



United Technologies

D E S I G N I N G I N N O V A T I V E S O L U T I O N S

AIR CONDITIONING & HEATING SOLUTIONS

FORCE **OR** INTELLIGENCE ?

AQUAFORCE® WITH GREENSPEED® INTELLIGENCE,
BECAUSE YOU SHOULD NOT HAVE TO CHOOSE.



Air and water-sourced, variable-speed screw units

500 kW - 1750 kW

30XAV & 30XWV

AQUAFORCE greenspeed 

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 recognized 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 organizations 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. Carrier AdvanTE³C, a global group of Experts in Efficiency and Environment, supports customers around the world in developing strategic, energy-efficient and custom-engineered building solutions.

Expertise

Carrier delivers global solutions across the broadest range of air conditioning, ventilation and heating applications. With a proven track record of leadership and industry expertise, Carrier provides a portfolio of market-leading products and services.

FORCE

The strength of the AquaForce heritage

Experience

Launched in 2006, the AquaForce range now counts **thousands of installations worldwide**. AquaForce with Greenspeed® intelligence leverages its unique experience while improving performance, especially at partial load, and control capability.

Full efficiency

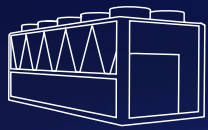
With its magistral use of the variable-speed technology, AquaForce with Greenspeed® intelligence offers an **optimum efficiency at full and partial load** without any compromise.

Unrivalled reliability

The 30XAV and 30XWV ranges are characterized by the same **unrivalled reliability** rate of the famous AquaForce range :

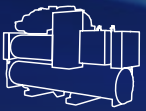
- surge-risk free technology
- extensive qualification process
- vibration tests based on military standards

30XAV



EER up to **3.4**
ESEER up to **4.9**

30XW-V



EER up to **5.5**
ESEER up to **8.0**



Values in accordance with EN14511-3:2013 and certified by Eurovent.
EER calculated for typical air-conditioning application, 12/7°C - 30/35°C (30XW-V) and 12/7°C - 35°C (30XAV)

&

INTELLIGENCE

Greenspeed® intelligence: the smart innovation

Smart efficiency

With the use of **experienced and robust technologies**, the **high efficiency** of AquaForce with Greenspeed® intelligence ranges make the 30XAV and 30XWV units the best return on investment.

Advanced control

The **Touch Pilot™ control new generation** sets new standard for chillers and heat pumps operation: precise resource control, speed of response, interactive and self-explanatory user-interface together with web-server capability.

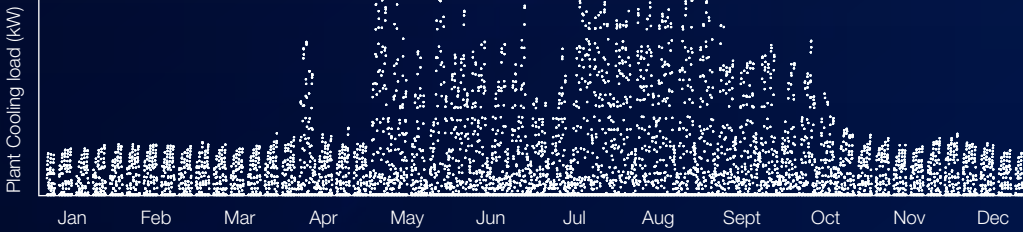
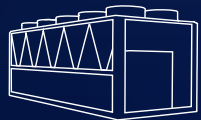
Adaptability

30XAV and 30XWV ranges fit with many types of applications thanks to:

- extended operating envelope
- **high efficiency** at both full and partial load
- **robustness** of its technology
- **reduced noise** during real life operation
- various available options.



Carrier control software enables moment to moment adaptation to the buildings requirements with precision



Based on Hourly Analysis Program simulation - Cooling load profile - Hotel in London, air conditioning required 24h/day, 365d/year.

Air-cooled variable-speed screw chillers with Greenspeed® intelligence

30XAV



Water-sourced variable-speed screw chillers and heat pumps with Greenspeed® intelligence

