



Агрегаты для осушения бассейнов AIR MASTER VCP Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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Pool air handling units



Cooling capacity: 92,1 to 179,9 kW
Heating capacity: 69,5 to 148,7 kW

Heating and dehumidification of covered pools

Optimized energy consumption

Electronic control

DESCRIPTION

The range of **Air Master BCP Series** are dehumidification units by cooling circuit, with total condensing heat recovery, specially designed for conventional covered pools and other dehumidification applications. These units have been designed for indoor or outdoor installations. Consult specific applications (marine atmospheres, high concentrations of salts or chemical agents, high temperatures, etc.).

RANGE

Air Master BCP: 3 cooling circuits, 3 compressors, 7 models:
• 320 / 360 / 400 / 440 / 480 / 555 / 610

OPERATING LIMITS

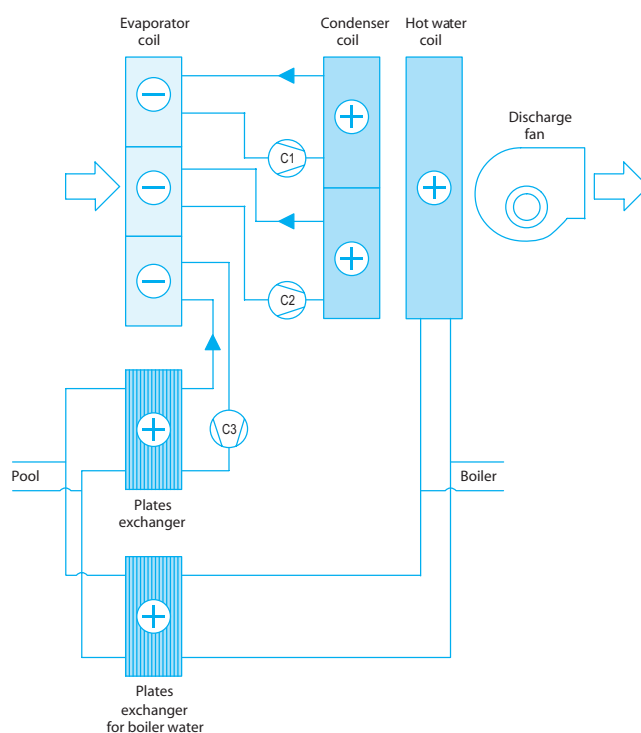
Air inlet dry temperature

Maximum: 35°C (65% RH - 29°C WB)
Minimum: 18°C (90% RH - 17°C WB)

Condenser water inlet temperature

Maximum: 50°C
Minimum: 20°C

PRINCIPLE SCHEMES



UNITS COMPOSITION

Standard equipment

- Sandwich-panel casing made up in galvanized steel plate of 1 mm covered with polyester paint outside and inside, with glass fiber insulation of 25 mm.
- Support frame and hinged doors to access to the sections of the unit.
- Panels and doors with rubber joints to ensure watertightness.
- Sheet butt-strap between modules for outdoor installation.

Internal air circuit

- G3 filter renewable mounted on frame.
- Direct expansion chiller coil with copper tubes and aluminium fins, with polyurethane coating.
- Condenser coil with copper tubes and aluminium fins, with polyurethane protection (air condenser) and of welded plates (water condenser).
- Stainless steel condensates drain pan with drainage outlet. This pan is inclined towards the drainage outlet so that the water does not stagnate in the pan, avoiding sanitary problems.
- Centrifugal fan of galvanized plate driven by belts and pulleys. Kit mounted over anti-vibratory supports and attached to the panel by means of flexible pipe.
- Air by-pass damper, with manual fit.

Cooling circuit

- Unit of three cooling circuits:
 - All circuits participate in the air dehumidification when evaporating on coil.
 - One of the circuits is condensed over a special SMO-254 welded with copper, filled with pool water, recovering part of the energy from the evaporation process.
 - The other two circuits condensate over an air coil located at the evaporator air outlet, heating the cold and dry air, before discharge over the optional hot water coil.
- Three Scroll hermetic compressors with heat insulation, motor temperature integral protection, mounted over anti-vibratory supports.
- Thermostatic expansion valve with external equalization.
- Antiacid dryer filter.

