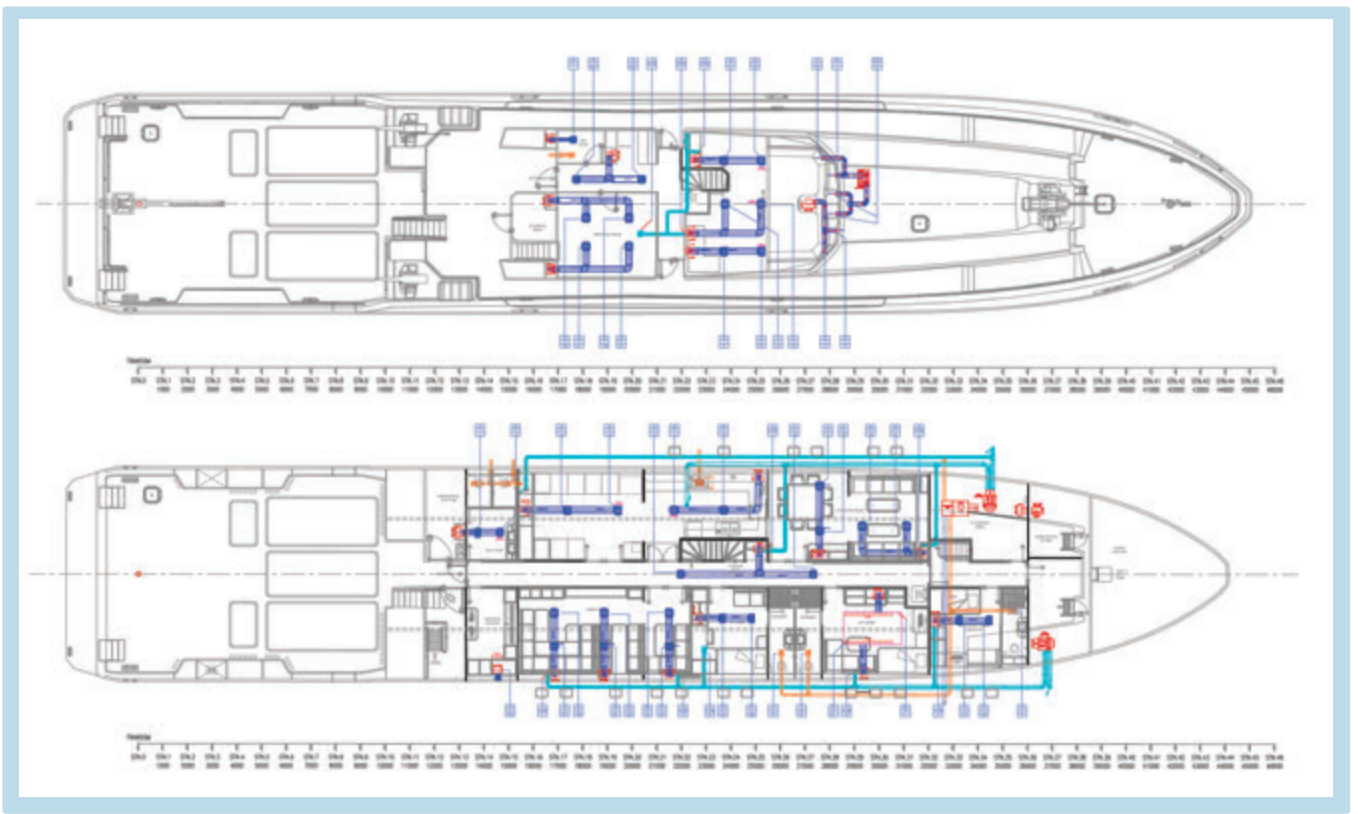

COOLMAR®
HVAC & R MARINE SYSTEM

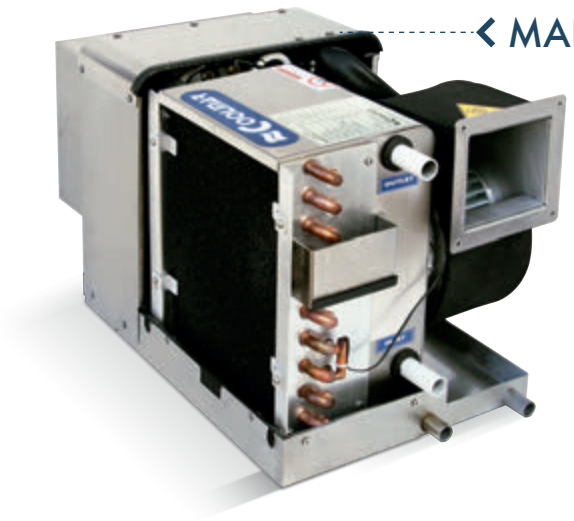
OUR QUALITY POLICY

Air conditioning is a process which heats, cools, cleans and cycles the air and it continuously controls the humidity content of the environment. Today it is seen that humans give great importance to air conditioning systems and their qualities in order to live more conveniently and efficiently. Our firm which performs activities on marine HVAC systems follows closely the continuously changing air – conditioning, ventilation and heating technologies and with the procurement of design, project engineering, site installation, application, commissioning and all spare parts, we present HVAC systems which became an inseparable part of ships and yachts to our customers by targeting mainly the comforting conditions. Yachts, commercial ships, vessels, ferries, passenger boats and torpedo boats giving military service are our working fields. Our projects are planned with years of experience and by our expert staff. HVAC system productions are supported by high technologies using our own software. The systems are designed by being sensitive to the human and environmental health and giving great importance to our purpose of low energy usage and maximum efficiency. We establish systems which have integrated our special productions designed for our customers needs. We support technical documents, all engineering drawings to our customers.



