



AQUAFORCE[®] VISION INNOVATION AT WORK



AQUAFORCE greenspeed
INNOVATION AT WORK



CARRIER PRESENTS AQUAFORCE VISION

*Variable-speed screw liquid chiller with
Greenspeed™ intelligence*



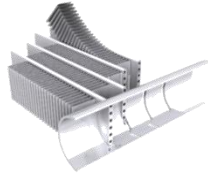
greenspeed
AQUAFORCE

30KAV

500 kW – 1100 kW

INNOVATION AT WORK

"W" shape Novation®
Micro channel



Variable-speed
Flying Bird™ fans



Advanced
Touch Pilot™

Variable-speed
dual pumps

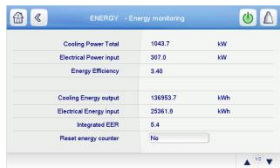


Flooded shell and
tube evaporator

Variable-speed
twin screw
compressor



Smart energy
monitoring

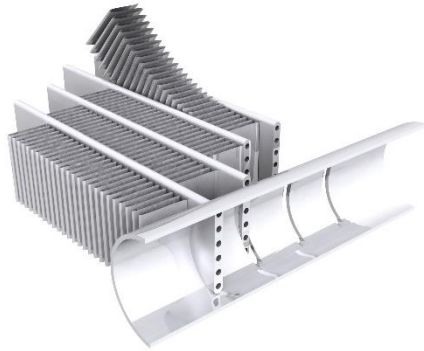


ENERGY - Energy monitoring	
Cooling Power Total	1543.7 kW
Electrical Power input	367.6 kW
Energy Efficiency	5.48
Cooling Energy output	13693.7 kWh
Electrical Energy input	25361.8 kWh
Integrated COP	5.4
Reset energy counter	Yes



BACK TO
OVERVIEW

NOVATION® MICRO CHANNEL



3RD GENERATION OF “W” SHAPE NOVATION® MICRO CHANNEL HEAT EXCHANGERS

- Exclusive Carrier design
- Increased reliability with new aluminum alloy
- Significantly reduces refrigerant charge (-40% vs cu/al coils)
- More compact units (-25% vs previous 30XAV generation)
- Enviro-shield™ coating for mildly corrosive environments
- Super Enviro-shield™ coating for highly corrosive environments (industry or marine applications)
- Easy cleaning with high pressure air or water washer



FLYING BIRD™ FANS



6TH GENERATION OF VARIABLE-SPEED FLYING BIRD™ FANS

- Exclusive Carrier design
- Fan blade design inspired by nature
- High efficiency version with AC motor technology
- EC motor technology (option)



VARIABLE-SPEED SCREW COMPRESSOR



LATEST GENERATION CARRIER VARIABLE-SPEED 06Z TWIN SCREW COMPRESSOR WITH AC MOTOR

- Exclusive Carrier design
- Twin screw compressor designed for variable speed operation
- High efficiency AC motor
- Stepless variable-speed control (0%-100%)
- Integrated resonator array for compressor acoustic attenuation
- Integrated check valve for quiet shutdown
- Air-cooled variable-speed drive for increased reliability
- Bearing life exceeding 100,000 hours



VARIABLE-SPEED DUAL PUMPS



VARIABLE-SPEED DUAL PUMPS WITH AC MOTOR

- Dual pumps designed for variable speed operation
- High efficiency AC motor
- Low static pressure (~100 kPa) or high static pressure (~180 kPa) available
- 3 pump control modes available: constant water flow with 2 speeds, variable water flow based on constant delta T or constant delta P
- Compatibility of chillers for variable primary flow operation



FLOODED SHELL AND TUBE EVAPORATOR

FLOODED SHELL AND TUBE EVAPORATOR

- Exclusive Carrier design
- Flooded technology for high energy efficiency
- New generation of copper tubes with specific profile to reduce pressure drops when operating with glycol
- Able to produce brine up to -15°C



