



Hydronic Heating and Cooling

with Air-to-Water Heat Pumps and Hydronic Fan Coils

COMFORT
WHEN YOU
NEED IT



SPACE PAK 
HYDRONICS



SpacePak's Solstice® heat pumps are air-to-water reverse cycle heat pumps that use the comfort of Hydronics as the primary source for both heating and cooling demands. In any season, SpacePak units provide perfectly conditioned air with reliability and efficiency.

Solstice heat pumps work similar to conventional heat pumps by circulating refrigerant, which vaporizes at a low temperature in its enclosed evaporator, producing additional energy in the process. Further concentration of the conditioned warm vapor occurs in SpacePak's Inverter compressor raising it to a temperature where it can be circulated through one of the many SpacePak hydronic air handlers for distribution to the occupied space.

Flexible Solutions

Heat pumps can be used in many types of applications from small homes with multiple thermostat driven zones, to large homes and light commercial applications.

Perfect for zoning, these units can operate in a loop that can provide conditioned air to several individual zones utilizing single or multiple air handlers, allowing total comfort control to the occupied space.

Whether radiant heating & cooling, domestic hot water, dehumidification, process cooling, or even conventional with multiple air handlers SpacePak Solstice heat pumps offer application flexibility requiring less equipment outside.

Units can be easily installed at ground level, on rooftops or even in remote locations when necessary.

Solstice Series Air-to-Water Heat Pumps

- Simple Piping and Plumbing
- Installation and Service Friendly
- Easily Zoned
- Green Hydronic Energy
- Extended Warranty for Certified Contractors:
 - 10-Year Compressor - Industry Leading!
 - 5-Year Parts

High Efficiency

Solstice heat pumps utilize a condenser coil that is 30% larger than standard units and operate with a COP of up to 4. Designed for heating in colder climates, SpacePak Solstice products produce up to 67,000 BTU/h, and can effectively heat in ambient temperatures as low as 0°F.



