NEW

HEAT PUMPS WITH GREENSPEED® INTELLIGENCE



Low environmental impact

High full and part load efficiency

Compact and simple to install

Low refrigerant charge

Superior reliability

30RQ 040R-160R

Heating capacity 40-160 kW
Cooling capacity 40-160 kW

Aquasnap® heat pumps and liquid chillers are the best solution for commercial and industrial applications where installers, engineering and design departments and building owners require reduced installation costs, optimal performances and maximum quality.

- AquaSnap® (30RQ) is a compact all-in-one package optimised for applications which require reduced investment and installation costs (low CapEx).
- The large options panel allows for configurations that suit user requirements.
- Optional variable-speed fans and pumps with Carrier Greenspeed® intelligence control logic make this a product which is optimised for part load applications where a high SEPR, SCOP or IPLV value is required.

In this configuration, AquaSnap® provides premium part load efficiency to reduce maintenance costs over the lifespan of the chiller. In addition, the sound levels achieved under the part load conditions are particularly low. Besides operating efficiently and quietly, the AquaSnap® range with Greenspeed® intelligence operates from -20 °C up to +46 °C as standard.

greenspeed AQUASNAP

R-32

ECO DESIGN READY

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

CARRIER participates in the ECP programme for LCP/HP
Check ongoing validity of certificate:
www.eurovent-certification.com

PHYSICAL DATA, SIZES 040R TO 160R

30RQ				040R	045R	050R	060R	070R	080R	090R	100R	120R	140R	160R
Heating														
Standard unit Full load performances*	HA1	**Nominal capacity**	**kW**	**44,1**	**47,9**	**54,3**	**61,6**	**68,2**	**61,8**	**93,3**	**106,6**	**119,1**	**136,8**	**123,0**
		COP	**kW/kW**	**3,91**	**3,97**	**3,89**	**3,80**	**3,80**	**3,03**	**3,80**	**3,75**	**3,74**	**3,80**	**3,03**
	HA2	**Nominal capacity**	**kW**	**42,7**	**47,0**	**53,5**	**59,5**	**67,2**	**75,7**	**91,7**	**104,5**	**117,6**	**134,9**	**150,2**
		COP	**kW/kW**	**3,07**	**3,16**	**3,12**	**3,01**	**3,08**	**3,01**	**3,10**	**3,09**	**3,09**	**3,08**	**3,00**
Seasonal energy efficiency**		**$SCOP_{30/35°C}$**	**kWh/kWh**	**3,82**	**3,85**	**3,81**	**3,57**	**3,67**	**3,64**	**3,60**	**3,55**	**3,79**	**3,76**	**3,78**
		ηs heat $_{30/35°C}$	**%**	**150**	**151**	**149**	**140**	**144**	**143**	**141**	**139**	**149**	**147**	**148**
	HA1	P_{rated}	kW	31,6	33,5	36,4	42,7	49,8	55,0	59,9	68,4	87,0	99,6	109,3
Cooling														
Standard unit Full load performances*	CA1	Nominal capacity	kW	41,0	43,1	50,3	60,2	65,2	74,3	87,0	99,9	114,2	131,6	147,2
		EER	kW/kW	2,89	2,69	2,66	2,97	2,90	2,66	2,88	2,84	2,93	2,85	2,66
Seasonal energy efficiency**		SEER $_{12/7\ °C}$ Comfort low temp.	kWh/kWh	4,19	4,23	4,18	4,34	4,25	4,03	4,48	4,86	4,88	4,20	4,09
		SEPR $_{12/7\ °C}$ Process high temp.	kWh/kWh	6,01	5,85	5,62	6,06	5,81	5,34	5,74	5,71	5,76	5,41	5,15
Sound levels														
Unit + option 16														
Sound power(1)			dB(A)	82	83	84	89	89,5	89,5	92	92	92	92,5	92
Sound pressure at 10 m(2)			dB(A)	50	52	53	58	58	58	60	61	60	61	60,0
Standard unit														
Sound power(1)			dB(A)	82	83	84	89	89,5	89,5	92	92	92	92,5	92
Sound pressure at 10 m(2)			dB(A)	50	52	53	58	58	58	60	61	60	61	60,0
Unit + option 15LS(3)														
Sound power(1)			dB(A)	78,5	79	80,5	80,5	80,5	80,5	83,5	83,5	83,5	83,5	83,5
Sound pressure at 10 m(2)			dB(A)	47	48	49	49	49	49	52	52	52	52	52

* In accordance with standard EN14511-3:2018.

** In accordance with EN14825:2018, average climatic conditions.

HA1 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30 °C/35 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 m^2. k/W

HA2 Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40 °C/45 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 m^2. k/W

CA1 Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m^2. k/W

ηs heat $_{30/35°C}$ & SCOP $_{30/35°C}$ **Values in bold comply with Ecodesign Regulation (EU) No. 813/2013 for Heating applications**

SEER $_{12/7\ °C}$ & SEPR $_{12/7\ °C}$ Applicable Ecodesign regulation (EU) No. 2016/2281

(1) In dB ref=10^{-12} W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

(3) Options: 15LS = Very low noise level, 116W = Variable-speed high pressure dual-pump hydraulic module, 307 = Water buffer tank module

