# **CHAPTER 2**

AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS FOR COMMERCIAL & INDUSTRIAL APPLICATION

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## CHA/IK/A 91÷151

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







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

PACTORY 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









MODEL			91	101	131	151
Cooling CTD	Cooling capacity (1)	kW	25.8	30.5	35.9	42.3
Cooling STD versions	Absorbed power (1)	kW	8.0	9.5	11.3	13.4
	EER (1)		3.23	3.21	3.18	3.16
	Cooling capacity (1)	kW	25.6	30.3	35.7	42.1
	Absorbed power (1)	kW	8.1	9.7	11.5	13.6
Cooling STD	EER (1)		3.16	3.12	3.10	3.10
versions	ESEER		4.57	4.31	4.31	4.27
(EN14511)	EUROVENT Class		А	A	А	A
,,	SEER (2)		4.42	4.16	4.21	4.22
	Energy Efficiency (2)	%	174	163	165	166
0 1: 140	Cooling capacity (1)	kW	25.8	30.5	35.9	42.3
Cooling MC	Absorbed power (1)	kW	7.9	9.4	11.2	13.3
versions	EER (1)		3.27	3.24	3.21	3.18
	Cooling capacity (1)	kW	25.6	30.3	35.7	42.1
	Absorbed power (1)	kW	8.0	9.6	11.4	13.5
Cooling MC	EER (1)		3.20	3.16	3.13	3.12
versions	ESEER		4.63	4.36	4.36	4.32
EN14511)	EUROVENT Class		A	A	A	A
LIVITOTTI	SEER (2)		4.48	4,21	4.26	4.27
	Energy Efficiency (2)	%	176	165	167	168
	Heating capacity (3)	kW	28.7	34.3	40.4	48.0
Heating STD	Absorbed power (3)	kW	8.1	9.9	11.8	14.0
versions	COP (3)		3.54	3.46	3.42	3.43
	Heating capacity (3)	kW	28.9	34.5	40.7	48.3
	Absorbed power (3)	kW	8.3	10.1	12.0	14.3
Heating STD	COP (3)		3.48	3.42	3.39	3.38
versions	EUROVENT Class		A	A	A	A
EN14511)	SCOP (4)		3.34	3.23	3.33	3.41
211110111	Energy Efficiency (4)	%	131	126	130	133
	Energy Class (4)		A+	A+	A+	A+
Compressor	Quantity	n°	1	1	1	1
	Water flow	I/s	1.23	1.46	1.72	2.02
vaporator	Pressure drops	kPa	20	29	31	31
- raporator	Water connections	"G	1 1/4"	1 1/4"	1 ¼"	1 1/4"
	Power supply	V/Ph/Hz	.,,	400/3+		. , ,
Electrical	Max. running current	A	21	24	27	34
characteristics	Max. starting current	A	11	14	15	18
1 1 1 1 1 1	Pump available static pressure	kPa	140	115	150	105
Jnit with pump	Water connections	"G	1 ¼"	1 1/4"	1 ¼"	1 1/4"
	STD versions (5)	dB(A)	51	53	53	53
Sound pressure	MC versions (5)	dB(A)	50	52	52	52
	Transport weight	Kg	224	239	269	283
Weights	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
Н	STD/MC	mm	1300	1300	1300	1300

## CLEARANCE AREA

CHA/IK/A 91÷151

500 800 800 800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  Seasonal energy efficiency of heating at low temperature with
- average climatic conditions. According to EU Regulation n. 811/2013.
- 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.

## 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.



V	Ε	R	S	O	ľ	V

12.101011	
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



MODEL			91	101	131	151		
	Cooling capacity (1)	kW	27.9	31.4	37.3	42.8		
Cooling	Absorbed power (1)	kW	9.5	11.0	13.9	15.6		
· ·	EER (1)		2.94	2.85	2.68	2.74		
	Cooling capacity (1)	kW	27.5	30.9	36.7	42.1		
	Absorbed power (1)	kW	9.9	11.5	14.5	16.3		
Cooling (EN14511)	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		
For a Condition would	Air temperature (3)	°C	-1.7	-2.7	0.5	-1.2		
Free-Cooling cycle	Absorbed power (3)	kW	0.98	0.98	1.96	1.96		
Compressor	Quantity	n°	1	1	1	1		
	Water flow	I/s	1.55	1.74	2.07	2.37		
Water circuit	Pressure drops	kPa	117	142	132	141		
	Water connections	"G	1″	1"	1"	1"		
Electrical	Power supply	V/Ph/Hz	400/3+N/50					
	Max. running current	А	20	22	29	32		
characteristics	Max. starting current	А	144	144	162	201		
	Water flow	I/s	1.55	1.74	2.07	2.37		
Unit SP version	Pump available static pressure	kPa	109	152	150	129		
OHIL OF AGISION	Tank water volume	I	150	150	150	150		
	Water connections	"G	1″	1"	1"	1"		
Sound pressure	STD/SP version (4)	dB(A)	51	52	52	52		
Majahta	Transport weight (5)	Kg	415	430	470	485		
Weights	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
Н	STD/SP	mm	1840	1840	1840	1840

## **CLEARANCE AREA**

CHA/K/FC 91÷151

0, , .,			
500	800	800	800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.





# 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.



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**

FACTO	RY FITTED ACCESSORIES				
IM	Automatic circuit breakers	DS	Desuperheater	ISBT	BACnet TCP/IP protocol, Ethernet
SL	Unit silencement	RT	Total heat recovery		port
RFM	Cooling circuit shut-off valve on	TX	Coil with pre-coated fins	ISL	LonWorks protocol, FTT-10 serial
	discharge line	TXB	Coil with epoxy treatment		interface
RFL	Cooling circuit shut-off valve on	PS	Single circulating pump		
	liquid line	PSI	Inverter single circulating pump	LOOSI	ACCESSORIES
ВТ	Low water temperature Kit	PD	Double circulating pump	MN	High and low pressure gauges
EC	EC Inverter fans	PDI	Inverter double circulating pump	CR	Remote control panel
ECH	EC Inverter fans with high available	FE	Antifreeze heater for evaporator	RP	Coil protection metallic guards
	static pressure	IS	Modbus RTU protocol, RS485	AG	Rubber shock absorbers
			serial interface	AM	Spring shock absorbers
		ISB	BACnet MSTP protocol, RS485		

serial interface

## 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	Cooling capacity (1)	kW	49.9	57.7	65.7	74.8	85.9	97.7	112	130	152	179
Cooling STD	Absorbed power (1)	kW	15.6	18.1	20.4	23.6	27.0	30.3	35.0	40.5	47.2	55.6
versions	EER (1)		3.20	3.19	3.22	3.17	3.18	3.22	3.20	3.21	3.22	3.22
	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
Cooling STD	EER (1)		3.12	3.12	3.16	3.10	3.11	3.16	3.15	3.14	3.16	3.17
versions	ESEER		4.07	4.13	4.03	3.99	3.93	4.09	4.01	4.02	3.97	4.00
(EN14511)	EUROVENT Class		А	Α	А	А	Α	А	А	Α	А	Α
,,	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
O - 1' MO	Cooling capacity (1)	kW	49.9	57.7	65.7	74.8	85.9	97.7	112	130	152	179
Cooling MC	Absorbed power (1)	kW	15.4	17.9	20.2	23.4	26.7	30.0	34.7	40.1	46.7	55.0
versions	EER (1)		3.24	3.22	3.25	3.20	3.22	3.26	3.23	3.24	3.25	3.25
	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
Cooling MC	EER (1)		3.16	3.15	3.19	3.13	3.14	3.19	3.18	3.17	3.19	3.20
versions	ESEER		4.11	4.17	4.07	4.03	3.97	4.13	4.05	4.06	4.01	4.04
(EN14511)	EUROVENT Class		А	Α	А	A	A	A	A	A	A	A
(LIVI-1011)	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 capacity (3)	kW	53.7	62.2	71.0	80.7	92.6	105	121	140	164	193
Heating STD	Absorbed power (3)	kW	16.2	18.7	21.2	24.5	28.0	31.4	36.4	41.8	49.0	57.7
versions	COP (3)	KVV	3.31	3.33	3.35	3.29	3.31	3.34	3.32	3.35	3.35	3.34
	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
Heating STD	COP (3)	NVV	3.26	3.26	3.31	3.24	3.24	3.30	3.28	3.27	3.30	3.30
versions	EUROVENT Class		A A	A A	A A	A A	A A	A A	A A	A A	A	A A
(EN14511)	SCOP (4)		3.47	3.43	3.42	3.62	3.64	3.46	3.56	3.53	3.44	3.43
(LIV14311)	Energy Efficiency (4)	%	136	134	134	142	143	135	139	138	135	134
	Energy Class (4)	70	A+	A+	A+	A+	-	-	-	-	-	104
	Quantity	n°	2	2	2	2	2	2	2	2	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
Compressor	Capacity steps	n°	1		<u> </u>	'	'	less				
	Water flow	I/s	2,38	2.76	3.14	3.57	4.10	4.67	5.35	6.21	7.26	8.55
Evaporator	Pressure drops	kPa	41	40	32	39	4.10	4.07	35	44	33	30
Lvaporator	Water connections	"G	1 ½"	1 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Power supply	V/Ph/Hz	1 /2	1 /2	L //2	2 /2		3/50	L //	Z /Z	2 /2	_ Z //2
Electrical	Max. running current	A A	45	45	54	54	63	69	89	89	112	129
characteristics	Max. starting current	A	128	128	176	176	187	237	230	230	245	297
	Pump available static pressure	kPa	140	135	140	125	130	180	175	160	160	145
Unit with pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	STD versions	Pa	70	60	100	80	75	80	80	80	75	65
ECH fan available	SSL versions	Pa	70	60	95	90	80	80	80	80	75	
	MC versions	Pa	60	65	95	80	80	75	75	75	75	75
static pressure	MC/SSL versions	Pa	60	65	95	80	80	75	75	75	75	75
	-				62		62			63		63
	STD versions (5) STD versions with SL accessory (5)	dB(A)	58 55	58 55	59	62 59	59	62 59	63 60	60	63 61	61
		dB(A)										61
Sound pressure	SSL versions (5)	dB(A)	57	57 57	61	61	61	61	62	62 62		62
	MC versions (5)	dB(A)	57		61	61	61	61	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
· <b>J</b> · · · -	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	
	STD-MC	mm	2350	2350	2350	2350	2350	3550	3550	3550	4700	4700
L	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
ш	STD-MC	mm	1920	2220	2220	2220	2220	1920	2220	2220	2220	2220
П	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation
- n. 811/2013.
- Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Weights of SSL and WP versions are specified on technical
- brochure.

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





## 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.











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.

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

#### **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**

IIVI	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

ВТ	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

EC	EC Inverter fans
ECH	EC Inverter fans with high availa
	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 capacity (1)	kW	51.1	59.1	67.2	76.6	87.9	100	115	133	156	183
Cooling	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 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
Cooling (EN14511)	ESEER		3.89	3.90	3.92	3.83	3.89	3.79	3.76	3.89	3.77	3.99
-	EUROVENT Class		А	Α	А	А	А	А	А	Α	А	А
	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 capacity (3)	kW	55.4	64.1	72.9	83.1	95.3	109	124	144	169	198
Heating	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 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
Heating (EN14511)	EUROVENT Class		Α	Α	А	Α	Α	Α	А	Α	Α	Α
	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+	-	-	-	-	-	-
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3			4
_	Water flow	I/s	2.44	2.82	3.21	3.66	4.20	4.78	5.49	6.35	7.45	8.74
Evaporator	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	Power supply	V/Ph/Hz					400/					
characteristics	Max. running current	A	38	44	51	57	68	73	85	102	113	136
	Max. starting current	А	132	142	148	172	212	169	200	246	229	280
Electrical	Power supply	V/Ph/Hz					400/					
characteristics	Max. running current	A	42	48	54	60	71	78	90	106	118	140
(ST versions)	Max. starting current	A	135	145	152	176	215	173	204	250	233	284
Unit with tank and	Pump available static pressure	kPa	140	135	135	120	125	175	175	155	155	140
pump	Tank water volume		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"
U.S. OT	Water flow	I/s	2.44	2.82	3.21	3.66	4.20	4.78	5.49	6.35	7.45	8.74
Unit ST versions	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"
FOLL for a sub-line	STD versions	Pa	70	60	100	80	75	80	80	80	75	65
ECH fan available	SSL versions	Pa	70	60	95	90	80	80	80	80		
static pressure	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		
Cound pre	STD and ST versions (5)	dB(A)	58	58	62	62	62	62	63	63	63	63
Sound pressure	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	1005	I
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	Transport weight	Kg	589	621	640	694	743	856	993	1035	1325	1387
(ST versions)	Operating weight	Kg	593	625	645	700	749	863	1002	1044	1340	1407

DIM	ENSIONS		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
1	STD-ST	mm	2350	2350	2350	2350	2350	3550	3550	3550	4700	4700
L	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
	STD-ST	mm	1920	2220	2220	2220	2220	1920	2220	2220	2220	2220
П	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 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.

## CHA/K/A/WP 182-P+604-P

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







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.

#### **VFRSION**

1 - 1 - 1 - 1 - 1	
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**

Low water temperature Kit

<b>FACTO</b>	RY FITTED ACCESSORIES		
IM	Automatic circuit breakers	EC	EC Inverter fans
SL	Unit silencement	ECH	EC Inverter fans with high available
RFM	Cooling circuit shut-off valve on		static pressure
	discharge line	DS	Desuperheater
RFL	Cooling circuit shut-off valve on	RT	Total heat recovery
	liquid line	TX	Coil with pre-coated fins
CT	Condensing control down to 0 °C	SI	Inertial tank
CC	Condensing control down to -20 °C	PS	Single circulating pump

PD FΔ

Antifreeze heater for tank SS Soft start

IS Modbus RTU protocol, RS485

Double circulating pump

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



ВT

## 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 capacity (1)	kW	55.7	63.6	71.4	81.6	94.2	109	124	142	163	197
Heating	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 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
Heating (EN14511)	EUROVENT Class		Α	А	А	А	Α	Α	А	Α	Α	А
	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 capacity (3)	kW	48.2	54.9	62.5	71.9	82.3	94.5	108	125	139	161
Cooling	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 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
Cooling (EN14511)	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		В	С	В	В	С	В	В	В	С	С
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
'	Capacity steps	n°			2				3			4
Evaporator	Water flow	I/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 1/2"	2 1/2"	2 ½"	2 1/2"	2 ½"	2 1/2"	2 ½"
Floorical	Power supply	V/Ph/Hz					400/	3/50				
Electrical	Max. running current	А	35	41	48	54	65	72	81	102	109	132
characteristics	Max. starting current	A	130	140	144	169	209	169	197	246	225	276
Electrical	Power supply	V/Ph/Hz					400/	3/50				
characteristics	Max. running current	А	39	45	51	57	68	77	86	106	114	136
(ST versions)	Max. starting current	А	133	143	148	173	212	173	201	250	229	280
Hait with took and	Pump available static pressure	kPa	155	150	140	135	150	195	185	165	160	150
Unit with tank and	Tank water volume		400	400	400	400	400	400	400	400	600	600
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 1/2"	2 ½"	2 ½"
	Water flow	I/s	2.30	2.62	2.99	3.44	3.93	4.52	5.16	5.97	6.64	7.69
Unit ST versions	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 1/2"	2 ½"	2 ½"
	STD versions	Pa	70	60	100	100	100	95	60	65	60	65
ECH fan available	SSL versions	Pa	70	60	65	60	60	95	60	60	60	60
static pressure	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
	STD and ST versions (4)	dB(A)	57	57	61	61	61	61	62	62	62	62
Sound pressure	With SL accessory (4)	dB(A)	55	55	59	59	59	59	60	60	60	60
<u> </u>	SSL and SSL/ST versions (4)	dB(A)	53	53	57	57	56	56	57	57	57	58
Maighte	Transport weight (5)	Kg	635	644	693	760	807	926	1076	1126	1235	1414
Weights	Operating weight (5)	Kg	640	650	700	770	820	940	1090	1140	1250	1430
Weights	Transport weight	Kg	650	659	708	775	822	946	1096	1146	1255	1434
(ST versions)	Operating weight	Kg	655	665	715	785	830	960	1110	1160	1270	1450

DIN	MENSIONS		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
$\overline{}$	STD-ST	mm	2350	2350	2350	2350	2350	2350	3550	3550	3550	3550
L	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
Н	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



- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.

  Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

  Unit without tank and pump.

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

## CHA/K 182-P÷604-P

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







VEDSION

















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.

VENSION		
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	Super silenced reversible Heat Pump with	

### **FEATURES**

AQUALOGIK technology

· Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.

AQUALOGIK technology

- 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.

Inverter fans with high available

Modbus RTU protocol, RS485

Microprocessor control and regulation system (with AQUALOGIK technology on ST versions).

