SysAqua

Optimized Air Cooled Heat Pumps
for low outside temperature operation !

from 19 to 209 kW

from 20 to 218 kW

systemair

SysAqua

Air cooled chillers & heat pumps

Refrigerant R410A
Scroll Compressors

TERTIAIRY INDUSTRY

- SysAqua L (cooling-only) or SysAqua H (reversible)
- 17 sizes from 20 to 210
- Cooling capacity from 19 to 209 kW
- Heating capacity from 20 to 218 kW
- Very low sound levels
- Coil geometry optimized to limit defrost cycles
- Heating capacity maintained even at low outside temperature

SysAqua units are available in cooling-only or reversible versions optimized to operate in heating mode.
The heat pumps range reaches the energy class A+ SCOP.
With alternated defrost cycles, this product family provides continuous comfort even at very low outside temperatures.
The SysAqua range is distinguished also by a low sound level as standard and stable heating capacities.

Product advantages

- High SEER/SCOP
- Low sound levels
- Plug & Play units
- Easy control and diagnosis
- Extended operating limits : Heating mode operation down to -17°C and cooling mode operation up to 50°C
- Remotely-controllable with ACloud
- Leak detection according to BREEAM standard
- Low footprint
- Easy maintenance
- Multiple communication protocols (Modbus RTU as standard)
- Available in the BIM library Magicloud
- Patented antifrost coil (available for sizes 140 to 210)
- Tandem Scroll compressor per circuit (for a better efficiency at partial load)
- "Night mode" for energy savings and extra low sound levels
- Double water set point

ErP 2021 Ready.

SysAqua L (cooling-only) units are already compliant with the ErP 2021 regulation

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

The full range is Eurovent certified

100%
of the units are factory tested

A+

Energy efficiency class (SCOP)

According to the Delegated Regulation No. 813/2013 of the European commission

BIM models

available at
www.magicloud.com

RFA DOWNLOAD
DXF DOWNLOAD

ACloud

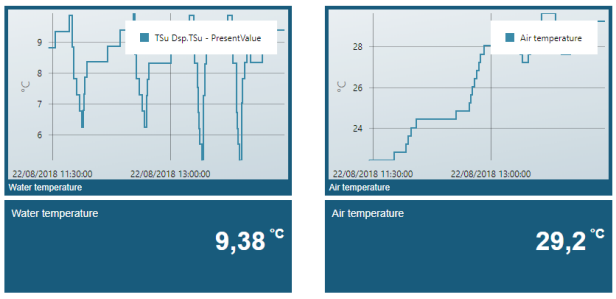
Enter the Era of connected units and make significant savings !

Offering more than reliable products is the Systemair's aim. From that perspective, we created ACloud. With this new software, you will get the control of all your units at anytime and from anywhere.

Decrease your energy consumption & Optimize your maintenance interventions !

Adjust precisely your units' settings thanks to a relevant and real-time energy consumption analysis.
With one click, watch the operating state of your units, anticipate the dysfunctions and reduce your interventions on site.

A complete and performant remote control software



Unit dashboards

- Temperature data
- Set point adjustment
- Consumption's monitoring
- Time schedule
- Alarms
- Diagnosis
- Data history
- Different access levels
- Units location

Smart defrost : New technology optimized to limit the defrost cycles

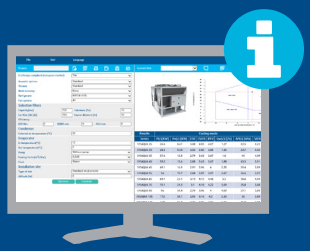
Alternated defrost cycle to ensure a production of stable hot water even at low outside temperature.

