

Compliant
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Regulation (EU)
No. 327/2011



Air Conditioning Ocean Modular Air Conditioners



Quality management systems
ISO 9001 – Cert. n° 0545/5



SABIANA
ENVIRONMENTAL COMFORT



Air Conditioning

SABIANA

ENVIRONMENTAL COMFORT

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HORIZONTAL UNIT



SECTION WITH CRYSTALL ELECTROSTATIC FILTER AND CARBON FILTER

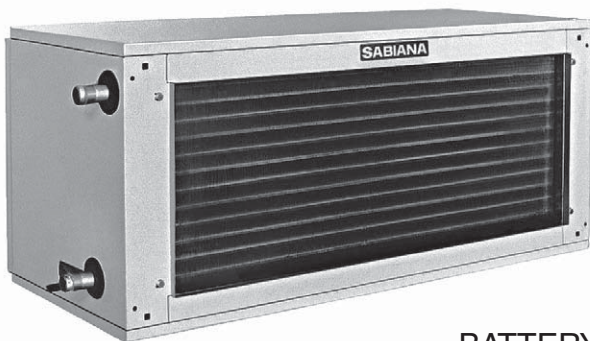


VERTICAL UNIT





FAN SECTION



BATTERY SECTION

Thanks to its expertise in the heating and air conditioning field Sabiana now presents you with the Ocean series of slim-line air conditioners. They are constructed in four basic versions in order to satisfy any installation request.

By the use of the same modular components 6 vertical and 9 horizontal versions can be obtained. It is also possible to mount either 2, 3, 4 or 6 row heat exchangers for water, or a 4 row heat exchanger for the direct expansion of refrigerated gases in the treatment section.

The fan section can be driven directly by choosing one of the three available speeds, by a recessed remote speed control switch, or by electronic proportional speed drive.

The available air volume ranges from 600 to 1400 m³/h on model 1, from 1000 to 2100 m³/h on model 2, from 1500 to 3000 m³/h on model 3 and from 2400 to 5300 m³/h on model 4.

Thanks to its modular construction the unit can be easily disassembled and re-assembled on site and the air flow direction can be changed according to the specific needs.

Additional features like condensate collection trays, humidification etc. can also be easily added later.

The special construction makes the inspection and the removal of the fan assembly and heat exchangers extremely easy.

Construction features

Casing

Consists of self-supporting panels in hot dip galvanized, prepainted steel, which are completely insulated with a 20 mm. thick, thermoacoustic, flame retardant lining.

Fan section

Consists of centrifugal fans in galvanized steel with two impellers and a directly coupled single phase, three speed motor, 230/240 Volt/50 Hz with permanently installed capacitor, insulation class F, power: 450 W - 2,1 A for size 1, 520 W - 2,4 A for size 2, 620 W - 2,8 A for size 3, 1340 W - 5,9 A for size 4.

Heat Exchanger

Constructed in 3/8" dia expanded copper tubes with aluminium fins with a pitch of 2,1 mm.

The steel headers have an extra tapping for an air vent and following male connections:

Sizes 1 and 2 = 3/4"

Size 3 = 1"

Size 4 = 1.1/4" except 6 rows with 1.1/2"

The heat exchanger is mounted in a galvanized steel carrying frame.

Diameters of connections of the direct expansion battery:

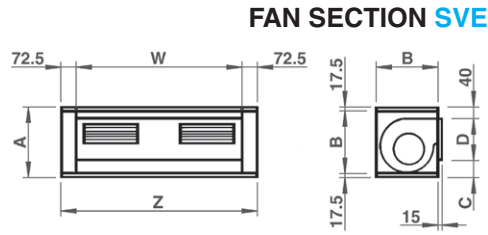
- Inlet Ø 16 mm - Outlet Ø 24 mm

Noise level

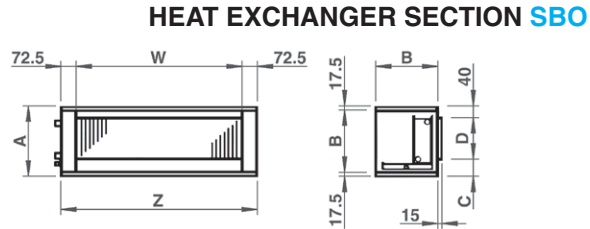
The average noise level (sound pressure) is measured in the open air at a distance of one meter from the mouth of the unit.

SIZE 1			SIZE 2			SIZE 3			SIZE 4		
Speed	dB(A)	m ³ /h	Speed	dB(A)	m ³ /h	Speed	dB(A)	m ³ /h	Speed	dB(A)	m ³ /h
1	45	650	1	50	1150	1	53	1750	1	55	2500
2	51	1000	2	55	1550	2	56	2300	2	61	3800
3	55	1400	3	60	2100	3	61	3000	3	65	5300

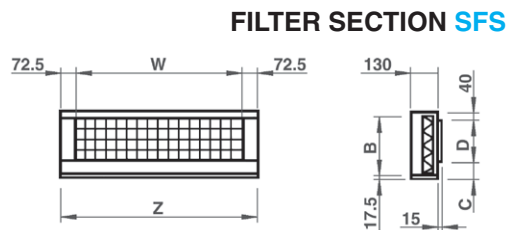
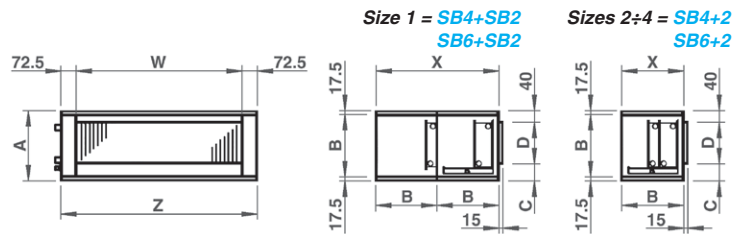
	a	b	c	d	x	z	w
SIZE 1	335	300	65	195	600	950	805
SIZE 2	415	380	40	300	380	950	805
SIZE 3	515	480	40	400	480	950	805
SIZE 4	515	480	40	400	480	1500	1355



SIZE	SECTIONS WEIGHTS				WATER CONTENT				
	kg				liters				
	1	2	3	4	1	2	3	4	
FAN SECTION	23	28	32	52	-	-	-	-	
BATTERY SECTIONS	2 ROWS	14	18	22	38	1,05	1,6	2,3	3,6
	3 ROWS	16	20	24	42	1,5	2,3	3,2	5,0
	4 ROWS	18	22	26	45	2,0	3,0	4,1	6,5
	6 ROWS	22	28	34	55	2,9	4,4	6,0	9,7
	4 + 2 ROWS	-	26	30	52	SEE ABOVE			
	6 + 2 ROWS	-	32	38	62				
	DIRECT EXPANSION	19	23	27	46	-	-	-	-



Sections with 4 row battery + 2 row battery



The standard filter extraction is from the bottom, any different need must be specifically requested.

Heat exchanger

The heat exchangers are tested to a pressure of 30 Bar. In normal operation the water temperature should not exceed 95°C and the maximum working pressure 10 Bar. On request special heat exchangers can be supplied for H.T.H.W. Where a cooling battery is fitted the battery should always be fitted in a vertical position; if the unit is being used for heating only then the battery can be mounted either vertically or horizontally. The heat exchanger is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

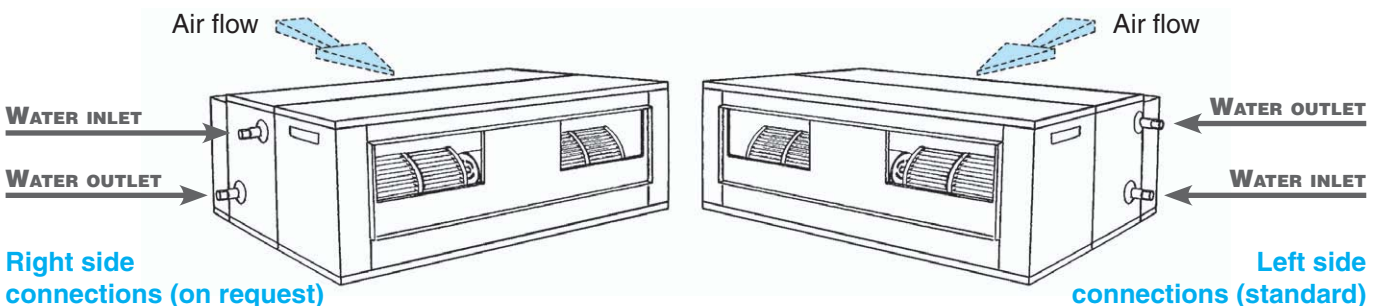
Operation limits

Electric motors

The leaving air temperature must not exceed a temperature of 55°C with 230V 50Hz supply and 50°C with 240V 50Hz supply.

Connection side in relation to the air flow direction

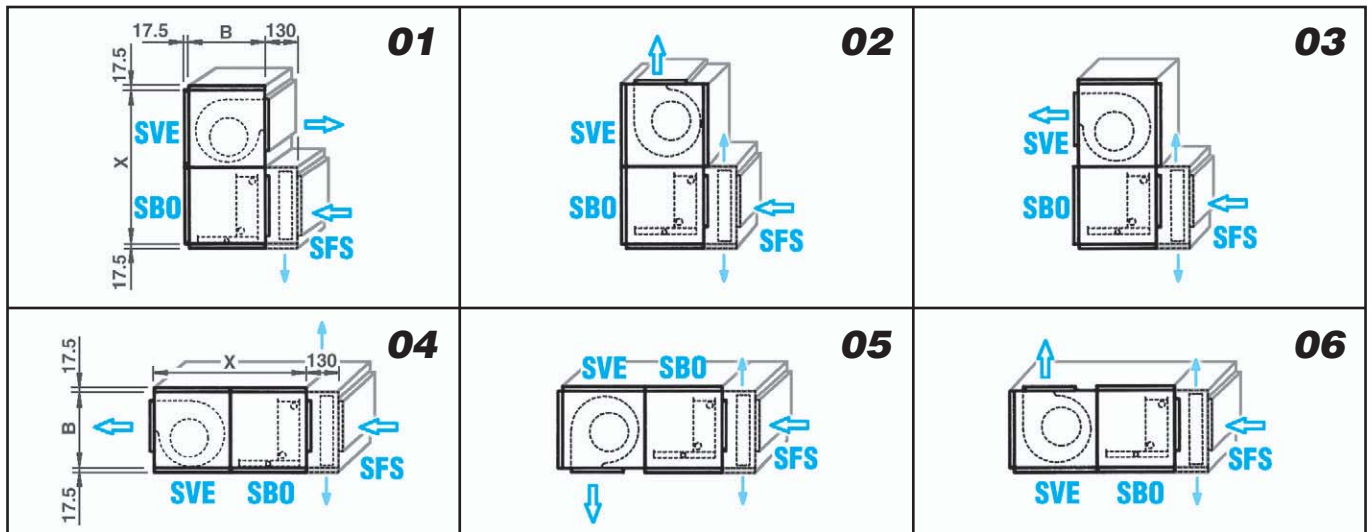
(It must be specified on the order)



In addition to the 12 versions available using standard components a wide range of further combinations can be achieved and for each of them you can choose between the four different types of heat exchanger.

The sizes 1, 2, 3 and 4 of the Ocean air conditioner can be supplied with the Crystall electrostatic filter (see page 17).