SS

IS

Soft start

serial interface

#### **ACCESSORIES**

FACT	ORY FITTED ACCESSORIES		
IM	Automatic circuit breakers	ECH	EC Inverter fans with high availab
SL	Unit silencement		static pressure
RFM	Cooling circuit shut-off valve on	DS	Desuperheater
	discharge line	RT	Total heat recovery
RFL	Cooling circuit shut-off valve on	TX	Coil with pre-coated fins
	liquid line	SI	Inertial tank
CT	Condensing control down to 0 °C	PS	Single circulating pump
CC	Condensing control down to -20 °C	PD	Double circulating pump
BT	Low water temperature Kit	FE	Antifreeze heater for evaporator
EC	EC Inverter fans	FA	Antifreeze heater for tank

#### 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 capacity (1)	kW	47.6	54.9	63.5	72.9	83.4	95.9	110	127	147	178
Cooling	Absorbed power (1)	kW	16.1	18.8	21.8	25.0	28.3	31.6	37.9	43.3	50.1	58.2
, i	EER (1)		2.96	2.92	2.91	2.92	2.95	3.03	2.90	2.93	2.93	3.06
	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
Cooling (EN14511)	ESEER		3.64	3.52	3.50	3.64	3.85	3.62	3.40	3.51	3.52	3.64
-	EUROVENT Class		С	С	С	С	С	В	С	С	С	В
	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 capacity (3)	kW	54.1	61.8	71.4	80.3	90.4	106	120	135	154	187
Heating	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 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
Heating (EN14511)	EUROVENT Class		В	В	В	В	В	В	В	В	В	В
	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+	-	-	-	-	-	-
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°			2				3		4	4
	Water flow	I/s	2.27	2.62	3.03	3.48	3.98	4.58	5.27	6.06	7.04	8.49
Evaporator	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	Power supply	V/Ph/Hz					400/	3/50				
characteristics	Max. running current	Α	35	41	48	54	65	69	81	98	105	132
CHALACIEHSLICS	Max. starting current	Α	130	140	144	169	209	166	197	242	221	276
Electrical	Power supply	V/Ph/Hz						3/50				
characteristics	Max. running current	Α	39	45	51	57	68	73	86	102	110	136
(ST versions)	Max. starting current	A	133	143	148	173	212	170	201	246	226	280
Unit with tank and	Pump available static pressure	kPa	140	130	130	115	135	160	165	150	145	130
pump	Tank water volume		400	400	400	400	400	400	400	400	600	600
pullip	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Water flow	I/s	2.27	2.62	3.03	3.48	3.98	4.58	5.27	6.06	7.04	8.49
Unit ST versions	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"
	STD versions	Pa	90	80	100	100	100	80	95	75	60	60
ECH fan available	SSL versions	Pa	85	85	75	75	70	50	70	60	60	
static pressure	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	
	STD and ST versions (5)	dB(A)	56	56	60	60	60	60	61	61	61	61
Sound pressure	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	
	Transport weight (6)	Kg	595	624	663	682	791	878	927	1036	1135	1374
M/pinhte !					070	000	000	000	040	1050	4450	1000
Weights	Operating weight (6)	Kg	600	630	670	690	800	890	940	1050	1150	1390
Weights Weights	Operating weight (6) Transport weight	Kg Kg	600 610 615	630 639 645	670 678 685	690 697 705	800 806 815	890 898 910	940 947 960	1050 1056 1070	1150 1155 1170	1390 1394 1410

DIM	ENSIONS		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	STD-ST	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
L	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
Н	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 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.

## CHA/K/FC 182-P+604-P

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



















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**

.,	1 TITTED / TOOLOGOTTILE
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
E0	FO.1

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 B

ISL

Modbus RTU protocol, RS485 serial interface

ISB BACnet MSTP protocol, RS485 serial interface

ISBT BACnet TCP/IP protocol, Ethernet

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



MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	524-P	604-P
	Cooling capacity (1)	kW	52.7	59.5	68.1	76.7	85.7	99.1	114	130	151	174
Cooling	Absorbed power (1)	kW	18.1	20.3	23.3	26.1	29.3	36.8	42.2	48.4	54.4	64.9
Ů	EER (1)		2.91	2.93	2.92	2.94	2.92	2.69	2.70	2.69	2.78	2.68
	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
Cooling (EN14511)	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
Fron Cooling avala	Air temperature (3)	°C	2.1	1.3	0.0	-2.4	-3.5	1.0	0.0	-1.1	-3.0	-4.8
Free-Cooling cycle	Absorbed power (3)	kW	2	2	2	2	2	6	6	6	8	8
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
	Capacity steps	n°	2					3			-	4
	Water flow	I/s	2.72	3.07	3.52	3.96	4.43	5.09	5.88	6.70	7.78	8.93
Water circuit	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 1/2"	2 ½"
Electrical	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	А	35	41	48	54	65	76	85	102	113	136
characteristics	Max. starting current	А	130	140	144	169	209	173	201	246	229	280
Unit with tank and	Pump available static pressure	kPa	120	125	100	115	100	190	145	125	150	125
	Tank water volume		400	400	400	400	400	400	400	400	600	600
pump	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	2 1/2"
ECH fan available s	tatic pressure	Pa	110	110	110	105	105	60	60	60	65	65
	STD version (4)	dB(A)	59	59	59	59	59	60	60	60	61	61
Sound pressure	With SL accessory (4)	dB(A)	57	57	57	57	57	58	58	58	59	59
Maiabta	Transport weight (5)	Kg	923	932	951	980	999	1308	1317	1350	1472	1510
Weights	Operating weight (5)	Kg	970	980	1000	1030	1050	1390	1400	1435	1560	1600

DIMENSION	NS		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
Н	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



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in part (1) is repeated.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.

# CHA/K 182÷604

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



















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** IN/I Automatic circuit breakers

IM	Automatic circuit breakers	HR	Desuperheater	FB	Antifreeze heater for evaporator/tank
SL	Unit silencement	HRT/S	Total heat recovery in series	SS	Soft start
RFM	Cooling circuit shut-off valve on	HRT/P	Total heat recovery in parallel	IS	Modbus RTU protocol, RS485
	discharge line	TX	Coil with pre-coated fins		serial interface
RFL	Cooling circuit shut-off valve on	EW	External water connections		
	liquid line	SP	Inertial tank	LOOS	E ACCESSORIES
CT	Condensing control down to 0 °C	PU	Single circulating pump	MN	High and low pressure gauges
CC	Condensing control down to -20 °C	PD	Double circulating pump	CR	Remote control panel
ВТ	Low water temperature Kit	SPU	Inertial tank and single circulating	RP	Coil protection metallic guards
EC	EC Inverter fans		pump	AG	Rubber shock absorbers
ECH	EC Inverter fans with high available	SPD	Inertial tank and double circulating	AM	Spring shock absorbers
	static pressure		pump	FL	Flow switch

Antifreeze heater for evaporator

## CHA/K 182÷604







MODEL			182	202	242	262	302	363	393	453	524	604
	Cooling capacity (1)	kW	49.0	55.0	62.4	73.3	84.3	95.2	109	129	149	179
Cooling	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 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
Cooling (EN14511)	ESEER		3.74	3.57	3.44	3.60	3.85	3.60	3.37	3.61	3.54	3.67
	EUROVENT Class		С	С	С	C	С	В	С	С	С	В
	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 capacity (3)	kW	55.7	61.9	70.2	80.7	91.4	105	119	137	156	188
Heating	Absorbed power (3)	kW	17.8	19.6	22.8	25.7	29.1	33.4	38.1	44.2	51.1	61.0
J	COP (3)		3.13	3.16	3.08	3.14	3.14	3.14	3.12	3.10	3.05	3.08
	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
Heating (EN14511)	EUROVENT Class		В	В	В	В	В	В	В	В	С	В
, ,	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+	-	-	-	-	-	-
	Quantity	n°	2	2	2	2	2	3	3	3	4	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	2	2
'	Capacity steps	n°			2				3			4
	Water flow	I/s	2.31	2.60	2.95	3.46	3.98	4.50	5.15	6.09	7.04	8.45
Evaporator	Pressure drops	kPa	22	29	50	55	40	39	45	36	43	38
	Water connections	"G	1 ½"	1 ½"	2"	2"	2 1/2"	2 ½"	2 ½"	3"	3"	3"
Electrical	Power supply	V/Ph/Hz		'		'	400/	3/50		'		
	Max. running current	А	35	41	48	54	65	69	81	98	105	132
characteristics	Max. starting current	А	130	140	144	169	209	166	197	242	221	276
Electrical	Power supply	V/Ph/Hz		'		'	400/	3/50		'	•	
characteristics	Max. running current	А	39	45	51	57	68	73	86	102	110	136
(ST versions)	Max. starting current	А	133	143	148	173	212	170	201	246	226	280
Unit with tank and	Pump available static pressure	kPa	160	150	125	110	140	180	170	170	150	140
	Tank water volume	I	470	470	470	470	470	470	470	470	660	660
pump	Water connections	"G	2 1/2"	2 ½"	2 ½"	2 ½"	2 1/2"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"
	Water flow	I/s	2.31	2.60	2.95	3.46	3.98	4.50	5.15	6.09	7.04	8.45
Unit ST versions	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"
	STD versions	Pa	90	80	100	100	100	80	95	75	60	60
ECH fan available	SSL versions	Pa	85	85	75	75	70	50	70	60	60	
static pressure	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	
	STD and ST versions (5)	dB(A)	56	56	60	60	60	60	61	61	61	61
Sound pressure	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
Ŭ	Operating weight (6)	Kg	660	680	720	740	870	960	1000	1150	1230	1470
Weights	Transport weight	Kg	655	675	715	735	860	950	990	1130	1210	1450
(ST versions)	Operating weight	Kg	660	690	730	750	875	970	1010	1150	1230	1470

DIN	MENSIONS		182	202	242	262	302	363	393	453	524	604
	STD-ST	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550
L	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
Н	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 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.

## CHA/K/E 252-P+684-P

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













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.



VERSION	V	Ε	RS	Ю	Ν
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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

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



IS

## CHA/K/E 252-P÷684-P





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

DIMENSION	NS .		252-P	342-P	504-P	684-P
L	STD	mm	2200	2200	2200	2200
W	STD	mm	1100	1100	2200	2200
Н	STD	mm	2045	2045	2045	2045

### CLEARANCE AREA

CHA/K/E 252-P÷684-P

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SHILL	1 11	I XIIII	



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
   Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
   Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
   Unit without tank and pump.
   N.B. Weights of SSL version are specified on technical brochure.

## 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.



CLINT















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.



INVERTER SCROLL

EC INVERTER PLUG FANS

## **VERSION**

VEHOIOIV	
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









MODEL			21	31	41	51	61	71	81	91	101	131
	Cooling capacity (1)	kW	6.0	7.6	9.3	12.4	15.7	19.0	22.4	25.8	30.5	35.9
Cooling	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 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
Cooling (EN14511)	ESEER		4.47	4.27	4.12	4.05	4.26	4.28	4.44	3.84	3.80	3.82
	EUROVENT Class		А	А	А	А	А	А	А	Α	А	Α
	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 capacity (3)	kW	6.7	8.8	10.9	14.1	17.5	20.9	24.8	28.7	34.3	40.4
Heating	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 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
Heating (EN14511)	EUROVENT Class		А	Α	Α	А	Α	Α	А	А	А	Α
	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
·	Water flow	I/s	0.29	0.36	0.44	0.59	0.75	0.91	1.07	1.23	1.46	1.72
Evaporator	Pressure drops	kPa	18	14	18	25	20	29	30	20	29	31
·	Water connections	"G	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Fan available statio	pressure	Pa	80	80	80	115	115	115	115	150	150	150
Electrical	Power supply	V/Ph/Hz		230/1/50					400/3+N/5	5		
Eloculou.	Max. running current	А	17	17	17	14	14	16	19	22	22	25
characteristics	Max. starting current	Α	11	11	11	9	9	10	11	12	12	13
Unit with name	Pump available static pressure	kPa	53	56	52	76	82	70	60	140	115	150
Unit with pump	Water connections	"G	1"	1"	1"	1 ¼"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Sound pressure (5)		dB(A)	49	51	52	52	52	53	62	62	62	63
	Transport weight	Kg	131	136	143	203	213	215	217	353	359	374
Weights	Operating weight	Kg	132	137	144	205	215	217	219	356	362	377

DIMENSION	1S		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
Н	STD	mm	1500	1500	1500	1750	1750	1750	1750	1600	1600	1600

### CLEARANCE AREA

CRA/IK/A 21÷41

100 | 800 | 800 | 800











## NOTES

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

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5

6

## 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.





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.

ISB

**ISBT** 

- 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 Coil with pre-coated fins ISL LonWorks protocol, FTT-10 serial ΤX SI Unit silencement TXR Coil with epoxy treatment interface **RFM** Cooling circuit shut-off valve on ΕW External water connections IAV Remote set-point, 0-10 V signal discharge line Single circulating pump ΙΔΔ Remote set-point, 4-20 mA signal PS RFL Cooling circuit shut-off valve on PSI Inverter single circulating pump IAS Remote signal for second set-point liquid line PD Double circulating pump activation RT Low water temperature Kit PDI Inverter double circulating pump IDL Demand limit from digital input EC EC Inverter fans FF Antifreeze heater for evaporator **FCH** EC Inverter fans with high available IS Modbus RTU protocol, RS485 LOOSE ACCESSORIES static pressure serial interface MN High and low pressure gauges DS

BACnet MSTP protocol, RS485

serial interface

port



Desuperheater

Total heat recovery

RT

Remote control panel

Coil protection metallic guards

CR

RP

## 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	Cooling capacity (1)	kW	196	234	287	316	349	383	422	458	515	668
5	Absorbed power (1)	kW	61	73	90	98	109	120	133	144	163	211
versions	EER (1)		3.21	3.21	3.19	3.22	3.20	3.19	3.17	3.18	3.16	3.17
	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
Cooling STD	EER (1)		3.15	3.15	3.14	3.18	3.16	3.16	3.14	3.15	3.13	3.13
versions	ESEER		4.03	3.97	4.01	4.03	4.12	4.06	4.14	4.22	4.24	4.29
(EN14511)	EUROVENT Class		Α	Α	А	А	Α	А	А	А	А	А
	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	Cooling capacity (1)	kW	196	234	287	316	349	383	422	458	515	668
0	Absorbed power (1)	kW	60	72	89	97	108	119	132	143	161	209
versions	EER (1)		3.27	3.25	3.22	3.26	3.23	3.22	3.20	3.20	3.20	3.20
	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
Cooling MC	EER (1)		3.20	3.19	3.18	3.21	3.19	3.18	3.17	3.17	3.17	3.16
versions	ESEER		4.07	4.01	4.05	4.07	4.16	4.10	4.18	4.26	4.28	4.33
(EN14511)	EUROVENT Class		Α	Α	А	А	Α	А	А	Α	А	А
, ,	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
Hasting CTD	Heating capacity (3)	kW	212	253	311	343	379	417	458	497	559	724
Heating STD	Absorbed power (3)	kW	63	75	93	102	112	124	137	148	169	218
versions	COP (3)		3.37	3.37	3.34	3.36	3.38	3.36	3.34	3.36	3.31	3.32
	Heating capacity (3)	kW	213	254	312	344	380	418	459	499	561	726
Heating STD	Absorbed power (3)	kW	65	77	95	104	115	127	140	151	172	223
versions	COP (3)		3.28	3.30	3.28	3.31	3.30	3.29	3.28	3.30	3.26	3.26
	EUROVENT Class		Α	Α	А	Α	Α	Α	А	Α	А	А
(EN14511)	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
	Quantity	n°	2+2	2+2	2+2	2+2	2+2	3+3	3+3	3+3	3+3	3+3
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°					Step	less				
	Water flow	I/s	9.36	11.18	13.71	15.10	16.67	18.30	20.16	21.88	24.61	31.92
Evaporator	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	Power supply	V/Ph/Hz					400/	3/50				
	Max. running current	А	137	156	194	211	173	250	202	320	355	460
characteristics	Max. starting current	А	305	334	407	424	386	428	415	534	617	800
Unit with numn	Pump available static pressure	kPa	160	140	170	185	170	165	145	185	175	145
Unit with pump	Water connections	DN	100	100	100	100	100	150	150	150	150	150
	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
Sound pressure	SSL versions (5)	dB(A)	63	64	65	64	65	66	66	67	68	
Sound pressure	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
v v Giyiitə	Operating weight	Kg	2270	2410	2550	2830	2890	3230	3300	3710	3900	4470

DIN	/IENSIONS		674-P	784-P	1004-P	1054-P	1154-P	1256-P	1456-P	1606-P	1756-P	2356-P
	STD-MC	mm	4000	4000	4000	5000	5000	5000	5000	6200	6200	7200
L	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
Н	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.

  Seasonal energy efficiency of heating at low temperature with average
- climatic conditions. According to EU Regulation n. 811/2013.
- 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.

## 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.



















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**

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

#### LOOSE ACCESSORIES

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









MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P
	Cooling capacity (1)	kW	197	220	245	271	300	329	361
Cooling	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 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
Cooling (EN14511)	ESEER		3.75	3.80	3.90	4.01	3.90	4.15	4.13
	EUROVENT Class		А	А	Α	А	А	A	Α
	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 capacity (3)	kW	214	239	266	295	325	359	391
Heating	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 capacity (3)	kW	215	240	267	296	327	360	393
	Absorbed power (3)	kW	67	75	83	90	102	112	122
Heating (EN14511)	COP (3)		3.21	3.20	3.22	3.29	3.21	3.21	3.22
riodding (Ervi io'r)	EUROVENT Class		А	А	Α	А	Α	А	А
	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
0	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2
	Capacity steps	n°	0.44	6		10.05	44.00	8	17.05
Funnamete:	Water flow	I/s kPa	9.41 45	10.51	11.71	12.95	14.33 50	15.72	17.25
Evaporator	Pressure drops			49	44	42		39	46
	Water connections	DN	80	80	80	80	80	80	80
Electrical	Power supply	V/Ph/Hz	152	166	187	400/3/50	224	241	258
characteristics	Max. running current	A		299	354	199 367		409	426
	Max. starting current Pump available static pressure	A kPa	276 155	135	205	185	357 180	185	170
Unit with pump	Water connections	DN	100	100	100	100	100	100	100
	STD version (5)	dB(A)	69	71	72	72	72	72	73
Sound pressure	With SL accessory (5)	dB(A)	66	68	69	69	69	69	70
Journa pressure	SSL version (5)	dB(A)	63	65	66	67	66	67	68
	Transport weight	Kg	1854	2171	2289	2317	2437	2680	2690
Weights	Operating weight	Kg	1870	2190	2310	2340	2460	2710	2720
MODEL	1 - 1 - 1 - 1	1 3 1	13010-P	15010-P		'	012-P	21012-P	24012-P
MODEL	Cooling capacity (1)	kW	396	435	489		538	609	692
Cooling	Absorbed power (1)	kW	124	137	154		169	192	220
ooojing	EER (1)	IV V	3.19	3.18	3.1		3.18	3.17	3.15
	Cooling capacity (1)	kW	394	433	484		536	607	690
	Absorbed power (1)	kW	126	139	15!		171	194	222
	EER (1)		3.13	3.12	3.1		3.13	3.13	3.11
Cooling (EN14511)	ESEER		4.06	4.08	4.1		4.11	4.05	4.09
	EUROVENT Class		A	A	A		A	A	A
	SEER (2)		4.14	4.13	4.1		4.13	4.11	4.13
	Energy Efficiency (2)	%	163	162	163	3	162	161	162
	Heating capacity (3)	kW	431	473	526	6	586	663	754
Heating	Absorbed power (3)	kW	129	143	162		176	202	231
5	COP (3)		3.34	3.31	3.2	5	3.33	3.28	3.26
	Heating capacity (3)	kW	433	475	528	3	588	665	756
	Absorbed power (3)	kW	133	147	165	5	181	206	236
Heating (EN14511)	COP (3)		3.26	3.23	3.2	0	3.25	3.23	3.20
ricating (LIV14511)	EUROVENT Class		А	А	А		А	А	А
	SCOP (4)		3.36	3.32	3.3		3.21	3.24	3.43
	Energy Efficiency (4)	%	131	130	13		125	127	134
	Quantity	n°	5+5	5+5	6+6	6	6+6	6+6	6+6
Compressor	Refrigerant circuits	n°	2	2	2		2	2	2
	Capacity steps	n°		8			10		
-	Water flow	I/s	18.92	20.78	23.1	7 :	25.70	29.10	33.06
Evaporator	Pressure drops	kPa	49	49	33		41	34	32
	Water connections	DN V/Ph/Hz	80	80	150	100/3/50	150	150	150
	Power cumply	1 V/Ph/Hz				/11111/3750			

<b>DIMENSION</b>	IS		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
1	STD	mm	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
L	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
Н	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

324

492

125 100

71 68

3004

3040

407

155 100

71 68

2869

2900

V/Ph/Hz

A A kPa DN

dB(A)

dB(A)

dB(A)

Kg Kg

### CLEARANCE AREA

Electrical

characteristics

Unit with pump

Sound pressure

Weights

CHA/K/AF 726-P÷24012-P

500 1800 1000 1800



### NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation
- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.

391 558 170

100

71 69

3642

3690

400/3/50

70 68

3512

446

623 160 150

75 72

4420

4480

- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 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.