OPTIONS

- Copper tubes and copper fins coils.
- 1 or 2 stages electrical heaters with built-in control.
- Hot water coil for post-heating with three ways proportional valve, with polyurethane coating or in copper-copper.
- Plates exchanger (AISI 316L Steel) and joints (Nitrile) to reach the operating conditions and maintain the vessel temperature, by three ways proportional valve with control depending on the vessel water temperature.
 - * Optionally Titanium plates.
 - * Optionally Butilum joints.

Protections

- High and low pressure pressostats.
- Main door switch.
- Protection fuses of the compressor(s) and motorfan(s) power supply.
- Control circuit automatic switch.
- Temperature limit thermostat at the inlet of the dehumidification coil.
- Compressor anti-short-cycle timer.
- Double access door to the fan.

Electrical panel

- Complete electrical panel, totally wired.
- General ground plug.
- Compressor(s) and motorfan(s) contactors.

GESCLIMA PRO electronic control

GESCLIMA PRO electronic control by microprocessor composed by main board (CPU) and user terminal (pGD control), with the following functions:

- Dehumidification control.
- Temperature control (optional) (with hot water coil and/or plates exchanger of boiler water).
- Anti-short-cycle timings.
- Water circuit pump control.
- Selection of configuration and operating parameters.
- Failures diagnosis and general alarm.

Optional functions:

- Enthalpic free-cooling and control of external air gates minimum opening.
- Optional electrical heaters control.
- Proportional control of hot water coil.
- Control of plates exchanger of boiler water (optional).
- Air flow control.
- Fouled filters detection.
- Fire thermostat.
- Daily and weekly scheduling.
- Connection to a building management system by PC with Carel, Modbus or LonWorks communication protocol, for managing and control of up to 200 units.

- Fouled filters differential pressostat.
- High flow in discharge and return of air circuit.
- G4 and F7 filters.
- Manual damper for ext. air intake.
- Mixing box of 2 dampers, with motorized dampers
- Mixing box of 3 dampers, with motorized dampers and centrifugal return fan.
- Flexible connections of the hot water coil (except connections with flange).

TECHNICAL CHARACTERISTICS

Air Master BCP		320	360	400	440	480	555	610	
Air circuit	Dehumidification capacity ① (kg/h)	66,5	77,8	82,8	93,1	100,0	116,2	126,5	
	Heating capacity (kW)	69,5	85,5	94,0	111,9	109,7	124,2	148,7	
	Cooling capacity ② (kW)	92,1	109,8	115,0	132,2	138,4	160,0	179,9	
	Power input ③ (kW)	22,6	26,3	29,3	31,2	33,1	36,9	45,0	
	Nominal air flow (m³/h)	16.000	18.000	20.000	22.000	24.000	27.775	30.000	
	Avail. static press. (mm.W.G.)	19,1	17,5	19,7	16,6	17,2	16,5	18,8	
	Fan type/ Number	Centrifugal / 1							
	Power (kW)	5,5	5,5	7,5	7,5	7,5	7,5	11	
Air circuit of high flow (optional)	Nominal air flow (m³/h)	24.000	27.000	30.000	33.000	36.000	41.625	43.000	
	Avail. static press. (mm.W.G.)	16,9	21,9	18,9	15,8	18,2	17,4	19,4	
	Fan type/ Number	Centrifugal / 1							
	Power (kW)	7,5	11	11	11	11	15	18,5	
Water condenser	Heating capacity ④ (kW)	39,7	43,1	42,8	44,0	54,2	65,1	65,2	
	Nominal water flow (m³/h)	6,8	7,4	7,4	7,6	9,3	11,2	11,2	
	Pressure drop (m.W.G.)	0,6	0,8	0,8	0,7	0,8	0,7	0,8	
	Hydraulic connections	DN-50 Ø 1 1/2"					DN-63 Ø 2"		
Hot water coil (optional)	Heating capacity ④ (kW)	130,2	138,4	145,1	165,3	179,3	211,3	216,7	
	Nominal water flow (m³/h)	6,8	7,2	7,5	8,6	9,4	11	11,3	
	Pressure drop (m.W.G.)	1,6	1,8	1,2	1,2	1,4	1,7	1,6	
	Hydraulic connections	2"							
Plates exchanger for boiler water (optional)	Heating capacity ⑤ (kW)	200		350			500		
	Flow (17°C fall) (m³/h)	10,6		17,7			25,3		
	Pressure drop (m.W.G.) (pool side and boiler side)	0,9		0,8			0,8		
	Threaded hydraulic connections	2"		2 1/2"					
Compressors	Type	Scroll							
	Nº compressors / Nº stages	3 / 3							
	Nº air circuits/ recovery	2 / 1							
	Oil volume (l)	3,3 + 1,7 / 3,3	3,3 + 3,3 / 3,3	4,0 + 3,3 / 3,3	4,0 + 4,0 / 3,3	4,0 + 4,0 / 4,0	6,2 + 6,2 / 6,2	8,0 + 6,2 / 6,2	
Power supply	3 Hilos + Tierra + Neutro								
Maximum power input	400 V / III ph / 50 Hz (A)	87,1	99,1	102,2	102,2	102,2	120,2	144,5	
	Type	R-407c							
Refrigerant	Climate warming potential (CWP) ⑥	1652,5							
	Load (kg)	18,1	23,2	23,6	28,2	28,2	33,5	34,3	
	Length (mm)	4.640 (2.685 + 1.775)							
Dimensions	Width (mm)	2.204							
	Height (mm)	1.603		1.822			2.138		
	Weight (kg)	2.690	2.865	2.940	3.360	3.385	3.950	4.050	
Condensates draining Ø	1 1/4"								

