

Air Cooled Chiller

AQWL 1404-2406

 380-634 kW

 HFC 410A

 Scroll

Technical feature

- 5 sizes.
- Cooling capacity from 380 to 602 kW.
- Heating capacity from 418 to 702 kW.
- 4 versions:
 - STD (Standard);
 - HSE (High Seasonal Efficiency);
 - HT (High Temperature);
 - HPF (High Pressure Fans).
- 3 acoustic versions:
 - BLN (Basic Low Noise);
 - LN (Low Noise);
 - ELN (Extra Low Noise).
- Two refrigerant circuits.
- Scroll compressors.
- Electronic expansion valve.
- Inverter fans (Standard HSE and HT).



Accessories and options

- Hydrokit with 1 or 2 pumps with or without buffer tank.
- Desuperheater and total heat recover AQWR.
- Coils treatments.
- Unit protection grilles.
- Sofstart.
- BMS interface.
- Overload protection for compressors.
- Automatic circuit breaker.
- Flow switch.
- Differential pressure switch as standard.
- Water filter.
- S&T evaporator.
- Fan speed control (-18°C).
- Power factor corrector capacitors.
- Sequence phases control as standard.
- Mechanical gauges kit.
- Compressors acoustic box as standard.
- Compressors jackets.

Operating limit

AQWL			1404		1604		1806		2106		2406	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Leaving water temperature	Water	°C	from +6 to +15									
	Water + glycol	°C	from -8 to +15									
	Δ T	K	from 3 to 8									
Air temperature	BLN	°C	from 0 to +44	from 0 to +44	from -5 to +44	from 0 to +44	from -5 to +44	from 0 to +44	from 0 to +44	from -5 to +44	from -5 to +44	from -5 to +44
	LN	°C	from 0 to +42	from 0 to +42	from -5 to +42	from 0 to +42	from -5 to +42	from 0 to +42	from 0 to +42	from -5 to +42	from -5 to +42	from -5 to +42
	ELN	°C	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40	from -18 to +40
	HT	°C	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45	from -18 to +45
External static pressure	Standard fans	Pa	0									
	Inverter fans SIF	Pa	<120									

Technical feature AQWL STD/HSE/HPF 1404-2406 BLN

Model AQWL STD/HSE/HPF BLN		1404	1604	1806	2106	2406
Cooling capacity (1)	kW	380,0	422,9	496,0	562,0	634,4
Power input (2)	kW	116,6	131,2	153,0	174,9	196,8
GROSS EER		2,90	2,90	2,90	2,91	2,90
GROSS ESEER		4,07	4,08	4,07	4,09	4,08
GROSS EER HSE		2,93	2,93	2,93	2,94	2,93
GROSS ESEER HSE		4,22	4,22	4,22	4,23	4,22
EER		2,85	2,86	2,86	2,86	-
ESEER		3,73	3,79	3,80	3,84	-
EER HSE		2,89	2,89	2,89	2,89	-
ESEER HSE		3,85	3,91	3,92	3,96	-
Number of refrigerant circuits		2	2	2	2	2
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Charge	kg	40+40	44+44	52+52	67+52	67+67
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1	1	1	1	1
Type		Plate exchanger AISI 316				
Water flow	l/h	65.360	72.739	85.312	96.664	109.117
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4	4	4	4	4
Frontal surface	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	880	880	880	880	880
Air flow	m ³ /h	162.000	153.000	190.000	204.000	227.000
Power input	kW	14,4	14,4	18,0	18,0	21,6
Power input HSE	kW	13,0	13,0	16,3	16,3	19,6
Static head pressure	Pa	from 0 to 120**				
Weight						
Shipping	kg	2.633	2.850	3.559	3.814	3.932
Operating	kg	2.668	2.887	3.599	3.854	3.975
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level (3)	db(A)	97	97	98	98	99
Sound pressure level (4)	db(A)	65	65	66	66	67

** For version with High Pressure Fans (HPF).

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Only compressors.