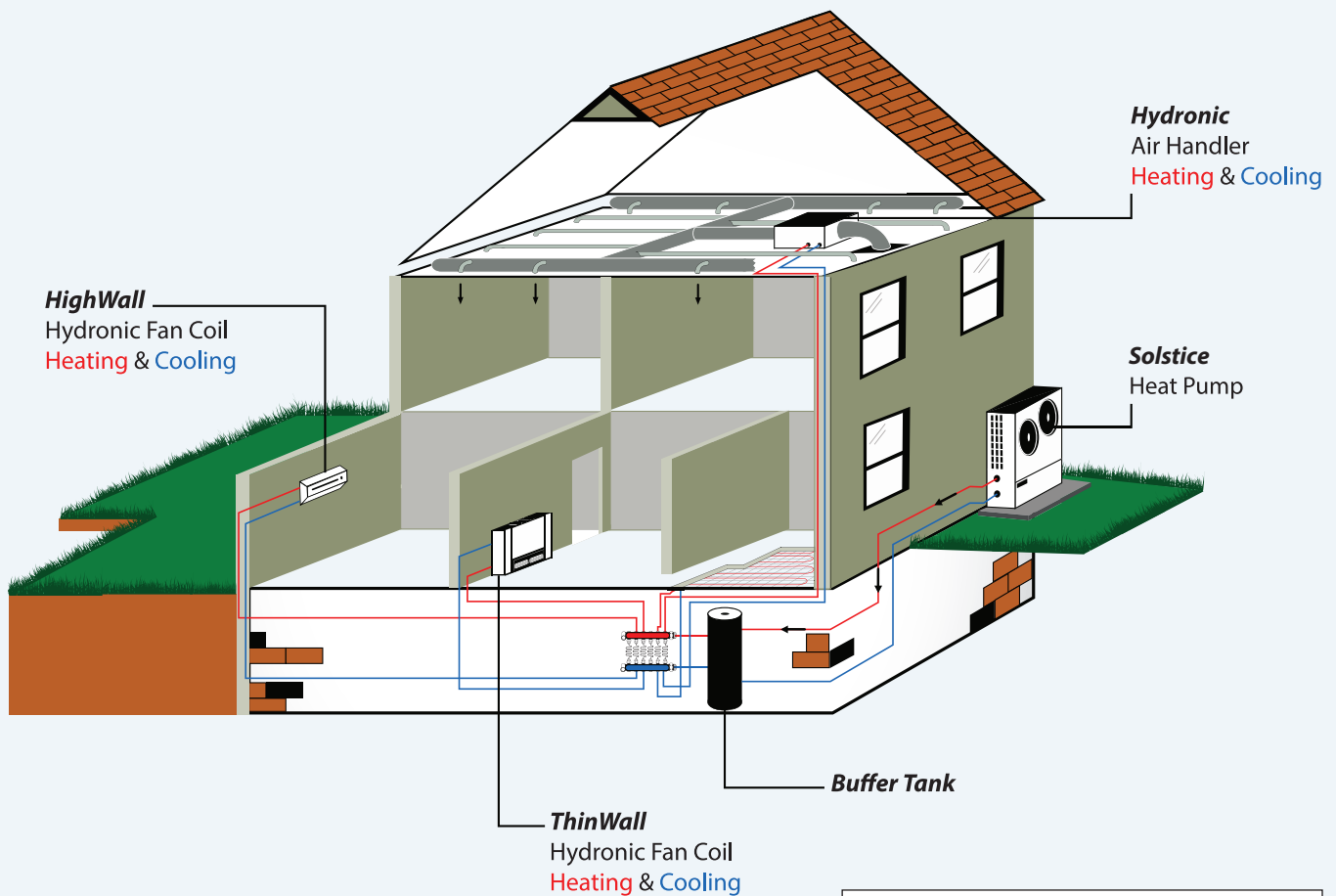
Green by Nature

An ultra safe and environmentally friendly design keeps all refrigerant sealed in its powder coated galvanized steel cabinet and outside the occupied space. Heat pump high efficiency compressors operate on R-410A but use only a fraction of the refrigerant needed by other systems, while providing superior performance and high COP and EER.

Solstice heat pumps run quieter than traditional systems with their dual fan, horizontal discharge configuration and soft start activation.



System Layout



Key:

— = Supply

— = Return

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



Solstice Extreme, SpacePak's monobloc 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.

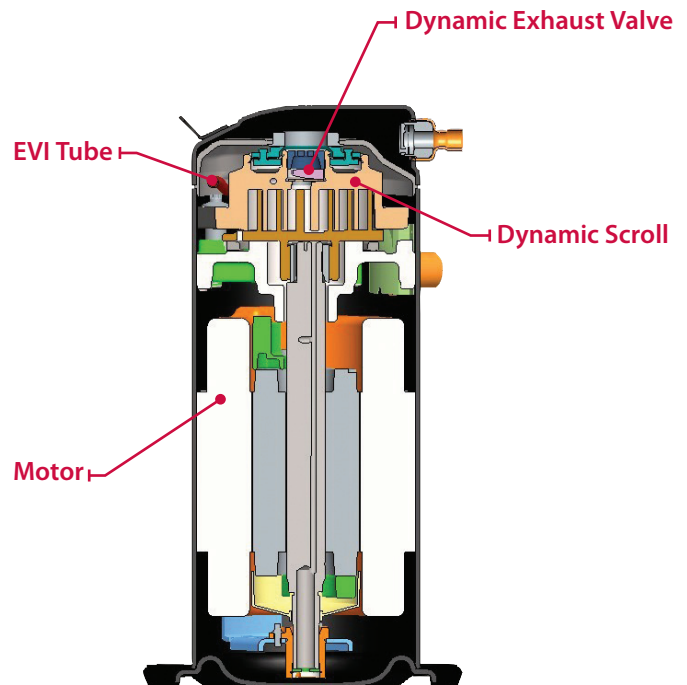
Standard Features

- Reliable EVI Copeland Compressor
- Simple Piping and Pumping with Easy Zoning
- Modulating Fans for Higher Efficiencies
- Monobloc Design (No On-Site Refrigerant Charging)
- Low Ambient Freeze Protection
- 37,500 BTU/h at -5°F Ambient