Heating and cooling with 1 battery

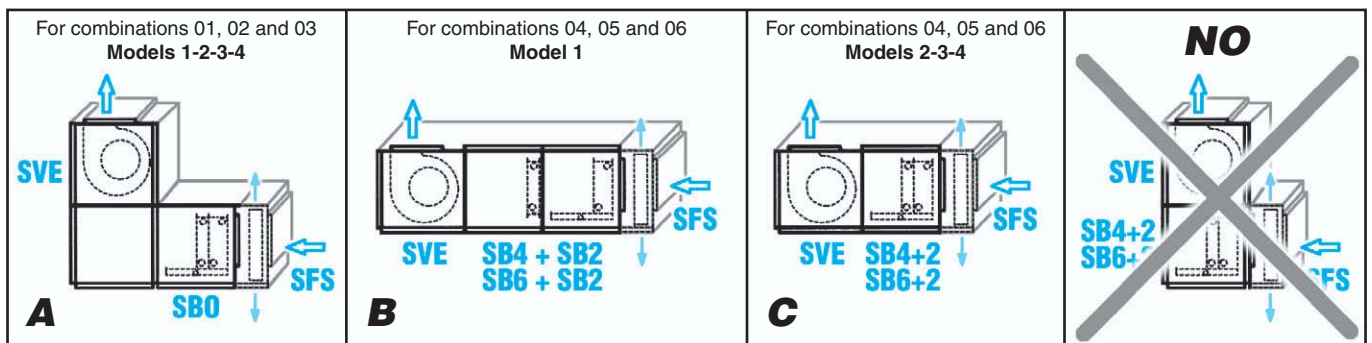


Heating and cooling with 2 batteries

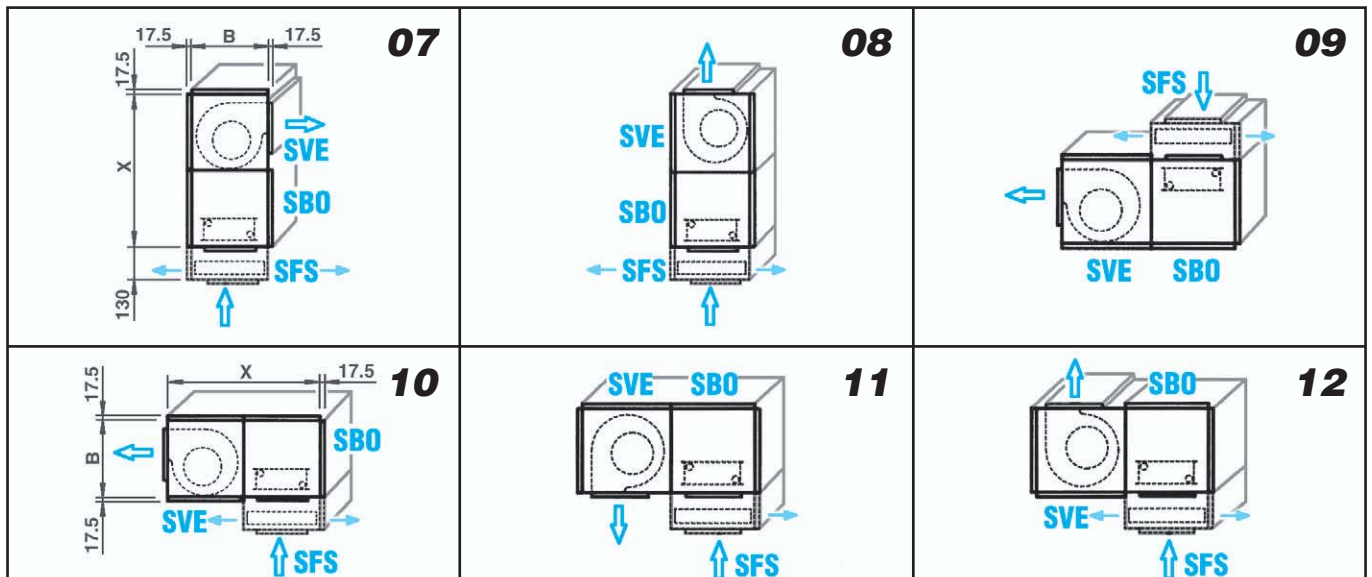
Vertical versions: the section with 2 coils can be carried out only as specified in Provision **A**

Horizontal versions:

- For Size 1, provide a section for each coil (2 sections in total) – Provision **B**
- For Sizes 2-3-4, the 2 coils can be placed in one section – Provision **C**



Heating only

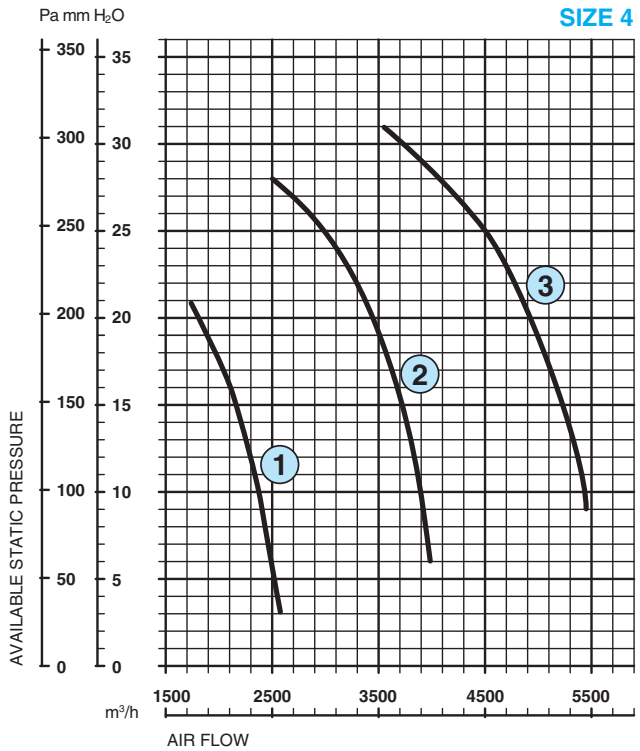
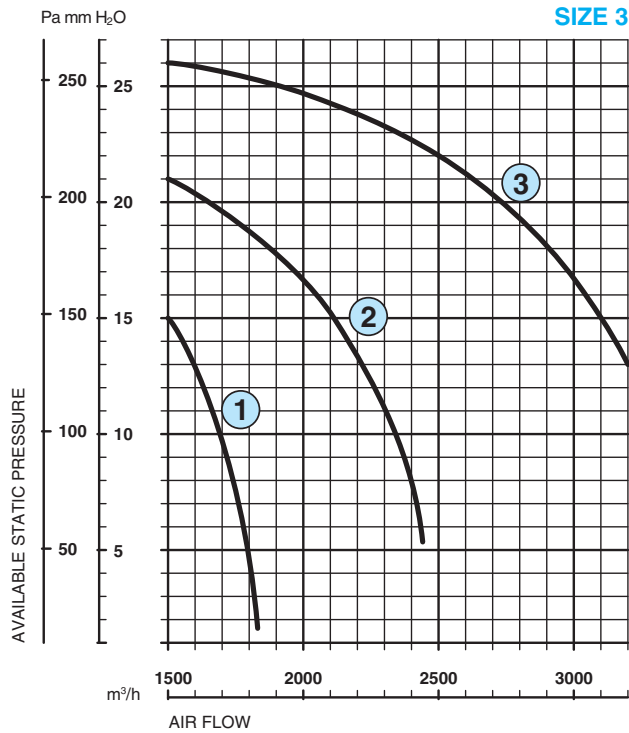
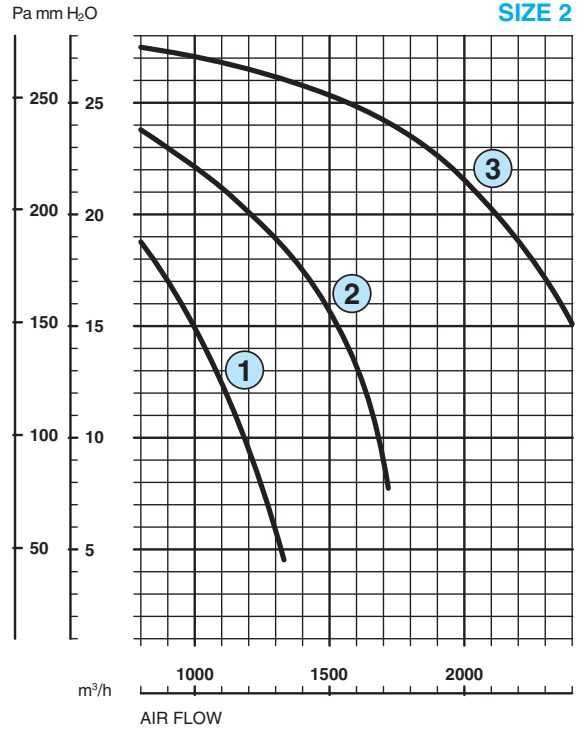
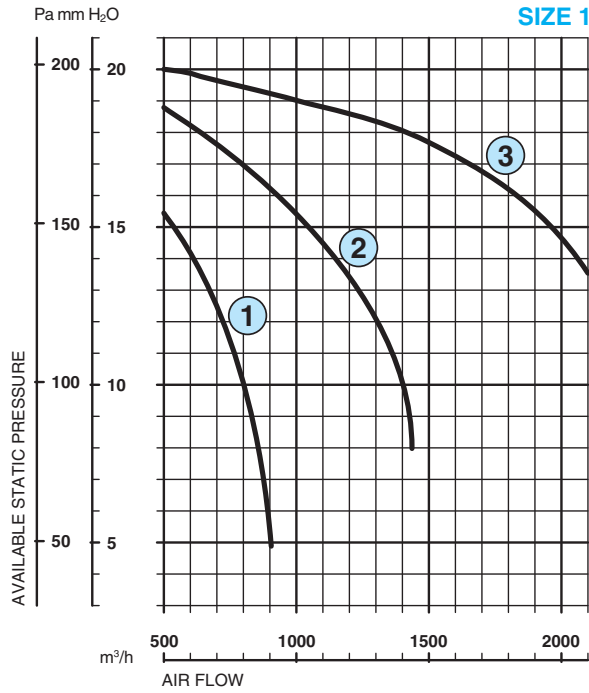


Fan section graphs

Fan section

The fan section can be used for ventilation or as an air extraction box. The fan performance curve shows the air flow and the available static pressure for each speed at the mouth of the fan.

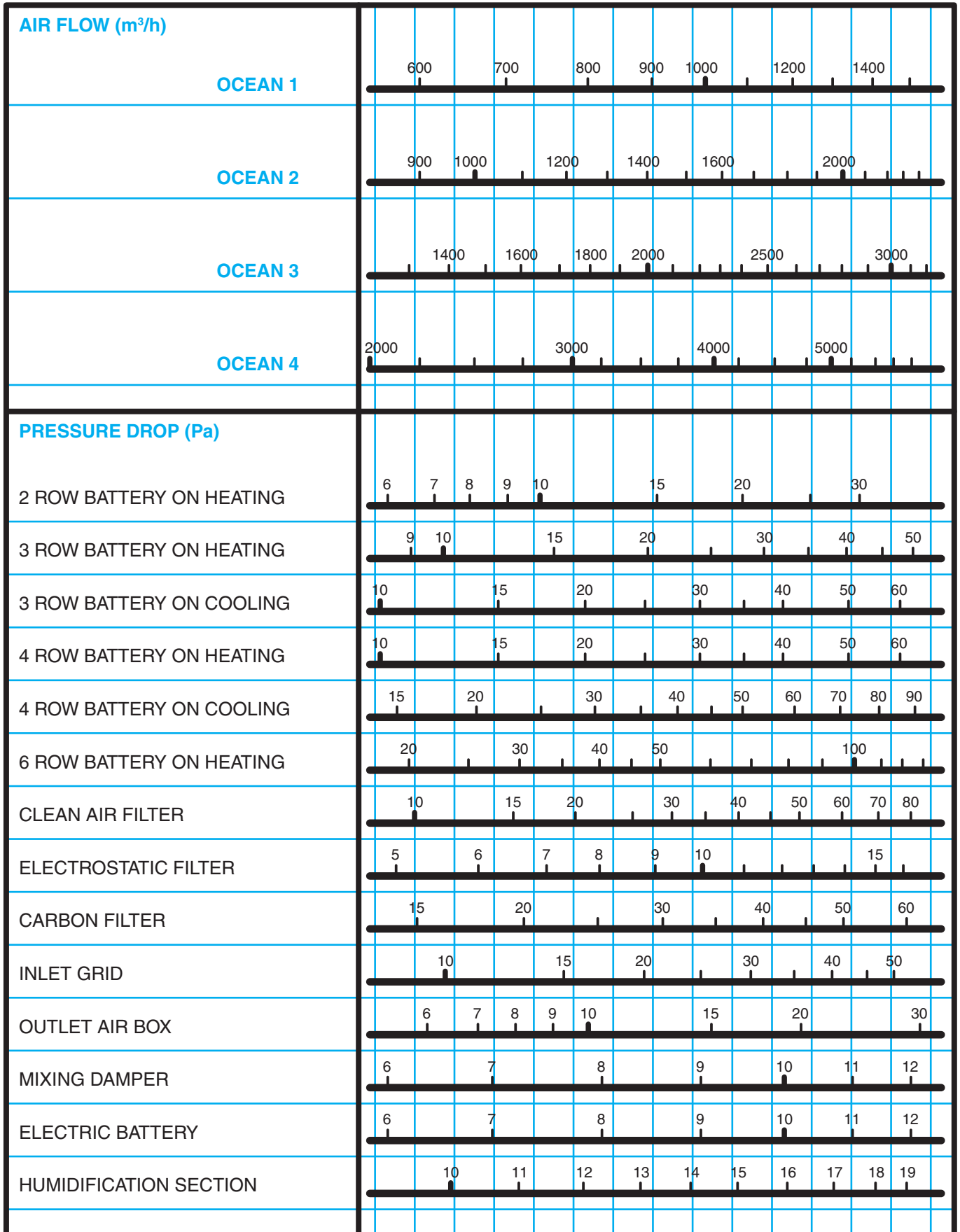
Maximum Absorption AMP			
Size	High	Medium	Low
1	2,1	1,4	1,0
2	2,4	1,4	1,0
3	2,8	2,0	1,5
4	5,9	3,9	2,9



NOTE: ① ② ③ fan speed.

The curves show the available static pressure of the fan at its various speeds. To find out the available static pressure of the Ocean Unit you have to deduct the pressure drop of each component fitted in the unit. This information can be found in the pressure drop diagram on page 7.

