

Energy Savings

Compact

Environmentally
Friendly

Quiet

Truly
Redundant

Reliable

Serviceable

Simultaneous
Heating & Cooling



Packaged Air Cooled Modular Chiller

UCA Series

20, 30, 50 and 70 Tons – Configurable up to 420 Tons

Available in 208, 230, 460 and 575 Volts

CLIMA COOL®

THE ULTIMATE CHILLER SOLUTION®



50 ton UCA,
Cooling Only



Available in 20, 30, 50 and 70 tons, modules can be configured to provide project turndown and capacity requirements from 20 - 420 tons. By simply adding modules, the UCA can satisfy future incremental growth needs. This model was designed to provide a quiet, serviceable and extremely efficient system that will offer years of reliable operation.

Compact Modules have a low center of gravity and base cutouts for forklifts or pallet jacks for ease of transport and rigging. The compact design allows significant space savings and easy installation in severely limited areas.

Durable Heavy gauge G90 galvanized steel cabinet with 3 mil powder coat paint finish cabinet construction provides superior protection from weather. Schedule 40 carbon steel pipe water headers are designed to connect to adjacent modules through the use of 300 psi rated grooved couplings.

Energy Efficient High efficiency design offers a minimum of 10.0 EER at full-load, exceeding ASHRAE 90.1 minimum efficiency requirements.

Environmentally Friendly Micro charge of non-ozone depleting R-410A offers better efficiency, higher capacity and utilizes superior synthetic lubricants for longer compressor life.

Flexible Back-to-back, end-to-end and combination configurations provide ultimate design flexibility. The UCA offers a standard ambient operating range of 0 to 115°F. The 20, 30, 50 and 70 ton modules can be mixed and matched for required bank capacity.

Flexible, Simple, Reliable

Integrated CoolLogic Control System

Each module has an independent control panel and simple two-conductor shielded daisy chain connection from the Master Panel to the modules ensuring ultimate performance with minimal field wiring. BAS interface with native BACnet, Modbus, Lonworks, and N2 communications.

Quiet Variable speed EC condenser fans with integral head pressure control and distinctive airfoil blade design providing low operating sound levels and optimal energy efficiency.

Reliable Dual scroll compressors with independent refrigerant circuits provide reliable, efficient, quiet and redundant operation. Use of highly efficient, dual circuit brazed plate heat exchangers offer maximum performance at both full and part-load conditions.

Service Friendly Design allows easy access to all major components. Unique design is fully serviceable and maintainable without removal of module from the chiller bank or disassembly of headers.

True Redundancy Separate module electrical feeds and integral water isolation valves permits maintenance of one module while the remaining system continues operation.



Photo shows two 30 ton UCA modules, totaling 60 tons capacity, in an end-to-end configuration.

Options for Every Application

Free Cooling Modules Directly couples to chiller bank. The module includes: glycol free cooling coils, high efficiency, variable speed EC condenser fans with integral head pressure control with acoustical airfoil blade design providing low operating sound levels, two position motorized water isolation valve, 3-way bypass valves and fully integrated controls.



Photo shows UCF030, Free Cooling

Hail Guards Factory or field installed 18 gauge galvanized steel louver panels with powdered coat paint finish for outdoor element protection.

Harsh Environment Factory installed coil coating for outdoor element protection.

Heat Pump Factory installed reverse cycle heat pump for heating and cooling operation.

Heat Recovery Factory installed desuperheater provides hot water.

Hot Gas Bypass Factory installed on both circuits allowing unit operation below the minimum step of unloading.

Low Ambient to -20°F Factory installed variable speed fan control for all condenser fans provides optimum head pressure control. Liquid receivers, refrigerant relief valves and flood-back head pressure control valves are provided for all refrigerant circuits.

Manual Strainers Field installed to increase efficiency and ensure long life of the equipment with Y-style and basket strainers of cast iron 200 psi or carbon 275 psi with 60 mesh stainless steel screens. All strainers are field installed external to the chiller bank for ease of service.

