Variable-speed, water-cooled chillers and heat pumps

580 – 1750 kW

30XW-V/30XWHV
The latest AquaForce generation: Carrier expertise turned to meet customer needs

Greenspeed technology enhances the renowned AquaForce line features for variable-load building demands

Carrier has developed its own state-of-the-art answer to market-challenging requirements: a complete product range featuring new inverter-driven screw compressors, based on the successful AquaForce series. The new line with Greenspeed technology offers increased global performance as well as Carrier’s acclaimed product quality, reliability and customer service support.

Quality: simply in Carrier’s culture

Carrier is committed to delivering perfect operational products to every customer. Components and processes are accurately defined, tested and monitored during the entire product development process. In addition, Eurovent regularly tests our products to certify their accurate performance.

Rely on Carrier commitment long after the sale

Our commitment to our products extends far beyond the factory gate. Carrier continues to support you, offering a variety of service maintenance contracts and control solution packages. These services ensure that the equipment always operates at peak efficiency and offer added advantages of faster fault diagnosis, minimising the risk of operational downtime.

Carrier participates in the ECC programme for Liquid Chilling Packages.
Check ongoing certification validity: www.eurovent-certification.com or www.certiflash.com

Carrier GREEN

30XW-V/30XWHV: the air conditioning and heating solution for green buildings

Sustainability is the issue that most 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, gaining points with current sustainability protocols such as LEED® or GreenStar. To make an air conditioning unit the right choice for a green building it needs to meet a number of requirements: high efficiency, low noise, recyclability, reliability, flexibility. Carrier meets these targets and sets new standards with the new AquaForce line with Greenspeed technology.
to meet customer needs

Seasonal efficiency

The exclusive Carrier Greenspeed technology used for the new AquaForce line ensures high energy efficiency, both at full and part load. The ESEER of the 30XW-V is up to 40% higher than that of traditional fixed-speed units and in line with more recent oil-free centrifugal chillers. High seasonal efficiency means minimised energy consumption and lower electricity bills.

Reliability

For applications such as data centres or industrial processes reliability comes first, but to minimise maintenance and operating costs reliability is always a key point.

The new AquaForce line with Greenspeed technology can operate even at high condensing temperatures without surge risk. The complete range was continually tested during the development stage to ensure exceptional reliability, becoming a preferred solution even for the most critical applications.

Economy

Designing a new building, consultants and owners need to consider budgetary constraints and the return-on-investment analysis. The optimal air conditioning system guarantees lowest total life cycle cost, compared to alternative systems, with a payback time that can be lower than two years.

Carrier helps customers find the best solution for a specific application, and the new AquaForce line with Greenspeed technology offers exceptional cost benefits.

Versatility

Each building or application has specific unique air conditioning and heating requirements.

The AquaForce line with Greenspeed technology was developed for heating systems, high-water-column hydronic plants and variable-flow applications. The wide range of unit configurations makes of this new Carrier line the right choice for many different applications.
INVERTER-DRIVEN SCREW COMPRESSORS
(CARRIER PROPRIETARY TECHNOLOGY)

- Improved efficiency, especially at part load
- Negligible start-up current and high power factor
- Accurate capacity control
- Surge-free, positive-displacement technology

**PART-LOAD EFFICIENCY**

```
Load [%], condenser EWT [°C] and evaporator LWT [°C] defined by ESEER, European Seasonal Energy Efficiency Ratio index
```

**Greenspeed technology delivers...**

- Seasonal energy efficiency
- Economy
- Reliability
- Versatility
... with all the advantages of the acclaimed AquaForce line

- **Experience**
  Proven technology, demonstrated by thousands of installations world-wide

- **Compactness**
  Compact chillers designed for standard door widths and for easy retrofit installation

- **Efficiency**
  Chillers and heat pumps that exceed Eurovent Class A standards, for reduced building energy consumption and CO₂ emissions

NEW TOUCHPILOT CONTROL

- User-friendly touch screen interface
- Status of all main parameters on one screen
- Direct access to the unit’s technical drawings and main service documents
- Easy enhanced remote monitoring via the internet
- Easy access to unit parameters with different security access levels: enter your password and get access to your unique parameters.
Energy consumption comparison for a unit that works every day, except Saturdays and Sundays, from 7 am to 8 pm. Assumes two further weeks off during August, the total yearly operating hours are 2158.

Example
- Month of May, 50% load
- > 34% lower energy consumption!

- AquaForce chiller with Greenspeed technology
- Traditional fixed-speed screw-compressor chiller

Significantly higher efficiency 97% of year

Energy efficiency comparison at ESEER conditions.

Example
- Month of May, 50% load
- > 9.7 vs 6.4 EER (with ELWT = 7°C, CEWT = 22°C)
- > 52% higher efficiency!

- AquaForce chiller with Greenspeed technology
- Traditional fixed-speed screw-compressor chiller

Less noise 64% of year

Sound emission comparison.

