



DESIGNING INNOVATIVE SOLUTIONS

United Technologies

AIR CONDITIONING & HEATING SOLUTIONS

PROVEN PERFORMANCE OR HIGH EFFICIENCY ?

AQUAFORCE®, BECAUSE YOU SHOULD NOT HAVE TO CHOOSE.



Air and water-cooled screw units

252 kW - 1750 kW

30XA & 30XW

AQUAFORCE

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. 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.

PROVEN PERFORMANCE

The performance of AquaForce, tried and trusted

Thousands of installations

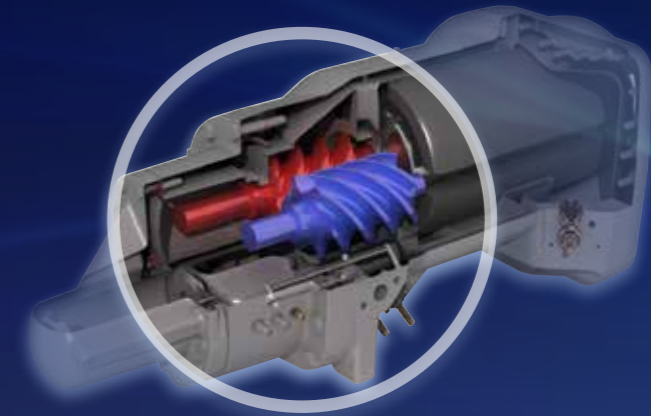
The AquaForce range is the result of several years of research and now counts thousands of installations worldwide. It operates in extreme climate conditions (from -22°C to +55°C) and offers among the best levels of energy efficiency and environmental performance in our industry.

Robustness and reliability

The reliability of the AquaForce system is the result of intensive research, combined with the highest quality standards (vibration tests based on military standards). The AquaForce range equipped with twin screw compressors delivers guaranteed long-term optimised performance.

Carrier Service

In order to ensure that the customer's equipment provides optimum performance and a long operating life, the Carrier Service team takes care of integration, optimization and supervision of the plant within its operating environment.



HIGH EFFICIENCY

The AquaForce range, highly efficient in all conditions

Energy Efficiency

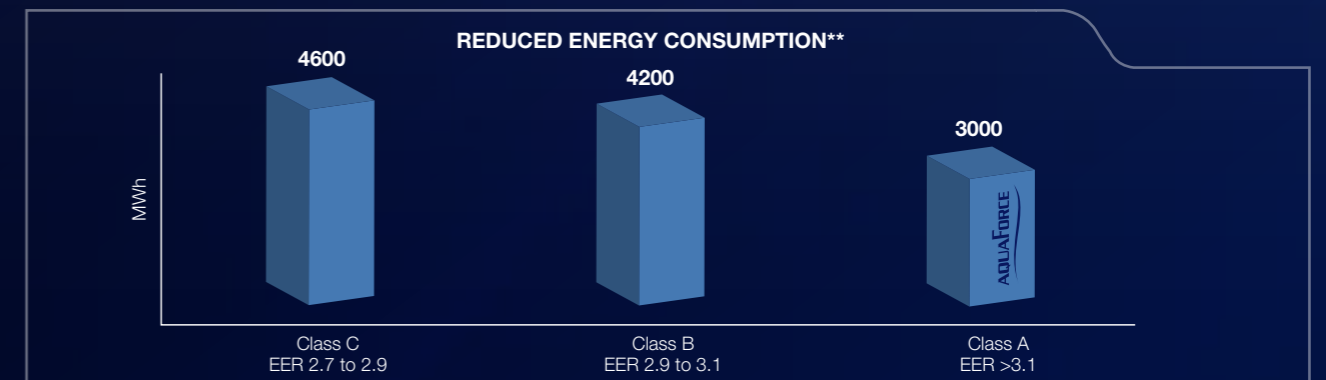
With an average Energy Efficiency Ratio (EER) of 3.15, the AquaForce system is a reference in energy efficiency. The AquaForce system, with its electronic expansion device, has a considerably increased cooling capacity, which contributes to optimized energy efficiency of the chiller at full and part load conditions.