Air side pressure drop diagram for internal components



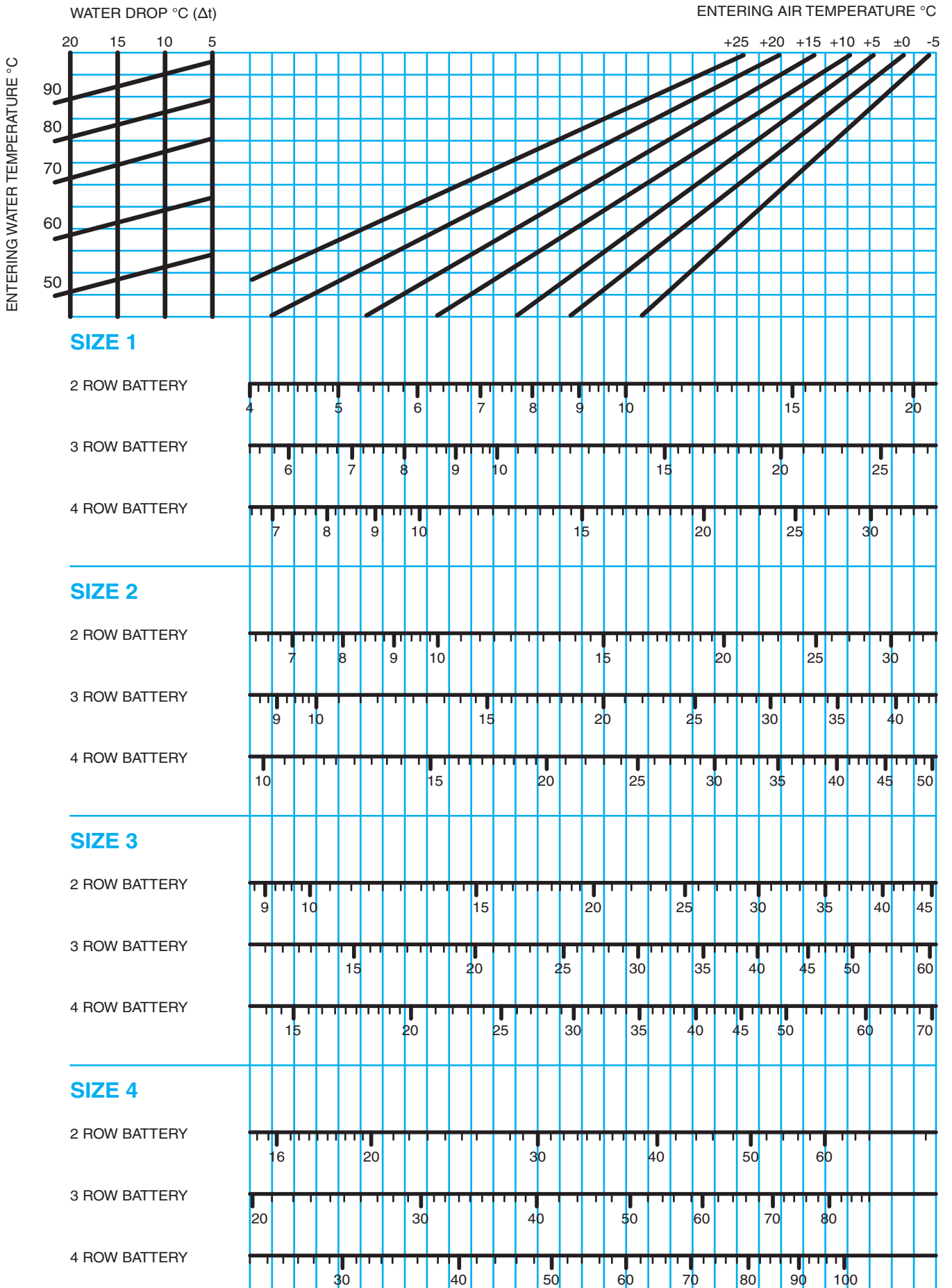
Heating emission (kW)

OCEAN Size	Air flow m³/h	Battery rows	Water °C 50/45			Water °C 70/60			Water °C 80/70		
			Air °C			Air °C			Air °C		
			0	+ 10	+ 20	0	+ 10	+ 20	0	+ 10	+ 20
1	600	2	5.9	4.5	3.2	8.0	6.5	5.1	9.3	7.8	6.4
		3	7.5	5.7	4.0	10.1	8.3	6.5	11.7	9.9	8.1
		4	8.4	6.3	4.6	11.5	9.4	7.4	13.3	11.2	9.1
	1000	2	8.5	6.5	4.5	11.5	9.5	7.4	13.5	11.3	9.2
		3	11.1	8.5	6.0	15.2	12.4	9.8	17.6	14.8	12.1
		4	12.8	9.8	7.0	17.6	14.4	11.4	20.4	17.1	14.0
	1400	2	10.8	8.2	5.8	14.6	12.0	9.5	17.0	14.3	11.7
		3	14.3	10.9	7.7	19.5	16.0	12.6	22.7	19.1	15.6
		4	16.8	12.8	9.1	23.1	18.9	15.0	26.8	22.4	18.4

OCEAN Size	Air flow m³/h	Battery rows	Water °C 50/45			Water °C 70/60			Water °C 80/70		
			Air °C			Air °C			Air °C		
			0	+ 10	+ 20	0	+ 10	+ 20	0	+ 10	+ 20
2	1000	2	9.5	7.3	5.1	12.9	10.6	8.4	15.1	12.6	10.3
		3	12.1	9.2	6.5	16.6	13.5	10.7	19.2	16.1	13.2
		4	13.8	10.4	7.4	18.9	15.4	12.2	21.9	18.3	15.0
	1550	2	13.1	10.0	7.0	17.8	14.5	11.4	20.7	17.3	14.2
		3	17.1	13.0	9.2	23.3	19.1	15.1	27.1	22.7	18.6
		4	19.8	15.1	10.7	27.2	22.2	17.6	31.4	26.3	21.6
	2100	2	16.2	12.3	8.6	21.9	17.9	14.2	25.6	21.5	17.6
		3	21.5	16.4	11.5	29.4	24.0	19.0	34.0	28.6	23.4
		4	25.3	19.3	13.7	34.6	28.3	22.4	40.2	33.7	27.6

OCEAN Size	Air flow m³/h	Battery rows	Water °C 50/45			Water °C 70/60			Water °C 80/70		
			Air °C			Air °C			Air °C		
			0	+ 10	+ 20	0	+ 10	+ 20	0	+ 10	+ 20
3	1500	2	14.3	11.0	7.7	19.4	15.9	12.6	22.7	18.9	15.5
		3	18.2	13.8	9.8	24.9	20.3	16.1	28.8	24.2	19.8
		4	20.7	15.6	11.1	28.4	23.1	18.3	32.9	27.5	22.5
	2100	2	17.7	13.6	9.5	24.1	19.6	15.4	28.0	23.4	19.2
		3	23.2	17.6	12.5	31.6	25.9	20.5	36.7	30.8	25.2
		4	26.8	20.5	14.5	36.9	30.1	23.8	42.5	35.6	29.3
	3000	2	23.1	17.6	12.3	31.3	25.6	20.3	36.6	30.7	25.2
		3	30.7	23.4	16.4	42.0	34.3	27.2	48.6	40.9	33.4
		4	36.2	27.6	19.6	49.4	40.4	32.0	57.4	48.2	39.4

OCEAN Size	Air flow m³/h	Battery rows	Water °C 50/45			Water °C 70/60			Water °C 80/70		
			Air °C			Air °C			Air °C		
			0	+ 10	+ 20	0	+ 10	+ 20	0	+ 10	+ 20
4	2400	2	22.8	17.4	12.3	31.1	25.6	20.3	36.4	30.7	25.3
		3	28.9	22.3	15.9	39.8	32.9	26.2	46.2	39.1	32.3
		4	33.3	25.6	18.3	45.9	37.9	30.2	53.1	44.9	37.1
	3800	2	31.1	23.8	16.8	42.3	34.8	27.6	49.5	41.9	34.5
		3	40.5	31.2	22.3	55.7	46.0	36.7	64.7	54.7	45.3
		4	47.6	36.6	26.1	65.6	54.1	43.2	76.0	64.3	53.1
	5300	2	38.4	29.4	20.7	52.2	43.0	34.1	61.1	51.7	42.6
		3	51.0	39.3	28.0	69.9	57.8	46.1	81.2	68.9	57.0
		4	60.8	46.8	33.4	83.6	69.0	55.1	97.1	82.1	67.9



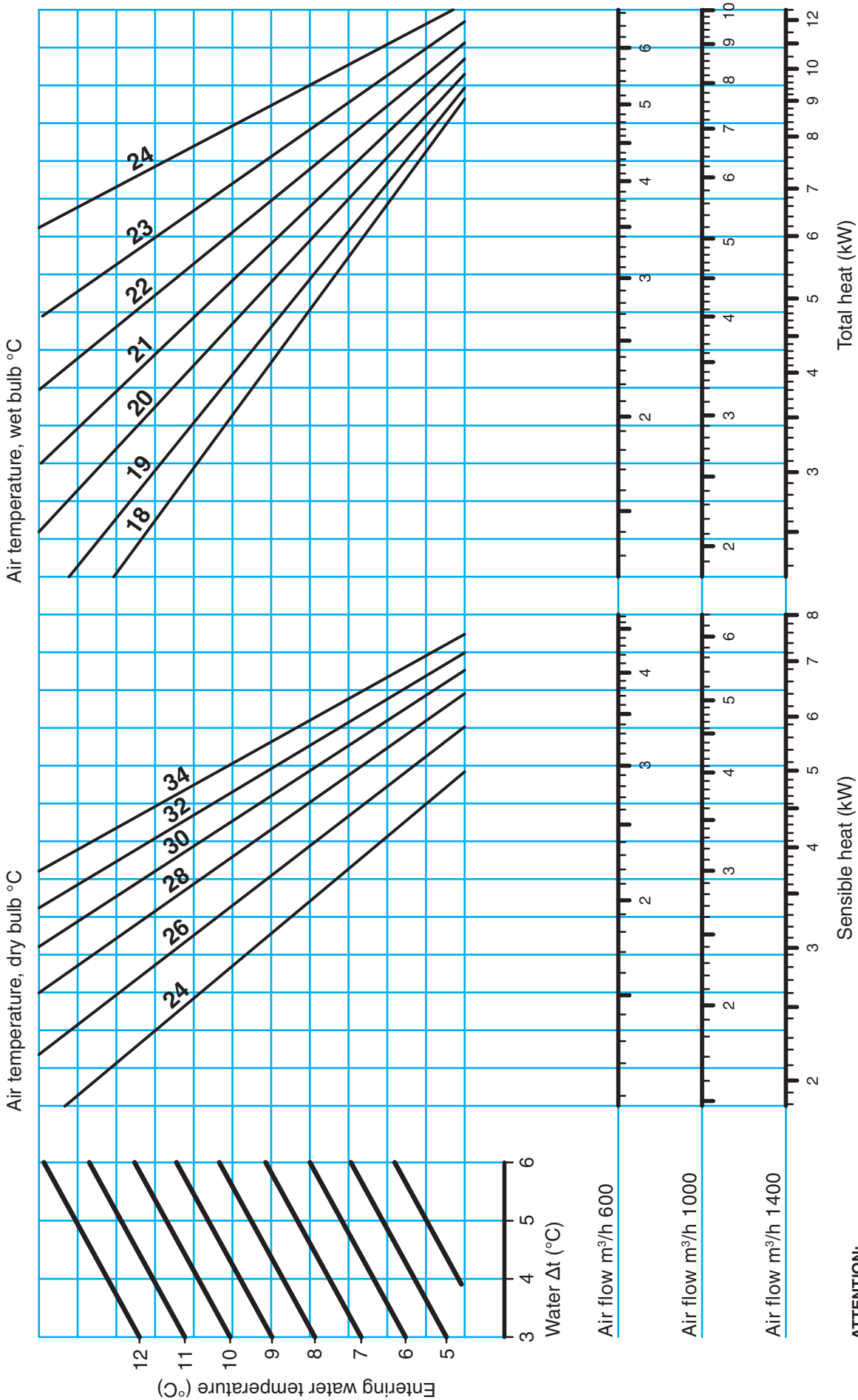
NOTE: Emission at high speed.
 For emission figures at medium speed multiply by 0.75.
 For emission figures at low speed multiply by 0.55.