1 defrost cycle every 130 min

ADVANTAGE : **+22%** of heating capacity
Integrated COP : + 15%
Improved SCOP class

Many options and accessories to meet exactly your needs

- **ACloud** (delivered as standard with sizes 140 to 210),
- Antivibration mount rubber,
- Antivibration spring,
- Bacnet IP,
- Bacnet MSTP (for sizes 20 to 125 only),
- **Electrical Heaters,**
- **Extra low noise versions** (delivered as standard with sizes 20 to 40 and 140 to 210),
- Fan speed control,
- Finned coil with Epoxy or Blygold treatment,
- **High pressure fan(s),**
- **Hydraulic circuit - single or double pump pack,**
- Hydraulic gauges (for sizes 140 to 210 only),
- Modbus TCP/IP (delivered as standard with sizes 140 to 210),
- Nordic Pack (for heat pump models, sizes 20 to 40 and 140 to 210 only),
- Outdoor coil protection grid,
- Refrigerant gauges HP/LP (for sizes 45 to 210 only),
- Remote control,
- Shut off valves,
- Softstarter,
- **Variable pumps,**
- Water pressure switch,
- **Water tank** (100L for sizes 20 to 40 and 300L for sizes 45 to 210),
- Without neutral.

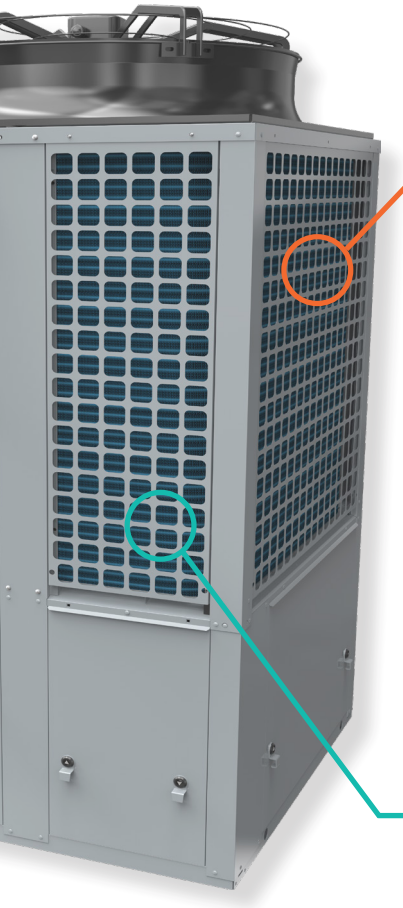


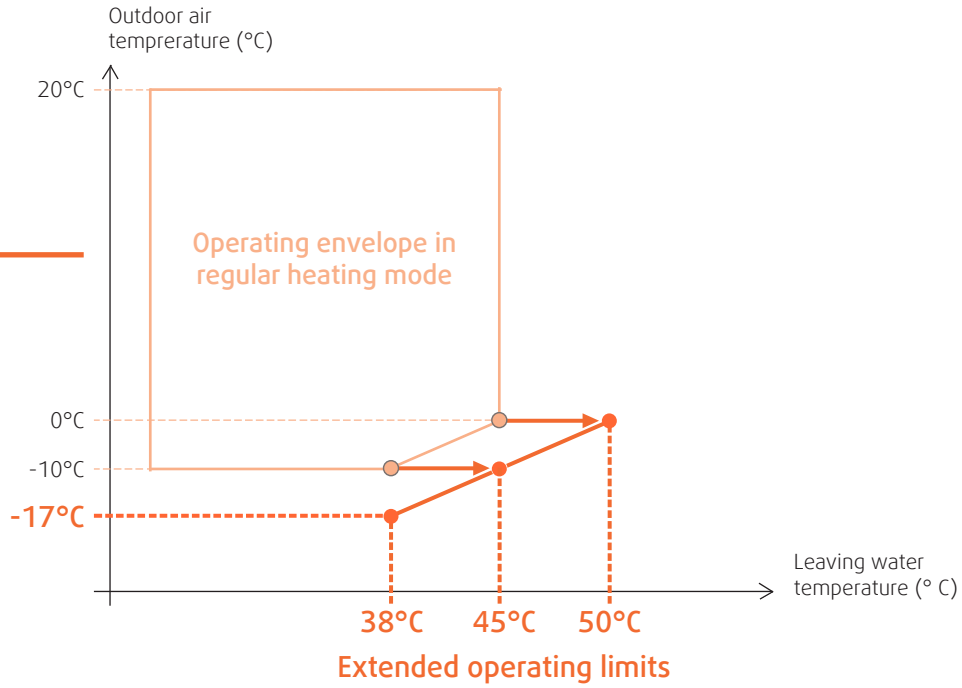
Sysoft AC, the online selection software for all your Air Conditioning projects

