



Central Air and Heating Systems

COMFORT
WHEN YOU
NEED IT



*"Water is far superior
to air when it comes
to moving heating
or cooling through
buildings."
-John Siegenthaler*

SpacePak Hydronics is taking the comfort and flexibility of water-based central heating and cooling systems to new levels of performance. In any season, SpacePak units provide perfectly conditioned air with reliability and efficiency.

Hydronic Heating & Cooling

Hydronic technology has long been known for providing unsurpassed heating comfort. New innovative technologies have allowed hydronic equipment manufacturers the opportunity to provide complete packaged solutions for both space heating and central cooling using the known advantages of hydronics over that of traditional forced air systems.

Using the same physical properties that make water ideal for conveying heat also make it ideal for conveying cooling.

Cooling is simply the removal of heat from an occupied space. Water is capable of absorbing substantially more (almost 3500X more) heat than air for the same temperature change.

Therefore, chilled water circulated through a high efficiency terminal unit is ideal for absorbing heat from an occupied space without the intrusive ductwork associated with forced air systems.

Small Scale Hydronics

The concept of using water as a heat transfer medium for cooling is not new and has long been used by commercial engineers through the use of chillers, which reduce circulated water to the range of 40° to 50°F and then disperse the conditioned air through various types of terminal units into the occupied space in a much more efficient and environmentally friendly process than all-air systems.



Small scale hydronic (chilled water) cooling in residential and light commercial applications is done safely and easily through much smaller space requirements than that of traditional ducted systems with increased operating efficiencies and is more aesthetically pleasing at the same time.

Packaged Solutions

SpacePak Hydronics offers a total packaged solution for all residential and light commercial applications. Solstice Heat Pumps (air to water) in combination with our various styles of modern aesthetically pleasing emitters provide the ultimate in total year-round comfort.

Chiller or heat pump based systems are the environmentally friendly choice for both heating and cooling by keeping all refrigerant safely contained outside of the occupied space.

