

# PHOENIX *freecooling*

Air cooled water chillers with Freecooling system featuring double screw semihermetic compressors. Cooling capacity 187 - 494 kW.



## BENEFITS

- Maximum exploitation of free cooling and maximum energy efficiency of the system with respect to conventional solutions, thanks to the independence of the coils in terms of air handling;
- Accurate control of water outlet temperature (including at low temperatures - down to  $-15^{\circ}\text{C}$ ), thanks to the use of a modulating three-way water valve;
- Generous sizing of coils for free-cooling;
- Version SSF featuring extremely quiet operation;
- User friendly control section with simple readout and graphic display;
- Simple to install and maintain, easily accessible components;
- Environmental friendly, with zero ODP refrigerant R407C.

## MAIN OPTIONS

- Compressor silencing canopy on C version (standard on other version);
- Electronic thermostatic valve;
- Correction capacitor;
- Axial fans with continuous regulation;
- Fused or MCB electrical protection;
- Air filters on coils;
- $-15^{\circ}\text{C}$  ambient temperature version;
- Antivibration dampers;
- Kit for remote control;
- Supervision system kits.

## STANDARD FEATURES

- 400/3/50 power supply;
- Twin screw compressors with crankcase heater and oil level control;
- Part winding start for reduced current spikes;
- Compressor suction and discharge valves;
- Shell and tube evaporator;
- Independent refrigeration circuits;
- Condensers and fans installed in separate section with aeraulic isolation for the maximum exploitation of Free-Cooling and the maximum overall energy efficiency of the system;
- Axial fans with crescent shaped blades;
- 3-way modulating valve for Free-Cooling (controlled by microprocessor), water connections within chiller;
- Total Free-Cooling from approximately  $10^{\circ}\text{C}$  below the water outlet temperature;
- Water differential pressure switch on evaporator;
- High and low pressure transducers;
- Electronic expansion valve with external equalisation, refrigerant filter, sight glass, solenoid valve on liquid line;
- Safety valve (except 0801 - 1101);
- Microprocessor control with advanced software ensuring optimum control in all conditions;
- Main switch;
- Protection grade IP54;
- SSF fitted silencers, flexible tubing and compressor vibration damping.
- Refrigerant R407C;

## VERSIONS

- Refrigeratore con freecooling;
- Configurazioni acustiche:
  - C, standard;
  - SC, silenziosa;
  - SF, silenziosa (per elevata temperatura ambiente);
  - SSF, super-silenziosa.

## TECHNICAL DATA

		Model AS FC	0801	0901	1101	1251	1401	1602	1702	1802	2002	2202
Free Cooling OFF	Cooling capacity	kW	187	218	264	306	362	373	395	412	467	494
	Total absorbed power	kW	74.0	87.0	101	115	131	148	163	177	190	209
TOTAL Free Cooling	Cooling capacity	kW	187	218	264	306	362	373	395	412	467	494
	Absorbed power	kW	6.0	8.0	8.0	10.0	12.0	12.0	12.0	12.0	14.0	14.0
	Total freecooling	°C	-0.2	-1.6	-2.0	-0.6	0.1	-0.2	-0.8	-1.3	-0.6	-1.3
Power supply		V/Ph/Hz	400±10%/3/50									
Noise Freecooling OFF		dB(A)	62.0	63.2	62.6	63.6	65.0	65.5	65.6	65.7	66.9	66.9
Depth		mm	3675	4590	4590	5490	6425	6425	6425	6425	7360	7360
Width		mm	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190
Height		mm	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
Installed weight		Kg	2623	3306	3814	4648	5003	5273	5385	6089	6133	6154

All data refers to standard units at the following nominal conditions:

- external air temperature 35 °C, water inlet temperature 15 °C,
- water outlet temperature 10°C, Glycol = 30%

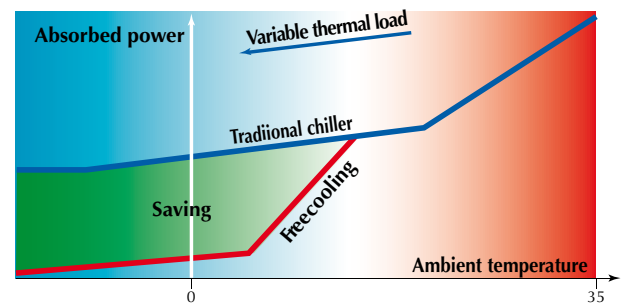
In total Freecooling mode the absorbed power is only the fans absorbed power.

Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tolerance  $\pm 2$  dB. The sound levels refer to operation of the unit under full load in nominal conditions.

### AVAILABILITY OF FREE-COOLING

	Annual FC % usability on daily time from 6 AM till 8 PM	
	% T <sub>in</sub> =12°C	% T <sub>in</sub> =15°C
Berlino	54%	68%
Bruxelles	51%	69%
Copenhagen	61%	74%
Milano	47%	54%
Oslo	75%	84%
Stoccolma	63%	73%
Vienna	50%	60%

### ENERGY SAVING



6-key semi-graphic backlit PGD terminal.



Sections featuring complete aeraulic segregation to maximise the use of free-cooling.



Servo-controlled three-way hydraulic valve.

