

## SYSAQUA R32

Sustainable air-cooled chillers and heat pumps



R32

New

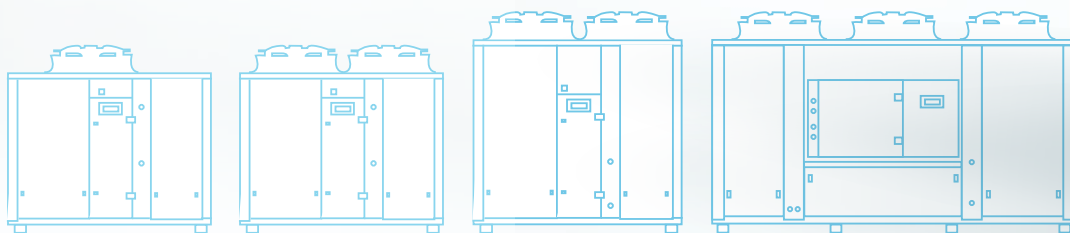
# SYSAQUA R32

## Efficiency and sustainability

At Systemair, we strive to develop quality and reliable products that can improve the life of our customers. This serves as the guiding principle of our Research and Development (R&D) departments. Through their innovation and breakthroughs, we offer the most efficient and environmentally friendly solutions on the market.

The SYSAQUA R32 range perfectly embodies this vision. These new air-cooled chillers and heat pumps have many advantages and offer quality, efficiency, and sustainability. The range is available in 10 sizes, with selections that range from 50 to 170 kW, and comes with a number of customisation options and accessories, ensuring there is a SYSAQUA R32 that will meet every project requirement.

- 10 sizes - 4 chassis
- Cooling only (L) or Reversible (H) units
- Low GWP R32 refrigerant
- High efficiency
- Wide operating limits
- Low footprint
- New advanced control system
- Easy maintenance
- Standard or Super low noise versions
- Remotely controllable with AC CLOUD
- 100% factory tested





A<sup>++</sup>

A<sup>+</sup>







 50 → 176 kW

 53 → 182 kW

 Scroll compressors

 Plate heat exchanger

 AC/EC fans

# R32



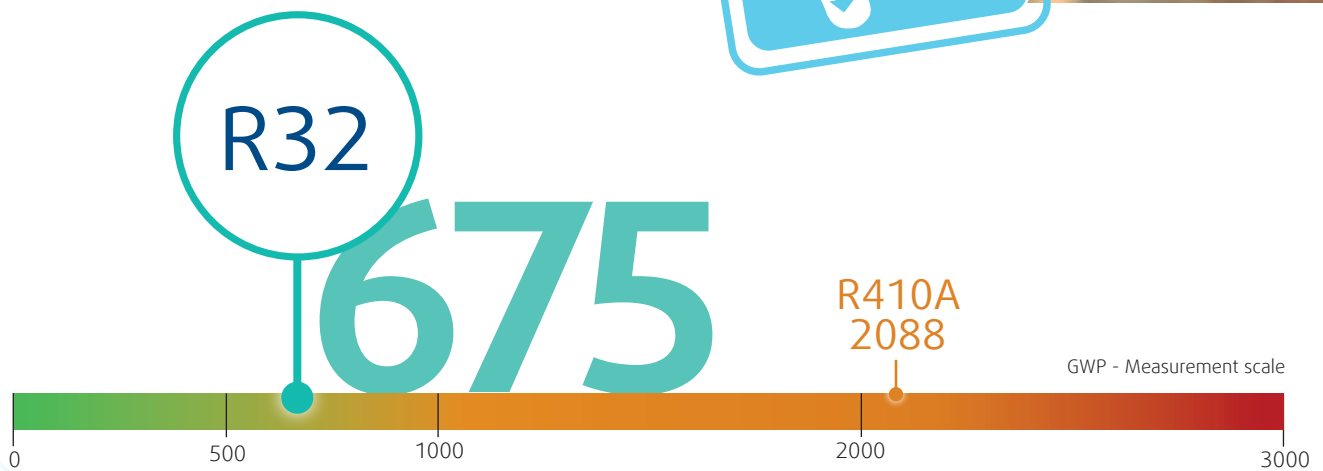
## SYSAQUA R32

# Better for the planet

The new Systemair air-cooled chillers and heat pumps operate with R32. Thanks to a GWP (Global Warming Potential) of 675, this refrigerant is 3 times less polluting than the standard R410A.

