



United Technologies

DESIGNING INNOVATIVE SOLUTIONS

AIR CONDITIONING AND HEATING SOLUTIONS

# SIMPLICITY **OR** INTELLIGENCE?

AQUASNAP<sup>®</sup>, BECAUSE YOU SHOULD NOT HAVE TO CHOOSE.



Heat pumps and  
water-cooled chillers

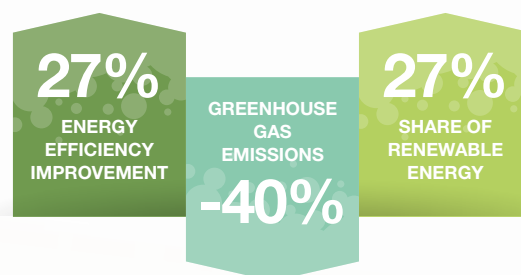
Cooling capacity 25 – 190 kW  
Heating capacity 29 – 230 kW

30WG / 61WG / 30WGA

**AQUASNAP<sup>®</sup>**

# Carrier, committed to environmental responsibility

Carrier is committed to limiting the environmental impact of its products and solutions and reducing energy consumption. This commitment is in line with the targets of the European climate and energy package for 2030:



## Ecodesign

Ecodesign takes into account a product's impact on the environment throughout its lifecycle and plays an essential role in meeting the 2030 targets. In the European Union, the Ecodesign Directive sets mandatory energy efficiency requirements for all energy-related products (ERPs), including air conditioning products. Therefore, this directive pushes the market away from low-performance products, requiring manufacturers to develop products that consume less energy.

## SCOP Calculation

SCOP is the ratio between annual heating demand and annual energy input over an entire heating season.

$$\text{SCOP} = \frac{\text{ANNUAL HEATING DEMAND}}{\text{ANNUAL ENERGY INPUT*}}$$

\* Annual energy input:  
 - Compressor running (SCOPon)  
 - Backup heater to supplement heat pump capacity  
 - Compressor not running: thermostat OFF, standby, OFF mode & crankcase heater

## New energy efficiency metric

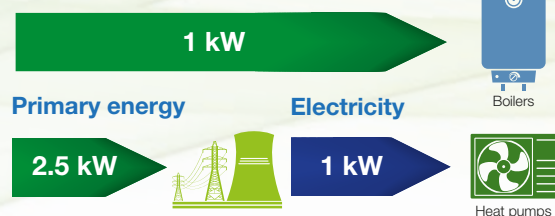
The SCOP is a new European parameter to evaluate the energy efficiency of heat pumps. Previously, COP (Coefficient of Performance) was used to measure the ratio of power consumed to power produced in the heating mode. As these values focused on a single operating point, they were not representative of operation during the heating season. SCOP addresses this by including seasonal variations in the performance rating.

### $\eta_s$ : seasonal primary energy efficiency metrics:

In order to compare the energy efficiency of products using different sources of energy, such as boilers (gas, fuel) and electric heat pumps, the Ecodesign regulation introduces a new measurement expressed in primary energy:  $\eta_s$  (eta s).

$$\eta_s = \text{SCOP} / 2.5^* \times 100 - i^{**}$$

#### Primary energy



In Europe, on average, 2.5 kW\*\*\* of primary energy is required to generate 1 kW of electricity.

\*\*Air source heat pump  $i = 3$   
 Water source heat pump:  $i = 8$

\*\*\*Source: EU Regulation 813/2013

## 30WG / 61WG / 30 WGA

The 30WG and 61WG ranges are fully compliant with the Ecodesign regulation. The 30WGA condenserless range is not subject to the Ecodesign regulation.