Pressure Differential Flow Sensor Field installed to prevent operation of chiller without sufficient water flow to the evaporator.

Pump Module Module includes primary and standby centrifugal pumps in a lead/lag configuration coupled to the common chiller header and controlled through the *CoolLogic* Control System.

Simultaneous Heating and Cooling See next page for exclusive SHC onDemand information.

Variable Speed Compressor Factory installed variable frequency drives provide more precise water temperature control and optimum part load energy efficiency.

Water Header Bypass A field installed water header bypass may be utilized to prevent deadheading the pump.

Water Isolation Valves Factory installed manual or motorized valves to provide isolation to the module for maintenance and cleaning of evaporator heat exchanger.

Weatherproof Enclosure Nema 4 enclosure for *CoolLogic* Master Panel.

LEED categories satisfied by the UCA system:

Enhanced Commissioning and Measurement and Verification *CoolLogic* Control System provides maximum flexibility with BAS interface.

Optimized Energy Performance Exceeds ASHRAE 90.1 minimum efficiency requirements.

Thermal Comfort Precise required heating and cooling ensures the highest comfort for building occupants.



Photo shows two 30 ton UCA modules, totaling 60 tons capacity, in a back-to-back configuration.

Exclusive SHConDEMAND

Simultaneous Heating and Cooling Heat Pump

SHC onDemand modular chiller helps reduce energy consumption and the environmental impact of heating and cooling equipment by harnessing energy that is already being produced but not used. The simultaneous modular system eliminates the need to have separate equipment for heating and cooling while saving installation cost, overall operating cost and reducing the physical footprint. The SHC onDemand allows dramatic energy savings to be achieved, by more than 50%, when compared to conventional systems.

onDemand Operation Allows any module to be indexed for heating or cooling regardless of its position in the bank, providing optimum module/compressor run time equalization. Integral motorized isolation valves and dual independent refrigeration circuits per module provide true mechanical redundancy.

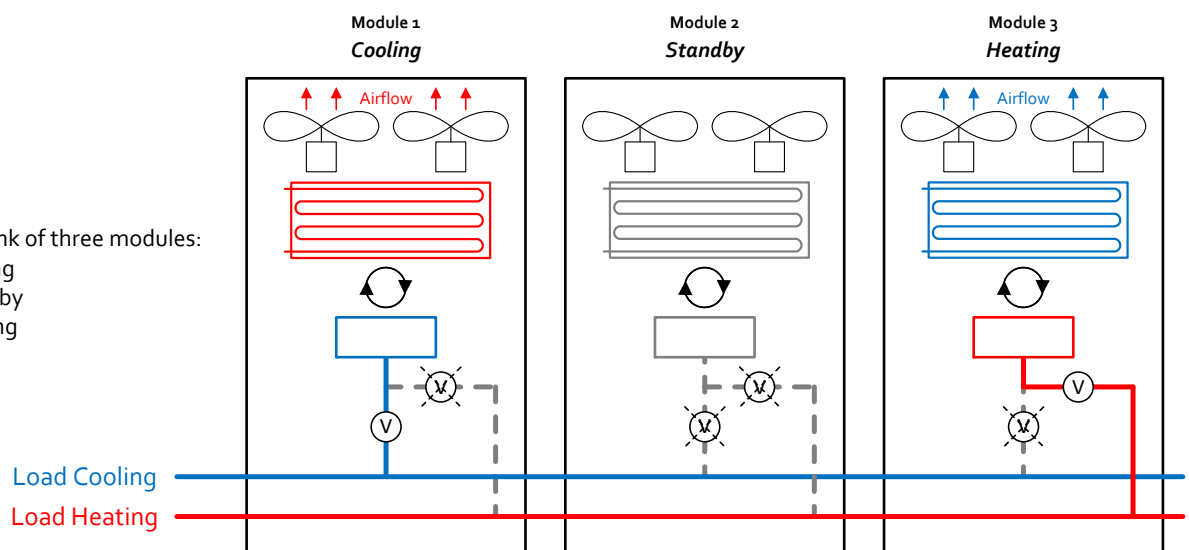
Simplicity Patent pending, four (4) header design simplifies installation, design and controls. Simultaneously, the SHC satisfies required heating and cooling demands without the use of inter-module/external header isolation valves, controls, associated logic, piping or wiring. Innovative engineering simplifies the simultaneous heating and cooling process, taking multitasking to a whole new level.