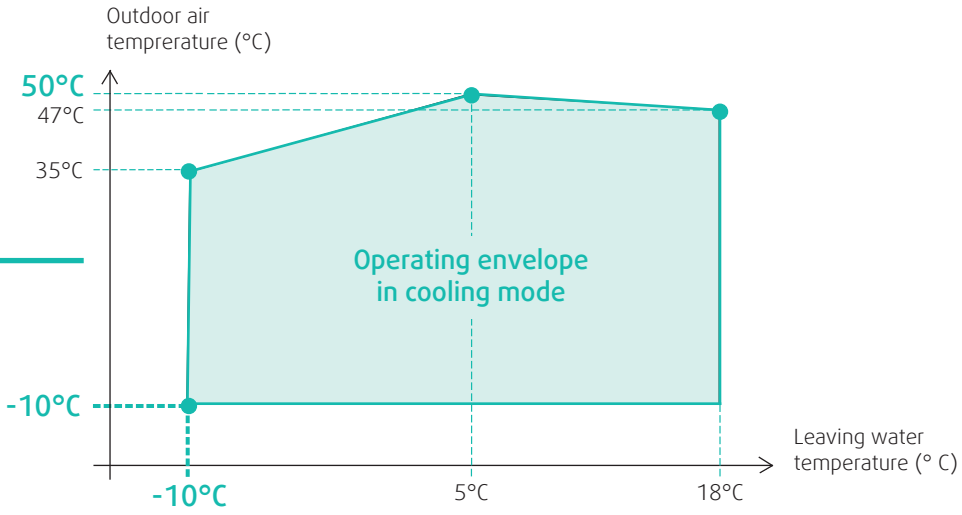
Thanks to our online selection tool Sysoft AC, select and dimension precisely and quickly, by yourself, "THE" unit(s) you need.

www.sysoftac.com

Improved performances







Operating limits

SysAqua			
Leaving water temperature (cooling mode)	without glycol	°C	from 5 to 18
	with glycol 45%	°C	from -10 to 18
External air temperature (Cooling mode)		°C	from -10 to 50
Leaving water temperature (Heating mode)		°C	from 20 to 50
External air temperature (Heating mode)		°C	from -17 to 20

Quick selection guide

SysAqua H Size	Cooling and Heating capacities (kW)		SEER	SCOP	Nominal Water flow (Cooling / heating)	Acoustic power	Dimensions (LxWxH)*
20	19,4	19,5	3,91	3,37	3,5 / 3,4 m³/h	75,0 dB(A)	1000 x 1000 x 1983
25	25,3	26,9	3,87	3,27	4,4 / 4,6 m³/h	75,0 dB(A)	
30	26,9	29,7	3,88	3,27	4,6 / 5,1 m³/h	75,0 dB(A)	
35	35,8	37,3	3,68	3,36	6,2 / 6,4 m³/h	76,0 dB(A)	
40	37,4	41,6	3,91	3,40	6,4 / 7,2 m³/h	76,0 dB(A)	
45	46,8	48,5	3,70	3,23	8,1 / 8,4 m³/h	80,0 dB(A)	2180 x 1160 x 1986
55	53,3	58,2	3,86	3,27	9,2 / 10,0 m³/h	80,0 dB(A)	
65	65,8	67,2	4,04	3,43	11,3 / 11,6 m³/h	80,0 dB(A)	
75	71,6	75,9	3,99	3,40	12,3 / 13,1 m³/h	80,0 dB(A)	
90	91,4	88,1	3,89	3,26	15,7 / 15,2 m³/h	83,0 dB(A)	2180 x 1160 x 2286
105	106,2	101,0	3,88	3,31	18,3 / 17,4 m³/h	83,0 dB(A)	
125	121,9	119,1	3,89	3,35	21,0 / 20,5 m³/h	83,0 dB(A)	
140	125,4	143,7	3,87	3,32	21,6 / 24,7 m³/h	85,4 dB(A)	2856 x 2210 x 2295
150	137,6	153,7	3,87	3,36	23,7 / 26,5 m³/h	85,4 dB(A)	
170	150,9	170,1	3,91	3,31	26,0 / 29,6 m³/h	87,0 dB(A)	2856 x 2210 x 2321
190	175,8	194,9	3,69	3,29	30,2 / 33,5 m³/h	88,1 dB(A)	
210	195,4	217,6	3,68	3,23	33,6 / 37,4 m³/h	88,1 dB(A)	

