CHAPTER 2

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION

FROM 26 KW TO 42 KW.

CHA/IK/A 91÷151

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSOR AND PLATE EXCHANGER.

NEW

AQUA PLUS

INVERTER SCROLL

MICROCHANNEL

The liquid Chillers and Heat Pumps of the CHA/IK/A 91÷151 series, with R410A refrigerant, are designed to satisfy the needs of small and medium domestic and service sector environments. With a peraluman structure corrosion-resistant over time, these units can be combined with Fan Coil units or with intermediate heat exchangers for process cooling applications. All units feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/ESEER/IPLV/SCOP). The Microchannel condensing coil, available on the dedicated version, ensures an even higher efficiency (high EER), having a better heat exchange than traditional coils.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
The Heat Pump version is designed for **hot water production up to 55°C.**

The units are already compliant to ErP 2021 European Regulations.

VERSION

CHA/IK/A	***CHA/IK/A/MC***	***CHA/IK/A/WP***
Cooling only	Cooling only with MICROCHANNEL condensing coil	Reversible Heat Pump

FEATURES

- Structure with supporting frame, in peraluman and galvanized sheet.
- DC INVERTER Scroll compressor with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tube and aluminum finned coils or aluminium MICROCHANNEL coils.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: main switch with door lock device, fuses and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

BT	Low water temperature Kit
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
PS	Single circulating pump
FE	Antifreeze heater for evaporator

LOOSE ACCESSORIES

CR	Remote control panel
IS	Modbus RTU protocol, RS485 serial interface
RP	Coil protection metallic guards
AG	Rubber shock absorbers

CHA/IK/A 91÷151

MODEL			91	101	131	151
Cooling STD versions	Cooling capacity (1)	kW	25.8	30.5	35.9	42.3
	Absorbed power (1)	kW	8.0	9.5	11.3	13.4
	EER (1)		3.23	3.21	3.18	3.16
Cooling STD versions (EN14511)	Cooling capacity (1)	kW	25.6	30.3	35.7	42.1
	Absorbed power (1)	kW	8.1	9.7	11.5	13.6
	EER (1)		3.16	3.12	3.10	3.10
	ESEER		4.57	4.31	4.31	4.27
	EUROVENT Class		A	A	A	A
	SEER (2)		4.42	4.16	4.21	4.22
	Energy Efficiency (2)	%	174	163	165	166
Cooling MC versions	Cooling capacity (1)	kW	25.8	30.5	35.9	42.3
	Absorbed power (1)	kW	7.9	9.4	11.2	13.3
	EER (1)		3.27	3.24	3.21	3.18
Cooling MC versions (EN14511)	Cooling capacity (1)	kW	25.6	30.3	35.7	42.1
	Absorbed power (1)	kW	8.0	9.6	11.4	13.5
	EER (1)		3.20	3.16	3.13	3.12
	ESEER		4.63	4.36	4.36	4.32
	EUROVENT Class		A	A	A	A
	SEER (2)		4.48	4.21	4.26	4.27
	Energy Efficiency (2)	%	176	165	167	168
Heating STD versions	Heating capacity (3)	kW	28.7	34.3	40.4	48.0
	Absorbed power (3)	kW	8.1	9.9	11.8	14.0
	COP (3)		3.54	3.46	3.42	3.43
Heating STD versions (EN14511)	Heating capacity (3)	kW	28.9	34.5	40.7	48.3
	Absorbed power (3)	kW	8.3	10.1	12.0	14.3
	COP (3)		3.48	3.42	3.39	3.38
	EUROVENT Class		A	A	A	A
	SCOP (4)		3.34	3.23	3.33	3.41
	Energy Efficiency (4)	%	131	126	130	133
	Energy Class (4)		A+	A+	A+	A+
Compressor	Quantity	n°	1	1	1	1
Evaporator	Water flow	l/s	1.23	1.46	1.72	2.02
	Pressure drops	kPa	20	29	31	31
	Water connections	"G	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Electrical characteristics	Power supply	V/Ph/Hz	400/3+N/50			
	Max. running current	A	21	24	27	34
	Max. starting current	A	11	14	15	18
Unit with pump	Pump available static pressure	kPa	140	115	150	105
	Water connections	"G	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Sound pressure	STD versions (5)	dB(A)	51	53	53	53
	MC versions (5)	dB(A)	50	52	52	52
Weights	Transport weight	Kg	224	239	269	283
	Operating weight	Kg	229	244	275	289

DIMENSIONS			91	101	131	151
L	STD/MC	mm	1850	1850	1850	1850
W	STD/MC	mm	1000	1000	1000	1000
H	STD/MC	mm	1300	1300	1300	1300

CLEARANCE AREA

CHA/IK/A 91÷151

500	800	800	800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

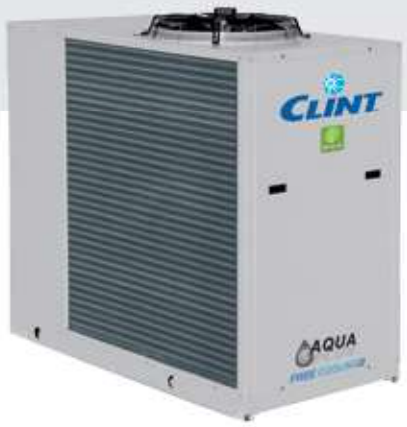
N.B. Data of MC version are specified on technical brochure.
N.B. Weights of WP version are specified on technical brochure.

Electrical board side

FROM 28 KW TO 43 KW.

CHA/K/FC 91÷151

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSOR AND PLATE EXCHANGER.



The liquid Chillers of the CHA/K/FC 91÷151 series, with R410A refrigerant, offer innovative technology to meet the needs of systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round.
During the cold months, in the **FREE-COOLING** operation mode, the return liquid of the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Scroll compressors. A 3-way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.

AQUA PLUS

FREE COOLING

VERSION

CHA/K/FC	***CHA/K/FC/SP***
Cooling only	Cooling only with tank and pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tubes and aluminium finned coil combined with FREE-COOLING copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch.
- R410A refrigerant.
- Electrical board includes: main switch with door lock device, fuses, compressor and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high pressure transducer on cooling circuit and an electrical heater on electrical board.
- Water circuit for SP version includes: insulated tank, circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

BT	Low water temperature Kit
TX	Coil with pre-coated fins
PS	Single circulating pump

LOOSE ACCESSORIES

CR	Remote control panel
IS	Modbus RTU protocol, RS485 serial interface
RP	Coil protection metallic guards
AG	Rubber shock absorbers

CHA/K/FC 91÷151

ErP SEER

MODEL			91	101	131	151
Cooling	Cooling capacity (1)	kW	27.9	31.4	37.3	42.8
	Absorbed power (1)	kW	9.5	11.0	13.9	15.6
	EER (1)		2.94	2.85	2.68	2.74
Cooling (EN14511)	Cooling capacity (1)	kW	27.5	30.9	36.7	42.1
	Absorbed power (1)	kW	9.9	11.5	14.5	16.3
	EER (1)		2.78	2.69	2.53	2.58
	SEER (2)		3.84	3.83	3.90	3.88
	Energy Efficiency (2)	%	151	150	153	152
Free-Cooling cycle	Air temperature (3)	°C	-1.7	-2.7	0.5	-1.2
	Absorbed power (3)	kW	0.98	0.98	1.96	1.96
Compressor	Quantity	n°	1	1	1	1
Water circuit	Water flow	l/s	1.55	1.74	2.07	2.37
	Pressure drops	kPa	117	142	132	141
	Water connections	"G	1"	1"	1"	1"
Electrical characteristics	Power supply	V/Ph/Hz	400/3+N/50			
	Max. running current	A	20	22	29	32
	Max. starting current	A	144	144	162	201
Unit SP version	Water flow	l/s	1.55	1.74	2.07	2.37
	Pump available static pressure	kPa	109	152	150	129
	Tank water volume	l	150	150	150	150
	Water connections	"G	1"	1"	1"	1"
Sound pressure	STD/SP version (4)	dB(A)	51	52	52	52
Weights	Transport weight (5)	Kg	415	430	470	485
	Operating weight (5)	Kg	437	452	499	515

DIMENSIONS			91	101	131	151
L	STD/SP	mm	1850	1850	1850	1850
W	STD/SP	mm	900	900	900	900
H	STD/SP	mm	1840	1840	1840	1840

CLEARANCE AREA

CHA/K/FC 91÷151

500	800	800	800

NOTES

1. Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
5. Unit without tank and pump.

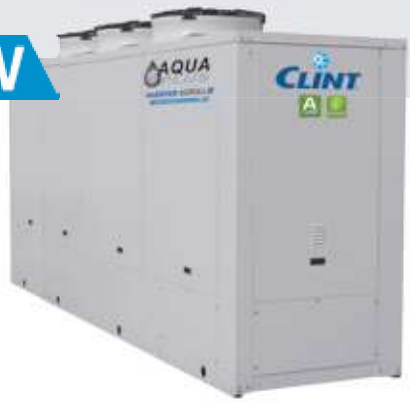
Electrical board side

FROM 50 KW TO 179 KW.

CHA/IK/A 172-P÷574-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSORS AND PLATE EXCHANGER.

NEW



AQUA PLUS

INVERTER SCROLL

MICROCHANNEL

The A CLASS energy efficiency liquid Chillers and Heat Pumps of the CHA/IK/A 172-P÷574-P series, with R410A refrigerant, are designed to satisfy the needs of medium-sized service sector or industrial ambients.
They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.
They are equipped with axial fans, Inverter Scroll compressors and plate exchanger, even in the super silent version. All units feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/ESEER/IPLV/SCOP). The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. Furthermore, Inverter control is also available on circulating pump and fans (EC Inverter) for a further efficiency improvement. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**
The Heat Pump versions are designed for **hot water production up to 55°C.**

The units are already compliant to ErP 2021 European Regulations.

VERSION

CHA/IK/A	***CHA/IK/A/MC***	***CHA/IK/A/WP***
Cooling only	Cooling only with MICROCHANNEL condensing coil	Reversible Heat Pump
CHA/IK/A/SSL	***CHA/IK/A/MC/SSL***	***CHA/IK/A/WP/SSL***
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coil	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminum finned coil or aluminium MICROCHANNEL coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 172-P÷372-P models; with two independent circuits on the refrigerant side and one on the water side in 484-P÷574-P models, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
FE	Antifreeze heater for evaporator
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/IK/A 172-P÷574-P

MODEL			172-P	192-P	212-P	232-P	272-P	302-P	352-P	372-P	484-P	574-P
Cooling STD versions	Cooling capacity (1)	kW	49.9	57.7	65.7	74.8	85.9	97.7	112	130	152	179
	Absorbed power (1)	kW	15.6	18.1	20.4	23.6	27.0	30.3	35.0	40.5	47.2	55.6
	EER (1)		3.20	3.19	3.22	3.17	3.18	3.22	3.20	3.21	3.22	3.22
Cooling STD versions (EN14511)	Cooling capacity (1)	kW	49.6	57.4	65.4	74.4	85.4	97.2	112	129	151	178
	Absorbed power (1)	kW	15.9	18.4	20.7	24.0	27.5	30.8	35.6	41.1	47.8	56.2
	EER (1)		3.12	3.12	3.16	3.10	3.11	3.16	3.15	3.14	3.16	3.17
	ESEER		4.07	4.13	4.03	3.99	3.93	4.09	4.01	4.02	3.97	4.00
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.17	4.20	4.19	4.21	4.21	4.22	4.22	4.19	4.17	4.20
	Energy Efficiency (2)	%	164	165	165	165	165	166	166	165	164	165
Cooling MC versions	Cooling capacity (1)	kW	49.9	57.7	65.7	74.8	85.9	97.7	112	130	152	179
	Absorbed power (1)	kW	15.4	17.9	20.2	23.4	26.7	30.0	34.7	40.1	46.7	55.0
	EER (1)		3.24	3.22	3.25	3.20	3.22	3.26	3.23	3.24	3.25	3.25
Cooling MC versions (EN14511)	Cooling capacity (1)	kW	49.6	57.4	65.4	74.4	85.4	97.2	112	129	151	178
	Absorbed power (1)	kW	15.7	18.2	20.5	23.8	27.2	30.5	35.2	40.7	47.3	55.6
	EER (1)		3.16	3.15	3.19	3.13	3.14	3.19	3.18	3.17	3.19	3.20
	ESEER		4.11	4.17	4.07	4.03	3.97	4.13	4.05	4.06	4.01	4.04
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.21	4.24	4.23	4.25	4.25	4.26	4.26	4.23	4.21	4.24
	Energy Efficiency (2)	%	165	167	166	167	167	167	167	166	165	167
Heating STD versions	Heating capacity (3)	kW	53.7	62.2	71.0	80.7	92.6	105	121	140	164	193
	Absorbed power (3)	kW	16.2	18.7	21.2	24.5	28.0	31.4	36.4	41.8	49.0	57.7
	COP (3)		3.31	3.33	3.35	3.29	3.31	3.34	3.32	3.35	3.35	3.34
Heating STD versions (EN14511)	Heating capacity (3)	kW	54.1	62.6	71.4	81.2	93.2	106	122	141	165	194
	Absorbed power (3)	kW	16.6	19.2	21.6	25.1	28.8	32.2	37.2	43.0	50.0	58.8
	COP (3)		3.26	3.26	3.31	3.24	3.24	3.30	3.28	3.27	3.30	3.30
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SCOP (4)		3.47	3.43	3.42	3.62	3.64	3.46	3.56	3.53	3.44	3.43
	Energy Efficiency (4)	%	136	134	134	142	143	135	139	138	135	134
	Energy Class (4)		A+	A+	A+	A+	-	-	-	-	-	-
Compressor	Quantity	n°	2	2	2	2	2	2	2	2	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°	Stepless									
Evaporator	Water flow	l/s	2.38	2.76	3.14	3.57	4.10	4.67	5.35	6.21	7.26	8.55
	Pressure drops	kPa	41	40	32	39	47	40	35	44	33	30
	Water connections	"G	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	45	45	54	54	63	69	89	89	112	129
	Max. starting current	A	128	128	176	176	187	237	230	230	245	297
Unit with pump	Pump available static pressure	kPa	140	135	140	125	130	180	175	160	160	145
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure	STD versions	Pa	70	60	100	80	75	80	80	80	75	65
	SSL versions	Pa	70	60	95	90	80	80	80	80	---	---
	MC versions	Pa	60	65	95	80	80	75	75	75	75	75
	MC/SSL versions	Pa	60	65	95	80	80	75	75	75	---	---
Sound pressure	STD versions (5)	dB(A)	58	58	62	62	62	62	63	63	63	63
	STD versions with SL accessory (5)	dB(A)	55	55	59	59	59	59	60	60	61	61
	SSL versions (5)	dB(A)	57	57	61	61	61	61	62	62	---	---
	MC versions (5)	dB(A)	57	57	61	61	61	61	62	62	62	62
	MC versions with SL accessory (5)	dB(A)	55	55	59	59	59	59	60	60	60	60
	MC/SSL versions (5)	dB(A)	53	53	57	57	56	56	57	57	---	---
Weights	Transport weight	Kg	614	688	747	756	765	857	1086	1095	1449	1494
	Operating weight	Kg	620	695	755	765	775	870	1100	1110	1470	1520

DIMENSIONS			172-P	192-P	212-P	232-P	272-P	302-P	352-P	372-P	484-P	574-P
L	STD-MC	mm	2350	2350	2350	2350	2350	3550	3550	3550	4700	4700
	SSL-MC/SSL	mm	2350	2350	2350	3550	3550	3550	4700	4700	---	---
W	STD-SSL-MC-MC/SSL	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD-MC	mm	1920	2220	2220	2220	2220	1920	2220	2220	2220	2220
	SSL-MC/SSL	mm	1920	2220	2220	1920	1920	2220	2220	2220	---	---

CLEARANCE AREA

CHA/IK/A 172-P÷574-P

300	800	800	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL and WP versions are specified on technical brochure.

N.B. Data of MC versions are specified on technical brochure.

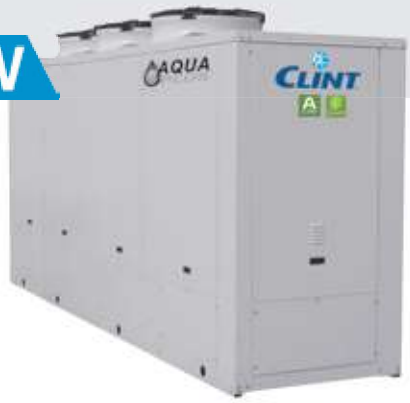
Electrical board side

FROM 51 KW TO 183 KW.

CHA/K/AF 182-P÷604-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.

NEW



AQUA PLUS

AQUALOGIK

The liquid Chillers and Heat Pumps of the CHA/K/AF 182-P÷604-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients and feature A CLASS energy efficiency.
They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.
Equipped with axial fans, Scroll compressors and plate exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.
The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**
The Heat Pump versions are designed for **hot water production up to 55°C.**

The units are already compliant to ErP 2021 European Regulations.

CHA/G/AF 182-P÷604-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/AF	***CHA/K/AF/WP***	***CHA/K/AF/SSL***
Cooling only	Reversible Heat Pump	Super silenced cooling only
CHA/K/AF/WP/SSL	***CHA/K/AF/ST***	***CHA/K/AF/WP/ST***
Super silenced reversible Heat Pump	Cooling only with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/K/AF/SSL/ST	***CHA/K/AF/WP/SSL/ST***	
Super silenced cooling only with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology	

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
SI	Inertial tank
PS	Single circulating pump
PD	Double circulating pump
FE	Antifreeze heater for evaporator
FA	Antifreeze heater for tank
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/AF 182-P÷604-P

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
Cooling	Cooling capacity (1)	kW	51.1	59.1	67.2	76.6	87.9	100	115	133	156	183
	Absorbed power (1)	kW	16.0	18.5	20.9	24.2	27.6	31.0	35.8	41.5	48.3	56.9
	EER (1)		3.19	3.19	3.22	3.17	3.18	3.23	3.21	3.20	3.23	3.22
Cooling (EN14511)	Cooling capacity (1)	kW	50.8	58.7	66.9	76.2	87.4	99.5	114	132	155	182
	Absorbed power (1)	kW	16.3	18.9	21.2	24.6	28.1	31.5	36.3	42.2	48.9	57.5
	EER (1)		3.12	3.11	3.16	3.10	3.11	3.16	3.14	3.13	3.17	3.17
	ESEER		3.89	3.90	3.92	3.83	3.89	3.79	3.76	3.89	3.77	3.99
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.11	4.15	4.14	4.13	4.13	4.16	4.19	4.10	4.10	4.12
	Energy Efficiency (2)	%	161	163	163	162	162	163	165	161	161	162
Heating	Heating capacity (3)	kW	55.4	64.1	72.9	83.1	95.3	109	124	144	169	198
	Absorbed power (3)	kW	16.8	19.4	22.0	25.4	28.8	32.5	37.7	43.4	51.0	59,7
	COP (3)		3.30	3.30	3.31	3.27	3.31	3.35	3.29	3.32	3.31	3.32
Heating (EN14511)	Heating capacity (3)	kW	55.8	64.5	73.3	83.6	95.9	110	125	145	170	199
	Absorbed power (3)	kW	17.3	19.9	22.5	26.1	29.7	33.4	38.6	44.7	52.1	61.2
	COP (3)		3.23	3.24	3.26	3.20	3.23	3.29	3.24	3.24	3.26	3.25
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SCOP (4)		3.36	3.32	3.31	3.50	3.52	3.35	3.44	3.41	3.33	3.32
	Energy Efficiency (4)	%	131	130	129	137	138	131	135	133	130	130
	Energy Class (4)		A+	A+	A+	A+	-	-	-	-	-	-
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	
Evaporator	Water flow	l/s	2.44	2.82	3.21	3.66	4.20	4.78	5.49	6.35	7.45	8.74
	Pressure drops	kPa	43	42	33	41	49	42	37	46	35	31
	Water connections	"G	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	38	44	51	57	68	73	85	102	113	136
	Max. starting current	A	132	142	148	172	212	169	200	246	229	280
Electrical characteristics (ST versions)	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	42	48	54	60	71	78	90	106	118	140
	Max. starting current	A	135	145	152	176	215	173	204	250	233	284
Unit with tank and pump	Pump available static pressure	kPa	140	135	135	120	125	175	175	155	155	140
	Tank water volume	l	400	400	400	400	400	400	400	400	600	600
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Unit ST versions	Water flow	l/s	2.44	2.82	3.21	3.66	4.20	4.78	5.49	6.35	7.45	8.74
	Pump available static pressure	kPa	135	130	135	115	100	140	140	125	125	115
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure	STD versions	Pa	70	60	100	80	75	80	80	80	75	65
	SSL versions	Pa	70	60	95	90	80	80	80	80	---	---
	ST versions	Pa	70	60	100	80	75	80	80	80	75	65
	SSL/ST versions	Pa	70	60	95	90	80	80	80	80	---	---
Sound pressure	STD and ST versions (5)	dB(A)	58	58	62	62	62	62	63	63	63	63
	With SL accessory (5)	dB(A)	56	56	60	60	60	60	61	61	61	61
	SSL and SSL/ST versions (5)	dB(A)	54	54	58	58	57	57	58	58	---	---
Weights	Transport weight (6)	Kg	574	606	625	679	728	836	973	1015	1305	1367
	Operating weight (6)	Kg	570	650	700	710	720	850	990	1000	1380	1420
Weights (ST versions)	Transport weight	Kg	589	621	640	694	743	856	993	1035	1325	1387
	Operating weight	Kg	593	625	645	700	749	863	1002	1044	1340	1407

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
L	STD-ST	mm	2350	2350	2350	2350	2350	3550	3550	3550	4700	4700
	SSL-SSL/ST	mm	2350	2350	2350	3550	3550	3550	4700	4700	--	--
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD-ST	mm	1920	2220	2220	2220	2220	1920	2220	2220	2220	2220
	SSL-SSL/ST	mm	1920	2220	2220	1920	1920	2220	2220	2220	--	--

CLEARANCE AREA

CHA/K/AF 182-P÷604-P

300	800	800	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
6. Unit without tank and pump.