BACK TO
OVERVIEW

SMART VIEW TOUCH SCREEN

ADVANCED SMARTVIEW™ 7 INCH COLOR TOUCH SCREEN INTERFACE

- Exclusive Carrier design
- 10 languages available: DE, EN, ES, FR, IT, NL, PT, TR, RU + one additional customer choice
- Touch screen user interface
- BACnet, J-Bus or LON communication interfaces
- Optional wireless connectivity

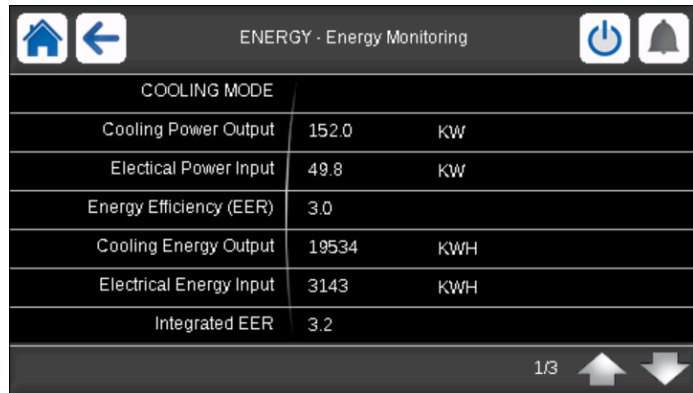


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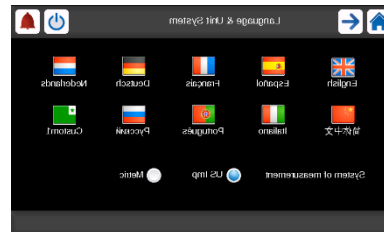
SMART ENERGY MONITORING

POWERFUL SMART ENERGY MONITORING FUNCTION

- Provides smart data based on intelligent algorithms
- Real time energy consumption measurement (kWh)
- Cooling energy output measurement (kWh)
- Instantaneous and average Energy Efficiency Ratio



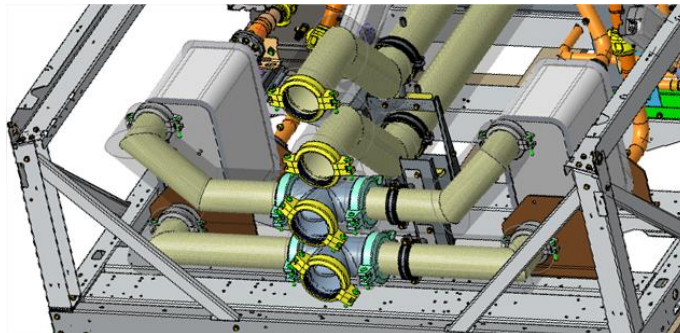
ENERGY - Energy Monitoring		
COOLING MODE		
Cooling Power Output	152.0	KW
Electrical Power Input	49.8	KW
Energy Efficiency (EER)	3.0	
Cooling Energy Output	19534	KWH
Electrical Energy Input	3143	KWH
Integrated EER	3.2	



HEAT RECOVERY

HEAT RECOVERY (OPTIONS 49 & 50)

- Partial heat recovery (Option 49)
- Total heat recovery (Option 50)
- Variable reclaim : No load limit to activate reclaim
- BPHE in serial with air condenser
- Less complexity, more flexibility
- Desuperheater mode





ONE PRODUCT

MANY APPLICATIONS



MULTI-RESIDENTIAL



GREEN BUILDING



INDUSTRY



HOTEL



DATA CENTER



HOSPITAL





KEY BENEFITS

-  Outstanding performance
-  Low sound levels
-  Intelligence & connectivity
-  Environmentally responsible
-  Extensive scope of application
-  Easy installation & maintenance