500 678 145

150

72

4458

4520

Power supply

Max. running current

Max. starting current

STD version (5)
With SL accessory (5)

SSL version (5)

Transport weight

Operating weight

Pump available static pressure Water connections

## 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













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
CHA/K/A/VVF	CHA/K/A/WF/33L

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**

<b>FACTORY</b>	FITTED	ACCESS	ORIES

IM	Automatic circuit breakers	PS
SL	Unit silencement	PSI
RFM	Cooling circuit shut-off valve on	PD
	discharge line	PDI
RFL	Cooling circuit shut-off valve on	SS
	liquid line	IS
CT	Condensing control down to 0 °C	
CC	Condensing control down to -20 °C	ISB
BT	Low water temperature Kit	
EC	EC Inverter fans	ISBT
ECH	EC Inverter fans with high available	
	static pressure	ISL
DS	Desuperheater	
RT	Total heat recovery	IAV
TX	Coil with pre-coated fins	IAA
EVV	External water connections	IAS
10		IDL

PS	Single circulating pump
PSI	Inverter single circulating pump
PD	Double circulating pump

Inverter double circulating pump Soft start

Modbus RTU protocol, RS485 serial interface BACnet MSTP protocol, RS485

serial interface BACnet TCP/IP protocol, Ethernet

LonWorks protocol, FTT-10 serial Remote set-point, 0-10 V signal

Remote set-point, 4-20 mA signal Remote signal for second set-point activation

Demand limit from digital input

### LOOSE ACCESSORIES

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







MODEL			726-P	786-P	826-P	906-P	1048-	P 1128-P	1208-F	
	Heating capacity (1)	kW	227	256	272	294	342	369	389	
Heating	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 capacity (1)	kW	228	257	273	295	343	370	390	
	Absorbed power (1)	kW	68	77	83	87	105	108	115	
Heating (EN14511)	COP (1)		3.35	3.34	3.29	3.39	3.27	3.43	3.39	
neading (EIV14511)	EUROVENT Class		А	А	Α	А	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 capacity (3)	kW	194	217	239	259	294	322	339	
Cooling	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 capacity (3)	kW	193	216	238	258	293	321	338	
	Absorbed power (3)	kW	69	76	79	86	101	108	114	
Cooling (EN14511)	EER (3)		2.80	2.84	3.01	3.00	2.90	2.97	2.96	
oooming (Ervi ioiii)	ESEER		3.64	3.69	3.79	3.89	3.79	4.03	4.01	
	EUROVENT Class		C	C	B	B	C C	В В	B B	
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	
oompressor	Capacity steps	n°	Z	6				8		
	Water flow	I/s	9.27	10.37	11.42	12.37	14.05	15.38	16.20	
Evaporator	Pressure drops	kPa	44	55	42	38	49	37	41	
Lvaporator	Water connections	DN	80	80	80	80	80	80	80	
	Power supply	V/Ph/Hz	/Hz 400/3/50							
Electrical	Max. running current	A A	152	166	187	199	224	241	258	
characteristics	Max. starting current	A	276	299	354	367	357	409	426	
	Pump available static pressure	kPa	155	130	205	190	180	185	175	
Unit with pump	Water connections	DN	100	100	100	100	100	100	100	
	STD version (4)	dB(A)	69	67	68	68	68	69	70	
Sound pressure	With SL accessory (4)	dB(A)	66	64	65	65	65	66	67	
Souria pressure	SSL version (4)	dB(A)	58	60	61	61	61	62	62	
			1954	2291	2409	2437	2567	2820	2830	
Weights	Transport weight	Kg	1954	2310	2430	2437	2590	2850	2860	
	Operating weight	Kg	1970	2310	Z43U	Z400	2590	2830	2800	
MODEL			13010-P	15010-P	1681	2-P	18012-P	21012-P	24012-P	
	Heating capacity (1)	kW	420	476	533		566	677	762	
Heating	Absorbed power (1)	kW	125	141	15		169	202	226	
3	COP (1)		3.36	3.38	3.3	9	3.35	3.35	3.37	
	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	3.3	3	3.30	3.30	3.32	
Heating (EN14511)	EUROVENT Class		A A	A	A		A A	A A	A	
	SCOP (2)		3.36	3.32	3.3		3.21	3.24	3.43	
	Energy Efficiency (2)	%	131	130	13		125	127	134	
	Cooling capacity (3)	kW	359	421	47:		512	597	671	
Coolina	Absorbed power (3)	kW	127	144	163		172	207	241	
Cooling A	Ansoined hower (9)	KVV	127	144	10,	_	1/2	207	241	

MODEL			13010-P	15010-P	16812-P	18012-P	21012-P	24012-P
	Heating capacity (1)	kW	420	476	532	566	677	762
Heating	Absorbed power (1)	kW	125	141	157	169	202	226
ŭ.	COP (1)		3.36	3.38	3.39	3.35	3.35	3.37
	Heating capacity (1)	kW	422	478	533	568	679	764
	Absorbed power (1)	kW	128	144	160	172	206	230
Hooting /ENI1/E11	COP (1)		3.30	3.32	3.33	3.30	3.30	3.32
Heating (EN14511)	EUROVENT Class		А	А	А	Α	А	А
	SCOP (2)		3.36	3.32	3.36	3.21	3.24	3.43
	Energy Efficiency (2)	%	131	130	131	125	127	134
	Cooling capacity (3)	kW	359	421	475	512	597	671
Cooling	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 capacity (3)	kW	358	419	474	510	595	669
	Absorbed power (3)	kW	128	146	163	174	209	243
Cooling (EN14511)			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		С	С	В	В	С	С
	Quantity	n°	5+5	5+5	6+6	6+6	6+6	6+6
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2
·	Capacity steps	n°		3			10	
	Water flow	I/s	17.15	20.11	22.69	24.46	28.52	32.06
Evaporator	Pressure drops	kPa	46	46	32	37	33	30
	Water connections	DN	80	80	150	150	150	150
Electrical	Power supply	V/Ph/Hz			400/			
characteristics	Max. running current	Α	274	324	358	391	446	500
Cildiacteristics	Max. starting current	Α	407	492	525	558	623	678
Unit with pump	Pump available static pressure	kPa	160	130	185	175	160	145
Offic with pullip	Water connections	DN	100	100	100	100	150	150
	STD version (4)	dB(A)	70	73	73	73	73	74
Sound pressure	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
vveigiits	Operating weight	Kg	3050	3200	3750	3880	4720	4770

<b>DIMENSION</b>	NS		726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P	1681 <mark>2-</mark> F	<sup>2</sup> 18012-F	21012-P	24012-P
1	STD	mm	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	6200	7200	7200
L	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
Н	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



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

- Weights of SSL version are specified on technical brochure.



## CHA/K 726-P+36012-P

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















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  ${\bf R452B}$  refrigerant.

### **VERSION**

**multi** 

VEHOIOIV	
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 Automatic circuit breakers

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









MODEL	10. "		1		1387	726-P			826-P	906-F			1128-P	1208-		10-P	15010-P
Cooling	Cooling co				kW kW	199 69		26 30	251 85	276 94		04	335 113	367 122		03 32	444 155
Cooling	EER (1)	power (1	)		KVV	2.88		83	2.95	2.94		.92	2.96	3.01		05	2.86
	Cooling c	anacity (1	)		kW	198		25	250	275	3	03	334	365		03	442
	Absorbed	power (1	)		kW	70		31	86	95		05	115	124		34	157
	EER (1)		,			2.84	2.	78	2.89	2.89	2	.87	2.91	2.95		00	2.81
Cooling (EN14511						3.54		65	3.66	3.77		.76	3.88	3.73		90	3.75
	EUROVEN	IT Class				С		C	С	C		C	В	В		3	C
	SEER (2)	c · /c	N		0/	3.82		81	3.86	3.96	3	.90	4.03	4.13		12	4.11
	Energy Ef				% kW	150 228	1	49 55	151 283	155 310	1	53 38	158 369	162 401	4	75	161 510
Heating	Heating c Absorbed	nower (3	1		kW	73		33	90	103		08	121	132		41	164
ricating	COP (3)	power (5	1		NVV	3.12		07	3.14	3.01		.13	3.05	3.04		13	3.11
	Heating c	apacity (3	()		kW	228	2	55	283	311		38	370	402		42	511
	Absorbed	power (3	)		kW	73	8	33	90	103	1	08	122	133		42	165
Heating (EN14511)	COP (3)					3.12		07	3.14	3.01		.12	3.04	3.03		12	3.10
ricating (EIVI +311)	LUNUVLIV	IT Class				В		В	В	В		В	В	В		3	В
	SCOP (4)	c · //			0/	3.20		21	3.22	3.21		.22	3.19	3.19		19	3.19
	Energy Ef	ficiency (4	F)		% n°	125 3+3		26 +3	126 3+3	125 3+3		26 +4	125 4+4	125 4+4		25 +5	125 5+5
Compressor	Quantity Refrigera	nt circuite			n°	2		2	2	2		2	2	2		2	2
Compressor	Capacity				n°			6						8			
	Water flo				I/s	9.51	10	.80	11.99	13.19	14	.52	16.01	17.53	19	.25	21.21
Evaporator	Pressure	drops			kPa	40		51	62	54	Į.	50	49	59		7	59
	Water co				DN	80	3	30	80	80		30	80	80	8	10	80
Electrical	Power su	pply			V/Ph/Hz							/3/50					
characteristics	Max. runr				A	152		66	179	191		16	233	250		74	316
Characteristics	Max. star				A L.D	276		99	347	359		49	401	418		07	484
Unit with pump	Pump ava Water co			re	kPa DN	155 100		30 00	175 100	160 100		80	170 100	145 100		40 00	110 100
· · ·	STD versi	nn (5)			dB(A)	66		66	67	69		67	69	70		i8	69
Sound pressure	With SL a	ccessory	(5)		dB(A)	63		63	64	66		64	65	66		55	66
	SSL versi	on (5)	(0)		dB(A)	57		7	59	61		58	60	62		9	61
Weights	Transport				Kg	1654	16	674	1763	1961	2	199	2457	2566	26	10	3179
vveignis	Operating	weight			Kg	1670	16	690	1780	1980	22	220	2480	2590	26	640	3210
MODEL						16812-	D 10	3012-P	21012-	D 2/	1012-P	27012	D 2	0012-P	33012	ъ .	36012-P
MODEL	lo P	*: /4	1		1144		Γ Ι			-Γ 24			2-1 3			г	
0 - 1	Cooling c				kW	495		546	602		671	751		845	942		1051
Cooling	Absorbed EER (1)	power (1	)		kW	170 2.91		184 2.97	211 2.85		243 2.76	275 2.73		303 2.79	336 2.80		365 2.88
	Cooling c	anacity (1	1		kW	493		544	599		669	749		842	939		1047
	Absorbed				kW	172		186	214		246	277		306	339		369
	EER (1)	porro. (	1			2.87		2.92	2.81		2.72	2.70		2.75	2.77		2.84
Cooling (EN14511	) ESEER					3.71		3.72	3.67		3.76	3.67		3.69	3.73		3.81
	EUROVEN	IT Class				С		В	C		С	D		С	С		С
	SEER (2)					4.17		4.17	4.12		4.19	4.10		4.15	4.17		4.12
	Energy Ef				%	167		164	162		165	161		163	164		169
Heating	Heating c	apacity (3	)		kW kW	564		620	684		776	861		962	1078		1210
Heating	Absorbed COP (3)	power (3	1		KVV	182 3.10		202 3.07	223 3.07		249 3.12	282 3.05		312 3.08	349 3.09		383 3.16
	Heating c	anacity (3	1)		kW	565		621	685		777	862		963	1079		1211
	Absorbed				kW	183		203	224		250	283		313	350		384
U+: /ENI14E11	CUD (3)	p = 1.1 c. (e	1			3.09		3.07	3.06		3.11	3.05		3.08	3.08		3.15
Heating (EN14511	EUROVEN	IT Class				В		В	В		В	В		В	В		В
	SCOP (4)					-		-	-		-	-		-	-		-
	Energy Ef	ficiency (4	.)		%	-		-	-		-	-		-	-		-
0	Quantity				n°	6+6		6+6	6+6		6+6	6+6		6+6	6+6		6+6
Compressor	Refrigeral Capacity				n° n°	2		2	2		2	<u> </u>		2	2		2
	Water flo				I/s	23.65		26.09	28.76		32.06	35.88	R	40.37	45.01		50.21
Evaporator	Pressure				kPa	49		60	58		49	41		51	42	<u> </u>	52
Evaporator	Water cor				DN	80		80	80		150	150		150	150		150
Electrical	Power su				V/Ph/Hz							/3/50					
characteristics	Max. runr	ning curre	nt		Α	350		375	422		485	545		598	676		746
CHARACTERISTICS	Max. star	Max. starting current			Α	518		543	600		662	759		812	938		1007
Unit with pump	Pump ava			re	kPa	165		145	135		125	165		140	130		100
ome man pamp		Water connections			DN	100		100	150		150	150		150	150		150
Sound pressure	STD versi With SL a		(5)		dB(A) dB(A)	68 65		70 67	72 69	-	73 70	73 70		73 70	73 70		74 71
Souria pressure	SSL versi		(0)		dB(A)	60		62	64	-	65	64		65	70		/ I
	Transport				Kg Kg	3294		3463	3517	-	3682	4200		4518	4918		5044
Weights	Operating				Kg	3330		3500	3560		3730	4260		4580	4990		5120
										1							
DIMENSIONS	726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-F	P 15010-P	16812-P	18012-F	21012-P	24012-F	27012-P	30012-P	33012	-P 36012-F
STD mm		2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	5000	6200	6200	7200	7200
L CCI	1 2800	2800	2800	2800	4000	4000	4000	4000	5000	5000	5000	5000	6200	7200	7200		
L SSL mm																	
W STD/SSL mm		2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

### CLEARANCE AREA

CHA/K 726-P÷36012-P

500 | 1800 | 1000 | 1800



#### NOTES

2100 | 2100 | 2100 | 2100 | 2100 | 2100

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

2100 2100 2100 2100 2100 2100

- Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 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.