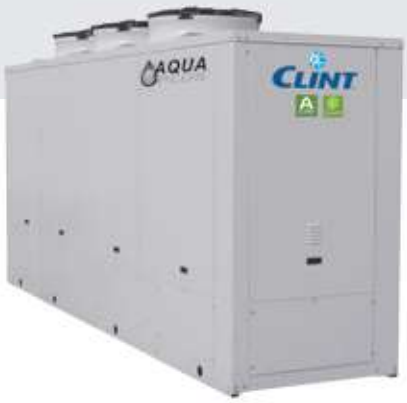
N.B. Weights of SSL and WP versions are specified on technical brochure.

Electrical board side

FROM 56 KW TO 197 KW.

CHA/K/A/WP 182-P÷604-P

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



AQUA PLUS

AQUALOGIK

The reversible Heat Pumps of the CHA/K/A/WP 182-P÷604-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients and feature A CLASS energy efficiency.
They are used, combined with Fan Coil units, for the heating or air conditioning of the rooms and are supplied with Modbus RTU protocol through RS485 serial interface.
Equipped with axial fans, Scroll compressors and plate exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.
The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**
Units are designed for **hot water production up to 55°C.**

CHA/G/A/WP 182-P÷604-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/A/WP	***CHA/K/A/WP/SSL***
Reversible Heat Pump	Super silenced reversible Heat Pump
CHA/K/A/WP/ST	***CHA/K/A/WP/SSL/ST***
Reversible Heat Pump with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
SI	Inertial tank
PS	Single circulating pump
PD	Double circulating pump
FA	Antifreeze heater for tank
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/A/WP 182-P÷604-P

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
Heating	Heating capacity (1)	kW	55.7	63.6	71.4	81.6	94.2	109	124	142	163	197
	Absorbed power (1)	kW	16.9	19.5	21.8	24.4	28.2	33.3	37.2	43.2	49.9	59.0
	COP (1)		3.30	3.26	3.28	3.34	3.34	3.27	3.33	3.29	3.27	3.34
Heating (EN14511)	Heating capacity (1)	kW	56.0	63.9	71.7	81.9	94.6	109	124	143	164	198
	Absorbed power (1)	kW	17.1	19.8	22.2	24.8	28.6	33.7	37.8	44.1	50.9	60.2
	COP (1)		3.27	3.23	3.23	3.30	3.31	3.23	3.28	3.24	3.22	3.29
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SCOP (2)		3.36	3.32	3.31	3.50	3.52	3.35	3.44	3.41	3.33	3.32
	Energy Efficiency (2)	%	131	130	129	137	138	131	135	133	130	130
	Energy Class (2)		A+	A+	A+	A+	-	-	-	-	-	-
Cooling	Cooling capacity (3)	kW	48.2	54.9	62.5	71.9	82.3	94.5	108	125	139	161
	Absorbed power (3)	kW	15.8	18.7	20.7	23.7	28.5	32.0	35.6	41.8	48.0	56.7
	EER (3)		3.05	2.94	3.02	3.03	2.89	2.95	3.03	2.99	2.90	2.84
Cooling (EN14511)	Cooling capacity (3)	kW	48.0	54.6	62.2	71.6	82.0	94.2	108	124	138	160
	Absorbed power (3)	kW	16.0	19.0	21.0	24.0	28.8	32.3	36.0	42.4	48.6	57.4
	EER (3)		3.00	2.87	2.96	2.98	2.85	2.92	3.00	2.92	2.84	2.79
	ESEER		3.71	3.70	3.71	3.81	3.90	3.85	3.66	3.63	3.78	3.67
	EUROVENT Class		B	C	B	B	C	B	B	B	C	C
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	
Evaporator	Water flow	l/s	2.30	2.62	2.99	3.44	3.93	4.52	5.16	5.97	6.64	7.69
	Pressure drops	kPa	28	30	31	28	28	23	29	39	38	37
	Water connections	"G	1 ½"	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	35	41	48	54	65	72	81	102	109	132
	Max. starting current	A	130	140	144	169	209	169	197	246	225	276
Electrical characteristics (ST versions)	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	39	45	51	57	68	77	86	106	114	136
	Max. starting current	A	133	143	148	173	212	173	201	250	229	280
Unit with tank and pump	Pump available static pressure	kPa	155	150	140	135	150	195	185	165	160	150
	Tank water volume	l	400	400	400	400	400	400	400	400	600	600
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Unit ST versions	Water flow	l/s	2.30	2.62	2.99	3.44	3.93	4.52	5.16	5.97	6.64	7.69
	Pump available static pressure	kPa	155	145	140	135	125	165	150	135	130	120
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure	STD versions	Pa	70	60	100	100	100	95	60	65	60	65
	SSL versions	Pa	70	60	65	60	60	95	60	60	60	60
	ST versions	Pa	70	60	100	100	100	95	60	65	60	65
	SSL/ST versions	Pa	70	60	65	60	60	95	60	60	60	60
Sound pressure	STD and ST versions (4)	dB(A)	57	57	61	61	61	61	62	62	62	62
	With SL accessory (4)	dB(A)	55	55	59	59	59	59	60	60	60	60
	SSL and SSL/ST versions (4)	dB(A)	53	53	57	57	56	56	57	57	57	58
Weights	Transport weight (5)	Kg	635	644	693	760	807	926	1076	1126	1235	1414
	Operating weight (5)	Kg	640	650	700	770	820	940	1090	1140	1250	1430
Weights (ST versions)	Transport weight	Kg	650	659	708	775	822	946	1096	1146	1255	1434
	Operating weight	Kg	655	665	715	785	830	960	1110	1160	1270	1450

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
L	STD-ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	3550
	SSL-SSL/ST	mm	2350	2350	2350	2350	2350	3550	3550	4700	4700	4700
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD-SSL-ST-SSL/ST	mm	1920	1920	1920	2220	2220	2220	2220	2220	2220	2220

CLEARANCE AREA

CHA/K/A/WP 182-P÷604-P

300	800	800	1800

NOTES

1. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
2. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
3. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
5. Unit without tank and pump.

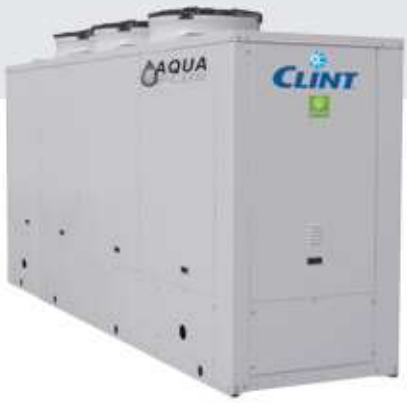
N.B. Weights of SSL versions are specified on technical brochure.

Electrical board side

FROM 48 KW TO 178 KW.

CHA/K 182-P÷604-P

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



AQUA PLUS

AQUALOGIK

The liquid Chillers and Heat Pumps of the CHA/K 182-P÷604-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients.
They are used, combined with Fan Coil units, for the air conditioning of the rooms or to remove the heat developed during industrial processes. They can be supplied with Modbus RTU protocol through RS485 serial interface.
Equipped with axial fans, Scroll compressors and plate exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.
The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**

CHA/G 182-P÷604-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K	***CHA/K/WP***	***CHA/K/SSL***
Cooling only	Reversible Heat Pump	Super silenced cooling only
CHA/K/WP/SSL	***CHA/K/ST***	***CHA/K/WP/ST***
Super silenced reversible Heat Pump	Cooling only with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/K/SSL/ST	***CHA/K/WP/SSL/ST***	
Super silenced cooling only with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology	

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
SI	Inertial tank
PS	Single circulating pump
PD	Double circulating pump
FE	Antifreeze heater for evaporator
FA	Antifreeze heater for tank
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K 182-P÷604-P

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
Cooling	Cooling capacity (1)	kW	47.6	54.9	63.5	72.9	83.4	95.9	110	127	147	178
	Absorbed power (1)	kW	16.1	18.8	21.8	25.0	28.3	31.6	37.9	43.3	50.1	58.2
	EER (1)		2.96	2.92	2.91	2.92	2.95	3.03	2.90	2.93	2.93	3.06
Cooling (EN14511)	Cooling capacity (1)	kW	47.3	54.5	63.1	72.4	82.9	95.3	110	126	147	177
	Absorbed power (1)	kW	16.4	19.2	22.2	25.4	28.7	32.3	38.5	43.9	50.9	59.2
	EER (1)		2.88	2.84	2.84	2.85	2.89	2.95	2.85	2.87	2.88	2.99
	ESEER		3.64	3.52	3.50	3.64	3.85	3.62	3.40	3.51	3.52	3.64
	EUROVENT Class		C	C	C	C	C	B	C	C	C	B
	SEER (2)		3.80	3.80	3.83	3.80	3.84	3.82	3.81	3.86	3.89	3.95
	Energy Efficiency (2)	%	149	149	150	149	151	150	149	151	153	155
Heating	Heating capacity (3)	kW	54.1	61.8	71.4	80.3	90.4	106	120	135	154	187
	Absorbed power (3)	kW	17.3	19.6	23.1	25.4	28.8	33.4	38.5	43.8	50.5	60.4
	COP (3)		3.13	3.15	3.09	3.16	3.14	3.16	3.12	3.08	3.06	3.10
Heating (EN14511)	Heating capacity (3)	kW	54.5	62.3	71.9	80.9	90.9	107	121	136	155	188
	Absorbed power (3)	kW	17.8	20.2	23.7	26.1	29.5	34.6	39.5	45.1	51.8	62.0
	COP (3)		3.06	3.08	3.03	3.10	3.08	3.09	3.06	3.02	2.99	3.03
	EUROVENT Class		B	B	B	B	B	B	B	B	B	B
	SCOP (4)		3.23	3.20	3.19	3.28	3.29	3.28	3.20	3.20	3.19	3.19
	Energy Efficiency (4)	%	126	125	125	128	129	128	125	125	125	125
	Energy Class (4)		A+	A+	A+	A+	-	-	-	-	-	-
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	
Evaporator	Water flow	l/s	2.27	2.62	3.03	3.48	3.98	4.58	5.27	6.06	7.04	8.49
	Pressure drops	kPa	45	48	43	48	43	58	46	53	48	48
	Water connections	"G	1 ½"	1 ½"	1 ½"	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	35	41	48	54	65	69	81	98	105	132
	Max. starting current	A	130	140	144	169	209	166	197	242	221	276
Electrical characteristics (ST versions)	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	39	45	51	57	68	73	86	102	110	136
	Max. starting current	A	133	143	148	173	212	170	201	246	226	280
Unit with tank and pump	Pump available static pressure	kPa	140	130	130	115	135	160	165	150	145	130
	Tank water volume	l	400	400	400	400	400	400	400	400	600	600
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Unit ST versions	Water flow	l/s	2.27	2.62	3.03	3.48	3.98	4.58	5.27	6.06	7.04	8.49
	Pump available static pressure	kPa	135	130	125	115	110	130	135	120	115	100
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure	STD versions	Pa	90	80	100	100	100	80	95	75	60	60
	SSL versions	Pa	85	85	75	75	70	50	70	60	60	---
	ST versions	Pa	90	80	100	100	100	80	95	75	60	60
	SSL/ST versions	Pa	90	90	80	80	85	50	70	55	50	---
Sound pressure	STD and ST versions (5)	dB(A)	56	56	60	60	60	60	61	61	61	61
	With SL accessory (5)	dB(A)	54	54	58	58	58	58	59	59	59	59
	SSL and SSL/ST versions (5)	dB(A)	52	52	56	56	56	55	55	55	56	---
Weights	Transport weight (6)	Kg	595	624	663	682	791	878	927	1036	1135	1374
	Operating weight (6)	Kg	600	630	670	690	800	890	940	1050	1150	1390
Weights (ST versions)	Transport weight	Kg	610	639	678	697	806	898	947	1056	1155	1394
	Operating weight	Kg	615	645	685	705	815	910	960	1070	1170	1410

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
L	STD-ST	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
	SSL-SSL/ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	---
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD-SSL-ST-SSL/ST	mm	1920	1920	1920	1920	2220	2220	2220	2220	2220	2220

CLEARANCE AREA

CHA/K 182-P÷604-P

300	800	800	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
6. Unit without tank and pump.

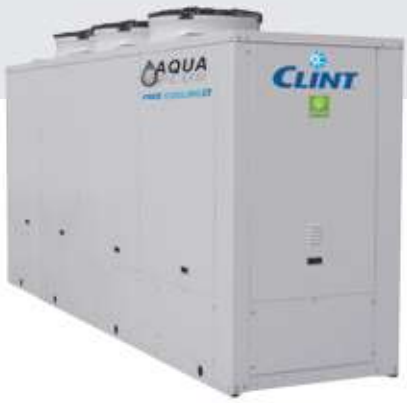
N.B. Weights of SSL and WP versions are specified on technical brochure.

Electrical board side

FROM 53 KW TO 174 KW.

CHA/K/FC 182-P÷604-P

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



AQUA PLUS

FREE COOLING

The liquid Chillers of the CHA/K/FC 182-P÷604-P series, with R410A refrigerant, offer innovative technology for both domestic as well as industrial applications requiring the production of cooled water continuously year-round.
During the cold months, in the **FREE-COOLING** operation mode, the return liquid of the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Scroll compressors. A 3-way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for ducted installation.**

CHA/G/FC 182-P÷604-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/FC

Cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil combined with FREE-COOLING coil.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 182-P÷453-P models; with two independent circuits on the refrigerant side and one on the water side in 524-P÷604-P models, complete with water differential pressure switch.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high pressure transducer on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
SI	Inertial tank
PS	Single circulating pump
PD	Double circulating pump
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/FC 182-P÷604-P

ErP SEER

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
Cooling	Cooling capacity (1)	kW	52.7	59.5	68.1	76.7	85.7	99.1	114	130	151	174
	Absorbed power (1)	kW	18.1	20.3	23.3	26.1	29.3	36.8	42.2	48.4	54.4	64.9
	EER (1)		2.91	2.93	2.92	2.94	2.92	2.69	2.70	2.69	2.78	2.68
Cooling (EN14511)	Cooling capacity (1)	kW	52.0	58.8	67.3	75.9	84.9	98.2	113	129	150	172
	Absorbed power (1)	kW	18.8	21.0	24.1	26.9	30.1	37.7	43.5	49.9	55.7	66.4
	EER (1)		2.77	2.80	2.79	2.82	2.82	2.60	2.60	2.59	2.69	2.59
	SEER (2)		3.81	3.84	3.89	3.85	3.84	3.80	3.83	3.83	3.83	3.86
	Energy Efficiency (2)	%	149	151	153	151	151	149	150	150	150	151
Free-Cooling cycle	Air temperature (3)	°C	2.1	1.3	0.0	-2.4	-3.5	1.0	0.0	-1.1	-3.0	-4.8
	Absorbed power (3)	kW	2	2	2	2	2	6	6	6	8	8
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	
Water circuit	Water flow	l/s	2.72	3.07	3.52	3.96	4.43	5.09	5.88	6.70	7.78	8.93
	Pressure drops	kPa	115	105	120	100	100	100	135	145	102	106
	Water connections	"G	2"	2"	2"	2"	2"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	35	41	48	54	65	76	85	102	113	136
	Max. starting current	A	130	140	144	169	209	173	201	246	229	280
Unit with tank and pump	Pump available static pressure	kPa	120	125	100	115	100	190	145	125	150	125
	Tank water volume	l	400	400	400	400	400	400	400	400	600	600
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure		Pa	110	110	110	105	105	60	60	60	65	65
Sound pressure	STD version (4)	dB(A)	59	59	59	59	59	60	60	60	61	61
	With SL accessory (4)	dB(A)	57	57	57	57	57	58	58	58	59	59
Weights	Transport weight (5)	Kg	923	932	951	980	999	1308	1317	1350	1472	1510
	Operating weight (5)	Kg	970	980	1000	1030	1050	1390	1400	1435	1560	1600

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
L	STD	mm	3550	3550	3550	3550	3550	4700	4700	4700	4700	4700
W	STD	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD	mm	2220	2220	2220	2220	2220	2235	2235	2235	2235	2235

CLEARANCE AREA

CHA/K/FC 182-P÷604-P

300	800	800	1800

NOTES

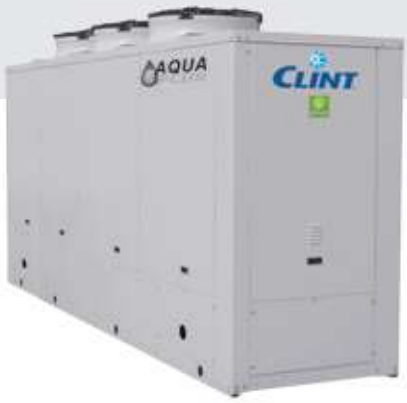
1. Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
5. Unit without tank and pump.

Electrical board side

FROM 49 KW TO 179 KW.

CHA/K 182÷604

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGER



AQUA PLUS

AQUALOGIK

The liquid Chillers and Heat Pumps of the CHA/K 182÷604 series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients.
They are used, combined with Fan Coil units, for the air conditioning of the rooms or to remove the heat developed during industrial processes. They can be supplied with Modbus RTU protocol through RS485 serial interface.
Equipped with axial fans, Scroll compressors and shell and tube exchanger, even in the super silent version, these units can be completed by a hydraulic circuit with tank, with pump, with tank and pump or with AQUALOGIK technology.
The AQUALOGIK smart control system optimises the water set point and modulates the power supply voltage of the pump and the fans, thus making the use of the inertial tank superfluous. This obtains high energy efficiency, quiet operation and optimised dimensions and costs.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**

CHA/G 182÷604
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K	***CHA/K/WP***	***CHA/K/SSL***
Cooling only	Reversible Heat Pump	Super silenced cooling only
CHA/K/WP/SSL	***CHA/K/ST***	***CHA/K/WP/ST***
Super silenced reversible Heat Pump	Cooling only with AQUALOGIK technology	Reversible Heat Pump with AQUALOGIK technology
CHA/K/SSL/ST	***CHA/K/WP/SSL/ST***	
Super silenced cooling only with AQUALOGIK technology	Super silenced reversible Heat Pump with AQUALOGIK technology	

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Shell and tube type evaporator with one circuit on the refrigerant side and one on the water side in 182÷453 models; with two independent circuits on the refrigerant side and one on the water side in 524÷604 models, complete with water differential pressure switch.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- On ST versions water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- On ST versions Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PD	Double circulating pump
SPU	Inertial tank and single circulating pump
SPD	Inertial tank and double circulating pump
FE	Antifreeze heater for evaporator
FB	Antifreeze heater for evaporator/tank
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/K 182÷604

MODEL			182	202	242	262	302	363	393	453	524	604
Cooling	Cooling capacity (1)	kW	49.0	55.0	62.4	73.3	84.3	95.2	109	129	149	179
	Absorbed power (1)	kW	16.6	18.8	21.5	25.3	28.6	31.6	37.5	43.7	50.7	58.8
	EER (1)		2.95	2.93	2.90	2.90	2.95	3.01	2.91	2.95	2.94	3.04
Cooling (EN14511)	Cooling capacity (1)	kW	48.8	54.7	62.0	72.8	83.9	94.7	108	128	148	178
	Absorbed power (1)	kW	16.8	19.1	21.9	25.8	29.0	32.1	38.1	44.3	51.4	59.5
	EER (1)		2.90	2.86	2.83	2.82	2.89	2.95	2.83	2.89	2.88	2.99
	ESEER		3.74	3.57	3.44	3.60	3.85	3.60	3.37	3.61	3.54	3.67
	EUROVENT Class		C	C	C	C	C	B	C	C	C	B
	SEER (2)		3.84	3.84	3.83	3.80	3.91	3.86	3.81	3.88	3.81	3.93
	Energy Efficiency (2)	%	151	151	150	149	153	151	149	152	149	154
Heating	Heating capacity (3)	kW	55.7	61.9	70.2	80.7	91.4	105	119	137	156	188
	Absorbed power (3)	kW	17.8	19.6	22.8	25.7	29.1	33.4	38.1	44.2	51.1	61.0
	COP (3)		3.13	3.16	3.08	3.14	3.14	3.14	3.12	3.10	3.05	3.08
Heating (EN14511)	Heating capacity (3)	kW	56.0	62.2	70.7	81.3	91.9	106	120	138	157	189
	Absorbed power (3)	kW	18.0	20.0	23.5	26.6	29.8	34.2	39.1	45.1	52.3	62.3
	COP (3)		3.11	3.11	3.01	3.06	3.08	3.10	3.07	3.06	3.00	3.03
	EUROVENT Class		B	B	B	B	B	B	B	B	C	B
	SCOP (4)		3.28	3.23	3.20	3.29	3.31	3.27	3.19	3.19	3.19	3.19
	Energy Efficiency (4)	%	128	126	125	129	129	128	125	125	125	125
	Energy Class (4)		A+	A+	A+	A+	-	-	-	-	-	-
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	4	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	
Evaporator	Water flow	l/s	2.31	2.60	2.95	3.46	3.98	4.50	5.15	6.09	7.04	8.45
	Pressure drops	kPa	22	29	50	55	40	39	45	36	43	38
	Water connections	"G	1 ½"	1 ½"	2"	2"	2 ½"	2 ½"	2 ½"	3"	3"	3"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	35	41	48	54	65	69	81	98	105	132
	Max. starting current	A	130	140	144	169	209	166	197	242	221	276
Electrical characteristics (ST versions)	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	39	45	51	57	68	73	86	102	110	136
	Max. starting current	A	133	143	148	173	212	170	201	246	226	280
Unit with tank and pump	Pump available static pressure	kPa	160	150	125	110	140	180	170	170	150	140
	Tank water volume	l	470	470	470	470	470	470	470	470	660	660
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
Unit ST versions	Water flow	l/s	2.31	2.60	2.95	3.46	3.98	4.50	5.15	6.09	7.04	8.45
	Pump available static pressure	kPa	160	150	120	105	110	145	135	140	120	110
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure	STD versions	Pa	90	80	100	100	100	80	95	75	60	60
	SSL versions	Pa	85	85	75	75	70	50	70	60	60	---
	ST versions	Pa	90	80	100	100	100	80	95	75	60	60
	SSL/ST versions	Pa	90	90	80	80	85	50	70	55	50	---
Sound pressure	STD and ST versions (5)	dB(A)	56	56	60	60	60	60	61	61	61	61
	With SL accessory (5)	dB(A)	54	54	58	58	58	58	59	59	59	59
	SSL and SSL/ST versions (5)	dB(A)	52	52	56	56	56	55	55	55	56	---
Weights	Transport weight (6)	Kg	641	661	701	719	844	931	971	1112	1192	1428
	Operating weight (6)	Kg	660	680	720	740	870	960	1000	1150	1230	1470
Weights (ST versions)	Transport weight	Kg	655	675	715	735	860	950	990	1130	1210	1450
	Operating weight	Kg	660	690	730	750	875	970	1010	1150	1230	1470

DIMENSIONS			182	202	242	262	302	363	393	453	524	604
L	STD-ST	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
	SSL-SSL/ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	---
W	STD-SSL-ST-SSL/ST	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD-SSL-ST-SSL/ST	mm	1920	1920	1920	1920	2220	2220	2220	2220	2220	2220

CLEARANCE AREA

CHA/K 182÷604

300	800	800	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
6. Unit without tank and pump.