① Unit cooling dehumidification capacity. For unit selection, it should be taken into account the dehumidification which provides fresh air of ventilation (UNE 100011).

② Cooling capacity for air inlet temperature conditions of 28°C and 65% RH

③ Total power input by compressor and motorfans under nominal conditions.

④ Heating capacity for recovery circuit water 28 / 33°C.

⑤ Water from boiler for hot water coil 82 / 65°C.

⑥ Climate warming potential of one kg of greenhouse-effect fluored gas relative to one kilogram of carbon dioxide over a period of 100 years.



RETURN FAN TECHNICAL CHARACTERISTICS (OPTIONAL)

Air Master BCP	320	360	400	440	480	555	610
Nominal flow							
Avail. static pressure (mm.W.G.)	14,7	13,9	15,7	14,4	14,4	16	14,2
Fan type / Number	Centrifugal / 1						
Power (kW)	3	4	3	3	3	4	4
High flow (optional)							
Avail. static pressure (mm.W.G.)	12,7	16,0	10,5	13,5	9,8	20,8	25,1
Fan type / Number	Centrifugal / 1						
Power (kW)	5,5	7,5	7,5	7,5	7,5	11	11

NIVEAUX SONORES dB(A)

■ Sound power level

Sound power level at the discharge of fan and at the intake of return fan (optional), to take into account for the silencer calculation:

Air Master BCP		320	360	400	440	480	555	610
Nominal flow								
Discharge fan	dB(A)	81,6	81,5	82,5	81,8	82,6	81,6	84,2
Return fan(optional)	dB(A)	86,4	89,5	79,1	76,4	78,3	77,5	78,8
High flow (optional)								
Discharge fan	dB(A)	85,3	87,8	86,4	84,4	86,3	88,4	89,4
Return fan(optional)	dB(A)	83,3	86,3	88,7	85,0	87,0	86,4	87,3

■ Sound pressure level

Measure conditions: in free field, measured at 5 meters of distance, directivity 2 and at 1,5 meters from floor.

Air Master BCP		320	360	400	440	480	555	610
Standard unit	dB(A)	70,4	70,2	72,7	72,5	72,3	72,6	74,8

NOTE: The sound pressure level depends on the installation conditions and, therefore, it is given only as an approximate guide.