MAP SERIES

MAP 005



MAP 24

SELF CONTAINED

TECHNICAL SPECIFICATIONS

SYSTEM			HEAT PUMP										
MODEL			MAP										
CAPACITY			005	008	010	012	015	018	020	024	028	032	036
Power Supply			220-240 / 1 Ph / 50 Hz										
Cooling Capacity		Btu/h	4,600	7,500	9,500	12,200	15,000	18,200	20,000	24,600	28,000	31.300	35.800
Heating Capacity		Btu/h	4,900	7,600	9,700	12,600	15,800	18,700	20,300	25,000	28,800	32.000	37.000
Power Consumption		W	550	690	736	943	1196	1357	1426	1725	1955	2254	2645
Operating Current		A	2.5 / 3.0	3.0 / 3.9	3.1 / 4.2	4.1 / 5.4	5.2 / 6.8	5.9 / 7.7	6.2 / 8.1	7.5 / 9.3	8.5 / 10.5	9.8 / 12.4	11.5 / 13.8
Duct Diameter		mm	100	125	125	125	150	180	180	180	180	2x150	2x180
Refrigerant-Control				R-134A / R 410 A / R-22 / R-407C HFC - Capillary Tube									
DIMENSIONS (mm)		Height	280	320	320	340	370	370	420	420	420	500	500
		Lenght	460	430	430	480	525	545	595	595	645	750	850
		Width	270	270	270	270	320	320	335	335	430	525	525
Weight		Kg	18	22	23	28	37	39	39.5	46	49	76	87
Air Flow		m3/h	250	330	380	480	620	750	850	1,050	1000	1300	1500
Fan Motor		W	80	110	115	180	180	195	250	300	300	360	390
Pipe	Condenser	inch (mm)	5/8"(15)	3/4"(19)									
Dimension	Drainage	inch (mm)	5/8"(15)										
Condenser Water Flow		Lt/min	8	10	11	13	15	18	20	22	25	35	42

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C

HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

MAF - C SERIES

MAF 10 C

FANCOIL COMPACT

TECHNICAL SPECIFICATIONS

MODEL	MAF									
CAPACITY	004	008	010	012	016	020	024	028	032	036
Capacity (Btu/h)	4,000	7,500	9,700	12,500	16,000	20,000	24,000	28,000	32,000	36,000
Capacity (Kcal/h)	1,010	1,894	2,449	3,157	4,040	5,051	6,061	7,071	8,081	9,091
Power Supply	220-240V / 1Ph / 50Hz									
Power Consumption (Watt)	80	115	115	180	180	250	300	300	360	390
Operating Current (A)	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.6	2.4
Air Flow (m3/h)	250	330	375	480	620	750	950	1000	1300	1500
Duct Diameter (mm)	100	125	125	125	150	180	180	180	2x150	2x180
Body	304 Cr - Ni Body									
Control	COOLMAR PRO. CM- MPC20									
Water Pipe Dimension (mm)	12	15	15	15	15	19	19	19	19	19
Drainage Pipe Diameter (mm)	19									
Dimensions										
Height (mm)	280	330	330	330	360	360	360	360	400	400
Lenght (mm) w/o valve	310	320	370	400	440	480	480	580	610	660
Lenght (mm) valve	360	370	420	450	490	550	550	630	670	720
Width (mm)	275	275	275	275	375	395	395	395	450	450
Weight (kg)	6.5	9	10	13	14	15	20	21	23	27

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C

HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

MAF - SL SERIES

MAF 30 SL

MAF 12 SL

FANCOIL SLIMLINE

TECHNICAL SPECIFICATIONS

MODEL	MAF - SL							
CAPACITY	004	008	010	012	016	020	24	30
Capacity (Btu/h)	4,000	7,500	9,700	12,500	16,000	20,000	24,000	30,000
Capacity (Kcal/h)	1,010	1,894	2,449	3,157	4,040	5,051	6,061	7,576
Power Supply	220-240V / 1Ph / 50Hz							
Power Consumption (Watt)	80	115	115	180	180	250	300	360
Operating Current (A)	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1,6
Air Flow (m3/h)	200	275	320	520	650	950	1000	1300
Duct Diameter (mm)	100	100	100	125	125	2X125	2X125	2X125
Body	304 Cr - Ni Body							
Control	COOLMAR PRO. CM- MPC20							
Water Line Hose (mm)	12	15	15	15	15	19	19	19
Drainage Pipe Diameter (mm)	15							
Dimensions								
Height (mm)	525	550	550	550	600	620	900	900
Lenght (mm)	360	420	420	420	520	520	520	520
Width (mm)	170	170	170	170	185	185	185	185
Weight (kg)	7	9.5	10	12	14	19	30	30

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C

HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

MAF - CF SERIES

MAF 10 CF >

< MAF 16 CF

FANCOIL CROSFLOW

TECHNICAL SPECIFICATIONS

MODEL	MAF - C					
CAPACITY	004	006	008	010	012	016
Capacity (Btu/h)	4,000	6,000	7,500	9,700	12,500	16,000
Capacity (Kcal/h)	1,010	1,515	1,894	2,449	3,157	4,040
Power Supply	220-240V / 1Ph / 50Hz					
Power Consumption (Watt)	29	33	45	45	45	65
Operating Current (A)	0.13	0.15	0.2	0.2	0.2	0.3
Air Flow (m3/h)	150	170	230	230	230	420
Duct Diameter (mm)	60x180	60X240	60x300	60x300	60x300	60x300 x2
Body	304 Cr - Ni Body					
Control	COOLMAR PRO. CM - MPC20 LCD					
Water Pipe Dimension (mm)	12	12	15	15	15	15
Drainage Pipe Diameter (mm)	15					
Dimensions						
Height (mm)	150	150	170	170	170	170
Lenght (mm)	330	330	330	330	330	330
Width (mm)	300	350	420	420	460	760
Weight (kg)	6.5	7	8	9	11	16