Ultimate Efficiency The *CoolLogic* Control System provides advanced algorithms for maintaining precise leaving chilled and hot water temperatures. Integral motorized valves allow for variable pumping on heating and cooling water loops. High efficiency design offers a minimum of 10 EER cooling efficiencies with typical heating efficiencies around 3.0 COP.

- Provides hot water, as high as 135° F, utilizing R-410A refrigerant
- Built in modulating head pressure control

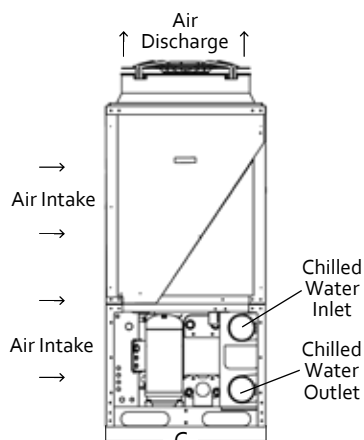
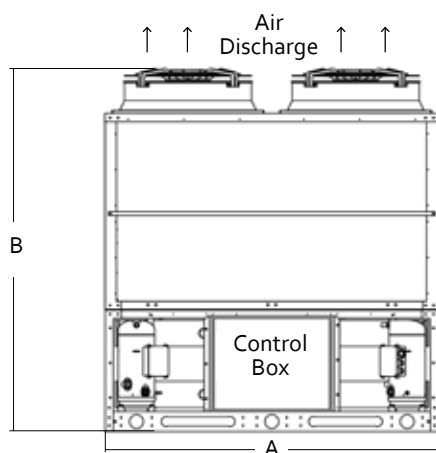


Figure shows a bank of three modules:
Module 1 in Cooling
Module 2 in Standby
Module 3 in Heating

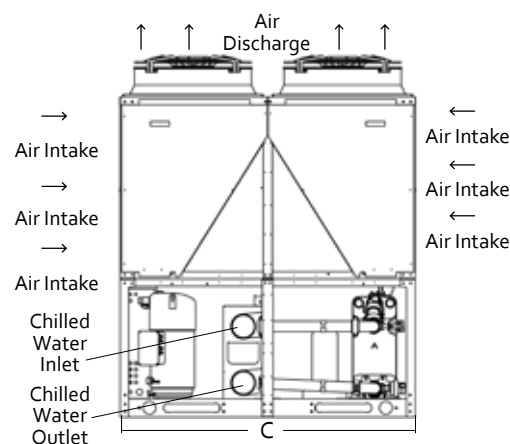


* Simplified single line water circuit shown; V= motorized isolation and control valve

Dimensional Drawings

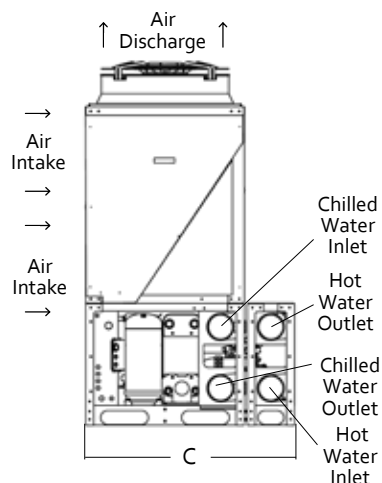
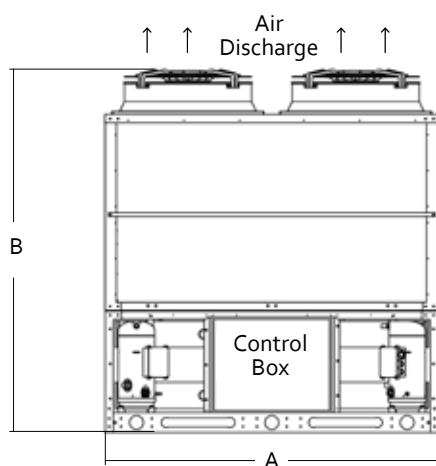