N.B. Weights of SSL and WP versions are specified on technical brochure.

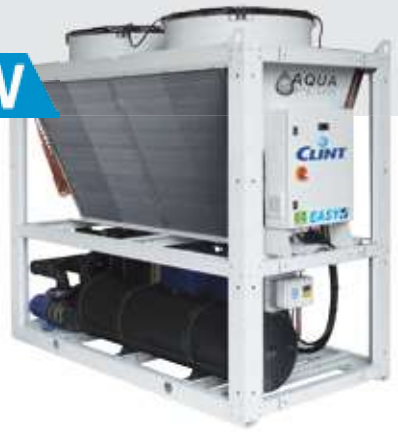
Electrical board side

FROM 65 KW TO 180 KW.

CHA/K/E 252-P÷684-P

AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.

NEW



The liquid Chillers of the CHA/K/E 252-P÷684-P series, with R410A refrigerant, are designed for medium-sized service sector or industrial ambients.
They are used, combined with Fan Coil units, for the air conditioning of the rooms.
The AQUAPLUS **EASY** range is made of 4 sizes from 65 to 180 kW, and features V design condensing coils, axial fans, single or double cooling circuit with Scroll compressors and plate exchanger.
Units, also available in super silent version, can be completed with tank and single or double pump, available as accessory.

AQUA PLUS

EASY

VERSION

CHA/K/E	*CHA/K/E/SSL*
Cooling only	Super silenced cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side in 252-P÷342-P models, with two independent circuits on the refrigerant side and one on the water side in 504-P÷684-P models, complete with water differential pressure switch.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
SI1-SI2	Inertial tank
PS	Single circulating pump
PD	Double circulating pump
FE	Antifreeze heater for evaporator
FA1-FA2	Antifreeze heater for tank
IS	Modbus RTU protocol, RS485 serial interface

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/E 252-P÷684-P

MODEL			252-P	342-P	504-P	684-P
Cooling	Cooling capacity (1)	kW	65.5	90.0	131	180
	Absorbed power (1)	kW	22.2	30.3	44.4	60.6
	EER (1)		2.95	2.97	2.94	2.97
Cooling (EN14511)	Cooling capacity (1)	kW	64.9	89.6	130	179
	Absorbed power (1)	kW	22.6	30.8	45.2	61.6
	EER (1)		2.87	2.91	2.87	2.91
	ESEER		3.39	3.73	3.39	3.73
	EUROVENT Class		C	B	C	B
	SEER (2)		3.80	3.83	3.80	3.83
	Energy Efficiency (2)	%	149	150	149	150
Compressor	Quantity	n°	2	2	4	4
	Refrigerant circuits	n°	1	1	2	2
	Capacity steps	n°	2		4	
Evaporator	Water flow	l/s	3.12	4.30	6.24	8.60
	Pressure drops	kPa	43	48	43	48
	Water connections	"G	2"	2"	2"	2"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50			
	Max. running current	A	53.5	66.5	107	133
	Max. starting current	A	170	235	340	470
Unit with tank and pump	Pump available static pressure	kPa	145	135	135	120
	SI1 Tank water volume	l	150	150	150	150
	SI2 Tank water volume	l	-	-	300	300
	Water connections	"G	2"	2"	2"	2"
Sound pressure	STD version (3)	dB(A)	60	60	62	62
	With SL accessory (3)	dB(A)	58	58	60	60
	SSL version (3)	dB(A)	55	55	57	57
Weights	Transport weight (4)	Kg	547	596	1114	1211
	Operating weight (4)	Kg	550	600	1120	1220

DIMENSIONS			252-P	342-P	504-P	684-P
L	STD	mm	2200	2200	2200	2200
W	STD	mm	1100	1100	2200	2200
H	STD	mm	2045	2045	2045	2045

CLEARANCE AREA

CHA/K/E 252-P÷684-P

800	0	800	0

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
4. Unit without tank and pump.

N.B. Weights of SSL version are specified on technical brochure.

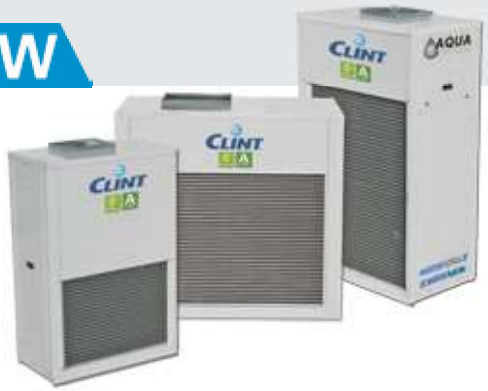
Electrical board side

FROM 6,0 KW TO 36 KW.

CRA/IK/A 21÷131

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH EC INVERTER PLUG-FANS, INVERTER SCROLL COMPRESSOR AND PLATE EXCHANGER FOR INDOOR DUCTED INSTALLATION.

NEW



AQUA PLUS

INVERTER SCROLL

EC INVERTER PLUG FANS

The A CLASS indoor liquid Chillers of the CRA/IK/A 21÷131 series, with R410A refrigerant and EC Inverter Plug-Fans, are designed for small and medium domestic or service sector systems with particular difficulty in positioning units outside the building.
With a prepainted plate structure, these units can be combined with Fan Coil units or with intermediate heat exchangers for process cooling applications.
These units are equipped with particular technical and design adjustments that enable an immediate and efficient use, in addition to remarkably quiet operation and a significant useful head of the fan.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
The Heat Pump version is designed for **hot water production up to 55°C**.

The models 51÷131 are already compliant to ErP 2021 European Regulations.

VERSION

CRA/IK/A	***CRA/IK/A/WP***
Cooling only	Reversible Heat Pump

FEATURES

- Self-supporting prepainted steel frame.
- DC INVERTER Scroll compressor with internal overheat protection and crankcase heater.
- High efficiency reverse blade EC INVERTER PLUG-FANS with electronic speed control.
- Condenser made of copper tubes and aluminium finned coil, complete with drain pan for WP version only.
- Evaporator AISI 316 stainless steel braze welded plates type, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Electronic expansion valve.
- R410A refrigerant.
- Electrical board includes: main switch with door lock device, fuses, compressor (21÷81) and pump remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

BT	Low water temperature Kit
TX	Coil with pre-coated fins
PS	Single circulating pump
FE	Antifreeze heater for evaporator

LOOSE ACCESSORIES

CR	Remote control panel
IS	Modbus RTU protocol, RS485 serial interface
RP	Coil protection metallic guards
AG	Rubber shock absorbers

CRA/IK/A 21÷131

MODEL			21	31	41	51	61	71	81	91	101	131
Cooling	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.7	19.0	22.4	25.8	30.5	35.9
	Absorbed power (1)	kW	1.9	2.5	3.1	4.3	5.4	6.5	7.7	9.3	10.3	12.1
	EER (1)		3.16	3.04	3.00	2.88	2.91	2.92	2.91	2.77	2.96	2.97
Cooling (EN14511)	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.6	18.9	22.5	25.6	30.3	35.7
	Absorbed power (1)	kW	1.9	2.5	3.1	4.3	5.4	6.5	7.7	9.4	10.5	12.3
	EER (1)		3.16	3.04	3.00	2.88	2.89	2.91	2.92	2.72	2.89	2.90
	ESEER		4.47	4.27	4.12	4.05	4.26	4.28	4.44	3.84	3.80	3.82
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		3.84	3.84	3.98	4.32	4.30	4.23	4.33	4.32	4.10	4.12
	Energy Efficiency (2)	%	151	151	156	170	169	166	170	170	161	162
Heating	Heating capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8	28.7	34.3	40.4
	Absorbed power (3)	kW	2.0	2.6	3.3	4.5	5.4	6.4	7.5	9.4	10.7	12.6
	COP (3)		3.35	3.38	3.30	3.13	3.24	3.27	3.31	3.05	3.21	3.21
Heating (EN14511)	Heating capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8	28.9	34.5	40.7
	Absorbed power (3)	kW	2.0	2.6	3.3	4.5	5.4	6.4	7.5	9.6	10.9	12.8
	COP (3)		3.35	3.38	3.30	3.13	3.24	3.27	3.31	3.01	3.17	3.18
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SCOP (4)		3.38	3.27	3.41	3.30	3.43	3.49	3.77	3.21	3.23	3.22
	Energy Efficiency (4)	%	132	128	133	129	134	137	148	125	126	126
	Energy Class (4)		A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
Compressor	Quantity	n°	1	1	1	1	1	1	1	1	1	1
Evaporator	Water flow	l/s	0.29	0.36	0.44	0.59	0.75	0.91	1.07	1.23	1.46	1.72
	Pressure drops	kPa	18	14	18	25	20	29	30	20	29	31
	Water connections	"G	1"	1"	1"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Fan available static pressure		Pa	80	80	80	115	115	115	115	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	230/1/50			400/3+N/50						
	Max. running current	A	17	17	17	14	14	16	19	22	22	25
	Max. starting current	A	11	11	11	9	9	10	11	12	12	13
Unit with pump	Pump available static pressure	kPa	53	56	52	76	82	70	60	140	115	150
	Water connections	"G	1"	1"	1"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
Sound pressure (5)		dB(A)	49	51	52	52	52	53	62	62	62	63
Weights	Transport weight	Kg	131	136	143	203	213	215	217	353	359	374
	Operating weight	Kg	132	137	144	205	215	217	219	356	362	377

DIMENSIONS			21	31	41	51	61	71	81	91	101	131
L	STD	mm	900	900	900	900	900	900	900	1500	1500	1500
W	STD	mm	550	550	550	690	690	690	690	800	800	800
H	STD	mm	1500	1500	1500	1750	1750	1750	1750	1600	1600	1600

CLEARANCE AREA

CRA/IK/A 21÷41

100 | 800 | 800 | 800

CRA/IK/A 51÷81

100 | 800 | 800 | 1000

CRA/IK/A 91÷131

1200 | 800 | 800 | 100

Electrical board side

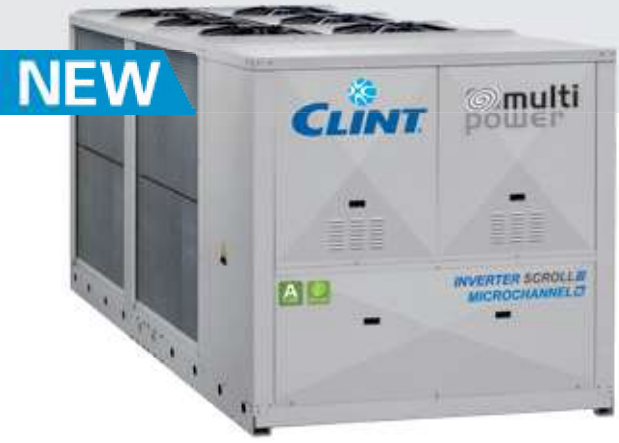
NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

FROM 196 KW TO 668 KW.

CHA/IK/A 674-P÷2356-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSORS AND PLATE EXCHANGER.



multi power

INVERTER SCROLL

MICROCHANNEL

The A CLASS energy efficiency liquid Chillers and Heat Pumps of the CHA/IK/A/ 674-P÷2356-P series, with R410A refrigerant, are designed to satisfy the needs of medium and wide-sized service sector or industrial ambients.
They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.
All units feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/ESEER/IPLV/SCOP). The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. Furthermore, Inverter control is also available on circulating pumps and fans (EC Inverter) for a further efficiency improvement.
The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.
The Heat Pump versions are designed for **hot water production up to 55°C.**

The units are already compliant to ErP 2021 European Regulations.

VERSION

CHA/IK/A	***CHA/IK/A/MC***	***CHA/IK/A/WP***
Cooling only	Cooling only with MICROCHANNEL condensing coils	Reversible Heat Pump
CHA/IK/A/SSL	***CHA/IK/A/MC/SSL***	***CHA/IK/A/WP/SSL***
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminium finned coils or aluminium MICROCHANNEL coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1004-P÷2356-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
EW	External water connections
PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
FE	Antifreeze heater for evaporator
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/IK/A 674-P÷2356-P

MODEL			674-P	784-P	1004-P	1054-P	1154-P	1256-P	1456-P	1606-P	1756-P	2356-P
Cooling STD versions	Cooling capacity (1)	kW	196	234	287	316	349	383	422	458	515	668
	Absorbed power (1)	kW	61	73	90	98	109	120	133	144	163	211
	EER (1)		3.21	3.21	3.19	3.22	3.20	3.19	3.17	3.18	3.16	3.17
Cooling STD versions (EN14511)	Cooling capacity (1)	kW	195	233	286	315	348	382	421	457	514	666
	Absorbed power (1)	kW	62	74	91	99	110	121	134	145	164	213
	EER (1)		3.15	3.15	3.14	3.18	3.16	3.16	3.14	3.15	3.13	3.13
	ESEER		4.03	3.97	4.01	4.03	4.12	4.06	4.14	4.22	4.24	4.29
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.19	4.23	4.22	4.21	4.18	4.22	4.23	4.18	4.25	4.29
	Energy Efficiency (2)	%	165	166	166	165	164	166	166	164	167	169
Cooling MC versions	Cooling capacity (1)	kW	196	234	287	316	349	383	422	458	515	668
	Absorbed power (1)	kW	60	72	89	97	108	119	132	143	161	209
	EER (1)		3.27	3.25	3.22	3.26	3.23	3.22	3.20	3.20	3.20	3.20
Cooling MC versions (EN14511)	Cooling capacity (1)	kW	195	233	286	315	348	382	421	457	514	666
	Absorbed power (1)	kW	61	73	90	98	109	120	133	144	162	211
	EER (1)		3.20	3.19	3.18	3.21	3.19	3.18	3.17	3.17	3.17	3.16
	ESEER		4.07	4.01	4.05	4.07	4.16	4.10	4.18	4.26	4.28	4.33
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.23	4.27	4.26	4.25	4.22	4.26	4.27	4.22	4.29	4.33
	Energy Efficiency (2)	%	166	168	167	167	166	167	168	166	169	170
Heating STD versions	Heating capacity (3)	kW	212	253	311	343	379	417	458	497	559	724
	Absorbed power (3)	kW	63	75	93	102	112	124	137	148	169	218
	COP (3)		3.37	3.37	3.34	3.36	3.38	3.36	3.34	3.36	3.31	3.32
Heating STD versions (EN14511)	Heating capacity (3)	kW	213	254	312	344	380	418	459	499	561	726
	Absorbed power (3)	kW	65	77	95	104	115	127	140	151	172	223
	COP (3)		3.28	3.30	3.28	3.31	3.30	3.29	3.28	3.30	3.26	3.26
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SCOP (4)		3.67	3.57	3.60	3.52	3.61	3.45	3.46	3.41	3.47	3.46
	Energy Efficiency (4)	%	144	140	141	138	141	135	135	133	136	135
Compressor	Quantity	n°	2+2	2+2	2+2	2+2	2+2	3+3	3+3	3+3	3+3	3+3
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless									
Evaporator	Water flow	l/s	9.36	11.18	13.71	15.10	16.67	18.30	20.16	21.88	24.61	31.92
	Pressure drops	kPa	38	36	35	37	40	32	33	36	32	37
	Water connections	DN	80	80	80	80	80	150	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	137	156	194	211	173	250	202	320	355	460
	Max. starting current	A	305	334	407	424	386	428	415	534	617	800
Unit with pump	Pump available static pressure	kPa	160	140	170	185	170	165	145	185	175	145
	Water connections	DN	100	100	100	100	100	150	150	150	150	150
Sound pressure	STD versions (5)	dB(A)	69	71	72	72	72	72	73	73	74	75
	STD versions with SL accessory (5)	dB(A)	66	67	68	69	69	69	70	70	71	72
	SSL versions (5)	dB(A)	63	64	65	64	65	66	66	67	68	---
	MC versions (5)	dB(A)	68	70	71	71	71	71	72	72	73	74
	MC versions with SL accessory (5)	dB(A)	65	66	67	68	68	68	69	69	70	71
	MC/SSL versions (5)	dB(A)	62	63	64	63	64	65	65	66	67	---
Weights	Transport weight	Kg	2251	2384	2511	2791	2851	3186	3248	3658	3836	4392
	Operating weight	Kg	2270	2410	2550	2830	2890	3230	3300	3710	3900	4470

DIMENSIONS			674-P	784-P	1004-P	1054-P	1154-P	1256-P	1456-P	1606-P	1756-P	2356-P
L	STD-MC	mm	4000	4000	4000	5000	5000	5000	5000	6200	6200	7200
	SSL-MC/SSL	mm	5000	5000	5000	6200	6200	6200	6200	7200	7200	---
W	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD-SSL-MC-MC/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/IK/A 674-P÷2356-P

500	1800	1000	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

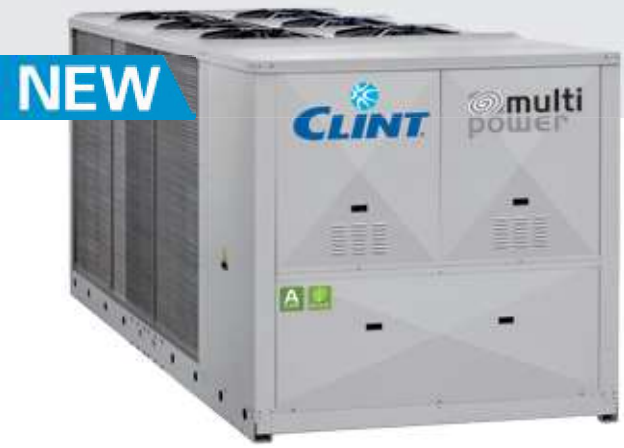
N.B. Weights of SSL and WP versions are specified on technical brochure.
N.B. Data of MC versions are specified on technical brochure.

Electrical board side

FROM 197 KW TO 692 KW.

CHA/K/AF 726-P÷24012-P

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



multi power

The CHA/K/AF 726-P÷24012-P liquid Chillers and Heat Pumps are characterized by A CLASS energy efficiency.
The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.
The Heat Pump versions are designed for **hot water production up to 55°C.**

The units are already compliant to ErP 2021 European Regulations.

