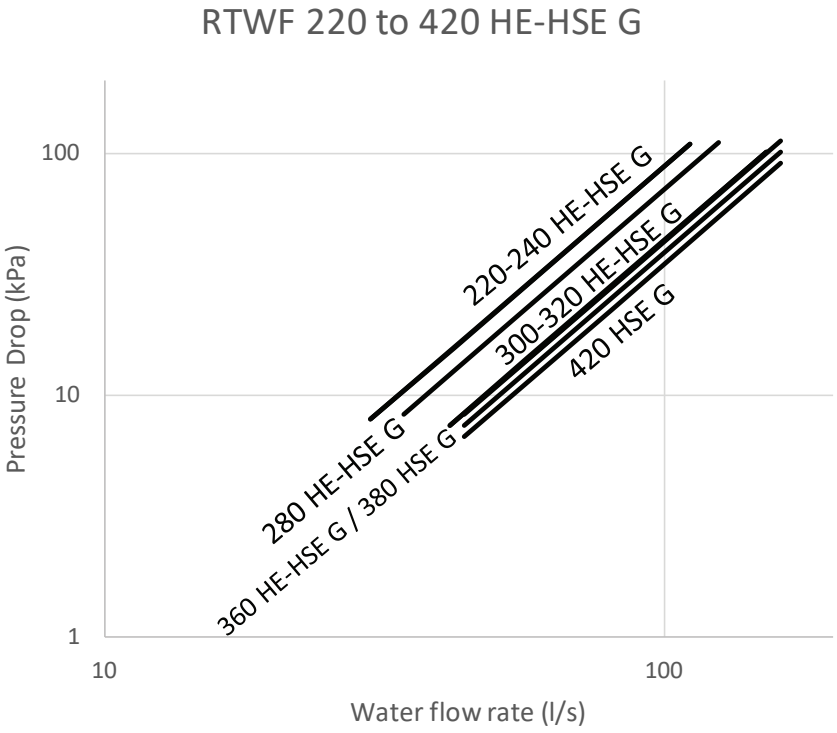

### RTWF 220 to 360 SE G - Condenser pressure drop



## RTWF 95 to 165 HE G - Condenser pressure drop

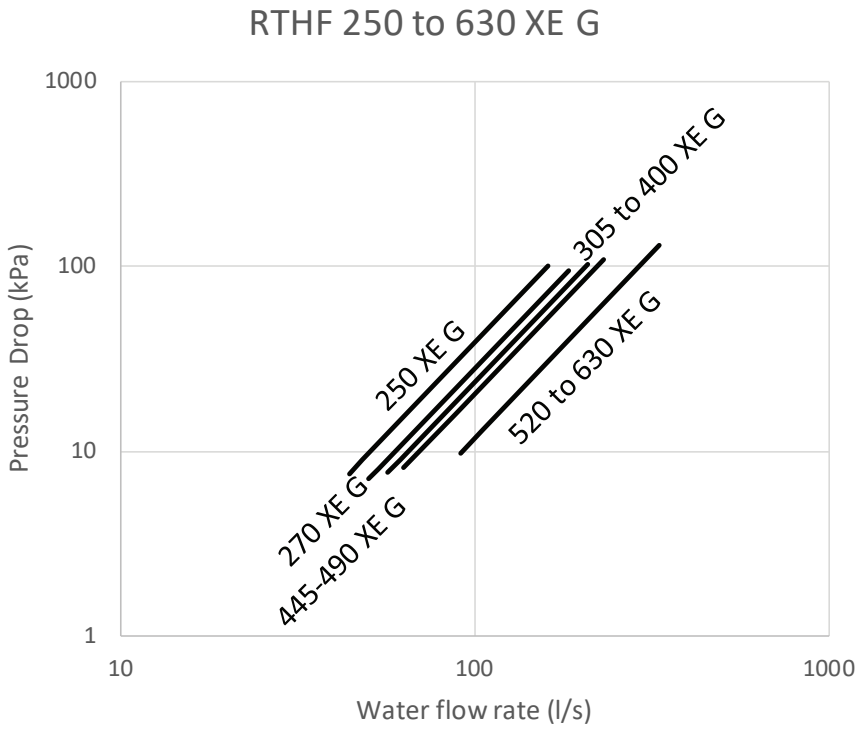



## RTWF 220 to 420 HE/HSE G - Condenser pressure drop

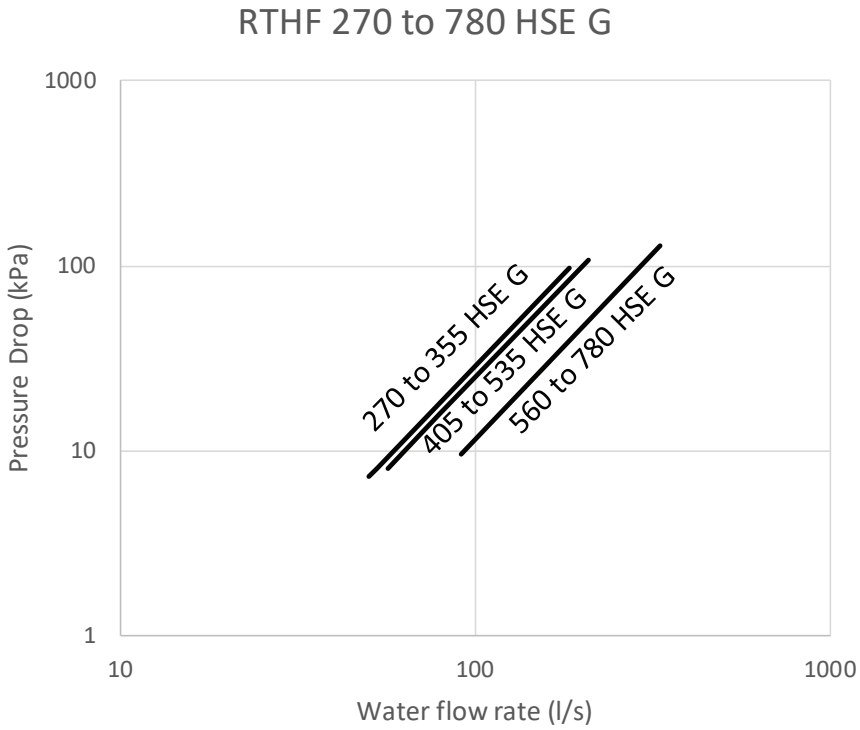


# Pressure drop

## RTHF XE G - Condenser pressure drop




## RTHF HSE G - Condenser pressure drop



# Electrical Data

*RTWF SE G*

| | | RTWF 095 SE G | RTWF 105 SE G | RTWF 125 SE G | RTWF 135 SE G | RTWF 155 SE G | RTWF 165 SE G | RTWF 220 SE G | RTWF 240 SE G | RTWF 280 SE G | RTWF 300 SE G | RTWF 320 SE G | RTWF 360 SE G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max current | (A) | 223 | 243 | 290 | 318 | 348 | 378 | 423 | 452 | 510 | 563 | 621 | 679 |
| Starting current | (A) | 330 | 350 | 419 | 451 | 481 | 544 | 574 | 637 | 695 | 714 | 806 | 864 |

*RTWF HE G*

| | | RTWF 095 HE G | RTWF 105 HE G | RTWF 125 HE G | RTWF 135 HE G | RTWF 155 HE G | RTWF 165 HE G | RTWF 220 HE G | RTWF 240 HE G | RTWF 280 HE G | RTWF 300 HE G | RTWF 320 HE G | RTWF 360 HE G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max current | (A) | 223 | 243 | 290 | 318 | 348 | 378 | 423 | 452 | 510 | 563 | 621 | 679 |