* without buffer tank

Sysoft AC

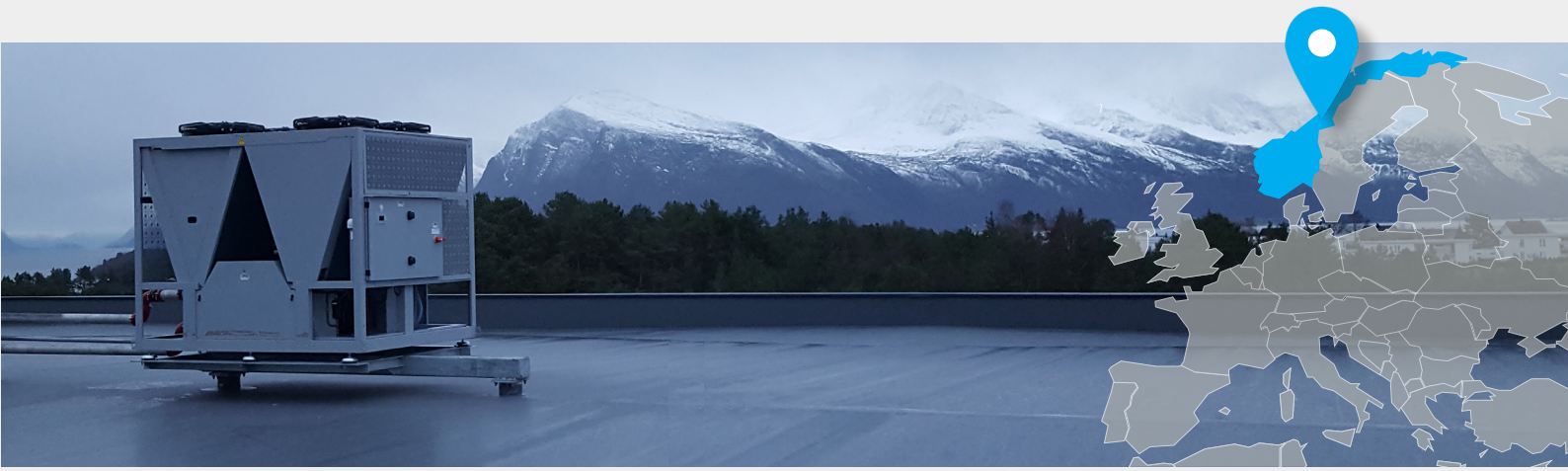
For a precise selection
and more technical information
www.sysoftac.com

Technical documentation

Complete documentation available
at **www.systemair.com** and the app
MEDIA CENTER by Systemair