COOLING	Internal conditions : 19.5°C / 27°C (YT/KT)	EXTERNAL CONDITIONS (Water °C) : 28°C
HEATING	Internal conditions : 16°C / 22°C (YT/KT)	EXTERNAL CONDITIONS (Water °C) : 8°C

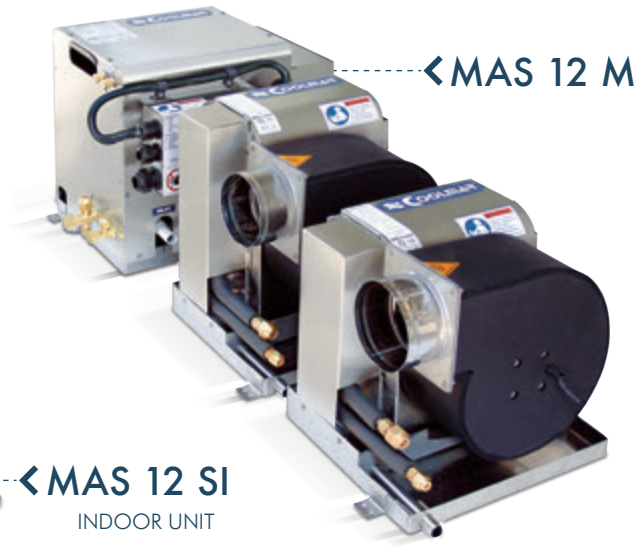
Technical Specifications and sizes to change without notice.

MAS SERIES

MAS 12 S
OUTDOOR UNIT

SPLIT

MAS 12 SI
INDOOR UNIT



MAS 12 M

MULTI SPLIT

ocean's wonder...

TECHNICAL SPECIFICATIONS

SYSTEM			HEAT PUMP								
MODEL			MAS								
CAPACITY			005	008	010	012	016	018	020	022	024
Power Supply		Indoor	220-240V / 1Ph / 50Hz								
		Outdoor	220-240V / 1Ph / 50Hz								
Cooling Capacity		Btu/h	4,600	7,500	9,500	12,200	15,000	18,200	20,000	22,100	24,600
Heating Capacity		Btu/h	4,900	7,600	9,700	12,600	15,800	18,700	20,300	22,600	25,000
Power Consumption		W	550	690	736	943	1196	1357	1426	1495	1725
Operating Current (Cool / Heat)		Indoor (A)	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7
		Outdoor (A)	2.5/3.0	3.0/3.9	3.1/4.2	4.1/5.4	5.2/6.8	5.9/7.7	6.2/8.1	6.5/8.4	7.5/9.3
Duct Diameter		mm	100	125	125	125	150	180	180	180	180
Refrigerant / Control			R-134A / R 410 A / R-22 / R-407C HFC - Capillary Tube								
INDOOR UNIT	DIMENSION (mm)	Height	270	320	320	320	350	370	400	400	400
		Lenght	320	345	345	390	420	420	445	445	445
		Width	270	270	270	270	320	320	320	320	320
	Weight	Kg	6	8	8.5	12	16	18	19	20	21
	Air Flow	m^3/h	250	330	380	480	620	750	850	950	1,050
	Fan Motor	W	80	110	115	180	180	180	300	300	330
OUTDOOR UNIT	DIMENSION (mm)	Height	280	320	320	340	370	370	420	420	420
		Lenght	285	285	285	285	320	320	320	320	320
		Width	260	275	275	275	320	320	320	320	320
PIPE DIMENSION	Weight	Kg	15	17	18	19	25	27	28	30	32
	Suction Line	inch (mm)	3/8"(10)	3/8"(10)	3/8"(10)	3/8"(10)	1/2"(12)	1/2"(12)	1/2"(12)	1/2"(12)	1/2"(12)
	Liquid Line	inch (mm)	1/.4"(6)	1/.4"(6)	1/.4"(6)	1/.4"(6)	1/.4"(6)	1/.4"(6)	3/8"(10)	3/8"(10)	3/8"(10)
	Condenser	inch (mm)	5/8"(15)	3/4"(19)	3/4"(19)	3/4"(19)	3/4"(19)	3/4"(19)	3/4"(19)	3/4"(19)	3/4"(19)
	Drain	inch (mm)	5/8"(15)	5/8"(15)	5/8"(15)	5/8"(15)	5/8"(15)	5/8"(15)	5/8"(15)	5/8"(15)	5/8"(15)
Condanser Water Flow		Lt/min	8	10	11	13	15	18	20	20	22

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C

HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

MAC SERIES

Our chiller systems are within two different groups by modular and single body models. Our modular chiller units have various advantages such as easiness for installation, maintenance and repair and occupying a small place in the boats. Minimum loss of power, maximum performance and rapid cooling-heating can be ensured thanks to stainless plate heat exchanger in its hardware. It displays a great resistance to marine conditions for years by its chromium-nickel body and connectors (quality 304) and copper-nickel alloyed condenser. In addition to three water sensors, the system was fully protected by high-low gas pressure protection, water flow check and freezing sensor. It provides operation under most appropriate conditions by its control system (manufactured by Carel-Danfoss), wide programming range and temperature sensors. In addition to our standard manufactures, specially tailored chiller units aiming to avoid installation place problems are projected and provided for our customers.