# AquaSnap<sup>®</sup>, the right solution for every application

## 30WG



SEER 12/7°C up to **6.24**  
SEPR 12/7°C up to **7.13**  
SCOP 30/35°C up to **6.37**



**HEATING  
& COOLING**

## 61WG



SCOP 47/55°C up to **5.14**  
High temperature up to **65°C**



**HEATING  
APPLICATIONS**

## 30WGA



EER 12/7°C up to **3.94**



**COOLING  
APPLICATIONS**

### 30WG

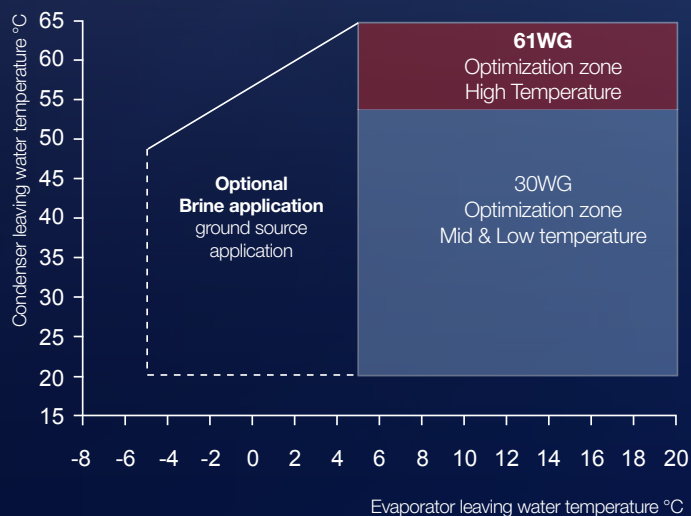
The unit is Carrier heat pump designed for commercial (offices, small hotels, leisure facilities), residential and industrial applications. The 30WG offers a **unique combination of high performance and functionality** in an exceptionally compact chassis.

### 61WG

The unit is designed for **high temperature heating applications** with hot water production possible up to 65°C

### 30WGA

The unit is a condenserless version designed for air-conditioning and process applications with high performance. The 30WGA unit is compatible with the Carrier 09PE remote condensers for an optimized global solutions. **It ensures optimal all-round performance levels.**



# AquaSnap®

as intelligent as it is simple



**1.4M<sup>2</sup>**  
FOR **200W**  
FOOTPRINT

## ■ Easy installation

Designed for rapid installation in both new projects or existing buildings, the AquaSnap units offer **flexible water connections** from the top or rear to adapt easily to site configuration. The units are also **compact**, for minimal footprint (1.4m<sup>2</sup> for 200kW), and **stackable** (size 020 to 090) for further space saving when water connections are at the back. All **components are easily accessible** for maintenance operations. combination of high performance and functionality in an exceptionally compact chassis.



FROM  
**-12°C**  
TO **20°C**

## ■ Large operating map

The 30WG is fully operational in many applications. Its **-12 °C to 20°C** leaving water temperature range suits an extended scope of requirements from residential, or light commercial to industrial applications. Offering **heating temperatures up to 65°**, the 61WG has been designed to provide **domestic hot water** while cooling on the terminal unit side.



**100%**  
COMPATIBLE

## ■ Adaptability

The unit can **connect to any source**, cooling towers or dry coolers, and any emitter, including comfort units, floor heating, chilled beams, air handling units or radiators. It is **fully compatible with Carrier's wide range of dry coolers** for enhanced energy efficiency. The range also ensures **maximum safety and reliability**, with condensing pressure valve control for operation with dry coolers in cold weather.



UP TO  
**-80%**  
energy  
consumption

## ■ Lower energy consumption

An optional **variable water flow pump** optimizes unit operation and reduces running costs. It is available in both evaporator and condenser sides and can be controlled at constant temperature or pressure. The range can also be integrated into the Aquasmart Touch Pilot system, offering flexible **time scheduling and zone management** for enhanced comfort and reduced energy consumption.



**67 dB (A)**

## ■ Acoustic comfort

Thanks to the Low Noise option, the unit offers sound levels that are among the lowest on the market. A very low noise option that **deducts 7 dB(A)** is available for highly sensitive environments such as residential application (size 020 to 090).



