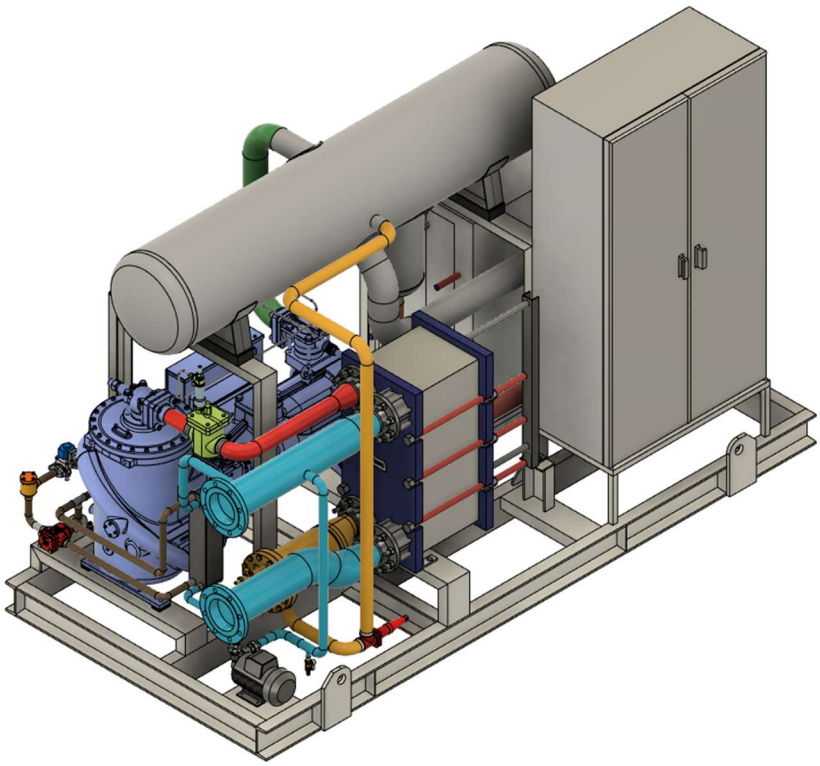
QHA-CW series

Chiller units for 6/12°C chilled water



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Characteristics

- **QHA-LC chillers range in cooling capacity from 45 to 500 TR (158 to 1758 kW)**
- **Low refrigerant charges and semi-hermetic compressors allow safe usage in varying environments**
- **Ammonia refrigerant has zero ODP and GWP**
- **VFD driven motors and automatic internal volume ratio control* enable high efficiency operation at varying capacities and environmental parameters**
- **Compact design with serviceability in mind**
- **Gravity flooded evaporator needs no control**
- **An automatic oil return system from the liquid separator is implemented, meaning no oil management is needed apart from oil quality checks and change according to quality**
- **Only power supply and communication connections are required on site**
- **Heat recovery and seasonal heat pump operation can be implemented**
- **A design using glycol is planned, please contact us**
- **Remote monitoring solutions are available**

***On single compressor models stepless automatic, on multi compressor models 2-step automatic or stepless manual internal volume ratio control**

Single compressor units (45…90 TR, 158…317 kW)