CHILLER UNIT - SINGLE COMPRESSOR

MODEL NO	CAPACITY	Power Supply	Operating Current*	LRA **	Power Consumption	Sea Water Flow	Chiller Water Flow
	(Btu/h)		(A)	(A)	(KW)	(Lt/min)	(Lt/min)
MAC 024 S1	24.000	230V/1Ph/50Hz	7,5	56	1,7	26	25
MAC 030 S1	30.000	230V/1Ph/50Hz	7,8	66	1,8	32	28
MAC 030 S3	31.000	400V/3Ph/50Hz	3,3	39	1,75	32	28
MAC 036 S1	36.000	230V/1Ph/50Hz	9,8	83	2,2	36	32
MAC 036 S3	36.000	400V/3Ph/50Hz	4,46	45	2	36	32
MAC 044 S3	44.000	400V/3Ph/50Hz	4,6	41	2,4	42	38
MAC 050 S3	50.000	400V/3Ph/50Hz	5	53	2,7	45	42
MAC 060 S3	60.000	400V/3Ph/50Hz	6,8	82	3,4	60	58
MAC 072 S3	72.100	400V/3Ph/50Hz	8,55	87	3,9	70	65
MAC 083 S3	83.300	400V/3Ph/50Hz	9,9	100	4,6	80	68
MAC 090 S3	92.000	400V/3Ph/50Hz	10,5	98	5,2	88	75
MAC 100 S3	107.000	400V/3Ph/50Hz	13,2	142	6,3	104	98
MAC 120 S3	121.000	400V/3Ph/50Hz	13,8	142	6,8	122	116
MAC 140 S3	140.000	400V/3Ph/50Hz	15,55	147	7,8	130	120

CHILLER UNIT - DUAL COMPRESSOR

MODEL NO	CAPACITY	Power Supply	Operating Current*	LRA **	Power Consumption	Sea Water Flow	Chiller Water Flow
	(Btu/h)		(A)	(A)	(KW)	(Lt/min)	(Lt/min)
MAC 048 D1	48.000	230V/1Ph/50Hz	15	56	3,4	52	50
MAC 060 D1	60.000	230V/1Ph/50Hz	15,6	66	3,6	64	56
MAC 060 D3	62.000	400V/3Ph/50Hz	6,6	39	3,5	64	56
MAC 072 D1	72.000	230V/1Ph/50Hz	19,6	83	4,4	72	64
MAC 072 D3	72.000	400V/3Ph/50Hz	8,92	45	4	72	64
MAC 088 D3	88.000	400V/3Ph/50Hz	9,2	41	4,8	84	76
MAC 100 D3	100.000	400V/3Ph/50Hz	10	53	5,4	90	84
MAC 120 D3	120.000	400V/3Ph/50Hz	13,6	82	6,8	120	116
MAC 144 D3	144.200	400V/3Ph/50Hz	17,1	87	7,8	140	130
MAC 166 D3	166.600	400V/3Ph/50Hz	19,8	100	9,2	160	136
MAC 180 D3	184.000	400V/3Ph/50Hz	21	98	10,4	176	150
MAC 200 D3	214.000	400V/3Ph/50Hz	26,4	142	12,6	208	196
MAC 240 D3	242.000	400V/3Ph/50Hz	27,6	142	13,6	244	232
MAC 280 D3	280.000	400V/3Ph/50Hz	31,1	147	15,6	260	240

- Capacities are designed at 7 °C evaporation and 38 °C condensation temperature conditions.
- Operating Current (A) *: The amps are given at 7 °C evaporation and 38 °C condensation temperature conditions of compressor manufacturer selection programs.
- LRA (A) **: Amperage value of 1(one) compressor.
- All models have heat pump heating system.
- Technical Specifications and sizes to change without notice.

MAC SERIES

CHILLER UNIT - TREE COMPRESSOR

MODEL NO	CAPACITY	Power Supply	Operating Current*	LRA **	Power Consumption	Sea Water Flow	Chiller Water Flow
	(Btu/h)		(A)	(A)	(KW)	(Lt/min)	(Lt/min)
MAC 072 T1	72.000	230V/1Ph/50Hz	22,5	56	5,1	78	75
MAC 090 T1	90.000	230V/1Ph/50Hz	23,4	66	5,4	96	84
MAC 090 T3	93.000	400V/3Ph/50Hz	9,9	39	5,25	96	84
MAC 108 T1	108.000	230V/1Ph/50Hz	29,4	83	6,6	108	96
MAC 108 T3	108.000	400V/3Ph/50Hz	13,38	45	6	108	96
MAC 132 T3	132.000	400V/3Ph/50Hz	13,8	41	7,2	126	114
MAC 150 T3	150.000	400V/3Ph/50Hz	15	53	8,1	135	126
MAC 180 T3	180.000	400V/3Ph/50Hz	20,4	82	10,2	180	174
MAC 216 T3	216.300	400V/3Ph/50Hz	25,65	87	11,7	210	195
MAC 250 T3	250.000	400V/3Ph/50Hz	29,7	100	13,8	240	204
MAC 270 T3	276.000	400V/3Ph/50Hz	31,5	98	15,6	264	225
MAC 300 T3	321.000	400V/3Ph/50Hz	39,6	142	18,9	312	294
MAC 360 T3	363.000	400V/3Ph/50Hz	41,4	142	20,4	366	348
MAC 320 T3	420.000	400V/3Ph/50Hz	46,65	147	23,4	390	360

