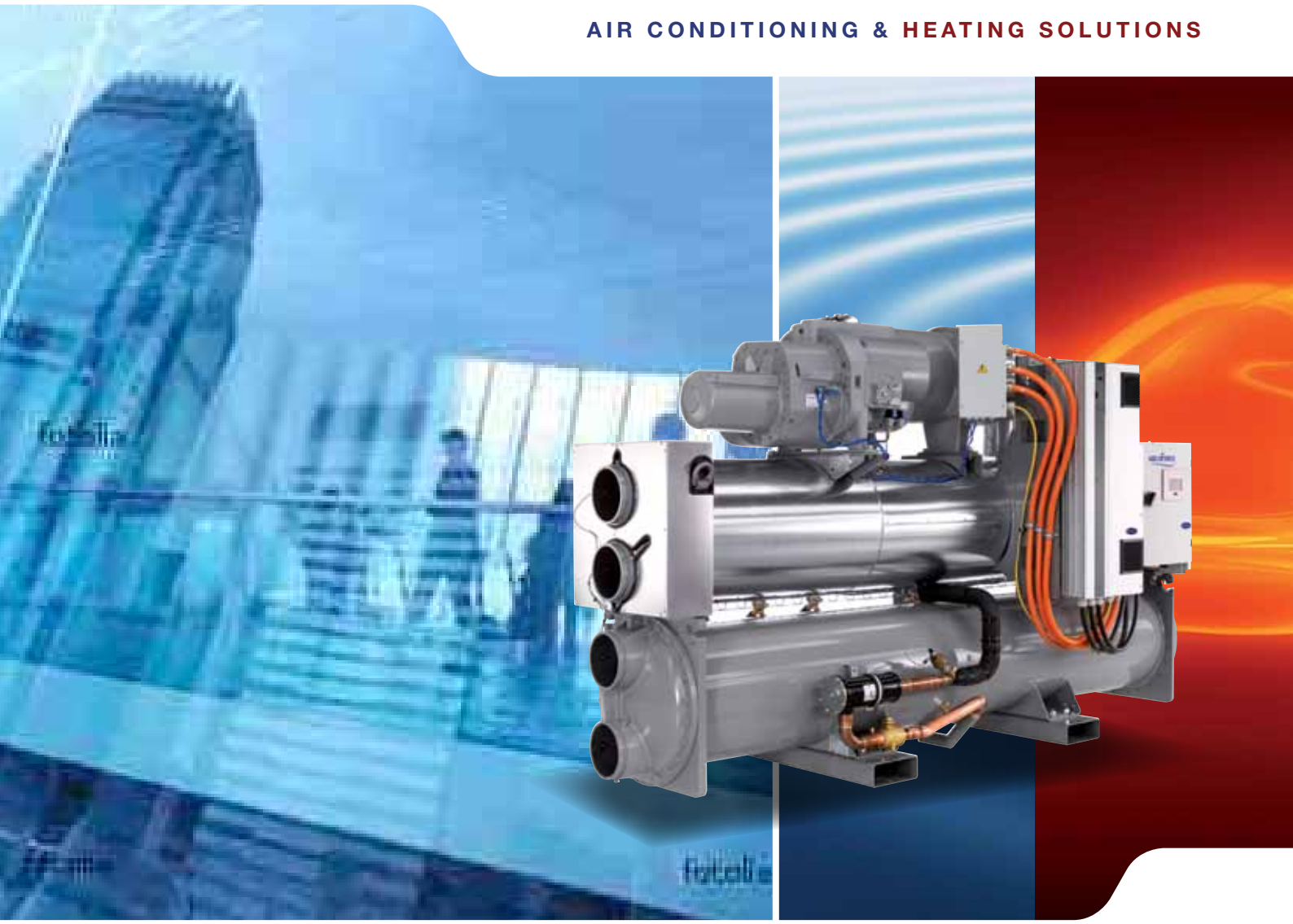
Carrier®

AIR CONDITIONING & HEATING SOLUTIONS



Variable-speed, water-cooled chillers and heat pumps

580 – 1700 kW

30XW-V/30XWHV

AQUAFORCE PLUS®

Performance PLUS

The latest Aquaforce generation: Carrier expertise **turned**

Aquaforce^{PLUS} – the renowned Aquaforce features enhanced 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 - Aquaforce^{PLUS} 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.