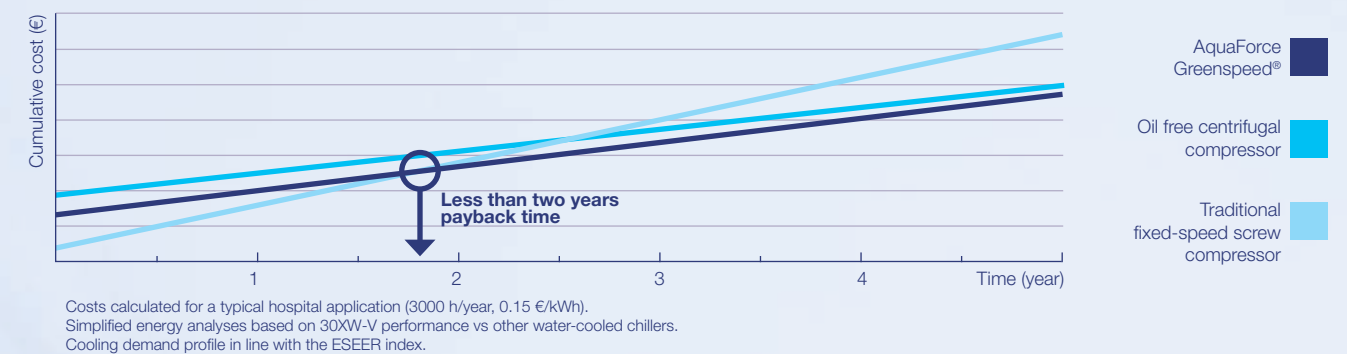
30XW-V/30XWHV



Ecodesign is the European Directive that sets mandatory requirements for Energy related Products (ErP) to improve their energy efficiency. Carrier supports initiatives to reduce the environmental impact of its products. AquaForce with Greenspeed® intelligence ranges are designed to anticipate and exceed future regulation requirements.

- **High performance and full efficiency** at full and partial load
- **Short payback** compared to a traditional fixed-speed screw machine
- **Advanced control:** precise capacity matching of building load, ease management, increased computing capabilities, web-server connectivity and enhanced system integration
- **Adaptability:** wide operating envelope and robust core technology suitable for various applications and installation in different climates
- **Reliability:** AquaForce with Greenspeed® intelligence based on the proven Carrier quality

Short payback



Specific solutions for specific needs



■ HOSPITAL: REMARKABLE RELIABILITY

At the heart of the 30XAV and 30XWV is a **screw compressor with a very low failure rate close to 0.1%**. With the legacy of the AquaForce range installed in thousands of sites worldwide, the experience confirms the reliability of Carrier.

The screw compressors feature automatic unloading at abnormally high condensing temperatures: even in extreme heat conditions, AquaForce with Greenspeed® intelligence ensures continuous cooling **with no risk of surge**.

Carrier performs **exceptional endurance tests** before launching any new product. Specialized laboratories and advanced dynamic simulation tools are used to design critical subassemblies components and to ensure coils anti corrosion.



■ HOTEL: ADAPTABILITY TO LOAD VARIATION

Hotels' cooling loads may vary sharply and rapidly throughout the day. Thanks to their electronic capacity control method, **variable-speed motors adapt their output to real demand** in just a few seconds.

This in turn ensures minimum energy consumption during the variations.



■ DATA CENTER: FAST CAPACITY RECOVERY

Data centers have very specific needs: high efficiency, precise temperature control and maximum uptime. To meet these challenges, Carrier has developed its dedicated **Fast Capacity Recovery feature**, offering significant reduction of recovery time in case of power failure.

Greenspeed® intelligence systems **reduce full load capacity recovery by as much as five minutes**.



■ GREEN BUILDING: SUSTAINABILITY

The 30XAV and 30XW-V/30XWHV not only offer **efficiency to reduce the overall building energy consumption** but are also **designed for an easy system integration**:

- **Variable-speed pumps control** to exploit the package efficiency
- **Time-scheduling, double-set point, night-mode operation** and other control features are available to optimize the chiller operation with the building's need
- **Several communication protocols** are available for an easy integration of the chiller control into the plant Building Management System
- Remote monitoring: Carrier's experts support the building owner to secure a consistent efficiency through the entire lifetime of the equipment.



■ INDUSTRY: FULL LOAD EFFICIENCY

It is not uncommon for an inverter-driven machine to offer very high efficiency at partial load, but often, achieving high efficiency at partial load meant sacrificing efficiency at full load.

Now, with AquaForce with Greenspeed® intelligence, you can have both.

With Greenspeed® intelligence you can count on a high reliable system that won't let you down. A fast capacity recovery setup is provided in case of a possible breakdown.



■ MULTI RESIDENTIAL: CUSTOMIZED SOLUTIONS

The 30XAV and 30XWV ranges of sizes are suitable for every multi-residential applications, where the ease of installation and the plug & play approach are essential. With 30XAV and 30XWV ranges, Carrier offers:

- **EMC Class 2 compatibility**, for application in residential environments
- **Low noise options**, to reduce noise by 6 dB(A) for 30XAV and 3 dB(A) for 30XW-V
- **Pumps control**, to reduce installation time
- **Leak detection signal**, to promptly report any refrigerant leak
- **Heating capability** (30XWHV only) for comfort all year long: during summer and winter seasons.

Carrier Service beyond your expectations

Carrier teams are committed to ensuring your peace of mind while supporting your business objectives throughout the lifecycle of your equipment.

