Air conditioning and heating solutions

SIMPLICITY OR INTELLIGENCE?

Aquasnap® with Greenspeed® intelligence, because you should not have to choose.

Air-to-water scroll heat pumps

160 kW - 520 kW

30RQM & 30RQP
Carrier solutions based on experience and expertise

Carrier Heritage
Since Willis Carrier developed the world’s first modern air conditioning system in 1902, Carrier teams have been designing solutions tailored to each customer’s requirements. Over time, Carrier has been recognised as a pioneer in the design and manufacture of heating, ventilation and air conditioning (HVAC) solutions with sustainable performance and, equally important, for its commitment to first class service.

Carrier Commitment

• **Quality**
  Carrier quality and reliability are incorporated and guaranteed in all products and systems. Products undergo extensive tests before they are shipped to the customer and are also certified by internal organisations to ensure the highest levels of safety and quality.

• **Sustainability**
  Carrier continuously works to improve the environmental performance of its products and services, operations and its culture to help lead the way to environmental sustainability. Sustainability is one of the issues that affects the real-estate value of modern buildings. A high-efficiency air conditioning system with a low carbon footprint is a must to support green building design.

• **Performance**
  Carrier strives for continuous growth to reinforce its leadership position, continuously improving the productivity of its assets and resources.

• **Service Excellence**
  The Carrier Service delivery model maintains a reputation for high customer satisfaction and delivers service excellence with strong communication channels, the top technicians in the industry, continuous improvement of contracts and a highly experienced management team.

• **Innovation**
  Carrier is a company of ideas, committed to research and development, whose founder still inspires the company to reach the next innovative, powerful and marketable idea. AdvanTE3C, a global group of Experts in Efficiency and Environment, supports customers with a portfolio of market-leading products and services.

For more information on the new AquaSnap heat pumps, visit Carrier’s website or contact your local Carrier representative.

**SIMPACITY**

The simplicity of AquaSnap, tried and trusted

**Experience**

With more than 400,000 units installed since 1998, AquaSnap sets the standard in “plug & play” air conditioning and heating solutions. Compact and simple to install, the new generation of AquaSnap with Greenspeed intelligence combines trusted reliability with even more innovation.

**Easy installation**

AquaSnap integrates an hydraulic module with pressure transducers for digital water flow rate display on the user interface and pump protection against too high/low pressures. The variable-speed pump allows easy and fast installation start-up thanks to the electronic setting of the nominal water flow.

**Adaptability**

The new AquaSnap heat pumps can operate in all climates with large operating maps in cooling and heating modes. Thanks to special coil coatings, the AquaSnap heat pumps can withstand operation in corrosive environments. To match specific commercial or industrial application requirements, the unit can be equipped with multiple options.

**INTELLIGENCE**

Greenspeed intelligence: the smart innovation

**Smart efficiency**

The new generation of AquaSnap heat pumps deliver on the energy savings and reduced carbon footprint required by the latest European regulations. AquaSnap heat pumps with Greenspeed intelligence offer Seasonal Coefficient of Performance (SCOP) in heating of up to 3.38 and European Seasonal Energy Efficiency (ESEER) in cooling of up to 4.38, making them the best value air conditioning solution in commercial and industrial applications. AquaSnap heat pumps with Greenspeed intelligence comply with the European Ecodesign regulation for heating products that will be in effect in September 2017.

**Acoustic comfort**

Thanks to the variable-speed fans, AquaSnap heat pumps with Greenspeed intelligence offer smooth fan speed variation during partial load operation. For noise-sensitive environments during both night and day, the AquaSnap noise level can be automatically factory-set or tuned on site.

**Advanced control**

An advanced control algorithm calculates energy efficiency and readjusts fan speed in real time to reduce energy consumption. Free Defrost, an innovative defrosting solution, can significantly improve the SCOP of the heat pump during positive outside air temperature conditions. For further energy savings, the water flow rate can be electronically controlled to meet real application needs. This significantly reduces pumping energy consumption both night and day.