Model		QHA-CW12S1-45	QHA-CW14S1-60	QHA-CW14S1-75	QHA-CW14S1-90
Refrigerant		R717	R717	R717	R717
Number of compressors		1	1	1	1
Compressor manufacturer		SRMTec	SRMTec	SRMTec	SRMTec
Capacity regulation method [1] [2] [3]		VSD and mechanical	VSD and mechanical	VSD and mechanical	VSD and mechanical
Internal volume ratio control		Automatic stepless	Automatic stepless	Automatic stepless	Automatic stepless
Evaporator type		Frame and plate	Frame and plate	Frame and plate	Frame and plate
Condenser type		Shell and tube	Shell and tube	Shell and tube	Shell and tube
Oil cooler type		Shell and tube	Shell and tube	Shell and tube	Shell and tube
Rated motor power per compressor		44.4 kW	44.4 kW	107.0 kW	107.0 kW
Power grid frequency		50 Hz	50 Hz	50 Hz	50 Hz
Oil separator		Integrated	Integrated	Integrated	Integrated
Oil cooling method [4]		Water	Water	Water	Water
Oil charge [5] [6]		9 l	10 l	15 l	15 l
Hot side connections (flange)		DN80	DN100	DN100	DN125
Cold side connections (flange)		DN65	DN80	DN80	DN100
Cold side maximum pressure drop		100 kPa	100 kPa	100 kPa	100 kPa
Refrigerant charge [7]		13 kg	18 kg	23 kg	28 kg
Water circuit design pressure		10 bar	10 bar	10 bar	10 bar
Ammonia circuit design pressure		22.1 bar	22.1 bar	22.1 bar	22.1 bar
Dimensions (Length [mm] x Width [mm] x Height [mm])		2200 x 1200 x 1420	3000 x 1500 x 2240	3000 x 1500 x 2240	3000 x 1500 x 2240
Empty weight		1260 kg	2330 kg	2616 kg	2750 kg
Performance at 38°C Condensation, Chilled water 6/12°C [8]	Total cooling capacity	**45 TR**	**60 TR**	**75 TR**	**90 TR**
	kW/TR	0.66	0.66	0.64	0.64
	Total cooling capacity	158 kW	211 kW	264 kW	317 kW
	Condenser capacity	178 kW	236 kW	297 kW	358 kW
	Hot side water temperatures	35.0°C / 40.4°C	35.0°C / 40.4°C	35.0°C / 40.4°C	35.0°C / 40.4°C
	Total shaft power	29.5 kW	39.4 kW	47.7 kW	57.2 kW
	COP [9]	5.36	5.36	5.53	5.53
	IPLV [9]	25.5 BTU/Wh	25.5 BTU/Wh	26.3 BTU/Wh	26.3 BTU/Wh
	ESEER [9]	7.44 kW/kW	7.44 kW/kW	7.68 kW/kW	7.68 kW/kW
	Chilled water	22.7 m3/h	30.2 m3/h	37.8 m3/h	45.4 m3/h
	Warm side water	30.9 m3/h	41.4 m3/h	51.6 m3/h	62.2 m3/h

(1) With 1500 minimum rpm VSD capacity control allows stepless regulation down to 36% - 62% based on the model
(2) Stepless mechanical capacity control allows regulation down to 75% indefinitely, and to 50% for maximum 5 minutes
(3) The two methods can be used in conjunction, resulting in regulation down to 27% - 47% indefinitely based on the model
(4) Heat recovery option available
(5) Approximate value
(6) Recommended oil type is Mobil Gargoyle Arctic 300, equivalent oils can be used, but please contact us
(7) Approximate value
(8) Please note that these values vary with different water temperatures
(9) Compressor COP, IPLV and ESEER values, system values can be calculated on request

Single compressor units (115…180 TR, 405…633 kW)

Model		QHA-CW17S1-115	QHA-CW17S1-145	QHA-CW17S1-180
Refrigerant		R717	R717	R717
Number of compressors		1	1	1
Compressor manufacturer		SRMTec	SRMTec	SRMTec
Capacity regulation method (1) (2) (3)		VSD and mechanical	VSD and mechanical	VSD and mechanical
Internal volume ratio control		Automatic stepless	Automatic stepless	Automatic stepless
Evaporator type		Frame and plate	Frame and plate	Frame and plate
Condenser type		Shell and tube	Shell and tube	Shell and tube
Oil cooler type		Shell and tube	Shell and tube	Shell and tube
Rated motor power per compressor		107.0 kW	134.4 kW	134.4 kW
Power grid frequency		50 Hz	50 Hz	50 Hz
Oil separator		Integrated	Integrated	Integrated
Oil cooling method (4)		Water	Water	Water
Oil charge (5) (6)		15 l	15 l	15 l
Hot side connections (flange)		DN125	DN150	DN150
Cold side connections (flange)		DN100	DN125	DN125
Cold side maximum pressure drop		100 kPa	100 kPa	100 kPa
Refrigerant charge (7)		35 kg	41 kg	46 kg
Water circuit design pressure		10 bar	10 bar	10 bar
Ammonia circuit design pressure		22.1 bar	22.1 bar	22.1 bar
Dimensions (Length [mm] x Width [mm] x Height [mm])		3500 x 1700 x 2260	3500 x 1700 x 2260	3500 x 1700 x 2260
Empty weight		3622 kg	3940 kg	4175 kg
Performance at 38°C Condensation, Chilled water 6/12°C (8)	Total cooling capacity	**115 TR**	**145 TR**	**180 TR**
	kW/TR	0.64	0.62	0.62
	Total cooling capacity	405 kW	510 kW	633 kW
	Condenser capacity	458 kW	581 kW	726 kW
	Hot side water temperatures	35.0°C / 40.4°C	35.0°C / 40.4°C	35.0°C / 40.4°C
	Total shaft power	73.1 kW	90.3 kW	112.0 kW
	COP (9)	5.53	5.65	5.65
	IPLV (9)	26.3 BTU/Wh	26.9 BTU/Wh	26.9 BTU/Wh
	ESEER (9)	7.68 kW/kW	7.84 kW/kW	7.84 kW/kW
	Chilled water	58.0 m3/h	73.1 m3/h	90.7 m3/h
	Warm side water	80.1 m3/h	100.6 m3/h	125.7 m3/h