2100

H STD/SSL mm 2100 2100 2100

## CHA/K/FC 726-P+36012-P

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





FREE COOLING IV













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**

IIVI	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

Modbus RTU protocol, RS485 IS serial interface

ISB BACnet MSTP protocol, RS485 serial interface **ISBT** BACnet TCP/IP protocol, Ethernet

ISL LonWorks protocol, FTT-10 serial interface IA\/ Remote set-point, 0-10 V signal IAA Remote set-point, 4-20 mA signal

Remote signal for second set-point

IAS

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



MODEL			726-P	786-P	826-P	906-P	1048-P	1128-P	1208-P	13010-P	15010-P
	Cooling capacity (1)	kW	208	236	263	290	328	365	401	441	483
Coolina	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 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
Cooling (EN14511)			2.64	2.63	2.86	2.84	2.93	2.87	2.95	2.92	2.87
oooming (Erri for r)	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
	Air temperature (3)	°C	-2.0	-2.8	-2.5	-0.2	-2.7	-3.5	-1.0	-2.0	-1.0
Free-Cooling cycle	Absorbed power (3)	kW	7.0	7.0	10.5	10.5	14.0	14.0	14.0	14.0	17.5
	Quantity	n°	3+3	3+3	3+3	3+3	4+4	4+4	4+4	5+5	5+5
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2
Compressor	Capacity steps	n°		2		4				_	6
	Water flow	I/s	11.02	12.38	13.87	15.31	17.32	19.34	21.21	23.33	25.52
Water circuit	Pressure drops	kPa	102	12.30	165	124	112	106	115	100	120
vvater circuit	Water connections	DN	100	100	100	100	100	100	100	100	100
		V/Ph/Hz	100	100	100	100	400/3/50	100	100	100	100
Electrical	Power supply		152	166	187	199	232	249	266	282	332
characteristics	Max. running current	A	276	299	354	367	232		433		
	Max. starting current	A	2/6		354		365	417		415	500
Unit with pump	Pump available static pressure	kPa	150	115	70 100	100	95	80	105	115	85 100
	Water connections	DN	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								36012-P
MODEL	Cooling capacity (1)	kW			P 21012					33012-P	36012-P 1102
MODEL Cooling	Cooling capacity (1) Absorbed power (1)	kW kW	536 179	18012- 590 199	665	73	8 8	012-P 30 327 305	920 340		
			536 179	590	665	73	8 8	327	920	1014	1102
	Absorbed power (1) EER (1)		536	590 199	665	73	8 8 6 3 7 2	327 305	920 340	1014 368	1102 412
	Absorbed power (1)	kW	536 179 2.99 532	590 199 2.96 585	665 230 2.89 659	73 26 2.7 73	8 8 6 3 7 2 1 8	327 305 1.71	920 340 2.71	1014 368 2.76	1102 412 2.67
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1)	kW	536 179 2.99 532 183	590 199 2.96 585 204	665 230 2.89 659 236	73 26 2.7 73 27	8 8 6 3 7 2 1 8 3 3	327 305 318 314	920 340 2.71 911 349	1014 368 2.76 1004 378	1102 412 2.67 1102 412
	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1)	kW	536 179 2.99 532 183 2.91	590 199 2.96 585 204 2.87	665 230 2.89 659 236 2.79	73 26 2.7 73 27 2.6	8 8 6 3 7 2 1 8 3 3 88 2	327 305 71 318 314	920 340 2.71 911 349 2.61	1014 368 2.76 1004 378 2.66	1102 412 2.67 1102 412 2.67
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2)	kW kW kW	536 179 2.99 532 183 2.91 4.43	590 199 2.96 585 204 2.87 4.25	665 230 2.89 659 236 2.79 4.24	73 26 2.7 73 27 2.6 4.2	8 8 8 6 3 17 2 1 1 8 3 3 3 3 3 18 2 2 6 4	327 305 3.71 318 314 3.61	920 340 2.71 911 349 2.61 4.14	1014 368 2.76 1004 378 2.66 4.14	1102 412 2.67 1102 412 2.67 4.14
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2)	kW	536 179 2.99 532 183 2.91 4.43	590 199 2.96 585 204 2.87 4.25 167	665 230 2.89 659 236 2.79 4.24	73 26 2.7 73 27 2.6 4.2	8 8 8 6 3 7 2 1 8 3 3 3 3 8 2 6 4 7 1 1	327 305 71 318 314 61 10	920 340 2.71 911 349 2.61 4.14 163	1014 368 2.76 1004 378 2.66 4.14 163	1102 412 2.67 1102 412 2.67 4.14 163
Cooling	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3)	kW kW kW	536 179 2.99 532 183 2.91 4.43 174 -2.2	590 199 2.96 585 204 2.87 4.25 167 -2.7	665 230 2.89 659 236 2.79 4.24 167 -3.0	73 26 2.7 73 27 2.6 4.2 16	8 8 8 6 3 7 2 1 1 8 3 3 3 3 8 2 2 6 4 7 1 5	327 305 .71 318 314 .61 .10 .61 2.5	920 340 2.71 911 349 2.61 4.14 163 -0.1	1014 368 2.76 1004 378 2.66 4.14 163 0.1	1102 412 2.67 1102 412 2.67 4.14 163 -0.4
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3)	kW kW kW	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5	665 230 2.89 659 236 2.79 4.24 167 -3.0	73 26 2.7 73 27 2.6 4.2 16 -3.	8 8 8 8 6 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	327 305 71 318 314 61 10 10 61 2.5 4.5	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5
Cooling Cooling (EN14511) Free-Cooling cycle	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity	kW kW kW °C kW	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5	73 26 2.7 73 27 2.6 4.2 16 -3. 21.	8 8 8 8 6 3 3 3 3 3 3 3 3 8 8 2 9 6 6 4 7 1 5 0 2 6 6 6 6	327 305 71 318 314 61 10 61 2.5 4.5 64	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6
Cooling Cooling (EN14511)	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits	kW kW kW °C kW n°	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5	665 230 2.89 659 236 2.79 4.24 167 -3.0	73 26 2.7 73 27 2.6 4.2 16 -3.	8 8 8 6 3 3 17 2 2 1 1 8 3 3 3 18 2 16 4 7 1 1 5 10 2 6 6 6 6	327 305 71 318 314 61 10 10 61 2.5 4.5	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5
Cooling Cooling (EN14511) Free-Cooling cycle	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps	kW kW kW °C kW n° n°	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6	590 199 2.96 585 204 4.25 167 -2.7 17.5 6+6	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6	73 26 2.7 73 27 2.6 4.2 16 -3. 21.	8 8 8 6 3 7 2 1 1 8 3 3 3 8 2 16 4 7 1 1 5 - 0 2 6 6 6 8	327 305 .71 318 314 .61 .10 61 2.5 .4.5 .6+6 2	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6
Cooling Cooling (EN14511) Free-Cooling cycle Compressor	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow	kW kW % °C kW n° n°	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2	8 8 8 6 3 77 2 1 1 8 3 3 3 3 3 8 2 8 8 2 8 6 4 4 7 1 5 0 2 6 6 6 8 8 8 8 9 4 4 8 8 9 4 4 8 8 9	327 305 3.71 318 314 4.61 3.10 61 2.5 4.5 5+6 2	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2
Cooling Cooling (EN14511) Free-Cooling cycle	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	kW kW % °C kW n° n° 1/s	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2	8 8 8 6 3 77 2 1 8 3 3 3 3 88 2 2 66 4 7 1 5 5 5 5 6 6 6 6 8 8 8 8 9 44 2 1 1	327 305 71 318 8314 61 10 61 2.5 44.5 5+6 2	920 340 2.71 911 9349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	kW kW kW °C kW n° n° n° l/s kPa DN	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2	8 8 8 6 3 77 2 1 1 8 3 3 3 3 8 2 8 6 4 7 1 1 5 5 5 6 6 6 8 8 8 8 9 4 5 2 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	327 305 3.71 318 314 4.61 3.10 61 2.5 4.5 5+6 2	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2
Cooling Cooling (EN14511) Free-Cooling cycle Compressor	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	kW kW kW °C kW n° n° 1/s kPa DN V/Ph/Hz	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2	8	327 3005 .711 3118 3.61 10 61 10 61 2.5 44.5 5 61 25 74.5 61	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162 150	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	kW kW kW  °C kW  n° n° l/s kPa DN V/Ph/Hz A	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2	8	327 3005 .711 3118 3.61 61 10 61 10 61 2.5 4.5 546 2 3 64 72	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162 150	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical  characteristics	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	kW kW kW °C kW n° n° l/s kPa DN V/Ph/Hz A	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2 38.4 15 15	8	327 305 307 318 318 314 314 314 316 316 317 318 318 319 310 311 311 311 311 311 311 311	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162 150 699 961	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	kW kW kW °C kW n° n° DN V/Ph/Hz A A kPa	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125 391 558 90	665 230 2.89 659 2366 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2 38.8 15 15	8	327 305 .71 318 314 .61 .10 .61 .10 .61 .25 .4.5 .56 .77 .72 .75 .77 .75 .77 .77 .77 .77 .77	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150 622 835 125	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162 150 699 961 90	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical  characteristics	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections	kW kW kW % °C kW n° n° l/s kPa DN V/Ph/Hz A A A A DN	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125 365 533 110	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125 438 615 60	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2 38.9 15 15	8 8 8 6 3 77 2 1 1 8 3 3 3 3 8 2 8 6 4 7 1 1 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	327 305 .71 318 314 .61 .10 .61 .2.5 .44.5 .54.6 2 .772 .550 .661 .774 .774 .774	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162 150 699 961 90 150	1102 412 2.67 11102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical  characteristics	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (4)	kW kW kW  % °C kW  n° n° l/s kPa DN  V/Ph/Hz A  kPa DN  dB(A)	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125 365 533 110 125 71	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125 391 558 90 125 71	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125 438 615 60 125 74	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2 38.8 15 15 50 67 16	8	327 3005 .711 318 3.61 .10 .61 .2.5 .44.5 .546 .72 .72 .50 .61 .774 .72 .774 .774 .774 .775 .774 .775 .775	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150 75	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 646 2 53.51 162 150 699 961 90 150 75	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150 769 1031 110
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical characteristics  Unit with pump	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (4) With SL accessory (4)	kW kW kW % °C kW n° n° l/s kPa DN V/Ph/Hz A kPa DN dB(A) dB(A)	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125 365 533 110 125 71	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125 391 558 90 125 71 68	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125 438 615 60 125 74	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2 38.4 15 15 50 67 16	8	327 305 .71 318 314 .61 .10 .61 .10 .61 .25 .4.5 .4.5 .4.5 .4.5 .4.5 .5.6 .77 .72 .50 .50 .50 .50 .77 .77 .77 .77 .77 .77 .77 .7	920 340 2.71 911 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150 75 71	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 6+6 2 53.51 162 150 699 961 90 150 75 71	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150 769 1031 110 150 76
Cooling  Cooling (EN14511)  Free-Cooling cycle  Compressor  Water circuit  Electrical characteristics  Unit with pump	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) SEER (2) Energy Efficiency (2) Air temperature (3) Absorbed power (3) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Water connections STD version (4)	kW kW kW  % °C kW  n° n° l/s kPa DN  V/Ph/Hz A  kPa DN  dB(A)	536 179 2.99 532 183 2.91 4.43 174 -2.2 17.5 6+6 2 28.28 121 125 365 533 110 125 71	590 199 2.96 585 204 2.87 4.25 167 -2.7 17.5 6+6 2 31.09 132 125 391 558 90 125 71	665 230 2.89 659 236 2.79 4.24 167 -3.0 17.5 6+6 2 35.11 148 125 438 615 60 125 74	73 26 2.7 73 27 2.6 4.2 16 -3. 21. 6+ 2 38.8 15 15 15	8 8 8 6 3 77 2 1 8 3 3 8 2 96 4 4 7 1 1 5 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	327 3005 .711 318 3.61 .10 .61 .2.5 .44.5 .546 .72 .72 .50 .61 .774 .72 .774 .774 .774 .775 .774 .775 .775	920 340 2.71 911 349 2.61 4.14 163 -0.1 28.0 6+6 2 48.52 151 150 622 835 125 150 75	1014 368 2.76 1004 378 2.66 4.14 163 0.1 31.5 646 2 53.51 162 150 699 961 90 150 75	1102 412 2.67 1102 412 2.67 4.14 163 -0.4 31.5 6+6 2 58.13 173 150 769 1031 110

DIMENSION	1S		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
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360

<b>DIMENSION</b>	NS .		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
Н	STD	mm	2360	2360	2360	2360	2360	2360	2360	2360

## CLEARANCE AREA

CHA/K/FC 726-P÷36012-P

500 1800 1000 1800



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in paint (1) is reached.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

## CHA/K 726+36012

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



®multi ow∈r













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  ${\bf R452B}$  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**

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







MODEL	I C. "		1)		114													,	15010
Cooling							200							328					445 158
Cooling		a power (	1)		KVV													-	2.82
		ranacity (	1)		k\M														444
	Absorbe	d nower (	1)													123		+	159
		a poveci (	1.7		IN V V		2.80												2.79
Cooling (EN14511)	Conting capacity (1)		3.86																
00011119 (2.11.1011)		NT Class																	С
		0.000											3.90		3				4.11
		fficiency (	2)		%														161
	Heating	capacity (	3)		kW		229	252			304		336						512
Heating	Absorbe	d power (3	3)		kW			83			106		109				145		167
													3.08						3.07
	Heating	capacity (	3)																513
	Absorbe	d power (3	3)		kW								109	124					168
Heating (EN14511)	COP (3)														3			$\rightarrow$	3.06
ricating (EIVI-1011)																		$\rightarrow$	В
							3.19											$\rightarrow$	3.20
			.4)				125											$\rightarrow$	125
0																		$\rightarrow$	5+5
Compressor			<u>S</u>				Z	2		Z	2	_	Z	2			1 2		2
							0.44	10.50		11 71	10 75	1	4 OC	45.44	n		10.00		21.0
Evaporator	Prosessing	UW							+						7			<del></del>	21.01
Evaporator	Motor	urops							-	100					_	100		+	33 125
			2				IUU	100		100	100	100	100 1/2/E0	100		TUU	1 125		125
Electrical			ont .				152	166		170	101			791		250	77/	—	316
characteristics	May etc	ining curr	ent			_	276		+									+	484
	Pumn av	ailahla et	atic pres	SIIFE			150	1/10	+	195			180			150		+	135
Unit with pump	Water o	anabic Sla	2010 ht 62	JUI 6		-			_									+	100
<u> </u>	STD vor	sinn (5)	<u> </u>		4B(V)				_						_			+	69
Sound pressure	With SI	accessors	(5)		dB(A													_	66
oouna pressure			101				57											_	61
					Ka Ka										<del>,    </del>			_	3283
Weights	Oneratin	n weinht			Kn				_									-	3380
	Operatin	ig worgint			1 119	,													
MODEL						1	6812	180	12	21012	2 2	24012	27	012	300	12	33012	36	6012
	Cooling	capacity (	1)		kW		510	55	1	614		684	7	66	862		961	1 1	1062
Cooling	Absorbe	d power (	1)		kW		174			214		250	2	281	307		340		369
3							2.93										2.83	1	2.88
	Cooling	capacity (	1)		kW		508	54	9			682			858			1	1058
	Absorbe	d power (	1)		kW					217		252	2	284	311		343		373
	EER (1)						2.89			2.82		2.71	2	.69	2.76	6	2.79		2.84
Cooling (EN14511)																7			3.80
		NT Class																	С
																			4.12
	Energy E	fficiency (	.2)																169
	Heating	capacity (	3)					62	6	698		791					1100		1222
Heating		d power (3	3)		kW		186	20	4	226					316	i			388
			-1																3.15
																	1101		1223
		d power (3	3)		kW			20	5			258	2	:89					389
Heating (EN14511)		LIT OF			1											)		<del></del>	3.14
sacing (civi to 11)	FUROVE	N I Class																+	В
			4)		- 0/	_									-		2.97 403 137 2.94 3.83 8 4.11 175 442 145 3.05 443 146 3.04 8 3.19 125 5+5 2  19.08 45 125  274 407 140 100 68 65 59 2691 2780  33012 961 340 2.83 958 343 2.79 3.75 C 4.17 164 1100 353 3.12 1101 354 3.11 8 6+6 2 45.38 47 150  73 70 70 73 70 70 73 770 770		-
			4)										+		-			+	-
Compression						_					_		1 6					+	6+6
Compressor			<u>S</u>					1 2		Z		Z	10		2				2
							24.00	200	02	20.00		22.20		2.17	40.7	1	4E 20		EO 1 F
Fuonorete:						_					-					1		+-5	50.15
Evaporator											_							+-	52 150
		onnection	<u>s</u>		DN V/Ph/H	Ja	125	12	ບ	125		150		50	150		100		150
Electrical	Power su	upply Ining curre	ont			IZ.	350	37	5	422		485	)/3/50	645	598		676		746
characteristics	May otc	ining curr irting curr	ont		A	+	518	54		600	-	662		59	812				1007
		ailable sta		SIII O	kPa		165	15		130	-	130		50	125			+'	95
Unit with pump		onnection:		3UI G	DN	+	100	10		150	_	150		50	150			+-	150
	STD vers		3		dB(A)		68	70		72	_	73		73	73	<u> </u>		+-	74
		accessory	/ (5)		dB(A		65	67		69	_	70		70	70	_		+-	71
Sound prageura			101		dB(A		60	62		64		65		64	65	_		+-	71
Sound pressure	ISSI Ware				Kg		3383	356		3605	_	3840		385	470	5	5210	1	5330
Sound pressure	SSL vers	c vvoigiit			Kg		3480	367	70	3720		3970		540	486		5470		5590
<u> </u>	Transpor	a weinht			1 119	1		1	'		1		'	,					5550
<u> </u>	Transpor	g weight							4000										
Weights	Transpor	g weight	726	786	826	906	1048	1128	1208	13010	15010	16812	18012	21012	<u>24</u> 012	27012	30012	33012	360
Weights	Transpor Operatin STD	g weight mm	<b>726</b> 2800	<b>786</b> 2800	<b>826</b> 2800	906 2800	<b>1048</b> 4000	4000	4000	4000	<b>15010</b> 5000	<b>16812</b> 5000	18012 5000	<b>21012</b> 5000	5000	<b>27012</b> 6200	2 <b>30012</b> 6200	<b>33012</b> 7200	
Weights  DIMENSIONS	Transpor Operation STD SSL						_	_		4000									72
Weights  DIMENSIONS	Transpor Operatin STD	mm	2800	2800	2800	2800	4000	4000	4000	4000 4000	5000	5000	5000	5000	5000	6200	6200	7200	72

## CLEARANCE AREA

CHA/K 726÷36012

500 1800 1000 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.

  Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.

- Sound pressure level measured in free field conditions at 1 m from the unit. According
- N.B. Weights of SSL and WP versions are specified on technical brochure.



