

Water Cooled Chiller & Heat Pump

WQL/WQH/WQRC 524-1204



154-379 kW



Water cooled



Scroll



170-419 kW



Plate



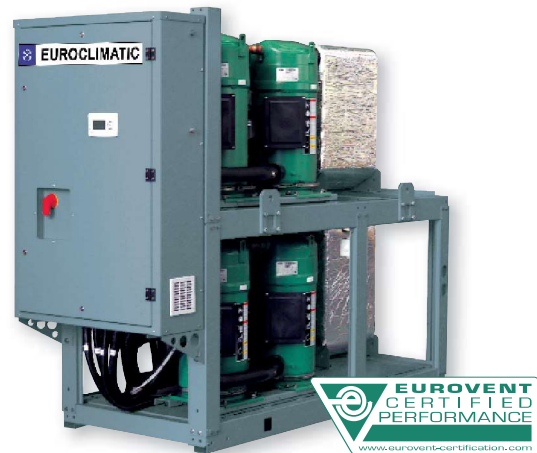
410A

Technical features

- 8 sizes
- Cooling capacity from 154,3 to 379,2 kW
- Heating capacity from 170,2 to 418,5 kW
- 3 versions:
 - WQL (Cooling only)
 - WQH (Heat pump)
 - WQRC (Condenserless)
- 2 acoustic option:
 - BLN (Basic Low Noise)
 - ELN (Extra Low Noise)
- Two refrigerant circuits
- Scroll compressors

Accessories and options

- Desuperheater
- Differential pressure switch (standard)
- Electronic expansion valve (standard WQRC 1104-1204)
- Hydrokit with 1 or 2 pumps for evaporator and condenser
- Mechanical gauges
- Sequence phases control (standard)
- Softstart
- Water filter
- Water flow switch



Operating limit (to be confirmed following selection software issue)

WQL-WQH 524-1204			
Leaving water temperature (cooling)	Water	°C	from +5 to +18
	Water + glycol	°C	-8 / +5 (with glycol and electronic expansion valve); +5/+18 (standard)
	Δ T	K	from 3 to 8
Leaving water temperature (heating)	Water	°C	from +25 to +55
	Δ T	°C	from 3 to 15

Note: maximum % glycol (ethylene or propylene): 40%.

WQRC 524-1204			
Leaving water temperature (cooling)	Water	°C	from +5 to +18
	Water + glycol	°C	-8 / +5 (with glycol and electronic expansion valve); +5/+18 (standard)
	Δ T	K	from 3 to 8

Note: maximum % glycol (ethylene or propylene): 40%.

Technical feature

WQL/WQH 524-1204		524	604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	154,3	181,8	208,9	232,6	265,8	295,6	338,0	379,2
Input power ¹	kW	34,2	41,6	47,5	53,3	59,3	65,5	74,9	83,3
EER ¹	kW/kW	4,51	4,37	4,40	4,36	4,48	4,51	4,51	4,55
Energy Efficiency class		C	C	C	C	C	C	C	C
ESEER	kW/kW	5,40	5,68	5,81	5,29	5,74	5,52	5,70	5,67
Power supply	V/Ph/Hz	400/3/50							
Refrigerant									
Type		HFC 410A							
Number of refrigerant circuits		2							
Compressor									
Qty/Type ⁵		4 / Scroll							
Crankcase heater ⁵	W	90-90	90-90	90-120	140-140	140-140	140-140	140-140	140-140
Evaporator									
Qty/Type		1 / Plate							
Water flow rate	l/s	7,40	8,71	10,01	11,2	12,7	14,1	16,2	18,2
Water pressure drop	kPa	26,7	26,6	31,5	36,3	18,7	22,8	17,8	18,4
Evaporator water connections									
Qty		Victaulic							
Inlet/outlet diameter	inch	2"1/2	2"1/2	2"1/2	2"1/2	4"	4"	4"	4"
Evaporator pump									
Qty		1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Input power (SP version)	kW	2,20	2,20	2,20	3,00	3,00	3,00	4,00	4,00
Available static pressure (SP version)	kPa	Refer to EDM graphics							
Input power (HP version)	kW	3,00	3,00	4,00	4,00	5,50	5,50	5,50	7,50
Available static pressure (HP version)	kPa	Refer to EDM graphics							
Condenser									
Qty/Type		1 / Plate							
Water flow rate	l/s	8,97	10,6	12,2	13,6	15,5	17,2	19,7	22,0
Water pressure drop	kPa	38,1	38,6	45,8	53,0	23,6	18,6	21,5	21,5
Condenser water connections									
Qty		Victaulic							
Inlet/outlet diameter	inch	2"1/2	2"1/2	2"1/2	2"1/2	4"	4"	4"	4"
Condenser pump									
Qty		1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Input power (SP version)	kW	2,20	3,00	3,00	4,00	4,00	5,50	5,50	5,50
Available static pressure (SP version)	kPa	Refer to EDM graphics							
Input power (HP version)	kW	3,00	4,00	5,50	5,50	5,50	5,50	7,50	7,50
Available static pressure (HP version)	kPa	Refer to EDM graphics							
Desuperheater									
Qty/Type		2 / Plate							
Heat recovery	kW	22,1	28,4	36,1	42,0	50,4	68,3	78,1	81,9
Water flow rate	l/s	1,05	1,35	1,73	2,01	2,41	3,26	3,73	3,91
Water pressure drop	kPa	8,3	4,5	5,1	5,7	5,0	8,7	10,3	7,5
Weight									
Shipping ^{2/3}	kg	858/961	929/1.032	1.110/1.213	1.279/1.382	1.266/1.369	1.363/1.466	1.449/1.552	1.541/1.644
Operating ^{2/3}	kg	890/993	971/1.074	1.156/1.259	1.329/1.432	1.340/1.443	1.453/1.556	1.552/1.655	1.660/1.763
Dimensions									
Length	mm	2.250							
Width	mm	850 ² /854 ³ / 885 ^{2/4} - 1.005 ^{3/4}							
Height	mm	1.845 ² / 1850 ³							
Acoustic data									
Sound power level ^{2/3*}	dB(A)	81/75	82/76	85/79	87/81	89/83	90/84	90/84	90/84
Sound pressure level ^{2/3**}	dB(A)	49/43	50/44	53/47	55/49	57/51	58/52	58/52	58/52

