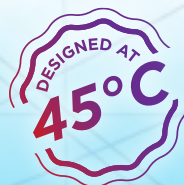


ECOMAX PRODUCT LINE





FEATURES

Exterior Structure

The frame and panel construction allows all access panels to be opened or removed without affecting the structural strength of the unit. Galvanized steel with powder coat paint finish and fastening screws are durable. Units shall be constructed of 14-gauge welded galvanized steel frame with 14 and 16-gauge galvanized steel panels and access doors.

Compressors

The function of an air-conditioning system is to transfer heat from a relatively low-temperature heat source to a relatively high temperature heat sink. Energy must be expended through a compressor, the point of energy input to the system, to force the heat transfer. It draws refrigerant gas from the evaporator, compresses it, and then discharges it to the condenser. At this point in the cycle, the refrigerant gas is carrying heat taken from the building. High efficiency, heavy-duty scroll compressors utilized shall be equipped with thermal overload protection. Fully hermetic compressors capacity staging is accomplished by cycling multiple compressors on or off. If a hermetic compressor has failed, it must be replaced. To ensure reliable compressor operation, proper oil return is the most important factor in designing refrigerant piping. Although the suction piping is sloped to encourage oil drainage to the compressor, the suction lines should be trapped at the evaporator to prevent liquid refrigerant from draining to the compressor during idle periods.

Coils

Hot compressed refrigerant gas leaves the compressor and is condensed to liquid in the condenser. The condenser is the final point of heat exchange, where heat is transferred from the refrigerant to the atmosphere. The condenser capacity must be sufficient to reject heat taken from the building in the evaporator and heat added by the compressor. The capacity for heat rejection decreases at higher outdoor air temperatures. Because peak cooling loads occur when the atmosphere is at its warmest, the condenser must be able to achieve its rated capacity when the air passing through it is upwards of 115°F. Condenser capacity increases with decreasing outdoor air temperature and can cause part load control problems.

Large face area condenser & evaporator for high operating efficiencies. Coils shall be constructed with 3/8", 1/2" & 5/8" OD copper tubing mechanically bonded to aluminum fins for maximum heat transfer.

Each coil shall be factory leak tested up to 450 psig internally with high-pressure air under water, cleaned and dehydrated in factory.

Condenser Fan

Direct drive, permanently lubricated motors with inherent thermal overload. All condenser fans shall be vertical discharge, statically balanced, with aluminum, propeller type blades and zinc plated steel hubs. The motors are factory wired, using wires specially selected for high ambient operation, to unit control panel where the motor contactors are located to control the operation of these motors.

Refrigerant Connections

Capped connections shall be external to the unit providing for field connection of refrigerant piping. All unit shall have a liquid line and suction line service shut off valves.

Accessories

The unit will include Filter Drier, Suction Accumulator, Crankcase Heater, High and Low Pressure Control, Ambient Pressure Switch and Pressure Gauges. Refrigerant tend to migrate to colder section of the unit. During winter, the compressor compartment is at lower temperature than the evaporator and thus refrigerant tend to accumulate in the compressor compartment. During idle periods, condensed refrigerant will mix with oil in the compressor crankcase. When the compressor starts, the pressure in the crankcase drops rapidly. Manual reset control deactivates system (opens contactor circuit) if abnormally high pressure occurs. Automatic reset control deactivates system if abnormally low pressure or refrigerant loss occurs. Externally placed pressure gauges ensure end user can verify and inspect the system performance.

Unit Wiring

All units require three phase, 50 Hz, 380/440 Volt power supply, All units include branch circuits, short circuit protection and are available with a single point power terminal block for main power connection. The units are provided with a factory wired weatherproof control panel.

Controller

ECOMAX product line, comes equipped with state-of-the-art controller. Now control your entire unit with a single screen, without the hassle of catering to each equipment individually. The new Coolmax controller comes with built-in features to control the indoor blower, two-stage compressors, which uses precise temperature readings to decrease overall operation costs. The additional features include three speeds controlling of VFD (if applicable), and points to incorporate the system in your Building Management System.