CHA/G/AF 726-P÷24012-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/AF	***CHA/K/AF/WP***
Cooling only	Reversible Heat Pump
CHA/K/AF/SSL	***CHA/K/AF/WP/SSL***
Super silenced cooling only	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷24012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
EW	External water connections
PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
FE	Antifreeze heater for evaporator
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/AF 726-P÷24012-P

MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P
Cooling	Cooling capacity (1)	kW	197	220	245	271	300	329	361
	Absorbed power (1)	kW	62	69	76	83	95	105	111
	EER (1)		3.18	3.19	3.22	3.27	3.16	3.13	3.25
Cooling (EN14511)	Cooling capacity (1)	kW	196	219	244	270	299	328	360
	Absorbed power (1)	kW	63	70	77	84	96	105	112
	EER (1)		3.11	3.13	3.17	3.21	3.11	3.12	3.21
	ESEER		3.75	3.80	3.90	4.01	3.90	4.15	4.13
	EUROVENT Class		A	A	A	A	A	A	A
	SEER (2)		4.13	4.14	4.18	4.19	4.10	4.10	4.19
	Energy Efficiency (2)	%	162	163	164	165	161	161	165
Heating	Heating capacity (3)	kW	214	239	266	295	325	359	391
	Absorbed power (3)	kW	65	73	81	88	99	109	119
	COP (3)		3.29	3.27	3.28	3.35	3.28	3.29	3.29
Heating (EN14511)	Heating capacity (3)	kW	215	240	267	296	327	360	393
	Absorbed power (3)	kW	67	75	83	90	102	112	122
	COP (3)		3.21	3.20	3.22	3.29	3.21	3.21	3.22
	EUROVENT Class		A	A	A	A	A	A	A
	SCOP (4)		3.35	3.42	3.35	3.34	3.37	3.34	3.35
	Energy Efficiency (4)	%	131	134	131	131	132	131	131
Compressor	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4
	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	6				8		
Evaporator	Water flow	l/s	9.41	10.51	11.71	12.95	14.33	15.72	17.25
	Pressure drops	kPa	45	49	44	42	50	39	46
	Water connections	DN	80	80	80	80	80	80	80
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50						
	Max. running current	A	152	166	187	199	224	241	258
	Max. starting current	A	276	299	354	367	357	409	426
Unit with pump	Pump available static pressure	kPa	155	135	205	185	180	185	170
	Water connections	DN	100	100	100	100	100	100	100
Sound pressure	STD version (5)	dB(A)	69	71	72	72	72	72	73
	With SL accessory (5)	dB(A)	66	68	69	69	69	69	70
	SSL version (5)	dB(A)	63	65	66	67	66	67	68
Weights	Transport weight	Kg	1854	2171	2289	2317	2437	2680	2690
	Operating weight	Kg	1870	2190	2310	2340	2460	2710	2720

MODEL			13010-P	15010-P	16812-P	18012-P	21012-P	24012-P
Cooling	Cooling capacity (1)	kW	396	435	485	538	609	692
	Absorbed power (1)	kW	124	137	154	169	192	220
	EER (1)		3.19	3.18	3.15	3.18	3.17	3.15
Cooling (EN14511)	Cooling capacity (1)	kW	394	433	484	536	607	690
	Absorbed power (1)	kW	126	139	155	171	194	222
	EER (1)		3.13	3.12	3.12	3.13	3.13	3.11
	ESEER		4.06	4.08	4.10	4.11	4.05	4.09
	EUROVENT Class		A	A	A	A	A	A
	SEER (2)		4.14	4.13	4.16	4.13	4.11	4.13
	Energy Efficiency (2)	%	163	162	163	162	161	162
Heating	Heating capacity (3)	kW	431	473	526	586	663	754
	Absorbed power (3)	kW	129	143	162	176	202	231
	COP (3)		3.34	3.31	3.25	3.33	3.28	3.26
Heating (EN14511)	Heating capacity (3)	kW	433	475	528	588	665	756
	Absorbed power (3)	kW	133	147	165	181	206	236
	COP (3)		3.26	3.23	3.20	3.25	3.23	3.20
	EUROVENT Class		A	A	A	A	A	A
	SCOP (4)		3.36	3.32	3.36	3.21	3.24	3.43
	Energy Efficiency (4)	%	131	130	131	125	127	134
Compressor	Quantity	n°	5+5	5+5	6+6	6+6	6+6	6+6
	Refrigerant circuits	n°	2	2	2	2	2	2
	Capacity steps	n°	8		10			
Evaporator	Water flow	l/s	18.92	20.78	23.17	25.70	29.10	33.06
	Pressure drops	kPa	49	49	33	41	34	32
	Water connections	DN	80	80	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50					
	Max. running current	A	274	324	358	391	446	500
	Max. starting current	A	407	492	525	558	623	678
Unit with pump	Pump available static pressure	kPa	155	125	185	170	160	145
	Water connections	DN	100	100	100	100	150	150
Sound pressure	STD version (5)	dB(A)	74	74	73	74	75	75
	With SL accessory (5)	dB(A)	71	71	70	71	72	72
	SSL version (5)	dB(A)	68	68	68	69	---	---
Weights	Transport weight	Kg	2869	3004	3512	3642	4420	4458
	Operating weight	Kg	2900	3040	3560	3690	4480	4520

DIMENSIONS			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P	18012-P	21012-P	24012-P
L	STD	mm	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
	SSL	mm	5000	5000	5000	5000	6200	6200	6200	6200	6200	7200	7200	---	---
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/K/AF 726-P÷24012-P

500	1800	1000	1800

Electrical board side

NOTES

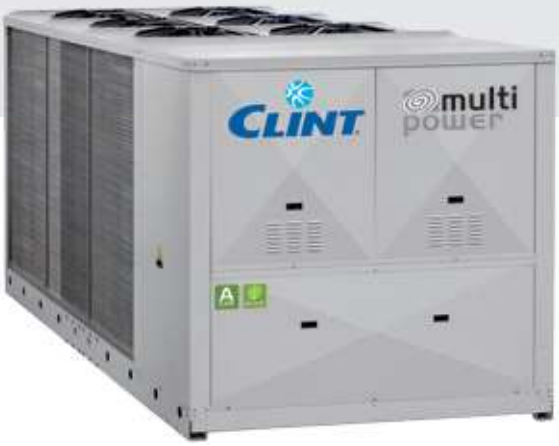
1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL and WP versions are specified on technical brochure.

FROM 227 KW TO 762 KW.

CHA/K/A/WP 726-P÷24012-P

A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



multi power

The CHA/K/A/WP 726-P÷24012-P reversible Heat Pumps are characterized by A CLASS energy efficiency.
The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.
Units are designed for **hot water production up to 55°C.**

CHA/G/A/WP 726-P÷24012-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/A/WP	*CHA/K/A/WP/SSL*
Reversible Heat Pump	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷24012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
EW	External water connections
PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/A/WP 726-P÷24012-P

MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P
Heating	Heating capacity (1)	kW	227	256	272	294	342	369	389
	Absorbed power (1)	kW	66	75	81	85	102	106	112
	COP (1)		3.44	3.41	3.36	3.46	3.35	3.48	3.47
Heating (EN14511)	Heating capacity (1)	kW	228	257	273	295	343	370	390
	Absorbed power (1)	kW	68	77	83	87	105	108	115
	COP (1)		3.35	3.34	3.29	3.39	3.27	3.43	3.39
	EUROVENT Class		A	A	A	A	A	A	A
	SCOP (2)		3.35	3.42	3.35	3.34	3.37	3.34	3.35
	Energy Efficiency (2)	%	131	134	131	131	132	131	131
Cooling	Cooling capacity (3)	kW	194	217	239	259	294	322	339
	Absorbed power (3)	kW	68	75	78	85	100	107	113
	EER (3)		2.85	2.89	3.06	3.05	2.94	3.01	3.00
Cooling (EN14511)	Cooling capacity (3)	kW	193	216	238	258	293	321	338
	Absorbed power (3)	kW	69	76	79	86	101	108	114
	EER (3)		2.80	2.84	3.01	3.00	2.90	2.97	2.96
	ESEER		3.64	3.69	3.79	3.89	3.79	4.03	4.01
	EUROVENT Class		C	C	B	B	C	B	B
Compressor	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4
	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	6				8		
Evaporator	Water flow	l/s	9.27	10.37	11.42	12.37	14.05	15.38	16.20
	Pressure drops	kPa	44	55	42	38	49	37	41
	Water connections	DN	80	80	80	80	80	80	80
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50						
	Max. running current	A	152	166	187	199	224	241	258
	Max. starting current	A	276	299	354	367	357	409	426
Unit with pump	Pump available static pressure	kPa	155	130	205	190	180	185	175
	Water connections	DN	100	100	100	100	100	100	100
Sound pressure	STD version (4)	dB(A)	69	67	68	68	68	69	70
	With SL accessory (4)	dB(A)	66	64	65	65	65	66	67
	SSL version (4)	dB(A)	58	60	61	61	61	62	62
Weights	Transport weight	Kg	1954	2291	2409	2437	2567	2820	2830
	Operating weight	Kg	1970	2310	2430	2460	2590	2850	2860

MODEL			13010-P	15010-P	16812-P	18012-P	21012-P	24012-P
Heating	Heating capacity (1)	kW	420	476	532	566	677	762
	Absorbed power (1)	kW	125	141	157	169	202	226
	COP (1)		3.36	3.38	3.39	3.35	3.35	3.37
Heating (EN14511)	Heating capacity (1)	kW	422	478	533	568	679	764
	Absorbed power (1)	kW	128	144	160	172	206	230
	COP (1)		3.30	3.32	3.33	3.30	3.30	3.32
	EUROVENT Class		A	A	A	A	A	A
	SCOP (2)		3.36	3.32	3.36	3.21	3.24	3.43
	Energy Efficiency (2)	%	131	130	131	125	127	134
Cooling	Cooling capacity (3)	kW	359	421	475	512	597	671
	Absorbed power (3)	kW	127	144	162	172	207	241
	EER (3)		2.83	2.92	2.93	2.98	2.88	2.78
Cooling (EN14511)	Cooling capacity (3)	kW	358	419	474	510	595	669
	Absorbed power (3)	kW	128	146	163	174	209	243
	EER (3)		2.80	2.87	2.91	2.93	2.85	2.75
	ESEER		3.94	3.96	3.98	3.99	3.93	3.97
	EUROVENT Class		C	C	B	B	C	C
Compressor	Quantity	n°	5+5	5+5	6+6	6+6	6+6	6+6
	Refrigerant circuits	n°	2	2	2	2	2	2
	Capacity steps	n°	8		10			
Evaporator	Water flow	l/s	17.15	20.11	22.69	24.46	28.52	32.06
	Pressure drops	kPa	46	46	32	37	33	30
	Water connections	DN	80	80	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50					
	Max. running current	A	274	324	358	391	446	500
	Max. starting current	A	407	492	525	558	623	678
Unit with pump	Pump available static pressure	kPa	160	130	185	175	160	145
	Water connections	DN	100	100	100	100	150	150
Sound pressure	STD version (4)	dB(A)	70	73	73	73	73	74
	With SL accessory (4)	dB(A)	67	70	70	70	70	71
	SSL version (4)	dB(A)	62	63	64	65	---	---
Weights	Transport weight	Kg	3019	3164	3702	3832	4660	4698
	Operating weight	Kg	3050	3200	3750	3880	4720	4770

DIMENSIONS			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P	18012-P	21012-P	24012-P
L	STD	mm	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	6200	7200	7200
	SSL	mm	4000	4000	5000	5000	5000	5000	5000	5000	6200	6200	7200	---	---
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/K/A/WP 726-P÷24012-P

500	1800	1000	1800

Electrical board side

NOTES

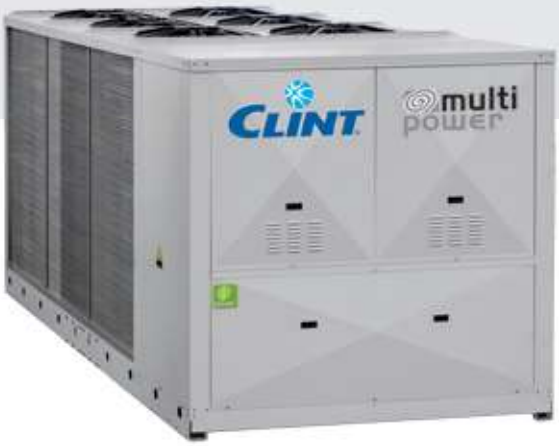
1. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
2. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
3. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL version are specified on technical brochure.

FROM 199 KW TO 1051 KW.

CHA/K 726-P÷36012-P

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



multi power

The liquid Chillers and Heat Pumps of the CHA/K 726-P÷36012-P series, with R410A refrigerant, are designed for large-sized service sector or industrial ambients.
The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

CHA/G 726-P÷36012-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K	***CHA/K/WP***
Cooling only	Reversible Heat Pump
CHA/K/SSL	***CHA/K/WP/SSL***
Super silenced cooling only	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
DS	Desuperheater
RT	Total heat recovery
TX	Coil with pre-coated fins
EW	External water connections
PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
FE	Antifreeze heater for evaporator
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K 726-P÷36012-P

MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P
Cooling	Cooling capacity (1)	kW	199	226	251	276	304	335	367	403	444
	Absorbed power (1)	kW	69	80	85	94	104	113	122	132	155
	EER (1)		2.88	2.83	2.95	2.94	2.92	2.96	3.01	3.05	2.86
Cooling (EN14511)	Cooling capacity (1)	kW	198	225	250	275	303	334	365	402	442
	Absorbed power (1)	kW	70	81	86	95	105	115	124	134	157
	EER (1)		2.84	2.78	2.89	2.89	2.87	2.91	2.95	3.00	2.81
	ESEER		3.54	3.65	3.66	3.77	3.76	3.88	3.73	3.90	3.75
	EUROVENT Class		C	C	C	C	C	B	B	B	C
	SEER (2)		3.82	3.81	3.86	3.96	3.90	4.03	4.13	4.12	4.11
	Energy Efficiency (2)	%	150	149	151	155	153	158	162	175	161
Heating	Heating capacity (3)	kW	228	255	283	310	338	369	401	441	510
	Absorbed power (3)	kW	73	83	90	103	108	121	132	141	164
	COP (3)		3.12	3.07	3.14	3.01	3.13	3.05	3.04	3.13	3.11
Heating (EN14511)	Heating capacity (3)	kW	228	255	283	311	338	370	402	442	511
	Absorbed power (3)	kW	73	83	90	103	108	122	133	142	165
	COP (3)		3.12	3.07	3.14	3.01	3.12	3.04	3.03	3.12	3.10
	EUROVENT Class		B	B	B	B	B	B	B	B	B
	SCOP (4)		3.20	3.21	3.22	3.21	3.22	3.19	3.19	3.19	3.19
	Energy Efficiency (4)	%	125	126	126	125	126	125	125	125	125
Compressor	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	6				8				
Evaporator	Water flow	l/s	9.51	10.80	11.99	13.19	14.52	16.01	17.53	19.25	21.21
	Pressure drops	kPa	40	51	62	54	50	49	59	47	59
	Water connections	DN	80	80	80	80	80	80	80	80	80
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50								
	Max. running current	A	152	166	179	191	216	233	250	274	316
	Max. starting current	A	276	299	347	359	349	401	418	407	484
Unit with pump	Pump available static pressure	kPa	155	130	175	160	180	170	145	140	110
	Water connections	DN	100	100	100	100	100	100	100	100	100
Sound pressure	STD version (5)	dB(A)	66	66	67	69	67	69	70	68	69
	With SL accessory (5)	dB(A)	63	63	64	66	64	65	66	65	66
	SSL version (5)	dB(A)	57	57	59	61	58	60	62	59	61
Weights	Transport weight	Kg	1654	1674	1763	1961	2199	2457	2566	2610	3179
	Operating weight	Kg	1670	1690	1780	1980	2220	2480	2590	2640	3210

MODEL			16812-P	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P
Cooling	Cooling capacity (1)	kW	495	546	602	671	751	845	942	1051
	Absorbed power (1)	kW	170	184	211	243	275	303	336	365
	EER (1)		2.91	2.97	2.85	2.76	2.73	2.79	2.80	2.88
Cooling (EN14511)	Cooling capacity (1)	kW	493	544	599	669	749	842	939	1047
	Absorbed power (1)	kW	172	186	214	246	277	306	339	369
	EER (1)		2.87	2.92	2.81	2.72	2.70	2.75	2.77	2.84
	ESEER		3.71	3.72	3.67	3.76	3.67	3.69	3.73	3.81
	EUROVENT Class		C	B	C	C	D	C	C	C
	SEER (2)		4.17	4.17	4.12	4.19	4.10	4.15	4.17	4.12
	Energy Efficiency (2)	%	167	164	162	165	161	163	164	169
Heating	Heating capacity (3)	kW	564	620	684	776	861	962	1078	1210
	Absorbed power (3)	kW	182	202	223	249	282	312	349	383
	COP (3)		3.10	3.07	3.07	3.12	3.05	3.08	3.09	3.16
Heating (EN14511)	Heating capacity (3)	kW	565	621	685	777	862	963	1079	1211
	Absorbed power (3)	kW	183	203	224	250	283	313	350	384
	COP (3)		3.09	3.07	3.06	3.11	3.05	3.08	3.08	3.15
	EUROVENT Class		B	B	B	B	B	B	B	B
	SCOP (4)		-	-	-	-	-	-	-	-
	Energy Efficiency (4)	%	-	-	-	-	-	-	-	-
Compressor	Quantity	n°	6+6	6+6	6+6	6+6	6+6	6+6	6+6	6+6
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°	10							
Evaporator	Water flow	l/s	23.65	26.09	28.76	32.06	35.88	40.37	45.01	50.21
	Pressure drops	kPa	49	60	58	49	41	51	42	52
	Water connections	DN	80	80	80	150	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50							
	Max. running current	A	350	375	422	485	545	598	676	746
	Max. starting current	A	518	543	600	662	759	812	938	1007
Unit with pump	Pump available static pressure	kPa	165	145	135	125	165	140	130	100
	Water connections	DN	100	100	150	150	150	150	150	150
Sound pressure	STD version (5)	dB(A)	68	70	72	73	73	73	73	74
	With SL accessory (5)	dB(A)	65	67	69	70	70	70	70	71
	SSL version (5)	dB(A)	60	62	64	65	64	65	---	---
Weights	Transport weight	Kg	3294	3463	3517	3682	4200	4518	4918	5044
	Operating weight	Kg	3330	3500	3560	3730	4260	4580	4990	5120

DIMENSIONS			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	16812-P	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P
L	STD	mm	2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
	SSL	mm	2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	7200	7200	---	---
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/K 726-P÷36012-P

500	1800	1000	1800

Electrical board side

NOTES

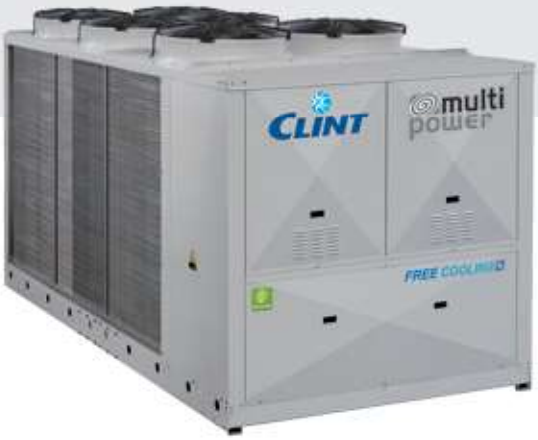
1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL and WP versions are specified on technical brochure.

FROM 208 KW TO 1102 KW.

CHA/K/FC 726-P÷36012-P

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.



multi power

FREE COOLING

The liquid Chillers of the CHA/K/FC 726-P÷36012-P series, with R410A refrigerant, provide advanced technology, flexible and reliable, through an intelligent control module which optimizes the operating times and the powers delivered by the Scroll compressors, according to the needs of the systems, both civil and industrial, where the production of chilled water is required in continuous service throughout the year. During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly, by way of the forced convection of outside air through the condensing coil, thus reducing the energy required for the Scroll compressors operation that the units are equipped with. A system of 3-way valves, controlled by the electronic microprocessor controller that manages the entire unit, can, depending on outside air temperature, operate in CHILLER, FREE-COOLING or MIXED (CHILLER and FREE-COOLING at the same time) mode. CHA/K/FC 726-P÷36012-P allows the reduction of inrush currents generated, the elimination of inertial accumulation tanks and an excellent silent functioning, as the fans adjust their speed to the actual load of the system, providing great benefits especially at night. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

CHA/G/FC 726-P÷36012-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/FC

Cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/FC 726-P÷36012-P

ErP SEER

MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P
Cooling	Cooling capacity (1)	kW	208	236	263	290	328	365	401	441	483
	Absorbed power (1)	kW	76	87	88	98	108	123	132	147	163
	EER (1)		2.74	2.71	2.99	2.96	3.04	2.97	3.04	3.00	2.96
Cooling (EN14511)	Cooling capacity (1)	kW	206	234	260	287	325	362	398	438	479
	Absorbed power (1)	kW	78	89	91	101	111	126	135	150	167
	EER (1)		2.64	2.63	2.86	2.84	2.93	2.87	2.95	2.92	2.87
	SEER (2)		3.81	3.87	3.97	4.03	4.12	4.10	4.25	4.44	4.10
	Energy Efficiency (2)	%	149	152	156	158	162	161	167	175	161
Free-Cooling cycle	Air temperature (3)	°C	-2.0	-2.8	-2.5	-0.2	-2.7	-3.5	-1.0	-2.0	-1.0
	Absorbed power (3)	kW	7.0	7.0	10.5	10.5	14.0	14.0	14.0	14.0	17.5
Compressor	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	4							6	
Water circuit	Water flow	l/s	11.02	12.38	13.87	15.31	17.32	19.34	21.21	23.33	25.52
	Pressure drops	kPa	102	126	165	124	112	106	115	100	120
	Water connections	DN	100	100	100	100	100	100	100	100	100
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50								
	Max. running current	A	152	166	187	199	232	249	266	282	332
	Max. starting current	A	276	299	354	367	365	417	433	415	500
Unit with pump	Pump available static pressure	kPa	150	115	70	100	95	80	105	115	85
	Water connections	DN	100	100	100	100	100	100	100	100	100
Sound pressure	STD version (4)	dB(A)	66	67	68	69	69	70	70	70	71
	With SL accessory (4)	dB(A)	64	64	65	66	66	67	67	67	67
Weights	Transport weight	Kg	2175	2185	2360	2435	2990	3020	3220	3510	3920
	Operating weight	Kg	2310	2320	2500	2630	3190	3220	3470	3770	4250

MODEL			16812-P	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P
Cooling	Cooling capacity (1)	kW	536	590	665	738	827	920	1014	1102
	Absorbed power (1)	kW	179	199	230	266	305	340	368	412
	EER (1)		2.99	2.96	2.89	2.77	2.71	2.71	2.76	2.67
Cooling (EN14511)	Cooling capacity (1)	kW	532	585	659	731	818	911	1004	1102
	Absorbed power (1)	kW	183	204	236	273	314	349	378	412
	EER (1)		2.91	2.87	2.79	2.68	2.61	2.61	2.66	2.67
	SEER (2)		4.43	4.25	4.24	4.26	4.10	4.14	4.14	4.14
	Energy Efficiency (2)	%	174	167	167	167	161	163	163	163
Free-Cooling cycle	Air temperature (3)	°C	-2.2	-2.7	-3.0	-3.5	-2.5	-0.1	0.1	-0.4
	Absorbed power (3)	kW	17.5	17.5	17.5	21.0	24.5	28.0	31.5	31.5
Compressor	Quantity	n°	6+6	6+6	6+6	6+6	6+6	6+6	6+6	6+6
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°	8							
Water circuit	Water flow	l/s	28.28	31.09	35.11	38.89	43.64	48.52	53.51	58.13
	Pressure drops	kPa	121	132	148	152	172	151	162	173
	Water connections	DN	125	125	125	150	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50							
	Max. running current	A	365	391	438	500	561	622	699	769
	Max. starting current	A	533	558	615	678	774	835	961	1031
Unit with pump	Pump available static pressure	kPa	110	90	60	160	125	125	90	110
	Water connections	DN	125	125	125	150	150	150	150	150
Sound pressure	STD version (4)	dB(A)	71	71	74	75	75	75	75	76
	With SL accessory (4)	dB(A)	67	68	70	71	71	71	71	72
Weights	Transport weight	Kg	4180	4220	5060	5240	5830	6880	7410	7530
	Operating weight	Kg	4520	4560	5460	5650	6320	7600	8220	8340

DIMENSIONS			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P
L	STD	mm	4000	4000	4000	4000	5000	5000	5000	5000	6200
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360

DIMENSIONS			16812-P	18012-P	21012-P	24012-P	27012-P	30012-P	33012-P	36012-P
L	STD	mm	6200	6200	7200	7200	8400	9600	10600	10600
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360

CLEARANCE AREA

CHA/K/FC 726-P÷36012-P

500	1800	1000	1800

NOTES

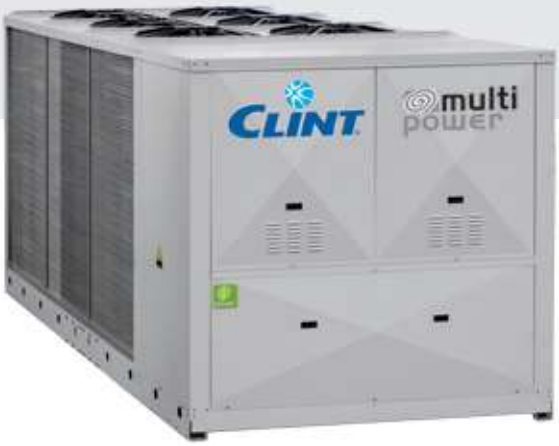
1. Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

Electrical board side

FROM 200 KW TO 1062 KW.