UP TO  
**40% LESS**  
refrigerant  
charge

## ■ Ecodesign

Carrier products are designed to take account of their environmental impact throughout their lifecycle. They comply fully with the **Ecodesign** regulation on energy savings and reduced carbon footprint.

# Technical insight



## TOUCH PILOT™ CONTROL

- 4,3" user-friendly multilanguage touch screen
- All main parameters displayed on one screen
- Easy remote monitoring via the internet
- Easy and secured access to unit parameters
- BMS communication via Modbus, LON or BACNET (Option)



ELECTRONIC EXPANSION VALVE



SCROLL COMPRESSORS



HYDRAULIC MODULE (Option)



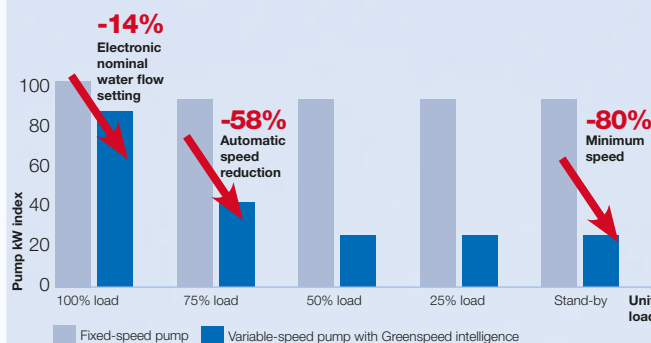
BRAZED PLATE HEAT EXCHANGERS

## HYDRAULIC MODULE AND FLEXIBLE WATER CONNECTIONS

- 30WG and 61WG units can be supplied with a **hydraulic module** either on the condenser or evaporator side.
- The hydraulic module includes a **circulating pump, valves and an expansion vessel (in option)**.
- The circulating pump can either be **fixed speed** or with **variable water flow**.
- **Two control modes** for reduced energy consumption:
  - Constant  $\Delta t$  (°K)
  - Constant pressure
- **Water connections** can either be located on the rear of the unit (in standard) or on the top (in option) to fit every site configurations.



- **Pumping energy savings:** The units can be equipped with one or two variable-speed pumps to save significant pumping energy costs (up to 2/3) during partial load operation and stand-by periods.



Source: Carrier estimates based on pump affinity law and variable water flow hydraulic system design. This information is intended as an example for comparison purposes only.