Models 20 & 30

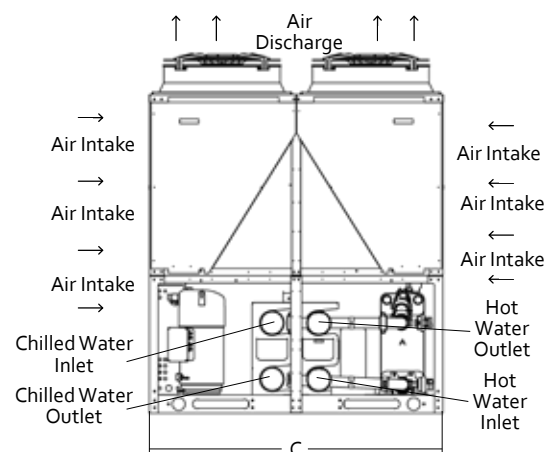


Models 50 & 70

Model UCA	Voltage	A Unit Width (in.)	B Unit Height (in.)	C Unit Depth (in.)	Unit Weight ¹ (lb.)	Operating Weight ² (lb.)	Header Connection (in.)
020	208/230/460/575/3/60	83 3/4	92	39 3/4	2,035	2,250	6
030	208/230/460/575/3/60	83 3/4	92	39 3/4	2,195	2,410	6
050 ³	208/230/460/575/3/60	83 3/4	99 1/8	80 1/2	3,855	4,125	6
070 ³	208/230/460/575/3/60	83 3/4	99 1/8	80 1/2	4,005	4,275	6



Models 20 & 30 SHC



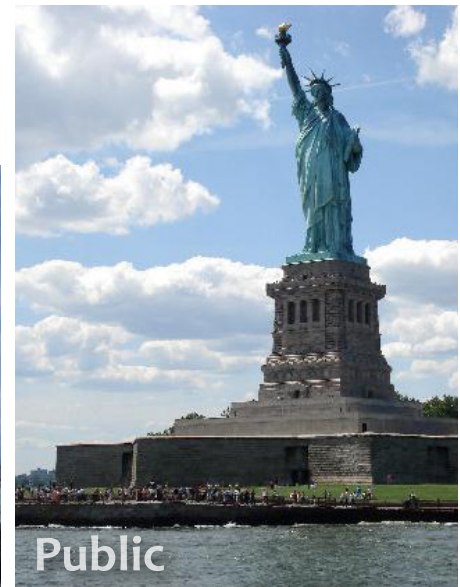
Models 50 & 70 SHC

Model UCA SHC ⁴	Voltage	A Unit Width (in.)	B Unit Height (in.)	C Unit Depth (in.)	Unit Weight ¹ (lb.)	Operating Weight ² (lb.)	Header Connection (in.)
020 SHC	208/230/460/575/3/60	83 3/4	92	52 3/4	2,735	3,115	6
030 SHC	208/230/460/575/3/60	83 3/4	92	52 3/4	2,895	3,275	6
050 SHC	208/230/460/575/3/60	83 3/4	99 1/8	80 1/2	4,255	4,730	6
070 SHC	208/230/460/575/3/60	83 3/4	99 1/8	80 1/2	4,405	4,880	6

Notes:

- Shipping weight includes refrigerant charge, compressor oil and packaging.
- Operating weight includes refrigerant charge, compressor oil and water.
- The models UCA 050 & 070 cannot be coupled back-to-back.
- SHC models cannot be coupled back-to-back.

Market Applications



Contact your local ClimaCool representative or visit our web site at www.climacoolcorp.com to find out more about the UCA and other heating and cooling solutions that may fit your application needs.



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