SYSAQUA R32 units are also equipped with a new generation of outdoor heat exchangers. The design enables a refrigerant charge reduction of 40%.

Together, these two features help reduce the carbon footprint of each unit by 84% \*



\* Comparison made between equivalent units operating respectively with R410A and R32 refrigerants. Impact only considers the refrigerants and not the units as a whole.

# and better for your buildings.

## High efficiency level

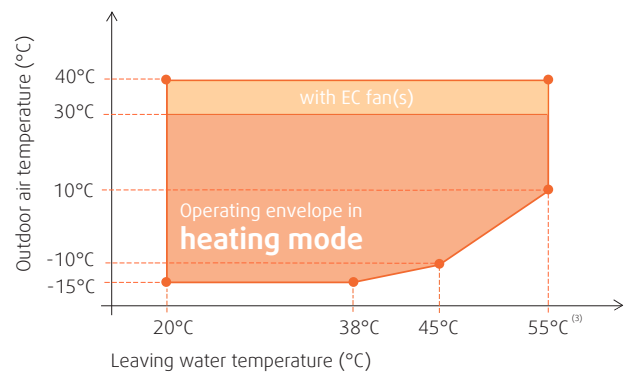
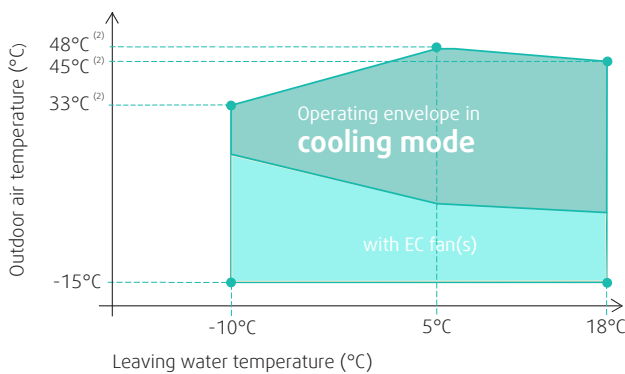


Energy efficiency classes (SCOP)  
According to Delegated Regulation  
No. 813/2013 of the European Commission

In addition to operating with a more sustainable refrigerant, the SYSAQUA R32 units also have excellent SEER and SCOP seasonal efficiencies. At this level of performance, the SYSAQUA R32 range not only exceeds the EU's minimum regulatory requirements, it also has the added benefit of reaching the A+ and A++ energy efficiency classes (SCOP) <sup>(1)</sup>.

SYSAQUA R32 can also be equipped with a variable speed pump that automatically adjusts its speed according to the required capacity. Compared to a fixed-speed pump, and depending on the operating profile of a pump working at partial load, the annual energy consumption of the pump can be reduced by up to 70%.