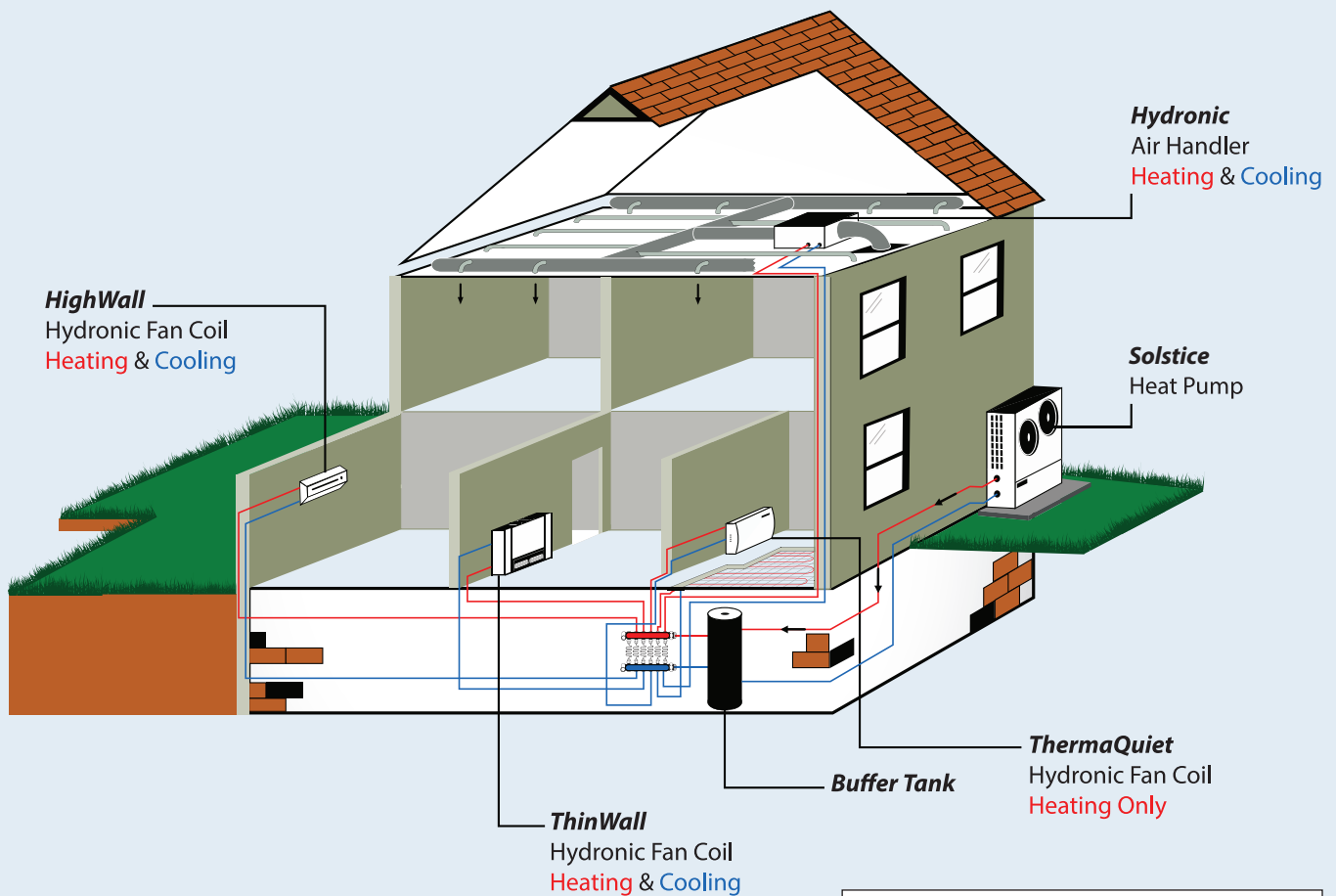
Benefits

- Energy Efficient
- Ease of Installation
- Minimally Invasive
- Aesthetically Pleasing
- Easily Zoned
- Environmentally Friendly

Types of Emitters

- Hydronic Fan Coils
 - AirCell
 - HighWall
 - ThinWall
- Chilled-beams
- Radiant Ceiling Panels

System Layout



Key:

— = Supply

— = Return

Illustration depicts heating application. In cooling applications chilled water replaces hot water supply lines.

AirCell

AIR DISTRIBUTION MODULE

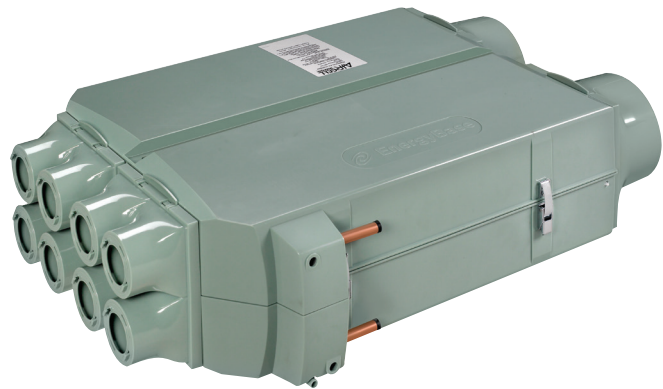
Standard Features

- ECM Variable Speed Fan Technology
- 110v Power Supply
- Heating & Cooling Hydronic Coil
- Lightweight Heavy-Duty Molded Plastic Shell
- Outer Insulation Jacket
- Internal Drain Pan
- Silent Operation (22dBA @ 3')
- Integrated Control Platform
- WiFi Enabled Devices / Laptops / Smart Phones
- Fan Speed Control
- Auto Timed Zone Control
- Fresh Air Induction Control (Optional)
- Temperature Set-Points
- Alarm Settings