FLOOR STANDING UNIT 4 - 30 USRT



ECOMAX Floor Standing Unit

Indoor						
Model		EM-FS-004	EM-FS-005	EM-FS-006	EM-FS-008	EM-FS-010
Nominal Cooling Capacity	Btu/h	48000	60000	72000	96000	120000
	Tons	4	5	6	8	10
Evaporator Coil Rows	Nos.	4	4	4	4	4
Coil Face Area	in ²	638	638	768	1056	1232
	mm ²	411612	411612	495483	681289	794837
Air Flow Rate	CFM	1600	2000	2400	3200	4000
	CMH	2718	3398	4078	5437	6796
External Static Pressure	in-wg	1.5				
Fan Motor	Kw-Pole	0.55-4	1.1-4	1.1-4	1.5-4	1.5-4
Dimensions	Width (in)	36	38	42	58	59
	Height (in)	58	61	62	65	65
	Depth (in)	22	22	22	24	24
Drain Piping Connections		1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Outdoor						
Model		EM-CU-004	EM-CU-005	EM-CU-006	EM-CU-008	EM-CU-010
Compressor		Scroll Type				
Compressor Quantity	Nos.	1	1	1	1	1
Condenser Fan		Direct Driven				
Condenser Fan Motor	kW	0.6	0.8	0.8	0.8	1.2
Refrigerant		R-407c/R-22				
Charge	Kg	4.2	4.4	5.1	7	8.2
Refrigerant Piping Connections	Liquid	1/2"	1/2"	1/2"	5/8"	5/8"
	Gas	3/4"	3/4"	7/8"	1-1/8"	1-1/8"
Heat Insulation		Both Liquid and Gas pipings				

Indoor						
Model		EM-FS-012	EM-FS-016	EM-FS-020	EM-FS-025	EM-FS-030
Nominal Cooling Capacity	Btu/h	144000	192000	240000	300000	360000
	Tons	12	16	20	25	30
Evaporator Coil Rows	Nos.	4	4	4	4	4
Coil Face Area	in ²	1568	2048	2560	3168	3888
	mm ²	1011611	1321288	1651610	2043867	2508382
Air Flow Rate	CFM	4800	6400	8000	10000	12000
	CMH	8155	10874	13592	16990	20388
External Static Pressure	in-wg	1.5				
Fan Motor	Kw-Pole	2.2-4	3-4	3-4	4-4	5.5-4
Dimensions	Width (in)	60	76	72	80	80
	Height (in)	76	76	80	98	101
	Depth (in)	26	25	30	30	33
Drain Piping Connections		1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Outdoor						
Model		EM-CU-012	EM-CU-016	EM-CU-020	EM-CU-025	EM-CU-030
Compressor		Scroll Type				
Compressor Quantity	Nos.	2	2	2	3	3
Condenser Fan		Direct Driven				
Condenser Fan Motor	kW	1.2	1.2	1.5	1.5	1.5
Refrigerant		R-407c/R-22				
Charge	Kg	9.3	5.8 x 2	8.0 x 2	5.8 x 3	8.1 x 3
Refrigerant Piping Connections	Liquid	1/2"	5/8"	5/8"	5/8"	5/8"
	Gas	7/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"
Heat Insulation		Both Liquid and Gas pipings				

*Nominal cooling Capacity based on 78 °F (DB) and 64 °F (WB) on Evaporator and 113 °F air on Condenser.

*Electric, hot water or steam heater, evaporating pan type, steam spray type or water spray type humidifier, fresh air intake, rear suction inlet, plenum chamber; these are optional accessories. These features come with additional cost and changes in design.