## Wide operating limits



<sup>(1)</sup> more information on pages 7 and 8

<sup>(2)</sup> Temp. -1°C for sizes 150-170

<sup>(3)</sup> 53°C for sizes 150-170

**BIM models**  
available on  
[www.magicad.com](http://www.magicad.com)





## Design and characteristics

### New advanced control system

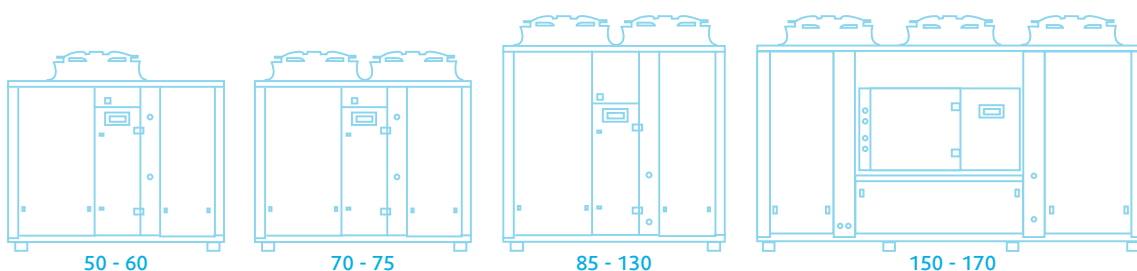
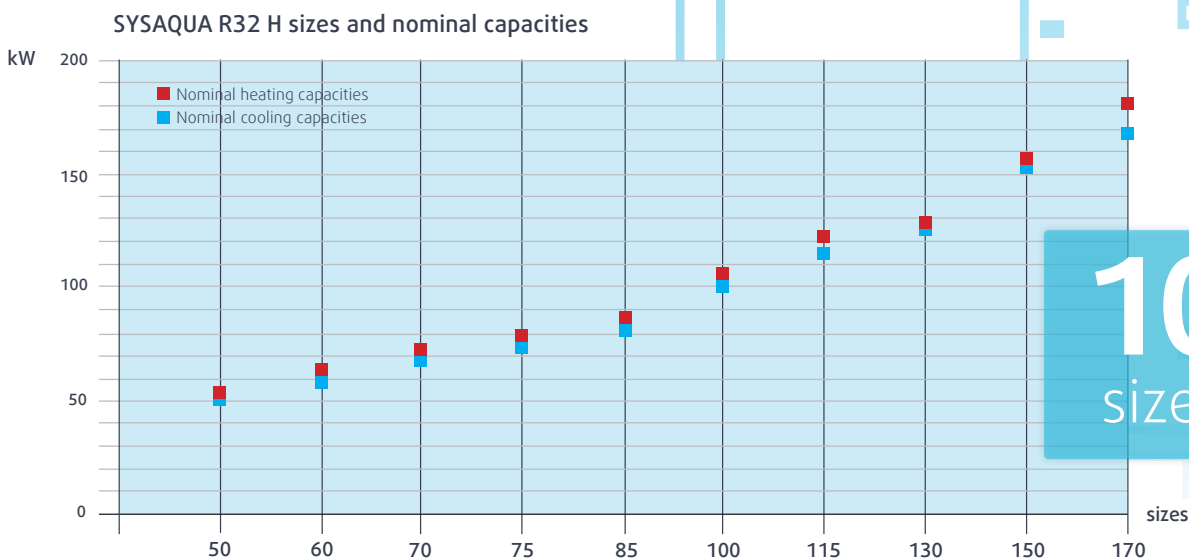
The SYSAQUA R32 units are equipped with a brand-new controller and a user-friendly external control panel that displays the operating parameters and alarms. Optimised for EC fans control and electronic expansion valve management, the new controller comes built-in with one of the following communication protocols : Modbus RTU, Modbus TCP/IP, Bacnet MSTP, Bacnet IP.

### Compact units

The SYSAQUA R32 range has been designed in a compact manner to ensure the smallest possible footprint. The first 3 chassis measure 2,53 m<sup>2</sup> and the 4<sup>th</sup> chassis features **one of the smallest footprint on the market** with an average ratio of 37kW/m<sup>2</sup>.

### Super low noise versions

For the entire range, customers can choose between a standard unit or a super low noise "S" version. The S version features EC fans and compressor sound jackets for improved sound levels.





### EC fans

For an even better efficiency level and improved acoustic performance, SYSAQUA R32 units can be equipped with EC fans\* (EC type high pressure fans also available).

### Removable panels

Great accessibility to internal components for easy service operations.

### Highly optimised external heat exchanger

New coil design enables a refrigerant charge reduction of 40%.

R32

### Scroll Compressors

The two Scroll compressors are optimized for the R32 refrigerant and are covered with sound jackets in "Super low noise" (S) versions.

### Electronic expansion valve

This reliable and high-performance valve minimises overheating of the evaporator. It is directly managed from the control system.

### Variable speed pump


A variable speed pump can be added for even greater energy savings.


SYSAQUA R32 L/H	50	60	70	75	85	100	115	130	150	170	
Refrigerant circuit											
Number of refrigerant circuit						1					
Type of refrigerant		R32									
Charge of refrigerant <sup>1</sup>	kg	8,1	7,9	10,4	10,6	13,9	13,5	17,2	18,5	26,2	25,6
Type of compressors		Scroll									
Number of compressors						2					
Type of internal heat exchanger		Stainless steel plate heat exchanger									

\* AC fans are installed in standard units

<sup>1</sup> Indicative values. Please refer to the unit name plate to know the exact charge of refrigerant