## CHA/K/EP 182-P+693-P

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























**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

**PSH** 

### **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.

Automatic circuit breakers

Inverter single circulating pump

## **ACCESSORIES**

IM

**PSIC** 

**PDIC** 

**FACTORY FITTED ACCESSORIES** 

SL	Unit silencement		side		serial interface
RFM	Cooling circuit shut-off valve on	PSIH	Inverter single circulating pump	ISB	BACnet MSTP protocol, RS485
	discharge line		heating side		serial interface
RFL	Cooling circuit shut-off valve on	PDH	Double circulating pump heating	ISBT	BACnet TCP/IP protocol, Ethernet port
	liquid line		side	ISL	LonWorks protocol, FTT-10 serial
ВТ	Low water temperature Kit	PDIH	Inverter double circulating pump		interface
EC	EC Inverter fans		heating side	IAV	Remote set-point, 0-10 V signal
ECH	EC Inverter fans with high available	FGC	Antifreeze heater for single pump	IAA	Remote set-point, 4-20 mA signal
	static pressure		and pipes cooling side	IAS	Remote signal for second set-point
TX	Coil with pre-coated fins	FMC	Antifreeze heater for double pump		activation
PSC	Single circulating pump cooling side		and pipes cooling side	IDL	Demand limit from digital input
PSIC	Inverter single circulating numn	FGH	Antifreeze heater for single pump	CP	Potential free contacts

and nines heating side

Single circulating pump heating

	cooling side		arra pipos rioatirig oras			
PDC	Double circulating pump cooling	FMH	Antifreeze heater for double pump			
FDC	Double circulating pump cooling	1 1 1 1 1 1	· · ·	LOOSE	ACCESSOR	RIES
	side		and pipes heating side			

cooling side		and pipes neating side		
Double circulating pump cooling	FMH	Antifreeze heater for double pump	LOOSI	EACCESSORIES
side	SS	and pipes heating side Soft start	MN	High and low pressure gauges
Inverter double circulating pump	TS	Touch screen Interface	CR	Remote control panel
cooling side	WM	Web Monitoring - Wireless remote	RP	Coil protection metallic guards
	VVIVI	monitoring (GPRS/EDGE/3G/TCP-IP)	AG	Rubber shock absorbers
		monitoring (at no/Ebac/sa/Tet-it )	AM	Spring shock absorbers

IS

CP

Modbus RTU protocol, RS485

Potential free contacts

## CHA/K/EP 182-P÷693-P





Cooling only   Absorbed power (1)	only /	Absorbed power (1) EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2)	kW kW kW	16.8 2.89 48.3 17.1 2.82 52.2	19.3 2.90 55.5 19.6	21.9 2.89 62.8	24.4	27.9	32.5			134	159 57.4	190
EER (1)	only (111) I I I I I I I I I I I I I I I I I I	EER (1) Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2)	kW kW	2.89 48.3 17.1 2.82 52.2	2.90 55.5 19.6	2.89 62.8				38.0	42.3	46.5	E7.4	00.5
Cooling only (EN14511)   Cooling capacity (1)	only (11) I I I I I I I I I I I I I I I I I I	Cooling capacity (1) Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2)	kW	48.3 17.1 2.82 52.2	55.5 19.6	62.8	2.96	0.00				40.0	07.4	68.5
Absorbed power (1)	j only	Absorbed power (1) EER (1) Heating capacity (2) Absorbed power (2) COP (2)	kW	17.1 2.82 52.2	19.6							2.88	2.77	2.77
(EN14511)	11)	EER (1) Heating capacity (2) Absorbed power (2) COP (2)	kW	2.82 52.2								133	158	189
Heating capacity	y only (	Heating capacity (2) Absorbed power (2) COP (2)		52.2	2.02	22.3	24.9	28.4	33.1	38.5	42.9	47.2	58.3	69.5
Heating only   Absorbed power (2)   kW   16.0   18.7   21.2   23.4   26.5   30.0   35.1   39.5   42.8	only  only  only  only  11)	Absorbed power (2) COP (2)										2.82	2.71	2.72
COP (2)	only (	COP (2)	kW									142	171	203
Heating capacity (2)	) only (11)	(-)										42.8	52.5	61.2
Absorbed power (2)	only (	Heating capacity (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)   SCOP (2)   3.22   3.16   3.12   3.18   3.20   3.24   3.14   3.18   3.26   (EN14511)   SCOP (3)   3.49   3.46   3.36   3.36   3.38   3.93   3.58   3.53   3.73   (EN14511)   SCOP (3)	only (		kW	52.5	60.0	67.4	75.9	86.4	98.8	112	128	143	172	204
(EN14511)	11)	Absorbed power (2)	kW		19.0	21.6				35.7		43.9	53.7	62.7
Energy Efficiency (3)				3.22	3.16	3.12	3.18	3.20	3.24	3.14	3.18	3.26	3.20	3.25
Energy Class (3)												3.73	3.73	3.75
Cooling apacity (4)			%		135			132	154	140	138	146	146	147
Heating capacity (4)														
Absorbed power (4)			1111									140	168	203
Absorbed power (4)   KW   13.3   17.4   19.6   22.3   23.2   29.4   32.6   37.2   40.7			kW										217	261
Cooling capacity (4)   RW   49.3   56.2   62.5   71.3   82.8   93.4   109   125   139	+ neating [	Absorbed power (4)	kW	15.3	17.4	19.6	22.3	25.2		32.6	37.2	40.7	49.0	58.4
Heating capacity   Heating (EN14511)	[-	TER (4)										7.89	7.86	7.95
Absorbed power (4)	- 1	Cooling capacity (4)	kW		56.2			82.8		109		139	167	202
TER (4) 7.34 7.37 7.27 7.28 7.50 7.25 7.64 7.65 7.75  Quantity n° 2 2 2 2 2 2 3 3 3 2 2 2 2 2 3 3 3 3 2 2 3 3 3 3 2 2 3 3 3 3 2 2 3	+ Heating	Heating capacity (4)	kW									182	218	262
Quantity			kW										49.8	59.3
Compressor         Refrigerant circuits         n°         1 <th< td=""><td></td><td>TER (4)</td><td></td><td>7.34</td><td>7.37</td><td>7.27</td><td>7.28</td><td>7.50</td><td>7.25</td><td>7.64</td><td>7.65</td><td>7.75</td><td>7.73</td><td>7.82</td></th<>		TER (4)		7.34	7.37	7.27	7.28	7.50	7.25	7.64	7.65	7.75	7.73	7.82
Capacity steps   n°   2   3   3   2			n°	2	2		2	2	3	3	3	2	3	3
Water flow   I/s   2.32   2.67   3.02   3.45   3.91   4.43   5.02   5.64   6.40     Pressure drops   kPa   35   41   53   50   49   51   38   46   50     Water connections   "G   2½"				1	1		1	1	1		1		1	1
Pressure drops   KPa   35   41   53   50   49   51   38   46   50			n°											3
cooling side         Pressure drops         kPa         35         41         53         50         49         51         38         46         50           Water connections         "G         2 ½"	tor -	Water flow											7.60	9.08
Water connections   G   Z½   Z½   Z½   Z½   Z½   Z½   Z½		Pressure drops											52	52
Condenser - heating side         Pressure drops         kPa         31         35         38         42         40         35         34         42         48           Water connections         "G         2 ½"         2½"	Side	Water connections						2 ½"	2 ½"		2 1/2"		3"	3"
Pressure drops   RPa   31   35   38   42   40   35   34   42   48	cor										6.07		8.17	9.70
Water connections   G   Z/2   Z/2	11	Pressure drops											43	45
Max. running current	,			2 ½"	2 ½"	2 ½"	2 ½"	2 ½"		2 ½"	2 1/2"	2 ½"	3"	3"
Max. running current         A         40         46         54         59         66         //         84         95         100           Max. starting current         A         164         166         178         191         234         201         217         263         314			V/Ph/Hz						400/3/50					
Max. starting current   A   164   166   178   191   234   201   217   263   314	orieties												128	151
													304	359
												150	135	115
												2 ½"	3"	3"
												150	135	115
												2 ½"	3"	3"
ECH fan available STD version Pa 95 100 95 95 100 60 50 60													50	50
static pressure         SSL version         Pa         70         85         70         70         70         90         50         50         60													50	50
STD version (5) dB(A) 60 62 62 63 63 63 65 65 69													70	70
Sound pressure 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 60 60 64													65	65
												1295	1500	1545
Operating weight Kg 765 775 830 925 950 1060 1085 1115 1335		Operating weight	Kg	765	775	830	925	950	1060	1085	1115	1335	1545	1595

<b>DIMENSION</b>	IS		182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
1	STD	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550	3550
L	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
Н	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. 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.

## CHA/K/EP 604-P÷2406-P

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























**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.

CR

RP

ΑG

ΑM

Remote control panel

Rubber shock absorbers

Spring shock absorbers

Coil protection metallic guards

#### CHA/G/EP 604-P+2406-P

On request, units can be supplied with R452B refrigerant.

Super silenced multifunctional unit

### **VERSION**

CHA/K/EP/SSL CHA/K/EP

#### **FEATURES**

Multifunctional unit

- 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	PSH	Single circulating pump heating side	ISB	BACnet MSTP protocol, RS485
SL	Unit silencement	PSIH	Inverter single circulating pump		serial interface
RFM	Cooling circuit shut-off valve on		heating side	ISBT	BACnet TCP/IP protocol, Ethernet
	discharge line	PDH	Double circulating pump heating side		port
RFL	Cooling circuit shut-off valve on	PDIH	Inverter double circulating pump	ISL	LonWorks protocol, FTT-10 serial
	liquid line		heating side		interface
BT	Low water temperature Kit	FGC	Antifreeze heater for single pump	IAV	Remote set-point, 0-10 V signal
EC	EC Inverter fans		and pipes cooling side	IAA	Remote set-point, 4-20 mA signal
ECH	EC Inverter fans with high available	FMC	Antifreeze heater for double pump	IAS	Remote signal for second set-point
	static pressure		and pipes cooling side		activation
TX	Coil with pre-coated fins	FGH	Antifreeze heater for single pump	IDL	Demand limit from digital input
PSC	Single circulating pump cooling side		and pipes heating side	CP	Potential free contacts
PSIC	Inverter single circulating pump	FMH	Antifreeze heater for double pump		
	cooling side		and pipes heating side	LOOSE ACCESSORIES	
PDC	Double circulating pump cooling side	SS	Soft start	MN	High and low pressure gauges
PDIC	Inverter double circulating pump	TS	Touch screen Interface		, ,
	arrant and data in g pairip			CR	Remote control panel

Web Monitoring - Wireless remote

monitoring (GPRS/EDGE/3G/TCP-IP)

Modbus RTU protocol, RS485

serial interface

WW

IS

cooling side

## 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 capacity (1)	kW	167	190	216	241	264	301	339	395	459	522	583	643
Cooling only	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
Caalina anh	Cooling capacity (1)	kW	166	189	215	240	263	300	338	394	457	520	581	641
Cooling only	Absorbed power (1)	kW	58	70	76	85	94	105	115	141	171	195	212	227
(EN14511)	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 capacity (2)	kW	180	204	231	257	281	318	361	427	515	570	632	693
Heating only	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 capacity (2)	kW	181	205	232	258	282	319	362	429	517	572	634	696
Handar and	Absorbed power (2)	kW	56	65	73	80	87	98	111	131	162	172	200	214
Heating only	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
(EN14511)	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 capacity (4)	kW	170	195	214	243	270	303	334	405	465	543	594	652
0 11 11 2	Heating capacity (4)	kW	220	255	281	318	351	396	436	527	613	712	777	849
Cooling + Heating	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 capacity (4)	kW	169	194	213	242	269	302	333	404	463	541	592	650
Cooling + Heating	Heating capacity (4)	kW	221	256	282	319	352	397	438	529	615	715	780	852
(EN14511)	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
	Quantity	n°	4	4	4	4	4	4	6	6	6	6	6	6
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°				1						6		
г .	Water flow	I/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
Evaporator -	Pressure drops	kPa	34	33	36	35	42	36	45	44	53	43	34	40
cooling side	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
0 1	Water flow (4)	I/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
Condenser -	Pressure drops (4)	kPa	35	36	39	30	37	33	43	43	42	49	48	54
heating side	Water connections (4)	DN	100	100	100	100	100	100	100	100	125	150	150	150
EL COLL	Power supply	V/Ph/Hz							3/50					
Electrical	Max. running current	A	133	151	171	186	201	227	255	301	386	416	453	483
characteristics	Max. starting current	A	301	328	347	400	415	488	432	515	647	755	792	822
Unit with pump -	Pump available static pressure	kPa	175	170	160	150	130	145	125	160	125	165	165	145
cooling side	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Unit with pump -	Pump available static pressure	kPa	170	165	150	145	125	140	120	150	110	150	140	120
heating side	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
<u> </u>	STD version (5)	dB(A)	70	70	71	71	71	72	74	74	76	77	78	79
Sound pressure	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
		1	2300	2330	2450	2500	2530	3310	3560	3680		1	5630	5670

<b>DIMENSION</b>	1S		604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
1	STD	mm	3350	3350	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200
L	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
Н	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013. Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
- 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.

## CHA/Y/EP 1352÷4402

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

























**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				

	0.00
-NH	Antifreeze heater for pipes heating
	side

FGC	Antifreeze heater for single pump
	and pipes cooling side

=MC	Antifreeze heater for double pump
	and pipes cooling side

1	Inverter on one compressor
ID	Inverter on all compressors
22	Soft start

TS \/\/\/

Touch screen Interface
Web Monitoring - Wireless remote
monitoring (GPRS/EDGE/3G/TCP-IP)

		_				
IS	Modb	us R	TU pro	tocol,	RS4	85
	serial	inter	face			

	Serial irreriace	
ISB	BACnet MSTP protocol,	RS485
	serial interface	

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-poin

BACnet TCP/IP protocol, Ethernet

IAS	Remote signal for second set-po
	activation
IDL	Demand limit from digital input
CP	Potential from contacts

**ISBT** 

LOOSE A	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 capacity (1)	kW	278	312	366	423	484	564	676	822	978	1133
Cooling only	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	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
(EN14511)	EER (1)		3.08	3.08	3.08	3.12	3.11	3.14	3.18	3.14	3.05	3.05
	Heating capacity (2)	kW	283	320	375	431	490	572	672	838	990	1156
Heating only	Absorbed power (2)	kW	86	91	107	122	139	159	190	231	271	313
0 /	COP (2)		3.29	3.52	3.50	3.53	3.53	3.60	3.54	3.63	3.65	3.69
	Heating capacity (2)	kW	284	321	376	432	491	574	674	840	992	1159
Handan ad	Absorbed power (2)	kW	88	93	109	124	141	162	193	235	276	319
Heating only	COP (2)		3.23	3.45	3.45	3.48	3.48	3.54	3.49	3.57	3.59	3.63
(EN14511)	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 capacity (4)	kW	276	318	370	429	492	575	686	834	996	1181
0 11 11 11	Heating capacity (4)	kW	359	404	469	544	621	726	865	1054	1261	1495
Cooling + Heating	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 capacity (4)	kW	275	317	368	427	490	573	684	831	992	1176
Cooling + Heating (EN14511)	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
	Quantity	n°	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
, , , , , , ,	Capacity steps	n°	Stepless									
Г	Water flow	I/s	13.28	14.91	17.49	20.21	23.12	26.95	32.30	39.27	46.73	54.13
Evaporator -	Pressure drops	kPa	33	43	51	48	48	46	48	47	52	64
cooling side	Water connections	DN	100	100	125	125	125	150	150	150	150	200
C	Water flow (4)	I/s	17.15	19.30	22.41	25.99	29.67	34.69	41.33	50.36	60.25	71.43
Condenser -	Pressure drops (4)	kPa	34	37	31	29	28	32	29	32	32	34
heating side	Water connections (4)	DN	100	100	125	125	125	150	150	150	150	200
Electrical	Power supply	V/Ph/Hz					400/	3/50				
Electrical	Max. running current	A	237	237	269	301	309	393	445	580	664	720
characteristics	Max. starting current	А	281	281	345	361	369	504	534	785	827	855
Hada a dala	Pump available static pressure	kPa	185	155	155	140	155	140	115	135	100	145
Unit with pump	Water connections	DN	100	100	125	125	125	150	150	150	150	200
	STD version (5)	dB(A)	77	77	77	78	78	78	79	80	80	81
Sound pressure	With SL accessory (5)	dB(A)	73	73	74	75	74	75	76	76	76	77
p	SSL version (5)	dB(A)	67	67	68	69	69	70	70	72	72	72
NA ( * 1 .	Transport weight	Kg	4090	4110	4820	5460	5970	6950	8100	9340	9760	10430
Weights	Operating weight	Kg	4330	4460	5280	5980	6480	7570	8880	10200	10740	11800

<b>DIMENSION</b>	IS		1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
1	STD	mm	5550	5550	6700	7750	8900	8900	10050	11100	11100	11100
L	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
11	STD	mm	2100	2100	2100	2100	2100	2500	2500	2500	2500	2500
П	SSL	mm	2100	2100	2100	2100	2500	2500	2500	2500	2500	2500

## CLEARANCE AREA

CHA/Y/EP 1352÷4402

500 1800 1000 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b. 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.

## CHA/H/A 1002÷6002

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













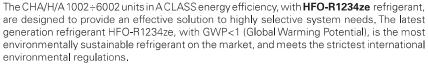




Rubber shock absorbers

Spring shock absorbers

Flow switch



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).