| Starting current | (A) | 330 | 350 | 419 | 451 | 481 | 544 | 574 | 637 | 695 | 714 | 806 | 864 |

*RTWF HSE G*

| | | RTWF 095 HSE G | RTWF 105 HSE G | RTWF 125 HSE G | RTWF 135 HSE G | RTWF 155 HSE G | RTWF 165 HSE G | RTWF 185 HSE G | RTWF 205 HSE G* | RTWF 220 HSE G | RTWF 240 HSE G | RTWF 280 HSE G | RTWF 300 HSE G | RTWF 320 HSE G | RTWF 360 HSE G | RTWF 380 HSE G | RTWF 420 HSE G* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max current | (A) | 214 | 232 | 281 | 309 | 334 | 363 | 406 | 487 | 405 | 434 | 488 | 545 | 603 | 657 | 718 | 960 |
| Starting current | (A) | 321 | 338 | 410 | 442 | 467 | 530 | 572 | 599 | 556 | 619 | 673 | 696 | 788 | 842 | 903 | 1074 |

*RTHF XE G*

| | | RTHF 250 XE G | RTHF 270 XE G | RTHF 305 XE G | RTHF 335 XE G | RTHF 370 XE G | RTHF 400 XE G | RTHF 445 XE G | RTHF 490 XE G | RTHF 520 XE G | RTHF 560 XE G | RTHF 595 XE G | RTHF 630 XE G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max current | (A) | 466 | 466 | 582 | 582 | 698 | 698 | 804 | 910 | 910 | 910 | 943 | 976 |
| Starting current | (A) | 645 | 645 | 761 | 761 | 829 | 829 | 1097 | 1203 | 1203 | 1203 | 1236 | 1236 |