CHA/K 726÷36012

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGER



multi power

The liquid Chillers and Heat Pumps of the CHA/K 726÷36012 series, with R410A refrigerant, are designed for large-sized service sector or industrial ambients.
The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

CHA/G 726÷36012
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K	***CHA/K/WP***
Cooling only	Reversible Heat Pump
CHA/K/SSL	***CHA/K/WP/SSL***
Super silenced cooling only	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048÷36012 models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
CT	Condensing control down to 0 °C
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
EW	External water connections
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
FE	Antifreeze heater for evaporator
SS	Soft start
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/K 726÷36012

MODEL			726	786	826	906	1048	1128	1208	13010	15010
Cooling	Cooling capacity (1)	kW	200	224	248	270	302	328	367	404	445
	Absorbed power (1)	kW	70	80	86	97	105	115	121	136	158
	EER (1)		2.86	2.80	2.88	2.78	2.88	2.85	3.03	2.97	2.82
Cooling (EN14511)	Cooling capacity (1)	kW	199	223	247	269	301	326	365	403	444
	Absorbed power (1)	kW	71	81	87	98	106	117	123	137	159
	EER (1)		2.80	2.75	2.84	2.74	2.84	2.79	2.97	2.94	2.79
	ESEER		3.47	3.69	3.70	3.62	3.72	3.72	3.80	3.83	3.86
	EUROVENT Class		C	C	C	C	C	C	B	B	C
	SEER (2)		3.82	3.81	3.86	3.96	3.90	4.03	4.13	4.11	4.11
	Energy Efficiency (2)	%	150	149	151	155	153	158	162	175	161
Heating	Heating capacity (3)	kW	229	252	280	304	336	362	401	442	512
	Absorbed power (3)	kW	74	83	91	106	109	123	130	145	167
	COP (3)		3.09	3.04	3.08	2.87	3.08	2.94	3.08	3.05	3.07
Heating (EN14511)	Heating capacity (3)	kW	229	252	280	305	336	363	402	443	513
	Absorbed power (3)	kW	74	83	91	107	109	124	131	146	168
	COP (3)		3.09	3.04	3.08	2.86	3.07	2.93	3.07	3.04	3.06
	EUROVENT Class		B	B	B	C	B	C	B	B	B
	SCOP (4)		3.19	3.20	3.21	3.22	3.21	3.22	3.23	3.19	3.20
	Energy Efficiency (4)	%	125	125	125	126	125	126	126	125	125
Compressor	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	6				8				
Evaporator	Water flow	l/s	9.44	10.58	11.71	12.75	14.26	15.49	17.33	19.08	21.01
	Pressure drops	kPa	45	42	45	50	48	56	55	45	33
	Water connections	DN	100	100	100	100	100	100	100	125	125
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50								
	Max. running current	A	152	166	179	191	216	233	250	274	316
	Max. starting current	A	276	299	347	359	349	401	418	407	484
Unit with pump	Pump available static pressure	kPa	150	140	195	170	180	165	150	140	135
	Water connections	DN	100	100	100	100	100	100	100	100	100
Sound pressure	STD version (5)	dB(A)	66	66	67	69	67	69	70	68	69
	With SL accessory (5)	dB(A)	63	63	64	66	64	65	66	65	66
	SSL version (5)	dB(A)	57	57	59	61	58	60	62	59	61
Weights	Transport weight	Kg	1703	1723	1813	2003	2253	2532	2642	2691	3283
	Operating weight	Kg	1750	1770	1860	2050	2310	2600	2710	2780	3380

MODEL			16812	18012	21012	24012	27012	30012	33012	36012
Cooling	Cooling capacity (1)	kW	510	551	614	684	766	862	961	1062
	Absorbed power (1)	kW	174	186	214	250	281	307	340	369
	EER (1)		2.93	2.96	2.87	2.74	2.73	2.81	2.83	2.88
Cooling (EN14511)	Cooling capacity (1)	kW	508	549	611	682	763	858	958	1058
	Absorbed power (1)	kW	176	188	217	252	284	311	343	373
	EER (1)		2.89	2.92	2.82	2.71	2.69	2.76	2.79	2.84
	ESEER		3.78	3.75	3.69	3.77	3.60	3.67	3.75	3.80
	EUROVENT Class		C	B	C	C	D	C	C	C
	SEER (2)		4.17	4.17	4.12	4.19	4.10	4.15	4.17	4.12
	Energy Efficiency (2)	%	167	164	162	165	161	163	164	169
Heating	Heating capacity (3)	kW	581	626	698	791	878	981	1100	1222
	Absorbed power (3)	kW	186	204	226	257	288	316	353	388
	COP (3)		3.12	3.07	3.09	3.08	3.05	3.10	3.12	3.15
Heating (EN14511)	Heating capacity (3)	kW	582	627	699	792	879	982	1101	1223
	Absorbed power (3)	kW	187	205	227	258	289	317	354	389
	COP (3)		3.12	3.06	3.08	3.07	3.04	3.10	3.11	3.14
	EUROVENT Class		B	B	B	B	B	B	B	B
	SCOP (4)		-	-	-	-	-	-	-	-
	Energy Efficiency (4)	%	-	-	-	-	-	-	-	-
Compressor	Quantity	n°	6+6	6+6	6+6	6+6	6+6	6+6	6+6	6+6
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°	10							
Evaporator	Water flow	l/s	24.08	26.02	28.99	32.30	36.17	40.71	45.38	50.15
	Pressure drops	kPa	43	54	59	46	55	62	47	52
	Water connections	DN	125	125	125	150	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50							
	Max. running current	A	350	375	422	485	545	598	676	746
	Max. starting current	A	518	543	600	662	759	812	938	1007
Unit with pump	Pump available static pressure	kPa	165	150	130	130	150	125	125	95
	Water connections	DN	100	100	150	150	150	150	150	150
Sound pressure	STD version (5)	dB(A)	68	70	72	73	73	73	73	74
	With SL accessory (5)	dB(A)	65	67	69	70	70	70	70	71
	SSL version (5)	dB(A)	60	62	64	65	64	65	---	---
Weights	Transport weight	Kg	3383	3565	3605	3840	4385	4705	5210	5330
	Operating weight	Kg	3480	3670	3720	3970	4540	4860	5470	5590

DIMENSIONS			726	786	826	906	1048	1128	1208	13010	15010	16812	18012	21012	24012	27012	30012	33012	36012
L	STD	mm	2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
	SSL	mm	2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	7200	7200	---	---
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/K 726÷36012

500	1800	1000	1800

Electrical board side

NOTES

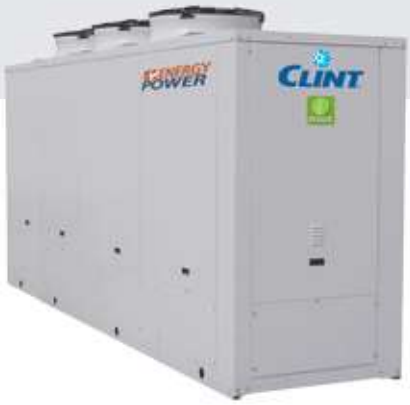
1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL and WP versions are specified on technical brochure.

FROM 49 KW TO 190 KW.

CHA/K/EP 182-P÷693-P

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGERS.



ENERGY POWER

ENERGYPOWER is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/K/EP 182-P÷693-P feature R410A refrigerant and Scroll compressors activated in series based on the requested thermal load, to reach high EER/COP/TER and SEER/ESEER/IPLV/SCOP energy values. Thanks to the advanced control system, the units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs.
Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**
Units are designed for **hot water production up to 55°C.**

CHA/G/EP 182-P÷693-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/EP	***CHA/K/EP/SSL***
Multifunctional unit	Super silenced multifunctional unit

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coil.
- Condenser AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side. On the units it is always installed an antifreeze heater.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
PSC	Single circulating pump cooling side
PSIC	Inverter single circulating pump cooling side
PDC	Double circulating pump cooling side
PDIC	Inverter double circulating pump cooling side
PSH	Single circulating pump heating side
PSIH	Inverter single circulating pump heating side
PDH	Double circulating pump heating side
PDIH	Inverter double circulating pump heating side
FGC	Antifreeze heater for single pump and pipes cooling side
FMC	Antifreeze heater for double pump and pipes cooling side
FGH	Antifreeze heater for single pump and pipes heating side
FMH	Antifreeze heater for double pump and pipes heating side
SS	Soft start
TS	Touch screen Interface
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/EP 182-P÷693-P

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
Cooling only	Cooling capacity (1)	kW	48.6	55.9	63.2	72.2	81.8	92.7	105	118	134	159	190
	Absorbed power (1)	kW	16.8	19.3	21.9	24.4	27.9	32.5	38.0	42.3	46.5	57.4	68.5
	EER (1)		2.89	2.90	2.89	2.96	2.93	2.85	2.76	2.79	2.88	2.77	2.77
Cooling only (EN14511)	Cooling capacity (1)	kW	48.3	55.5	62.8	71.7	81.3	92.2	105	117	133	158	189
	Absorbed power (1)	kW	17.1	19.6	22.3	24.9	28.4	33.1	38.5	42.9	47.2	58.3	69.5
	EER (1)		2.82	2.83	2.82	2.88	2.86	2.79	2.73	2.73	2.82	2.71	2.72
Heating only	Heating capacity (2)	kW	52.2	59.7	67.0	75.5	86.0	98.4	111	127	142	171	203
	Absorbed power (2)	kW	16.0	18.7	21.2	23.4	26.5	30.0	35.1	39.5	42.8	52.5	61.2
	COP (2)		3.26	3.19	3.16	3.23	3.25	3.28	3.16	3.22	3.32	3.26	3.32
Heating only (EN14511)	Heating capacity (2)	kW	52.5	60.0	67.4	75.9	86.4	98.8	112	128	143	172	204
	Absorbed power (2)	kW	16.3	19.0	21.6	23.9	27.0	30.5	35.7	40.3	43.9	53.7	62.7
	COP (2)		3.22	3.16	3.12	3.18	3.20	3.24	3.14	3.18	3.26	3.20	3.25
	SCOP (3)		3.49	3.46	3.36	3.36	3.38	3.93	3.58	3.53	3.73	3.73	3.75
	Energy Efficiency (3)	%	137	135	131	131	132	154	140	138	146	146	147
	Energy Class (3)		A+	A+	A+	A+	--	--	--	--	--	--	--
Cooling + Heating	Cooling capacity (4)	kW	49.6	56.5	62.9	71.8	83.3	94.0	110	126	140	168	203
	Heating capacity (4)	kW	64.9	73.9	82.5	94.1	109	123	143	163	181	217	261
	Absorbed power (4)	kW	15.3	17.4	19.6	22.3	25.2	29.4	32.6	37.2	40.7	49.0	58.4
	TER (4)		7.48	7.49	7.42	7.44	7.63	7.38	7.76	7.77	7.89	7.86	7.95
Cooling + Heating (EN14511)	Cooling capacity (4)	kW	49.3	56.2	62.5	71.3	82.8	93.4	109	125	139	167	202
	Heating capacity (4)	kW	65.2	74.3	82.9	94.6	110	124	144	164	182	218	262
	Absorbed power (4)	kW	15.6	17.7	20.0	22.8	25.7	30.0	33.1	37.8	41.4	49.8	59.3
	TER (4)		7.34	7.37	7.27	7.28	7.50	7.25	7.64	7.65	7.75	7.73	7.82
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	2	3	3
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1	1	1
	Capacity steps	n°			2				3		2	3	
Evaporator - cooling side	Water flow	l/s	2.32	2.67	3.02	3.45	3.91	4.43	5.02	5.64	6.40	7.60	9.08
	Pressure drops	kPa	35	41	53	50	49	51	38	46	50	52	52
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
Condenser - heating side	Water flow	l/s	2.49	2.85	3.20	3.61	4.11	4.70	5.30	6.07	6.78	8.17	9.70
	Pressure drops	kPa	31	35	38	42	40	35	34	42	48	43	45
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
Electrical characteristics	Power supply	V/Ph/Hz						400/3/50					
	Max. running current	A	40	46	54	59	66	77	84	95	100	128	151
	Max. starting current	A	164	166	178	191	234	201	217	263	314	304	359
Unit with pump - cooling side	Pump available static pressure	kPa	150	140	120	115	130	115	115	95	150	135	115
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
Unit with pump - heating side	Pump available static pressure	kPa	150	140	130	120	135	125	115	160	150	135	115
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"
ECH fan available static pressure	STD version	Pa	95	100	95	95	95	100	60	50	60	50	50
	SSL version	Pa	70	85	70	70	70	90	50	50	60	50	50
Sound pressure	STD version (5)	dB(A)	60	62	62	63	63	63	65	65	69	70	70
	With SL accessory (5)	dB(A)	58	60	60	61	61	61	63	63	67	68	68
	SSL version (5)	dB(A)	55	57	57	58	58	58	60	60	64	65	65
Weights	Transport weight	Kg	750	760	815	905	925	1030	1055	1085	1295	1500	1545
	Operating weight	Kg	765	775	830	925	950	1060	1085	1115	1335	1545	1595

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
L	STD	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550	3550
	SSL	mm	2350	2350	2350	2350	2350	3550	3550	3550	3550	4700	4700
W	STD/SSL	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD/SSL	mm	1920	1920	1920	2220	2220	2220	2220	2220	2220	2220	2220

CLEARANCE AREA

CHA/K/EP 182-P÷693-P

300	800	800	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
3. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
4. Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

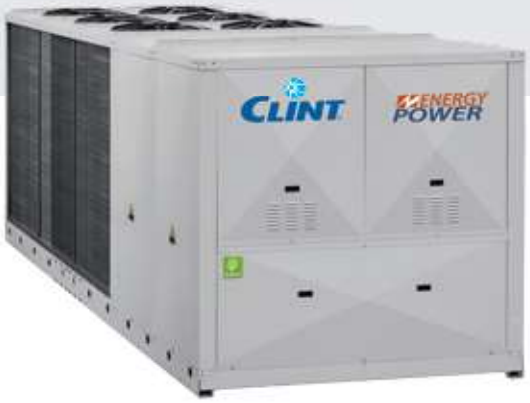
N.B. Weights of SSL version are specified on technical brochure.

Electrical board side

FROM 167 KW TO 643 KW.

CHA/K/EP 604-P÷2406-P

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGERS.



ENERGY POWER

ENERGYPOWER is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/K/EP 604-P÷2406-P feature R410A refrigerant and Scroll compressors activated in series based on the requested thermal load, to reach high EER/COP/TER and SEER/ESEER/IPLV/SCOP energy values. The units are characterized by double cooling circuit. Thanks to the advanced control system, ENERGYPOWER units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.
Units are designed for **hot water production up to 55°C.**

CHA/G/EP 604-P÷2406-P
On request, units can be supplied with **R452B** refrigerant.

VERSION

CHA/K/EP	***CHA/K/EP/SSL***
Multifunctional unit	Super silenced multifunctional unit

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coils.
- Condenser AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side. On the units it is always installed an antifreeze heater.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
PSC	Single circulating pump cooling side
PSIC	Inverter single circulating pump cooling side
PDC	Double circulating pump cooling side
PDIC	Inverter double circulating pump cooling side
PSH	Single circulating pump heating side
PSIH	Inverter single circulating pump heating side
PDH	Double circulating pump heating side
PDIH	Inverter double circulating pump heating side
FGC	Antifreeze heater for single pump and pipes cooling side
FMC	Antifreeze heater for double pump and pipes cooling side
FGH	Antifreeze heater for single pump and pipes heating side
FMH	Antifreeze heater for double pump and pipes heating side
SS	Soft start
TS	Touch screen Interface
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

CHA/K/EP 604-P÷2406-P

MODEL			604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
Cooling only	Cooling capacity (1)	kW	167	190	216	241	264	301	339	395	459	522	583	643
	Absorbed power (1)	kW	57	69	75	85	93	104	114	140	169	193	210	225
	EER (1)		2.93	2.75	2.88	2.84	2.84	2.89	2.97	2.82	2.72	2.70	2.78	2.86
Cooling only (EN14511)	Cooling capacity (1)	kW	166	189	215	240	263	300	338	394	457	520	581	641
	Absorbed power (1)	kW	58	70	76	85	94	105	115	141	171	195	212	227
	EER (1)		2.86	2.70	2.83	2.82	2.80	2.86	2.94	2.79	2.67	2.67	2.74	2.82
Heating only	Heating capacity (2)	kW	180	204	231	257	281	318	361	427	515	570	632	693
	Absorbed power (2)	kW	55	64	72	79	86	97	109	128	159	168	195	208
	COP (2)		3.25	3.20	3.22	3.25	3.28	3.28	3.31	3.34	3.24	3.39	3.24	3.33
Heating only (EN14511)	Heating capacity (2)	kW	181	205	232	258	282	319	362	429	517	572	634	696
	Absorbed power (2)	kW	56	65	73	80	87	98	111	131	162	172	200	214
	COP (2)		3.23	3.15	3.18	3.23	3.24	3.26	3.26	3.27	3.19	3.33	3.17	3.25
	SCOP (3)		3.52	3.36	3.65	3.58	3.43	3.63	3.68	3.51	3.51	3.80	3.56	3.53
	Energy Efficiency (3)	%	138	131	143	140	134	142	144	137	137	149	139	138
Cooling + Heating	Cooling capacity (4)	kW	170	195	214	243	270	303	334	405	465	543	594	652
	Heating capacity (4)	kW	220	255	281	318	351	396	436	527	613	712	777	849
	Absorbed power (4)	kW	50	60	67	75	81	93	102	122	148	169	183	197
	TER (4)		7.80	7.50	7.39	7.48	7.67	7.52	7.55	7.64	7.28	7.43	7.49	7.62
Cooling + Heating (EN14511)	Cooling capacity (4)	kW	169	194	213	242	269	302	333	404	463	541	592	650
	Heating capacity (4)	kW	221	256	282	319	352	397	438	529	615	715	780	852
	Absorbed power (4)	kW	51	61	68	76	82	94	103	123	150	171	185	199
	TER (4)		7.65	7.38	7.28	7.38	7.57	7.44	7.49	7.59	7.19	7.35	7.42	7.55
Compressor	Quantity	n°	4	4	4	4	4	4	6	6	6	6	6	6
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	4						6					
Evaporator - cooling side	Water flow	l/s	7.98	9.08	10.32	11.51	12.61	14.38	16.20	18.87	21.93	24.94	27.85	30.72
	Pressure drops	kPa	34	33	36	35	42	36	45	44	53	43	34	40
	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Condenser - heating side	Water flow (4)	l/s	8.60	9.75	11.04	12.28	13.43	15.19	17.25	20.40	24.61	27.23	30.20	33.11
	Pressure drops (4)	kPa	35	36	39	30	37	33	43	43	42	49	48	54
	Water connections (4)	DN	100	100	100	100	100	100	100	100	125	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50											
	Max. running current	A	133	151	171	186	201	227	255	301	386	416	453	483
	Max. starting current	A	301	328	347	400	415	488	432	515	647	755	792	822
Unit with pump - cooling side	Pump available static pressure	kPa	175	170	160	150	130	145	125	160	125	165	165	145
	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Unit with pump - heating side	Pump available static pressure	kPa	170	165	150	145	125	140	120	150	110	150	140	120
	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Sound pressure	STD version (5)	dB(A)	70	70	71	71	71	72	74	74	76	77	78	79
	With SL accessory (5)	dB(A)	68	68	69	69	69	70	72	72	74	75	76	77
	SSL version (5)	dB(A)	64	64	65	65	65	66	66	66	70	70	71	72
Weights	Transport weight	Kg	2200	2230	2350	2390	2420	3180	3420	3530	4530	4600	5320	5350
	Operating weight	Kg	2300	2330	2450	2500	2530	3310	3560	3680	4730	4840	5630	5670

DIMENSIONS			604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
L	STD	mm	3350	3350	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200
	SSL	mm	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200	7200	7200
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/K/EP 604-P÷2406-P

500	1800	1000	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
3. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
4. Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

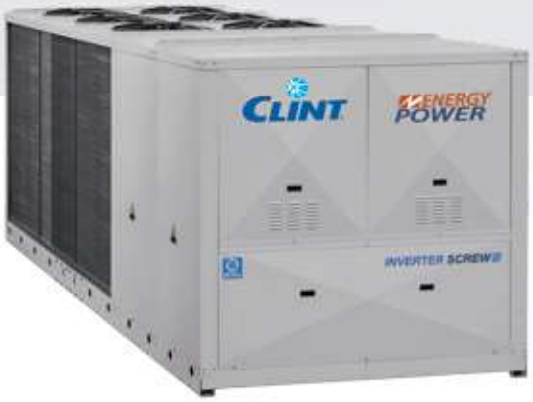
N.B. Weights of SSL version are specified on technical brochure.