Download on the App Store | GET IT ON Google Play

Six months tested in extreme temperature conditions in Norway



Technical Data

SysAqua L (Chiller)		20	25	30	35	40	45	55	65	75	90	105	125	140	150	170	190	210
Cooling capacity [1]	kW	19,30	24,70	27,10	38,20	40,90	49,80	56,90	69,70	75,80	97,00	112,70	129,80	134,0	147,0	161,2	187,8	208,8
Power input [1]	kW	6,10	7,70	9,00	12,20	13,40	16,70	18,80	22,10	22,10	24,20	32,50	38,60	44,15	49,00	53,70	64,50	72,30
Total EER 100% [1]		3,16	3,21	3,01	3,13	3,05	2,98	3,03	3,15	3,13	2,98	2,92	2,93	3,03	3,00	3,00	2,91	2,89
Energy efficiency (EER) [1]		A	A	B	A	B	B	B	A	A	C	B	C	B	B	B	C	C
SEER [2]		4,59	4,45	4,23	4,42	4,21	4,12	4,12	4,41	4,32	4,23	4,12	4,24	4,35	4,31	4,40	4,23	4,22
η_{sc} [2]		181	175	166	174	166	162	162	174	170	166	162	167	171	169	173	166	166
Energy efficiency (SEER) [2]		A+	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Electrical data																		
Power supply		400V / 3~N / 50Hz																
Startup type		Direct																
Maximum operating current	A	17,7	22,2	24,3	31,8	33,8	40,2	44,2	59,4	64,4	77,9	86,0	102,0	108	119	136	153	170
Startup current without softstarter	A	52,71	63,71	77,29	118,34	119,34	133,2	140,2	201,43	206,43	264,9	311,96	349,96	251	262	324	341	396
Refrigerant																		
Type		R410A																
Number of refrigerant circuit		1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Charge	kg	6,5	8,4	8,4	9,1	9,2	14,0	14,3	18,9	19,3	22,0	32,3	33,0	2x19,55	2x19,55	2x19,55	2x19,55	2x29,60
Compressors																		
Nomber		2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4
Type		Scroll																
Part load step	%	0/50/100	0/50/100	0/50/100	0/50/100	0/50/100	0/50/100	0/43/57/100	0/40/60/100	0/45/55/100	0/45/55/100	0/38/62/100	0/33/67/100	0/24/26/48/50/52/74/76/100	0/23/27/46/50/54/73/77/100	0/20/24/44/45/55/69/80/100	0/22/28/44/50/56/72/78/100	0/19/31/38/50/62/69/81/100
Crankcase heater	W	2x40	2x40	2x49	2x49	2x49	2x66	2x66	2x66	2x66	66/82	66/95	66/95	4x66	4x66	3x66/82	2x82/2x66	2x95/2x66
Evaporator																		
Nomber		1																
Type		Plates																
Water volume	l	1,78	1,78	2,55	2,55	2,55	4,10	4,10	6,10	6,10	10,80	10,80	10,80	8,5	8,5	12,2	12,2	12,2
Nominal water flow	m^3/h	3,3	4,3	4,6	6,6	7,0	8,6	9,8	12,0	13,0	16,7	19,4	22,3	23,0	25,3	27,7	32,3	35,9
Water pressure drop	kPa	22	35	22	41	46	30	40	31	37	29	38	50	37	44	53	37	45
Antifreeze heater	W	30	30	30	30	30	30	30	2x30	2x30	2x30	2x30	2x30	60	60	120	120	120
Coil(s)																		
Nomber		1	1	1	1	1	1	1	2	2	2	2	2	4	4	4	4	4
Frontal surface	m^2	2,4	2,4	2,4	2,8	2,8	4,2	4,2	5,6	5,6	6,4	6,4	6,4	11,9	11,9	11,9	11,9	11,9
Number of rows		2	2	2	2	2	2	2	2	2	2	3	3	2 + 2	2 + 2	2 + 3	3 + 3	3 + 3
Fan(s) STD																		
Nomber		1	1	1	1	1	1	1	2	2	2	2	2	4	4	4	4	4
Airflow	m^3/h	9 000	13 000	13 000	16 000	16 000	22 500	22 500	15 000	15 000	21 000	21 000	21 000	56 000	56 000	71 000	86 000	83 000
Rotation speed	r.p.m	900	900	900	650	650	790	790	650	650	790	790	790	900	900	900	900	900
Power input (each fan)	W	620	940	940	930	930	1650	1650	930	930	1650	1650	1650	940	940	940 - 1650	1650	1650
Water connections																		
Type		Threaded gas male BSPP iso 228												Victaulic				
Inlet - diameter	inch	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2
Outlet - diameter	inch	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2
Dimensions (with STD fans)																		
Without buffer tank (LxWxH)	mm	1000x1000x1983					2180x1160x1986				2180x1160x2286			2856x2210x2295		2856x2210x2321		
With buffer tank (LxWxH)	mm	1000x1507x1983					2680x1160x1986				2680x1160x2286			3666x2210x2295		3666x2210x2321		
Weight (with 1 pump)																		
Without buffer tank	kg	285	295	325	335	335	545	545	615	615	795	905	925	1 685	1 705	1 798	1 891	2 201
With buffer tank	kg	450	460	490	500	500	1005	1005	1075	1075	1255	1365	1385	2 139	2 159	2 253	2 343	2 653
Sound levels (with STD fans)																		
Sound power level	dB(A)	75	75	75	76	76	80	80	80	80	83	83	83	85,4	85,4	87,0	88,1	88,1
Sound pressure level *	dB(A)	46,8	46,8	46,8	47,8	47,8	51,8	51,8	51,8	51,8	54,8	54,8	54,8	53,4	53,4	55,0	56,1	56,1