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(4) Heat recovery option available
(5) Approximate value
(6) Recommended oil type is Mobil Gargoyle Arctic 300, equivalent oils can be used, but please contact us
(7) Approximate value
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(9) Compressor COP, IPLV and ESEER values, system values can be calculated on request

Multi compressor units (230…500 TR, 809…1758 kW)

Model		QHA-CW2x14MR-230	QHA-CW2x16SR-290	QHA-CW3x14MR-360	QHA-CW3x16SR-420	QHA-CW4x16SR-500
Refrigerant		R717	R717	R717	R717	R717
Number of compressors		2	2	3	3	4
Compressor manufacturer		SRMTec	SRMTec	SRMTec	SRMTec	SRMTec
Capacity regulation method (1) (2) (3)		VSD and mechanical	VSD and mechanical	VSD and mechanical	VSD and mechanical	VSD and mechanical
Internal volume ratio control		Automatic 2-step or manual stepless	Automatic 2-step or manual stepless	Automatic 2-step or manual stepless	Automatic 2-step or manual stepless	Automatic 2-step or manual stepless
Evaporator type		Frame and plate	Frame and plate	Frame and plate	Frame and plate	Frame and plate
Condenser type		Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube
Oil cooler type		Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube
Rated motor power per compressor		107.0 kW	134.4 kW	107.0 kW	134.4 kW	134.4 kW
Power grid frequency		50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Oil separator		Common	Common	Common	Common	Common
Oil cooling method (4)		Water	Water	Water	Water	Water
Oil charge (5) (6)		83 l	99 l	100 l	123 l	124 l
Hot side connections (flange)		DN150	DN200	DN200	DN250	DN250
Cold side connections (flange)		DN150	DN150	DN200	DN200	DN200
Cold side maximum pressure drop		100 kPa	100 kPa	100 kPa	100 kPa	100 kPa
Refrigerant charge (7)		78 kg	98 kg	136 kg	158 kg	190 kg
Water circuit design pressure		10 bar	10 bar	10 bar	10 bar	10 bar
Ammonia circuit design pressure		22.1 bar	22.1 bar	22.1 bar	22.1 bar	22.1 bar
Dimensions (Length [mm] x Width [mm] x Height [mm])		5000 x 2300 x 2360	5000 x 2300 x 2360	5000 x 2300 x 2360	7100 x 2300 x 2490	8100 x 2300 x 2490
Empty weight		6141 kg	8073 kg	8585 kg	9660 kg	10600 kg
Performance at 38°C Condensation, Chilled water 6/12°C (8)	Total cooling capacity	**230 TR**	**290 TR**	**360 TR**	**420 TR**	**500 TR**
	kW/TR	0.71	0.69	0.69	0.7	0.7
	Total cooling capacity	809 kW	1020 kW	1266 kW	1477 kW	1758 kW
	Condenser capacity	919 kW	1165 kW	1441 kW	1686 kW	2000 kW
	Hot side water temperatures	35.0°C / 40.4°C	35.0°C / 40.4°C	35.0°C / 40.4°C	35.0°C / 40.4°C	35.0°C / 40.4°C
	Total shaft power	162.4 kW	200.0 kW	249.7 kW	294.8 kW	348.9 kW
	COP (9)	4.98	5.10	5.07	5.01	5.04
	IPLV (9)	22.8 BTU/Wh	23.2 BTU/Wh	23.2 BTU/Wh	23.0 BTU/Wh	23.1 BTU/Wh
	ESEER (9)	6.64 kW/kW	6.76 kW/kW	6.77 kW/kW	6.69 kW/kW	6.74 kW/kW
	Chilled water	115.9 m3/h	146.1 m3/h	181.4 m3/h	211.6 m3/h	252.0 m3/h
	Warm side water	159.5 m3/h	202.3 m3/h	252.1 m3/h	292.0 m3/h	349.2 m3/h

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Notes:

Specification shown in this document is subject to change without notification

For further details please contact us.

Customized solutions for different temperatures, configurations are possible, please contact us with your request.