Electrical board side

FROM 278 KW TO 1133 KW.

CHA/Y/EP 1352÷4402

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGERS.



ENERGY POWER
INVERTER SCREW

ENERGYPOWER is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/Y/EP 1352÷4402 ENERGYPOWER, with R134a refrigerant, are provided with latest generation Screw compressors, to reach high EER/COP/TER and SEER/ESEER/IPLV/SCOP energy values. Thanks to the advanced control system, the units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs. Furthermore, accessories as the Inverter control on one or both Screw compressors, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

CHA/J/EP 1352÷4402
On request, units can be supplied with **R513A** refrigerant.

VERSION

CHA/Y/EP	CHA/Y/EP/SSL
Multifunctional unit	Super silenced multifunctional unit

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coils.
- Shell and tube type condenser, with two independent circuits on the refrigerant side and one on the water side.
- Shell and tube type evaporator, with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
PUC	Single circulating pump cooling side
PUIC	Inverter single circulating pump cooling side
PDC	Double circulating pump cooling side
PDIC	Inverter double circulating pump cooling side
FI	Antifreeze heater for evaporator and condenser
FNC	Antifreeze heater for pipes cooling side
FNH	Antifreeze heater for pipes heating side
FGC	Antifreeze heater for single pump and pipes cooling side
FMC	Antifreeze heater for double pump and pipes cooling side
II	Inverter on one compressor
ID	Inverter on all compressors
SS	Soft start
TS	Touch screen Interface
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/Y/EP 1352÷4402

MODEL			1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
Cooling only	Cooling capacity (1)	kW	278	312	366	423	484	564	676	822	978	1133
	Absorbed power (1)	kW	89	100	116	133	153	177	210	258	315	365
	EER (1)		3.12	3.12	3.16	3.18	3.16	3.19	3.22	3.19	3.10	3.10
Cooling only (EN14511)	Cooling capacity (1)	kW	277	311	364	421	482	562	674	819	974	1128
	Absorbed power (1)	kW	90	101	118	135	155	179	212	261	319	370
	EER (1)		3.08	3.08	3.08	3.12	3.11	3.14	3.18	3.14	3.05	3.05
Heating only	Heating capacity (2)	kW	283	320	375	431	490	572	672	838	990	1156
	Absorbed power (2)	kW	86	91	107	122	139	159	190	231	271	313
	COP (2)		3.29	3.52	3.50	3.53	3.53	3.60	3.54	3.63	3.65	3.69
Heating only (EN14511)	Heating capacity (2)	kW	284	321	376	432	491	574	674	840	992	1159
	Absorbed power (2)	kW	88	93	109	124	141	162	193	235	276	319
	COP (2)		3.23	3.45	3.45	3.48	3.48	3.54	3.49	3.57	3.59	3.63
	SCOP (3)		3.20	3.42	3.41	3.40	3.39	3.69	3.63	3.71	3.90	4.00
	Energy Efficiency (3)	%	125	134	133	133	133	145	142	145	153	157
Cooling + Heating	Cooling capacity (4)	kW	276	318	370	429	492	575	686	834	996	1181
	Heating capacity (4)	kW	359	404	469	544	621	726	865	1054	1261	1495
	Absorbed power (4)	kW	83	87	99	115	130	152	179	220	265	314
	TER (4)		7.65	8.30	8.47	8.46	8.56	8.56	8.66	8.58	8.52	8.52
Cooling + Heating (EN14511)	Cooling capacity (4)	kW	275	317	368	427	490	573	684	831	992	1176
	Heating capacity (4)	kW	360	405	470	545	622	728	867	1057	1264	1499
	Absorbed power (4)	kW	84	88	101	117	132	154	181	223	269	319
	TER (4)		7.56	8.20	8.30	8.31	8.42	8.45	8.57	8.47	8.39	8.39
Compressor	Quantity	n°	2	2	2	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless									
Evaporator - cooling side	Water flow	l/s	13.28	14.91	17.49	20.21	23.12	26.95	32.30	39.27	46.73	54.13
	Pressure drops	kPa	33	43	51	48	48	46	48	47	52	64
	Water connections	DN	100	100	125	125	125	150	150	150	150	200
Condenser - heating side	Water flow (4)	l/s	17.15	19.30	22.41	25.99	29.67	34.69	41.33	50.36	60.25	71.43
	Pressure drops (4)	kPa	34	37	31	29	28	32	29	32	32	34
	Water connections (4)	DN	100	100	125	125	125	150	150	150	150	200
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	237	237	269	301	309	393	445	580	664	720
	Max. starting current	A	281	281	345	361	369	504	534	785	827	855
Unit with pump	Pump available static pressure	kPa	185	155	155	140	155	140	115	135	100	145
	Water connections	DN	100	100	125	125	125	150	150	150	150	200
Sound pressure	STD version (5)	dB(A)	77	77	77	78	78	78	79	80	80	81
	With SL accessory (5)	dB(A)	73	73	74	75	74	75	76	76	76	77
	SSL version (5)	dB(A)	67	67	68	69	69	70	70	72	72	72
Weights	Transport weight	Kg	4090	4110	4820	5460	5970	6950	8100	9340	9760	10430
	Operating weight	Kg	4330	4460	5280	5980	6480	7570	8880	10200	10740	11800

DIMENSIONS			1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
L	STD	mm	5550	5550	6700	7750	8900	8900	10050	11100	11100	11100
	SSL	mm	6700	6700	7750	7750	8900	10050	11100	12250	12250	12250
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2100	2100	2100	2100	2100	2500	2500	2500	2500	2500
	SSL	mm	2100	2100	2100	2100	2500	2500	2500	2500	2500	2500

CLEARANCE AREA

CHA/Y/EP 1352÷4402

500	1800	1000	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
3. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
4. Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL version are specified on technical brochure.

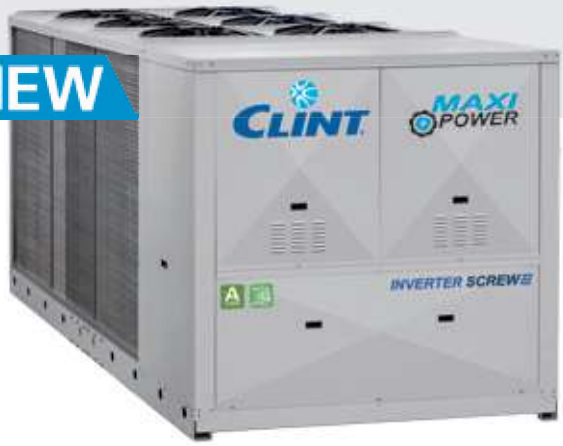
Electrical board side

FROM 197 KW TO 1353 KW.

CHA/H/A 1002÷6002

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.

NEW



MAXI POWER

INVERTER SCREW

MICROCHANNEL

HFO R1234ze

The CHA/H/A 1002÷6002 units in A CLASS energy efficiency, with **HFO-R1234ze** refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.
The innovative heat exchangers, traditional or Microchannel, the Screw compressors and the new design optimized in every detail ensure the reach of the highest efficiency. Furthermore, accessories as the Inverter control on one or both Screw compressors, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load. The super silenced versions, obtained through acoustic insulation on compressors and on whole structure and wider exchangers, are particularly suitable for installations where extremely quiet operation are essential for the ideal execution of the system.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are already compliant to ErP 2021 European Regulations if provided with EC accessory (EC Inverter fans).

VERSION

CHA/H/A	CHA/H/A/MC
Cooling only	Cooling only with MICROCHANNEL condensing coils
CHA/H/A/SSL	**CHA/H/A/MC/SSL**
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminium finned coils or aluminium MICROCHANNEL coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SPU	Inertial tank and single circulating pump
SPUI	Inertial tank and Inverter single circulating pump
SPD	Inertial tank and double circulating pump
SPDI	Inertial tank and Inverter double circulating pump
FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator and pipes
FB	Antifreeze heater for evaporator/tank
FQ	Antifreeze heater on evaporator/tank and pipes
FZ	Antifreeze heater for evaporator, single pump and pipes
FH	Antifreeze heater for evaporator, double pump and pipes
FU	Antifreeze heater for evaporator/tank, single pump and pipes
FD	Antifreeze heater for evaporator/tank, double pump and pipes
II	Inverter on one compressor
ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/H/A 1002÷6002

MODEL			1002	1202	1402	1602	1802	2202	2502
Cooling STD version	Cooling capacity (1)	kW	197	261	309	366	406	464	548
	Absorbed power (1)	kW	63	83	98	116	129	147	168
	EER (1)		3.13	3.14	3.15	3.16	3.15	3.16	3.26
Cooling STD version (EN14511)	Cooling capacity (1)	kW	197	260	308	365	405	463	547
	Absorbed power (1)	kW	63	84	99	117	130	149	169
	EER (1)		3.13	3.10	3.11	3.12	3.12	3.11	3.24
	ESEER		3.88	3.92	4.09	3.98	4.24	4.20	4.24
	EUROVENT Class		A	A	A	A	A	A	A
	SEER (2)		3.81	3.84	4.01	3.89	4.15	4.10	4.17
	Energy Efficiency (2)	%	149	151	157	153	163	161	164
Cooling MC version	Cooling capacity (1)	kW	197	261	309	366	406	464	548
	Absorbed power (1)	kW	62	81	96	114	126	144	165
	EER (1)		3.18	3.22	3.22	3.21	3.22	3.22	3.32
Cooling MC version (EN14511)	Cooling capacity (1)	kW	197	260	308	365	405	463	547
	Absorbed power (1)	kW	62	82	97	115	127	146	166
	EER (1)		3.18	3.17	3.18	3.17	3.19	3.17	3.30
	ESEER		4.00	4.04	4.21	4.10	4.37	4.33	4.37
	EUROVENT Class		A	A	A	A	A	A	A
	SEER (2)		3.92	3.96	4.13	4.01	4.27	4.23	4.30
	Energy Efficiency (2)	%	154	155	162	157	168	166	169
Compressor	Quantity	n°	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless						
Evaporator	Water flow	l/s	9.41	12.47	14.76	17.49	19.40	22.17	26.18
	Pressure drops	kPa	39	37	32	34	31	28	37
	Water connections	DN	125	125	150	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50						
	Max. running current	A	203	275	319	355	413	467	512
	Max. starting current	A	291	417	488	586	642	723	783
Unit with tank and pump	Pump available static pressure	kPa	155	185	180	155	140	180	160
	Tank water volume	l	2000	2000	2000	2000	2000	2000	2000
	Water connections	DN	100	100	100	100	125	125	150
Sound pressure	STD version (3)	dB(A)	75	76	76	77	77	78	78
	With SL accessory (3)	dB(A)	72	73	73	74	74	75	75
	SSL version (3)	dB(A)	67	68	68	69	69	70	70
Weights	Transport weight (4)	Kg	2700	3215	3540	4015	4120	4625	5165
	Operating weight (4)	Kg	2790	3300	3670	4180	4280	4820	5430

MODEL			2802	3302	3602	4602	4802	5402	6002
Cooling STD version	Cooling capacity (1)	kW	608	717	809	980	1064	1228	1353
	Absorbed power (1)	kW	189	223	249	300	333	379	422
	EER (1)		3.22	3.22	3.25	3.27	3.20	3.24	3.21
Cooling STD version (EN14511)	Cooling capacity (1)	kW	606	714	806	978	1061	1224	1348
	Absorbed power (1)	kW	191	225	251	302	336	383	427
	EER (1)		3.17	3.17	3.21	3.24	3.16	3.20	3.16
	ESEER		4.22	4.24	4.25	4.26	4.19	4.20	4.18
	EUROVENT Class		A	A	A	A	A	A	A
	SEER (2)		4.16	4.17	4.17	4.18	4.11	4.14	4.11
	Energy Efficiency (2)	%	163	164	164	164	161	163	161
Cooling MC version	Cooling capacity (1)	kW	608	717	809	980	1064	1228	1353
	Absorbed power (1)	kW	185	219	244	294	326	371	414
	EER (1)		3.29	3.27	3.32	3.33	3.26	3.31	3.27
Cooling MC version (EN14511)	Cooling capacity (1)	kW	606	714	806	978	1061	1224	1348
	Absorbed power (1)	kW	187	221	246	296	329	375	418
	EER (1)		3.24	3.23	3.28	3.30	3.22	3.26	3.22
	ESEER		4.35	4.37	4.38	4.39	4.32	4.33	4.31
	EUROVENT Class		A	A	A	A	A	A	A
	SEER (2)		4.28	4.30	4.30	4.31	4.23	4.26	4.23
	Energy Efficiency (2)	%	168	169	169	169	166	168	166
Compressor	Quantity	n°	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless						
Evaporator	Water flow	l/s	29.05	34.26	38.65	46.82	50.84	58.67	64.64
	Pressure drops	kPa	33	40	42	30	38	47	54
	Water connections	DN	150	200	200	200	200	250	250
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50						
	Max. running current	A	597	670	731	764	831	951	1039
	Max. starting current	A	896	947	1091	1206	1244	1450	1494
Unit with tank and pump	Pump available static pressure	kPa	145	160	140	120	170	180	155
	Tank water volume	l	3000	3000	3000	-	-	-	-
	Water connections	DN	150	150	150	-	-	-	-
Sound pressure	STD version (3)	dB(A)	78	80	81	82	82	84	84
	With SL accessory (3)	dB(A)	75	77	78	79	79	81	81
	SSL version (3)	dB(A)	70	72	73	74	74	76	76
Weights	Transport weight (4)	Kg	5260	6240	7460	8995	9435	11230	11560
	Operating weight (4)	Kg	5520	6570	7880	9500	9910	11800	12190

DIMENSIONS			1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802	5402	6002
L	STD-MC	mm	4400	5000	5000	5550	5550	6700	6700	6700	8900	10050	11100	12250	13400	13400
	SSL-MC/SSL	mm	5000	5550	5550	6700	6700	8900	8900	8900	10050	11100	12250	13400	-	-
W	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD-MC	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2550	2550	2550	2550	2550
	SSL-MC/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2550	2550	2550	2550	-	-

CLEARANCE AREA

CHA/H/A 1002÷6002

500	1800	1000	1800

Electrical board side

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
4. Unit without tank and pump.

N.B. Weights of SSL versions are specified on technical brochure.

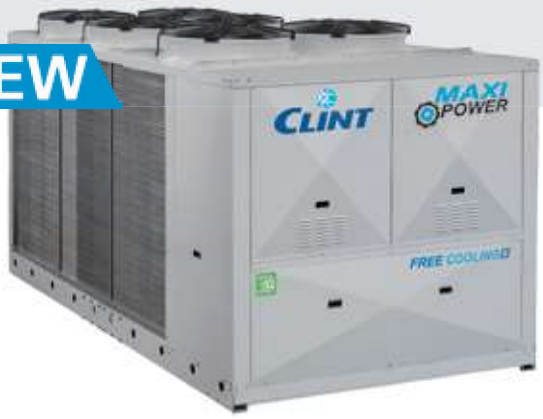
N.B. Data of MC versions are specified on technical brochure.

FROM 232 KW TO 1144 KW.

CHA/H/FC 1002÷4802

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.

NEW



MAXI POWER

FREE COOLING

HFO R1234ze

The liquid Chillers of the CHA/H/FC 1002÷4802 series, with **HFO-R1234ze** refrigerant, offer innovative technology to meet the needs of large systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations.
During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Screw compressors. A 3-Way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are already compliant to ErP 2021 European Regulations if provided with EC accessory (EC Inverter fans).

VERSION

CHA/H/FC

Cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R1234ze refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.
- Electronic high and low pressure gauges.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SPU	Inertial tank and single circulating pump
SPUI	Inertial tank and Inverter single circulating pump
SPD	Inertial tank and double circulating pump
SPDI	Inertial tank and Inverter double circulating pump
II	Inverter on one compressor
ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/H/FC 1002÷4802

ErP SEER

MODEL			1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802
Cooling	Cooling capacity (1)	kW	232	297	350	404	444	519	604	684	801	891	1044	1144
	Absorbed power (1)	kW	67	87	107	125	142	158	187	205	239	271	338	362
	EER (1)		3.46	3.41	3.27	3.23	3.13	3.28	3.23	3.34	3.35	3.29	3.09	3.16
Cooling (EN14511)	Cooling capacity (1)	kW	231	295	346	401	440	516	600	678	796	885	1035	1132
	Absorbed power (1)	kW	68	89	111	128	146	161	191	211	244	277	347	374
	EER (1)		3.40	3.31	3.12	3.13	3.01	3.20	3.14	3.21	3.26	3.19	2.98	3.03
	SEER (2)		3.92	3.96	4.13	4.01	4.27	4.23	4.30	4.28	4.30	4.30	4.31	4.23
	Energy Efficiency (2)	%	154	155	162	157	168	166	169	168	169	169	169	166
Free-Cooling cycle	Air temperature (3)	°C	2.0	0.0	1.3	1.0	-0.5	-0.5	0.5	-1.0	-0.5	-0.5	-1.0	0.0
	Absorbed power (3)	kW	10.8	10.8	14.4	14.4	14.4	18.0	21.6	21.6	21.6	25.2	28.8	32.4
Compressor	Quantity	n°	2	2	2	2	2	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless											
Water circuit	Water flow	l/s	11.6	14.9	17.5	20.2	22.2	25.9	30.2	34.2	40.1	44.6	52.2	57.2
	Pressure drops	kPa	77	96	143	118	132	77	104	124	98	108	138	169
	Water connections	DN	100	100	100	125	125	125	150	150	150	150	200	200
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50											
	Max. running current	A	211	275	327	355	413	467	520	605	670	731	764	831
	Max. starting current	A	299	417	496	586	642	723	791	904	947	1091	1206	1244
Unit with tank and pump	Pump available static pressure	kPa	148	114	117	137	158	193	146	106	162	132	112	111
	Tank water volume	l	2000	2000	2000	2000	2000	2000	2000	2000	3000	-	-	-
	Water connections	DN	100	100	100	125	125	125	150	150	150	150	200	200
Sound pressure	STD version (4)	dB(A)	75	76	76	77	77	78	78	78	80	81	82	82
	With SL accessory (4)	dB(A)	72	73	73	74	74	75	75	75	77	78	79	79
Weights	Transport weight (5)	Kg	3150	3420	4020	4410	4560	5440	6800	7280	8420	8900	10690	11570
	Operating weight (5)	Kg	3390	3720	4400	4850	5040	6010	7420	7980	9420	10000	11890	12940

DIMENSIONS			1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802
L	STD	mm	4400	4400	5550	5550	5550	6700	10050	10050	10050	10050	12250	13400
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2750	2750	2750	2750

CLEARANCE AREA

CHA/H/FC 1002÷4802

500	1800	1000	1800

NOTES

1. Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
5. Unit without tank and pump.

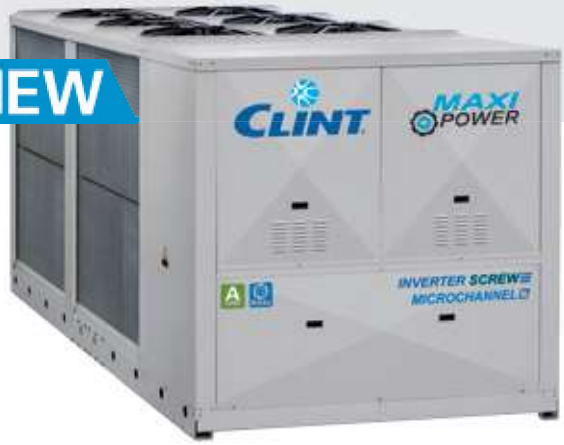
Electrical board side

FROM 263 KW TO 1136 KW.

CHA/Y/A 1302÷4802

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.

NEW



MAXI POWER

MICROCHANNEL

INVERTER SCREW

The CHA/Y/A 1302÷4802 units in A CLASS energy efficiency have extremely high efficiency levels due to reduced electrical absorption and a high efficiency of the compressor-exchanger combination. The latest generation Screw compressors and the new design optimized in every detail ensure the reach of the highest efficiency. Furthermore, accessories as the Inverter control on Screw compressors, on circulating pumps and EC Inverter on fans are also available for getting the highest efficiency at part load. The super silenced version, obtained through acoustic insulation on compressors and wider exchangers, is particularly suitable for installations where extremely quiet operation are essential for the ideal execution of the system.
The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.
The Heat Pump versions are designed for **hot water production up to 55°C.**

The models 1302÷1702 are already compliant to ErP 2021 European Regulations. The models 1902÷4802 are already compliant to ErP 2021 European Regulations if provided with EC accessory (EC Inverter fans).

CHA/J/A 1302÷4802
On request, units can be supplied with **R513A** refrigerant.