Specifications are subject to change without notice





CEILING SUSPENDED UNIT 4 - 30 USRT



ECOMAX Ceiling Suspended Unit

Indoor						
Model		EM-CS-004	EM-CS-005	EM-CS-006	EM-CS-008	EM-CS-010
Nominal Cooling Capacity	Btu/h	48000	60000	72000	96000	120000
	Tons	4	5	6	8	10
Coil Rows	Nos.	4	4	4	4	4
Coil Face Area	in ²	638	638	768	1056	1232
	mm ²	411612	411612	495483	681289	794837
Air Flow Rate	CFM	1600	2000	2400	3200	4000
	CMH	2718	3398	4078	5437	6796
External Static Pressure	in-wg	1.5				
Fan Motor	Kw-Pole	0.55-4	1.1-4	1.1-4	1.5-4	1.5-4
Dimensions	Width (in)	40	43	46	68	70
	Height (in)	24	24	26	26	28
	Depth (in)	30	33	33	33	33
Drain Piping Connections		1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Outdoor						
Model		EM-CU-004	EM-CU-005	EM-CU-006	EM-CU-008	EM-CU-010
Compressor		Scroll Type				
Compressor Quantity	Nos.	1	1	1	1	1
Condenser Fan		Direct Driven				
Condenser Fan Motor	kW	0.6	0.8	0.8	0.8	1.2
Refrigerant		R-407c/R-22				
Charge	Kg	4.2	4.4	5.1	7	8.2
Refrigerant Piping Connections	Liquid	1/2"	1/2"	1/2"	5/8"	5/8"
	Gas	3/4"	3/4"	7/8"	1-1/8"	1-1/8"
Heat Insulation		Both Liquid and Gas pipings				

Indoor						
Model		EM-CS-012	EM-CS-016	EM-CS-020	EM-CS-025	EM-CS-030
Nominal Cooling Capacity	Btu/h	144000	192000	240000	300000	360000
	Tons	12	16	20	25	30
Coil Rows	Nos.	4	4	4	4	4
Coil Face Area	in ²	1568	2048	2560	3168	3888
	mm ²	1011611	1321288	1651610	2043867	2508382
Air Flow Rate	CFM	4800	6400	8000	10000	12000
	CMH	8155	10874	13592	16990	20388
External Static Pressure	in-wg	1.5				
Fan Motor	Kw-Pole	2.2-4	3-4	3-4	4-4	5.5-4
Dimensions	Width (in)	70	76	88	94	108
	Height (in)	30	36	38	42	42
	Depth (in)	35	35	37	37	43
Drain Piping Connections		1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Outdoor						
Model		EM-CU-012	EM-CU-016	EM-CU-020	EM-CU-025	EM-CU-030
Compressor		Scroll Type				
Compressor Quantity	Nos.	2	2	2	3	3
Condenser Fan		Direct Driven				
Condenser Fan Motor	kW	1.2	1.2	1.5	1.5	1.5
Refrigerant		R-407c/R-22				
Charge	Kg	9.3	5.8 x 2	8.0 x 2	5.8 x 3	8.1 x 3
Refrigerant Piping Connections	Liquid	1/2"	5/8"	5/8"	5/8"	5/8"
	Gas	7/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"
Heat Insulation		Both Liquid and Gas pipings				

*Nominal cooling Capacity based on 78 °F (DB) and 64 °F (WB) on Evaporator and 113 °F air on Condenser.

*Electric, hot water or steam heater, evaporating pan type, steam spray type or water spray type humidifier, fresh air intake, rear suction inlet, plenum chamber; these are optional accessories. These features come with additional cost and changes in design.