EUROVENT CERTIFIED PERFORMANCE
eurovent-certification.com

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 an innovative new product -Aquaforce^{PLUS}.

to meet customer needs

Seasonal efficiency^{PLUS}

The exclusive inverter-driven Carrier compressor used for the Aquaforce^{PLUS} 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.

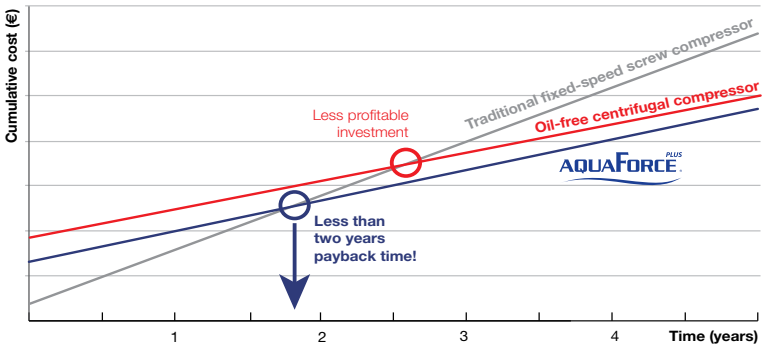
Reliability^{PLUS}

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.
Aquaforce^{PLUS} can operate even at high condensing temperatures without surge risk. The complete range was continually tested during the development stage to ensure exceptional reliability, making Aquaforce^{PLUS} a preferred solution even for the most critical applications.

Economy^{PLUS}

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 Aquaforce^{PLUS} offers exceptional cost benefits.



Costs calculated for a typical hospital application (3000 h/year, 0.15 €/kWh) with a cooling demand profile in line with the ESEER base.

Versatility^{PLUS}

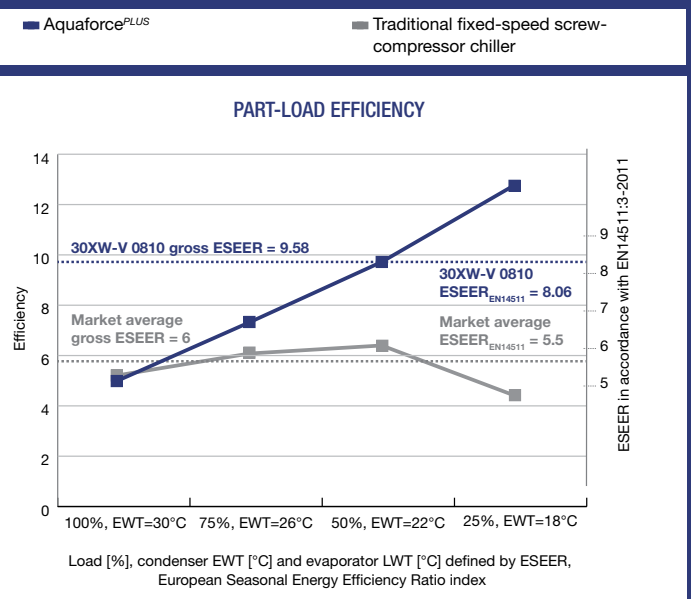
Each building or application has specific unique air conditioning and heating requirements.
The Aquaforce^{PLUS} range was developed for heating systems, high-water-column hydronic plants and variable-flow applications. The wide range of unit configurations makes Aquaforce^{PLUS} the right choice for many different applications.

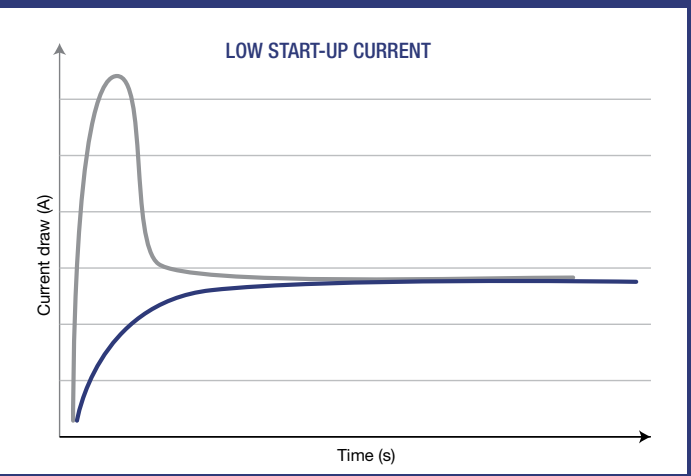
Carrier Aquaforce^{PLUS}: **designed to use**

INVERTER-DRIVEN SCREW COMPRESSORS

(CARRIER PROPRIETARY TECHNOLOGY)

- Improved efficiency, especially at part load
- Negligible start-up current and high cos (ϕ) at all load conditions
- Accurate capacity control
- Surge-free, positive-displacement technology





Aquaforce^{PLUS} is...