Cooling emission (kW) with 55% RH

TOTAL	SENSIBLE
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OCEAN Size	Air flow m³/h	Battery rows	Water temperature 7/12 °C						Water temperature 12/17 °C					
			Entering Air temperature, dry bulb °C						Entering Air temperature, dry bulb °C					
			+26		+30		+32		+26		+30		+32	
1	600	3	3.2	2.2	4.8	2.9	5.7	3.0	1.6	1.4	2.9	1.9	3.8	2.2
		4	3.7	2.6	5.6	3.5	6.7	3.8	1.8	1.7	3.4	2.2	4.5	2.6
		6	4.8	3.0	7.0	3.8	8.1	4.1	2.2	2.0	4.6	2.8	5.8	3.2
	1000	3	4.3	3.2	6.6	4.0	7.9	4.3	2.3	2.3	3.9	3.0	5.1	3.4
		4	5.2	3.7	8.0	4.6	9.4	5.1	2.7	2.7	4.7	3.5	6.2	3.9
		6	7.1	4.6	10.4	5.7	12.2	6.3	3.1	3.1	6.6	4.3	8.4	4.8
	1400	3	5.2	4.0	8.0	5.0	9.6	5.4	2.8	2.8	4.6	3.8	6.1	4.3
		4	6.4	4.7	9.8	5.9	11.6	6.4	3.4	3.4	5.7	4.4	7.6	5.0
		6	9.0	6.0	13.3	7.5	15.6	8.2	4.5	4.5	8.3	5.6	10.6	6.3
2	1000	3	5.6	3.8	8.3	4.7	9.8	5.1	2.8	2.8	5.1	3.5	6.6	4.0
		4	5.8	4.1	9.0	5.1	10.7	5.6	3.2	3.2	6.0	4.0	7.8	4.5
		6	7.2	4.7	10.8	6.0	12.7	6.5	3.4	3.4	6.7	4.4	8.7	5.0
	1550	3	6.7	5.1	10.4	6.4	12.5	6.9	3.5	3.5	6.0	4.8	8.0	5.4
		4	7.9	5.8	12.3	7.3	14.7	8.0	4.0	4.0	7.0	5.4	9.4	6.1
		6	10.3	7.0	15.5	8.7	18.3	9.5	4.9	4.9	9.5	6.4	12.3	7.3
	2100	3	8.0	6.4	12.5	7.9	14.9	8.6	4.4	4.4	7.0	6.0	9.5	6.8
		4	9.6	7.3	14.9	9.1	17.8	9.9	5.1	5.1	8.5	6.9	11.4	7.8
		6	13.0	9.0	19.5	11.1	23.0	12.2	6.4	6.4	11.8	8.3	15.4	9.4
3	1500	3	7.8	5.6	11.8	6.9	14.0	7.5	3.9	3.9	7.0	5.2	9.2	5.8
		4	9.8	6.5	14.5	8.1	17.1	8.9	4.4	4.4	8.2	5.8	11.6	6.8
		6	11.9	7.6	17.3	9.4	20.2	10.3	5.4	5.4	11.2	7.0	14.5	7.9
	2100	3	10.2	7.4	15.4	9.1	18.2	9.9	5.4	5.4	9.3	6.9	12.0	7.7
		4	12.2	8.5	18.3	10.5	21.6	11.4	6.2	6.2	11.2	7.8	14.5	8.9
		6	15.4	10.0	22.5	12.4	26.4	13.6	6.6	6.6	14.3	9.2	18.3	10.4
	3000	3	12.5	9.5	18.9	11.6	22.3	12.5	6.8	6.8	11.2	8.9	14.6	9.9
		4	15.2	11.0	22.9	13.5	27.0	14.7	8.1	8.1	13.7	10.3	17.9	11.5
		6	19.7	13.3	29.2	16.4	34.3	17.9	10.0	10.0	18.1	12.3	23.3	13.8
4	2400	3	11.8	8.2	17.8	10.2	21.0	11.1	5.9	5.9	10.7	7.7	14.0	8.6
		4	15.0	9.9	22.0	12.3	25.9	13.4	7.2	7.2	13.9	9.2	17.8	10.4
		6	17.6	11.2	25.4	13.8	29.6	15.1	8.4	7.6	16.6	10.4	20.9	11.7
	3800	3	15.5	11.4	23.5	14.0	27.9	15.8	8.1	8.1	13.9	10.6	18.3	11.9
		4	20.3	14.0	30.1	17.2	35.4	18.7	10.2	10.2	17.3	12.5	22.4	14.1
		6	24.5	16.1	35.6	19.8	41.6	21.5	11.3	11.0	22.9	14.9	28.9	16.7
	5300	3	18.5	14.2	28.2	17.4	33.4	18.9	10.1	10.1	16.5	13.4	21.7	14.9
		4	24.8	17.7	36.8	21.6	43.4	23.5	12.9	12.9	21.1	16.1	27.5	18.0
		6	30.5	20.6	44.5	25.2	52.1	27.4	15.3	15.3	28.2	19.1	35.8	21.4

OceanSabiana size 1
cooling emission graph with 3 row battery.



ATTENTION:

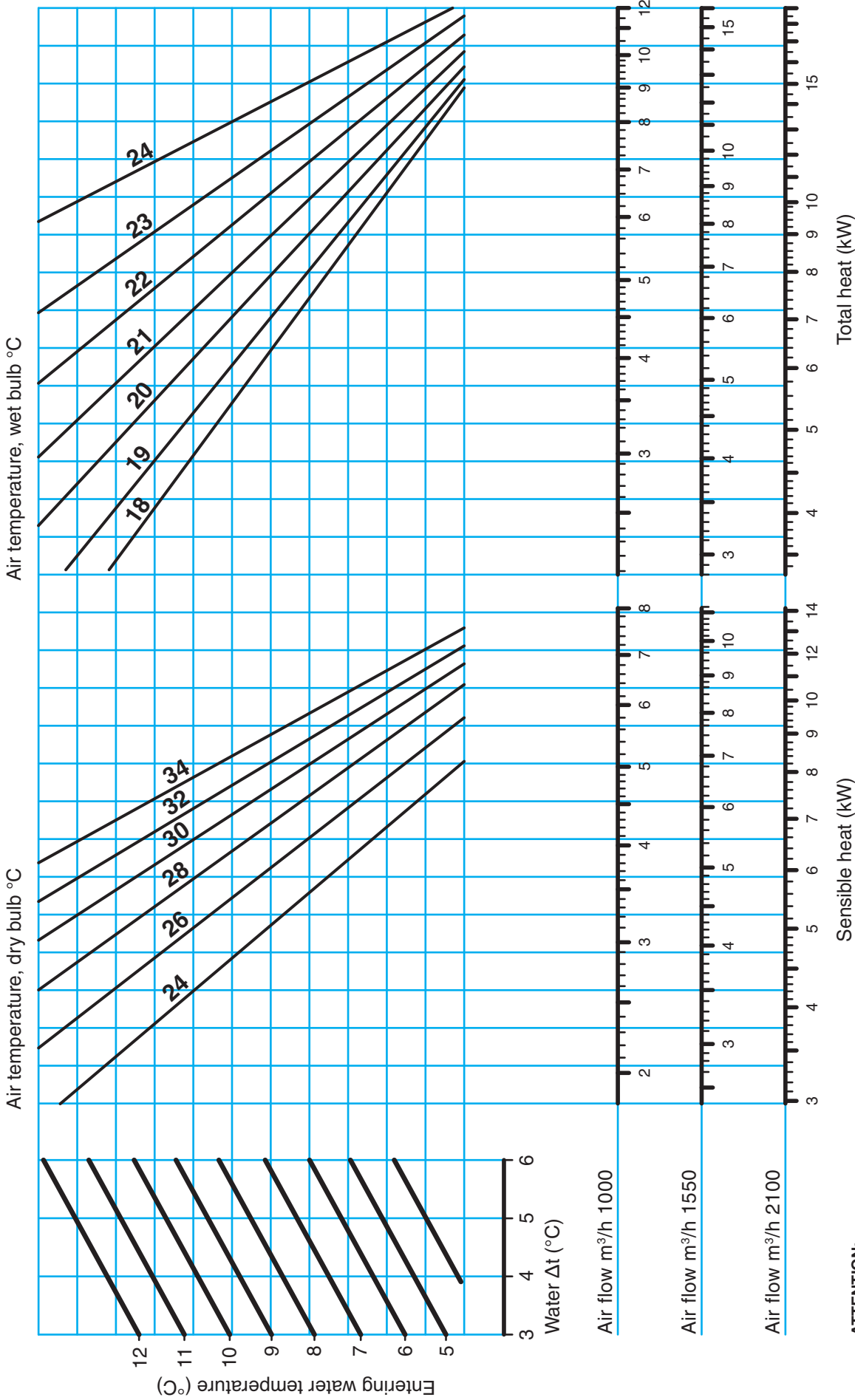
A sensible heat figure higher than a total heat figure shows that the cooling is obtained without dehumidification, therefore the emission to refer to is the sensible one.

NOTE: do not supply the unit with water at a temperature lower than +5°C.

Output figures of 4 row battery are obtained multiplying the 3 row battery figures of the graph by 1.19

Output figures of 6 row battery are obtained multiplying the 3 row battery figures of the graph by 1.45

OceanSabiana size 2
cooling emission graph with 3 row battery.



ATTENTION:

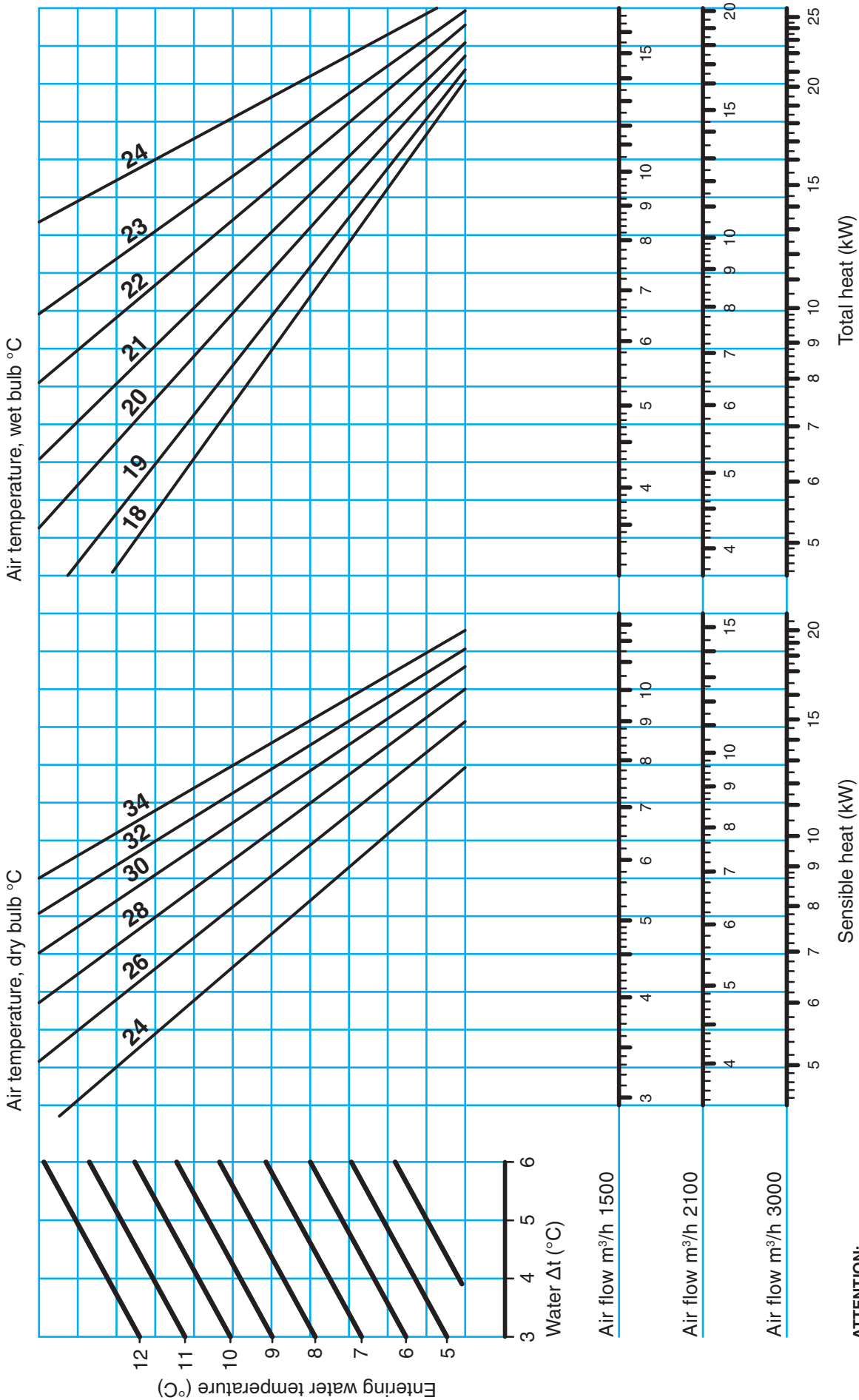
A sensible heat figure higher than a total heat figure shows that the cooling is obtained without dehumidification, therefore the emission to refer to is the sensible one.

NOTE: do not supply the unit with water at a temperature lower than +5°C.

Output figures of 4 row battery are obtained multiplying the 3 row battery figures of the graph by 1.19

Output figures of 6 row battery are obtained multiplying the 3 row battery figures of the graph by 1.45

OceanSabiana size 3
cooling emission graph with 3 row battery.



ATTENTION:

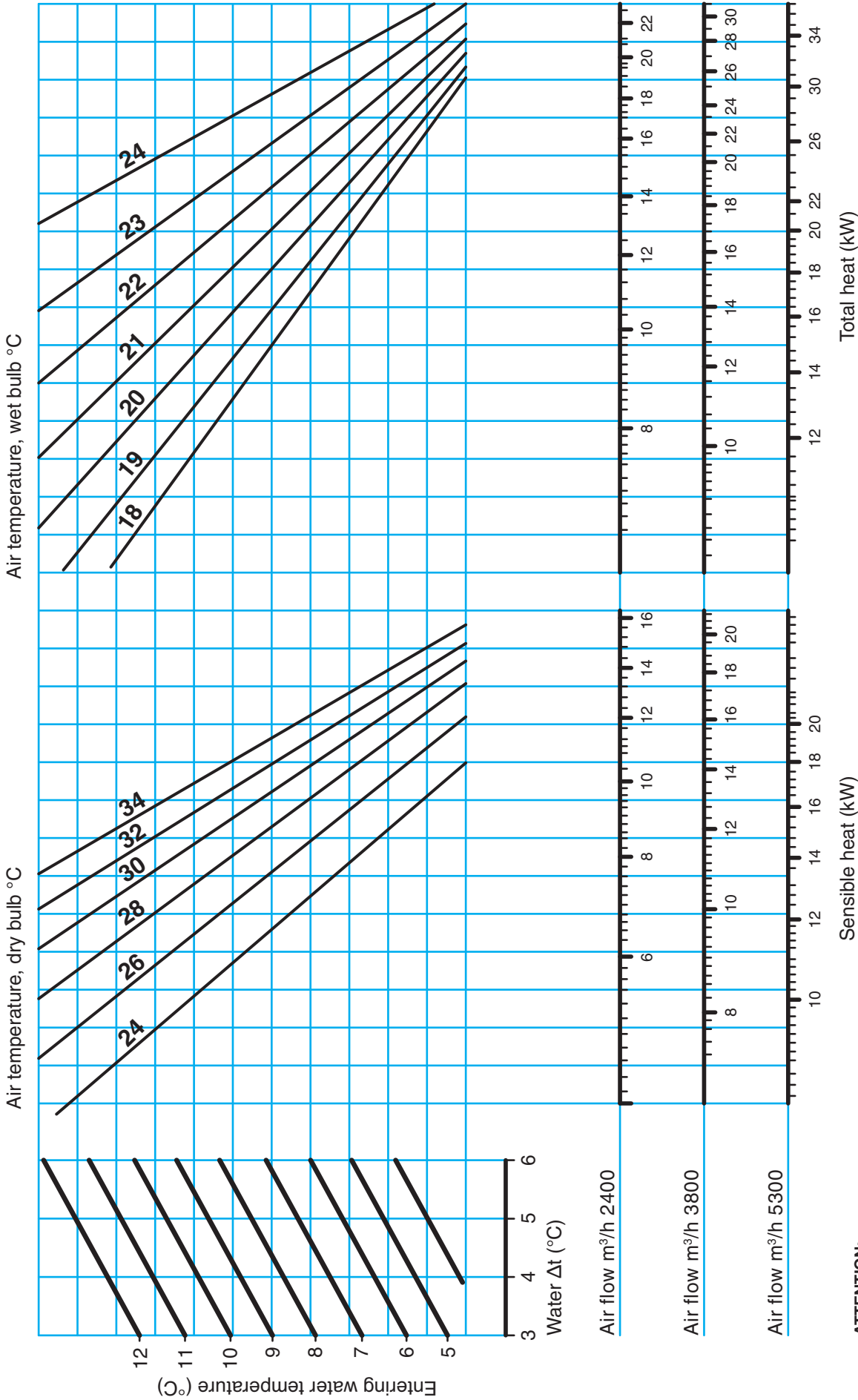
A sensible heat figure higher than a total heat figure shows that the cooling is obtained without dehumidification, therefore the emission to refer to is the sensible one.