CHILLER UNIT - FOUR COMPRESSOR

MODEL NO	CAPACITY	Power Supply	Operating Current*	LRA **	Power Consumption	Sea Water Flow	Chiller Water Flow
	(Btu/h)		(A)	(A)	(KW)	(Lt/min)	(Lt/min)
MAC 096 F1	96.000	230V/1Ph/50Hz	30	56	6,8	104	100
MAC 120 F1	120.000	230V/1Ph/50Hz	31,2	66	7,2	128	112
MAC 120 F3	124.000	400V/3Ph/50Hz	13,2	39	7	128	112
MAC 144 F1	144.000	230V/1Ph/50Hz	39,2	83	8,8	144	128
MAC 144 F3	144.000	400V/3Ph/50Hz	17,84	45	8	144	128
MAC 180 F3	176.000	400V/3Ph/50Hz	18,4	41	9,6	168	152
MAC 200 F3	200.000	400V/3Ph/50Hz	20	53	10,8	180	168
MAC 240 F3	240.000	400V/3Ph/50Hz	27,2	82	13,6	240	232
MAC 288 F3	288.400	400V/3Ph/50Hz	34,2	87	15,6	280	260
MAC 330 F3	333.200	400V/3Ph/50Hz	39,6	100	18,4	320	290
MAC 360 F3	268.000	400V/3Ph/50Hz	42	98	20,8	352	330
MAC 400 F3	428.000	400V/3Ph/50Hz	52,8	142	25,2	416	392
MAC 480 F3	484.000	400V/3Ph/50Hz	55,2	142	27,2	488	464
MAC 560 F3	560.000	400V/3Ph/50Hz	62,2	147	31,2	520	480
MAC 630 F3	630.000	400V/3Ph/50Hz	64,8	158	34,5	585	540
MAC 720 F3	720.000	400V/3Ph/50Hz	74,8	170	39,3	670	620

- Capacities are designed at 7 °C evaporation and 38 °C condensation temperature conditions.
- Operating Current (A) *: The amps are given at 7 °C evaporation and 38 °C condensation temperature conditions of compressor manufacturer selection programs.
- LRA (A) **: Amperage value of 1(one) compressor.
- All models have heat pump heating system.

Technical Specifications and sizes to change without notice.

INVERTER CHILLER


Inverter compressor


Inverter speed drive


Chiller control


Temperature probe


Electronic pressure control


Sea water flow control


Electronic pressure transmitter


Electronic expantion valve

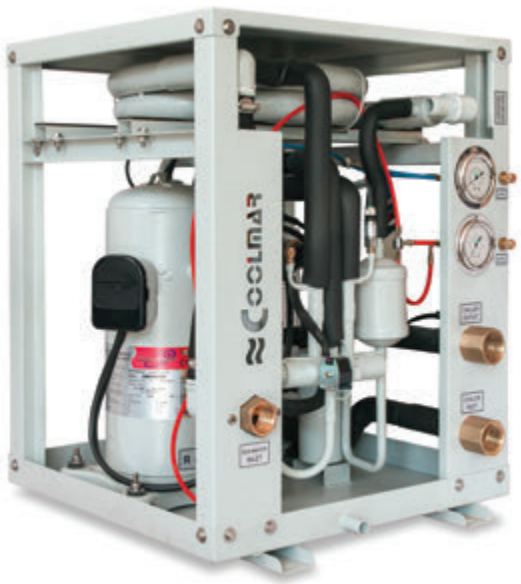

Superheat control board

MODEL NO (S3)	MAC072-I	MAC100-I	MAC130-I	MAC160-I	MAC190-I
Capacity Rance Min. Btu/h	13.555	17.121	23.487	28.475	33.600
Capacity Rance Max. Btu/h	88.722	112.648	137.439	165.570	192.000
Power Supply	DC INVERTER 400V / 3Ph /				
Operating Current Max. (A)	10,9	13,2	16,2	19,8	21,3
Power Consumption max. (KW)	5,2	6,6	8,1	10,5	11,7
Refrigerant	R410A				
Refrigerant Control	TXV -E				
Sea Water Condenser	90/10 Cu-Ni				
Compressor Type	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Chiller Type	316 crni Plate Heat Exchanger				
Body	304 Cr-Ni				
Control	Carel / Danfoss				
Condenser Pipe Dia (inch)	1 "	1 1/4 "	1 1/4 "	1 1/2"	1 1/2"
Chiller Pipe Dia (inch)	1"	1 1/4"	1 1/2"	2"	2"
Drain Pipe Dia (mm)	19				
Sea Water Flow lt/min	85	115	132	170	200
Chiller Water Flow lt/min	82	110	125	160	185

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C
HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

MAC INVERTER



Impressively low operating cost is a key advantage of inverter air conditioners. We've combined advanced inverter technologies with cutting-edge electronics and mechaniel technologies to achieve a synergistic effect that enables improvements in heating/cooling performance efficiency. Better performance and lower energy consumption are the results. Our models, which have been developed by adding inverter technology to the Coolmar chiller units, operate with less electricity consumption and with maximum efficiency compared to the normal systems. Our Inverter chiller products provide 14.000-192.000 Btu/h capacity at three phases system between 12.000 – 72.000 Btu/h mono phase system. DC Inverter systems do not require high power at first take-off compared to the normal systems, therefore they decrease the electricity load fluctuations up to the minimum levels by not imposing any burden to the generator. By controlling water temperature in the circuit, it operates stable at requested water temperature at lower speeds. At first operation, it enables maximum power and fast cooling. When the circuit water temperature reaches at desired temperature, inverter continues to operate at lower energy by decreasing its speed. It enables full load operation at maximum efficiency by performing pressure and temperature checks sensitively with electronic expansion valve and superheat control board. The system measures itself all the time with programmable developed electronic control systems and operates more efficiently with less energy consumption and real capacity.