- Seasonal energy efficiency
- Economy
- Versatility
- Reliability

the full potential of the latest technologies

… 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 CO_2 emissions

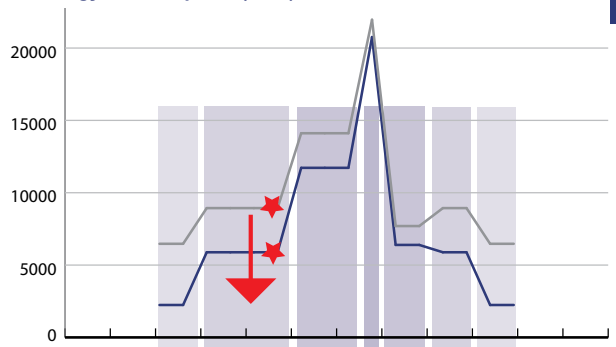
NEW TOUCHPILOT CONTROL

- 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.

Discover new Aquaforce^{PLUS} **strengths**

32% lower energy consumption!

Energy consumption (kWh)



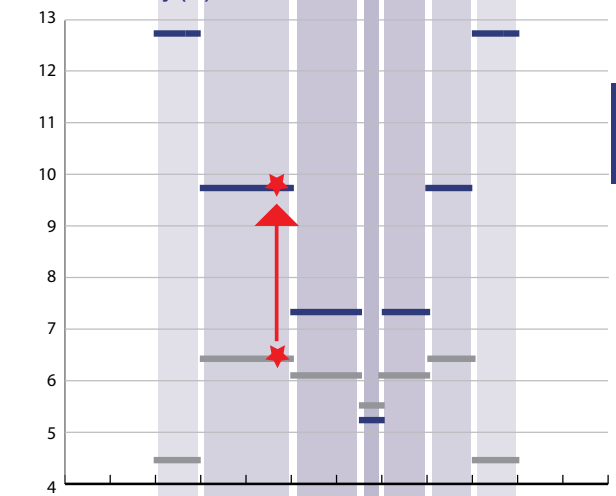
Energy consumption comparison for a unit that works every day, except Saturdays and Sundays, from 7 am to 8 pm. Assumes two further weeks off during August, the total yearly operating hours are 2158.

Example
month of May, 50% load = 400 kW
> 34% lower energy consumption!

Aquaforce^{PLUS}
Traditional fixed-speed screw-compressor chiller

Significantly higher efficiency 97% of year

Unit efficiency (%)



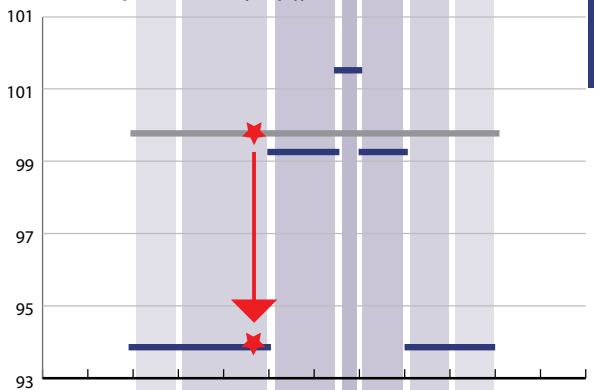
Energy efficiency comparison at ESEER conditions.

Example
month of May, 50% load
> Aquaforce^{PLUS} (ELWT = 7°C, CEWT = 22°C): EER 9.7, traditional unit (ELWT = 7°C, CEWT = 22°C): EER 6.4
> 52% higher efficiency!