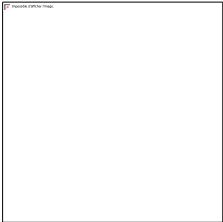
OUTSTANDING PERFORMANCE



SEER
UP TO
5,5

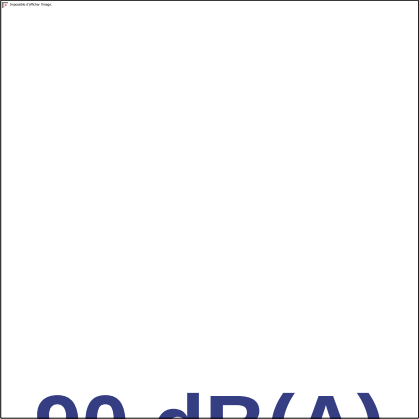
Equipped with variable-speed screw compressors, variable-speed fans and optional variable-speed pumps, Carrier's **AquaForce® Vision 30KAV chiller with Greenspeed™ intelligence automatically adjusts the cooling capacity and the water flow to perfectly match the needs of the building** or the process load variations. The result is optimum operation at both full load and part load.

30KAV offers energy efficiency up to **40% higher** than the 30GX range with the same footprint.



The range is already **fully compliant with the 2021 Ecodesign regulations**.

LOW SOUND LEVELS



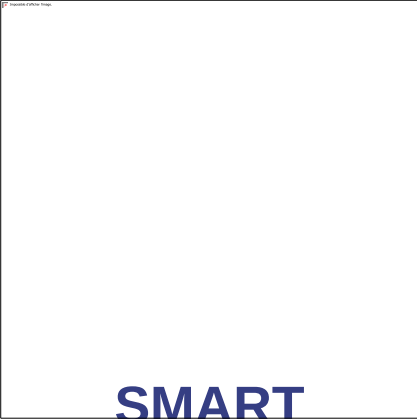
90 dB(A)

The new generation of Carrier 06Z variable-speed twin screw compressor with integrated resonator array and the 6th generation of Flying Bird™ fans with new fan blade design inspired by nature help **reduce compressor and airflow noise down to as little as 90 dB(A).**

30KAV is **6 dB(A) quieter** than the previous AquaForce® 30XAV generation.



INTELLIGENCE & CONNECTIVITY



SMART ENERGY MONITORING

The advanced Touch Pilot™ intelligent control system displays **operating parameters in real time**, making it intuitive and particularly user-friendly.

30KAV also features innovative **smart energy monitoring**, providing users with smart data such as real time electric energy consumption, cooling energy output and instantaneous and average seasonal energy efficiency ratios.

For further energy savings, 30KAV can be monitored remotely by Carrier experts for **energy consumption diagnosis and optimization**.

ENVIRONMENTALLY RESPONSIBLE



UP TO
-25%
LESS
CO₂ EMISSION

Carrier's AquaForce® Vision 30KAV with Greenspeed™ intelligence is a boost for green cities and contributes to a sustainable future.

Combining a **reduced load of refrigerant** and **exceptional energy efficiency** it significantly **lowers energy consumption** while **reducing carbon dioxide emissions by 25%** throughout its life cycle.

The AquaForce® Vision PUREtec™ version, designed exclusively for ultra low GWP HFO R-1234ze, will be available in 2018.



PUREtec



EXTENSIVE SCOPE OF APPLICATION



FROM
-20°C
TO **55°C**

Carrier's AquaForce® Vision adapts effortlessly to a wide range of applications.

Extended operating temperatures **from -20°C to 55°C** outdoor air temperatures and negative water temperatures make it ideal for various sectors of activity. From high-end office buildings and hotels to healthcare facilities, data centers and industrial projects, **AquaForce® Vision 30KAV meets the most demanding expectations in terms of energy efficiency and savings**, whatever the climate and wherever the location.



EASY INSTALLATION & MAINTENANCE



25%
SMALLER

Built-in variable-speed pumps up to 800 kW, automatic nominal water flow adjustment through electronic control, automatic unit energy performance measurement under real conditions, in units that are **25% smaller than the previous 30XAV generation**, all these new features provide **peace of mind for installers and service companies** alike.