MAR SERIES

MAR 072

COOLERS

TECHNICAL SPECIFICATIONS

MODEL NO	MAR-012	MAR-015	MAR-018	MAR-024	MAR-036	MAR-054	MAR-072
Capacity (Kcal/h)	280	300	350	420	480	550	750
Power Supply	230V / 1Ph / 50Hz						
Power Consumption (W)	240	250	260	270	300	350	380
Operating Current FLA (A)	1.1	1.13	1.18	1.22	1.36	1.60	1.72
Height (mm)	290	290	290	300	300	300	300
Lenght (mm)	350	350	350	370	370	400	400
Width (mm)	370	370	370	385	385	400	400
Weight (kg)	23	24	24	25	26	27	28

MODEL NO	MAR 1218-I	MAR 2436-I	MAR 5472-I
Power Supply	230V / 1Ph / 50Hz		
Power Consumption (W)	29	33	45
Air Flow (m3/h)	170	170	230
Fan Motor Type	Cross Flow		
Height (mm)	375	500	785
Lenght (mm)	410	410	410
Width (mm)	150	150	150
Weight (kg)	9	11	18

COOLING EXTERNAL CONDITIONS (Water °C) : 28°C
HEATING EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

PDU SERIES

Coolmar Marine type packaged air conditioners with central system are manufactured as per requests; therefore, the rival companies are outdistanced thanks to chromium body, changeable air volumes and pressures as well as body and technical specifications that may be modified in line with the ordered projects. The systems will be in between 10 kW and 150 kW upon requests of the customers.

Depending on the structure, voltage requirements, climate and region; humidifying and fresh air units can be added to the devices in addition to heating processes conducted by using tank water via heat pumps, resistors, or additional batteries.

PDU (DX CENTRAL AIR CONDITIONING)

TECHNICAL SPECIFICATIONS

SYSTEM				COOLING - HEAT PUMP - HEATER								
MODEL				PDU								
CAPACITY			40	50	60	80	100	120	150	180	200
Power Supply			380 - 460V / 3Ph / 50-60Hz								
Cooling Capacity		Btu/h	41,200	48,000	58,600	82,000	102,000	123,000	145,000	178,000	210,000
Heating Capacity		Btu/h	46,000	52,000	63,000	90,000	108,000	135,000	OPS.	OPS.	OPS.
Power Consumption		W	4,400	4,900	6,500	8,300	9,400	11,600	12,700	14,400	15,500
Operating Current		A	7.7	9.6	12	15	17.5	21	23	26	28
Refrigerant - Control			R-134A / R-22 / R-407C / R-410A HFC - Capillary Tube / TXV								
Air Flow		m3/h	2,500	3,250	4,500	6,500	7,000	9,500	11,500	13,500	15,000
Fan Motor		W	2,200	3,000	4,000	5,500	5,500	5,500	8,000	8,000	8,000
Pipe Dimension	Condenser	inch (mm)	1"(25)	1"(25)	1"(25)	11/4"(32)	11/4"(32)	11/4"(32)	11/2"(38)	11/2"(38)	11/2"(38)
	Drainage	inch (mm)	1" (25)								
Condenser Water Flow		Lt/min	41	48	63	82	96	125	148	180	210

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C

HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

FDU SERIES

FDU 120

FDU 80

Coolmar Marine type central system air conditioning units are manufactured as per requests within the air volume range of 750-25,000 m3/h so as to be functional; therefore, the expectations are surpassed and rival companies are outdistanced thanks to double layer chromium body as well as the body and technical specifications that may be modified in line with the ordered projects. They are manufactured in between 10 kW and 150 kW upon requests of the customers by making calculations along with structures established thanks to the project team of Coolmar.

All capacity calculations, air volume requirement, channel calculations and all assistant elements are provided for the customer by Coolmar. These are such units which can be controlled for 24 hours with heating, cooling and humidifying functions and provide full automation upon request depending on the changeable structures and voltage requirements as well as the climate and region in which it shall operate. Coolmar will be your solution partner providing all of your needs during the construction process for which the shipyard need help most thanks to wide capacity range of the units.

FDU MARINE TYPE AHU

ocean's wonder...

TECHNICAL SPECIFICATIONS

SYSTEM				COOLING - HEAT PUMP - HEATER								
MODEL				FDU								
CAPACITY			040	050	060	080	100	120	150	180	200
Power Supply			380-460V / 3Ph / 50-60Hz								
Cooling Capacity		Btu/h	41,200	48,000	58,600	82,000	98,000	123,000	145,000	178,000	210,000
Heating Capacity		Btu/h	46,000	52,000	63,000	90,000	105,000	130,000	150,000	185,000	280,000
Power Consumption		W	1,380	1,660	2,500	3,400	3,500	3,800	3,900	4,500	4,700
Operating Current		A	2.2	3	4	5.5	5.5	6.5	7	8	8,5
Refrigerant - Control			WATER								
Air Flow		m^3/h	2,500	3,250	4,000	5,000	6,000	7,500	9,900	11,000	12,500
Pipe Dimension	Chiller Water	inch (mm)	1"(25)	1"(25)	11/4"(32)	11/4"(32)	11/4"(32)	11/2"(38)	11/2"(38)	2"(50)	11/2"(38)
	Drainage	inch (mm)	1"								
Chiller Water Flow		Lt/min	45	52	58	70	98	116	135	178	210

COOLING Internal conditions : 19.5°C / 27°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 28°C

HEATING Internal conditions : 16°C / 22°C (YT/KT) EXTERNAL CONDITIONS (Water °C) : 8°C

Technical Specifications and sizes to change without notice.