# Technical characteristics



30WG				020	025	030	035	040	045	050	060	070	080	090
HEATING														
Full load performances*	HW1	Nominal capacity	kW	28	33	35	41	47	52	65	73	81	93	103
		COP	kW/kW	3,59	3,63	3,61	3,60	3,67	3,61	3,58	3,62	3,54	3,70	3,56
	HW3	Nominal capacity	kW	30	35	38	44	50	56	70	77	89	101	114
COP		kW/kW	5,53	5,53	5,49	5,52	5,49	5,51	5,58	5,48	5,53	5,46	5,50	
Seasonal efficiency**	HW1	SCOP <sub>30/35°C</sub>	kW/kW	5,46	5,45	5,36	5,40	5,35	5,38	6,12	6,08	6,09	6,11	6,09
		ηs heat <sub>30/35°C</sub>	%	211	210	206	208	206	207	237	235	235	236	235
	HW3	SCOP <sub>47/55°C</sub>	kW/kW	4,36	4,37	4,34	4,37	4,40	4,34	4,91	4,96	4,85	5,08	4,91
		ηs heat <sub>47/55°C</sub>	%	167	167	166	167	168	166	188	190	186	195	188
		Prated	kW	32	37	40	47	54	59	75	83	93	106	118
		Energy labelling		A++	A++	A++	A++	A++	A++	-	-	-	-	-
COOLING														
Standard units	CW1	Nominal capacity	kW	25	29	32	37	42	47	58	63	74	84	95
		EER	kW/kW	4,72	4,72	4,69	4,73	4,69	4,72	4,72	4,65	4,69	4,65	4,68
Full load performances*	CW2	Eurovent class		B	B	B	B	B	B	B	B	B	B	B
		Nominal capacity	kW	34	39	43	50	57	66	79	86	102	113	129
		EER	kW/kW	6,42	6,10	6,03	6,04	5,90	6,06	6,12	5,95	6,19	5,93	6,13
Seasonal efficiency*		Eurovent class		A	A	A	A	A	A	A	A	A	A	A
		SEER <sub>12/7°C</sub> Comfort low temp.	kW/kW	4,94	4,97	4,88	4,84	4,81	4,72	5,60	5,62	5,49	5,57	5,62
		SEPR <sub>12/7°C</sub> Process high temp.	kW/kW	6,42	6,44	6,26	6,22	6,26	6,31	6,63	6,50	6,48	6,59	6,62
		SEER <sub>23/18°C</sub> Comfort medium temp.	kWh/kWh	5,96	5,76	5,62	5,60	5,52	5,57	6,56	6,33	6,19	6,22	6,14
		SEPR <sub>23/18°C</sub> Process medium temp.	kWh/kWh	3,86	4,23	4,41	4,32	4,44	3,98	4,24	4,83	4,65	4,89	4,87
Operating weight <sup>(1)</sup>			kg	191	200	200	207	212	220	386	392	403	413	441
Sound levels <sup>(2)</sup>														
Sound power level, standard unit			dB(A)	67	68	69	69	70	70	72	72	72	73	73
Sound power level, option 257			dB(A)	65	66	66	67	68	68	68	69	69	69	70
Sound power level, option 257 + 258			dB(A)	60	62	62	62	64	63	65	65	65	66	66
Dimensions, standard unit <sup>(3)</sup>														
Length			mm	600	600	600	600	600	600	880	880	880	880	880
Width			mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474
Height			mm	901	901	901	901	901	901	901	901	901	901	901

30WG				110	120	140	150	170	190
HEATING									
Full load performances*	HW1	Nominal capacity	kW	137	156	172	183	206	230
		COP	kW/kW	5,63	5,61	5,53	5,67	5,62	5,59
	HW3	Nominal capacity	kW	125	140	155	167	189	209
		COP	kW/kW	3,59	3,63	3,57	3,60	3,76	3,60
Seasonal efficiency**	HW1	SCOP <sub>30/35°C</sub>	kW/kW	6,31	6,37	6,29	6,31	6,32	6,18
		ηs heat <sub>30/35°C</sub>	%	244	247	244	244	245	239
	HW3	SCOP <sub>47/55°C</sub>	kW/kW	5,05	5,09	5,05	5,02	5,17	4,96
		ηs heat <sub>47/55°C</sub>	%	194	196	194	193	199	190
	Prated		kW	143	161	178	191	216	239
COOLING									
Standard units		Nominal capacity	kW	115	130	144	153	172	192
Full load performances*	CW1	EER	kW/kW	4.79	4.77	4.70	4.83	4.78	4.79
		Eurovent class		B	B	B	B	B	B
	CW2	Nominal capacity	kW	155	176	196	207	231	262
		EER	kW/kW	6.20	6.10	6.01	6.23	5.97	6.14
Seasonal efficiency*	Eurovent class			A	A	A	A	A	A
	SEER <sub>12/7°C</sub>	Comfort low temp.	kW/kW	6.12	6.24	6.17	5.97	6.06	5.96
	SEPR <sub>12/7°C</sub>	Process high temp.	kW/kW	6.95	7.10	6.95	6.72	6.72	6.74
	SEER <sub>23/18°C</sub>	Comfort medium temp.	kWh/kWh	6.98	7.13	6.90	6.54	6.62	6.41
	SEPR <sub>23/18°C</sub>	Process medium temp.	kWh/kWh	4.01	4.40	4.35	4.52	4.65	4.45
Operating weight <sup>(1)</sup>			kg	707	733	758	841	877	908
Sound levels <sup>(2)</sup>									
Sound power level, standard unit			dB(A)	76	77	78	76	77	78
Sound power level, option 257			dB(A)	73	74	75	73	74	75
Dimensions, standard unit <sup>(3)</sup>									
Length			mm	880	880	880	880	880	880
Width			mm	1583	1583	1583	1583	1583	1583
Height			mm	1574	1574	1574	1574	1574	1574