NOTE: do not supply the unit with water at a temperature lower than +5°C.

Output figures of 4 row battery are obtained multiplying the 3 row battery figures of the graph by 1.19

Output figures of 6 row battery are obtained multiplying the 3 row battery figures of the graph by 1.45

OceanSabiana size 4
cooling emission graph with 3 row battery.



ATTENTION:

A sensible heat figure higher than a total heat figure shows that the cooling is obtained without dehumidification, therefore the emission to refer to is the sensible one.

NOTE: do not supply the unit with water at a temperature lower than +5°C.

Output figures of 4 row battery are obtained multiplying the 3 row battery figures of the graph by 1.19

Output figures of 6 row battery are obtained multiplying the 3 row battery figures of the graph by 1.45

Unit with 4 row direct expansion battery. Cooling emission kW

Direct expansion batteries

The air treatment section of the Ocean series can be fitted with a direct expansion battery. These sections have to be connected to a condenser unit with performances suitable to the emissions shown in the table. The air side pressure drop of these batteries is the same shown in the diagram at page 7 for a 4 row battery on cooling.

Cooling gas: R 407 C

Expansion air temperature: +6°C with air +25°C 55% R.H.

SIZE 1

Air flow m ³ /h	600	1000	1400
Total heat kW	4.1	6.4	8.3
Sensible heat kW	3.1	4.8	6.2

SIZE 2

Air flow m ³ /h	1000	1550	2100
Total heat kW	6.7	9.8	12.5
Sensible heat kW	5.0	7.3	9.4

SIZE 3

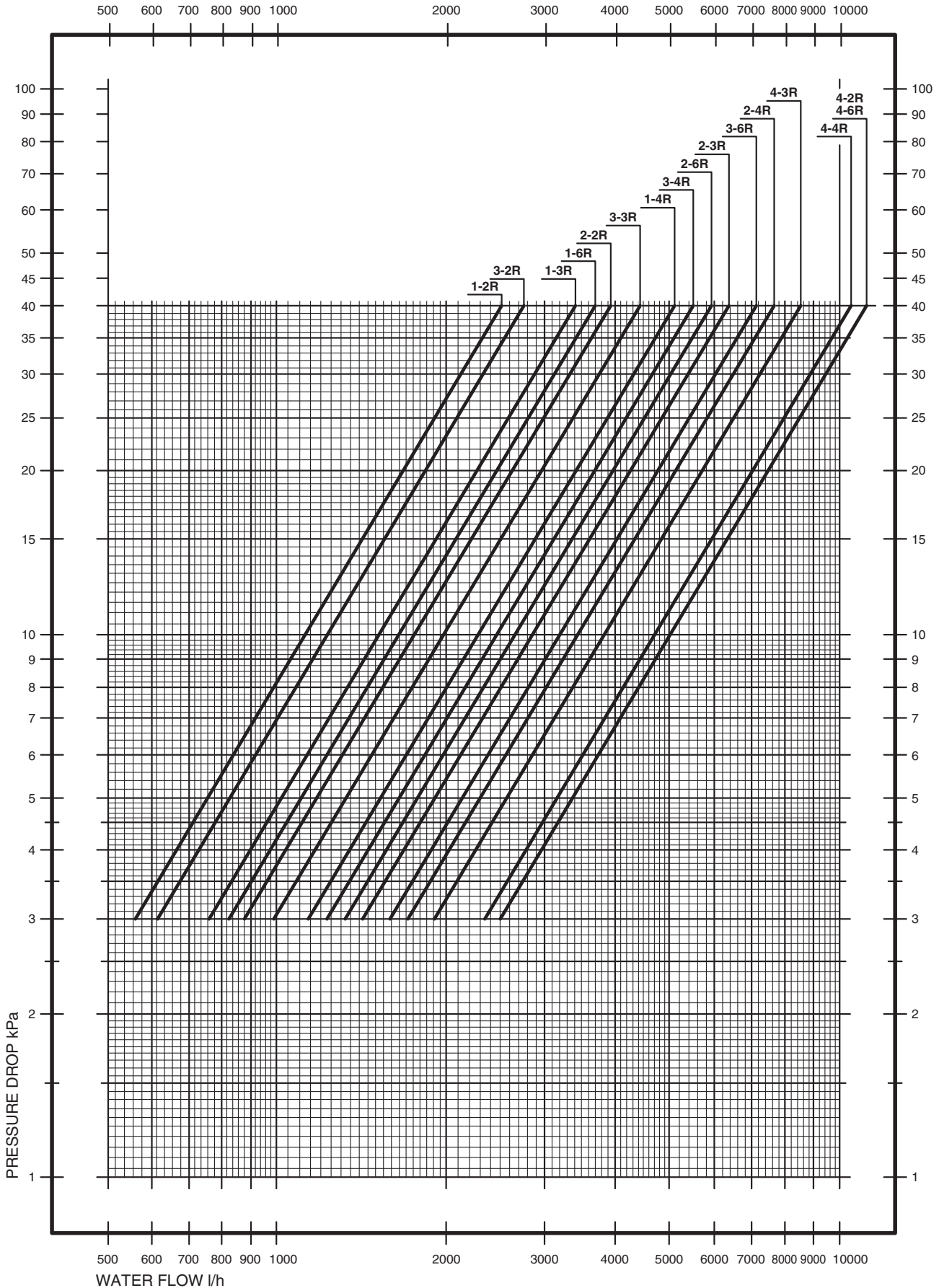
Air flow m ³ /h	1500	2100	3000
Total heat kW	10.3	12.9	16.3
Sensible heat kW	7.7	9.7	12.2

SIZE 4

Air flow m ³ /h	2400	3800	5300
Total heat kW	15.5	22.0	26.1
Sensible heat kW	10.0	14.6	18.0

NOTE: For correct working of the unit it must be installed a thermostatic valve (not supplied).
Always use an auxiliary condensate collection tray BRC.

Water pressure drop



The table shows the water pressure drop in kPa (10 kPa = about 1 m of W.G.) of each unit with either 2, 3, 4, or 6 row battery against the water flow in l/hr at a mean water temperature of 75°C. For different M.W.T. the correction factor (K) must be applied.

°C	10	20	30	40	50	60	70	80	90
K	1.39	1.33	1.27	1.21	1.15	1.09	1.03	0.97	0.91

Crystall electrostatic filter and carbon filter

ELECTROSTATIC FILTER

The CRYSTALL SABIANA electrostatic filter matches the need for better air conditioning with the concepts of space and design. With this filter the various stages of air treatment are combined in one appliance. Thanks to this new patented filter, air pollutants such as cigarette smoke, dust, pollen and most biological organisms are eliminated. In addition, as fresh air is not being introduced to obtain the best climatic conditions, there are consequential energy savings.

CARBON FILTER

On request, the carbon filter can also be fitted in the electrostatic filter section. It is highly efficient for the purification of the air from gaseous pollutants and odours.

OPERATING PRINCIPLE OF THE ELECTROSTATIC FILTER CRYSTALL SABIANA AND OF THE CARBON FILTER

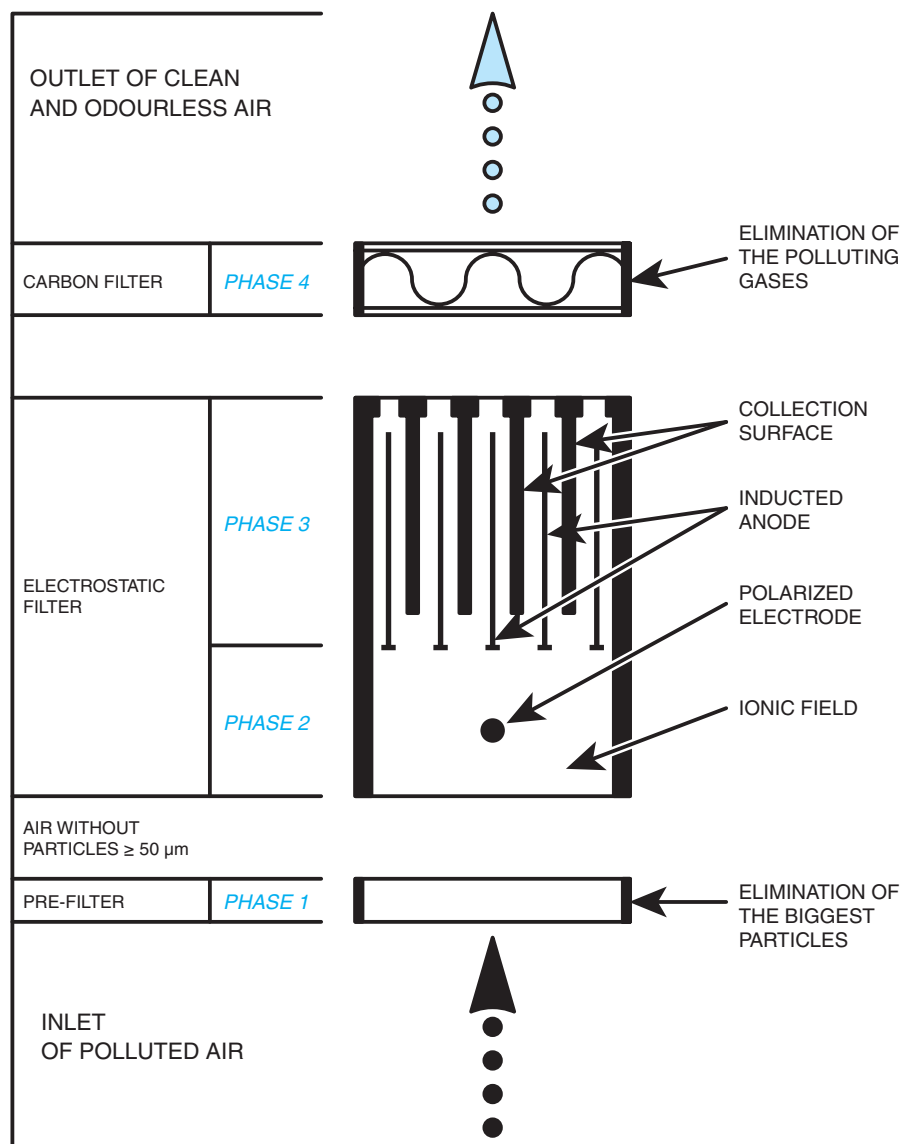
The air is sucked in and first passes a mechanical prefilter, which keeps away particles of more than 50 µm (dust, insects, etc.) (Phase 1)

Then the smallest particles (50 ÷ 0.01 µm) are exposed to an intensive ionic field and are polarized. (Phase 2)

The charged particles passing through the second filter section, are pushed back by the anode and attracted to the collection surfaces by a strong, inducted magnetic field. (Phase 3)

The air which leaves the unit is free from polluting particles.

The carbon filter (supplied on request) purifies the air from gaseous pollutants and from odours. (Phase 4)



Ventilation and air change

It is generally understood, that the more fresh air introduced indoors the better the indoor air quality will be. However, this implies an increase in energy costs necessary to keep comfortable environmental conditions. In addition the external air quality must be controlled year round in order to avoid a pollutant concentration that can jeopardize human health, when introduced indoor through ventilation.

The use of the “CRYSTALL” Electrostatic Filter dramatically reduces the external air intake which, in turn, provides a significant energy saving and reduces health risks.

The air treated by an Ocean air-conditioner fitted with an electrostatic filter usually has a concentration of polluting microparticles lower than the external air concentration, which improves the indoor air quality.

The U.S. agencies EPA, OSHA, and the ASHRAE 62-89 Standard set an external air intake minimum value of only 2.5/3L/s per person. This quantity of external air can guarantee a sufficient salubrity rate for the occupants, provided that there are no specific indoor sources of pollutants (ie tobacco, smoke, special activities).

With these recommended values for external air intake and with an OCEAN air-conditioner equipped with a suitably sized electrostatic filter, a high quality of indoor air and comfort level can be obtained.

