

Staged Chilled Water (SCG) Air Conditioning

Custom High-Capacity Marine HVAC Systems



Staged Chilled Water (SCG) R-410A large-capacity systems consist of two to six modules, and are available in capacities ranging from 48,000 (4 ton) to 1,080,000 (90 ton) BTU/hr. The marine-grade compressors come in single phase or three phase, 50Hz or 60Hz, and all standard voltages (208, 230, 380, 460 VAC). Multiple compressors and refrigerant circuits are incorporated to provide minimal power consumption versus load demands, as well as redundancy throughout the unit. Each condensing unit is monitored and protected with freeze controls, high-limit switches, high and low aquastats, timers and on-board fuses or breakers.

Cupro-nickel condenser coils provide high corrosion resistance. Unique stainless-steel evaporator plates are designed for maximum efficiency of heat transfer. SCG systems can be built with the circulation pump mounted in the chiller frame. Frames are welded with marine-grade aluminum alloy, primed, then finished with a corrosion resistant epoxy.

SCG systems can provide heating in a variety of ways, depending upon the requirements. Reverse-cycle provides the most efficient heating, but requires a seawater temperature $\geq 40^{\circ}\text{F}$ (5°C). Electric heating provides adequate capacities for vessels operating in all waters, but is limited by the capability of the power source. Auxiliary heating is available through the use of heating elements installed in the air handlers. Each of these elements provides 1-3 kW of heat that can be operated independently or in combination with the central heating circuit to maintain optimal temperatures.

SCG systems can be installed in any convenient location and are highly resistant to vibration, moisture or ambient temperatures up to $140^{\circ}\text{F}/60^{\circ}\text{C}$. All access ports to the refrigerant system are protected with Charge Guard[®], a factory installed seal, ensuring system integrity from shipping through final installation. Units meet or exceed Coast Guard regulations.

Key Benefits

- Two- to six-stage high-capacity systems.
- Built-in redundancy - the system will continue to function in the event a circuit fails.
- Spiral-fluted cupronickel condenser coil provides maximum heat transfer and corrosion resistance.
- Copper-brazed stainless-steel plate heat exchangers for maximum efficiency.
- Thermal expansion valves automatically adjust to changing load requirements.
- Modules are protected by a circuit breaker, blow switch, freeze protection, water temperature high limit, high-pressure refrigerant switch, and low-pressure refrigerant switch.
- Sturdy and lightweight aluminum frame.
- Complete control circuit provides multiple fail safes for system protection.
- Custom frame designs available to fit virtually any space requirement.
- Available with Chilled Water Master Controller (CWMC) or Tempered Water Logic Control (TWLC) for precise operation and monitoring of the system.

Electrical Specifications for Individual Compressors

Capacity ⁽¹⁾	Voltage ⁽²⁾	Cycle (Hz)/Phase	Full Load Amps (FLA) Cool	Full Load Amps (FLA) Heat	Locked Rotor Amps (LRA)
24,000 BTU/hr	208-240	60/1	6.4	10.9	58.3
	220-240	50/1	7.5	11.6	67.0
	208-230	60/3	5.5	7.3	58.0
	440-480	60/3	2.7	4.0	28.0
36,000 BTU/hr	208-240	60/1	10.9	15.6	112.0
	220-240	50/1	11.6	16.9	97.0
	208-230	60/3	7.3	9.4	88.0
	440-480	60/3	4.0	5.2	44.0
48,000 BTU/hr	208-240	60/1	13.0	19.1	135.0
	220-240	50/1	14.4	20.7	136.0
	208-230	60/3	9.1	12.2	98.0
	440-480	60/3	4.7	6.2	46.0
60,000 BTU/hr	380-420	50/3	7.0	7.0	51.5
	208-240	60/1	17.0	24.7	158.0
	220-240	50/1	21.5	30.1	176.0
	208-230	60/3	10.6	14.4	110.0
72,000 BTU/hr	440-480	60/3	6.2	8.2	75.0
	380-420	50/3	6.8	9.1	74.0
	208-240	60/1	23.3	32.5	148.0
	208-230	60/3	14.2	18.2	149.0
90,000 BTU/hr	440-480	60/3	6.9	9.1	75.0
	380-420	50/3	9.0	11.7	101.0
	208-230	60/3	19.5	24.9	195.0
	440-480	60/3	9.8	12.4	95.0
120,000 BTU/hr	380-420	50/3	10.8	13.6	111.0
	208-230	60/3	25.3	32.8	239.0
	440-480	60/3	12.7	16.4	125.0
	380-420	50/3	13.3	17.8	118.0
150,000 BTU/hr	208-230	60/3	29.5	38.0	245.0
	440-480	60/3	13.8	18.0	125.0
	380-420	50/3	21.2	26.2	173.0
	208-230	60/3	41.9	52.0	340.0
180,000 BTU/hr	440-480	60/3	21.2	26.2	173.0
	380-420	50/3	25.5	31.7	196.0

¹ Due to the number of variables, physical dimensions and weights for complete SCW systems are not listed here. Please contact Dometic Marine at 954-973-2477 to discuss your system with a sales representative.

² For more information regarding compressor voltages, please refer to field notice (FNR) #192-B3-M.

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Specifications and availability subject to change without notice.

Dealer