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² BLN version.

³ ELN version.

⁴ Only for movimentation.

⁵ Data for each refrigerant circuit.

* Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

** Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

Technical feature

WQH 524-1204		524	604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	150,7	176,2	204,5	225,4	263,1	291,3	332,0	370,5
Input power ¹	kW	34,9	42,7	48,3	54,3	59,8	66,4	76,2	85,2
EER ¹	kW/kW	4,32	4,13	4,23	4,15	4,40	4,39	4,36	4,35
Energy Efficiency class		C	D	D	D	C	C	C	C
ESEER	kW/kW	5,35	5,59	5,71	5,25	5,66	5,46	5,63	5,59
Heating capacity ²	kW	170,2	201,1	231,8	256,5	295,6	331,0	376,6	418,5
Input power ²	kW	44,2	53,6	60,2	68,4	77,4	84,0	95,6	106,2
COP ²	kW/kW	3,85	3,75	3,85	3,75	3,82	3,94	3,94	3,94
Energy Efficiency class		C	D	C	D	C	C	C	C
Power supply	V/Ph/Hz	400/3/50							
Refrigerant									
Type		HFC 410A							
Number of refrigerant circuits		2	2	2	2	2	2	2	2
Compressor									
Qty / Type ⁶		4 / Scroll							
Crankcase heater ⁶	W	90-90	90-90	90-120	140-140	140-140	140-140	140-140	140-140
Internal heat exchanger									
Qty/ Type		1 / Plate							
Water flow rate - Cooling operation	l/s	7,22	8,44	9,80	10,8	12,6	14,0	15,9	17,7
Water pressure drop - Cooling operation	kPa	25,5	25,0	30,3	34,2	18,3	22,2	17,2	17,7
Water flow rate - Heating operation	l/s	8,10	9,57	11,0	12,2	14,1	15,8	18,0	20,0
Water pressure drop - Heating operation	kPa	31,6	31,7	37,9	43,2	22,6	28,0	21,6	22,1
Internal heat exchanger water connections									
Type		Victaulic							
Inlet/outlet diameter	inch	2"1/2	2"1/2	2"1/2	2"1/2	4"	4"	4"	4"
Internal heat exchanger pump									
Qty		1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Input power (SP version)	kW	2,20	2,20	2,20	3,00	3,00	3,00	4,00	4,00
Available static pressure (SP version)	kPa	Refer to EDM graphics							
Input power (HP version)	kW	3,00	3,00	4,00	4,00	5,50	5,50	5,50	7,50
Available static pressure (HP version)	kPa	Refer to EDM graphics							
External heat exchanger									
Qty / Type		1 / Plate							
Water Flow Rate - Cooling operation	l/s	8,83	10,4	12,0	13,3	15,4	17,1	19,5	21,7
Water Pressure Drop - Cooling operation	kPa	37,1	37,2	44,6	50,9	23,3	18,3	21,0	20,9
Water Flow Rate - Heating operation	l/s	10,3	12,0	13,9	15,3	17,8	20,0	22,7	25,2
Water Pressure Drop - Heating operation	kPa	48,9	48,5	58,8	66,5	30,7	24,6	28,1	27,6
Desuperheater									
Qty / Type		2 / Plate							
Heat recovery	kW	22,1	28,4	36,1	42,0	50,4	68,3	78,1	81,9
Water flow rate	l/s	1,05	1,35	1,73	2,01	2,41	3,26	3,73	3,91
Water pressure drop	kPa	8,3	4,5	5,1	5,7	5,0	8,7	10,3	7,5
Weight									
Shipping ^{3/4}	kg	876/979	947/1.050	1.141/1.244	1.311/1.414	1.302/1.405	1.410/1.513	1.494/1.597	1.585/1.688
Operating ^{3/4}	kg	909/1.012	989/1.092	1.187/1.290	1.360/1.463	1.376/1.479	1.500/1.603	1.598/1.701	1.704/1.807
Dimensions									
Length	mm	2.250							
Width	mm	850 ³ /854 ⁴ / 885 ^{3/5} - 1.005 ^{4/5}							
Height	mm	1.845 ³ /1.850 ⁴							
Acoustic data									
Sound power level ^{3/4*}	dB(A)	81/75	82/76	85/79	87/81	89/83	90/84	90/84	90/84
Sound pressure level ^{3*/4**}	dB(A)	49/43	50/44	53/47	55/49	57/51	58/52	58/52	58/52