To meet your expectations, Carrier Service offers:

■ Proximity & Responsiveness

Carrier expert technicians are there to take action, quickly. The comprehensive and highly efficient maintenance processes mean your equipment will soon be back in action.

In the meantime you can rely on Carrier Rental Systems and spare parts availability, because downtime is not an option.

■ Expertise & Consultancy

Carrier team's experience, a dense network of branches, top grade logistics and powerful information systems converge to continuously deliver a dedicated service.

Your Carrier experts, based on in-house calculation algorithms, can help you to find the right balance between protecting the planet and maximizing your investments.

■ Proactiveness

As your preferred partner, Carrier designs tailored maintenance programs to meet your goals and to optimize your business performance.



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.



Physical data



30XAV		500	600	700	800	950	1050	1150
PERFORMANCE IN COOLING MODE								
AIR CONDITIONING APPLICATION *								
COOLING CAPACITY	kW	504	607	687	814	910	1041	1138
ESEER	kW/kW	4.59	4.67	4.79	4.85	4.72	4.68	4.84
EER	kW/kW	3.22	3.23	3.29	3.37	3.12	3.08	3.10
EUROVENT CLASS		A	A	A	A	A	B	A
SOUND LEVEL **								
SOUND POWER LEVEL, 100% LOAD	dB(A)	99	100	100	100	102	103	103
SOUND POWER LEVEL, 50% LOAD	dB(A)	92	93	93	93	93	94	94
PHYSICAL DATA								
NUMBER OF COMPRESSORS/CIRCUITS		2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
CAPACITY CONTROL RANGE		10% ... 100%						
LENGTH	mm	6092	6092	7186	8380	9573	10767	11962
WIDTH	mm	2253	2253	2253	2253	2253	2253	2253
HEIGHT	mm	2297	2297	2297	2297	2297	2297	2297

30XW-V/30XWHV		580	630	810	880	1150	1280	1470	1570⁺	1710⁺
PERFORMANCE IN COOLING MODE										
AIR CONDITIONING APPLICATION *										
COOLING CAPACITY	kW	587	652	812	858	1140	1305	1461	1604	1741
ESEER	kW/kW	7.80	7.60	8.04	7.76	7.79	7.59	7.30	7.15	6.85
EER	kW/kW	5.44	5.31	5.25	5.07	5.45	5.50	5.38	5.05	4.94
EUROVENT CLASS		A	A	A	A	A	A	A		
PERFORMANCE IN HEATING MODE										
HEATING CAPACITY	kW	649	719	890	974	1261	1428	1594	1761	1932
COP	kW/kW	4.64	4.53	4.56	4.43	4.62	4.61	4.55	4.33	4.16
EUROVENT CLASS		A	A	A	B	A	A			
SOUND LEVEL **										
SOUND POWER LEVEL, 100% LOAD	dB(A)	102	102	102	102	103	103	103	103	103
SOUND POWER LEVEL, 50% LOAD	dB(A)	94	94	94	94	94	94	94	94	94
PHYSICAL DATA										
NUMBER OF COMPRESSORS/CIRCUITS		1 / 1	1 / 1	1 / 1	1 / 1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
CAPACITY CONTROL RANGE		20% ... 100%				10% ... 100%				
LENGTH	mm	3059	3059	3290	3290	4730	4730	4730	4730	4730
WIDTH	mm	1087	1087	1237	1237	1164	1164	1255	1255	1255
HEIGHT	mm	1743	1743	1950	1950	1997	1997	2051	2051	2051

* Calculations in accordance with EN14511-3:2013. Conditions in cooling mode: 12/7°C, 35°C (30XAV) and 12/7°C, 30/35°C (30XW-V). Conditions in heating mode: 40/45°C, 10/7°C (30XWHV).
 ** Measured in accordance with ISO9614-1. For 30XAV, data refer to unit with option 279 (compressor enclosure) included. For 30XW-V/30XWHV, data refer to unit with option 257 (low noise) included.
 + This model is not Eurovent certified, as out of Eurovent certification program scope
 Carrier participates in the ECP program for Liquid Chilling Packages and Hydronic Heat Pumps. Check ongoing validity of certificate on www.eurovent-certification.com

MAIN FEATURES

- Fast capacity recovery
- Hydronic module (30XAV)
- Variable water flow control (30XAV)
- Coils protection for installation in mildly/highly polluted environments (30XAV)
- Low noise
- Customizable heat exchangers configuration
- Various BMS communication protocols, including BacNet over-IP
- EMC classification according IEC61800-3, class C2
- Leak detection signal

www.carrier.com

AquaForce with Greenspeed® intelligence - 30XAV & 30XWV - English - January 2015. © Carrier 2015. All rights reserved.
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