CONTROL SYSTEMS

CM-MPC-30 LCD

CM-MPC-20 LCD

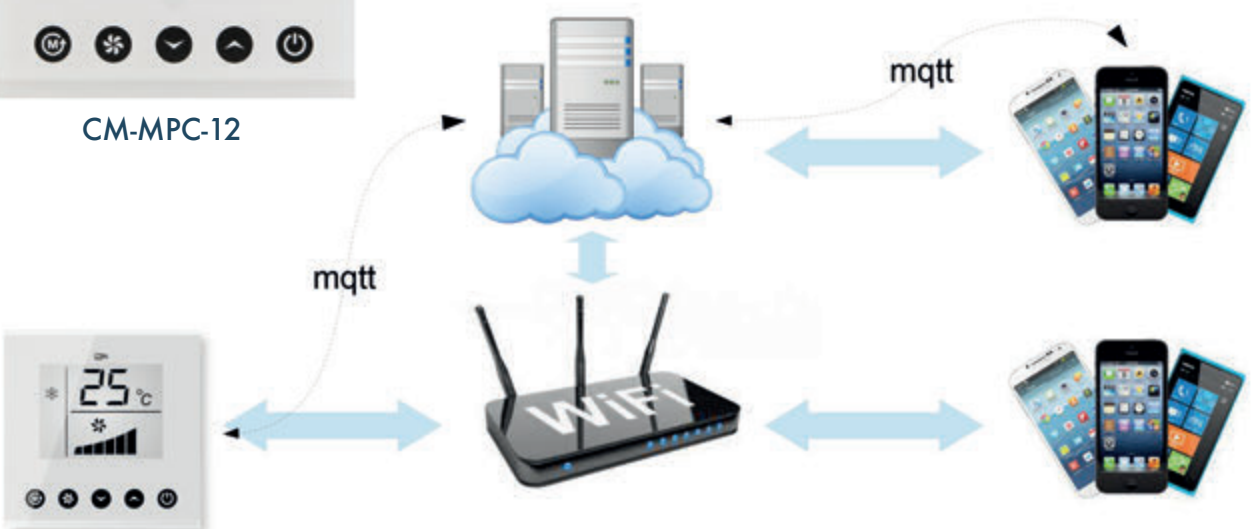
CM-MPC-11

CAREL CHILLER CONTROL

DANFOSS CHILLER CONTROL

CM-MPC-12

SYSTEM & INSTALLATION



Ankastre Kontrol

Geniş renk seçeneği, biçimi ve çizgileriyle zamana meydan okuyan Vimar, çerçevelerin kullanıldığı ankaste kontroller kolay kullanımı, programlanabilir özelliği ile mekanlara şıklık ve fonksiyonelliği bir arada sunmaktadır.

Build-in Control

The control panel covered with Vimar, Idea, Rondò frames having alternative ranges of color, style and desing features and endurance against time, provide for both elegance and functionality in your residences.

Fan Gövdesi

Hava kanallarının döşenmesinde montaj esnekliği sağlamak amacıyla dizayn edilmiş 0 - 90 derece arasında dönebilen fan gövdesi.

Blower Housing

The housing blower designed to rotate between 0 - 90 degrees ensure flexibility on assembling and locating the ducted units.

Krom Kabinet

Yuvarlak hatlı dizaynı ile oluşturulan krom kabinet kompresör sesini kendi gövdesi içersinde hapseder ayrıca dış darbelere karşı mekanik ve elektrik donanımını korur.

Chromium Cabinet

Elegantly designed curved chromium cabinet blocks the sound of the compressor and secures protection of the mechanical and electrical parts therein from outside strokes and damages.

Kondenser

İç boru 90/10 Bakır - Nikel alaşımlı, dış boru bakır olarak dizayn edilen Coolmar marin kondenserlerimiz uzun yıllar deniz suyuna dayanıklılık özelliği ile dünya standartlarındadır.

Condenser

Our Coolmar marine condensers; as a reputable brand meeting word standards; are desingned with 90 / 10 copper / nickel alloy inside the pipes and 100% copper on the outside;provide long endurance and resistance to sea water for many years.

Evaparatör

Üretimimizde kullanılan evaparatörlerimiz, asitli ortamlar ve deniz şartlarına uzun yıllar dayanıklı mavi renkli hidrofilik epoxy alaşım ile kaplıdır ve üzerinde su tutmaz.

Evaporator

Our evaporators are coated with blue hydrophilic epoxy paint which provides high resistance to sea water and acidic conditions. Hydrophilic paint supports the water drops to drain easily and prevents air dust to stick on the evaporator.

Beş Farklı Çalışma Modu

Klimamızın soğutma, ısıtma, otomatik, fan, nem alma fonksiyonlarında çalışabilecek beş farklı çalışma modu bulunmaktadır.

Five Different Operating Mode

Our air conditioning units operate at five different modes; cooling, heating, automatic, fan and moist taking modes.

Otomasyon

Klimalarımız otomasyon sistemlerinde kullanılan en son nokta can bus otomasyon yazılımı ile tek merkezden sistemdeki tüm klimaların kontrolü yapılabilmektedir.

Automation

Canbus automation software installed on our systems as the last control point for its operations enable the control of all units in the system from the main center.

RS 485

RS 485 veri yolu iletişimi ile display ve anakart arası hatasız ve hızlı veri transferi sağlanabilmektedir.

RS 485

It is possible to enable direct data transfer between the display and the main card by the RS 485 data transfer faster without mistakes.

Gaz Basınç Kontrolü

Sistemin çalışmasını olumsuz yönde etkileyecek kritik gaz basınç değerlerini, direk anakart üzerinde takılı basın kontrol ekipmanları ile kontrol edilmektedir.

Gas Pressure Control

The pressure control equipments installed directly on the main card enables control of the critical gas pressure values which may have negative effect on the operations of the system.

Deniz Suyu Pompası Kontrolü

Deniz suyu pompası klimanın çalışmasından altı saniye önce devreye girer. Klimanın durmasından altı saniye sonra devreden çıkar. Bu kontrol anakart üzerinden programlama ile sağlanmaktadır.