**LIFETIME ENERGY SAVINGS**

Source: Carrier estimates based on 15-year energy savings calculations comparing a 20kW AquaSnap heat pump of the previous generation (SCOP 3.1, ESEER 3.5) to a new AquaSnap heat pump (SCOP 3.3, ESEER 4.2).
**AquaSnap scroll heat pumps with Greenspeed intelligence**

**30RQP**

**HEAT EXCHANGER**

- True dual-circuit brazed plate heat exchanger with asymmetric channels
- Copper aluminium coils
- Heat shrinkable tube to protect distribution capillary tubes
- Coil electric resistance heaters to prevent ice formation and ease condensate draining during defrost

**COPPER ALUMINIUM COILS**

**TOUCH PILOT™ CONTROL**

- 5" user-friendly touch screen
- All main parameters displayed on one screen
- Direct access to the unit’s technical drawings and main service documents
- Easy remote monitoring via the internet
- Easy and secured access to unit parameters

**VARiABlE-spEED PUMP (Option)**

- Water flow electronic setting & readings
- Automatic pump protection against low water pressure
- Multiple pump control capabilities:
  - fixed-speed
  - variable-speed based on constant pressure or constant temperature

**VARiABlE-spEED PUMP DRIVE**

**VARiABlE-spEED FAN DRIVE**

**VARiABlE-spEED FLYING BiRD® FAN**

- Carrier-designed fan blades
- Proprietary algorithm to control fan speed
- Dedicated drive
- Night-mode operation

**FIXED-spEED FLYING BiRD® FAN**

**INNOVATIVE CARRIER “FREE DEFROST”**

Carrier offers “Free Defrost,” an innovative defrosting method which can significantly improve the COP of the heat pump during positive weather conditions. Compared to a traditional defrosting method, it generates shorter payback, improved comfort, higher efficiency and reliability while reducing the noise and vibration level, and the environmental impact.

**KEY FEATURES**

**Compact design**, same footprint as previous AquaSnap generation, “plug and play” installation thanks to its built-in hydronic module.

**Acoustic comfort**: smooth fan speed variation and night-time mode, adjustable sound level on site.

**Advanced control**, using Greenspeed intelligence, fan speed is adapted to continually optimise the energy efficiency of heat pumps.

**Partial heat recovery**: to produce free hot water, units can be equipped with one desuperheater on each refrigerant circuit.

**Pumping energy savings**: AquaSnap heat pumps can be equipped with one or two variable-speed pumps to save significant pumping energy costs (up to 2/3) during partial load operation and stand-by periods.

**Enhanced heat pump energy efficiency**: at full and especially at partial load, thus improving the lifetime energy savings.

**Technical insight**

- Compact design, same footprint as previous AquaSnap generation, “plug and play” installation thanks to its built-in hydronic module.
- Acoustic comfort**: smooth fan speed variation and night-time mode, adjustable sound level on site.
- Advanced control**, using Greenspeed intelligence, fan speed is adapted to continually optimise the energy efficiency of heat pumps.
- Partial heat recovery** (Option): to produce free hot water, units can be equipped with one desuperheater on each refrigerant circuit.

**Fixed-speed pump**

- Heat pump load
- Outdoor Air Temperature
- Water Temperature
- Electrical input

**Variable-speed pump with Greenspeed intelligence**

- Heat pump load
- Outdoor Air Temperature
- Water Temperature
- Electrical input

**Variable-speed pump (Option)**

- Water flow electronic setting & readings
- Automatic pump protection against low water pressure
- Multiple pump control capabilities:
  - fixed-speed
  - variable-speed based on constant pressure or constant temperature

**Improved comfort**

- Higher efficiency
- SCOP gain +12%* +4%
- Traditional Defrost Free Defrost

- Outdoor Air Temperature

**Source:** Carrier estimates based on tests & simulations. This information is intended as an example for comparison purposes only.

*30RQP only.
Carrier, committed to environmental responsibility

Carrier is committed to limiting the environmental impact of its products and solutions and reducing energy consumption. This commitment is in line with the targets of the European climate and energy package for 2020:

- 20% energy efficiency improvement
- 20% share of renewable energy
- 20% decrease in CO₂ emissions

Ecodesign

Ecodesign takes into account a product’s impact on the environment throughout its lifecycle and plays an essential role in meeting the 2020 targets. In the European Union, the Ecodesign Directive sets mandatory energy efficiency requirements for all energy-related products (ERPs), including air conditioning products. Therefore, this directive pushes the market away from low-performance products, requiring manufacturers to develop products that consume less energy.