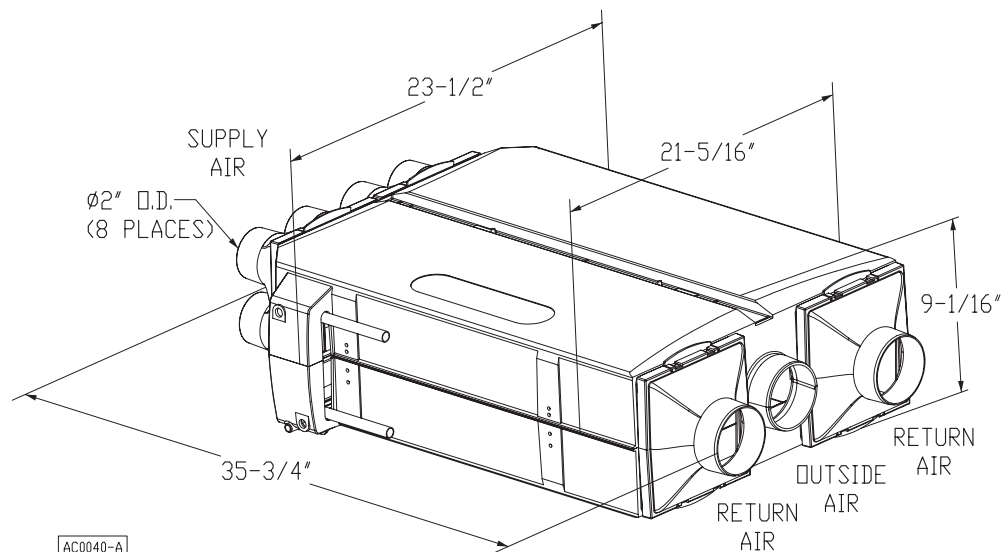


Specifications

	Heating	Cooling
Entering Water Temperature	160°F	42°F
Btu/h	24,000	—
Tons	—	1.2
Fan Watts	90W	90W
CFM	330	300
EER	13.7	14.0
Flow Rate GPM	3.5 - 5	
Weight lbs.	39	

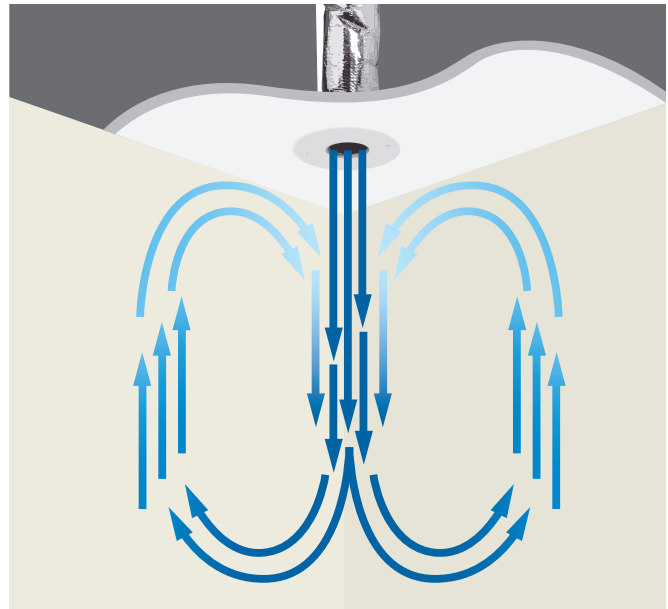


Dimensions



AirCell Simplicity - Aspiration

Through the use of high efficiency variable speed EC motors and a unique low temperature hydronic coil design, AirCell distributes perfectly conditioned air to any occupied space. Whether heating, cooling or ventilation, AirCell does it all. Working in conjunction with any hydronic supply system including boilers, reverse cycle chillers, heat pumps and geothermal AirCell allows full control and distribution of conditioned air with ultra-low energy consumption while reducing harmful CFC's by up to 40-60% over conventional DX systems. When connected to today's high efficiency condensing boilers AirCell guarantees ultra-efficiency utilizing lower supply water temperatures maximizing the performance of your boiler investment.

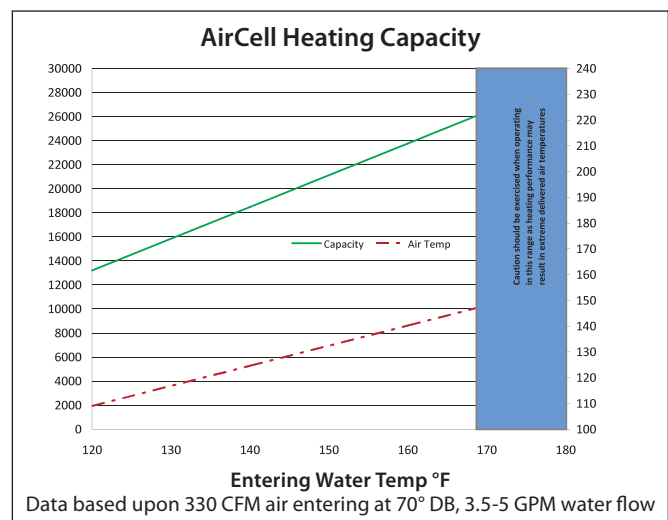
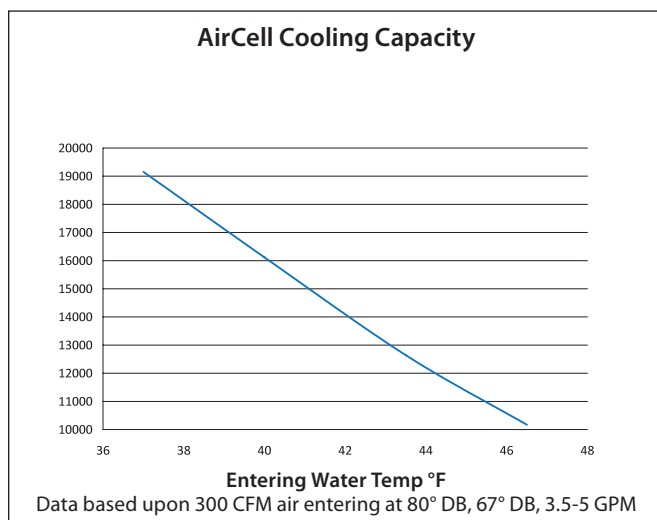