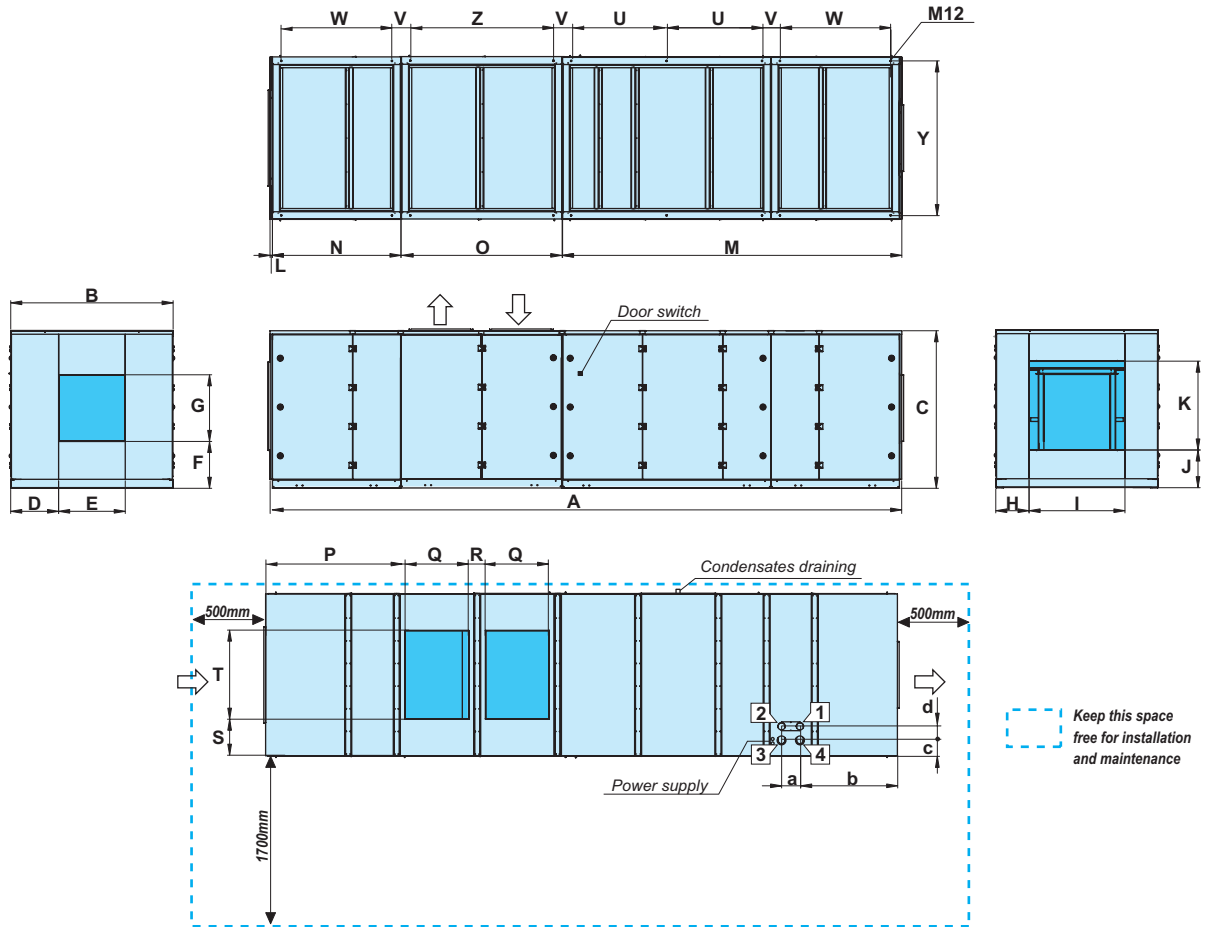
MAXIMUM CURRENTS (A)

Air Master BCP		320	360	400	440	480	555	610
Compressors	400 V / III ph / 50 Hz	75	87	87	87	87	105	120
	Nominal flow	11,6	11,6	14,7	14,7	14,7	14,7	22
Discharge fan (400 V / III ph / 50 Hz)	With bags filter (optional)	14,7	14,7	14,7	22	22	22	29
	High flow (optional)	14,7	22	22	22	22	29	37
	High flow with bags filter (optional)	22	29	29	29	29	37	42
Return fan (400 V / III ph / 50 Hz)	Nominal flow (optional)	6,9	9	6,9	6,9	6,9	9	9
	With bags filter (optional)	6,9	9	6,9	6,9	6,9	9	9
	High flow (optional)	11,6	14,7	14,7	14,7	14,7	22	22
	High flow with bags filter (optional)	11,6	14,7	14,7	14,7	14,7	22	22



Pool air handling units

Air Master BCP with return fan, mixing module with upper dampers (optional) (mm)



Keep this space free for installation and maintenance

Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y	Z
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Nominal flow

320 / 360	8562	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
400	8562	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
440 / 480	8562	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
555 / 610	8562	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	2178	1890	865	224	502	1500	1296	243	1502	2095	1938

High flow

320 / 360	8562	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
400	8562	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
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Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel
 Note: All accesses are on the right, in the air flow sense
 Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow

! IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.



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