The table below gives a simple indication of the size of the OCEAN air-conditioner, fitted with the electrostatic filter, required to function efficiently in various installation situations.

Obviously, the large variety of applications and environment

situations possible make difficult a more specific and detailed approach to solving particular problems.

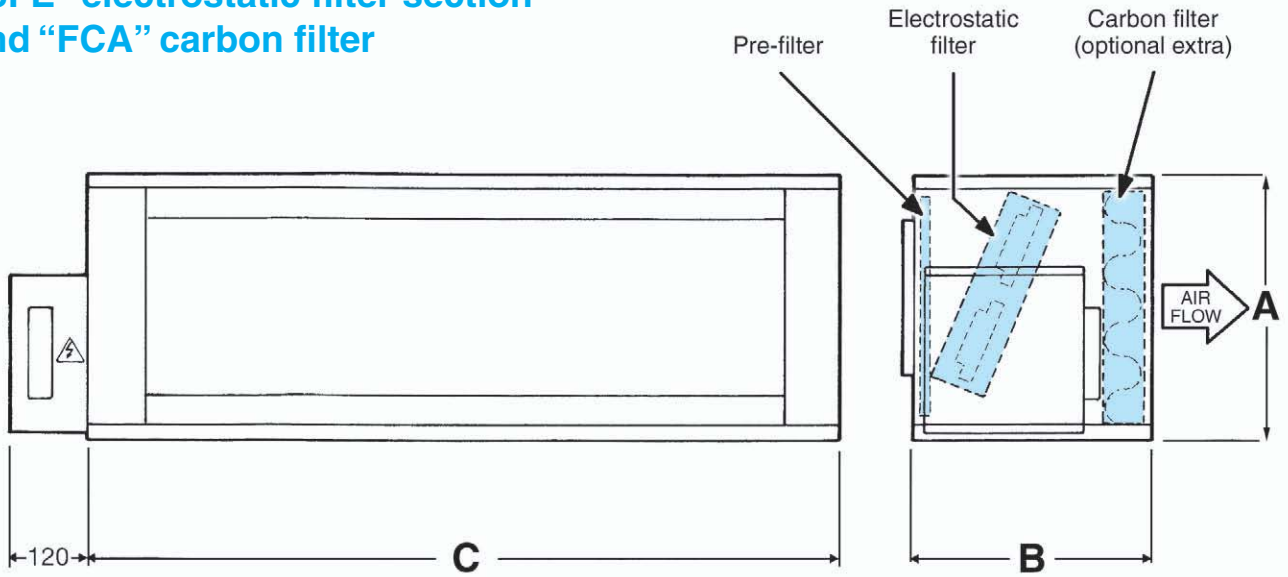
This table has therefore, been drawn up on a general basis assuming that certain values remain constant.

In particular:

- The pollutant quantity produced indoors is relatively low
- Occupational density is 7p/100 m² (7 people for every 100 m² of surface)
- Ventilation efficiency = 1
- External air quantity < 10% of maximum air flow
- Maximum room height = 3 metres

OCEAN	AIR FLOW m ³ /h	MAX ROOM VOLUME m ³	MAX NUMBER OF PEOPLE
1	650	160	4
	1000	250	6
	1400	350	8
2	1150	280	6
	1550	380	8
	2100	520	12
3	1750	430	9
	2300	570	12
	3000	750	17
4	2500	620	13
	3800	950	20
	5300	1320	28

“SFE” electrostatic filter section and “FCA” carbon filter

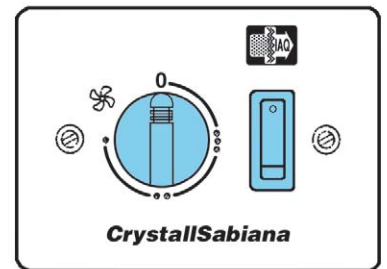


DIMENSIONS				
Model	1	2	3	4
A	335	415	515	515
B	300	380	480	480
C	950	950	950	1500
Electrostatic filter	840x112	840x112	840x112	1390x112
Number of electrostatic filters	2	3	4	4
Weight kg	7.8	8.5	10	17

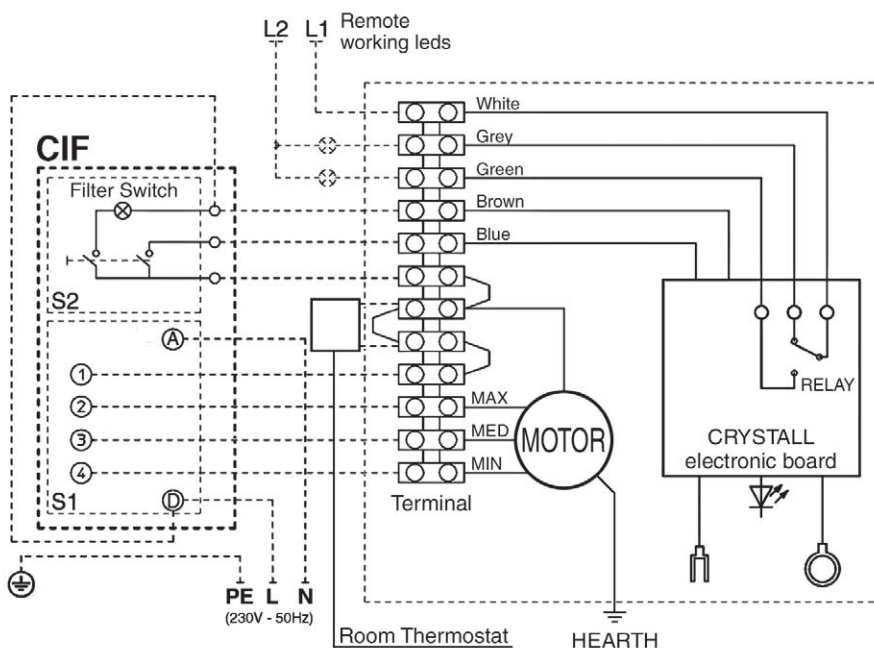
“CIF”

Remote control

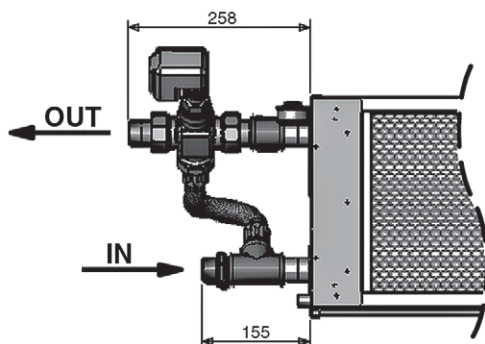
3 speed switch and electrostatic filter switch



Wiring diagram

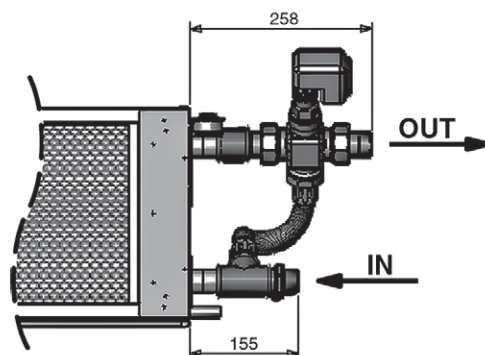


“230V ON-OFF VALVE KIT”

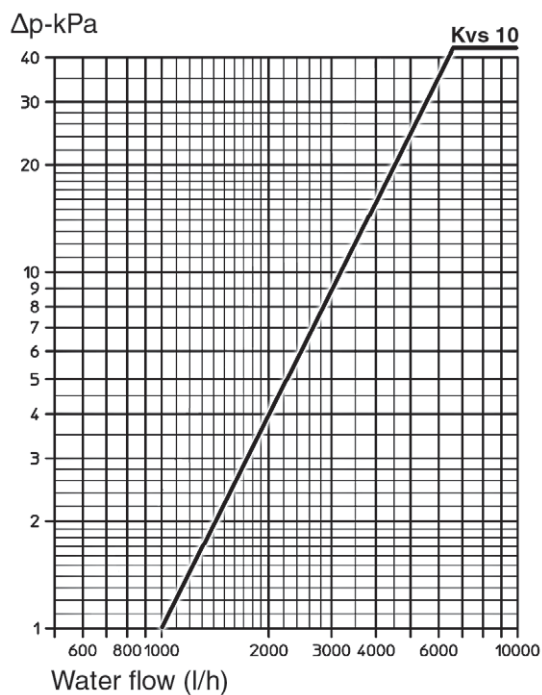


Left connections

Right connections

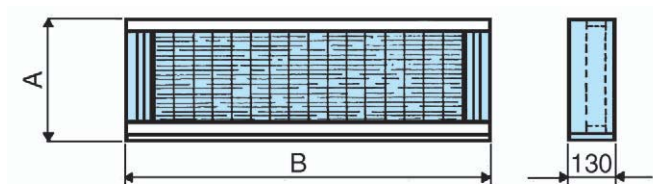


Model	(Ø) Connections	Kvs	Code
1 - 2	3/4"	10	9034255
3	1"	10	9034256
4	1" - 1/4	10	9034257



Filter section

“SFS”



Mod.	1	2	3	4
A	318	398	498	498
B	950	950	950	1500
Weight kg	7.4	7.9	8.4	11.5

Synthetic, re-usable pleated filter, efficiency according to ASHRAE 84%, Eurovent EU3 class.

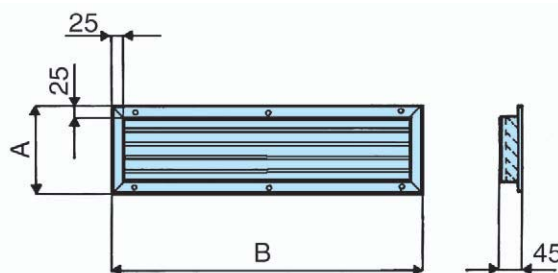
Dimensions: Model 1 = 290x870x48
 Model 2 = 370x870x48
 Model 3 = 470x870x48
 Model 4 = 470x1420x48

The standard filter extraction is from the bottom, any different need must be specifically requested.

Inlet grid

to be installed on the ductwork

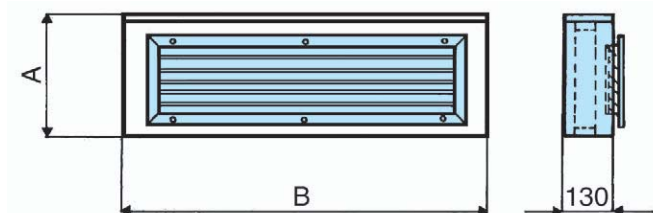
“GAS”



Mod.	1	2	3	4
A	225	325	425	425
B	820	820	820	1380

Filter section with inlet grid

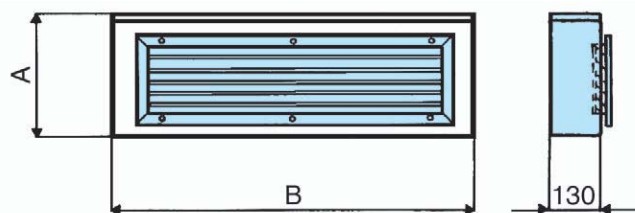
“FGR”



Mod.	1	2	3	4
A	318	398	498	498
B	950	950	950	1500

Inlet box with grid

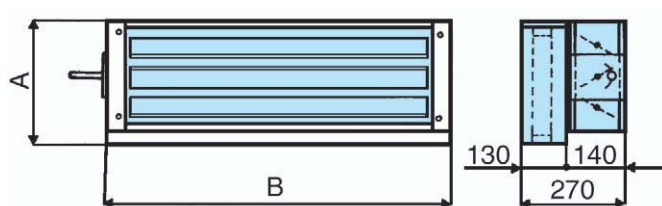
“PAG”



Mod.	1	2	3	4
A	318	398	498	498
B	950	950	950	1500

Filter section with damper

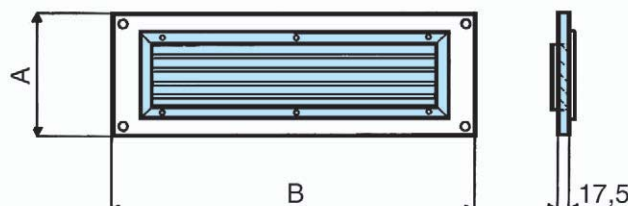
“FSR”



Mod.	1	2	3	4
A	318	398	498	498
B	950	950	950	1500

Panel with inlet grid to be installed on the fan section or on the air box

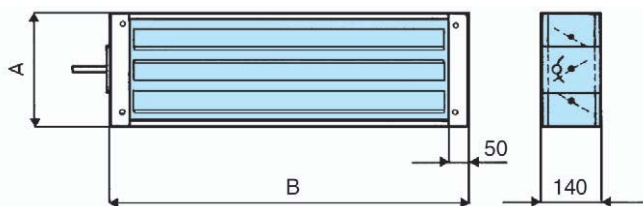
“PGA”



Mod.	1	2	3	4
A	300	380	480	480
B	950	950	950	1500

Inlet damper

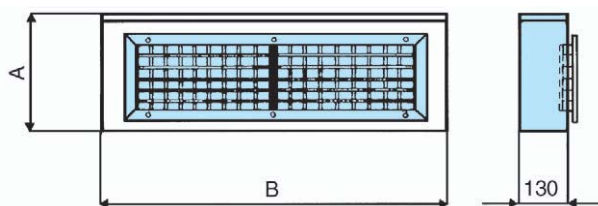
“SRA”