VERSION

CHA/Y/A	***CHA/Y/A/MC***	***CHA/Y/A/WP***
Cooling only	Cooling only with MICROCHANNEL condensing coils	Reversible Heat Pump
CHA/Y/A/SSL	***CHA/Y/A/MC/SSL***	***CHA/Y/A/WP/SSL***
Super silenced cooling only	Super silenced cooling only with MICROCHANNEL condensing coils	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminium finned coils or aluminium MICROCHANNEL coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Functioning in heating mode with outside air temperature down to -10 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SPU	Inertial tank and single circulating pump
SPUI	Inertial tank and Inverter single circulating pump
SPD	Inertial tank and double circulating pump
SPDI	Inertial tank and Inverter double circulating pump
FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator and pipes
FB	Antifreeze heater for evaporator/tank
FQ	Antifreeze heater on evaporator/tank and pipes
FZ	Antifreeze heater for evaporator, single pump and pipes
FH	Antifreeze heater for evaporator, double pump and pipes
FU	Antifreeze heater for evaporator/tank, single pump and pipes
FD	Antifreeze heater for evaporator/tank, double pump and pipes
II	Inverter on one compressor
ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/Y/A 1302÷4802

MODEL			1302	1502	1702	1902	2002	2602	3002	3602	4202	4802
Cooling STD versions	Cooling capacity (1)	kW	263	313	359	413	464	574	696	839	959	1136
	Absorbed power (1)	kW	82	96	114	131	146	179	219	256	305	352
	EER (1)		3.21	3.26	3.15	3.15	3.18	3.21	3.18	3.28	3.14	3.23
Cooling STD versions (EN14511)	Cooling capacity (1)	kW	262	312	358	412	463	573	694	837	956	1132
	Absorbed power (1)	kW	83	97	115	132	147	180	221	258	308	356
	EER (1)		3.16	3.22	3.11	3.12	3.15	3.18	3.14	3.24	3.10	3.18
	ESEER		3.89	4.01	3.93	4.01	4.03	3.98	3.91	4.03	4.01	4.00
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.13	4.25	4.22	4.22	4.23	4.26	4.15	4.34	4.33	4.26
	Energy Efficiency (2)	%	162	167	166	166	166	167	163	171	170	167
Cooling MC versions	Cooling capacity (1)	kW	263	313	359	413	464	574	696	839	959	1136
	Absorbed power (1)	kW	80	94	112	128	143	175	215	251	299	345
	EER (1)		3.29	3.33	3.21	3.23	3.24	3.28	3.24	3.34	3.21	3.29
Cooling MC versions (EN14511)	Cooling capacity (1)	kW	262	312	358	412	463	573	694	837	956	1132
	Absorbed power (1)	kW	81	95	113	129	144	176	217	253	302	349
	EER (1)		3.23	3.28	3.17	3.19	3.22	3.26	3.20	3.31	3.17	3.24
	ESEER		3.93	4.05	3.97	4.05	4.07	4.02	3.95	4.07	4.05	4.04
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.14	4.26	4.23	4.23	4.24	4.27	4.16	4.35	4.34	4.27
	Energy Efficiency (2)	%	163	167	166	166	167	168	163	171	171	168
Heating STD versions	Heating capacity (3)	kW	272	324	372	428	480	594	721	869	993	1176
	Absorbed power (3)	kW	81	95	113	130	144	177	217	253	302	348
	COP (3)		3.36	3.41	3.29	3.29	3.33	3.36	3.32	3.43	3.29	3.38
Heating STD versions (EN14511)	Heating capacity (3)	kW	273	325	373	430	482	596	723	872	996	1180
	Absorbed power (3)	kW	83	97	116	133	147	181	222	259	309	356
	COP (3)		3.29	3.34	3.23	3.23	3.27	3.29	3.26	3.36	3.22	3.31
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SCOP (4)		3.20	3.32	3.34	3.33	3.32	3.34	3.32	3.36	3.32	3.36
	Energy Efficiency (4)	%	125	130	131	130	130	131	130	131	130	131
Compressor	Quantity	n°	2	2	2	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless									
Evaporator	Water flow	l/s	12.57	14.95	17.15	19.73	22.17	27.42	33.25	40.09	45.82	54.28
	Pressure drops	kPa	30	26	49	44	34	28	42	34	39	48
	Water connections	DN	125	125	150	150	150	150	150	200	200	200
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	201	237	261	301	337	393	485	580	664	720
	Max. starting current	A	263	281	337	361	405	504	596	785	827	855
Unit with tank and pump	Pump available static pressure	kPa	130	150	155	140	175	160	165	145	120	160
	Tank water volume	l	2000	2000	2000	2000	2000	2000	3000	3000	---	---
	Water connections	DN	100	100	100	125	125	150	150	150	200	200
Sound pressure	STD versions (5)	dB(A)	76	76	76	76	77	76	77	77	77	78
	STD versions with SL accessory (5)	dB(A)	73	73	73	73	74	73	74	74	74	75
	SSL versions (5)	dB(A)	66	66	66	65	66	66	67	68	68	---
	MC versions (5)	dB(A)	75	75	75	75	76	75	76	76	76	77
	MC versions with SL accessory (5)	dB(A)	72	72	72	72	73	72	73	73	73	74
	MC/SSL versions (5)	dB(A)	65	65	65	64	65	65	66	67	67	---
Weights	Transport weight (6)	Kg	3562	3609	3719	4127	4820	5311	6437	7583	7683	8656
	Operating weight (6)	Kg	3690	3740	3850	4390	5070	5540	6790	8070	8170	9230

DIMENSIONS			1302	1502	1702	1902	2002	2602	3002	3602	4202	4802
L	STD-MC	mm	4400	4400	5000	5550	6200	6700	8900	11100	11100	11100
	SSL-MC/SSL	mm	5550	5550	5550	6700	8900	8900	11100	11100	11100	---
W	STD-SSL-MC-MC/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD-MC	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500
	SSL-MC/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2500	2500	---

CLEARANCE AREA

CHA/Y/A 1302÷4802

500	1800	1000	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
6. Unit without tank and pump.

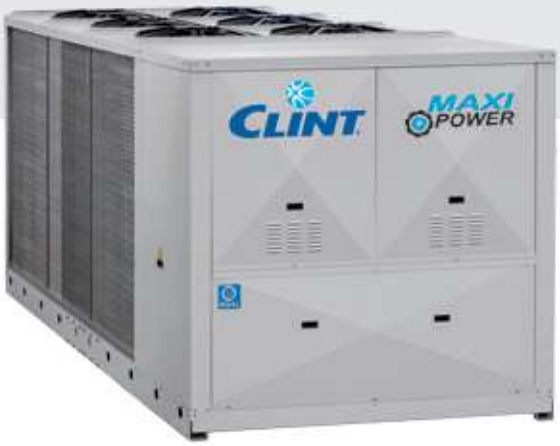
N.B. Weights of SSL and WP versions are specified on technical brochure.
N.B. Data of MC versions are specified on technical brochure.

Electrical board side

FROM 221 KW TO 1597 KW.

CHA/Y 1202-B÷6802-B

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.



MAXI POWER

CHA/Y 1202-B÷6802-B series liquid Chillers and Heat Pumps, with R134a refrigerant, are designed for large service sector or industrial-type ambients.
They are used, together with Fan Coil units, for air conditioning of rooms, or to remove the heat created during industrial processes. Equipped with axial fans, Screw compressors and shell and tube exchanger, even in the super silent version, they can be completed with a hydraulic circuit with tank, pump, or tank and pump. The use of large condensing coils and high efficiency fans, as well as optimisation of the hydraulic and cooling circuit and the use of latest generation Screw compressors, combined with a adequate sizing of the user system, ensure high operating efficiency with a considerably reduction in energy consumption.
A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

CHA/J 1202-B÷6802-B
On request, units can be supplied with **R513A** refrigerant.

VERSION

CHA/Y	***CHA/Y/WP***
Cooling only	Reversible Heat Pump
CHA/Y/SSL	***CHA/Y/WP/SSL***
Super silenced cooling only	Super silenced reversible Heat Pump

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
CC	Condensing control down to -20 °C
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
EW	External water connections
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SPU	Inertial tank and single circulating pump
SPUI	Inertial tank and Inverter single circulating pump
SPD	Inertial tank and double circulating pump
SPDI	Inertial tank and Inverter double circulating pump
FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator and pipes
FB	Antifreeze heater for evaporator/tank
FQ	Antifreeze heater on evaporator/tank and pipes
FZ	Antifreeze heater for evaporator, single pump and pipes
FH	Antifreeze heater for evaporator, double pump and pipes
FU	Antifreeze heater for evaporator/tank, single pump and pipes
FD	Antifreeze heater for evaporator/tank, double pump and pipes
II	Inverter on one compressor
ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/Y 1202-B÷6802-B

MODEL			1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	3002-B
Cooling	Cooling capacity (1)	kW	221	262	302	348	393	453	549	684
	Absorbed power (1)	kW	80	88	112	137	156	167	197	231
	EER (1)		2.76	2.98	2.70	2.54	2.52	2.71	2.79	2.96
Cooling (EN14511)	Cooling capacity (1)	kW	220	261	301	347	391	451	547	681
	Absorbed power (1)	kW	81	89	113	139	158	168	199	234
	EER (1)		2.71	2.93	2.67	2.50	2.48	2.68	2.75	2.91
	ESEER		3.44	3.62	3.54	3.38	3.37	3.69	3.58	3.60
	EUROVENT Class		C	B	D	E	E	D	C	B
	SEER (2)		3.80	3.88	4.00	4.02	4.04	4.15	4.10	4.10
	Energy Efficiency (2)	%	149	152	157	158	159	163	161	161
Heating	Heating capacity (3)	kW	225	255	289	338	390	457	536	662
	Absorbed power (3)	kW	75	78	91	105	120	138	160	191
	COP (3)		3.00	3.27	3.18	3.22	3.25	3.31	3.35	3.47
Heating (EN14511)	Heating capacity (3)	kW	225	255	289	338	390	457	536	665
	Absorbed power (3)	kW	75	78	91	106	121	143	161	197
	COP (3)		3.00	3.27	3.18	3.19	3.22	3.20	3.33	3.38
	EUROVENT Class		C	A	B	B	A	B	A	A
	SCOP (4)		3.20	3.21	3.30	3.30	3.49	3.20	3.23	3.49
	Energy Efficiency (4)	%	125	125	129	129	137	125	126	137
Compressor	Quantity	n°	2	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless							
Evaporator	Water flow	l/s	10.56	12.52	14.43	16.63	18.78	21.64	26.23	32.68
	Pressure drops	kPa	50	49	38	50	53	43	54	57
	Water connections	DN	100	100	125	125	125	125	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50							
	Max. running current	A	194	194	230	254	286	321	377	421
	Max. starting current	A	256	256	274	330	346	389	488	510
Unit with tank and pump	Pump available static pressure	kPa	135	180	185	160	140	165	135	100
	Tank water volume	l	1100	1100	1100	1100	1100	2000	2000	2000
	Water connections	DN	100	100	100	100	125	125	150	150
Sound pressure	STD version (5)	dB(A)	77	77	77	77	76	76	77	77
	With SL accessory (5)	dB(A)	74	74	74	74	73	73	74	74
	SSL version (5)	dB(A)	67	67	67	66	67	67	67	68
Weights	Transport weight	Kg	2640	2730	2780	2920	3120	3800	4070	5270
	Operating weight	Kg	2740	2820	2920	3060	3250	3930	4330	5500

MODEL			3602-B	4202-B	4802-B	5402-B	6002-B	6302-B	6802-B
Cooling	Cooling capacity (1)	kW	806	954	1089	1218	1347	1475	1597
	Absorbed power (1)	kW	284	334	402	443	494	531	554
	EER (1)		2.84	2.86	2.71	2.75	2.73	2.78	2.88
Cooling (EN14511)	Cooling capacity (1)	kW	803	950	1084	1213	1342	1469	1589
	Absorbed power (1)	kW	287	338	407	448	499	537	562
	EER (1)		2.80	2.82	2.67	2.71	2.69	2.74	2.83
	ESEER		3.66	3.61	3.49	3.59	3.57	3.68	3.63
	EUROVENT Class		C	C	D	C	D	C	C
	SEER (2)		4.12	4.13	4.14	4.14	4.15	4.36	4.36
	Energy Efficiency (2)	%	162	162	163	163	163	171	171
Heating	Heating capacity (3)	kW	767	850	1044	1172	1306	1438	---
	Absorbed power (3)	kW	225	260	318	350	395	418	---
	COP (3)		3.41	3.27	3.28	3.35	3.31	3.44	---
Heating (EN14511)	Heating capacity (3)	kW	770	853	1048	1176	1311	1443	---
	Absorbed power (3)	kW	231	266	328	360	406	431	---
	COP (3)		3.33	3.21	3.20	3.27	3.23	3.35	---
	EUROVENT Class		A	A	B	A	A	A	---
	SCOP (4)		-	-	-	-	-	-	---
	Energy Efficiency (4)	%	-	-	-	-	-	-	---
Compressor	Quantity	n°	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless						
Evaporator	Water flow	l/s	38.51	45.58	52.03	58.19	64.36	70.47	76.30
	Pressure drops	kPa	55	53	62	55	55	60	82
	Water connections	DN	200	200	200	200	200	200	250
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50						
	Max. running current	A	549	641	705	705	873	896	912
	Max. starting current	A	754	804	840	840	1665	1541	1557
Unit with tank and pump	Pump available static pressure	kPa	130	105	155	135	210	190	150
	Tank water volume	l	2000	2000	---	---	---	---	---
	Water connections	DN	150	200	200	200	200	200	200
Sound pressure	STD version (5)	dB(A)	77	78	78	79	79	80	80
	With SL accessory (5)	dB(A)	74	75	75	76	76	77	77
	SSL version (5)	dB(A)	69	69	70	70	70	70	---
Weights	Transport weight	Kg	5480	6250	7255	7715	8160	8840	10100
	Operating weight	Kg	5770	6600	7710	8150	8700	9380	10620

DIMENSIONS			1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	3002-B	3602-B	4202-B	4802-B	5402-B	6002-B	6302-B	6802-B
L	STD	mm	3350	3350	3350	3350	4400	5550	5550	6700	6700	7750	10050	10050	10050	11100	13400
	SSL	mm	3350	3350	3350	4400	4400	5550	6700	7750	7750	10050	10050	11100	13400	13400	---
	WP	mm	4400	4400	4400	4400	5550	6700	6700	7750	7750	8900	12250	12250	13400	13400	---
	WP/SSL	mm	4400	4400	4400	5550	5550	6700	6700	7750	8900	11100	13400	13400	---	---	---
W	STD-SSL-WP-WP/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/WP	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500
	SSL-WP/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500	---

CLEARANCE AREA

CHA/Y 1202-B÷6802-B

500	1800	1000	1800

Electrical board side

NOTES

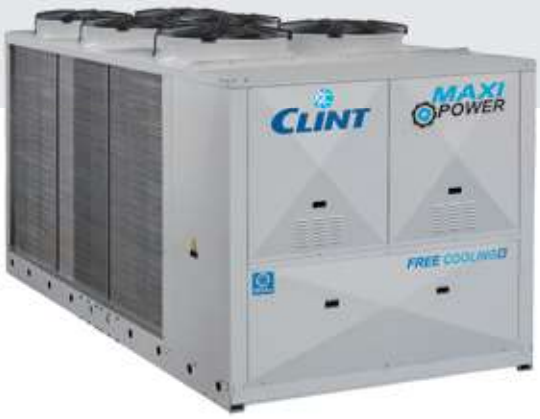
1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
4. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Weights of SSL and WP versions are specified on technical brochure.

FROM 217 KW TO 1460 KW.

CHA/Y/FC 1202-B÷6002-B

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGER.



MAXI POWER

FREE COOLING

The liquid Chillers of the CHA/Y/FC 1202-B÷6002-B series, with R134a refrigerant, offer innovative technology to meet the needs of large systems for both domestic as well as industrial applications requiring the production of cooled water continuously year-round. During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly by forced convection of outdoor air through the condensing coil, thus saving energy by not operating the unit's Screw compressors. A 3-Way valve system is controlled by the electronic microprocessor controller, allowing functioning in CHILLER, FREE-COOLING or MIXED (simultaneously CHILLER and FREE-COOLING) modes.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

CHA/J/FC 1202-B÷6002-B
On request, units can be supplied with **R513A** refrigerant.

VERSION

CHA/Y/FC

Cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencement
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
SP	Inertial tank
PU	Single circulating pump
PUI	Inverter single circulating pump
PD	Double circulating pump
PDI	Inverter double circulating pump
SPU	Inertial tank and single circulating pump
SPUI	Inertial tank and Inverter single circulating pump
SPD	Inertial tank and double circulating pump
SPDI	Inertial tank and Inverter double circulating pump
II	Inverter on one compressor
ID	Inverter on all compressors
SS	Soft start
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/Y/FC 1202-B÷6002-B

ErP SEER

MODEL			1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B
Cooling	Cooling capacity (1)	kW	217	258	315	375	418	473	569
	Absorbed power (1)	kW	83	97	114	148	157	184	210
	EER (1)		2.61	2.66	2.76	2.53	2.66	2.57	2.71
Cooling (EN14511)	Cooling capacity (1)	kW	215	255	311	371	413	469	565
	Absorbed power (1)	kW	85	100	118	152	162	188	215
	EER (1)		2.53	2.55	2.64	2.44	2.55	2.49	2.63
	SEER (2)		3.80	3.83	3.93	3.89	4.10	4.10	4.16
	Energy Efficiency (2)	%	149	150	154	153	161	161	163
Free-Cooling cycle	Air temperature (3)	°C	-2.5	-2.0	-2.0	-4.5	-3.7	-4.0	-3.5
	Absorbed power (3)	kW	8	12	12	12	12	16	20
Compressor	Quantity	n°	2	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless						
Water circuit	Water flow	l/s	11.22	13.34	16.29	19.38	21.61	24.45	29.42
	Pressure drops	kPa	125	170	180	168	191	130	115
	Water connections	DN	100	100	100	125	125	125	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50						
	Max. running current	A	194	201	237	261	293	337	393
	Max. starting current	A	256	263	281	337	353	405	504
Unit with tank and pump	Pump available static pressure	kPa	125	105	130	105	100	140	105
	Tank water volume	l	1100	1100	1100	1100	1100	1100	2000
	Water connections	DN	100	100	100	125	125	125	150
Sound pressure	STD version (4)	dB(A)	75	75	76	76	76	77	77
	With SL accessory (4)	dB(A)	72	72	73	73	73	74	74
Weights	Transport weight (5)	Kg	3250	3320	3620	3805	4180	4510	5310
	Operating weight (5)	Kg	3450	3520	3870	4060	4530	4850	5700

MODEL			3002-B	3602-B	4202-B	4802-B	5402-B	6002-B
Cooling	Cooling capacity (1)	kW	709	847	994	1139	1288	1460
	Absorbed power (1)	kW	263	316	370	434	490	541
	EER (1)		2.70	2.68	2.69	2.62	2.63	2.70
Cooling (EN14511)	Cooling capacity (1)	kW	702	838	984	1126	1272	1436
	Absorbed power (1)	kW	270	325	380	447	507	565
	EER (1)		2.60	2.58	2.59	2.52	2.51	2.54
	SEER (2)		4.11	4.17	4.15	4.12	4.13	4.13
	Energy Efficiency (2)	%	161	164	163	162	162	162
Free-Cooling cycle	Air temperature (3)	°C	-4.3	-4.3	-4.6	-4.7	-4.1	-3.9
	Absorbed power (3)	kW	20	22	22	25	29	36
Compressor	Quantity	n°	2	2	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2	2	2
	Capacity steps	n°	Stepless					
Water circuit	Water flow	l/s	36.65	43.79	51.38	58.88	66.58	75.47
	Pressure drops	kPa	160	164	160	200	225	300
	Water connections	DN	150	150	200	200	200	200
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50					
	Max. running current	A	437	565	649	713	720	896
	Max. starting current	A	526	770	812	848	855	1688
Unit with tank and pump	Pump available static pressure	kPa	115	130	140	170	120	115
	Tank water volume	l	2000	2000	2000	---	---	---
	Water connections	DN	150	150	200	200	200	200
Sound pressure	STD version (4)	dB(A)	77	79	79	79	79	80
	With SL accessory (4)	dB(A)	74	76	76	76	76	77
Weights	Transport weight (5)	Kg	6820	7710	8605	9590	10070	11750
	Operating weight (5)	Kg	7420	8350	9410	10550	10900	12970

DIMENSIONS			1202-B	1302-B	1502-B	1702-B	1902-B	2002-B	2602-B	3002-B	3602-B	4202-B	4802-B	5402-B	6002-B
L	STD	mm	4400	4400	4400	4400	5550	5550	6700	10050	10050	10050	10050	11100	13400
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360	2750	2750	2750	2750

CLEARANCE AREA

CHA/Y/FC 1202-B÷6002-B

500	1800	1000	1800

NOTES

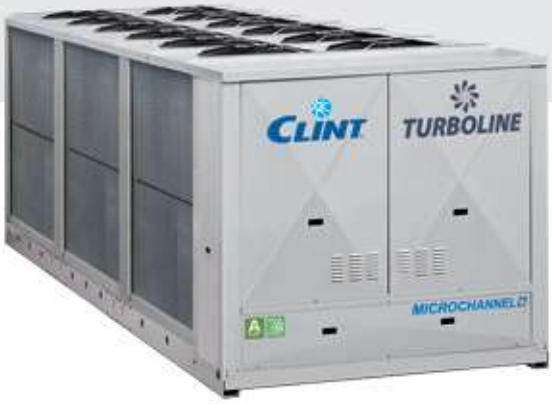
1. Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
5. Unit without tank and pump.

Electrical board side

FROM 262 KW TO 1340 KW.

CHA/TTH 1301-1÷4904-2

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.



TURBOLINE

MICROCHANNEL

HFO R1234ze

The innovative CHA/TTH 1301-1÷4904-2 **TURBOLINE** units, with **HFO-R1234ze** refrigerant, are designed to provide an effective solution to highly selective system needs. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations. Furthermore, thanks to Turbocor compressors, the units perform with top efficiency at partial loads, low inrush currents, an excellent silent functioning and reduced weight.
The use of TURBOCOR dynamic partial-load oil-free magnetic levitation compressors managed by the TURBOSOFT self-adaptive electronic control, of flooded shell and tube evaporator and innovative heat exchangers, traditional or Microchannel, results in a high energy efficiency with unequalled SEER/ESEER/IPLV values, with minimum water content, and an excellent silent functioning. Compared to traditional units, equipped with Screw compressors, TURBOLINE units have low operational costs during their entire operating period, even lower than 50%. Besides, the units are equipped with a WEB MONITORING system for the monitoring and remote management of the units through the GPRS/EDGE/3G/TCP-IP communication protocol. Users enabled to the use of this service can, by using a specific webpage, have access to the Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are already compliant to ErP 2021 European Regulations.