Low CO₂ impact

The AquaForce chiller is cost-effective to operate and environmentally responsible, with lower CO₂ emissions compared to other chillers of the similar capacity. With the Novation[®] Microchannel, the refrigerant charge can be reduced by up to 50% compared to traditional coils with copper tubes and aluminium fins (Cu/Al coils)*.

Advanced control

The new generation Touch Pilot[™] control is now integrated in the AquaForce range. It sets a new standard for chiller and heat pump operation, with its precise resource control, rapid response times, interactive and self-explanatory user interface and web-server capability and data management and storage.



*Source: Carrier estimates based on testing by Carrier laboratory.

**Source: Carrier estimates based on the example of the energy consumption of a 30XA unit in an office building in London. The heat load is 850 kW. The study compares the energy consumption of products in energy class A, B and C over 15 years.

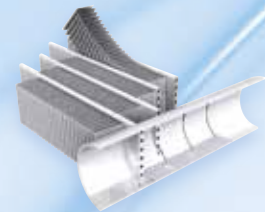


Air-cooled liquid chillers

30XA

NOVATION® MICROCHANNEL

- Latest generation of Carrier Microchannel Heat Exchangers (MCHE) with new aluminium alloy
- Up to 50% refrigerant charge reduction vs. traditional Cu/Al coils*
- Better thermal performance, better efficiency and lower air pressure drop vs. Cu/Al coils
- Enviro-Shield® and Super Enviro-Shield® coatings, as options, for mild and severe corrosive environments

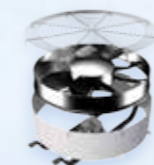


* Testing by Carrier Laboratory



SHELL AND TUBE HEAT EXCHANGER

- High efficiency flooded technology



FIXED-SPEED FLYING BIRD® FAN

SCREW COMPRESSOR

- Carrier 06T screw model
- High efficiency motor
- Variable slide valve for capacity control



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 secure access to unit parameters



KEY BENEFITS

- **High performance and full efficiency** at full and partial load, reaching the class A energy efficiency
- **Advanced control:** precise capacity matching of building load, easy management, increased computing capabilities, web-server connectivity and enhanced system integration
- **Adaptability:** wide operating envelope from -22°C up to 55°C and robust core technology suitable for various applications and installation in different climates
- **High reliability** resulting from intensive research, combined with the highest quality standards
From design to delivery at your site, the AquaForce delivers guaranteed long-term optimised performance

Physical data

30XA

COOLING

	252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1112	1202	1212	1302	1312	1352	1382	1402	1502	1702
STANDARD VERSION																								
FULL LOAD PERFORMANCES*																								
C1 NOMINAL CAPACITY kW	267	291	318	378	426	473	601	654	691	759	807	875	960	1119	1107	1216	1218	1294	1285	1383	1377	1436	1443	1611
C1 EER kW/kW	3.00	2.96	2.98	3.08	2.89	2.93	3.03	3.11	2.91	2.88	2.98	2.91	2.95	3.02	2.97	2.95	3.01	2.87	2.91	2.64	2.69	2.97	2.87	3.00
SEASONAL EFFICIENCY																								
ESEER* kW/kW	3.94	4.20	4.20	4.10	4.13	4.09	4.08	4.10	4.00	4.06	4.09	3.81	3.82	4.05	3.90	3.96	3.99	3.88	3.50	3.69	3.51	3.95	3.85	3.81
IPLV** kW/kW	4.41	4.50	4.77	4.73	4.75	4.77	4.54	4.67	4.58	4.55	4.66	4.35	4.39	4.66	4.36	4.54	4.60	4.54	3.95	4.29	3.97	4.57	4.43	4.33
SOUND POWER LEVEL dB(A)	89	89	89	92	93	93	95	94	96	96	95	97	96	96	97	96	96	100	97	97	97	97	97	97