Mod.	1	2	3	4
A	300	380	480	480
B	950	950	950	1500

Outlet box with double louvres

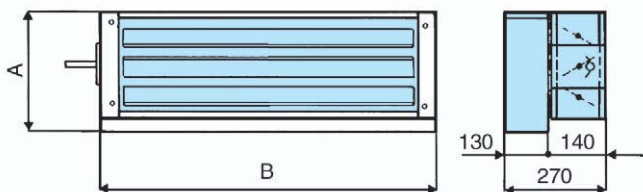
“PMB”



Mod.	1	2	3	4
A	318	398	498	498
B	950	950	950	1500

Inlet box with damper

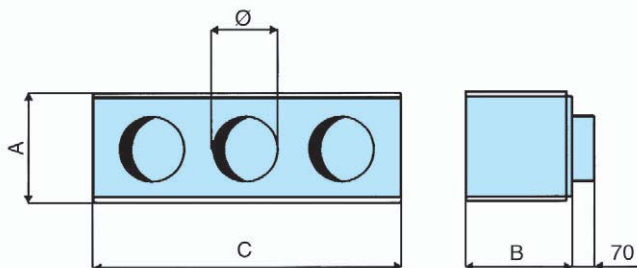
“PAS”



Mod.	1	2	3	4
A	318	398	498	498
B	950	950	950	1500

Outlet box with circular diffusers
with 3 circular diffusers (SIZES 1-2-3)
with 4 circular diffusers (SIZE 4)

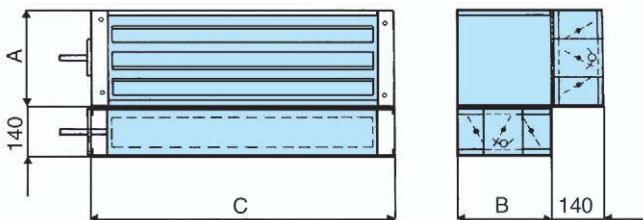
“PMC”



Mod.	1	2	3	4
A	335	415	515	515
B	318	398	498	498
C	950	950	950	1500
Ø	200	200	200	250

Mixing box with two dampers

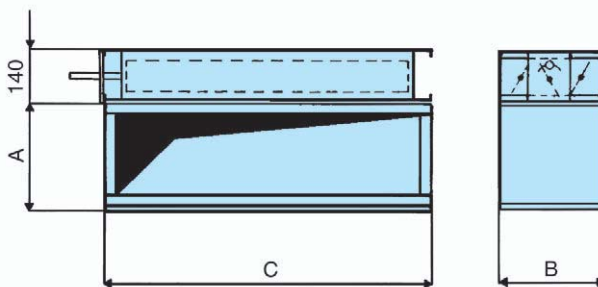
“PDS”



Mod.	1	2	3	4
A	318	398	498	498
B	300	380	480	480
C	950	950	950	1500

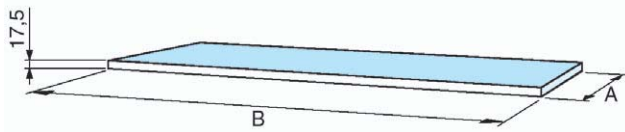
Inlet/outlet box with top or bottom damper

“PMS”



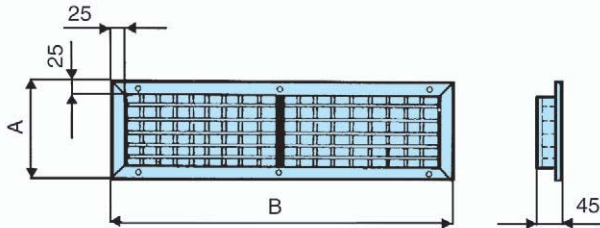
Mod.	1	2	3	4
A	318	398	498	498
B	300	380	480	480
C	950	950	950	1500

Top/bottom panel **“PSI”**



Mod.	1	2	3	4
A	300	380	480	480
B	950	950	950	1500

Outlet grid with double louvres **“BMA”**

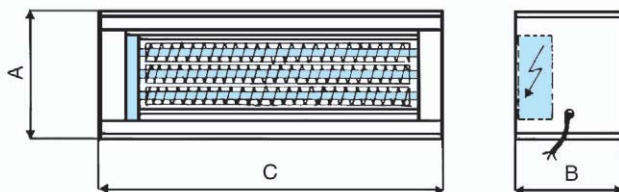


Mod.	1	2	3	4
A	225	325	425	425
B	820	820	820	1380

Supplementary electric battery **“BEL”**

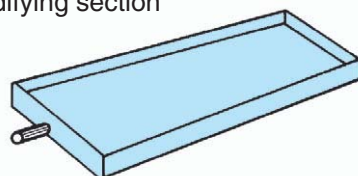
Section with an electrical element incorporating a safety thermostat (for TMO-T wiring diagram, see Page 27)

NOTE: the electric battery must be fitted after the fan section.



Mod.	1	2	3	4
A	335	415	515	515
B	300	380	480	480
C	950	950	950	1500
Volt	230/1	230/1	400/3	400/3
kW	2	4	6	12
Steps	1	1	3kW+3kW	6kW+6kW
Weight kg	12	14	16	24

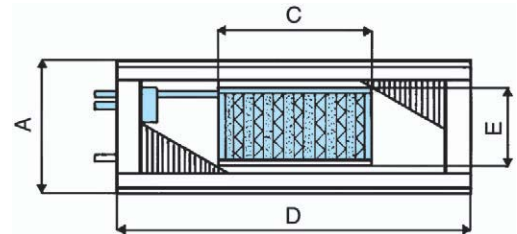
Condensate collection tray: to be used always for combinations from 01 to 06, represented at page 5 and with the “SUD” humidifying section and with chilled water or direct expansion coils. **“BRC”**



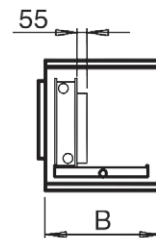
Mod.	1	2	3	4
Weight Kg	2.9	3.9	4.9	7.3

Humidification section **“SUD”**

Deck fill humidification with 2-way valve, powered at 220 V. 50 Hz., female gas fitting Ø 1/4”, with manual adjustment of the water flow rate. The valve is controlled by a room humidity sensor. Always use the “BRC” condensate collection tray with a siphon on the drain pipe. The maximum water pressure feeding is 2 bars.

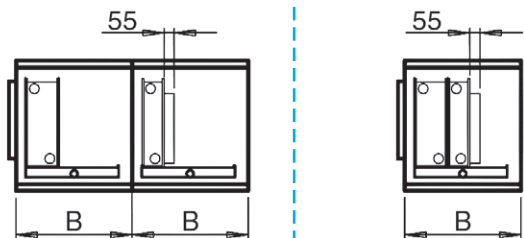


With 1 Battery: Sizes 1-2-3-4



With 2 Batteries

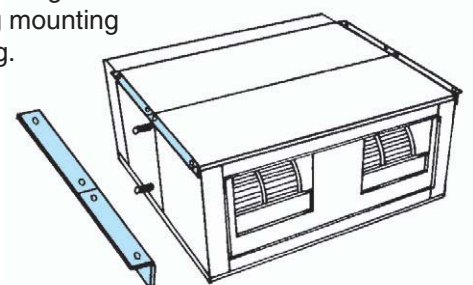
Size 1 = **SB4+SB2/SB6+SB2** | Sizes 2-3-4 = **SB4+2/SB6+2**



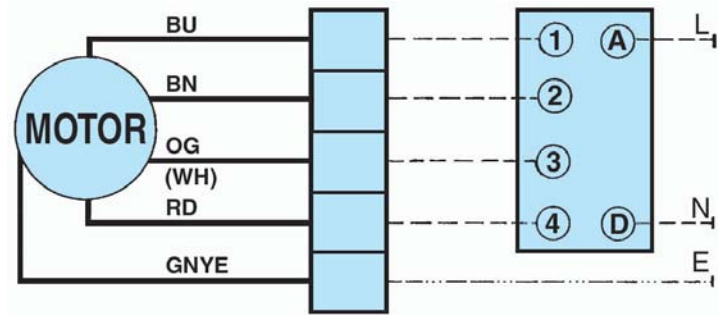
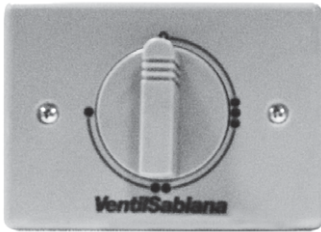
Mod.	1	2	3	4
A	335	415	515	515
B	300	380	480	480
C	480	480	725	1275
D	950	950	950	1500
E	200	200	420	420

Suspension brackets **“SQS”**

Galvanized steel angle brackets for either ceiling mounting or wall mounting.



IDENTIFICATION	CODE
COM	9053022

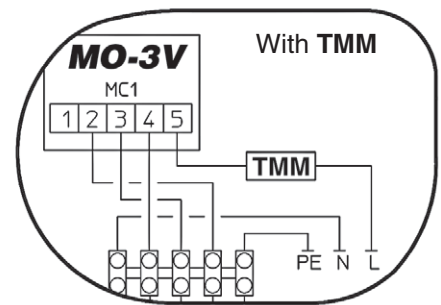
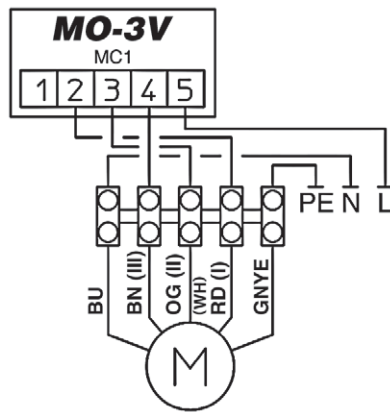


- Remote manual speed control.
- Switch with 4 positions: OFF, first speed, second speed, third speed.

IDENTIFICATION	CODE
MO-3V	9060160



Dimensions: 133x93x37 mm



- For Ocean size 1 and size 2 only.
- ON-OFF switch and 3 speed switch.
- Without thermostatic control.

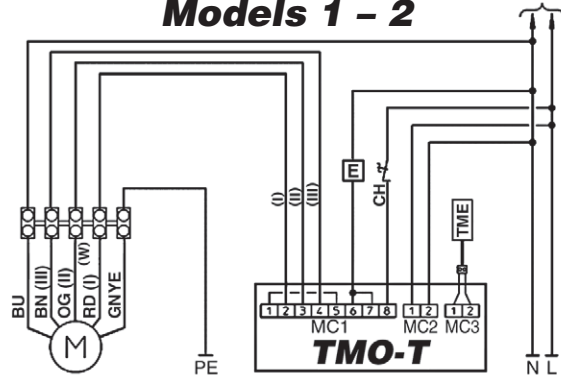
IDENTIFICATION	CODE
TMO-T	9060161



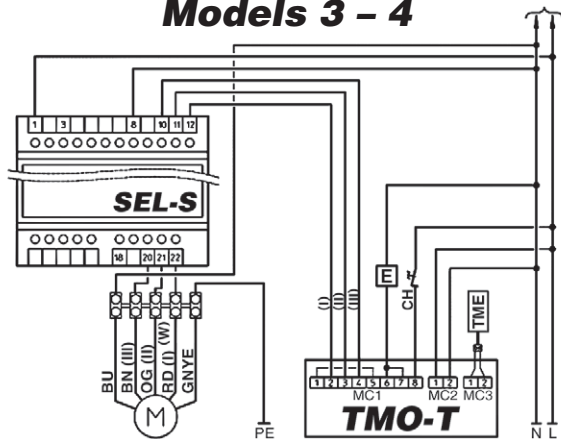
Dimensions: 133x93x37 mm

- For Ocean size 1 and size 2 use TMO-T only.
- For Ocean size 3 and size 4 use TMO-T + SEL-S (Code 9079110).
- ON-OFF switch and 3 speed switch.
- Summer/Winter switch.
- Electronic room thermostat for fan or valve control (ON-OFF).
- It allows to control the low temperature cut-out thermostat (TME).
- It allows to control the summer or winter cycle with centralized and remote switch, or an automatic change-over fitted on the water pipe (for 2-tube installations only).

Models 1 - 2



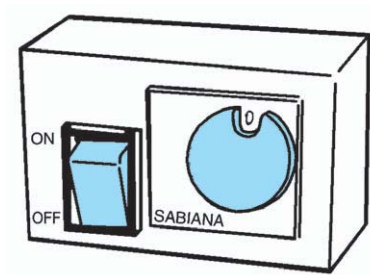
Models 3 - 4



LEGEND	CH = Remote Summer/Winter switch	E = Water valve	BN = Brown	WH = White
	TME = TME low temp. cut-out thermostat	GNYE = Yellow/Green	OG = Orange	GN = Green
	TMM = TMM low temp. cut-out thermostat	BU = Light Blue	RD = Red	YE = Yellow

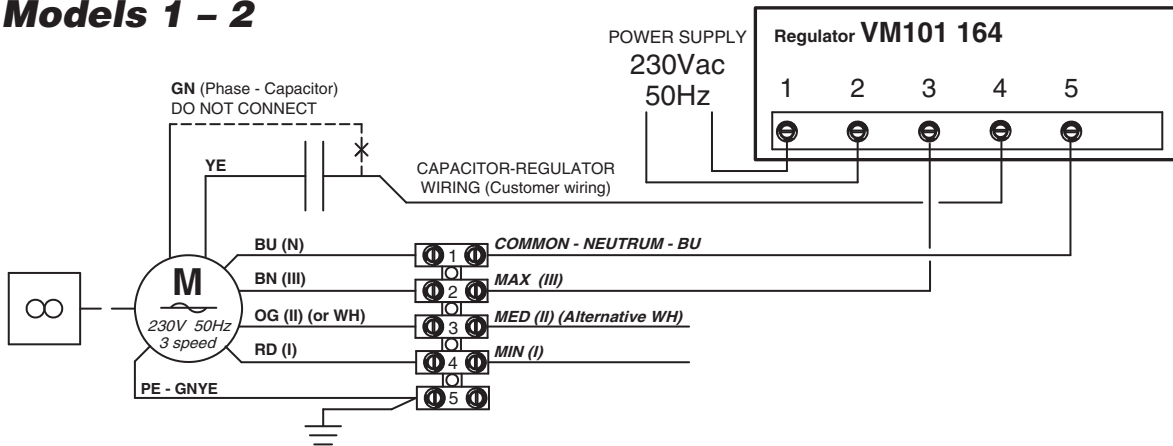
IDENTIFICATION	MODEL	CODE
VAR	1 - 2	3021051
	3	3021094
	4	9035105 *

* With this control it is mandatory to select the relevant special motor in the SVE fan section - Size 4 (Code 0035100X).