**INVERTER SCREW MICROCHANNEL** ##

# **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	SPUI	Inertial tank and Inverter single	WM	Web Monitoring - Wireless remote
SL	Unit silencement		circulating pump		monitoring (GPRS/EDGE/3G/TCP-IP)
CC	Condensing control down to -20 °C	SPD	Inertial tank and double circulating	IS	Modbus RTU protocol, RS485
BT	Low water temperature Kit		pump		serial interface
EC	EC Inverter fans	SPDI	Inertial tank and Inverter double	ISB	BACnet MSTP protocol, RS485
ECH	EC Inverter fans with high available		circulating pump		serial interface
	static pressure	FE	Antifreeze heater for evaporator	ISBT	BACnet TCP/IP protocol, Ethernet
HR	Desuperheater	FX	Antifreeze heater for evaporator		port
HRT/S	Total heat recovery in series		and pipes	ISL	LonWorks protocol, FTT-10 serial
HRT/P	Total heat recovery in parallel	FB	Antifreeze heater for evaporator/tank		interface
TX	Coil with pre-coated fins	FQ	Antifreeze heater on evaporator/tank	IAV	Remote set-point, 0-10 V signal
TXB	Coil with epoxy treatment		and pipes	IAA	Remote set-point, 4-20 mA signal
EW	External water connections	FZ	Antifreeze heater for evaporator,	IAS	Remote signal for second set-point
SP	Inertial tank		single pump and pipes		activation
PU	Single circulating pump	FH	Antifreeze heater for evaporator,	IDL	Demand limit from digital input
PUI	Inverter single circulating pump		double pump and pipes	CP	Potential free contacts
PD	Double circulating pump	FU	Antifreeze heater for evaporator/tank,		
PDI	Inverter double circulating pump		single pump and pipes	LOOSE	ACCESSORIES
SPU	Inertial tank and single circulating	FD	Antifreeze heater for evaporator/tank,	MN	High and low pressure gauges
SF U	pump		double pump and pipes	CR	Remote control panel
	pump 	П	Inverter on one compressor	RP	Coil protection metallic guards
		ID	1 0		con protoction motalile gadras

Soft start

Inverter on all compressors

ΑG

AM

FL

ID

SS

# ErP SEER



MODEL			1002	1202	1402	1602	1802	2202	2502
Cooling STD	Cooling capacity (1)	kW	197 63	261	309	366	406 129	464	548 168
version	Absorbed power (1) EER (1)	kW	3.13	83 3.14	98 3.15	116 3.16	3.15	147 3.16	3.26
	Cooling capacity (1)	kW	197	260	308	365	405	463	547
	Absorbed power (1)	kW	63	84	99	117	130	149	169
Cooling STD	EER (1)		3.13	3.10	3.11	3.12	3.12	3.11	3.24
ersion (EN14511)	ESEER EUROVENT Class		3.88 A	3.92 A	4.09 A	3.98 A	4.24 A	4.20 A	4.24 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	Cooling capacity (1)	kW	197	261	309	366	406	464	548
version	Absorbed power (1)	kW	62	81	96	114	126	144	165
(6121011	EER (1)	134/	3.18	3.22	3.22	3.21	3.22	3.22	3.32
	Cooling capacity (1) Absorbed power (1)	kW kW	197 62	260 82	308 97	365 115	405 127	463 146	547 166
	EER (1)	KVV	3.18	3.17	3.18	3.17	3.19	3.17	3.30
Cooling MC	ESEER		4.00	4.04	4.21	4.10	4.37	4.33	4.37
ersion (EN14511)	EUROVENT Class		А	Α	A	A	A	А	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
	Quantity	n°	2	2	2	2	2	2	2
Compressor	Refrigerant circuits Capacity steps	n° n°	2	2	2	2 Stepless	2	2	2
	Water flow	I/s	9.41	12.47	14.76	17.49	19.40	22.17	26.18
vaporator	Pressure drops	kPa	39	37	32	34	31	28	37
-p	Water connections	DN	125	125	150	150	150	150	150
lectrical	Power supply	V/Ph/Hz			'	400/3/50			
characteristics	Max. running current	A	203	275	319	355	413	467	512
	Max. starting current	A kPa	291 155	417 185	488 180	586	642 140	723 180	783 160
Jnit with tank and	Pump available static pressure Tank water volume	Kr,9	2000	2000	2000	155 2000	2000	2000	2000
oump	Water connections	DN	100	100	100	100	125	125	150
	STD version (3)	dB(A)	75	76	76	77	77	78	78
Sound pressure	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
<i>N</i> eights	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	Cooling capacity (1)	kW	608	717	809	980	1064	1228	1353
	Absorbed power (1)	kW	189	223	249	300	333	379	422
version	EER (1)		3.22	3.22	3.25	3.27	3.20	3.24	3.21
	Cooling capacity (1)	kW	606	714	806	978	1061	1224	1348
	Absorbed power (1) EER (1)	kW	191 3.17	225 3.17	251 3.21	302 3.24	336 3.16	383 3.20	427 3.16
Cooling STD	ESEER		4.22	4.24	4.25	4.26	4.19	4.20	4.18
version (EN14511)	EUROVENT Class		A	A	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	Cooling capacity (1)	kW	608	717	809	980	1064	1228	1353
version	Absorbed power (1)	kW	185	219	244	294	326	371	414
70101011	EER (1) Cooling capacity (1)	kW	3.29 606	3.27 714	3.32 806	3.33 978	3.26 1061	3.31 1224	3.27 1348
	Absorbed power (1)	kW	187	221	246	296	329		1540
Cooling MC		1000							418
Cooling MC	EER (1)		l 3.24 l	3.23				375 3.26	418 3.22
version (EN14511)	EER (1) ESEER		3.24 4.35	3.23 4.37	3.28 4.38	3.30 4.39	3.22 4.32	3.26 4.33	418 3.22 4.31
PEISION (EIN 14311)	ESEÉR EUROVENT Class		4.35 A	4.37 A	3.28 4.38 A	3.30 4.39 A	3.22 4.32 A	3.26 4.33 A	3.22 4.31 A
/ersion (EIV14511)	ESEER EUROVENT Class SEER (2)	0/	4.35 A 4.28	4.37 A 4.30	3.28 4.38 A 4.30	3.30 4.39 A 4.31	3.22 4.32 A 4.23	3.26 4.33 A 4.26	3.22 4.31 A 4.23
/ersion (EINT4511)	ESEER EUROVENT Class SEER (2) Energy Efficiency (2)	% p°	4.35 A 4.28 168	4.37 A 4.30 169	3.28 4.38 A 4.30 169	3.30 4.39 A 4.31 169	3.22 4.32 A 4.23 166	3.26 4.33 A 4.26 168	3.22 4.31 A 4.23 166
	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity	n°	4.35 A 4.28 168 2	4.37 A 4.30 169 2	3.28 4.38 A 4.30 169 2	3.30 4.39 A 4.31 169 2	3.22 4.32 A 4.23 166 2	3.26 4.33 A 4.26 168 2	3.22 4.31 A 4.23 166 2
	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits	n° n°	4.35 A 4.28 168	4.37 A 4.30 169	3.28 4.38 A 4.30 169	3.30 4.39 A 4.31 169 2	3.22 4.32 A 4.23 166	3.26 4.33 A 4.26 168	3.22 4.31 A 4.23 166
	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity	n° n° n°	4.35 A 4.28 168 2	4.37 A 4.30 169 2 2	3.28 4.38 A 4.30 169 2	3.30 4.39 A 4.31 169 2	3.22 4.32 A 4.23 166 2	3.26 4.33 A 4.26 168 2	3.22 4.31 A 4.23 166 2
Compressor	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops	n° n° n° I/s kPa	4.35 A 4.28 168 2 2 2 29.05 33	4.37 A 4.30 169 2 2 2 34.26 40	3.28 4.38 A 4.30 169 2 2 2	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30	3.22 4.32 A 4.23 166 2 2 2	3.26 4.33 A 4.26 168 2 2 2 58.67 47	3.22 4.31 A 4.23 166 2 2 2
Compressor	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections	n° n° n° I/s kPa DN	4.35 A 4.28 168 2 2 2	4.37 A 4.30 169 2 2 2	3.28 4.38 A 4.30 169 2 2 2	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200	3.22 4.32 A 4.23 166 2 2	3.26 4.33 A 4.26 168 2 2 2	3.22 4.31 A 4.23 166 2 2
Compressor	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply	n° n° n° I/s kPa DN V/Ph/Hz	4.35 A 4.28 168 2 2 2 2 29.05 33 150	4.37 A 4.30 169 2 2 2 34.26 40 200	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200 400/3/50	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250
Compressor Evaporator Electrical	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	n° n° n° I/s kPa DN V/Ph/Hz	4.35 A 4.28 168 2 2 2 2 29.05 33 150	4.37 A 4.30 169 2 2 34.26 40 200	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250
Compressor  vaporator  lectrical haracteristics	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	n° n° n° I/s kPa DN V/Ph/Hz A	4.35 A 4.28 168 2 2 2 2 29.05 33 150	4.37 A 4.30 169 2 2 34.26 40 200	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200 400/3/50 764 1206	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250
Compressor  vaporator  Electrical  characteristics	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	n° n° n° I/s kPa DN V/Ph/Hz	4.35 A 4.28 168 2 2 2 2 29.05 33 150 597 896 145	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200 400/3/50 764 1206	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250 951 1450 180	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250
Compressor  Evaporator  Electrical sharacteristics  Unit with tank and	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume	n° n° n° I/s kPa DN V/Ph/Hz A	4.35 A 4.28 168 2 2 2 2 29.05 33 150	4.37 A 4.30 169 2 2 34.26 40 200	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200 400/3/50 764 1206	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250
Compressor  Evaporator  Electrical sharacteristics  Unit with tank and bump	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3)	n° n° n° l/s kPa DN V/Ph/Hz A kPa I DN dB(A)	4.35 A 4.28 168 2 2 2 2 2 2 59.05 33 150 597 896 145 3000 150 78	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200 731 1091 140 3000 150 81	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200 831 1244 170	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250 951 1450 180 -	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250 1039 1494 155
Compressor  Evaporator  Electrical characteristics  Unit with tank and coump	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3)	n° n° n° l/s kPa DN V/Ph/Hz A kPa I DN dB(A) dB(A)	4.35 A 4.28 168 2 2 2 29.05 33 150 597 896 145 3000 150 78	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80 77	3.28 4.38 4.30 169 2 2 38.65 42 200 731 1091 140 3000 150 81 78	3.30 4.39 A 4.31 169 2 2 Stepless 46.82 30 200 400/3/50 764 1206 120 -	3.22 4.32 A 4.23 166 2 2 50.84 38 200 831 1244 170 - - - 82 79	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250 951 1450 180 -	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250 1039 1494 155
Compressor  Evaporator  Electrical characteristics  Unit with tank and coump	ESEÉR EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3)	n° n° n° l/s kPa DN V/Ph/Hz A kPa I DN dB(A) dB(A) dB(A)	4.35 A 4.28 168 2 2 2 2 29.05 33 150 597 896 145 3000 150 78 75	4.37 A 4.30 169 2 2 2 34.26 40 200 670 947 160 3000 150 80 77	3.28 4.38 A 4.30 169 2 2 38.65 42 200 731 1091 140 3000 150 81 78 73	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82 79 74	3.22 4.32 A 4.23 166 2 2 50.84 38 200 831 1244 170 - - - - 79 74	3.26 4.33 A 4.26 168 2 2 58.67 47 250 951 1450 180 84 81 76	3.22 4.31 A 4.23 166 2 2 64.64 54 250 1039 1494 155 - - - - 84 81 76
Compressor  Evaporator  Electrical characteristics  Unit with tank and coump  Sound pressure	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3) Transport weight (4)	n° n° n° I/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A) Kg	4.35 A 4.28 168 2 2 2 2 2 29.05 33 150 597 896 145 3000 150 78 75 70 5260	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80 77 72 6240	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200 731 1091 140 3000 150 81 78 73 7460	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82 79 74 8995	3.22 4.32 A 4.23 166 2 2 50.84 38 200 831 1244 170 - - - 82 79 74 9435	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250 951 1450 180 	3.22 4.31 A 4.23 166 2 2 64.64 54 250 1039 1494 155 - - - 84 81 76 11560
Compressor  Evaporator  Electrical characteristics  Unit with tank and coump  Sound pressure	ESEÉR EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3)	n° n° n° l/s kPa DN V/Ph/Hz A kPa I DN dB(A) dB(A) dB(A)	4.35 A 4.28 168 2 2 2 2 29.05 33 150 597 896 145 3000 150 78 75	4.37 A 4.30 169 2 2 2 34.26 40 200 670 947 160 3000 150 80 77	3.28 4.38 A 4.30 169 2 2 38.65 42 200 731 1091 140 3000 150 81 78 73	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82 79 74	3.22 4.32 A 4.23 166 2 2 50.84 38 200 831 1244 170 - - - - 79 74	3.26 4.33 A 4.26 168 2 2 58.67 47 250 951 1450 180 84 81 76	3.22 4.31 A 4.23 166 2 2 64.64 54 250 1039 1494 155 - - - - 84 81 76
Compressor  Evaporator  Electrical Characteristics  Unit with tank and pump  Sound pressure  Weights	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3) Transport weight (4)	n° n° n° l/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A) Kg Kg	4.35 A 4.28 168 2 2 2 2 29.05 33 150 597 896 145 3000 150 78 75 70 5260 5520	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80 77 72 6240 6570	3.28 4.38 A 4.30 169 2 2 38.65 42 200 731 1091 140 3000 150 81 78 73 7460 7880 2502 2802	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82 82 79 74 8995 9500	3.22 4.32 A 4.23 166 2 2 50.84 38 200 831 1244 170 - - - 82 79 74 9435	3.26 4.33 A 4.26 168 2 2 2 58.67 47 250 951 1450 180 84 81 76 11230 11800 4802 5	3.22 4.31 A 4.23 166 2 2 64.64 54 250 1039 1494 155 - - - - 84 81 76 11560 12190
Compressor  Evaporator  Electrical characteristics  Unit with tank and pump  Sound pressure  Weights  DIMENSIONS  STD-MC	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3) Transport weight (4) Operating weight (4)  1002 1202  mm 4400 5000	n° n° n° l/s kPa DN V/Ph/Hz A A kPa DN dB(A) dB(A) Kg Kg	4.35 A 4.28 168 2 2 2 3 150 597 896 145 3000 150 78 75 70 5260 5520 602 1802	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80 77 72 6240 6570 2202	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200  731 1091 140 3000 150 81 78 78 7460 7880  2502 2802 6700 6700	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82 79 74 8995 9500	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200  831 1244 170 82 79 74 9435 9910  602 4602 0050 11100	3.26 4.33 A 4.26 168 2 2 58.67 47 250 951 1450 180 84 81 76 11230 11800 4802 5	3.22 4.31 A 4.23 166 2 2 64.64 54 250 1039 1494 155 - - - - 84 81 76 11560 12190
Compressor  Evaporator  Electrical characteristics  Unit with tank and pump  Sound pressure  Weights  DIMENSIONS  STD-MC/S  SSL-MC/S	ESEER EUROVENT Class  SEER (2)  Cuantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3) Transport weight (4) Operating weight (4)  TOO 1202  C mm 4400 5000 SSL mm 5000 5550	n° n° n° l/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A) dB(A) Kg Kg 1402 15000 5550	4.35 A 4.28 168 2 2 2 3 150  597 896 145 3000 150 78 75 70 5260 5520  602 1802 5550 5550 6700 6700	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80 77 72 6240 6570 2202 6700 8900	3.28 4.38 4.30 169 2 2 2 38.65 42 200  731 1091 140 3000 150 81 78 78 7460 7880  2502 2802 6700 6700 8900 8900	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120 82 79 74 8995 9500  3302 3 8900 1 10050 1	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200 831 1244 170 - - 82 79 74 9435 9910 602 4602 0050 11100 11250	3.26 4.33 A 4.26 168 2 2 58.67 47 250  951 1450 180 84 81 76 11230 11800  4802 5 12250 13400	3.22 4.31 A 4.23 166 2 2 2 64.64 54 250 1039 1494 155 - 84 81 76 11560 12190 402 600 3400 1340
Compressor  Evaporator  Electrical characteristics  Unit with tank and pump  Sound pressure  Weights  DIMENSIONS  STD-MC	ESEER EUROVENT Class SEER (2) Energy Efficiency (2) Quantity Refrigerant circuits Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (3) With SL accessory (3) SSL version (3) Transport weight (4) Operating weight (4)  Operating weight (4)  SL mm 5000 5550 MC/SSL mm 2200 2200	n° n° n° l/s kPa DN V/Ph/Hz A kPa I DN dB(A) dB(A) dB(A) Kg Kg 1402 1 5000 5550 2200	4.35 A 4.28 168 2 2 2 3 150 597 896 145 3000 150 78 75 70 5260 5520 602 1802	4.37 A 4.30 169 2 2 34.26 40 200 670 947 160 3000 150 80 77 72 6240 6570 2202 6700 8900 2200	3.28 4.38 A 4.30 169 2 2 2 38.65 42 200  731 1091 140 3000 150 81 78 78 7460 7880  2502 2802 6700 6700	3.30 4.39 A 4.31 169 2 Stepless 46.82 30 200 400/3/50 764 1206 120	3.22 4.32 A 4.23 166 2 2 2 50.84 38 200  831 1244 170 82 79 74 9435 9910  602 4602 0050 11100	3.26 4.33 A 4.26 168 2 2 58.67 47 250  951 1450 180	3.22 4.31 A 4.23 166 2 2 64.64 54 250 1039 1494 155 - - - - 11560 12190 402 600 8400 1340

### CLEARANCE AREA

CHA/H/A 1002÷6002

500	1800	1000	1800

CHA/H/A 1002÷6002



### NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- Unit without tank and pump.
   N.B. Weights of SSL versions are specified on technical brochu.
   Data of MC versions are specified on technical brochure. Weights of SSL versions are specified on technical brochure.



## CHA/H/FC 1002÷4802

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





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	SPUI	Inertial tank and Inverter single
SL	Unit silencement		circulating pump
BT	Low water temperature Kit	SPD	Inertial tank and double circulating
EC	EC Inverter fans		pump
ECH	EC Inverter fans with high available	SPDI	Inertial tank and Inverter double
	static pressure		circulating pump
HRT/P	Total heat recovery in parallel	Ш	Inverter on one compressor
TX	Coil with pre-coated fins	ID	Inverter on all compressors
SP	Inertial tank	SS	Soft start
PU	Single circulating pump	WM	Web Monitoring - Wireless remote
PUI	Inverter single circulating pump		monitoring (GPRS/EDGE/3G/TCP-IP)
PD	Double circulating pump	IS	Modbus RTU protocol, RS485
PDI	Inverter double circulating pump		serial interface
SPU	Inertial tank and single circulating	ISB	BACnet MSTP protocol, RS485
	pump		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

LOOS	E 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



MODEL			1002	1202	1402	1602	1802	2202	2502	2802	3302	3602	4602	4802
	Cooling capacity (1)	kW	232	297	350	404	444	519	604	684	801	891	1044	1144
Cooling	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 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
Cooling (EN14511)	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
Fron Cooling avalo	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
Free-Cooling cycle	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
	Quantity	n°	2	2	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2
·	Capacity steps	n°						Step	less					
	Water flow	I/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
Water circuit	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	Power supply	V/Ph/Hz						400/	3/50					-
	Max. running current	А	211	275	327	355	413	467	520	605	670	731	764	831
characteristics	Max. starting current	А	299	417	496	586	642	723	791	904	947	1091	1206	1244
Unit with tank and	Pump available static pressure	kPa	148	114	117	137	158	193	146	106	162	132	112	111
	Tank water volume	I	2000	2000	2000	2000	2000	2000	2000	2000	3000	-	-	-
pump	Water connections	DN	100	100	100	125	125	125	150	150	150	150	200	200
Cound proceurs	STD version (4)	dB(A)	75	76	76	77	77	78	78	78	80	81	82	82
Sound pressure	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
vveignts	Operating weight (5)	Kg	3390	3720	4400	4850	5040	6010	7420	7980	9420	10000	11890	12940

<b>DIMENSION</b>	NS .		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
Н	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



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in part (1) is repeated.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.