\* In accordance with standard EN14511-3:2013  
 \*\* In accordance with standard EN14825:2013, average climate  
 HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m².k/W  
 HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m².k/W  
 CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m².k/W  
 CW2 Cooling mode conditions: Evaporator water entering/leaving temperature 23°C/18°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m².k/W  
 η<sub>s heat</sub> & SCOP<sub>30/35°C</sub> Applicable Ecodesign regulation: (EU) No 813/2013  
 η<sub>s heat</sub> & SCOP<sub>47/55°C</sub> Applicable Ecodesign regulation: (EU) No 813/2013  
 SEER<sub>12/7°C</sub> & SEPR<sub>12/7°C</sub> Applicable Ecodesign regulation: (EU) No 2016/2281  
 SEER<sub>23/18°C</sub> & SEPR<sub>23/18°C</sub> Applicable Ecodesign regulation: (EU) No 2016/2281  
 Applicable Ecodesign regulation: (EU) No 2015/1095  
 (1) Weight shown is a guideline only. Please refer to the unit nameplate  
 (2) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.  
 (3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

30WGA			020	025	030	035	040	045	050	060	070	080	090	110	120	140	150	170	190
<b>COOLING</b>																			
<b>Standard units</b>	CS1	Nominal capacity kW	23	27	29	34	39	43	55	59	68	78	87	106	119	132	140	159	175
<b>Full load performances*</b>	EER	kW/kW	3.70	3.76	3.68	3.73	3.75	3.70	3.70	3.66	3.64	3.81	3.77	3.78	3.78	3.72	3.75	3.81	3.72
<b>Operating weight<sup>(1)</sup></b>		kg	164	171	171	177	180	185	321	324	332	339	354	762	787	814	909	944	975
<b>Operating weight with option 258<sup>(1)</sup></b>		kg	171	178	178	184	187	192	334	337	345	352	367						
<b>Sound levels<sup>(2)</sup></b>																			
Sound power level, standard unit		dB(A)	67	68	69	69	70	70	72	72	72	73	73	76	77	78	76	77	78
Sound power level, option 257		dB(A)	65	66	66	67	68	68	68	69	69	69	70	73	74	75	73	74	75
Sound power level, option 257 + 258		dB(A)	60	62	62	62	64	63	65	65	65	66	66						
<b>Dimensions, standard unit (3)</b>																			
Width		mm	600	600	600	600	600	600	880	880	880	880	880	880	880	880	880	880	880
Length		mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474	1583	1583	1583	1583	1583	1583
Height		mm	901	901	901	901	901	901	901	901	901	901	901	1574	1574	1574	1574	1574	1574

\* In accordance with standard EN14511-3:2013. Refrigerant piping equivalent length (without drier and valves) = 3 m.  
CS1 Cooling mode conditions: evaporator entering/leaving water temperature 12 °C/7 °C, saturated condensing temperature 45 °C, subcooling 5 K, evaporator fouling factor 0 m<sup>2</sup>/kW.  
(1) Weight shown is a guideline only. Please refer to the unit nameplate  
(2) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.  
(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings.