New energy efficiency metric

The SCOP is a new European parameter to evaluate the energy efficiency of heat pumps. Previously, COP (Coefficient of Performance) was used to measure the ratio of power consumed to power produced in the heating mode. As these values focused on a single operating point, they were not representative of operation during the heating season. SCOP addresses this by including seasonal variations in the performance rating.

SCOP versus COP efficiency (for heat pumps)

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>CAPACITY (KW)</th>
<th>AUXILIARY MODES (KW)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>COP SCOP COP</td>
<td>Partial load + Full load Includes consumption auxiliary modes: - Standby mode - Off mode - Thermostat off...</td>
</tr>
<tr>
<td>Several rating temperatures: -10°C to 16°C</td>
<td>1 temperature condition: 7°C</td>
<td>Full load</td>
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Primary energy evaluation

In order to compare the energy efficiency of products using different sources of energy, such as boilers (gas, fuel) and electric heat pumps, the Ecodesign Directive introduces a new measurement expressed in primary energy: \( \eta_s \) (eta s).

Seasonal energy efficiency: \( \eta_s = \frac{\text{SCOP}}{2.5 \times 100 - i} \)

- \( \text{SCOP} \) is the conversion coefficient as 2.5kW primary energy = 1kW electricity
- \( i \) is the correction for air source heat pumps

AquaSnap with Greenspeed intelligence energy performance in heating mode


Tips and tricks:

- Proximity & Responsiveness
  - Carrier expert technicians are there to take action, quickly.
  - The company’s comprehensive and highly efficient maintenance processes mean your equipment works at peak performance level.
  - If necessary, you can rely on Carrier Rental Systems and readily available spare parts to avoid extended downtime.

- Expertise & Consultancy
  - Carrier has experienced teams, an extensive network of branches, top grade logistics and powerful information systems. These industry-leading resources come together to deliver a best-in-class service.
  - Your Carrier experts will help you to find the right balance between enhancing energy efficiency and maximising your investments.

- Proactivity
  - As your preferred partner, Carrier designs tailored maintenance programmes to meet your goals and optimise your business performance.

To meet your expectations, Carrier Service offers:

- Present in more than 60 countries
- 24/7 availability
- More than 110 years of experience

Carrier proposes an advanced service offer based on secure connectivity, allowing you to monitor your equipment in real time and receive recommendations from Carrier experts.
# 30RQM /30RQP

## Physical data

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<th>180</th>
<th>210</th>
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<td>170</td>
<td>203</td>
<td>228</td>
<td>268</td>
<td>301</td>
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**HEATING**

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**SOUND POWER LEVEL**

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<td>1505</td>
<td>1633</td>
<td>1656</td>
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<td>2372</td>
<td>2537</td>
<td>3040</td>
<td>3289</td>
<td>3302</td>
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**OPERATING WEIGHT STANDARD UNIT *****

| RQM | 1426 | 1505 | 1633 | 1656 | 2068 | 2216 | 2341 | 2372 | 2537 | 3040 | 3289 | 3302 |

**OPERATING WEIGHT STANDARD UNIT *****

| RQM | 1462 | 1542 | 1670 | 1693 | 2105 | 2252 | 2378 | 2608 | 3076 | 3347 | 3359 | 3408 |

**DIMENSIONS: LENGTH X DEPTH X HEIGHT mm**

|       | 2410 | 2253 | 2297 | 3604 | 2253 | 2297 | 4797 | 2253 | 2297 | 3604 | 2253 | 2297 |

## OPTIONS

- **LOW LEAVING WATER TEMPERATURE DOWN TO 0°C**
- **VERY LOW LEAVING WATER TEMPERATURE DOWN TO -12°C**
- **HIGH STATIC FAN FOR DUCTED APPLICATION**
- **LOW NOISE LEVEL**
- **LOW NOISE LEVEL**
- **SIDE PANELS**
- **ELECTRONIC STARTER**
- **WINTER OPERATION FOR OAT DOWN TO -20°C (COOLING MODE)**
- **EVAPORATOR FROST PROTECTION**
- **EVAPORATOR AND HYDRONiC MODULE FROST PROTECTION**
- **COIL DEFROST RESISTANCE HEATERS**

*Options available after official product launch. Please contact your sales representative for more information.*

**Standard feature on 30RQP**

Carrier participates in the ECP program for liquid chilling packages and hydronic heat pumps. Check ongoing validity of certificate on www.eurovent-certification.com

www.carrier.com