Aquaforce^{PLUS}
Traditional fixed-speed screw-compressor chiller

Less noise 64% of year

Unit sound power level (dB(A))

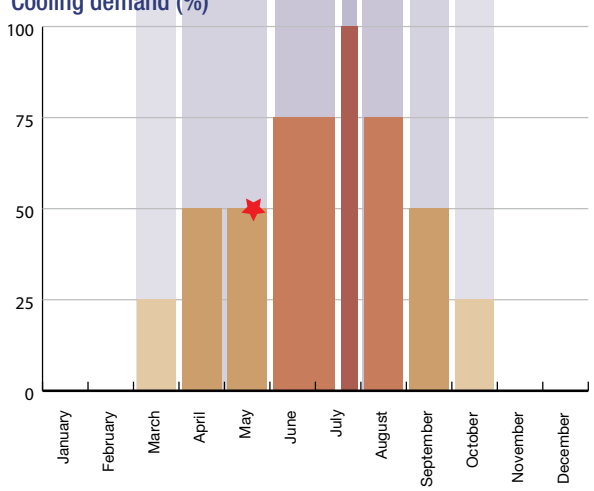


Sound emission comparison.

Example
month of May, 50% load
> Aquaforce^{PLUS}: 94 dB(A), traditional unit: 99 dB(A)
> 5 dB(A) less noise!

Aquaforce^{PLUS}
Traditional fixed-speed screw-compressor chiller

Cooling demand (%)



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

WORK IN PROGESS

Physical data

30XW-V/30XWHV		0580	0630	0810	0880	1150*	1280*	1470*	1570*	1710*
Refrigerant		R134a								
Compressor		Inverter-driven screw type								
Number of circuits		1	1	1	1	2	2	2	2	2
Capacity control steps		20% - 100%				10% - 100%				
Performance in cooling mode										
Cooling capacity (1)	kW	584	641	808	869	1140	1271	1460	1557	1694
EER (1)	kW/kW	5,34	5,30	5,29	5,00	5,38	5,30	5,08	5,02	4,94
Eurovent class		A	A	A	B	A	A	A	B	B
ESEER (1)		7,70	7,50	7,75	7,47	7,90	7,71	7,40	7,14	6,91
Cooling capacity (2)	kW	586	643	810	872	1144	1277	1468	1566	1706
EER (2)		5,57	5,56	5,51	5,22	5,62	5,57	5,39	5,36	5,31
ESEER (2)		9,00	9,03	9,58	9,04	9,25	9,25	9,18	8,98	8,92
Performance in heating mode										
Heating capacity (3)	kW									
COP (3)	kW/kW									
Eurovent class										
Heating Capacity (4)	kW	688	755	953	1033	1341	1499	1732	1850	2017
COP (4)	kW/kW	6,54	6,53	6,48	6,19	6,59	6,53	6,36	6,33	6,27
Sound level										
Sound power level (5)	dB(A)	99	99	99	99	102	102	102	102	102
Sound pressure level @ 1 m	dB(A)									
Unit dimensions										
Length	mm	3059	3059	3290	3290	4730	4730	4730	4730	4730
Width	mm	1132	1132	1138	1138	1190	1190	1212	1212	1212
Height	mm	1743	1743	1950	1950	1997	1997	2051	2051	2051
Operating weight	kg	3120	3160	4025	4050	7100	7170	7330	7525	7560

Main options

- Low-noise option
- EMC EN61800-3 - C2 compliance, for residential applications
- 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

(1) Performances based on EN14511. Evaporator entering/leaving water temperatures = 12/7°C; condenser entering/leaving water temperatures = 30/35°C

(2) Gross performances: Evaporator entering/leaving water temperatures = 12/7°C; condenser entering/leaving water temperatures = 30/35°C
NOTE: During 2013 Eurovent will certify unit performances based on EN14511. For more information please contact the Carrier sales team

(3) Performances based on EN14511. Condenser inlet/outlet temperatures = 40/45°C; Evaporator inlet temperature = 10°C

(4) Gross performances: Condenser entering/leaving water temperatures = 40/45°C; Evaporator entering water temperature = 10°C
NOTE: During 2013 Eurovent will certify unit performances based on EN14511. For more information please contact the Carrier sales team.

(5) Sound power level with option 257

** The data for sizes 1150 to 1710 is preliminary.*

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.

Your retailer:

www.carrier.com

Carrier®

turn to the experts℠

United Technologies

Climate | Controls | Security