Each AirCell ships with a thermal insulation cover

- Superior Insulation
- Minimizes Heat Gains / Losses
- Reduces Sweating in Humid Conditions
- Easy Snap Together Durable Design



AirCell's integrated control platform continuously monitors the return air and water coil sensors while controlling the fan speed in response to the programmed set-points (including on/off times, fresh air, temperature and numerous other custom variables). Communication and programming is performed through either wall-mount thermostat controls or using a WiFi 802.11 enabled device including smart phones and computers.





Solstice Extreme, SpacePak's low ambient heat pump provides primary heating and cooling even in severe weather climates. Its environmentally friendly design uses EVI technology and the clean efficient characteristics of hydronics as its primary energy source to deliver perfectly conditioned air to any occupied space.

Standard Features

- Enhanced Vapor Injection Technology (EVI)
- 48,000 BTU/h at 0°F at 140°F Heating Supply
- 4 Ton at 95°F at 47°F Cooling Supply
- Highest R-410A COP and EER
- Simple Piping & Pumping
- Installation & Service Friendly
- Easily Zoned
- Proven Integrated Control
- Low Amp Requirements
- Outdoor Reset
- Green Hydronic Energy – No Refrigerant in Occupied Space
- Low Ambient Freeze Protection

Enhanced Vapor Injection (EVI)

The award winning EVI technology and high efficiency condenser used in SpacePak low ambient heat pumps, provides improved efficiency, reliability and heating capacities. EVI increases heating capacity by over 30%, making it the perfect compressor for severe ambient conditions (0°F) in cold climates, while maintaining the ability to cool during the summer months.

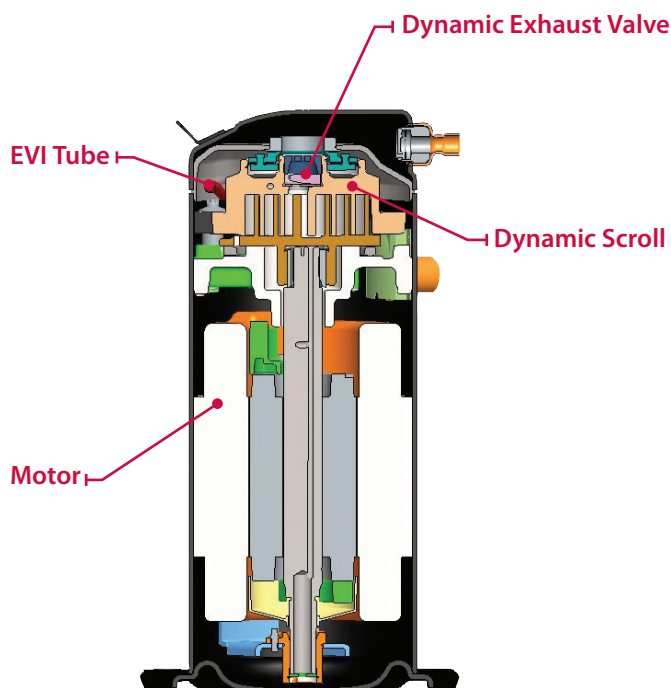
- +30% Heating Performance at 140°F Supply
- 50% Larger Condenser Coil
- Energy Efficient
- Reliable