30KAV

STANDARD EFFICIENCY



30KAV		500	550	600	650	720	800	900	1000	1100
NOMINAL COOLING CAPACITY	kW	493	537	600	636	723	791	892	975	1079
SEER (ECODESIGN)	kW/kW	4.97	4.95	5.23	5.21	5.34	5.15	5.24	5.13	5.27
ESEER (EUROVENT)	kW/kW	4.76	4.77	4.98	5.00	5.16	4.93	5.07	4.93	5.04
SEER (ECODESIGN) (OPTION 17)	kW/kW	5.02	5.00	5.29	5.27	5.42	5.21	5.32	5.20	5.35
ESEER (EUROVENT) (OPTION 17)	kW/kW	4.80	4.81	5.05	5.07	5.24	4.99	5.15	4.99	5.12
EER (EUROVENT)	kW/kW	3.00	2.91	3.14	2.98	3.19	3.03	3.07	2.98	3.05
ENERGY CLASS (EUROVENT)	CLASS	B	B	A	B	A	B	B	B	B
SOUND POWER LEVEL										
STANDARD UNIT ⁽¹⁾	dB(A)	95	95	96	98	99	98	99	98	100
LOW NOISE (OPTION 15) ⁽²⁾	dB(A)	94	94	94	96	97	96	97	97	98
VERY LOW NOISE (OPTION 15LS) ⁽²⁾	dB(A)	90	90	90	92	94	92	94	93	94
LENGTH - WIDTH -HEIGHT	mm	4350 x 2253 x 2297	4350 x 2253 x 2297	5540 x 2253 x 2297	5540 x 2253 x 2297	6735 x 2253 x 2297	6735 x 2253 x 2297	7925 x 2253 x 2297	7925 x 2253 x 2297	9120 x 2253 x 2297
REFRIGERANT		R-134a								

(*) In accordance with standard EN14511-3:2013.

(1) in dB ref=10-12 W, 'A' weighted. Declared dual-number noise emission values in accordance with ISO 4871 with an associated uncertainty of +/-3dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) Options: 15=Low noise level ; 15LS=Very low noise level.

Eurovent certified values

30KAV

HIGH ENERGY EFFICIENCY



30KAV option 119+		500	550	600	650	720	800	900	1000	1100
NOMINAL COOLING CAPACITY	kW	517	575	611	661	731	819	907	1010	1097
SEER (ECODESIGN) (OPTION 119)	kW/kW	5.32	5.32	5.40	5.38	5.44	5.36	5.31	5.29	5.33
ESEER (EUROVENT) (OPTION 119)	kW/kW	5.11	5.13	5.15	5.13	5.25	5.15	5.11	5.09	5.08
SEER (ECODESIGN) (OPTION 119+)	kW/kW	5.43	5.43	5.50	5.47	5.53	5.47	5.41	5.40	5.43
ESEER (EUROVENT) (OPTION 119+)	kW/kW	5.22	5.23	5.25	5.24	5.36	5.26	5.21	5.20	5.19
EER (EUROVENT)	kW/kW	3.49	3.41	3.42	3.32	3.37	3.35	3.29	3.30	3.25
ENERGY CLASS (EUROVENT)	Class	A	A	A	A	A	A	A	A	A
SOUND POWER LEVEL										
STANDARD UNIT ⁽¹⁾	dB(A)	96	96	97	98	99	98	100	98	100
LOW NOISE (OPTION 15) ⁽²⁾	dB(A)	95	95	94	96	97	96	98	98	98
VERY LOW NOISE (OPTION 15LS) ⁽²⁾	dB(A)	90	91	91	92	94	92	94	93	94
LENGTH - WIDTH - HEIGHT	mm	6735 x 2253 x 2297	6735 x 2253 x 2297	6735 x 2253 x 2297	6735 x 2253 x 2297	7925 x 2253 x 2297	9120 x 2253 x 2297	9120 x 2253 x 2297	10305 x 2253 x 2297	10305 x 2253 x 2297
REFRIGERANT		R-134a								

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Eurovent certified values



OPTIONS

OPTIONS

EC fans	High ambient temperature operation up to 55°C
High energy efficiency	IP 54 control box
High energy efficiency+	Evaporator and pumps aluminum jacket
Low pressure variable-speed dual pumps	Service valves
High pressure variable-speed dual pumps	BACnet, JBus and Lon communication interfaces
Low noise, very low noise, ultra-low noise	Carrier Connect wireless connectivity for remote energy monitoring
Side enclosure panels and grilles	PUREtec™ version