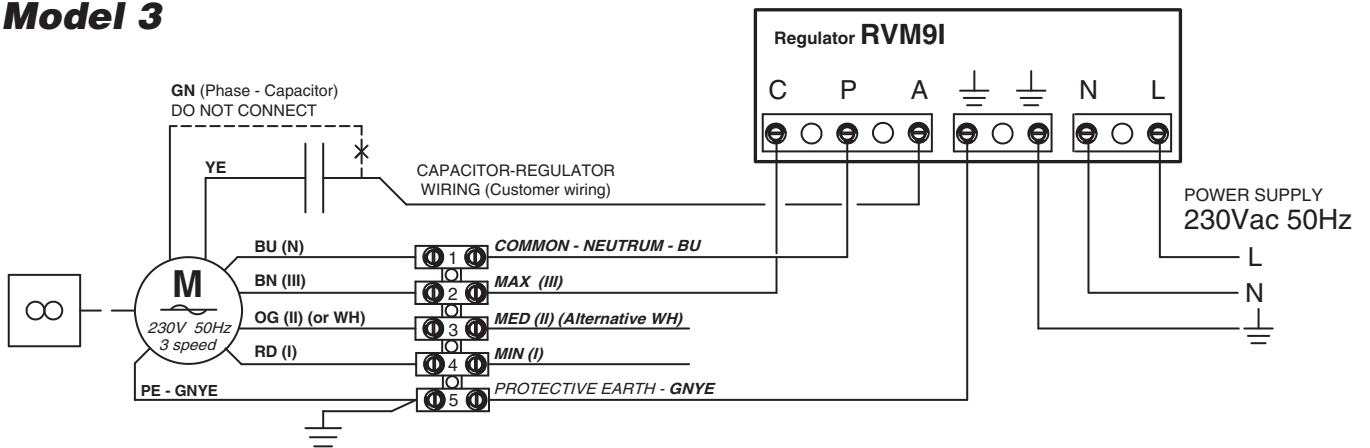


- Electronic variable speed drive with ON-OFF switch.

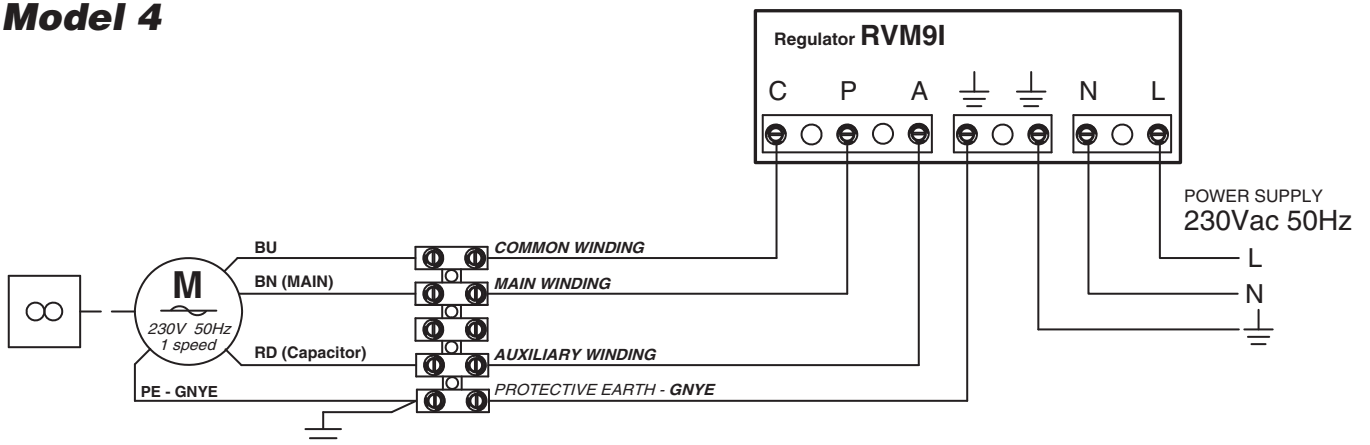
Models 1 - 2



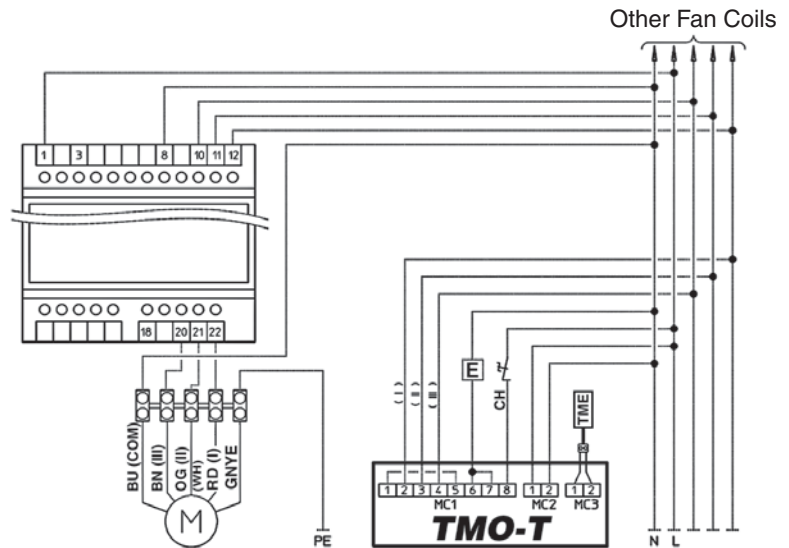
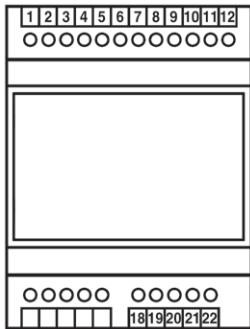
Model 3



Model 4



IDENTIFICATION	CODE
SEL-S	9079110



SPEED SWITCH (SLAVE)

- It allows to control up to 8 units with only one TMO-T centralized wall control (1 speed switch for each unit).

IDENTIFICATION	CODE
TME	3021091

TME low temperature cut-out thermostat

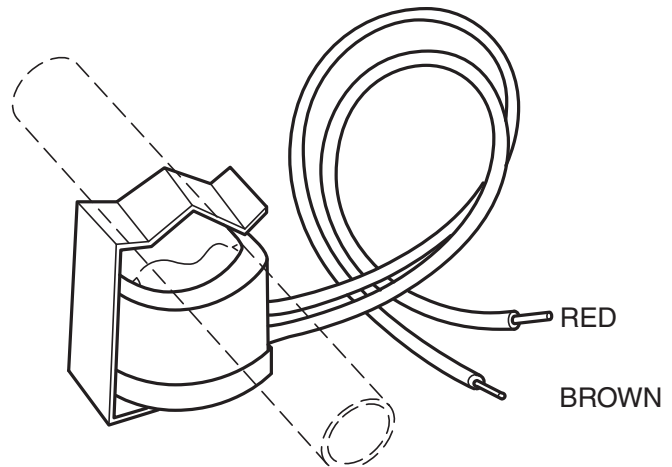
To be fitted between the coil fins; when connecting the control, the TME probe cable must be separated from the power supply wires. To be used only with TMO-T control. It stops the fan when the water temperature is lower than 38°C and it starts the fan when is higher than 42°C.



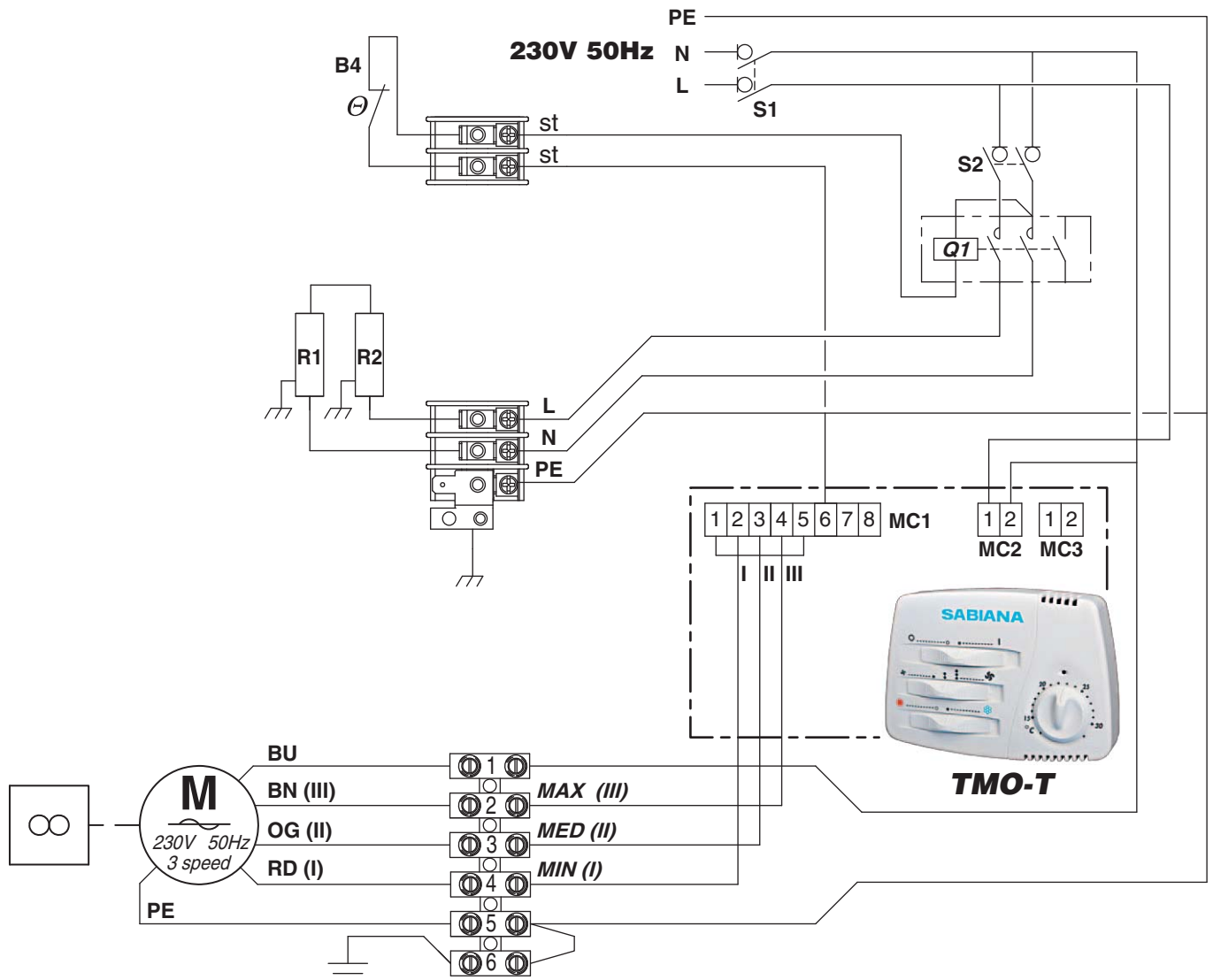
IDENTIFICATION	CODE
TMM	9053048

TMM low temperature cut-out thermostat

To be installed in contact with the hot water circuit. To be used only with MO-3V control. For units working on heating only. It stops the fan when the water temperature is lower than 30°C and it starts the fan when is higher than 38°C.



Supplementary electric coil wiring diagram
with TMO-T wall electronic control
(only for single phase versions - Sizes 1 and 2)



**NOTE: WHEN THE ELECTRIC RESISTANCES ARE ON,
THE FAN MOTOR MUST ALWAYS BE WORKING.**

LEGEND

- TMO-T** = TMO-T terminal board
- B4** = Internal safety thermostat
- Q1** = BEL insertion power switch contact
- R1-R2** = Electrical heaters
- S1** = Power switch disconnecter - OCEAN power supply
- S2** = Power switch disconnecter - BEL power supply
- BU** = Blue
- BN** = Brown
- OG** = Orange
- RD** = Red
- PE** = HEARTH - Yellow/Green

*The descriptions and illustrations provided in this publication are not binding:
Sabiana reserves the right, whilst maintaining the essential characteristics of the types described
and illustrated, to make, at any time, without the requirement to promptly update
this piece of literature, any changes that it considers useful
for the purpose of improvement or for any other manufacturing or commercial requirements.*

Air Conditioning
Ocean Modular Air Conditioners



SABIANA
ENVIRONMENTAL COMFORT

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OCEAN - EX - 02/13
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