

ARIES FREE-COOLING



Air-cooled water chillers with integrated Free-cooling featuring hermetic scroll compressors.
Cooling capacity 51 - 177 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 °C), thanks to the use of a modulating three-way water valve;
- Generous sizing of coils for free-cooling;
- Operates at high ambient temperatures thanks to the compressor unloading;
- Version SSN featuring extremely quiet operation;
- Individually tested in a test chamber like all MTA components and products;
- User friendly control section with simple readout and graphic display;
- Simple to install and maintain, easily accessible components;
- Sections featuring complete aeraulic segregation to maximise the use of free-cooling.

Main Options

- Compressor suction and discharge valves;
- Electronic fan speed control;
- Electronic thermostatic expansion valve (except 201-301);
- Hydronic group without pump;
- Hydronic group with storage tank and single or twin pumps (351-751 only);
- High, medium and low head pressure pumps;
- Air filter on condenser coils (standard on 201-301);
- Antivibration dampers;
- Simple remote control;
- Replicated remote user terminal;
- Supervisor systems;
- Victaulic connections.

Standard Features

- Parallel scroll compressor coupling within single refrigerant circuit;
- Finned coil evaporator inside the storage tank (201-301) and shell and tube evaporator (351-751);
- Condensers and fans installed in a separate compartment with aeraulic isolation, for maximum Free-Cooling effect and maximum overall energy efficiency;
- Axial fans with crescent shaped blades featuring step regulation;
- 3-way modulating valve for Free-Cooling (controlled by microprocessor), water connections within chiller;
- Total Free-Cooling from approximately 10 °C below the water outlet temperature;
- Water differential pressure switch on evaporator (301-751);
- High and low pressure transducers;
- Single or twin high pressure switches for max condensing pressure control;
- Electronic expansion valve with external equalisation, refrigerant filter, sight glass, solenoid valve on liquid line (except 201-301);
- Safety valve (except 201-301);
- Microprocessor control with advanced software ensuring optimum control in all conditions;
- All the units are delivered with a phase monitor which provides protection against phase loss and phase reversal;
- The scroll compressors are equipped with crankcase heaters as standard;
- Main switch;
- IP54 electric protection rating;
- Environmentally friendly refrigerant R407C with zero ozone depletion potential.

Versions

- **N** - Standard energy efficiency and basic acoustic configuration;
- **SN** - Standard energy efficiency and low noise acoustic configuration;
- **SSN** - Standard energy efficiency and very low noise acoustic configuration;
- **Low ambient air temperature** - down to -15 °C.



Model AS FC		201	251	301	351	401	501	551	601	701	751	
Free-Cooling OFF	Cooling capacity [1]	kW	50,9	54,6	69,3	80,1	97,6	115	133	146	161	177
	Absorbed power [1]	kW	16,2	19,3	20,0	30,1	34,3	40,1	44,4	50,7	52,7	60,1
	Max external air temperature [1]	°C	45	47	47	42	44	43	43	41	45	43
TOTAL Free-Cooling	Cooling capacity [1]	kW	50,9	54,6	69,3	80,1	97,6	115	133	146	161	177
	Absorbed power [1](*)	kW	1,6	2,3	2,3	4,0	4,0	4,0	4,0	4,0	6,0	6,0
	Total freecooling [1]	°C	1,0	1,4	-0,3	1,6	0,5	-0,7	0,4	-0,7	1,4	0,4
Free-Cooling OFF	Cooling capacity [2]	kW	46,5	49,5	63,1	72,8	88,6	105	121	133	147	162
	Absorbed power [2]	kW	15,7	18,8	19,5	29,0	33,1	38,5	42,7	48,6	50,8	57,8
	Max external air temperature [2]	°C	46	48	48	44	45	44	44	43	46	45
TOTAL Free-Cooling	Cooling capacity [2]	kW	46,5	49,5	63,1	72,8	88,6	105	121	133	147	162
	Absorbed power [2](*)	kW	1,6	2,3	2,3	4,0	4,0	4,0	4,0	4,0	6,0	6,0
	Total freecooling [2]	°C	-1,1	-0,7	-2,3	-0,6	-1,5	-2,5	-1,5	-2,5	-0,6	-1,6
ESEER	-	4,19	3,82	4,07	3,56	3,73	3,79	3,97	3,94	3,91	3,75	
Power supply	V/Ph/Hz	400 ± 10% / 3 - PE / 50										
Circuits / Compressors	N°	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	
Sound pressure Free-cooling OFF - N [3]	dB(A)	60,2	60,2	61,5	62,6	61,6	61,6	61,6	61,6	61,6	62,3	62,3
Sound pressure Free-cooling OFF - SN [3]	dB(A)	-	-	-	56,2	55,0	55,0	55,0	55,0	55,0	55,2	55,2
Sound pressure Free-cooling OFF - SSN [3]	dB(A)	-	-	-	48,9	48,9	47,7	48,7	48,7	49,1	49,1	
Depth	mm	2550	2550	2550	3495	3495	3495	4595	4595	4595	4595	
Width	mm	1400	1400	1400	2188	2188	2188	2188	2188	2188	2188	
Height	mm	2136	2136	2136	1989	1989	1989	1989	1989	1989	1989	
Installed weight	Kg	1494	1494	1509	1858	1980	2276	2536	2541	2752	2803	

Data declared according to UNI EN 14511:2011.

(1) Evaporator water inlet/outlet temperature 15-10 °C, external air temperature 35 °C, glycol water at 30%.

(2) Evaporator water inlet/outlet temperature 12-7 °C, external air temperature 35 °C, glycol water at 30%.

(*) In total Freecooling mode the absorbed power is only the fans absorbed power.

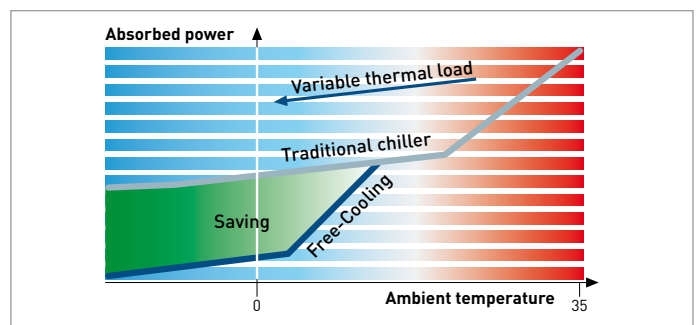
[3] **Sound pressure at 10 m:** average value obtained in free field on a reflective surface at a distance of 10 m from the side of the condenser coils and at a height of 1.6 m from the unit support base. Values with tolerance +/- 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions. The sound pressure level is referred at functioning with Free-cooling Off.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

Availability of Free-Cooling

	Annual FC % usability on daily time from 6 AM till 8 PM	
	% of freecooling with water inlet = 12 °C	% of freecooling with water inlet = 15 °C
Berlin	54%	68%
Brussels	51%	69%
Copenhagen	61%	74%
Milan	47%	54%
Oslo	75%	84%
Stockholm	63%	73%
Vienna	50%	60%

Energy saving



Semi-graphic backlit PGD terminal.



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



Servo-controlled three-way hydraulic valve.