	252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1112	1202	1212	1302	1312	1352	1382	1402	1502	1702
HIGH EFFICIENCY / HIGH AMBIENT VERSION																								
FULL LOAD PERFORMANCES*																								
C1 NOMINAL CAPACITY kW	273	298	325	391	442	499	613	679	723	785	841	886	976	1147	1144	1235	1247	1317	1326	1437	1433	1480	1525	1682
C1 EER kW/kW	3.13	3.10	3.09	3.21	3.08	3.15	3.13	3.31	3.08	3.09	3.24	3.12	3.09	3.24	3.27	3.09	3.23	3.09	3.16	3.09	3.06	3.20	3.19	3.22
FULL LOAD PERFORMANCES**																								
C1 NOMINAL CAPACITY kW	273	298	325	392	443	500	614	681	726	787	844	889	978	1151	1146	1238	1249	1321	1329	1442	1436	1485	1530	1688
C1 EER kW/kW	3.15	3.12	3.12	3.25	3.12	3.19	3.18	3.35	3.12	3.13	3.28	3.15	3.13	3.28	3.30	3.13	3.25	3.13	3.19	3.13	3.09	3.24	3.23	3.27
SEASONAL EFFICIENCY																								
ESEER* kW/kW	3.89	3.96	4.01	3.88	3.93	3.93	3.84	4.07	3.87	3.92	4.03	3.82	3.74	4.08	4.08	3.86	4.10	4.00	3.89	4.03	3.98	3.98	3.97	3.87
IPLV*** kW/kW	4.18	4.16	4.49	4.23	4.27	4.27	4.33	4.49	4.27	4.36	4.40	4.29	4.09	4.44	-	4.26	-	4.42	-	4.53	-	4.37	4.32	4.27
SOUND POWER LEVEL dB(A)	94	94	95	96	96	96	98	97	98	99	98	100	99	99	99	100	99	101	100	101	100	101	101	101
NUMBER OF COMPRESSORS / CIRCUITS	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	3 / 3	3 / 3	4 / 4
DIMENSIONS*																								
DEPTH mm	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253	2253
LENGTH mm	3604	3604	3604	4798	4798	5992	7186	7186	7186	7186	8380	8380	9574	11962	11962	11962	11962	11962	11962	11962	11962	9574 + 9574 + 8380 + 4798	9574 + 9574 + 8380 + 4798	8380
HEIGHT mm	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297	2297

C1: Cooling mode conditions: Water heat exchanger, entering/leaving temperature 12°C/7°C, fouling factor 0 m² K/W. Outside air temperature 35°C.

* In accordance with standard EN14511-3:2013

** Gross performances, not in accordance with EN14511-3:2011. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger.

*** In accordance with standard AHRI 550/590

Carrier participates in the ECP program for Liquid Chilling Packages and Hydronic Heat Pumps. Check ongoing validity of certificate on www.eurovent-certification.com

Note: Unit sizes 30XA 1402 to 1702 are supplied in two field-assembled modules.

Eurovent certified values

OPTIONS*

LOW AND MEDIUM-TEMPERATURE BRINE SOLUTION	LOW-PRESSURE SINGLE-PUMP HYDRONIC MODULE
UNIT EQUIPPED FOR AIR DISCHARGE DUCTING	LOW-PRESSURE DUAL-PUMP HYDRONIC MODULE
IP54 CONTROL BOX	CARRIER FREE COOLING SYSTEM ON TWO CIRCUITS
TROPICALISATION OF THE ELECTRICAL BOX	HIGH ENERGY EFFICIENCY
GRILLES AND ENCLOSURE PANELS	CCN TO J-BUS / LON GATEWAY
WINTER OPERATION DOWN TO -20 °C	BACNET OVER IP GATEWAY
EVAPORATOR FROST PROTECTION	ENERGY MANAGEMENT MODULE
EVAP. AND HYDRAULIC MOD. FROST PROTECTION	TOUCH PILOT CONTROL, 7" USER INTERFACE
TOTAL HEAT RECOVERY	LEAK DETECTION
MASTER/SLAVE OPERATION	DUAL RELIEF VALVES INSTALLED W/ 3-WAY VALVE
SINGLE POWER CONNECTION POINT	LOW NOISE AND VERY LOW SOUND LEVEL
SERVICE VALVE SET	ENVIRO-SHIELD ANTICORROSION PROTECTION
COMPRESSOR DISCHARGE VALVES	SUPER ENVIRO-SHIELD ANTICORROSION PROTECTION
EVAPORATOR WITH ONE PASS MORE / WITH ONE PASS LESS	COMPRESSOR ENCLOSURE
HIGH-PRESSURE SINGLE-PUMP HYDRONIC MODULE	EVAPORATOR WITH ALUMINIUM JACKET
HIGH-PRESSURE DUAL-PUMP HYDRONIC MODULE	CARRIER CONNECT LINK**