Water Pump Control

Water pump control is activated six seconds before the unit starts operating. It stops only six seconds after the unit stops. This control is ensured by the programming utility on the main card.

Gece Modu

Yatak odaları için düşünülmüş gece modu, bedenimizin uyku halindeyken soğuk yada sıcak hava sıcaklıklarından rahatsızlık duymaması için, oda sıcaklığını programa göre otomatik değiştirerek, gece boyunca konforlu bir ortam yaratmaktadır.

Night Mode

This mode is to operate at sleeping mode for the bedrooms, providing comfort for our bodies during sleeping periods by changing room temperature automatically as programmed previously .

Gözlem

Ekranda klimamızın donanımındaki tüm elektrikli parçalara ve deniz suyu pompasına ait sekiz adet özel simge yer almaktadır. Bu simgeler o an hangi elektrikli parçanın devrede olduğunu göstermektedir.

Observation

On the display of our units there are eight special symbols shown each indicating the different electrical components and the sea water pump installed within. These symbols indicate each electrical component currently active on the circuit (cycle)

Elektrik Kesintisi Sonrası Otamatik Çalışma Fonksiyonu

Enerji kesilmesinde, önceden seçilmiş program, enerji tekrar geldiğinde hiçbir değişikliğe uğramadan ve yeni programlama gerektirmeden otomatik olarak çalışmaya başlar.

Automatic Restart Function After Power Failures

On power failure previously selected automatic programs restart unchanged, soon after the power failure is over without any further need for reprogramming.

Otomatik Fan Hız Ayar

Oda sıcaklığına göre ve oda içinde rahat bir hava akımı sağlamak amacıyla mikro işlemci uygulamalı ve 3 aşamalı fan hızı ayarı. (Isıtma fonksiyonunda 4. aşama olarak başlangıç hava hızı devri)

Automatic Fan Speed Setting

The fan speed is set at three phases automatically by micro processing applications in order to enable heating at room temperature levels and to provide comfortable air flow within. (At the heating mode, there is a fourth phase for rotating the fan at air speed during starting.

Otomatik Sıcaklık Kontrolü

Oda sıcaklığını ölçerek arzu edilen sıcaklık derecesi elde edilene kadar klimamız çalışmayı sürdürür. Hava şartları ne olursa olsun, iç ortamdaki sıcaklığı sabit düzeyde tutarak konforlu bir ortam sağlar.

Automatic Heating Control

Our marine airconditioners continue to operate until the desired heating level is reached by measuring the room temperature automatically. Regardless of the weather conditions outside, they will keep the comfort inside at a constant level.

Otomatik Arıza Bildirme

Dijital Termostat üzerindeki ekranda arıza kodları yanıp sönerek hangi bölümünde olduğunu otomatik olarak gösterir ve onarımda büyük kolaylık sağlar.

Automatic Failure Notification

The display on the digital thermostat alerts automatically the failures on any part of the body by blinking coded error messages, simplfying the detection of the failure that needs to be fixed.

12 Saat on/off Programlama

12 saatlik zaman birimi içinde bu ayar modunu kullanarak klimanızı istediğiniz an açıp istediğiniz an kapatabilecek şekilde programlayabilirsiniz.

12 Hours on/of Programming

It is possible to adjust your unit with this programming mode to restart and stop at any desired time within a 12 hours time interval.

3 Dakika Otomatik Emniyet Fonksiyonu

Anı elektrik kesilmelerinde 3 dakika otomatik emniyet fonksiyonu devreye girerek kompresör ve diğer donanımların zarar görmesini engeller.

3 Minutes Automatic Security Function

This function will be automatically in effect for a 3 minutes time interval upon any unexpected powercuts, keeping your compessors and other parts at upmost security from malfunctioning and damages.

Soğutma / Isıtma

Sağlık koşullarına uygun ideal soğutma sağlayarak, ısı pompası özelliği ile de 5°C üzerindeki deniz suyu sıcaklığında çok ekonomik ısıtma sağlar.

Cooling/Heating

Provides not only the ideal healthy cooling but also the most economic heating with the heat pump at above 5 C sea water temperature.

Krom

Klimamızın üretiminde bağlantı elemanları (vida, somun, pul v.b.) dahil, tamamında 304 Kalite krom-nikel malzeme kullanılmıştır.

Chromium

All the fixing elements and accessories (such as screws, bolts etc) used during the production of our units are made from chromium material.

Fan Hız Kontrolü

Klimanın kapasitesini olumsuz yönde etkileyecek, hava debisinin fazla yada az olduğu özel durumlarda display de programlama menüsünden rakamsal değerlerde seçim yapılarak hava hızı arttırılabilir yada azaltılabilir.

Fan Speed Control

On the special conditions of having too much or inadequate air flows which may have negative effect on the units operations. The numeric values on the programming menu of the display can be altered by selecting the proper air flow values enabling increase or decrease of the current flow.

Çift oda sensörü

Lcd display ve anakart üzerindeki sensörlerin her ikisiyle de oda sıcaklığı kontrol edilebilir. Sensörlerin seçimi menüdeki parametrelerden yapılır. Fabrika ayarı olarak display sensörü seçilidir.

Double room sensor

Room temperature can be controlled with both of the sensors at the LCD display and the main card. Selection of sensors can be done by fallowing the parameters on the menu. Factory set Unit will have display sensor initally.

LCD ekran ışık parlaklığı

Lcd ekranın ışık şiddetini dilerseniz sürekli tam açık dilerseniz 45 sn sonra otomatik olarak %65 oranında azalacak şekilde ayarlanabilir

LCD display light setting

Yu can adjust the light strenght of the LCD display from full open to %65 less automatically if you wish, or keep it fully open as it is.

COOLMAR®

HVAC & R MARINE SYSTEM

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