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

PHYSICAL DATA, SIZES 040R TO 160R

30RQ		040R	045R	050R	060R	070R	080R	090R	100R	120R	140R	160R
Dimensions												
Standard unit												
Length	mm	1090	1090	1090	1090	1090	1090	2125	2125	2125	2125	2125
Width	mm	2109	2109	2109	2109	2109	2109	2275	2275	2275	2275	2275
Height	mm	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330
Unit height (option 12)	mm	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372
Unit height (option 307)	mm	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931
Unit height (option 12 +307)	mm	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973
Operating weight[4]												
Standard unit	kg	444	446	469	496	506	515	759	818	866	996	1000
Unit + single high-pressure pump option	kg	464	466	489	516	526	535	779	838	891	1021	1025
Unit + dual high-pressure pump option	kg	491	493	516	543	553	562	805	864	923	1054	1058
Unit + single high-pressure pump and buffer tank options	kg	816	818	841	868	878	887	1197	1256	1309	1439	1443
Unit + dual high-pressure pump and buffer tank options	kg	843	845	868	895	905	914	1223	1282	1341	1472	1476
Compressors		Hermetic Scroll 48,3 r/s										
Circuit A		2	2	2	2	2	2	2	3	3	2	2
Circuit B											2	2
No. of power stages		2	2	2	2	2	2	2	3	3	4	4
Refrigerant[4]		R-32 / A2L/ PRP= 675 in accordance with AR4										
Circuit A	kg	7,30	7,30	7,80	8,70	8,95	9,20	15,20	15,70	19,60	8,95	9,15
	tCO_2e	4,9	4,9	5,3	5,9	6,0	6,2	10,3	10,6	13,3	6,0	6,2
Circuit B	kg										8,95	9,15
	tCO_2e										6,0	6,2
Oil		Oil type										
Circuit A	l	6,0	6,0	6,6	6,6	7,2	7,2	7,2	10,8	10,8	7,2	7,2
Circuit B	l										7,2	7,2
Capacity control		SmartVu™										
Minimum capacity	%	50	50	50	50	50	50	50	33	33	25	25
PED category		III										
Condenser		Grooved copper tubes and aluminium fins										
Fans		Axial Flying Bird 6 with rotating shroud										
Standard unit												
Quantity		1	1	1	1	1	1	2	2	2	2	2
Maximum total air flow	l/s	4034	4034	4034	5613	5613	5613	10904	10904	10904	11226	11226
Maximum rotation speed	r/s	12	12	12	16	16	16	16	16	16	16	16
Evaporator		Dual-circuit plate heat exchanger										
Water volume	l	3,55	4	4,44	5,18	6,07	6,96	7,4	8,44	9,92	12,69	14,31
Max. water-side operating pressure without hydronic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Hydronic module (option)		Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors										
Pump		Centrifugal pump, monocell, 48,3 r/s, low- or high-pressure (as required), single or dual (as required)										
Expansion tank volume (Option 293)	l	12	12	12	12	12	12	35	35	35	35	35
Buffer tank volume (Option 307)	l	208	208	208	208	208	208	208	208	208	208	208
Max. water-side operating pressure with hydronic module	kPa	400	400	400	400	400	400	400	400	400	400	400
Water connections with or without hydronic module		Victaulic® type										
Connections	inches	2	2	2	2	2	2	2	2	2	2	2
External diameter	mm	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3
Casing paint colour		Colour code RAL 7035 & 7024										

(3) Options: 15LS = Very low noise level, 116W = Variable-speed high pressure dual-pump hydraulic module, 307 = Water buffer tank module,
(4) Values are guidelines only. Refer to the unit name plate.

ELECTRICAL SPECIFICATIONS

30RQ		040R	045R	050R	055R	060R	070R	080R	090R	100R	120R	140R	160R
Power circuit supply													
Nominal voltage	V-ph-Hz	400 - 3 - 50											
Voltage range	V	360 - 440											
Control circuit supply		24 V via internal transformer											
Maximum operating input power(1) or (2)													
Circuit A&B	kW	19	21	24	24	28	31	36	41	48	55	63	71
Power factor at maximum power(1) or (2)													
Displacement Power Factor (Cos Phi), standard unit		0,81	0,82	0,82	0,82	0,84	0,84	0,85	0,82	0,84	0,85	0,84	0,85
Nominal unit current draw(4)													
Standard unit	A	26	29	35	35	36	46	52	59	71	81	91	104
Maximum operating current draw (Un)(1) or (2)													
Standard unit	A	34	37	42	42	48	54	60	72	84	93	108	121
Maximum current (Un-10%)(1) or (2)													
Standard unit	A	37	39	44	44	51	58	65	77	89	99	115	129
Maximum start-up current (Un)(2) + (3)													
Standard unit	A	116	118	165	165	169	177	191	238	206	223	231	251

(1) Values at the unit's permanent maximum operating condition (as shown on the unit's nameplate).
(2) Values at the unit's maximum operating condition (as shown on the unit's nameplate).
(3) Maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor.
(4) Standardised EUROVENT conditions, water-cooled exchanger inlet/outlet = 12 °C/7 °C, outdoor air temperature = 35 °C.

Short-circuit withstand current (TN system)(1)

30RQ		040R	045R	050R	055R	060R	070R	080R	090R	100R	120R	140R	160R
Rated short-circuit withstand currents													
Rated short time (1s) current - Icw	kA eff	3,36	3,36	3,36	3,36	3,36	3,36	5,62	5,62	5,62	5,62	5,62	5,62
Rated peak current - Ipk	kA pk	20	20	20	20	20	20	15	20	20	15	20	15
Value with upstream electrical protection (1)													
Rated conditional short circuit current Icc	kA eff	40	40	40	40	40	40	40	40	40	40	30	30
Associated protection - type/supplier		Circuit breaker/Schneider											
Associated protection - rating/reference		NS100H	NS100H	NS100H	NS100H	NS100H	NS100H	NS100H	NS100H	NS160H	NS160H	NS250H	NS250H

(1) If another current limitation protection device is used, its time-current and thermal constraint (I^2t) trip characteristics must be at least equivalent to those of the recommended protection.
Note: The short circuit current withstand capability values above have been established for the TN system.