Specifications are subject to change without notice

ROOF TOP PACKAGED UNIT

4 - 30 USRT



ECOMAX Roof Top Packaged Unit

Evaporator						
Model		EM-SC-004	EM-SC-005	EM-SC-006	EM-SC-008	EM-SC-010
Nominal Cooling Capacity	Btu/h	48000	60000	72000	96000	120000
	Tons	4	5	6	8	10
Coil Rows	Nos.	4	4	4	4	4
Coil Face Area	in ²	638	638	768	1056	1232
	mm ²	411612	411612	495483	681289	794837
Air Flow Rate	CFM	1600	2000	2400	3200	4000
	CMH	2718	3398	4078	5437	6796
External Static Pressure	in-wg	1.5				
Fan Motor	Kw-Pole	0.55-4	1.1-4	1.1-4	1.5-4	1.5-4
Dimensions	Width (in)	40	40	40	50	50
	Height (in)	44	46	48	51	51
	Depth (in)	53	53	60	72	72
Drain Piping Connections		1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Condenser						
Compressor		Scroll Type				
Compressor Quantity	Nos.	1	1	1	1	1
Condenser Fan		Direct Driven				
Condenser Fan Motor	kW	0.6	0.8	0.8	0.8	1.2
Refrigerant		R-407c/R-22				
Charge	Kg	4.2	4.4	5.1	7	8.2
Refrigerant Piping Connections	Liquid	1/2"	1/2"	1/2"	5/8"	5/8"
	Gas	3/4"	3/4"	7/8"	1-1/8"	1-1/8"
Heat Insulation		Both Liquid and Gas pipings				

Evaporator						
Model		EM-SC-012	EM-SC-016	EM-SC-020	EM-SC-025	EM-SC-030
Nominal Cooling Capacity	Btu/h	144000	192000	240000	300000	360000
	Tons	12	16	20	25	30
Coil Rows	Nos.	4	4	4	4	4
Coil Face Area	in ²	1568	2048	2560	3168	3888
	mm ²	1011611	1321288	1651610	2043867	2508382
Air Flow Rate	CFM	4800	6400	8000	10000	12000
	CMH	8155	10874	13592	16990	20388
External Static Pressure	in-wg	1.5				
Fan Motor	Kw-Pole	2.2-4	3-4	3-4	4-4	5.5-4
Dimensions	Width (in)	68	76	80	80	82
	Height (in)	54	62	73	105	110
	Depth (in)	68	79	83	90	94
Drain Piping Connections		1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Condenser						
Compressor		Scroll Type				
Compressor Quantity	Nos.	2	2	2	3	3
Condenser Fan		Direct Driven				
Condenser Fan Motor	kW	1.2	1.2	1.5	1.5	1.5
Refrigerant		R-407c/R-22				
Charge	Kg	9.3	5.8 x 2	8.0 x 2	5.8 x 3	8.1 x 3
Refrigerant Piping Connections	Liquid	1/2"	5/8"	5/8"	5/8"	5/8"
	Gas	7/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"
Heat Insulation		Both Liquid and Gas pipings				

*Nominal cooling Capacity based on 78 °F (DB) and 64 °F (WB) on Evaporator and 113 °F air on Condenser.

*Electric, hot water or steam heater, evaporating pan type, steam spray type or water spray type humidifier, fresh air intake, rear suction inlet, plenum chamber; these are optional accessories. These features come with additional cost and changes in design.

Specifications are subject to change without notice



AIR COOLED CHILLERS



FEATURES

1. Highly efficient compressors with high COP ratings.
2. Environment friendlier with low energy consumption with R407c / R22
3. ECOMAX Chillers are compact.
4. High efficiency heat exchangers.
5. Top of the line expansion valves to provide best cooling.
6. Low power condensing fans to reduce operation costs.
7. Compressor delay timer included.
8. Over-high discharge pressure protection.
9. Over-low suction pressure protection.
10. Protection for compressor over current and over-load.
11. Water temperature sensors provided.
12. Automatic safeties to protect condenser fans.
13. Electrical safeties included.

ECOMAX chillers are complete, self-contained automatic units that include the latest in engineering components arranged to provide a compact and efficient unit.

Each unit is completely assembled; factory wired, evacuated, charged, tested and comes complete and ready for installation. Be it commercial or industrial application, ECOMAX Air Cooled Chillers have you covered.

Each unit consists of multiple air-cooled condensers with integral sub-cooler sections, two or more accessible scroll compressors, high efficiency evaporator, and expansion valves. The units are designed with a compact structure and robust assembly. The condenser fan is completed with high-efficiency wing style axial fan and direct driven motor for low sound level.

