TECHNICAL DATASHEET

HISELECT

CHA/IK/A 21

A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS WITH AXIAL FANS, INVERTER SCROLL COMPRESSOR, PLATE EXCHANGER AND HIGH EFFICIENCY EC INVERTER CIRCULATOR

The picture and the descriptions are only a sample of the selected unit. The real unit configuration can change depending on versions and or accessories selected.

TECHNICAL FEATURES

General description.

Aircooled liquid Chillers with axial fans for outdoor installation.

Frame.

Self-supporting frame, in peraluman and galvanized sheet, with rubber shock absorbers on the frame. Stainless-steel screws.

Compressor.

DC Inverter Scroll with oil sight glass. It is fitted with internal overheat protection and crankcase heater. It is installed on rubber shock absorbers.

Fans.

Axial fans with low rpm and special wing profile, directly coupled to external rotor motors. A safety fan guard is fitted on the air flow discharge.

Condenser.

Made up of finned coils with copper pipes and aluminium fins.

Evaporator.

AISI 316 stainless steel braze welded plates type.

Electrical board.

It includes: main switch with door lock system; fuses; thermal protection relays on compressors; thermocontacts for fans; remote ON-OFF; summer/winter switching; domestic hot water management; external 3-way valve management.

CHA/IK/A 21

Microprocessor.

For the automatic control of the following functions: water temperature regulation, antifreeze protection, compressor time control, alarms reset, alarms management and operating led, alarm cumulative contact for remote signal, local or remote cooling/heating cycle switching on heat pump units, visual system with digital display: running cycle (cooling or heating), compressor demand/on, outlet water temperature, set point and differential setting, alarm code.

Proportional electronic device.

It attenuates the sound level of the unit using a continuous regulation of fan rotation speed. This device also allows the cooling operation of the unit to outdoor air temperatures of -20 °C.

Control logic of the Inverter Scroll compressor.

It adjusts using Inverter the power supplied by the compressor as a function of the system thermal load, the condensing pressure and the outdoor air temperature. The control system, thanks to Inverter technology, monitors and adapts rapidly the performances of the Inverter compressor, the circulating pump and the fans in order to guarantee the best operating conditions for the unit. Thanks to the Inverter logic, the units can operate also with low water volume, making unnecessary the use of the inertial tank.

Refrigerant circuit.

Made of copper pipe, it includes the following components on all models: electronic thermostatic expansion valve; filter drier; liquid and humidity indicator; high pressure switch (with fixed setting); high and low pressure transducers.

Water circuit.

It includes: evaporator; temperature sensor; antifreeze sensor; water differential pressure switch; manual air vent; high efficiency EC Inverter circulator; expansion vessel; water drain; safety valve.

ACCESSORIES

TE - Electronic expansion valve
CC - Condensing control down to -20 °C
AG - Rubber shock absorbers

TECHNICAL DATASHEET

CHA/IK/A 21

TECHNICAL DATA

Unit		CHA/IK/A 21
Refrigerant		R410A
Refrigerant circuits	n°	1
Refrigerant charge	kg	2

Cooling conditions

Ambient air - Temperature	°C	30.0
Ambient air - Relative humidity	%	55
Fluid		Water
Inlet fluid temperature	°C	24.0
Outlet fluid temperature	°C	18.0
Flow rate	l/s	0.3
Pressure drops	kPa	23.7
Elevation	m	0

Cooling performances

Cooling capacity	kW	8.3
Compressors absorbed power	kW	1.6
Total absorbed power (1)	kW	1.7
EER		4.80
SEPR		7.18

TECHNICAL DATASHEET

CHA/IK/A 21

Compressors

Type		Scroll
Number	n°	1
Capacity steps	%	stepless
Minimum capacity step	%	30

Fan section

Exchanger coil		Finned coil Cu-Al
Type		Axial
Number	n°	1
Airflow	m^3/s	0.9
Fans absorbed power	kW	0.1
Fans absorbed current	A	0.3
Fans available static pressure	Pa	0

Hydraulic section (User side)

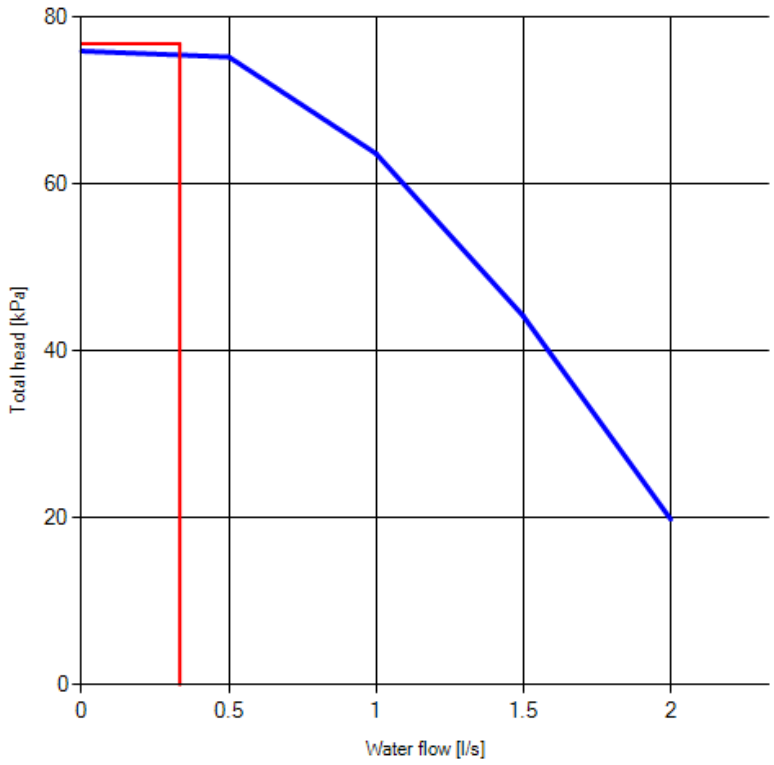
Heat exchanger		Plate
Fouling factor	m^2 °C/W	0.0000000
Minimum water circuit content	l	19
Water connections		1"

TECHNICAL DATASHEET

CHA/IK/A 21

Hydraulic kit

Pumps	n°	1
Pump available static pressure	kPa	53
Pump nominal power	kW	0.1
Pump nominal current	A	0.4
Maximum working pressure	kPa	600
Expansion vessel content	l	1



Dimensions

Length	mm	870
Width	mm	320
Height	mm	1100

Weight

Transport weight	kg	101
Operating weight	kg	126

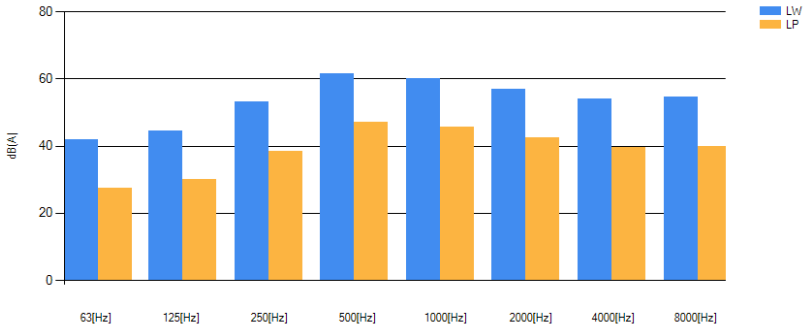
TECHNICAL DATASHEET

CHA/IK/A 21

Sound data

Sound power (Lw) (2)	dB(A)	65.7
Sound pressure (Lp) (3)	dB(A)	51.2
Distance from the unit	m	1

Frequency	Lw	Lp
Hz	dB(A)	dB(A)
63	42.0	27.5
125	44.5	30.0
250	53.0	38.5
500	61.5	47.0
1000	60.0	45.5
2000	57.0	42.5
4000	54.0	39.5
8000	54.5	40.0
TOT	65.7	51.2



Electrical data

Absorbed current	A	0.3
Max running current	A	16.0
Unit max starting current	A	10.0
Power supply	V-Hz-ph	230/50/1
Auxiliary supply	V-Hz-ph	230-24/50/1

Notes

(1) Compressors and fans absorbed power

(2) Sound power according to Standard ISO 3744 and Eurovent 8/1.

(3) Sound pressure measured in free field conditions. Average value as defined by ISO 3744.

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

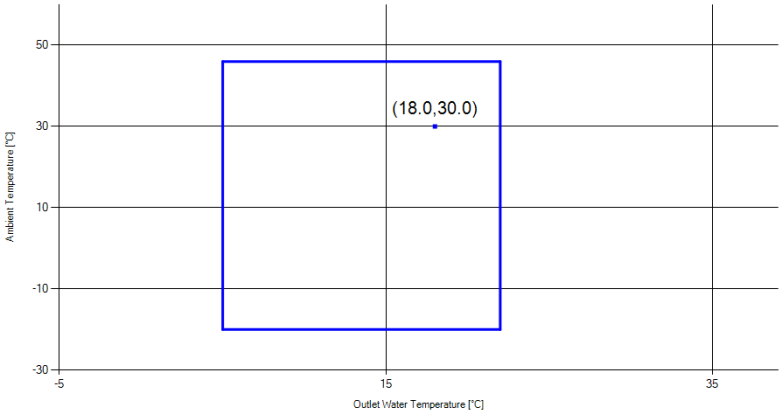
The reported performances are obtained from theoretical calculations and therefore affected by tolerances.

The manufacturer reserves the right to modify the data whenever it is considered necessary, without prior notice.

TECHNICAL DATASHEET

CHA/IK/A 21

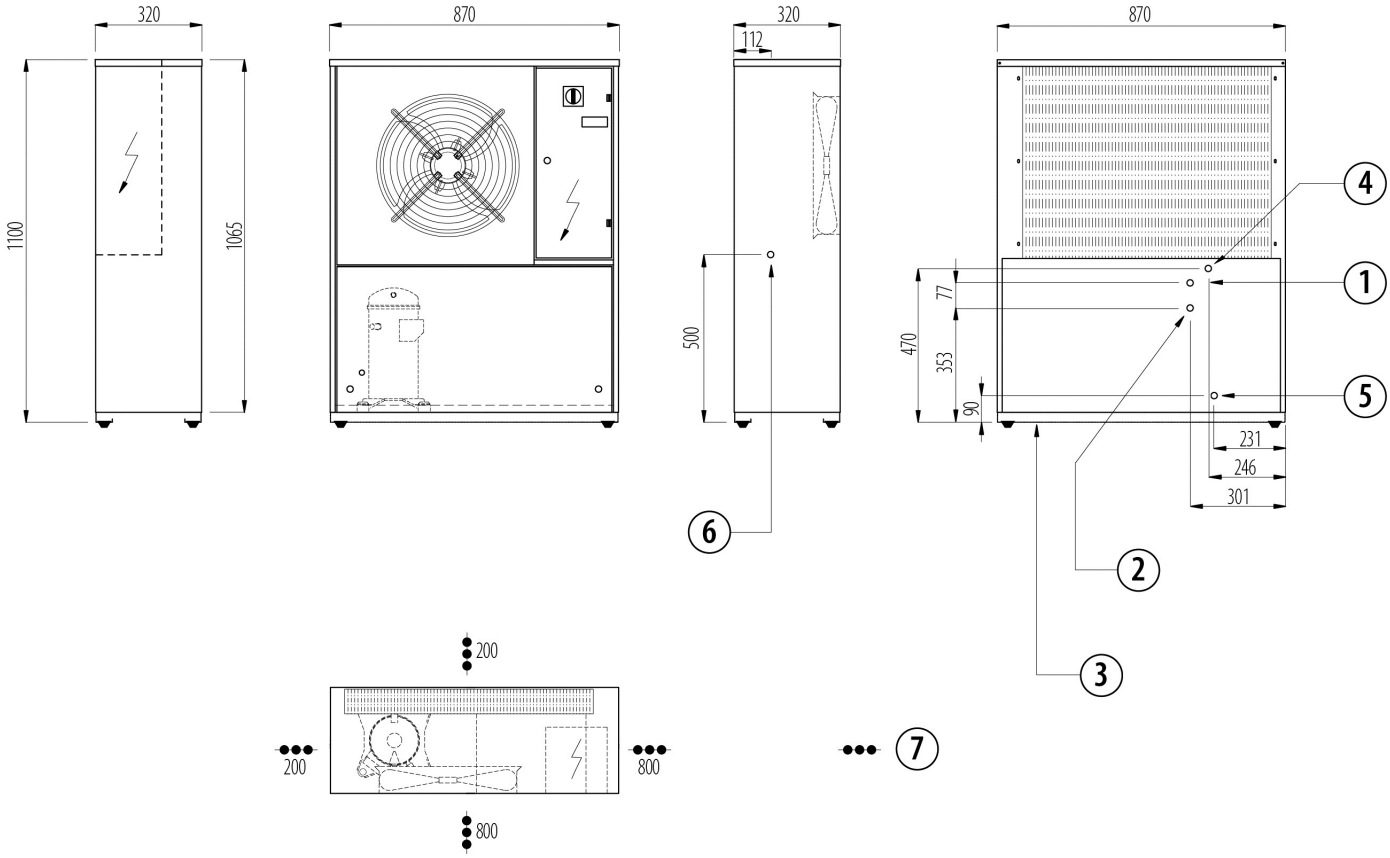
OPERATING RANGE: COOLING



TECHNICAL DATASHEET

CHA/IK/A 21

DIMENSIONAL DRAWING



1) WATER INLET 1"M
2) WATER OUTLET 1"M
3) VOLTAGE SUPPLY INLET
4) BREATHER
5) DRAINIG VALVE 1/2"M
6) CONDENSATE DRAIN (WP)
7) CLEARANCE AREA

TECHNICAL DATASHEET

HISELECT

CHA/IK/A 21

PRODUCT FICHE according to European Regulation n° 2016/2281: Information requirements for high temperature process chillers			
Model(s):	CHA/IK/A 21		
Type of condensing:			air-cooled
Refrigerant fluid(s):			R410A
Item	Symbol	Value	Unit
Operating temperature	t	7	°C
Seasonal energy performance ratio	SEPR	7.18	[-]
Annual electricity consumption	Q	6263	kWh/a
Parameters at full load and reference ambient temperature at rating point A (**)			
Rated refrigeration capacity	P_A	6.09	kW
Rated power input	D_A	1.71	kW
Rated energy efficiency ratio	$EER_{DC,A}$	3.56	[-]
Parameters at rating point B			
Declared refrigeration capacity	P_B	5.66	kW
Declared power input	D_B	1	kW
Declared energy efficiency ratio	$EER_{DC,B}$	5.64	[-]
Parameters at rating point C			
Declared refrigeration capacity	P_C	5.3	kW
Declared power input	D_C	0.86	kW
Declared energy efficiency ratio	$EER_{DC,C}$	6.17	[-]
Parameters at rating point D			
Declared refrigeration capacity	P_D	4.87	kW
Declared power input	D_D	0.52	kW
Declared energy efficiency ratio	$EER_{DC,D}$	9.29	[-]
Other items			
Capacity control		variable	
Degradation co-efficient chillers (*)	Cdc	0.90	[-]
GWP of the refrigerant		1924	kg CO2 eq (100 years)
(*) If Cdc is not determined by measurement then the default degradation coefficient of chillers shall be 0.9.			
(**) For staged capacity units, two values divides by a slash ('/') will be declared in each box in the section referring to 'refrigeration capacity' and 'EER'.			