Specifications

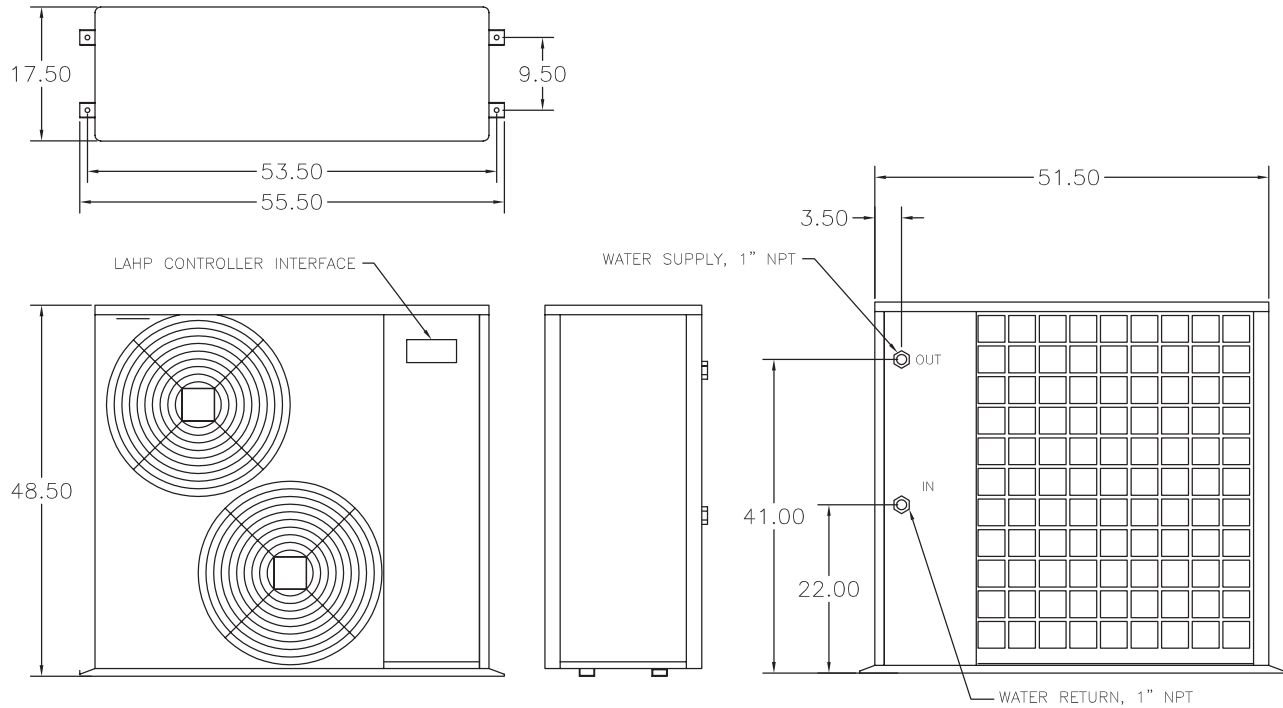
Model	LAHP - 048	COP
Heating Capacity	*48000 BTU/h 14.06 kW	2.42
Cooling Capacity	**48,000 BTU/h 13.5 kW	3.00
Voltage	230v/1ph/60Hz	
Min Supply Temp	42°F 7°C	
Max Supply Temp	140°F 60°C	
Min Water Flow	10 gpm 1.80 m3/hr	
Max Water Flow	14 gpm 3.20 m3/hr	
dP @ Max Flow	20.7 ft 62 kPa	
Heating Current	21.2 amps	
Cooling Current	23.5 amps	
Noise Level	62 dB(A)	
Compressor	Scroll X 2	
Installed Weight	386 lbs 175 Kg	

* at 0°F ambient, 120°F supply water (-16°C / 52°C)