## Technical performance

SYSAQUA R32 50-75 L - Cooling only (STD AC*)		50	60	70	75
Cooling capacity <sup>1</sup>	kW	52,5	60,3	69,9	75,1
Power input <sup>1</sup>	kW	16,9	19,9	22,3	25,8
EER <sup>1</sup>		3,11	3,03	3,14	2,92
Energy efficiency class (EER) <sup>1</sup>		A	B	A	B
 SEER (STD AC / STD EC*) <sup>4</sup>		4,23 / 4,69	4,40 / 4,87	4,57 / 4,88	4,60 / 4,82
$\eta_{sc}$ (STD AC / STD EC*) <sup>4</sup>		166 / 184	173 / 192	180 / 192	181 / 190
Nominal water flow (in the evaporator)	m <sup>3</sup> /h	9,0	10,4	12,0	12,9
Sound power level (STD AC / S*)	dB(A)	83,2 / 80,7	83,8 / 81,2	81,3 / 78,3	81,3 / 78,2
Sound pressure level at 10 m (STD AC / S*) <sup>5</sup>	dB(A)	51,4 / 48,9	52,0 / 49,4	49,5 / 46,5	49,5 / 46,4
Power supply	V/ph/Hz	400 / 3+N / 50			

SYSAQUA R32 50-75 H - Reversible (STD AC*)			50	60	70	75	
Cooling	Cooling capacity <sup>1</sup>	kW	49,8	58,0	68,7	74,5	
	Power input <sup>1</sup>	kW	17,1	20,0	22,3	25,2	
	EER <sup>1</sup>		2,92	2,90	3,08	2,95	
	Energy efficiency class (EER) <sup>1</sup>		B	B	B	B	
	SEER (STD AC / STD EC*) <sup>4</sup>		4,36 / 4,58	4,32 / 4,77	4,54 / 4,95	4,47 / 4,68	
	η <sub>sc</sub> (STD AC / STD EC*) <sup>4</sup>		171 / 180	170 / 188	178 / 195	176 / 184	
Nominal water flow (in the evaporator)		m³/h	8,6	10,0	11,8	12,8	
Heating	Heating capacity <sup>2</sup>	kW	53,4	62,0	72,4	78,9	
	Power input <sup>2</sup>	kW	17,3	19,9	23,0	25,6	
	COP <sup>2</sup>		3,09	3,12	3,15	3,08	
	COP <sup>3</sup>		3,82	3,90	3,99	4,03	
		SCOP (STD AC / STD EC*) <sup>4</sup>		3,62 / 3,84	3,54 / 3,86	3,54 / 3,80	3,57 / 3,79
		Energy efficiency class (SCOP) (STD AC / STD EC*) <sup>4</sup>		A+ / A++	A+ / A++	A+ / A++	A+ / A++
		η <sub>sh</sub> (STD AC / STD EC*) <sup>4</sup>		142 / 151	138 / 152	139 / 149	140 / 149
Nominal water flow (in the evaporator)		m³/h	9,2	10,7	12,5	13,6	
Sound power level (STD AC / S*)		dB(A)	83,2 / 80,7	83,8 / 81,2	81,3 / 78,3	81,3 / 78,2	
Sound pressure level at 10 m (STD AC / S*) <sup>5</sup>		dB(A)	51,4 / 48,9	52,0 / 49,4	49,5 / 46,5	49,5 / 46,4	
Power supply		V/ph/Hz	400 / 3+N / 50				



## Physical features


SYSAQUA R32 50-75 L/H - Cooling only/Reversible (STD AC*)		50	60	70	75
Hydraulic data					
Type of water connections (evaporator)		Male gas threaded			
Water Inlet/Outlet diameter	inch	2"	2"	2"	2"
Weight					
Operating weight	kg	527	547	621	637
Shipping weight	kg	522	542	615	632
Dimensions (more information p.9)					
Length without water tank	mm	2180	2180	2180	2180
Length with water tank	mm	2680	2680	2680	2680
Width	mm	1160	1160	1160	1160
Height	mm	1986	1986	1986	1986



Complete documentation available  
on the Systemair app **MEDIA CENTER**  
and on [www.systemair.com](http://www.systemair.com)