Example
- Month of May, 50% load
- > 94 vs 99 dB(A)
- > 5 dB(A) less noise!

- AquaForce chiller with Greenspeed technology
- Traditional fixed-speed screw-compressor chiller

Simplified cooling demand for an office building with load distribution according to ESEER index.

Example
- Month of May
- > Building cooling load = 50% of peak load
### Physical data

<table>
<thead>
<tr>
<th>30XW-V/30XWHV</th>
<th>580</th>
<th>630</th>
<th>810</th>
<th>880</th>
<th>1150</th>
<th>1280</th>
<th>1470</th>
<th>1570</th>
<th>1710</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant</td>
<td>R134a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td>Inverter-driven screw type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of compressors / circuits</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>2/2</td>
<td>2/2</td>
<td>2/2</td>
<td>2/2</td>
<td>2/2</td>
</tr>
<tr>
<td>Capacity control range</td>
<td>20% - 100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10% - 100%</td>
</tr>
<tr>
<td>EMC compatibility, EN61800-3</td>
<td>&lt;C3&gt;</td>
<td>&lt;C3&gt;</td>
<td>&lt;C3&gt;</td>
<td>&lt;C3&gt;</td>
<td>C3</td>
<td>C3</td>
<td>C3</td>
<td>C3</td>
<td>C3</td>
</tr>
</tbody>
</table>

#### Performance in cooling mode

<table>
<thead>
<tr>
<th>Air conditioning application - as per EN14511-3:2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooling capacity</strong></td>
</tr>
<tr>
<td><strong>EER</strong></td>
</tr>
<tr>
<td>Eurowent class</td>
</tr>
<tr>
<td><strong>ESEER</strong></td>
</tr>
</tbody>
</table>

#### Performance in heating mode

<table>
<thead>
<tr>
<th>Air conditioning application - as per EN14511-3:2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heating capacity</strong></td>
</tr>
<tr>
<td><strong>COP</strong></td>
</tr>
<tr>
<td>Eurowent class, heating</td>
</tr>
</tbody>
</table>

#### Cooling floor application - as per EN14511-3:2011

| **Cooling capacity** | kW | 791 | 846 | 1023 | 970 | 1529 | 1688 | 1703 | 2093 | 2273 |
| **EER** | kW/kW | 6.96 | 6.50 | 6.22 | 5.63 | 6.86 | 6.84 | 5.99 | 6.60 | 6.00 |
| Eurowent class, cooling | A | A | A | A | A | A | A | A | A |

#### Heating floor application - as per EN14511-3:2011

| **Heating capacity** | kW | 685 | 763 | 953 | 1017 | 1331 | 1519 | 1705 | 1889 | 2055 |
| **Sound level (at full load)** dB(A) | 102 | 102 | 102 | 102 | 102 | 103 | 103 | 103 | 103 |
| **Sound power level** dB(A) | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 |

### Main options

- **Low-noise option**
- **EMC EN61800-3 - C2 compliance**
- **Service valve set**
- **Customised heat exchangers (one or two passes, 1 or 2.1 MPa water pressure resistance, reversed water boxes)**
- **Units optimised for cooling tower applications**
- **Various BMS communication protocols**

---

* Calculations in accordance with standard performances (as per EN14511-3:2011) and certified by Eurovent.
** Conditions in cooling mode: evaporator water entering/leaving temperature 12°C/7°C, condenser water entering/leaving temperature 30°C/35°C, evaporator/condenser fouling factor = 0
*** Conditions in heating mode: condenser water entering/leaving temperature 3°C/7°C, evaporator/condenser fouling factor = 0
**** Conditions in cooling mode: evaporator water entering/leaving temperature 30°C/35°C, evaporator/condenser fouling factor = 0
#### Gross adjusted performances, not taking into account the water pump and heat exchangers pressure drops, that are not certified by Eurovent for 2012, but used for the 2011 gross declaration and given as a reference for comparison

---

7 | 30XW-V/30XWHV |
Carrier, for the environment
Carrier believes that industry leadership demands environmental leadership. In fact, environmental stewardship is one of Carrier’s core values. Carrier continuously works to improve the environmental performance of its products and services, operations and culture to help achieve a sustainable society.

Carrier, for performance
Carrier strives for continuous growth to reinforce its leadership position, achieve world-class financial performance and continuously improve the productivity of its assets and resources.

Carrier, for service
The Carrier service delivery model maintains a reputation for high customer satisfaction and delivers service excellence with strong communication channels, industry-leading technicians, continuous improvement of contracts and a highly experienced management team.

Carrier, for innovation
Carrier is a company of ideas, committed to research and development, whose founder inspires the company to reach the next innovative, powerful and marketable idea.

Carrier, to be your expert
Carrier delivers global solutions across the broadest range of heating, cooling and refrigeration applications. With a proven track record of leadership and industry expertise, we are here to meet your needs with our portfolio of market-leading products and services.

Visit our website with your smartphone

www.carrier.com

Carrier

United Technologies
Climate | Controls | Security