(3) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(4) Pressure power values in accordance with ISO 3744.

GROSS EER: efficiency in cooling mode without considering the available head of the pump or the pressure drop of the heat exchanger.

EER: efficiency in cooling unit according to EN14511-2011.

Technical feature AQWL STD/HSE 1404-2406 LN

Modello AQWL STD/HSE LN		1404	1604	1806	2106	2406
Cooling capacity (1)	kW	368,2	410,3	481,0	544,0	615,4
Power input (2)	kW	122,0	137,0	160,0	182,0	205,0
GROSS EER		2,80	2,80	2,80	2,80	2,80
GROSS ESEER		4,08	4,08	4,08	4,09	4,09
GROSS EER HSE		2,86	2,86	2,86	2,86	2,86
GROSS ESEER HSE		4,28	4,27	4,27	4,27	4,28
EER		2,76	2,76	2,76	2,76	2,76
ESEER		3,83	3,88	3,93	3,95	3,95
EER HSE		2,82	2,82	2,82	2,81	2,81
ESEER HSE		3,92	3,93	4,08	4,08	4,08
Number of refrigerant circuits		2	2	2	2	2
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Charge	kg	40+40	44+44	52+52	67+52	67+67
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1	1	1	1	1
Type		Plate exchanger AISI 316				
Water flow	l/h	63.330	70.571	82.732	93.568	105.848
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4	4	4	4	4
Frontal surface	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	700	700	700	700	700
Air flow	m ³ /h	124.000	116.000	142.000	156.000	172.000
Power input	kW	9,6	9,6	12,0	12,0	14,4
Power input HSE	kW	6,6	6,6	8,2	8,2	9,8
Static head pressure	Pa	0				
Weight						
Shipping	kg	2.633	2.850	3.559	3.814	3.932
Operating	kg	2.668	2.887	3.599	3.854	3.975
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level (3)	db(A)	91	91	92	92	93
Sound pressure level (4)	db(A)	59	59	60	60	61

(1) Data based on 7 °C leaving chilled water temperature and 35 °C ambient air temperature.

(2) Only compressors.

(3) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(4) Pressure power values in accordance with ISO 3744.

GROSS EER: efficiency in cooling mode without considering the available head of the pump or the pressure drop of the heat exchanger.
EER: efficiency in cooling unit according to EN14511-2011.

Technical feature AQWL STD/HSE 1404-2406 ELN

Model AQWL STD/HSE ELN		1404	1604	1806	2106	2406
Cooling capacity (1)	kW	349,8	389,0	456,5	517,2	584,0
Power input (2)	kW	129,4	145,2	170,4	194,1	217,8
GROSS EER		2,52	2,51	2,50	2,51	2,52
GROSS ESEER		3,81	3,80	3,78	3,79	3,80
GROSS EER HSE		2,65	2,63	2,63	2,62	2,64
GROSS ESEER HSE		4,10	4,07	4,07	4,06	4,08
EER		2,49	2,48	2,47	2,47	2,47
ESEER		3,53	3,64	3,73	3,74	3,74
EER HSE		2,62	2,60	2,60	2,58	2,58
ESEER HSE		3,79	3,88	3,96	3,93	3,93
Number of refrigerant circuits		2	2	2	2	2
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Charge	kg	40+40	44+44	52+52	67+52	67+67
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1	1	1	1	1
Type		Plate exchanger AISI 316				
Water flow	l/h	60.165	66.908	78.518	88.958	100.448
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4	4	4	4	4
Frontal surface	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	550	550	550	550	550
Air flow	m ³ /h	97.000	91.000	112.000	122.000	135.000
Power input	kW	9,6	9,6	12,0	12,0	14,4
Power input HSE	kW	2,6	2,6	3,2	3,2	3,8
Static head pressure	Pa	0				
Weight						
Shipping	kg	2.633	2.850	3.559	3.814	3.932
Operating	kg	2.668	2.887	3.599	3.854	3.975
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level (3)	db(A)	88	88	89	89	90
Sound pressure level (4)	db(A)	56	56	57	57	58

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Only compressors.