61WG			020	025	030	035	040	045	050	060	070	080	090	110	120	140	150	170	190
<b>HEATING</b>																			
<b>Standard unit</b>	HW1	Nominal capacity kW	29	34	38	44	50	57	69	78	88	100	117	135	151	175	183	204	235
<b>Full load performances*</b>	COP	kW/kW	5.42	5.29	5.21	5.29	5.34	5.32	5.49	5.36	5.46	5.28	5.33	5.48	5.44	5.44	5.62	5.49	5.48
	HW3	Nominal capacity kW	27	32	35	41	47	52	64	74	80	90	103	123	138	158	163	184	211
	COP	kW/kW	3.65	3.68	3.52	3.59	3.56	3.66	3.75	3.64	3.63	3.56	3.60	3.61	3.53	3.61	3.61	3.52	3.60
	HW4	Nominal capacity kW	26	31	34	40	43	49	61	71	76	85	97	118	131	150	157	174	200
	COP	kW/kW	2.96	2.96	2.86	2.93	2.88	2.96	2.98	3.04	2.99	2.94	2.97	2.83	2.74	2.85	2.86	2.70	2.85
<b>Seasonal efficiency**</b>	HB1	Nominal capacity kW	22	26	29	34	38	42	50	57	67	75	87						
	COP	kW/kW	4.24	4.26	4.29	4.27	4.27	4.25	4.25	4.27	4.26	4.28	4.29						
	HW1	SCOP <sub>30/35°C</sub> kW/kW	5.36	5.20	5.11	5.19	5.23	5.19	5.84	5.93	5.93	5.83	5.82	6.26	6.14	6.21	6.06	6.09	5.99
		η <sub>s</sub> heat <sub>30/35°C</sub> %	206	200	197	200	201	200	226	229	229	225	225	240	242	238	232	233	230
	HW3	SCOP <sub>47/55°C</sub> kW/kW	4.37	4.32	4.20	4.28	4.32	4.35	4.86	4.88	4.80	4.89	4.80	4.80	5.03	4.98	4.94	5.14	4.79
		η <sub>s</sub> heat <sub>47/55°C</sub> %	167	165	160	163	165	166	186	187	184	188	184	184	193	191	190	198	184
	P <sub>rated</sub>	kW	32	38	42	49	56	63	76	88	97	109	124	141	159	178	189	215	236
	Energy labelling		A++	A++	A++	A++	A++	A++	-	-	-	-	-	-	-	-	-	-	-
<b>Operating weight<sup>(1)</sup></b>		kg	191	200	200	207	212	220	386	392	403	413	441	707	733	758	841	877	908
<b>Sound levels<sup>(2)</sup></b>																			
Sound power level, standard unit		dB(A)	67	68	69	69	70	70	72	72	72	73	73	76	77	78	76	77	78
Sound power level, option 257		dB(A)	65	66	66	67	68	68	68	69	69	69	70	73	74	75	73	74	75
Sound power level, option 257 + 258		dB(A)	60	62	62	62	64	63	65	65	65	66	66	-	-	-	-	-	-
<b>Dimensions, standard unit<sup>(3)</sup></b>																			
Length		mm	600	600	600	600	600	600	880	880	880	880	880	880	880	880	880	880	880
Width		mm	1044	1044	1044	1044	1044	1044	1474	1474	1474	1474	1474	1583	1583	1583	1583	1583	1583
Height		mm	901	901	901	901	901	901	901	901	901	901	901	1574	1574	1574	1574	1574	1574

\* In accordance with standard EN14511-3:2013  
\*\* In accordance with standard EN14825:2013, average climate  
HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>/kW  
HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m<sup>2</sup>/kW  
HW4 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 55°C/65°C, evaporator and condenser fouling factor 0 m<sup>2</sup>/kW  
HB1 Heating mode conditions: Evaporator entering/leaving water temperature 0°C/-3°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>/kW, evaporator fluid: 30% ethylene glycol.  
Applicable Ecodesign regulation: (EU) No 813/2013  
η<sub>s</sub> heat<sub>30/35°C</sub> & SCOP<sub>30/35°C</sub> Applicable Ecodesign regulation: (EU) No 813/2013  
η<sub>s</sub> heat<sub>47/55°C</sub> & SCOP<sub>47/55°C</sub> Applicable Ecodesign regulation: (EU) No 813/2013  
(1) Weight shown is a guideline only. Please refer to the unit nameplate  
(2) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1.  
(3) The dimensions shown are for the standard unit. For other unit types please refer to the dimensional drawings