** at 95°F ambient, 47°F supply water (35°C / 12°C)



Dimensions



SPL-WG0778

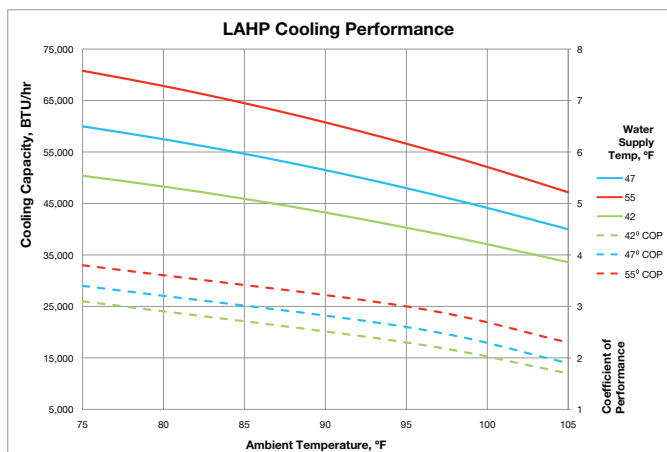
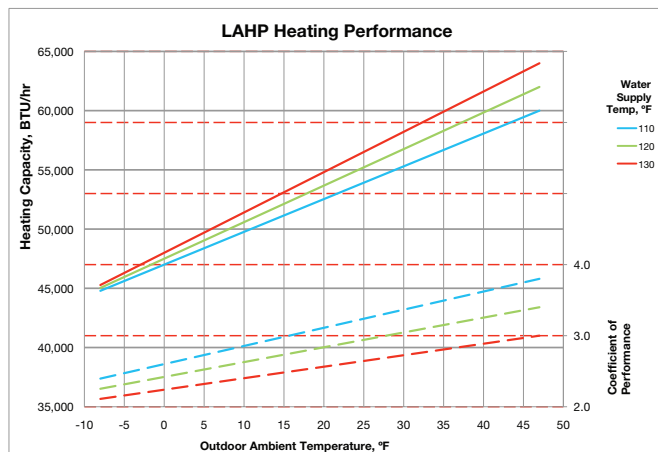
Performance

Cooling Operation at 47°F Water

Ambient Temp	Capacity BTU/hr	Electrical Power Watts	Heat Pump COP	Heat Pump EER
82°F	56,000	4,800	3.4	11.7
95°F	48,000	5,200	2.7	9.2
105°F	38,000	6,200	1.8	6.1

Heating Operation at 120°F Water

Ambient Temp	Capacity BTU/hr	Electrical Power Watts	Heat Pump COP	Heat Pump EER
45°F	61,500	5000	3.5	12.3
20°F	53,500	5437	2.8	9.8
0°F	47,500	5407	2.5	8.8





Standard Features

- Dual Refrigeration Circuits
- Simple Piping & Pumping
- Installation & Service Friendly
- Easily Zoned
- 30% Larger Condenser Coil than Traditional Units
- Self Diagnostic Control – Programmable
- Low Amp Requirements
- Quiet Operation – “Soft Start” Package Standard
- Green Hydronic Energy - No Refrigerant in Occupied Space
- Low Ambient Freeze Protection

Sophisticated.... but Simple Control Platform



Intelligent recovery factory programmed control platform, with state of the art self diagnostic microprocessor allow staging of compressors for seamless operation. Amp draw starts low and stays low with no spike at start-up and use a smaller breaker than other heat pump units for even more efficiency benefits.



Specifications

Model	SCM - 036	COP	SCM - 060	COP
Heating Capacity	**44,000 BTUh 13.0 kW	3.95	**60,000 BTUh 17.0 kW	3.97
Cooling Capacity	***34,000 BTUh 10.0 kW		***46,000 BTUh 13.5 kW	
Voltage	230v/1ph/60Hz		230v/1ph/60Hz	
Min Supply Temp	36°F 2.5°C		36°F 2.5°C	
Max Supply Temp	125°F 52°C		125°F 52°C	
Min Water Flow	7 gpm 1.60 m3/hr		10 gpm 2.27 m3/hr	
Max Water Flow	12 gpm 2.75 m3/hr		15 gpm 3.41 m3/hr	
dP @ Max Flow	21 ft 63 kPa		28 ft 84 kPa	
Heating Current	13.1 amps		21.3 amps	
Cooling Current	17.6 amps		26.4 amps	
Noise Level	56 dB(A)		56 dB(A)	
Compressor	Scroll x 2		Scroll x 2	
Installed Weight	354 lbs 161 Kg		407 lbs 185 Kg	