*RTHF HSE G*

| | | RTHF 270 HSE G | RTHF 295 HSE G | RTHF 320 HSE G | RTHF 355 HSE G | RTHF 405 HSE G | RTHF 440 HSE G | RTHF 480 HSE G | RTHF 535 HSE G | RTHF 560 HSE G | RTHF 595 HSE G | RTHF 630 HSE G | RTHF 680 HSE G | RTHF 720 HSE G | RTHF 780 HSE G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max current | (A) | 394 | 540 | 540 | 540 | 647 | 737 | 754 | 754 | 827 | 852 | 877 | 1086 | 1086 | 1086 |
| Starting current | (A) | 394 | 540 | 540 | 540 | 647 | 737 | 754 | 754 | 827 | 852 | 877 | 1086 | 1086 | 1086 |

* With a High Vi compressor.

# Acoustic Data

| | Global Sound Power SWL (dB(A)) | Global Sound pressure level at 10 m SPL (dB(A)) |
|---|---|---|
| RTWF 95 SE G | 96 | 64 |
| RTWF 105 SE G | 96 | 64 |
| RTWF 125 SE G | 95 | 63 |
| RTWF 135 SE G | 93 | 61 |
| RTWF 155 SE G | 93 | 61 |
| RTWF 165 SE G | 93 | 61 |
| RTWF 220 SE G | 96 | 64 |
| RTWF 240 SE G | 96 | 64 |
| RTWF 280 SE G | 96 | 64 |
| RTWF 300 SE G | 97 | 65 |
| RTWF 320 SE G | 97 | 65 |
| RTWF 360 SE G | 97 | 65 |
| RTWF 95 HE G | 96 | 64 |
| RTWF 105 HE G | 96 | 64 |
| RTWF 125 HE G | 95 | 63 |
| RTWF 135 HE G | 93 | 61 |
| RTWF 155 HE G | 93 | 61 |
| RTWF 165 HE G | 93 | 61 |
| RTWF 220 HE G | 96 | 64 |
| RTWF 240 HE G | 96 | 64 |
| RTWF 280 HE G | 96 | 64 |
| RTWF 300 HE G | 97 | 65 |
| RTWF 320 HE G | 97 | 65 |
| RTWF 360 HE G | 97 | 65 |
| RTWF 095 HSE G | 96 | 64 |
| RTWF 105 HSE G | 96 | 64 |
| RTWF 125 HSE G | 95 | 63 |
| RTWF 135 HSE G | 93 | 61 |
| RTWF 155 HSE G | 93 | 61 |
| RTWF 165 HSE G | 93 | 61 |
| RTWF 185 HSE G | 95 | 63 |
| RTWF 205 HSE G | 97 | 65 |
| RTWF 220 HSE G | 96 | 64 |
| RTWF 240 HSE G | 96 | 64 |
| RTWF 280 HSE G | 96 | 64 |
| RTWF 300 HSE G | 97 | 65 |
| RTWF 320 HSE G | 97 | 65 |
| RTWF 360 HSE G | 97 | 65 |
| RTWF 380 HSE G | 97 | 65 |
| RTWF 420 HSE G | 97 | 65 |
| RTHF 250 XE G | 97 | 65 |
| RTHF 270 XE G | 97 | 65 |
| RTHF 305 XE G | 98 | 66 |
| RTHF 335 XE G | 98 | 66 |
| RTHF 370 XE G | 98 | 66 |
| RTHF 400 XE G | 98 | 66 |
| RTHF 445 XE G | 102 | 70 |
| RTHF 490 XE G | 103 | 71 |
| RTHF 520 XE G | 103 | 71 |
| RTHF 560 XE G | 103 | 71 |
| RTHF 595 XE G | 103 | 71 |
| RTHF 630 XE G | 103 | 71 |
| RTHF 270 HSE G | 97 | 65 |
| RTHF 295 HSE G | 100 | 68 |
| RTHF 320 HSE G | 102 | 70 |
| RTHF 355 HSE G | 105 | 73 |
| RTHF 405 HSE G | 102 | 70 |
| RTHF 440 HSE G | 100 | 68 |
| RTHF 480 HSE G | 102 | 70 |
| RTHF 535 HSE G | 106 | 74 |
| RTHF 560 HSE G | 103 | 71 |
| RTHF 595 HSE G | 103 | 71 |
| RTHF 630 HSE G | 103 | 71 |
| RTHF 680 HSE G | 106 | 74 |
| RTHF 720 HSE G | 107 | 75 |
| RTHF 780 HSE G | 109 | 77 |

# Notes

Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

RLC-PRC060D-GB January 2021
Supersedes RLC-PRC060C-GB (March 2019)