[1] According to EN 14511-3:2011 standard. Return/Leaving water temperature : 12/7°C ; Outdoor air temperature (dry bulb) : 35°C.
[2] According to Eurovent and COMMISSION REGULATION (EU) No 2016/2281 for comfort application chillers <400 kW .
* Sound pressure levels calculated at 10 meters. Sound pressure levels refer to ISO standard 3744 with parallepiped shape.

SysAqua H (Heat pump)		20	25	30	35	40	45	55	65	75	90	105	125	140	150	170	190	210
Cooling capacity [1]	kW	19,40	25,30	26,90	35,80	37,40	46,80	53,30	65,80	71,60	91,40	106,20	121,90	125,41	137,59	150,88	175,78	195,44
Power input [1]	kW	6,10	8,61	9,34	13,51	13,64	16,90	19,67	22,10	24,26	34,36	38,06	46,35	43,55	47,77	52,73	64,83	72,54
Total EER 100% [1]		3,18	2,94	2,88	2,65	2,74	2,77	2,71	2,98	2,95	2,66	2,79	2,63	2,88	2,88	2,86	2,71	2,69
Energy efficiency (EER) [1]		A	B	C	D	C	C	C	B	B	D	C	D	C	C	C	C	D
SEER [3]		3,91	3,87	3,88	3,68	3,91	3,70	3,86	4,04	3,99	3,89	3,88	3,89	3,87	3,87	3,91	3,69	3,68
η_{sc} [3]		153	152	152	144	153	145	151	159	157	153	152	153	152	152	153	145	144
Energy efficiency (SEER) [3]		B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B
Heating capacity [2]	kW	19,50	26,90	29,70	37,30	41,60	48,50	58,20	67,20	75,90	88,10	101,00	119,10	143,71	153,73	170,13	194,93	217,56
Power input [2]	kW	6,11	9,28	9,93	13,23	13,51	17,32	20,35	22,47	24,33	33,75	38,40	45,46	45,77	50,24	55,42	67,45	78,26
Total COP 100% [2]		3,19	2,90	2,99	2,82	3,08	2,80	2,86	2,99	3,12	2,61	2,61	2,62	3,14	3,06	3,07	2,89	2,78
Energy efficiency (COP) [2]		B	C	C	C	B	C	C	C	B	D	D	D	B	B	B	C	D
SCOP [4]		3,37	3,27	3,27	3,36	3,40	3,23	3,27	3,43	3,40	3,26	3,31	3,35	3,32	3,36	3,31	3,29	3,23
η_{sh} [4]		132	128	128	132	133	126	128	134	133	128	129	131	138	145	165	185	195
Energy efficiency (SCOP) [4]		A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
Electrical data																		
Power supply		400V / 3~N / 50Hz																
Startup type		Direct																
Maximum operating current	A	17,7	22,2	24,3	31,8	33,8	40,2	44,2	59,4	64,4	77,9	86,0	102,0	108	119	136	153	170
Startup current without softstarter	A	52,71	63,71	77,29	118,34	119,34	133,2	140,2	201,43	206,43	264,9	311,96	349,96	251	262	324	341	396
Refrigerant																		
Type		R410A																
Number of refrigerant circuit		1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Charge	kg	6,5	8,4	8,4	9,1	9,2	14,0	14,3	18,9	19,3	22,0	32,3	33,0	2x24.7	2x24.7	24,7/33,3	2x33.3	2x33.3
Compressors																		
Nomber		2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4
Type		Scroll																
Part load step	%	0/50/100	0/50/100	0/50/100	0/50/100	0/50/100	0/50/100	0/43/57/100	0/40/60/100	0/45/55/100	0/45/55/100	0/38/62/100	0/33/67/100	0/24/26/48/50/52/74/76/100	0/23/27/46/50/54/73/77/100	0/20/24/44/45/55/69/80/100	0/22/28/44/50/56/72/78/100	0/19/31/38/50/62/69/81/100
Crankcase heater	W	2x40	2x40	2x49	2x49	2x49	2x66	2x66	2x66	2x66	66/82	66/95	66/95	4x66	4x66	3x66/82	2x82/2x66	2x95/2x66