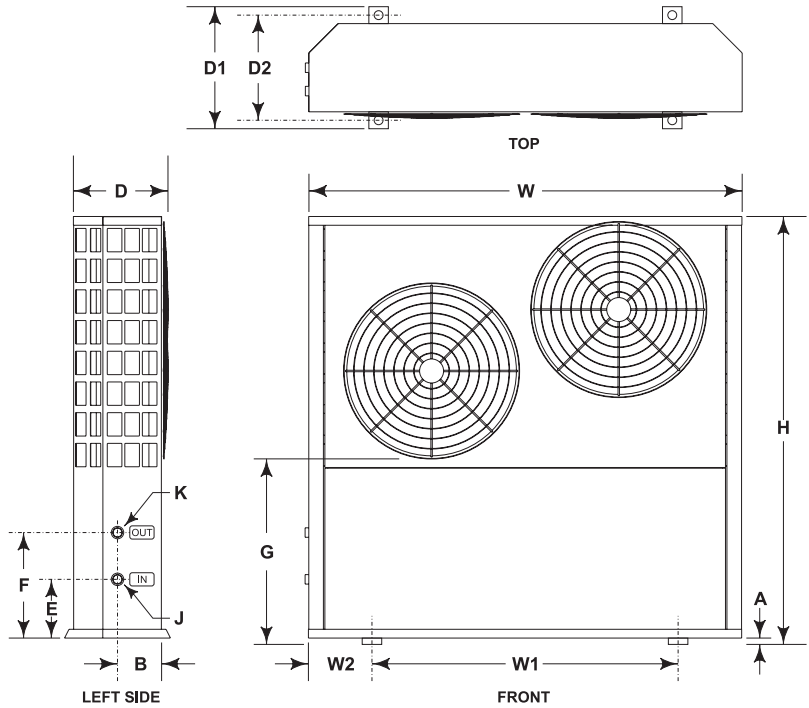
** at 95°F ambient, 47°F supply water (35°C / 12°C)

*** at 45° ambient, 115°F supply water

Dimensions

Model	A	B	D	D1	D2	E	F
	Leg height	Front to return	Cabinet depth	Mounting lug depth	Mounting lug centers	Bottom to return	Bottom to supply
SCM-036	1	10	17 3/4	17 3/8	15 3/4	5 1/2	15 1/4
SCM-060	1	10	17 3/4	17 3/8	15 3/4	5 1/2	15 1/4

Model	G	H	J	K	W	W1	W2
	Base to bottom edge of lower fan	Overall Height	Return connection	Supply connection	Overall width	Mounting lug centers	Lug center to edge
SCM-036	25	53	1" NPT	1" NPT	43 3/8	27 1/2	7 15/16
SCM-060	25	53	1" NPT	1" NPT	43 3/8	27 1/2	7 15/16



Performance

3 Ton Cooling Operation at 47°F Water

Ambient Temp	Capacity BTU/hr	Chiller Power Watts	Chiller COP	Chiller EER
82°F	38,553	2,523	4.47	15.28
95°F	29,694	3,873	2.25	7.67
105°F	22,880	4,912	1.36	4.66

5 Ton Cooling Operation at 47°F Water

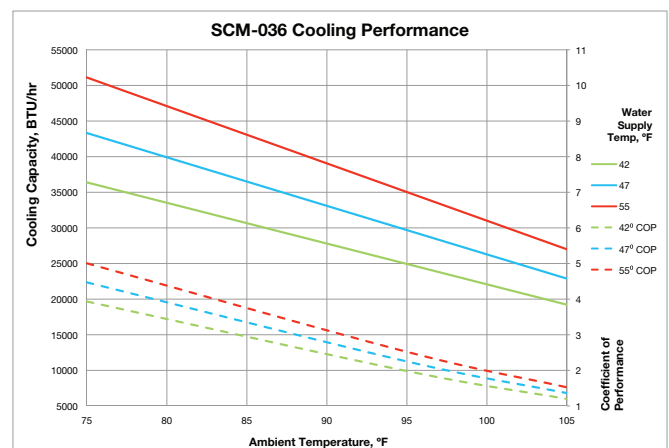
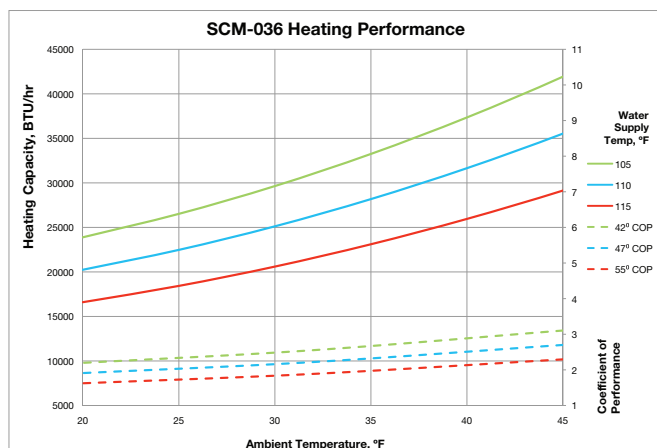
Ambient Temp	Capacity BTU/hr	Chiller Power Watts	Chiller COP	Chiller EER
82°F	61,526	5,150	3.50	11.95
95°F	54,621	5,881	2.72	9.29
105°F	45,668	6,643	2.01	6.87