## 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.





MICROCHANNEL 

INVERTER SCREW





















The CHAY/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

VERSION	On request, units can be supplied wi	On request, units can be supplied with <b>R513A</b> refrigerant.						
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	SPU	Inertial tank and single circulating pump
SL	Unit silencement	SPUI	Inertial tank and Inverter single circulating
CC	Condensing control down to -20 °C		pump
BT	Low water temperature Kit	SPD	Inertial tank and double circulating pump
EC	EC Inverter fans	SPDI	Inertial tank and Inverter double circulating
ECH	EC Inverter fans with high available static		pump
	pressure	FE	Antifreeze heater for evaporator
HR	Desuperheater	FX	Antifreeze heater for evaporator and pipes
HRT/S	Total heat recovery in series	FB	Antifreeze heater for evaporator/tank
HRT/P	Total heat recovery in parallel	FQ	Antifreeze heater on evaporator/tank and
TX	Coil with pre-coated fins		pipes
TXB	Coil with epoxy treatment	FZ	Antifreeze heater for evaporator, single
EW	External water connections		pump and pipes
SP	Inertial tank	FH	Antifreeze heater for evaporator, double pump and pipes
PU	Single circulating pump	FU	Antifreeze heater for evaporator/tank,
PUI	Inverter single circulating pump	10	single pump and pipes
PD	Double circulating pump	FD	Antifreeze heater for evaporator/tank,
PDI	Inverter double circulating pump		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

IS Modbus RTU protocol, RS485 serial interface ISB BACnet MSTP protocol, RS485

serial interface

ISBT BACnet TCP/IP protocol, Ethernet port

ISL LonWorks protocol, FTF-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

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

## CHA/Y/A 1302÷4802







MODEL			1302	1502	1702	1902	2002	2602	3002	3602	4202	4802
Cooling STD	Cooling capacity (1)	kW	263	313	359	413	464	574	696	839	959	1136
versions	Absorbed power (1)	kW	82	96	114	131	146	179	219	256	305	352
versions	EER (1)		3.21	3.26	3.15	3.15	3.18	3.21	3.18	3.28	3.14	3.23
	Cooling capacity (1)	kW	262	312	358	412	463	573	694	837	956	1132
0 I: 0TD	Absorbed power (1)	kW	83	97	115	132	147	180	221	258	308	356
Cooling STD	EER (1)		3.16	3.22	3.11	3.12	3.15	3.18	3.14	3.24	3.10	3.18
versions	ESEER		3.89	4.01	3.93	4.01	4.03	3.98	3.91	4.03	4.01	4.00
(EN14511)	EUROVENT Class		Α	Α	Α	Α	Α	A	A	Α	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	Cooling capacity (1)	kW	263	313	359	413	464	574	696	839	959	1136
versions	Absorbed power (1)	kW	80	94	112	128	143	175	215	251	299	345
¥01010110	EER (1)	1347	3.29	3.33	3.21	3.23	3.24	3.28	3.24	3.34	3.21	3.29
	Cooling capacity (1)	kW	262	312	358	412	463	573	694	837	956	1132
Cooling MC	Absorbed power (1)	kW	81	95	113	129	144	176	217	253	302	349
0	EER (1) ESEER		3.23 3.93	3.28 4.05	3.17 3.97	3.19	3.22 4.07	3.26 4.02	3.20 3.95	3.31	3.17	3.24 4.04
versions	EUROVENT Class					4.05			3.95 A	4.07	4.05	4.04 A
(EN14511)	SEER (2)		A 4.14	4.26	4.23	A 4.23	A 4.24	A 4.27	4.16	4.35	4.34	4.27
		%	163	167	166	166	167	168	163	171	171	168
	Energy Efficiency (2) Heating capacity (3)	kW	272	324	372	428	480	594	721	869	993	1176
Heating STD	Absorbed power (3)	kW	81	95	113	130	144	177	217	253	302	348
versions	COP (3)	KVV	3.36	3.41	3.29	3.29	3.33	3.36	3.32	3.43	3.29	3.38
	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
Heating STD	COP (3)	NVV	3.29	3.34	3.23	3.23	3.27	3.29	3.26	3.36	3.22	3.31
versions	EUROVENT Class		A A	A A	A A	A A	A A	A A	A A	A A	A	A A
(EN14511)	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
	Quantity	n°	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
001111010001	Capacity steps	n°	-	_				less				
	Water flow	I/s	12.57	14.95	17.15	19.73	22.17	27.42	33.25	40.09	45.82	54.28
Evaporator	Pressure drops	kPa	30	26	49	44	34	28	42	34	39	48
a raporator	Water connections	DN	125	125	150	150	150	150	150	200	200	200
Electrical	Power supply	V/Ph/Hz					400/	3/50				
	Max. running current	A	201	237	261	301	337	393	485	580	664	720
characteristics	Max. starting current	А	263	281	337	361	405	504	596	785	827	855
Unit with tank and	Pump available static pressure	kPa	130	150	155	140	175	160	165	145	120	160
	Tank water volume		2000	2000	2000	2000	2000	2000	3000	3000		
pump	Water connections	DN	100	100	100	125	125	150	150	150	200	200
	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
Sound pressure	SSL versions (5)	dB(A)	66	66	66	65	66	66	67	68	68	
Souria pressure	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
vvoigilla	Operating weight (6)	Kg	3690	3740	3850	4390	5070	5540	6790	8070	8170	9230

DIM	IENSIONS		1302	1502	1702	1902	2002	2602	3002	3602	4202	4802
	STD-MC	mm	4400	4400	5000	5550	6200	6700	8900	11100	11100	11100
L	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
ш	STD-MC	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2500
П	SSL-MC/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2500	2500	

## CLEARANCE AREA

CHA/Y/A 1302÷4802

500 1800 1000 1800



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.

- 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.

## CHA/Y 1202-B÷6802-B

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



















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.

RP

ΑG

ΑM

FL

Coil protection metallic guards

Rubber shock absorbers

Spring shock absorbers

Flow switch

#### 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.

Inertial tank and Inverter single

circulating pump

#### **ACCESSORIES**

## FACTORY FITTED ACCESSORIES

FACIC	DRY FITTED ACCESSORIES				
IM	Automatic circuit breakers	SPD	Inertial tank and double circulating pump	IS	Modbus RTU protocol, RS485
SL	Unit silencement	SPDI	Inertial tank and Inverter double		serial interface
CC	Condensing control down to -20 °C		circulating pump	ISB	BACnet MSTP protocol, RS485
ВТ	Low water temperature Kit	FE	Antifreeze heater for evaporator		serial interface
EC	EC Inverter fans	FX	Antifreeze heater for evaporator	ISBT	BACnetTCP/IP protocol, Ethernet
ECH	EC Inverter fans with high available		and pipes		port
	static pressure	FB	Antifreeze heater for evaporator/tank	ISL	LonWorks protocol, FTT-10
HR	Desuperheater	FQ	Antifreeze heater on evaporator/tank	1.43.7	serial interface
HRT/S	Total heat recovery in series		and pipes	IAV	Remote set-point, 0-10 V signal
HRT/P	Total heat recovery in parallel	FZ	Antifreeze heater for evaporator, single	IAA	Remote set-point, 4-20 mA signal
TX	Coil with pre-coated fins		pump and pipes	IAS	Remote signal for second set-point
EW	External water connections	FH	Antifreeze heater for evaporator, double		activation
SP	Inertial tank		pump and pipes	IDL	Demand limit from digital input
PU	Single circulating pump	FU	Antifreeze heater for evaporator/tank,	CP	Potential free contacts
PUI	Inverter single circulating pump		single pump and pipes		
PD	Double circulating pump	FD	Antifreeze heater for evaporator/tank,	LOOS	E ACCESSORIES
PDI	Inverter double circulating pump		double pump and pipes	MN	High and low pressure gauges
SPU	Inertial tank and single circulating pump	II	Inverter on one compressor	CR	Remote control panel
SPUI	Inertial tank and Inverter single	ID	Inverter on all compressors	RP	Coil protection metallic guards

Web Monitoring - Wireless remote

monitoring (GPRS/EDGE/3G/TCP-IP)

SS

WM

Soft start









MODEL	10 II	1 112	1202-B	1302-B		1702-B	1902-B	2002-B	2602-B	3002-
Cooling	Cooling capacity (1) Absorbed power (1)	kW kW	221 80	262 88	302 112	348 137	393 156	453 167	549 197	684 231
Cooling	EER (1)	KVV	2.76	2.98	2.70	2.54	2.52	2.71	2.79	2.96
	Cooling capacity (1)	kW	220	261	301	347	391	451	547	681
	Cooling capacity (1) 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
Cooling (EN14511)	ESEER		3.44	3.62	3.54	3.38	3.37	3.69	3.58	3.60
	EUROVENT Class		C 2.00	B	D	E	E	D 4.15	C 4.10	B 4 10
Į.	SEER (2) Energy Efficiency (2)	%	3.80 149	3.88 152	4.00 157	4.02 158	4.04 159	4.15 163	4.10 161	4.10 161
	Heating canacity (3)	kW	225	255	289	338	390	457	536	662
Heating	Heating capacity (3) 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 capacity (3)	kW	225	255	289	338	390	457	536	665
	Absorbed power (3)	kW	75	78	91	106	121	143	161	197
Heating (EN14511)	COP (3) EUROVENT Class		3.00	3.27	3.18	3.19	3.22	3.20	3.33	3.38
, , , , , , , , , , , , , , , , , , ,	SCOP (4)		3.20	A 3.21	3.30	3.30	A 3.49	3.20	3.23	3.49
Į.	Energy Efficiency (4)	%	125	125	129	129	137	125	126	137
	Quantity	n°	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2
	Capacity steps	n°			<u>'</u>	Step			<u>'</u>	
	Water flow	I/s	10.56	12.52	14.43	16.63	18.78	21.64	26.23	32.68
vaporator	Pressure drops	kPa	50	49	38	50	53	43	54	57
	Water connections	DN V/Db/Hz	100	100	125	125	125	125	150	150
Electrical	Power supply Max rupping current	V/Ph/Hz	194	194	230	400/3	286	321	377	421
characteristics	Max. running current Max. starting current	A	256	256	274	254 330	346	389	488	510
Unit with tools on I	Pump available static pressure	kPa	135	180	185	160	140	165	135	100
Silie With talik ana	Tank water volume	I I	1100	1100	1100	1100	1100	2000	2000	2000
oump	Water connections	DN	100	100	100	100	125	125	150	150
	STD version (5)	dB(A)	77	77	77	77	76	76	77	77
Sound pressure	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
Neights -	Transport weight Operating weight	Kg	2640 2740	2730 2820	2780 2920	2920 3060	3120 3250	3800 3930	4070 4330	5270 5500
·	Operating weight	Kg				'		'	'	
MODEL			3602-B	4202-B				6002-B	6302-B	6802-B
015	Cooling capacity (1)	kW	806	954	1089	12		1347	1475	1597
Coo <b>l</b> ing [	Absorbed power (1) EER (1)	kW	284 2.84	334 2.86	402 2.71	2.7		494 2.73	531 2.78	554 2.88
	Cooling capacity (1)	kW	803	950	1084	12		1342	1469	1589
-	Absorbed power (1)	kW	287	338	407	44	.8	499	537	562
	EER (1)		2.80	2.82	2.67	2.7	<u>"</u> 1	2.69	2.74	2.83
Cooling (EN14511)	ESEER		3.66	3.61	3.49	3.5		3.57	3.68	3.63
1	EUROVENT Class		С	С	D	(		D	С	С
	SEER (2)		4.12	4.13	4.14	4.1		4.15	4.36	4.36
	Energy Efficiency (2)	%	162	162	163	16		163	171	171
la atina	Heating capacity (3)	kW	767	850	1044	11	/2	1306	1438	
Heating [	Absorbed power (3) COP (3)	kW	225 3.41	260 3.27	318 3.28	3.3	U C	395 3.31	418 3.44	
	Heating capacity (3)	kW	770	853	1048	11		1311	1443	
	Absorbed power (3)	kW	231	266	328	36		406	431	
U .: (ENIA 454A)	COP (3)	NVV	3.33	3.21	3.20	3.2		3.23	3.35	
Heating (EN14511)	COP (3) EUROVENT Class		A	A	В	1		A	A	
	SCOP (4)		-	-	-	-		-	-	
	Energy Efficiency (4)	%	-	-	-	-		-	-	
_	Quantity	n°	2	2	2	2		2	2	2
Compressor		n°	2	2	2	Cton		2	2	2
50111p1 C 3301	Refrigerant circuits	-0				Step		64.36	70.47	76.30
00111p103301	Capacity steps	n° I/e	20 51	/5 5Q	52.03	50	10 I			
'	Capacity steps Water flow	I/s	38.51 55	45.58 53	52.03 62	58.			70.47 60	
'	Capacity steps Water flow Pressure drops		38.51 55 200	53	62	5	5	55 200	60	82
vaporator	Capacity steps Water flow	I/s kPa	55 200				0	55 200		
Evaporator Electrical	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current	I/s kPa DN V/Ph/Hz A	55 200 549	53 200 641	62 200 705	55 20 400/3 70	5 0 3/50 5	55 200 873	60 200 896	82 250 912
evaporator electrical	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current	I/s kPa DN V/Ph/Hz A	55 200 549 754	53 200 641 804	62 200 705 840	5: 20 400/3 70 84	3/50 5 0	55 200 873 1665	60 200 896 1541	82 250 912 1557
vaporator Electrical haracteristics	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure	I/s kPa DN V/Ph/Hz A	55 200 549 754 130	53 200 641 804 105	705 840 155	59 20 400/3 70 84 13	0 0 3/50 5 0	55 200 873 1665 210	896 1541 190	912 1557 150
vaporator Electrical Sharacteristics Juit with tank and	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume	I/s kPa DN V/Ph/Hz A kPa kPa	55 200 549 754 130 2000	53 200 641 804 105 2000	62 200 705 840 155	5: 20/ 400/3 70/ 84 13	5 0 3/50 5 0 5	55 200 873 1665 210	896 1541 190	912 1557 150
Evaporator Electrical Sharacteristics Unit with tank and	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections	I/s kPa DN V/Ph/Hz A kPa kPa I DN	55 200 549 754 130 2000 150	53 200 641 804 105 2000 200	62 200 705 840 155  200	55 20 400/3 70 84 13 	5 0 3/50 5 0 5 -	873 1665 210  200	896 1541 190  200	912 1557 150  200
Evaporator Electrical characteristics Unit with tank and oump	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5)	I/s kPa DN V/Ph/Hz A kPa I DN dB(A)	55 200 549 754 130 2000 150 77	53 200 641 804 105 2000 200 78	705 840 155  200 78	55 20 400/3 70 84 13  20	5 0 0 3/50 -5 0 5 -	55 200 873 1665 210  200 79	896 1541 190  200 80	912 1557 150  200 80
Evaporator Electrical Characteristics Unit with tank and coump Sound pressure	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5)	I/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A)	55 200 549 754 130 2000 150 77 74	53 200 641 804 105 2000 200 78 75	62 200 705 840 155  200 78 75	59 20 400/3 70 84 13  20 79	5 0 0 3/50 5 0 5 - 0 9	55 200 873 1665 210  200 79 76	896 1541 190  200 80 77	82 250 912 1557 150  200 80 77
Evaporator Electrical characteristics Unit with tank and coump Sound pressure	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5)	I/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A)	55 200 549 754 130 2000 150 77	53 200 641 804 105 2000 200 78	705 840 155  200 78	55 20 400/3 70 84 13  20	5 0 0 3/50 5 0 0 55 - 0 0 9	55 200 873 1665 210  200 79	896 1541 190  200 80	82 250 912 1557 150  200 80
Evaporator Electrical characteristics Unit with tank and bump	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5) SSL version (5)	I/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A)	55 200 549 754 130 2000 150 77 74 69	53 200 641 804 105 2000 200 78 75 69	62 200 705 840 155  200 78 75	55. 400/3 70 84 13  20 71 71	5 0 0 3/50 5 0 0 55  0 9 3 3	55 200 873 1665 210  200 79 76 70	896 1541 190  200 80 77 70	82 250 912 1557 150  200 80 77
vaporator  lectrical haracteristics  lnit with tank and ump  cound pressure  Veights	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight Operating weight	I/s kPa DN V/Ph/Hz A A KPa I DN dB(A) dB(A) Kg Kg	55 200 549 754 130 2000 150 77 74 69 5480 5770	53 200 641 804 105 2000 78 75 69 6250 6600	62 200 705 840 155  200 78 75 70 7255 7710	55 20 400/2 70 84 13  20 7: 71 77 81:	50 00 33/50 55 00 55 - 00 99 65 0	873 1665 210  200 79 76 70 8160 8700	896 1541 190  200 80 77 70 8840 9380	82 250 912 1557 150  200 80 77  10100 10620
vaporator  lectrical haracteristics lnit with tank and ump  ound pressure  Veights  IMENSIONS  STD	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight Operating weight  1202-B 1302 mm 3350 335	I/s   kPa   DN   V/Ph/Hz   A   A   kPa   I   DN   dB(A)   dB(A)   Kg   Kg   C2-B   1502-B   60   3350   dPa   S750   S7	55 200 549 754 130 2000 150 77 74 69 5480 5770 1702-B 190 3350 44	53 200 641 804 105 2000 200 78 75 69 6250 6600 2-B 2002-B	62 2000 705 840 155  200 78 75 70 7255 7710 2602-B 3002- 5550 6700	55 400/: 70 844 13 	50 00 3/50 55 0 0 55 5- 00 9 8 6 0 15 5 0 9 4202-8 4	55 200 873 1665 210 200 79 76 70 8160 8700 802-8 5402-10050 10050	896 1541 190  200 80 77 70 8840 9380 B 6002-B 63	82 250 912 1557 150 200 80 77  10100 10620 802-B 6802 11100 134
Evaporator Electrical characteristics Unit with tank and oump Sound pressure Veights Veights	Capacity steps Water flow Pressure drops Water connections Power supply Max. running current Max. starting current Pump available static pressure Tank water volume Water connections STD version (5) With SL accessory (5) SSL version (5) Transport weight Operating weight	I/s kPa DN V/Ph/Hz A A kPa I DN dB(A) dB(A) Kg Kg 2-B 1502-B 0 3350	55 200 549 754 130 2000 150 77 74 69 5480 5770	53 200 641 804 105 2000 200 78 75 69 6250 6600 2-B 2002-B	62 200 705 840 155  200 78 75 70 7255 7710 2602-B 3002-	55 400/x 70 84 13 	50   00   3/50   5   00   5   00   5   00   5   00   5   00   15	873   1665   210     200   79   76   70   8160   8700   802-B   5402-B   5402-B	896   1541   190   200   80   77   70   8840   9380   8   6002-B   63   63   63   63   63   63   63   6	82 250 912 1557 150  200 80 77  10100 10620

### **CLEARANCE AREA**

WP/SSL

STD-SSL-WP-WP/SSL

STD/WP

SSL-WP/SSL

mm

mm

mm

mm

CHA/Y 1202-B÷6802-B

W

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.

Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.

- Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
- 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.



## CHA/Y/FC 1202-B+6002-B

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

















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.



FREE COOLING

### **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.

ISB

**ISBT** 

- 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.

Inverter double circulating pump

Inertial tank and single circulating

### **ACCESSORIES**

## **FACTORY FITTED ACCESSORIES**

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

BACnet MSTP protocol, RS485

BACnet TCP/IP protocol, Ethernet

serial interface

port

RP

ΑG

AM

FL

Coil protection metallic guards

Rubber shock absorbers

Spring shock absorbers

Flow switch



pump

SPU

## CHA/Y/FC 1202-B÷6002-B



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

MODEL			3002-B	3602-B	4202-B	4802-B	5402-B	6002-B		
Co	ooling capacity (1)	kW	709	847	994	1139	1288	1460		
Cooling Ab	osorbed power (1)	kW	263	316	370	434	490	541		
EEF	R (1)		2.70	2.68	2.69	2.62	2.63	2.70		
Cor	oling capacity (1)	kW	702	838	984	1126	1272	1436		
Ab	osorbed power (1)	kW	270	325	380	447	507	565		
Cooling (EN14511) EEF	R (1)		2.60	2.58	2.59	2.52	2.51	2.54		
SE	ER (2)		4.11	4.17	4.15	4.12	4.13	4.13		
Ene	ergy Efficiency (2)	%	161	164	163	162	162	162		
Free Cooling and Air	r temperature (3)	°C	-4.3	-4.3	-4.6	-4.7	-4.1	-3.9		
Free-Cooling cycle Ab	osorbed power (3)	kW	20	22	22	25	29	36		
Qu	antity	n°	2	2	2	2	2	2		
Compressor Ret	frigerant circuits	n°	2	2	2	2	2	2		
Car	pacity steps	n°			Step	less				
Wa	ater flow	I/s	36.65	43.79	51.38	58.88	66.58	75.47		
Water circuit Pre	essure drops	kPa	160	164	160	200	225	300		
Wa	ater connections	DN	150	150	200	200	200	200		
Electrical Pov	wer supply	V/Ph/Hz			400/	400/3/50				
characteristics	ax. running current	А	437	565	649	713	720	896		
Ma	ax. starting current	А	526	770	812	848	855	1688		
Unit with tank and Fur	mp available static pressure	kPa	115	130	140	170	120	115		
l lar	nk water volume	I	2000	2000	2000					
pump	ater connections	DN	150	150	200	200	200	200		
Sound pressure ST	D version (4)	dB(A)	77	79	79	79	79	80		
Wi	ith SL accessory (4)	dB(A)	74	76	76	76	76	77		
	ansport weight (5)	Kg	6820	7710	8605	9590	10070	11750		
vveigins Op	perating weight (5)	Kg	7420	8350	9410	10550	10900	12970		

<b>DIMENSION</b>	NS .		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
Н	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



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at which the cooling capacity indicated in part (1) is repeated.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744. Unit without tank and pump.

## 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.





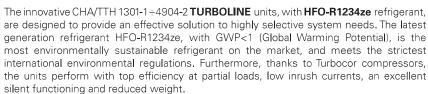












The use of TURBOCOR dynamic partial-load oil-free magnetic levitation compressors managed by the TURBOSOFT self-adaptive electronic control, of flooded shell and tube evaporator and innovative heat exchangers, traditional or Microchannel, results in a high energy efficiency with unequalled SEER/ESEER/IPLV 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

TURROLINE

**MICROCHANNEL** ##

HFO R1234ze ₩

CHA/TTH/MC CHA/TTH

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	FE	Antifreeze heater for evaporator
EC	EC Inverter fans	FX	Antifreeze heater for evaporator
ECH	EC Inverter fans with high available		and pipes
	static pressure	FZ	Antifreeze heater for evaporator,
HR	Desuperheater		single pump and pipes
HRT/S	Total heat recovery in series	FH	Antifreeze heater for evaporator,
HRT/P	Total heat recovery in parallel		double pump and pipes
TX	Coil with pre-coated fins	TS	Touch screen Interface
TXB	Coil with epoxy treatment	ISB	BACnet MSTP protocol, RS485
EW	External water connections		serial interface
PU	Single circulating pump	ISBT	BACnet TCP/IP protocol, Ethernet
PD	Double circulating pump		port
	<u>-</u>	ISL	LonWorks protocol, FTT-10 serial
0	<u>~</u>		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	Cooling capacity (1)	kW	262	335	524	670	777	1000	1340	524	670	1340
version	Absorbed power (1)	kW	76	94	154	191	228	280	377	154	193	381
version	EER (1)		3.45	3.56	3.40	3.51	3.41	3.57	3.55	3.40	3.51	3.55
	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
Cooling STD	EER (1)		3.39	3.52	3.35	3.46	3.35	3.52	3.51	3.37	3.46	3.51
version (EN14511)	ESEER		4.70	4.82	4.87	5.17	5.02	5.17	5.19	4.70	4.93	4.99
version (EIV14511)	EUROVENT Class		А	А	А	А	А	А	А	А	А	А
	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	Cooling capacity (1)	kW	262	335	524	670	777	1000	1340	524	670	1340
0	Absorbed power (1)	kW	72	89	145	181	216	264	356	145	183	360
version	EER		3.64	3.76	3.59	3.70	3.60	3.79	3.76	3.59	3.70	3.76
	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
Cooling MC	EER (1)		3.55	3.71	3.52	3.65	3.53	3.73	3.71	3.55	3.65	3.71
0	ESEER		4.92	5.06	5.12	5.42	5.26	5.43	5.44	4.93	5.17	4.99
version (EN14511)	EUROVENT Class		А	Α	А	А	А	А	А	Α	А	А
	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
	Quantity	n°	1	1	2	2	3	3	4	2	2	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	2	2	2
·	Capacity steps	n°					Step	less				
	Water flow	I/s	12.52	16.01	25.04	32.01	37.12	47.78	64.02	25.04	32.01	64.02
Evaporator	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	Power supply	V/Ph/Hz				•	400/	3/50				
	Max. running current	А	173	173	339	347	505	520	678	339	347	678
characteristics	Max. starting current	А	25	25	191	199	357	372	530	191	199	530
Unit with numan	Pump available static pressure	kPa	140	120	110	125	105	120	145	110	125	145
Unit with pump	Water connections	DN	100	100	150	150	150	150	200	150	150	200
Cound procesure	STD version (3)	dB(A)	70	70	71	71	71	71	72	71	71	72
Sound proceure L	MC version (3)	dB(A)	69	69	70	70	70	70	71	70	70	71
Maighta	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
Н	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



- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  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.

# 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.

















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**

HFO R1234ze ₽

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.

ISL

- 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 ΡU Single circulating pump PD Double circulating pump TS Touch screen Interface

BACnet MSTP protocol, RS485 ISB serial interface

**ISBT** BACnet TCP/IP protocol, Ethernet

LonWorks protocol, FTT-10 serial

IAV Remote set-point, 0-10 V signal ΙΔΑ 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 ΑM Spring shock absorbers

FL Flow switch



## CHA/TTH/FC 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 capacity (1)	kW	279	348	554	698	837	1040	1386	554	698	1386
Cooling	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 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
Cooling (EN14511)	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
riee-cooling cycle	Absorbed power (3)	kW	10.8	14.4	21.6	21.6	25.2	32.4	36.0	21.6	21.6	36.0
	Quantity	n°	1	1	2	2	3	3	4	2	2	4
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	2	2	2
	Capacity steps	n°	n° Stepless									
	Water flow	I/s	14.42	17.98	28.63	36.07	43.26	53.75	71.63	28.63	36.07	71.63
Water circuit	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	Power supply	V/Ph/Hz					400/	3/50				
characteristics	Max. running current	A	173	181	347	347	505	520	678	347	347	678
characteristics	Max. starting current	Α	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
Offic With pump	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
Woights	Transport weight	Kg	3620	3730	5560	5640	7890	8910	10800	5740	5820	11000
Weights	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
Н	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



- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.

  Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  Ambient air temperature at wich the cooling capacity indicated in part (1) is repeated.
- point (1) is reached.

  Sound pressure level measured in free field conditions at 1 m from
- the unit. According to ISO 3744.

# 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.



















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**

TURROLINE

**MICROCHANNEL** ##

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**

FACIO	NT FILLED ACCESSONIES		
IM	Automatic circuit breakers	FE	Antifreeze heate
EC	EC Inverter fans	FX	Antifreeze heate
ECH	EC Inverter fans with high available		and pipes
	static pressure	FZ	Antifreeze heate
HR	Desuperheater		single pump and
HRT/S	Total heat recovery in series	FH	Antifreeze heate
HRT/P	Total heat recovery in parallel		double pump ar
TX	Coil with pre-coated fins	TS	Touch screen In
TXB	Coil with epoxy treatment	ISB	BACnet MSTP p
EVV	External water connections		serial interface
PU	Single circulating pump	ISBT	BACnet TCP/IP
PD	Double circulating pump		port
		ISL	LonWorks proto interface

IAV

	Antifreeze heater for evaporator Antifreeze heater for evaporator
a	and pipes
A	Antifreeze heater for evaporator,
5	single pump and pipes

	single pump and pipes
Н	Antifreeze heater for evaporator,
	double pump and pipes
S	Touch screen Interface
SB	BACnet MSTP protocol BS485

	DACHEL MISTE PROLOCOL, NS465
	serial interface
Т	BACnet TCP/IP protocol, Ethernet
	and the second s

Remote set-point, 0-10 V signal

	port
ISL	LonWorks protocol, FTT-10 serial
	interface

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

LOOS	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								
FI	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	Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
version	Absorbed power (1)	kW	73	81	97	116	150	185	221	274	311
	EER (1) Cooling capacity (1)	kW	3.40 247	3.48 281	3.45 334	3.47 402	3.39 507	3.39 624	3.48 767	3.39 925	3.46 1072
	Absorbed power (1)	kW	74	82	98	117	152	188	224	278	315
Cooling STD	EER (1)		3.32	3.43	3.40	3.42	3.34	3.33	3.43	3.32	3.41
version (EN14511)	ESEER		4.24	4.47	4.57	4.69	4.69	4.50	4.72	4.51	4.81
VEISION (LIVIANIA)	EUROVENT Class		A	A	A A	A	A	A	A	A	A
	SEER (2)	%	4.32 170	4.48 176	4.49 177	4.58 180	4.55 179	4.57 180	4.73 186	4.68 184	4.74 187
0 1 140	Energy Efficiency (2) Cooling capacity (1)	kW	248	282	335	403	509	627	770	929	1075
Cooling MC	Absorbed power (1)	kW	64	73	86	106	133	163	198	243	281
version	EER		3.88	3.86	3.90	3.80	3.83	3.85	3.89	3.82	3.83
	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
Cooling MC	ESEER (1)		3.88 4.79	3.86 4.96	3.90	3.80 5.20	3.83 5.27	3.85 5.07	3.89 5.26	3.82 5.04	3.83 5.33
version (EN14511)	EUROVENT Class		4.79 A	4.90 A	5.13 A	3.20 A	3.27 A	3.07 A	3.26 A	3.04 A	0.33 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
	Quantity	n°	1	1	1	1	1	2	2	2	3
Compressor	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1
	Capacity steps	n°	11.05	10.47	10.04	10.00	Stepless	20.00	20.70	44.00	E1 00
Evaporator	Water flow Pressure drops	I/s kPa	11.85 64	13.47 40	16.01 40	19.25 35	24.32 44	29.96 56	36.79 46	44.39 68	51.36 46
∟ναμυται∪ι	Water connections	DN	100	100	100	125	125	150	150	150	150
Electrical	Power supply	V/Ph/Hz	100	100	1 100	120	400/3/50	100	100	1 100	
	Max. running current	A	168	168	168	262	270	337	509	517	763
characteristics	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 STD version (3)	DN dB(A)	100 69	100 69	100	125 69	125 70	150 70	150 70	150 69	150 70
Sound pressure	MC version (3)	dB(A)	68	68	68	68	69	69	69	68	69
186 1 1 .	Transport weight	Kg	2440	2440	2770	2790	3590	4020	4055	5710	6460
Weights	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
Caslina CTD	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
Cooling STD	Absorbed power (1)	kW	362	433	145	185	221	274	309	362	433
version	EER (1)		3.48	3.36	3.51	3.39	3.48	3.39	3.48	3.48	3.36
	Cooling capacity (1)	kW	1256	1450	507	624	767	925	1072	1256	1450
	Absorbed power (1)	kW	366 3.43	439	147 3.46	188 3.33	224 3.43	278	312 3.43	366	439 3.31
Cooling STD	EER (1) ESEER		4.44	3.31 4.78	4.35	4.33	4.43	3.32 4.61	4.15	4.46	4.70
version (EN14511)	EUROVENT Class		A	4.70 A	A A	A A	A A	A A	A.15	A A	A.70
	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	Cooling capacity (1)	kW	1260	1456	509	627	770	929	1075	1260	1456
version	Absorbed power (1)	kW	328	381	132	163	198	243	279	328	381
10101011	EER Cooling capacity (1)	kW	3.84 1260	3.82 1456	3.86 509	3.85 627	3.89 770	3.82 929	3.85 1075	3.84 1260	3.82 1456
	Absorbed power (1)	kW	328	381	132	163	198	243	279	328	381
Cooling MC	EER (1)	N.V.	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
version (EN14511)	EUROVENT Class		A	A	A	A	A	A	А	A	A
	SEER (2) Energy Efficiency (2)	%	4.67 184	4.64 183	4.55 179	4.67 184	4.55 179	4.56 179	4.72 186	4.67 184	4.64 183
	Quantity	n°	4	4	2	2	2	2	4	4	4
Compressor	Refrigerant circuits	n°	1	1	2	2	2	2	2	2	2
	Capacity steps	n°					Stepless				
_	Water flow	I/s	60.20	69.56	24.32	29.96	36.79	44.39	51.36	60.20	69.56
Evaporator	Pressure drops	kPa	50	59	44	56	46	68	41	50	59
	Water connections Power supply	DN V/Ph/Hz	200	200	125	150	150 400/3/50	150	150	200	200
Electrical	Max. running current	A A	658	1002	329	337	509	517	650	658	1002
characteristics	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
Onic with ballib	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 7430	70 7640	69 3700	69 4250	69 4270	68 5820	69 6690	70 7570	70 7850
Weights	Transport weight Operating weight	Kg Kg	7660	7880	3845	4405	4445	6030	6915	7805	8095
DIMENSIONS	1301-1 1401-1 1701-1 2201-1	2601-1 3	302-1 4002	2-1 4302-1	4603-1 4	804-1 5004-1	2602-2 3	302-2 4002-	-2 4302-2	4604-2 480	4-2 5004-2
L STD/MC mm	4000 4000 5000 5000		7200 720			11100 111100		7200 7200		10050 111	
W STD/MC mm	2200 2200 2200 2200		2200 220		2200	2200 2200		2200 2200		2200 220	
H STD/MC mm			2100 210			2500 2500	2100	2100 2100		2500 250	
1 1 1 1	, , , , , , , , , , , , , , , , , , , ,		, =.0	,		,		, 2.50			, _300

## CLEARANCE AREA

CHA/TTY 1301-1:5004-2 500 1800 1000 1800



- Chilled water from 12 to 7  $^{\circ}\text{C}\text{,}$  ambient air temperature 35  $^{\circ}\text{C}\text{.}$
- Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.

  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.



# 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.



















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 selfadaptive 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 ΤX Coil with pre-coated fins PU Single circulating pump PD Double circulating pump TS Touch screen Interface

ISB BACnet MSTP protocol, RS485 serial interface

BACnet TCP/IP protocol, Ethernet **ISBT** 

LonWorks protocol, FTT-10 serial ISL interface

ΙΔ\/ 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 Coil protection metallic guards RP ΑG Rubber shock absorbers ΑM Spring shock absorbers FΙ Flow switch