(3) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(4) Pressure power values in accordance with ISO 3744.

GROSS EER: efficiency in cooling mode without considering the available head of the pump or the pressure drop of the heat exchanger.

EER: efficiency in cooling unit according to EN14511-2011.

Technical feature AQWL HT 1404-2406

Model AQWL HT		1404	1604	1806	2106	2406
Cooling capacity (1)	kW	383,8	427,1	501,0	567,6	640,7
Power input (2)	kW	115,4	129,9	151,5	173,2	194,8
GROSS EER		3,33	3,29	3,31	3,28	3,29
GROSS ESEER		2,82	2,83	2,82	2,85	2,83
Number of refrigerant circuits		2	2	2	2	2
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Refrigerant						
Type		HFC 410A				
Charge	kg	40+40	44+44	52+52	67+52	67+67
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Evaporator						
Qty		1	1	1	1	1
Type		Plate exchanger AISI 316				
Water flow	l/h	66.013	73.461	86.172	97.627	110.200
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Condenser						
Qty		4	4	4	4	4
Frontal surface	mm ²	4,4	4,4	5,6	6,7	6,7
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	1.100	1.100	1.100	1.100	1.100
Air flow	m ³ /h	198.000	187.000	232.000	249.000	277.000
Power input	kW	20,8	20,8	26,0	26,0	31,2
Static head pressure	Pa	0				
Weight						
Shipping	kg	2.633	2.850	3.559	3.814	3.932
Operating	kg	2.668	2.887	3.599	3.854	3.975
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550
Acoustical data						
Sound power level (3)	db(A)	103	103	104	104	105
Sound pressure level (4)	db(A)	71	71	72	72	73

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Only compressors.

(3) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(4) Pressure power values in accordance with ISO 3744.

GROSS EER: efficiency in cooling mode without considering the available head of the pump or the pressure drop of the heat exchanger.

Technical feature AQWR 1404-2406

Modello AQWR		1404	1604	1806	2106	2406
Cooling capacity (1)	kW	380	423	496	562	634
Power input (2)	kW	117	131	153	175	197
EER (2)		3,26	3,22	3,24	3,21	3,22
ESEER		489	546	639	726	818
Number of refrigerant circuits		2	2	2	2	2
Part load steps	%	21-50-71-100	25-50-75-100	17-33-50-67-83-100	15-29-43-62-81-100	17-33-50-67-83-100
Compressor						
Qty		4	4	6	6	6
Type		Scroll				
Fan						
Qty		8	8	10	10	12
Speed	rpm/min	880	880	880	880	880
Air flow	m ³ /h	162.000	153.000	190.000	204.000	227.000
Power input	kW	14,4	14,4	18,0	18,0	21,6
Power input HSE	kW	13,0	13,0	16,3	16,3	19,6
Static head pressure	Pa	from 0 to 120**				
Evaporator						
Qty		1	1	1	1	1
Type		Plate exchanger AISI 316				
Water flow	m ³ /h	65.360	72.739	85.312	96.664	109.117
Connection type		Victaulic				
Inlet/outlet diameter	inch	4"	4"	4"	4"	4"
Scambiatore di calore						
Qty		4	4	4	4	4
Type		Plate exchanger AISI 316				
Water flow	m ³ /h	84.108	93.912	109.908	124.872	140.696
Inlet/outlet diameter	inch	3"	3"	3"	3"	3"
Weight						
Shipping	kg	2.896	3.133	3.922	4.177	4.315
Operating	kg	2.966	3.207	4.002	4.257	4.400
Dimensions						
Length	mm	4.000	4.000	5.000	6.000	6.000
Width	mm	2.200	2.200	2.200	2.200	2.200
Height	mm	2.550	2.550	2.550	2.550	2.550

** For version with High Pressure Fans (HPP).

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature..

(2) Only compressors.