SYSQUA R32 85-170 L - Cooling only (STD AC*)		85	100	115	130	150	170
Cooling capacity <sup>1</sup>	kW	84,1	102,2	120,6	134,7	156,1	175,8
Power input <sup>1</sup>	kW	29,0	34,2	37,7	42,4	48,0	55,6
EER <sup>1</sup>		2,90	2,99	3,19	3,18	3,25	3,16
Energy efficiency class (EER) <sup>1</sup>		B	B	A	A	A	A
 SEER (STD AC / STD EC*) <sup>4</sup>		4,52 / 5,12	4,30 / 4,92	4,55 / 4,74	4,48 / 4,63	4,64 / 4,92	4,56 / 4,95
 $\eta_{sc}$ (STD AC / STD EC*) <sup>4</sup>		178 / 202	169 / 194	179 / 187	176 / 182	183 / 194	179 / 195
Nominal water flow (in the evaporator)	m <sup>3</sup> /h	14,5	17,6	20,7	23,2	26,8	30,2
Sound power level (STD AC / S*)	dB(A)	84,4 / 81,7	86,0 / 83,2	87,0 / 84,0	87,4 / 84,4	88,9 / 85,9	91,1 / 88,0
Sound pressure level at 10 m (STD AC / S*) <sup>5</sup>	dB(A)	52,5 / 49,8	54,1 / 51,3	55,1 / 52,1	55,5 / 52,5	57,0 / 54,0	59,2 / 56,1
Power supply	V/ph/Hz	400 / 3+N / 50				400 / 3 / 50	

SYSQAUA R32 85-170 H - Reversible (STD AC <sup>*)</sup> )			85	100	115	130	150	170	
Cooling	Cooling capacity <sup>1</sup>	kW	82,8	99,2	115,50	127,8	152,5	169,6	
	Power input <sup>1</sup>	kW	28,6	34,0	37,27	41,0	47,5	55,0	
	EER <sup>1</sup>		2,90	2,91	3,10	3,12	3,21	3,08	
	Energy efficiency class (EER) <sup>1</sup>		B	B	B	A	A	B	
	SEER (STD AC / STD EC <sup>*)</sup> ) <sup>4</sup>		4,48 / 5,05	4,35 / 4,96	4,34 / 4,52	4,33 / 4,48	4,61 / 4,90	4,62 / 5,03	
	η <sub>sc</sub> (STD AC / STD EC <sup>*)</sup> ) <sup>4</sup>		176 / 199	171 / 196	171 / 178	170 / 176	181 / 193	182 / 198	
	Nominal water flow (in the evaporator)	m <sup>3</sup> /h	14,2	17,1	19,9	22,0	26,2	29,2	
Heating	Heating capacity <sup>2</sup>	kW	85,2	104,4	121,7	129,9	155,8	181,8	
	Power input <sup>2</sup>	kW	28,1	32,9	38,0	40,8	49,2	55,4	
	COP <sup>2</sup>		3,03	3,17	3,20	3,18	3,17	3,28	
	COP <sup>3</sup>		3,68	3,86	4,09	4,14	4,06	4,15	
		SCOP (STD AC / STD EC <sup>*)</sup> ) <sup>4</sup>		3,58 / 3,98	3,62 / 3,99	3,60 / 3,79	3,73 / 3,91	3,66 / 3,88	3,60 / 3,84
		Energy efficiency class (SCOP) (STD AC / STD EC <sup>*)</sup> ) <sup>4</sup>		A <sup>+</sup> / A <sup>++</sup>	A <sup>+</sup> / A <sup>++</sup>	A <sup>+</sup> / A <sup>+</sup>	A <sup>+</sup> / A <sup>++</sup>	A <sup>+</sup> / A <sup>++</sup>	A <sup>+</sup> / A <sup>++</sup>
		η <sub>sh</sub> (STD AC / STD EC <sup>*)</sup> ) <sup>4</sup>		140 / 156	142 / 156	141 / 149	146 / 153	143 / 152	141 / 151
	Nominal water flow (in the evaporator)	m <sup>3</sup> /h	14,7	18,0	20,9	22,3	26,8	31,3	
Sound power level (STD AC / S <sup>*)</sup> )		dB(A)	84,4 / 81,7	86,0 / 83,2	87,0 / 84,0	87,4 / 84,4	88,9 / 85,9	91,1 / 88,0	
Sound pressure level at 10 m (STD AC / S <sup>*)</sup> ) <sup>5</sup>		dB(A)	52,5 / 49,8	54,1 / 51,3	55,1 / 52,1	55,5 / 52,5	57,0 / 54,0	59,2 / 56,1	
Power supply		V/ph/Hz	400 / 3+N / 50				400 / 3 / 50		