* Non-exhaustive list of options available during 2015. Contact your Carrier representative for further information. ** Carrier HVAC Europe only.



Water-cooled liquid chillers

30XW/30XW-P

AQUAFORCE CHILLERS

- Compact sizes (only 900 mm wide) for handling and installation flexibility
- Easy access to critical components for facilitation of maintenance



TOUCH PILOT™ CONTROL

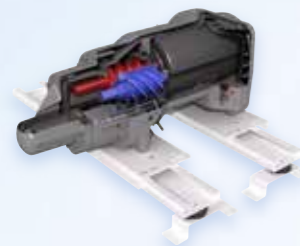
- 5" user-friendly touch screen
- All main parameters displayed on one screen
- Direct access to the unit's technical drawings and main service documents
- Easy remote monitoring via the internet
- Easy and secure access to unit parameters

SHELL AND TUBE HEAT EXCHANGER

- High efficiency flooded technology

SCREW COMPRESSOR

- Carrier 06T screw model
- High efficiency motor
- Variable slide valve for capacity control



KEY BENEFITS

- **Flexibility:** one product family that can satisfy the different requirements of every sector in the market - heating, airconditioning and industry
- **Compactness:** reduced size (1m wide) offering more handling and installation flexibility and facilitating maintenance by allowing fast and easy access to critical components.
- **Efficiency:** the AquaForce chiller is more affordable to operate and environmentally responsible, contributing to the reduction of building energy consumption and CO₂ emissions.
- **Reliability:** the AquaForce chillers undergo extensive testing in Carrier's laboratories.

Physical data

30XW

254 304 354 402 452 552 602 652 702 802 852 1002 1052 1154 1252 1352 1452 1552 1652 1702

COOLING

STANDARD VERSION (30XW)

FULL LOAD PERFORMANCES *

C1 NOMINAL CAPACITY	kW	273	307	359	459	473	532	538	677	730	792	839	1017	1060	1141	1257	1342	1453	1547	1654	1728
C1 EER	kW/kW	5.32	5.30	5.24	5.21	5.35	5.21	5.17	5.39	5.30	5.19	5.39	5.26	5.20	5.30	5.69	5.51	5.36	5.29	5.59	5.60
SEASONAL EFFICIENCY																					
ESEER *	kW/kW	5.67	5.58	5.58	5.75	5.77	5.78	5.66	6.06	6.02	5.79	5.94	6.30	6.34	6.23	6.73	6.44	6.27	6.06	6.40	6.34
IPLV **	kW/kW	6.84	6.71	6.72	6.66	6.90	6.90	6.89	7.35	7.32	7.18	7.18	7.54	7.75	7.60	8.07	7.83	7.73	7.57	7.96	7.89

HEATING

STANDARD VERSION (30XWH)

FULL LOAD PERFORMANCES *

H2 NOMINAL CAPACITY	kW	317	358	421	XW	529	599	632	751	813	887	967	1138	1190	1320	1384	1481	1612	1717	1891	1969
H2 EER	kW/kW	4.59	4.57	4.61	4.54	4.59	4.47	4.52	4.56	4.49	4.46	4.64	4.48	4.42	4.54	4.73	4.57	4.46	4.41	4.67	4.68

DIMENSIONS *

DEPTH	mm	928	928	928	936	936	936	936	1040	1040	1040	1042	1036	1036	1036	1156	1156	1156	1156	1902	1902
LENGTH	mm	2724	2724	2724	2741	2741	2741	2741	3059	3059	3059	2780	4025	4025	4025	4730	4730	4730	4730	4790	4790
HEIGHT	mm	1567	1567	1567	1692	1692	1692	1692	1848	1848	1848	1898	1870	1870	1925	2051	2051	2051	2051	1515	1515