VERSION

CHA/TTH	***CHA/TTH/MC***
Cooling only	Cooling only with MICROCHANNEL coils

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminium finned coils or aluminium MICROCHANNEL coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/EDGE/3G/TCP-IP network.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
EW	External water connections
PU	Single circulating pump
PD	Double circulating pump
FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator and pipes
FZ	Antifreeze heater for evaporator, single pump and pipes
FH	Antifreeze heater for evaporator, double pump and pipes
TS	Touch screen Interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/TTH 1301-1÷4904-2

MODEL			1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
Cooling STD version	Cooling capacity (1)	kW	262	335	524	670	777	1000	1340	524	670	1340
	Absorbed power (1)	kW	76	94	154	191	228	280	377	154	193	381
	EER (1)		3.45	3.56	3.40	3.51	3.41	3.57	3.55	3.40	3.51	3.55
Cooling STD version (EN14511)	Cooling capacity (1)	kW	261	334	522	668	774	997	1336	523	668	1335
	Absorbed power (1)	kW	77	95	156	193	231	283	381	155	195	386
	EER (1)		3.39	3.52	3.35	3.46	3.35	3.52	3.51	3.37	3.46	3.51
	ESEER		4.70	4.82	4.87	5.17	5.02	5.17	5.19	4.70	4.93	4.99
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.58	4.78	4.60	4.75	4.66	4.90	4.91	4.59	4.72	4.89
	Energy Efficiency (2)	%	180	188	181	187	183	193	193	181	186	193
Cooling MC version	Cooling capacity (1)	kW	262	335	524	670	777	1000	1340	524	670	1340
	Absorbed power (1)	kW	72	89	145	181	216	264	356	145	183	360
	EER		3.64	3.76	3.59	3.70	3.60	3.79	3.76	3.59	3.70	3.76
Cooling MC version (EN14511)	Cooling capacity (1)	kW	259	334	518	668	774	997	1336	519	668	1335
	Absorbed power (1)	kW	73	90	147	183	219	267	360	146	185	365
	EER (1)		3.55	3.71	3.52	3.65	3.53	3.73	3.71	3.55	3.65	3.71
	ESEER		4.92	5.06	5.12	5.42	5.26	5.43	5.44	4.93	5.17	4.99
	EUROVENT Class		A	A	A	A	A	A	A	A	A	A
	SEER (2)		4.82	5.04	4.88	5.00	4.92	5.18	5.19	4.87	4.96	5.16
	Energy Efficiency (2)	%	190	199	192	197	194	204	205	192	195	203
Compressor	Quantity	n°	1	1	2	2	3	3	4	2	2	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	2	2	2
	Capacity steps	n°	Stepless									
Evaporator	Water flow	l/s	12.52	16.01	25.04	32.01	37.12	47.78	64.02	25.04	32.01	64.02
	Pressure drops	kPa	40	47	47	50	40	43	32	47	50	32
	Water connections	DN	100	100	125	125	150	150	150	125	125	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	173	173	339	347	505	520	678	339	347	678
	Max. starting current	A	25	25	191	199	357	372	530	191	199	530
Unit with pump	Pump available static pressure	kPa	140	120	110	125	105	120	145	110	125	145
	Water connections	DN	100	100	150	150	150	150	200	150	150	200
Sound pressure	STD version (3)	dB(A)	70	70	71	71	71	71	72	71	71	72
	MC version (3)	dB(A)	69	69	70	70	70	70	71	70	70	71
Weights	Transport weight	Kg	2610	3000	4050	4460	6050	6820	8100	4290	4700	8400
	Operating weight	Kg	2670	3070	4150	4580	6210	7010	8400	4390	4820	8700

DIMENSIONS			1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
L	STD/MC	mm	4000	5000	6200	7200	8400	10050	11700	6200	7200	11700
W	STD/MC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/MC	mm	2100	2100	2100	2100	2500	2500	2500	2100	2100	2500

CLEARANCE AREA

CHA/TTH 1301-1÷4904-2

500	1800	1000	1800

NOTES

1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

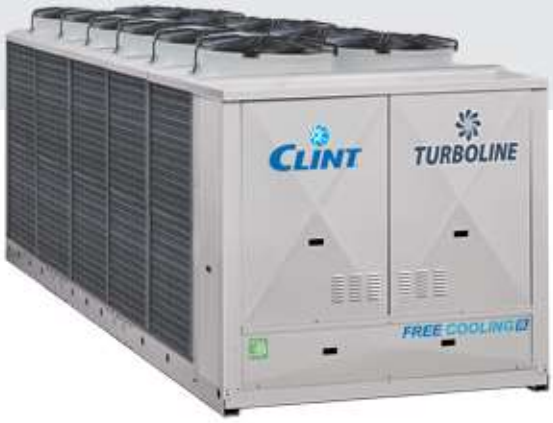
N.B. Data of MC version are specified on technical brochure.

Electrical board side

FROM 279 KW TO 1386 KW.

CHA/TTH/FC 1301-1÷4904-2

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.



TURBOLINE

FREE COOLING

HFO R1234ze

The innovative CHA/TTH/FC 1301-1÷4904-2 **TURBOLINE** units, with **HFO-R1234ze** refrigerant and **FREE-COOLING** technology, are designed to provide an effective solution to installation requirements of large areas, both commercial and industrial, where the production of chilled water is required in continuous service throughout the year. The latest generation refrigerant HFO-R1234ze, with GWP<1 (Global Warming Potential), is the most environmentally sustainable refrigerant on the market, and meets the strictest international environmental regulations. Furthermore, thanks to Turbocor compressors, the units perform with top efficiency at partial loads, low inrush currents, an excellent silent functioning and reduced weight. The unit, designed with specific attention to every aspect of construction and combined with the use of TURBOCOR dynamic partialization oil-free magnetic levitation compressors - managed by the TURBOSOFT self-adaptive electronic control - and with the use of flooded shell and tube evaporator, achieves a high rate of energy efficiency, with unequalled SEER/ESEER/IPLV values, with minimum water content, and an excellent silent functioning. Depending on outside air temperature, the microprocessor controller manages the functioning in CHILLER, FREE-COOLING or MIXED (both CHILLER and FREE-COOLING) mode. The units are also equipped with a WEB MONITORING system for the monitoring and remote management of the units through the communication protocol GPRS/EDGE/3G/TCP-IP. Users enabled to the use of this service can, by using a specific webpage, have access to the Monitoring, Managing and Statistics activities.
Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are already compliant to ErP 2021 European Regulations.

VERSION

CHA/TTH/FC

Cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- HFO-R1234ze refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/EDGE/3G/TCP-IP network.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
PU	Single circulating pump
PD	Double circulating pump
TS	Touch screen Interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/TTH/FC 1301-1÷4904-2

ErP SEER

MODEL			1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
Cooling	Cooling capacity (1)	kW	279	348	554	698	837	1040	1386	554	698	1386
	Absorbed power (1)	kW	75	95	160	193	242	283	387	160	193	387
	EER (1)		3.72	3.66	3.46	3.62	3.46	3.67	3.58	3.46	3.62	3.58
Cooling (EN14511)	Cooling capacity (1)	kW	277	345	551	694	831	1031	1366	551	694	1366
	Absorbed power (1)	kW	77	98	163	198	248	292	407	163	198	407
	EER (1)		3.60	3.52	3.38	3.51	3.35	3.53	3.36	3.38	3.51	3.36
	SEER (2)		4.70	4.72	4.57	4.79	4.63	4.95	4.89	4.57	4.78	4.89
	Energy Efficiency (2)	%	185	186	180	189	182	195	193	180	188	193
Free-Cooling cycle	Air temperature (3)	°C	3.0	2.5	1.5	-1.0	0.0	0.5	-1.0	1.5	-1.0	-1.0
	Absorbed power (3)	kW	10.8	14.4	21.6	21.6	25.2	32.4	36.0	21.6	21.6	36.0
Compressor	Quantity	n°	1	1	2	2	3	3	4	2	2	4
	Refrigerant circuits	n°	1	1	1	1	1	1	1	2	2	2
	Capacity steps	n°	Stepless									
Water circuit	Water flow	l/s	14.42	17.98	28.63	36.07	43.26	53.75	71.63	28.63	36.07	71.63
	Pressure drops	kPa	88	103	78	94	101	142	253	78	94	253
	Water connections	DN	100	100	125	125	150	150	150	125	125	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	173	181	347	347	505	520	678	347	347	678
	Max. starting current	A	25	33	199	199	357	372	530	199	199	530
Unit with pump	Pump available static pressure	kPa	140	125	110	180	150	150	160	110	180	160
	Water connections	DN	100	100	150	150	150	150	200	150	150	200
Sound pressure (4)		dB(A)	69	70	71	71	71	71	72	71	71	72
Weights	Transport weight	Kg	3620	3730	5560	5640	7890	8910	10800	5740	5820	11000
	Operating weight	Kg	3900	4030	6040	6160	8610	9810	11840	6220	6340	12040

DIMENSIONS			1301-1	1701-1	2802-1	3502-1	4103-1	4403-1	4904-1	2802-2	3502-2	4904-2
L	STD	mm	5000	5000	7200	7200	8400	10050	11700	7200	7200	11700
W	STD	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2360	2360	2360	2360	2750	2750	2750	2360	2360	2750

CLEARANCE AREA

CHA/TTH/FC 1301-1÷4904-2

500	1800	1000	1800

NOTES

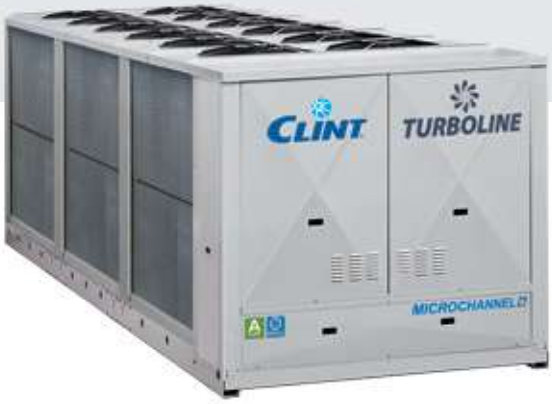
1. Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Ambient air temperature at wich the cooling capacity indicated in point (1) is reached.
4. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

Electrical board side

FROM 248 KW TO 1456 KW.

CHA/TTY 1301-1÷5004-2

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.



TURBOLINE

MICROCHANNEL

The innovative CHA/TTY 1301-1÷5004-2 **TURBOLINE** units, with R134a refrigerant, are designed to provide an effective solution to highly selective system needs. Efficiency at partial loads, low inrush currents, an excellent silent functioning, reduced weight and the specific design and handling of every manufacturing aspect make the TURBOLINE series the top unit of the range.
The use of TURBOCOR dynamic partial-load oil-free magnetic levitation compressors managed by the TURBOSOFT self-adaptive electronic control, of flooded shell and tube evaporator and innovative heat exchangers, traditional or Microchannel, results in a high energy efficiency with unequalled SEER/ESEER/IPLV values, with minimum water content, and an excellent silent functioning. Compared to traditional units, equipped with Screw compressors, TURBOLINE units have low operational costs during their entire operating period, even lower than 50%. Besides, the units are equipped with a WEB MONITORING system for the monitoring and remote management of the units through the GPRS/EDGE/3G/TCP-IP communication protocol. Users enabled to the use of this service can, by using a specific webpage, have access to the Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are already compliant to ErP 2021 European Regulations.

CHA/TTJ 1301-1÷5004-2
On request, units can be supplied with **R513A** refrigerant.

VERSION

CHA/TTY	***CHA/TTY/MC***
Cooling only	Cooling only with MICROCHANNEL coils

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminium finned coils or aluminium MICROCHANNEL coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/EDGE/3G/TCP-IP network.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HR	Desuperheater
HRT/S	Total heat recovery in series
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
TXB	Coil with epoxy treatment
EW	External water connections
PU	Single circulating pump
PD	Double circulating pump
FE	Antifreeze heater for evaporator
FX	Antifreeze heater for evaporator and pipes
FZ	Antifreeze heater for evaporator, single pump and pipes
FH	Antifreeze heater for evaporator, double pump and pipes
TS	Touch screen Interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

CHA/TTY 1301-1÷5004-2

MODEL			1301-1	1401-1	1701-1	2201-1	2601-1	3302-1	4002-1	4302-1	4603-1
Cooling STD version	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
	Absorbed power (1)	kW	73	81	97	116	150	185	221	274	311
	EER (1)		3.40	3.48	3.45	3.47	3.39	3.39	3.48	3.39	3.46
Cooling STD version (EN14511)	Cooling capacity (1)	kW	247	281	334	402	507	624	767	925	1072
	Absorbed power (1)	kW	74	82	98	117	152	188	224	278	315
	EER (1)		3.32	3.43	3.40	3.42	3.34	3.33	3.43	3.32	3.41
	ESEER		4.24	4.47	4.57	4.69	4.69	4.50	4.72	4.51	4.81
	EUROVENT Class		A	A	A	A	A	A	A	A	A
	SEER (2)		4.32	4.48	4.49	4.58	4.55	4.57	4.73	4.68	4.74
	Energy Efficiency (2)	%	170	176	177	180	179	180	186	184	187
Cooling MC version	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
	Absorbed power (1)	kW	64	73	86	106	133	163	198	243	281
	EER		3.88	3.86	3.90	3.80	3.83	3.85	3.89	3.82	3.83
Cooling MC version (EN14511)	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
	Absorbed power (1)	kW	64	73	86	106	133	163	198	243	281
	EER (1)		3.88	3.86	3.90	3.80	3.83	3.85	3.89	3.82	3.83
	ESEER		4.79	4.96	5.13	5.20	5.27	5.07	5.26	5.04	5.33
	EUROVENT Class		A	A	A	A	A	A	A	A	A
	SEER (2)		4.17	4.29	4.42	4.55	4.56	4.63	4.57	4.65	4.62
	Energy Efficiency (2)	%	164	169	174	179	179	182	180	183	182
Compressor	Quantity	n°	1	1	1	1	1	2	2	2	3
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1
	Capacity steps	n°	Stepless								
Evaporator	Water flow	l/s	11.85	13.47	16.01	19.25	24.32	29.96	36.79	44.39	51.36
	Pressure drops	kPa	64	40	40	35	44	56	46	68	46
	Water connections	DN	100	100	100	125	125	150	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50								
	Max. running current	A	168	168	168	262	270	337	509	517	763
	Max. starting current	A	25	25	25	33	41	194	280	288	534
Unit with pump	Pump available static pressure	kPa	150	200	195	165	175	145	155	120	170
	Water connections	DN	100	100	100	125	125	150	150	150	150
Sound pressure	STD version (3)	dB(A)	69	69	69	69	70	70	70	69	70
	MC version (3)	dB(A)	68	68	68	68	69	69	69	68	69
Weights	Transport weight	Kg	2440	2440	2770	2790	3590	4020	4055	5710	6460
	Operating weight	Kg	2510	2510	2900	2920	3730	4170	4225	5910	6680

MODEL			4804-1	5004-1	2602-2	3302-2	4002-2	4302-2	4604-2	4804-2	5004-2
Cooling STD version	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
	Absorbed power (1)	kW	362	433	145	185	221	274	309	362	433
	EER (1)		3.48	3.36	3.51	3.39	3.48	3.39	3.48	3.48	3.36
Cooling STD version (EN14511)	Cooling capacity (1)	kW	1256	1450	507	624	767	925	1072	1256	1450
	Absorbed power (1)	kW	366	439	147	188	224	278	312	366	439
	EER (1)		3.43	3.31	3.46	3.33	3.43	3.32	3.43	3.43	3.31
	ESEER		4.44	4.78	4.35	4.33	4.43	4.61	4.15	4.46	4.70
	EUROVENT Class		A	A	A	A	A	A	A	A	A
	SEER (2)		4.78	4.65	4.69	4.69	4.69	4.62	4.67	4.78	4.62
	Energy Efficiency (2)	%	188	183	185	185	185	182	184	188	182
Cooling MC version	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
	Absorbed power (1)	kW	328	381	132	163	198	243	279	328	381
	EER		3.84	3.82	3.86	3.85	3.89	3.82	3.85	3.84	3.82
Cooling MC version (EN14511)	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
	Absorbed power (1)	kW	328	381	132	163	198	243	279	328	381
	EER (1)		3.84	3.82	3.86	3.85	3.89	3.82	3.85	3.84	3.82
	ESEER		4.90	5.41	4.79	4.87	4.93	5.16	4.57	4.92	5.30
	EUROVENT Class		A	A	A	A	A	A	A	A	A
	SEER (2)		4.67	4.64	4.55	4.67	4.55	4.56	4.72	4.67	4.64
	Energy Efficiency (2)	%	184	183	179	184	179	179	186	184	183
Compressor	Quantity	n°	4	4	2	2	2	2	4	4	4
	Refrigerant circuits	n°	1	1	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless								
Evaporator	Water flow	l/s	60.20	69.56	24.32	29.96	36.79	44.39	51.36	60.20	69.56
	Pressure drops	kPa	50	59	44	56	46	68	41	50	59
	Water connections	DN	200	200	125	150	150	150	150	200	200
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50								
	Max. running current	A	658	1002	329	337	509	517	650	658	1002
	Max. starting current	A	515	773	186	194	280	288	507	515	773
Unit with pump	Pump available static pressure	kPa	220	185	175	145	155	120	170	220	185
	Water connections	DN	200	200	125	150	150	150	150	200	200
Sound pressure	STD version (3)	dB(A)	71	71	70	70	70	69	70	71	71
	MC version (3)	dB(A)	70	70	69	69	69	68	69	70	70
Weights	Transport weight	Kg	7430	7640	3700	4250	4270	5820	6690	7570	7850
	Operating weight	Kg	7660	7880	3845	4405	4445	6030	6915	7805	8095

DIMENSIONS			1301-1	1401-1	1701-1	2201-1	2601-1	3302-1	4002-1	4302-1	4603-1	4804-1	5004-1	2602-2	3302-2	4002-2	4302-2	4604-2	4804-2	5004-2
L	STD/MC	mm	4000	4000	5000	5000	6200	7200	7200	8400	10050	11100	11100	6200	7200	7200	8400	10050	11100	11100
W	STD/MC	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/MC	mm	2100	2100	2100	2100	2100	2100	2100	2500	2500	2500	2500	2100	2100	2100	2500	2500	2500	2500

CLEARANCE AREA

CHA/TTY 1301-1÷5004-2

500	1800	1000	1800

Electrical board side

NOTES

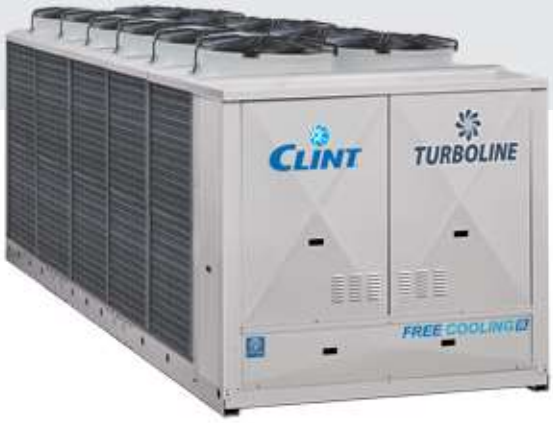
1. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
2. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
3. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

N.B. Data of MC version are specified on technical brochure.

FROM 246 KW TO 1443 KW.

CHA/TTY/FC 1301-1÷5004-2

AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, TURBOCOR (MAGNETIC LEVITATION) COMPRESSORS AND FLOODED SHELL AND TUBE EXCHANGER.



TURBOLINE

FREE COOLING

The innovative CHA/TTY/FC 1301-1÷5004-2 **TURBOLINE** units, with R134a refrigerant and FREE-COOLING technology, are designed to provide an effective solution to installation requirements of large areas, both commercial and industrial, where the production of chilled water is required in continuous service throughout the year. The unit, designed with specific attention to every aspect of construction and combined with the use of TURBOCOR dynamic partialization oil-free magnetic levitation compressors - managed by the TURBOSOFT self-adaptive electronic control - and with the use of flooded shell and tube evaporator, achieves a high rate of energy efficiency, with unequalled SEER/ESEER/IPLV values, with minimum water content, and an excellent silent functioning. Depending on outside air temperature, the microprocessor controller manages the functioning in CHILLER, FREE-COOLING or MIXED (both CHILLER and FREE-COOLING) mode. The units are also equipped with a WEB MONITORING system for the monitoring and remote management of the units through the communication protocol GPRS/EDGE/3G/TCP-IP. Users enabled to the use of this service can, by using a specific webpage, have access to the Monitoring, Managing and Statistics activities. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The units are already compliant to ErP 2021 European Regulations.

CHA/TTJ/FC 1301-1÷5004-2
On request, units can be supplied with **R513A** refrigerant.

VERSION

CHA/TTY/FC

Cooling only

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Semi-hermetic centrifugal compressors with dual Turbocor turbine, oil free, magnetic rising rotor, thermal protection, continuous capacity adjustment system thanks to built-in INVERTER, automatic anti-cavitation system. The power circuit of the compressor is fitted with a set of electrolytic condensers to control the rising in the event of a power failure, reactor for the power factor correction, EMI filter for electromagnetic compatibility.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- High efficiency flooded shell and tube type evaporator, with one or two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on suction, discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main on-off switch with door lock, fuses, electronic/digital overload device to protect the compressors and thermocontacts for fans, interface relay and terminals for external connections.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to –20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- TURBOSOFT control and regulation system is fitted with RS485 serial interface and Web Monitoring device for remote monitoring via GPRS/EDGE/3G/TCP-IP network.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
HRT/P	Total heat recovery in parallel
TX	Coil with pre-coated fins
PU	Single circulating pump
PD	Double circulating pump
TS	Touch screen Interface
ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch