

Model : **CAL016**



Mode	AIR
EcoDesign compliant	YES
Mode	Water chiller
Range	CUBE
Size	
Pump	P3 (3 bar)
Tank	Open tank



The images of the product in this document is for illustrative purpose only and therefore do not have any contractual value.

Refrigerant gas R513A - ASHRAE Class A1



Package air-cooled chillers of CUBE series, it is suitable for indoor installation, or outdoor with specific kit, and can be used to cool pure fluid solutions, mixture water plus Ethylene or Propylene Glycol, emulsion for industrial process in industrial application.

These chillers are compliant with Directive 2009/125/EC on the subject about eco-friendly design of comfort and process chillers according to Regulation (EU) 2016/2281. Scroll technology and piston (for smaller models) allows reaching great efficiency improvements at part load, if compared to the other traditional systems for cooling capacity control. Ecological Refrigerant gas R134a with glide-free at state exchangers or R513A.

These units have been designed considering the maintenance-friendly and keeping a high cooling performance.

**COMPRESSOR**

Piston compressor (up to CA006) or Scroll compressor with R134a refrigerant (standard) or R513A (as optional), and piston (for smaller), with thermal protection integrated and mounted on rubber anti-vibration dampers. It's provided with direct-start motor cooled by suction gas and fitted with both overload protection. They are charged with polyester oil and the terminal board is IP54. On-off function by microprocessor.

**COIL CONDENSER**

Batteria condensante rame-alluminio, alta efficienza, con filtro aria in alluminio con cornice metallica a protezione dall'intasamento. Filtro lavabile. Elevato passo alettatura della batteria condensante per minor manutenzione. Tubi sfalsati e mandrinati meccanicamente nel pacco alettato in alluminio.

**AXIAL FAN**

Axial fan directly coupled type, with wing-profile aluminum blades. It's designed not to create air turbulence. This ensures the max efficiency with the lowest sound level. Each fan is provided with a galvanized steel protection grid (dark), which is painted after construction. The IP54 fans motors are completely closed and provided with in-built overload protection thermostat, incorporated to the motor windings.

**COPPER-COPPER COAXIAL EVAPORATOR**

Copper-copper coaxial evaporator. Internal and external tubes made copper. High exchanger surface, and large section of flow rate crossing that allows the use it for cooling fluids containing suspended impurities. Its specific shape allows to minimize the risk of ice formation. Immersed in the tank (if present) or completely insulated with an insulating mat.

**P3 PUMP**

Stainless centrifugal pump AISI304 (peripheral brass pump for CUBE 1) with 3 bar available pressure. Silicon carbide/vidia mechanical seal with FPM gasket (Viton) for water plus glycol or emulsion. Easy pump access for friendly maintenance.

**STRUCTURE**

Structure and casing: The structure is made of a base of structural panels in carbon steel and painted, with polyester powder. All carbon steel surfaces are powder-coated with color RAL7035 orange peel finished. Right panel internal access for effective service maintenance. Air flow suction from one side (left side) and expelled by the top. Lifting eyes with crane.

The units are completely assembled and tested in the factory, supplied with refrigerant charge and non-freezing oil. Therefore, after installation it is required to be connected to the electricity and water system.

**FRIGORIFIC CIRCUIT**

Circuits made with following components:

- piston or Scroll compressor;
- high and low pressure switches;
- shut-off valve for maintenance;
- dehydrating filter;
- mechanical thermostatic valve with MOP (capillary for CUBE 1 models).

**"V" HYDRAULIC CIRCUIT TYPE**

Hydraulic circuit "V" type, complete of stainless steel "open" tank, with coaxial immersed evaporator, and standard stainless steel pressure pump. Stainless steel tank complete of drain valve, visual level and filling plug. No ferrous material. Rubber tubes. Flow switch safety device. 0-10 bar manometer with glycer. IN/OUT connection female thread.

**ELECTRICAL CIRCUIT**

Built in compliance with CE norm 60204-1/IEC 204-1 standards, inside of which are placed the control system and the components for motors starting, wired and tested in the factory. It is made by a cabinet suitable for outdoor installation, containing power and control devices, RS15 microprocessor electronic board complete with keypad and display, for visualizing the several functions available. IP54 rating. Yellow/red main switch of lock-door type, isolation transformer for auxiliary circuits, automatic overload for compressors, fans, and pump. Free general alarm and remote ON/OFF contact with signal alarm on display. Terminal board, relays for phase sequencing and missing phase.

**CONTROLLER**

RS15 parametric electronic microprocessor, for unit management, with refrigerated water temperature regulation function. Control of operating parameters, easy diagnostic faults, historical storage alarms (up to 100 alarms). RS485 connection with optional Modbus communication.

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**OPTIONAL INCLUDED**

- [EC] - Electronic fans
- [FT] - Metallic air filter
- [LA] - Low ambient working temp -10°C
- [AB] - Automatic by-pass
- [CP] - Plastic cover for digital controller
- [LW] - Low water temperature -10°C

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Process liquid chiller for industrial application

EcoDesign compliant YES  
Mode AIR  
Mode Water chiller



Model **CAL016**  
Range CUBE  
Code reference CAL016eVP3B3AFGHL-FALSOSM  
Size



<b>COOLING CAPACITY</b>		<b>kW</b>	<b>12,96</b>	(50Hz)
(Energy Efficiency Ratio) EER <sup>(1)</sup>			3,24	
(Seasonal Energy Performance Ratio) SEPR <sup>(1)</sup>	SEPR MT		2,73	
Electrical power absorbed	kW		4,01	
Referred at following conditions				
Leaving water temperature	°C		7,0	
Ambient temperature	°C		35,0	
Fluid			Water	
Altitude	Metres s.l.		0,0	
Accuracy fluid temperature	°C		+/- 2	
Ambient working limits	°C		-10 ÷ 42,0	
Set-point water working limits	°C		-10,0 ÷ 25,0	

**REFRIGERANT GAS**

Type / Safety class R513A  
GWP / Refrigerant group / Safety class 631 / II / A1

**COMPRESSORS**

Type scroll  
Quantity no. 1  
Nr. Circuits 1  
Part load % 0-100

**CONDENSER**

Fan type Axial  
Quantity / Diameter no. / mm #N/D  
Air flow m3/h #N/D

**EVAPORATOR**

Evaporator type COPPER-COPPER COAXIAL EVAPORATOR  
Nominal flow rate l/min 29,31  
Pressure drop bar 0,28

**HYDRAULIC CIRCUIT**

**PUMP** P3  
Available pressure bar 2,6

**TANK**

Storage tank capacity l 80

**SOUND PRESSURE LEVEL** dB(A) 52,7

<b>[Hz] - Octave bands</b>								*d Distance 10 m	
63	125	250	500	1000	2000	4000	8000	Power	Pressure
<b>d(B)A - Sound power level</b>								dB(A)	dB(A)* <sup>d</sup>
45,6	62,7	74,0	75,7	75,2	72,3	65,0	55,1	80,7	52,7

**DIMENSIONS**

W Width mm 750  
D Depth mm 980  
H Height mm 1.300  
Size cube3

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 Size



Weight	kg	240
Hydraulic connections IN/OUT	(inch)	
<b>POWER SUPPLY</b>		400V(±10%) 3ph 50Hz
Auxiliary circuit	V	24Vac
IP protection class		IP54
Max power absorbed	kW	7,51
Max current absorbed	A	13,32
Starting current	A	51,00

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**ECODESIGN DATA**

Model	<b>CAL016</b>	Range	CUBE
		Mode	AIR
		Refrigerant gas	R513A

Item	Symbol	Value	Unit
Operating temperature	<b>t</b>	-8	°C
Seasonal energy performance ratio	<b>SEPR HT</b>	2,73	[-]
Annual electricity consumption	<b>Q</b>	17.286	kWh/a

**Parameters at full load and reference ambient temperature at rating point A (\*\*)**

Rated refrigeration capacity	$P_A$	5,19	kW
Rated power input	$D_A$	3,15	kW
Rated energy efficiency ratio	$EER_{DC,A}$	1,65	[-]

**Parameters at rating point B**

Rated refrigeration capacity	$P_B$	5,81	kW
Rated power input	$D_B$	2,61	kW
Rated energy efficiency ratio	$EER_{DC,B}$	2,22	[-]

**Parameters at rating point C**

Rated refrigeration capacity	$P_C$	6,48	kW
Rated power input	$D_C$	2,25	kW
Rated energy efficiency ratio	$EER_{DC,C}$	2,88	[-]

**Parameters at rating point D**

Rated refrigeration capacity	$P_D$	6,48	kW
Rated power input	$D_D$	2,25	kW
Rated energy efficiency ratio	$EER_{DC,D}$	2,88	[-]

**Other items**

Capacity control	Fixed		
Degradation co-efficient chillers (*)	$C_{dc,B} / C_{dc,C} / C_{dc,D}$	0,96 / 0,96 / 0,95	[-]
GWP of refrigerant	631		
Standard rating water limit conditions	High Temperature Process Chiller		+2 ≤ Tw ≤ +12

Contact details **RPS COOLING S.r.l. - Via Veneto, 12/B - 46020 Suzzara (MN) - Italy**

(\*) If Cdc is not determined by measurement then the default degradation coefficient chillers shall be 0,9.

(\*\*) For staged capacity units, two values divided by a slash ("/") will be declared in each box in the section referring to refrigeration capacity and EER.

Technical information in according of Commission Regulation (EU) 2009/125 on 21 October 2009, that implementing Directive 2009/125/CE on EcoDesign requirements.

**ECODESIGN DATA**

Model	<b>CAL016</b>	Range	CUBE
		Mode	AIR
		Refrigerant gas	R513A

Item	Symbol	Value	Unit
Operating temperature	<b>t</b>	-8	°C
Seasonal energy performance ratio	<b>SEPR HT</b>	2,73	[-]
Annual electricity consumption	<b>Q</b>	17.286	kWh/a

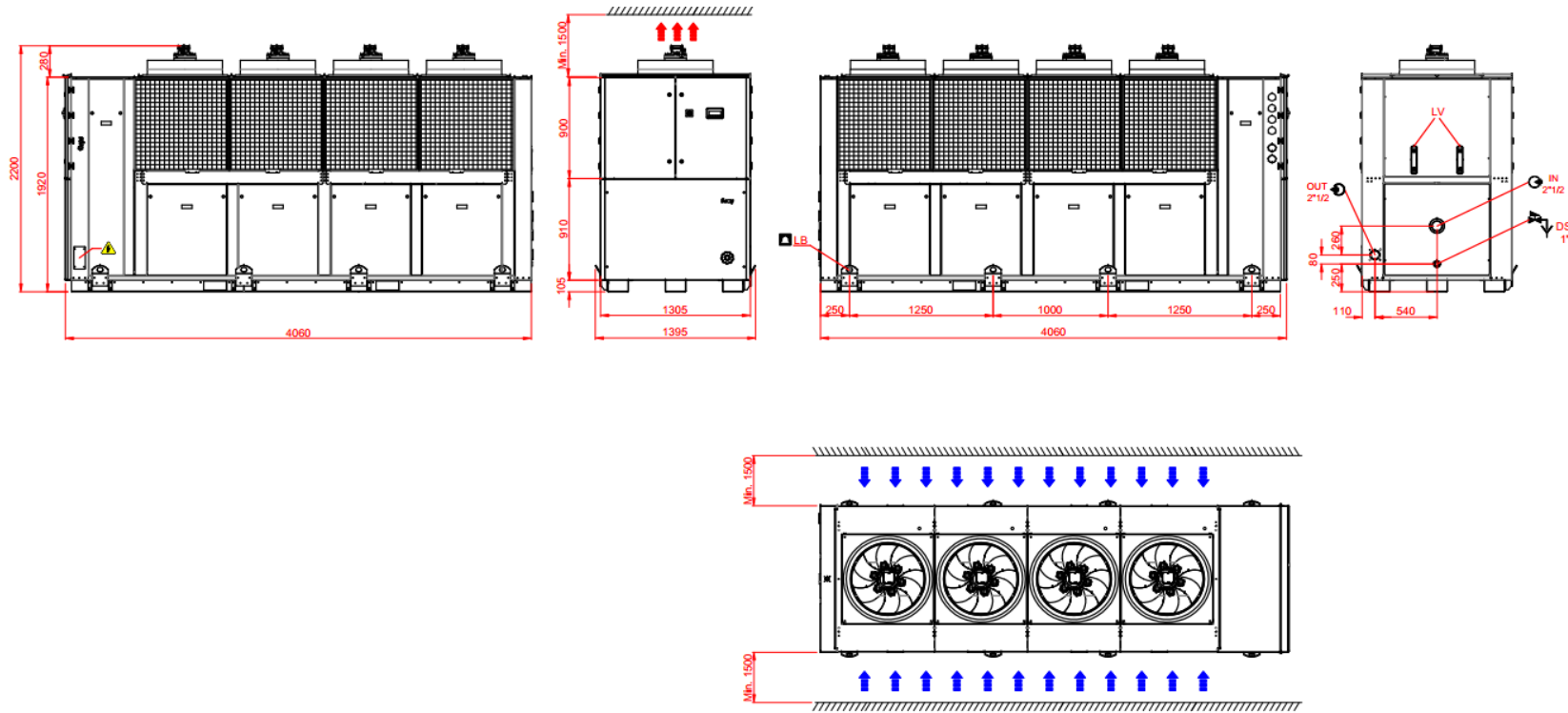
**Parameters at full load and reference ambient temperature at rating point A (\*\*)**

Rated refrigeration capacity	$P_A$	5,19	kW
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The performance herewith refer to basic configuration unit without any accessory or option having electrical as power supply.

Software v.2023.02



DIMENSIONS				
W Width	mm		Range	CUBE
D Depth	mm		Size	
H Height	mm		Model	CAL016
Weight	kg	240	Code reference	AL016eVP3B3AFGHL-FALSOSM

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DATE: 19/12/2023  
 QUOTATION NO.:  
 PROJECT REFERENCE: rental fleet  
 ATTENTION OF:  
 CUSTOMER: AQUA COOLING

# P3

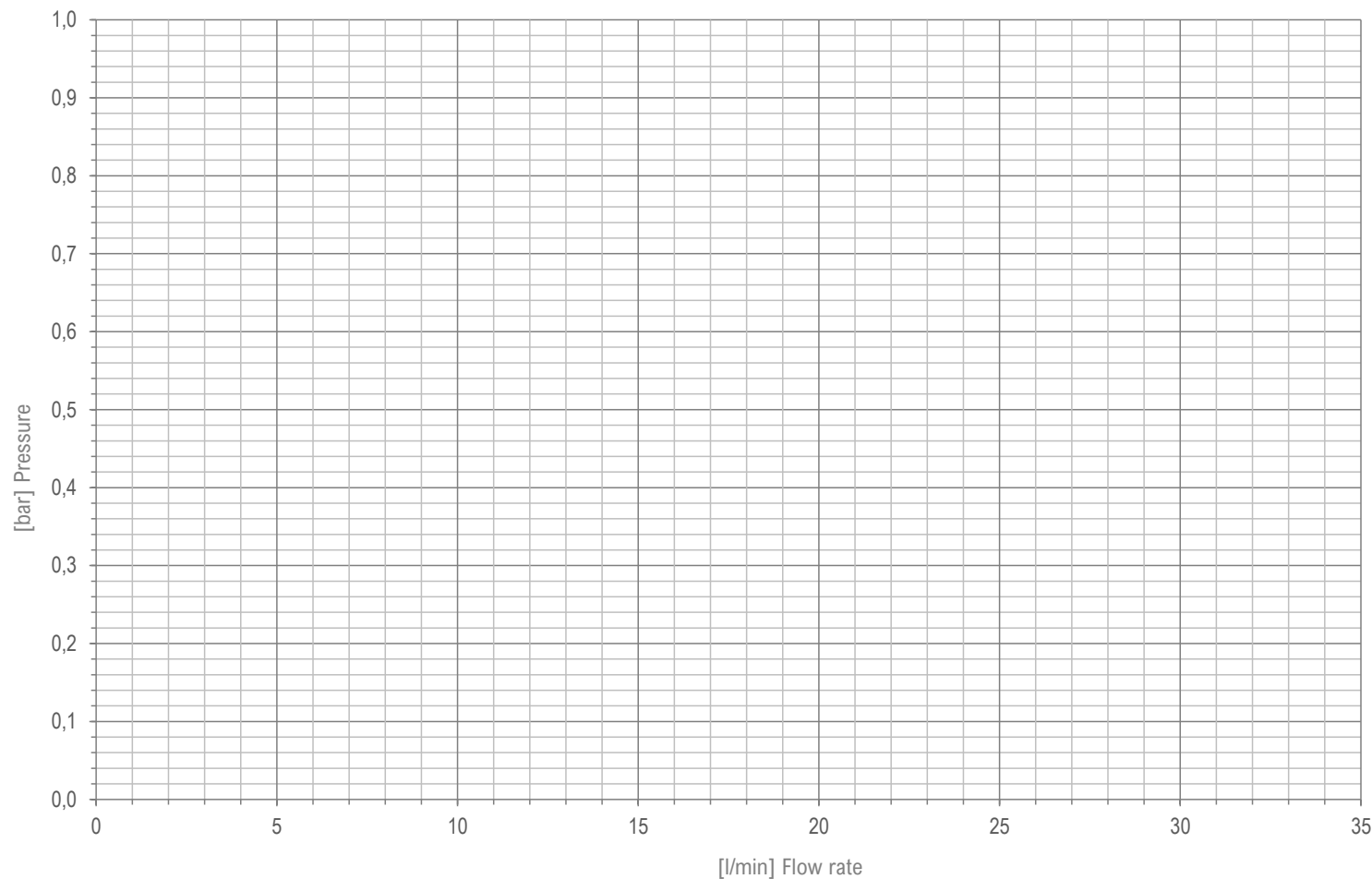
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ATTENTION OF:

CUSTOMER: AQUA COOLING

Range	CUBE	
Model	CAL016	
Size		
Pump	P3 (3 bar)	
Nominal flow rate	29,31	l/min
Available pressure*	#N/D	bar



\*Net pressure available at the hydraulic connections.



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