30XW-P

512 562 712 812 862 1012 1162 1314 1464 1612 1762

COOLING

HIGH EFFICIENCY VERSION (30XW-P)

FULL LOAD PERFORMANCES *

C1 NOMINAL CAPACITY	kW	509	577	737	786	861	1039	1157	1323	1452	1626	1756
C1 EER	kW/kW	5.71	5.64	5.83	5.62	5.65	5.73	5.78	5.80	5.58	5.87	5.79
SEASONAL EFFICIENCY												
ESEER *	kW/kW	6.09	6.14	6.41	6.24	6.17	6.74	6.83	6.65	6.36	6.80	6.60
IPLV **	kW/kW	7.32	7.47	7.67	7.51	7.44	7.75	8.13	8.07	7.85	8.20	7.90

HEATING

HIGH EFFICIENCY VERSION (30XWHP)

FULL LOAD PERFORMANCES *

H2 NOMINAL CAPACITY	kW	583	662	842	904	982	1191	1320	1509	1663	1846	1989
H2 EER	kW/kW	4.91	4.84	4.97	4.79	4.85	4.90	4.86	4.89	4.71	4.89	4.87

DIMENSIONS *

DEPTH / LENGTH / HEIGHT	mm	936 / 3059 / 1743	936 / 3059 / 1743	1069 / 3290 / 1950	1069 / 3290 / 1950	1069 / 3290 / 1950	1039 / 4730 / 1997	1039 / 4730 / 1997	1162 / 4730 / 2051	1162 / 4730 / 2051	2129 / 4832 / 1562	2129 / 4832 / 1562
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C1: Cooling mode conditions: Evaporator Water heat exchanger, entering/leaving temperature 12°C/7°C, fouling factor 0 m² K/W. Condenser Water heat exchanger, entering/leaving temperature 30°C/35°C, fouling factor 0 m² K/W.
 H2: Heating mode conditions: Condenser Water heat exchanger, entering/leaving temperature 40°C/45°C, fouling factor 0 m² K/W. Evaporator Water heat exchanger, entering/leaving temperature 10°C/7°C, fouling factor 0 m² K/W.
 * In accordance with standard EN14511-3:2013. ** In accordance with standard AHRI 550/590

Eurovent certified values Eurovent certified values Carrier participates in the ECP program for Liquid Chilling Packages and Hydronic Heat Pumps. Check ongoing validity of certificate on www.eurovent-certification.com

OPTIONS*

LOW AND MEDIUM-TEMPERATURE BRINE SOLUTION	JBUS GATEWAY
LIGHT-BRINE SOLUTION, DOWN TO -3°C	LON GATEWAY
MASTER/SLAVE OPERATION	BACNET OVER IP GATEWAY
SINGLE POWER CONNECTION POINT	HIGH CONDENSING TEMPERATURE
EVAPORATOR PUMP AND DUAL PUMPS ELECTRICAL POWER / CONTROL CIRCUIT	CONDENSING TEMPERATURE LIMITATION
CONDENSER PUMP ELECTRICAL POWER / CONTROL CIRCUIT	OPTIONS CONTROL FOR LOW CONDENSING TEMPERATURE SYSTEMS
SERVICE VALVE SET	ENERGY MANAGEMENT MODULE EMM
EVAPORATOR AND CONDENSER WITH ONE PASS	TOUCH PILOT CONTROL, 7" USER INTERFACE
21 BAR EVAPORATOR AND CONDENSER	LEAK DETECTION
REVERSED EVAPORATOR AND CONDENSER WATER CONNECTIONS	CARRIER CONNECT LINK**

* Non-exhaustive list of options available during 2015. Contact your Carrier representative for further information. ** Carrier HVAC Europe only.

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 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.

Presence
in more than

60
countries

24/7
availability

More than

110 years
of experience

Carrier proposes an advanced monitoring service offer based on secure connectivity: it allows you to monitor your equipment in real time and receive recommendations from Carrier experts.



www.carrier.com

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