Evaporator																		
Nomber		1																
Type		Plates																
Water volume	l	1,78	1,78	2,55	2,55	2,55	4,10	4,10	6,10	6,10	10,80	10,80	10,80	8,5	8,5	12,2	12,2	12,2
Nominal water flow (cooling/heating mode)	m^3/h	3,4/3,4	4,4/4,6	4,6/5,1	6,2/6,4	6,4/7,2	8,1/8,4	9,2/10,0	11,3/11,6	12,3/13,1	15,7/15,2	18,3/17,4	21,0/20,5	21,6/24,7	23,7/26,5	26,0/29,6	30,2/33,5	33,6/37,4
Water pressure drop (cooling/heating mode)	kPa	23/23	37/44	22/26	37/39	40/48	27/29	35/39	28/29	33/37	26/23	34/30	45/41	33/44	39/50	24/31	32/41	40/50
Antifreeze heater	W	30	30	30	30	30	30	30	2x30	2x30	2x30	2x30	2x30	60	60	120	120	120
Coil(s)																		
Nomber		1	1	1	1	1	1	1	2	2	2	2	2	4	4	4	4	4
Frontal surface	m^2	2,4	2,4	2,4	2,8	2,8	4,2	4,2	5,6	5,6	6,4	6,4	6,4	11,9	11,9	11,9	11,9	11,9
Number of rows		2	2	2	2	2	2	2	2	2	2	3	3	2 + 2	2 + 2	2 + 3	3 + 3	3 + 3
Fan(s) STD																		
Nomber		1	1	1	1	1	1	1	2	2	2	2	2	4	4	4	4	4
Airflow	m^3/h	9 000	13 000	13 000	16 000	16 000	22 500	22 500	15 000	15 000	21 000	21 000	21 000	56000	56000	71000	86000	83000
Rotation speed	r.p.m	900	900	900	650	650	790	790	650	650	790	790	790	900	900	900	900	900
Power input (each fan)	W	620	940	940	930	930	1650	1650	930	930	1650	1650	1650	940	940	940-1650	1650	1650
Water connections																		
Type		Male gas threaded BSPP iso 228												Victaulic				
Inlet - diameter	inch	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2
Outlet - diameter	inch	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2
Dimensions (with STD fans)																		
Without buffer tank (LxWxH)	mm	1000x1000x1983					2180x1160x1986				2180x1160x2286			2856x2210x2295		2856x2210x2321		
With buffer tank (LxWxH)	mm	1000x1507x1983					2680x1160x1986				2680x1160x2286			3666x2210x2295		3666x2210x2321		
Weight (with 1 pump)																		
Without buffer tank	kg	285	295	325	335	335	545	545	615	615	795	905	925	1 685	1 705	1 798	1 891	2 201
With buffer tank	kg	450	460	490	500	500	1005	1005	1075	1075	1255	1365	1385	2 139	2 159	2 253	2 343	2 653
Sound levels (with STD fans)																		
Sound power level	dB(A)	75	75	75	76	76	80	80	80	80	83	83	83	85,4	85,4	87,0	88,1	88,1
Sound pressure level *	dB(A)	46,8	46,8	46,8	47,8	47,8	51,8	51,8	51,8	51,8	54,8	54,8	54,8	53,4	53,4	55,0	56,1	56,1

[1] According to EN 14511-3:2011 standard. Return/Leaving water temperature : 12/7°C ; Outdoor air temperature (dry bulb) : 35°C.
[2] According to EN 14511-3:2011 standard. Return/Leaving water temperature : 40/45°C ; Outdoor air temperature (dry bulb) : 7°C.
[3] According to Eurovent and COMMISSION REGULATION (EU) No 2016/2281 for comfort application chillers <400 kW .
[4] According to Eurovent and COMMISSION REGULATION (EU) No 813/2013 for low-temperature heat pumps.
* Sound pressure levels calculated at 10 meters. Sound pressure levels refer to ISO standard 3744 with parallepiped shape.

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