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ BLN version.

⁴ ELN version.

⁵ Only for movimentation.

⁶ Data for each refrigerant circuit.

* Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

** Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

Technical feature

WQRC 524-1204		524	604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	130,0	155,3	177,6	196,5	224,2	247,2	285,9	316,1
Input power ¹	kW	42,9	51,1	59,0	65,8	74,4	82,5	94,6	105,8
Part load steps	%	0-25-50-75-100	0-25-50-75-100	0-21-50-71-100	0-25-50-75-100	0-22-50-72-100	0-25-50-75-100	0-23-50-73-100	0-25-50-75-100
Power supply	V/Ph/Hz	400/3/50							
Refrigerant									
Type		HFC 410A							
Number of refrigerant circuits		2							
Compressor									
Qty / Type ⁵		4 / Scroll							
Crankcase heater ⁵	W	90-90	90-90	90-120	140-140	140-140	140-140	140-140	140-140
Internal heat exchanger									
Qty / Type		1 / Plate							
Water flow rate	l/s	6,21	7,42	8,49	9,39	10,7	11,8	13,7	15,1
Water pressure drop	kPa	19,3	19,6	23,0	26,2	13,5	16,2	12,9	13,0
Internal heat exchanger water connections									
Type		Victaulic							
Inlet diameter	inch	2"1/2	2"1/2	2"1/2	2"1/2	4"	4"	4"	4"
Internal heat exchanger pump									
Qty		1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Input power (SP version)	kW	2,20	2,20	2,20	3,00	3,00	3,00	4,00	4,00
Available static pressure (SP version)	kPa	Refer to EDM graphics							
Input power (HP version)	kW	3,00							
Available static pressure (HP version)	kPa	Refer to EDM graphics							
Remote condenser refrigerant connections									
Type		To be brazed							
Inlet diameter	inch	7/8"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
Outlet diameter	inch	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 5/8"	1 5/8"	1 5/8"	1 5/8"
Weight									
Shipping ^{2/3}	kg	754/857	791/894	965/1.068	1.138/1.241	1.153/1.256	1.203/1.306	1.279/1.382	1.333/1.436
Operating ^{2/3}	kg	770/873	812/915	988/1.091	1.163/1.266	1.188/1.291	1.241/1.344	1.328/1.431	1.388/1.491
Dimensions									
Length	mm	2.250							
Width	mm	850 ² /854 ³ /885 ^{2/4} - 1.005 ^{3/4}							
Height	mm	1.845 ² /1.850 ³							
Acoustic data									
Sound power level ^{2*}	dB(A)	81	82	85	87	89	90	90	90
Sound pressure level ^{2**}	dB(A)	49	50	53	55	57	58	58	58
Sound power level ^{3*}	dB(A)	75	76	79	81	83	84	84	84
Sound pressure level ^{3**}	dB(A)	43	44	47	49	51	52	52	52

¹ Evaporator EWT/LWT 12 °C/7 °C, condensing temperature 50 °C.

² BLN version.

³ ELN version.

⁴ Only for movimentation.

⁵ Data for each refrigerant circuit.

* Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

** Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.