SYSQUA R32 85-170 L/H - Cooling only/Reversible (STD AC*)		85	100	115	130	150	170
Hydraulic data							
Type of water connections (evaporator)		Male gas threaded					
Water Inlet/Outlet diameter	inch	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2
Weight							
Operating weight	kg	701	731	813	815	1265	1279
Shipping weight	kg	696	726	807	810	1255	1269
Dimensions (more information p.9)							
Length without water tank	mm	2180	2180	2180	2180	3789	3789
Length with water tank	mm	2680	2680	2680	2680	3789	3789
Width	mm	1160	1160	1160	1160	1151	1151
Height	mm	2286	2286	2286	2286	2285	2285

<sup>1</sup> According to EN14511-2018: chilled water inlet/outlet temperature: 12/7°C, outdoor ambient temperature 35°C DB.

<sup>2</sup> According to EN14511-2018: warm water inlet/outlet temperature: 40/45°C, outdoor ambient temperature 7°C DB/6°C WB.

<sup>3</sup> According to EN14511-2018: warm water inlet/outlet temperature: 30/35°C, outdoor ambient temperature 7°C DB/6°C WB.

<sup>4</sup> According to EN14825.

<sup>5</sup> Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

<sup>6</sup> ERP Compliant: Following COMMISSION REGULATION (EU) 2016/2281.

<sup>7</sup> ERP Compliant: Following COMMISSION REGULATION (EU) No 813/2013.

\* STD AC: Standard versions with AC fans

STD EC: Standard versions with high efficiency EC fans

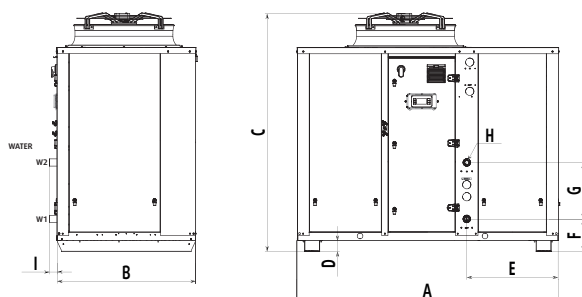
S: Super low noise versions with high efficiency EC fans + compressor sound jackets