# Carrier Service beyond your expectations

Your daily challenge is a complex balance between maintaining optimal comfort levels, maximising system uptimes and minimising cost of ownership. Carrier teams are committed to ensuring your peace of mind and supporting your business objectives throughout the lifecycle of your equipment.

## Customer needs come first

### ■ Proximity & Responsiveness

Carrier's expert technicians are there to take action, quickly. 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 programs to meet your goals and optimize your business performance.

## Worldwide-recognized experts

### ■ Asset Management

- Advise on fast-moving regulatory environment.
- Guidance for energy optimization solution.
- Information on EH&S guidance.
- Providing educational sessions.

### ■ Technical expertise

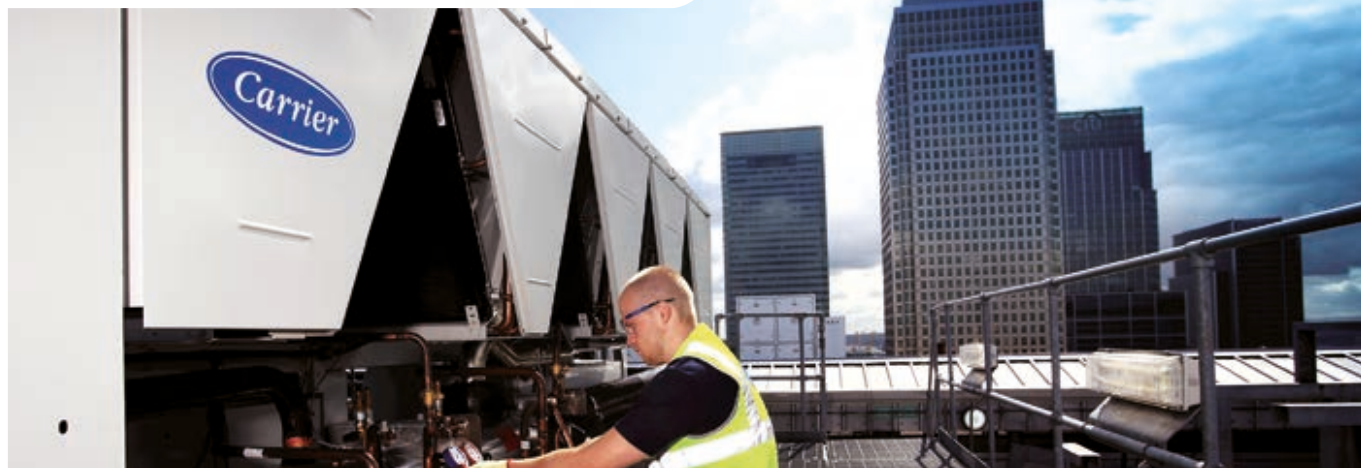
Carrier technicians benefit from a multifaceted training program based on 115 years of industry experience to bring you top level, up-to-date service.

- Technical training to ensure its teams remain familiar with all equipment types.
- Environmental, Health and Safety (EH&S) training to ensure the highest standards of ongoing safety.

Present  
in more than  
**60**  
countries

**24/7**  
on-site  
availability

More than  
**115**  
years of  
experience



[www.carrier.com](http://www.carrier.com)

AquaForce® - 30WG WGA 61WGA - English - September 2018. © Carrier 2018. All rights reserved.  
Carrier reserves the right to change certain information and specifications contained in this document at any time and without prior notice.  
Since standards, specifications and designs are subject to occasional change, please ask for confirmation of the information given in this publication.