3 Ton Heating Operation

Ambient Temp	Water Supply Temp.	Capacity BTU/hr	Chiller Power Watts	Chiller COP
45°F	115°F	35,536	3,855	2.70
32°F	110°F	26,295	3,472	2.22
20°F	105°F	20,245	3,103	1.91

5 Ton Heating Operation

Ambient Temp	Water Supply Temp.	Capacity BTU/hr	Chiller Power Watts	Chiller COP
45°F	115°F	60,256	6,919	2.55
32°F	110°F	42,770	5,927	2.11
20°F	105°F	24,769	4,125	1.76



HighWall – Heating & Cooling

HighWall fan coils are the perfect indoor complement to our Solstice heat pumps. HighWall fan coils provide optimum heating and cooling in one classic design. HighWall fan coils are designed for higher volume flow for primary heating in colder climates and use an electronic 3-way valve for reduced energy consumption and increased efficiency.

All HighWall fan coils feature high efficiency EC motors with Step-less speed modulation which operate from 50-70% more efficient than traditional on/off motors.

Standard Features

- Quiet Space-Saving Design
- Heating & Cooling
- Energy Efficient 3-Way Valve
- Low Ambient Capable Heat Emitter
- Hydronic Based – No Refrigerant
- Remote Control Thermostat
- Auto-Swing Damper for Uniform Air Distribution
- Easy Installation
- EC Step-Less Speed Modulation (15% - 100%)
- 7,400 – 20,000 BTUh Heating Capacity*
- 3,200 – 12,600 BTUh Cooling Capacity**



ThinWall – Heating & Cooling

ThinWall fan coils are the ultra-sleek alternative to HighWall fan coils or can be used in conjunction with them for optimum flexibility.

Perfectly conditioned air is quietly distributed through a cross-flow blower configuration with integrated air-guiding technology. ThinWall units offer versatility for both heating and cooling while operating up to 30% more efficient than traditional emitters.

Units offer custom zoning through integrated intelligent controls which can modulate based on environmental conditions.

Standard Features

- Quiet Modern Space-Saving Design
- Heating & Cooling
- Energy Efficient 3-Way Valve
- Hydronic Based – No Refrigerant
- Remote Control Thermostat (Optional)
- Cross-Flow Blower
- Easy Installation
- Active Carbon Air Filtration
- 8500 – 14,600 BTUh Heating Capacity*
- 1900 – 3500 BTUh Cooling Capacity**



* 122° Supply Water Temp
** 45° Supply Water Temp

ThermaQuiet – Heating Only

Engineered specifically for low-temperature hydronic applications, ThermaQuiet fan coils are an ideal complement to today's high-efficiency condensing boilers, heat pumps, and solar equipment.

This stylish design uses the latest variable-speed fan technology to reduce energy consumption by up to 35% when compared to traditional heating systems, while providing one of the most efficient heat distribution systems on the market.

Standard Features

- Sleek Profile Offers Application Flexibility
- Compatible with Solar and Heat Pumps
- "Insta-Heat" Overrides Setting for Immediate "Boost" of Heat
- Microprocessor Control Platform
- Cool-Touch Exterior for Safe Operation
- Diagnostic and Performance LED Indicators
- Less Expensive than Radiant Flooring
- 1,400 - 16,200 BTU/h



Solstice BT

Hydronic buffer tanks are used as both hydraulic separators and hydronic buffer tanks.

As a hydraulic separator, BT's separate the hydronic from the energy source loop (heat pump / boiler) from the hydronic flow in the distribution system (air handlers / emitters). Hydraulic separation is used primarily in systems where flow rates from the source to the distribution vary or with applications utilizing variable speed pumps. The heating or cooling source can be hydraulically decoupled from the distribution system.

BT's are used as hydronic buffer tanks in systems having several low BTU cooling or heating loads calling at different times or systems operating below the design load condition.

BT's store the additional system volume and energy currently not utilized by the system for use on additional calls for heat leading to more efficient system performance and longer equipment life.

There are four connections (1-1/2 NPT) built into the BT units. Two connections can be piped to the heat pump / boiler, and two connections can be piped to the distribution system.



All tanks are durable stainless steel construction with R12 insulation and offered in 26 and 40 gallons with optional 3kW electric heating elements.



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