# SYSAQUA R32

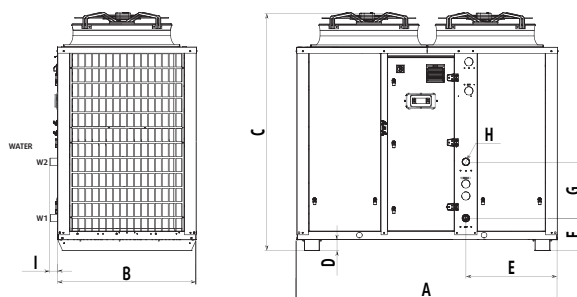
Compact units that fit everywhere

## Dimensions

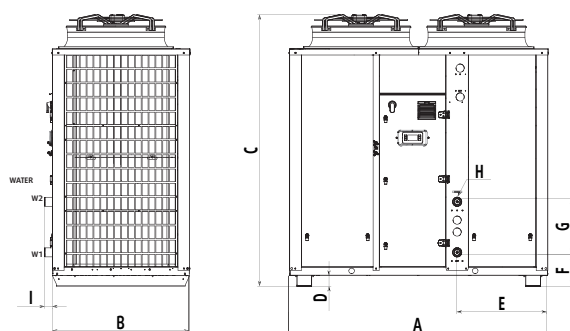
SYSAQUA R32 50-60 L/H



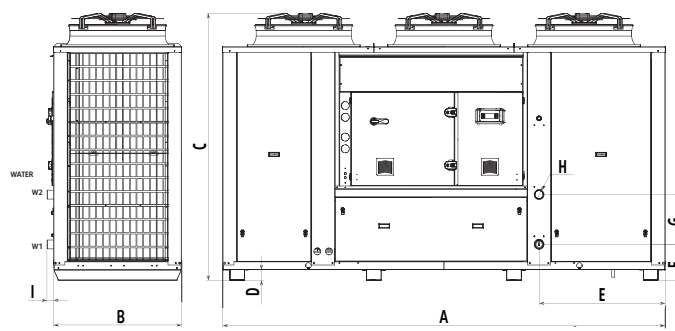
SYSAQUA R32 70-75 L/H



SYSAQUA R32 85-130 L/H



SYSAQUA R32 150-170 L/H



SYSAQUA R32 L/H			A	B	C	D	E	F	G	ØH	I	W1	W2
50-75	STD version with AC fans	without buffer tank	2180	1160	1986	90	764	270	470	2"	60	outlet	inlet
		with buffer tank	2680	1160	1986	90	1265	743	436	2"	60	inlet	outlet
	STD / S / HPF version with EC fans	without buffer tank	2180	1160	2034	90	764	270	470	2"	60	outlet	inlet
		with buffer tank	2680	1160	2034	90	1265	743	436	2"	60	inlet	outlet
85-130	STD version with AC fans	without buffer tank	2180	1160	2286	90	760	280	426	2" 1/2	60	outlet	inlet
		with buffer tank	2680	1160	2286	90	1265	711	638	2" 1/2	60	inlet	outlet
	STD / S / HPF version with EC fans	without buffer tank	2180	1160	2334	90	760	280	426	2" 1/2	60	outlet	inlet
		with buffer tank	2680	1160	2334	90	1265	711	638	2" 1/2	60	inlet	outlet
150-170	STD version with AC fans	without buffer tank	3789	1151	2285	91	1080	305	426	2" 1/2	55	inlet	outlet
		with buffer tank	3789	1151	2285	91	1080	305	426	2" 1/2	55	inlet	outlet
	STD / S / HPF version with EC fans	without buffer tank	3789	1151	2333	91	1080	305	426	2" 1/2	55	inlet	outlet
		with buffer tank	3789	1151	2333	91	1080	305	426	2" 1/2	55	inlet	outlet

Dimensions in mm.

Highly customisable to meet all your needs

## Accessories and Options

### SYSAQUA R32 accessories and options

AC CLOUD

Additional external switch (cooling/heating) (only for reversible "H" versions)

Antivibration mount rubber

Antivibration spring

Compatible with container transportation

Compressor jackets (standard for "S" versions)

Contact for external general alarm

Desuperheater

Electrical heater for the water tank  
(only for reversible "H" versions - sizes 50 to 130)

Energy meter for power input

Outdoor coil protection grid

Power factor corrector capacitors

Refrigerant gauges HP/LP

Remote control kit

Shut off valves

Sofstarter

Variable or fixed speed pumps

Water pressure switch

Water tank 300L

Without neutral (standard for sizes 150/170)

Easy to select, configure and control

# AC SELECT and AC CLOUD

## AC SELECT



### A new asset for your business

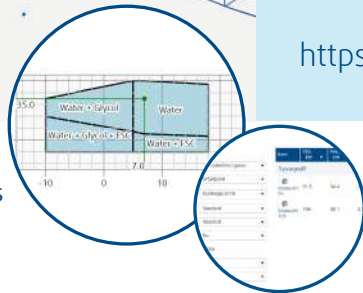
With AC SELECT, the new Systemair online selection program, select and customise easily and quickly the air conditioning products that perfectly satisfy your requirements.

- 1 - **Select** "THE" unit that meets your needs
- 2 - **Customise** by adding accessories & options
- 3 - Generate a **price offer**
- 4 - Download a complete and detailed **unit and project report**

And that's it! Quick, Easy & Precise.

<https://acselect.systemair.com>

Interactive  
Operating Maps



### "Selector"

Define your technical requirements in few clicks and the program tells you the unit you need.



### Enter the Era of connected units

Offering more than reliable products is the Systemair's aim. From that perspective, we created AC CLOUD. With this software, **take full control of your units from anywhere, at any time.**

### Decrease your energy consumption

Adjust your unit's settings precisely thanks to a relevant and real-time energy consumption analysis.

### Optimize your maintenance interventions

With one click, watch the operating state of your units, anticipate the dysfunctions and reduce your interventions on site.





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Systemair AC SAS - LEAF SYSAQUA R32-T2P-S-TGB(09.21)  
As part of our ongoing product improvement program, our products are subject to change without prior notice. Non-contractual document.