ECOMAX Chiller								
Model		EM-ACS-004	EM-ACS-006	EM-ACS-008	EM-ACS-010	EM-ACS-012	EM-ACS-015	
Cooling Capacity	Tons	4	6	8	10	12	15	
Power Input	kW	14.1	21.1	28.1	35.2	42.2	52.7	
Power Supply	V/Ph/Hz	380/3/50						
Max. Input consumption	kW	5.1	7.7	9.8	12.4	15.2	19.6	
Max. Current	A	10.5	15.9	20.0	24.5	34.8	41.0	
Compressor	Type	Scroll (fixed Speed)						
	Quantity	Pcs	1	1	1	1	2	
Refrigerant	Type	R407c/R22						
	Refrigerant control	TXV						
	Weight	Kg	5	7.5	10	12.5	15	18.75
Condenser (Air side)	Type	Al Fin-Cu Tube						
	Quantity of fan motor	Pcs	1	1	1	1	2	2
	Air flow	m³/hr	8720	10820	12200	15670	10820	12200
	Fan motor rated current	A	1.5	1.9	2	2.5	1.9	2
	Fan motor input	kW	0.6	0.8	0.8	0.9	0.8	0.8
	Fan motor power supply	V/Ph/Hz	380/3/50					
Evaporator (Water side)	Type	Plate & fin						
	Water inlet/outlet pipeline inside nominal diameter	In	1	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2
	Water flow	USGPM	9.6	14.4	19.2	24.0	28.8	36.0
	Max. pressure	Psi	170					
Dimensions	L (mm)	900		900	1080	1080	1400	2300
	W (mm)	900		900	1080	1080	1331	1500
	H (mm)	1200		1200	1120	1120	1116	1590
Control Type		Electro-Mechanical						

Model			EM-ACS-020	EM-ACS-025	EM-ACS-030	EM-ACS-040	EM-ACS-050	EM-ACS-060
Cooling Capacity		Tons	20	25	30	40	50	60
Power Input		kW	70.3	87.9	105.5	140.6	175.8	211.0
Power Supply		V/Ph/Hz	380/3/50					
Max. Input consumption		kW	24.7	29.8	39.2	49.4	59.6	78.4
Max. Current		A	50	57.6	82	100	115.2	164
Compressor	Type		Scroll (fixed Speed)					
	Quantity	Pcs	2	2	2	2	2	2
Refrigerant	Type		R407c/R22					
	Refrigerant control		TXV					
	Weight	Kg	25.0	31.3	37.5	50.0	62.5	75.0
Condenser (Air side)	Type		Al Fin-Cu Tube					
	Quantity of fan motor	Pcs	3	4	4	6	8	8
	Air flow	m³/hr	12200	10820	12200	12200	10820	12200
	Fan motor rated current	A	2	1.9	2	2	1.9	2
	Fan motor input	kW	0.8	0.8	0.8	0.8	0.8	0.8
	Fan motor power supply	V/Ph/Hz	380/3/50					
Evaporator (Water side)	Type		Plate & fin / Shell & Tube					
	Water inlet/outlet pipeline inside nominal diameter	In	1-1/2	2	2	2.5	2.5	3
	Water flow	USGPM	48	60	72	96	120	144
	Max. pressure	Psi	170					
Dimensions	L (mm)		2300	2650	2650	2650	3350	3350
	W (mm)		1500	1800	1800	1800	2286	2286
	H (mm)		1590	1980	1980	1980	2050	2050
Control Type			Electro-Mechanical					

*Nominal cooling Capacity based on 113 °F air on Condenser. The nominal capacity is based on 53.6 °F entering water temperature and 44.6 °F, leaving water temperature.

*Reciprocating compressors, Shell & Tube Heat exchangers, PLC based control system and Primary / Secondary pumps are optional and comes with an additional cost.

Specifications are subject to change without notice





With the ever increasing, state of the art ECOMAX product line, Coolmax International is proud to present modular Floor Standing, Ceiling Suspended & Roof Top Packaged Type units. These, one of their kind units, also comes with high density injected PU panels, available in 25 & 50mm thickness, to provide the extra strenght. Hygeinic, pharmaceutical grade units are also manufactured with fine workman ship, and are equipped with the imported line items, to provide customers with prolonged life of units, putting the clients' minds at ease.

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