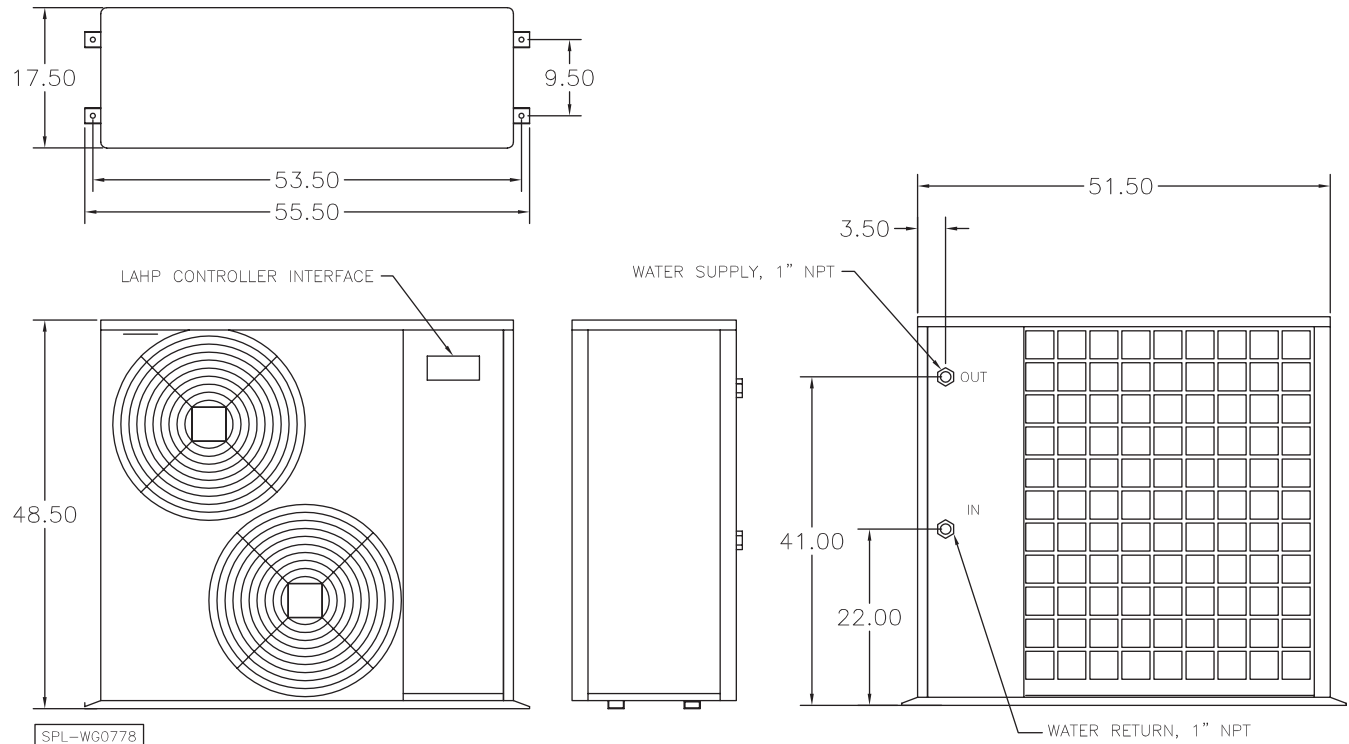


Enhanced Vapor Injection (EVI)

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.



Dimensions (In Inches)



Specifications

Model	LAHP - 048	COP
Heating Capacity (47°F/8°C Ambient temp. 120°F/50°C Supply Water)	66,480 BTU/h (18.9kW)	3.26
Heating Capacity (17°F/-8°C Ambient temp. 120°F/50°C Supply Water)	46,440 BTU/h (13.6kW)	2.35
Heating Capacity (5°F/-15°C Ambient temp. 120°F/50°C Supply Water)	42,240 BTU/h (12.4kW)	2.12
Cooling Capacity (95°F/35°C Ambient temp. 44°F/6.7°C Supply Water)	40,000 BTU/h (11.7kW)	2.43
Volts	230V/1ph/60Hz	
Minimum water supply temperature	42°F (5.5°C)	
Maximum water supply temperature	131°F (55°C)	
Minimum operating ambient temperature	-8°F (-22°C)	
Maximum operating ambient temperature	105°F (40°C)	
Minimum water flow	10 GPM (37.9 l/min)	
Rated water flow	11 GPM (41.6 l/min)	
Pressure drop at recommended flow	17.1 ft/7.4 PSI (35.8 kPa)	
Heating current	31A	
Cooling Current	23.5A	
Noise level at max fan speed (Heating or Cooling)	62 dB (A)	
Compressor	EVI Scroll	
Installed weight	386 lbs (175 kg)	

Performance

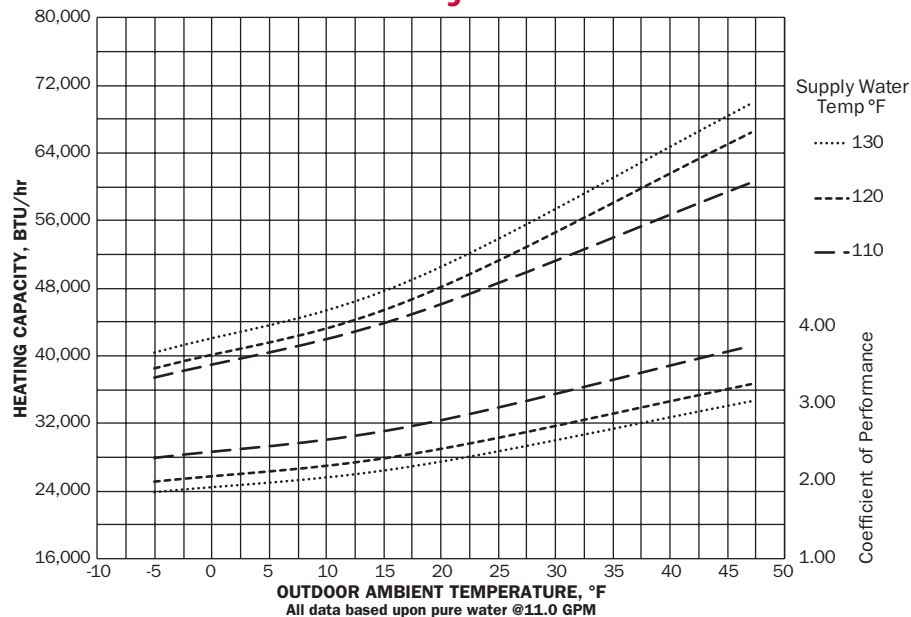
LAHP Heating Operation

LAHP Cooling Operation

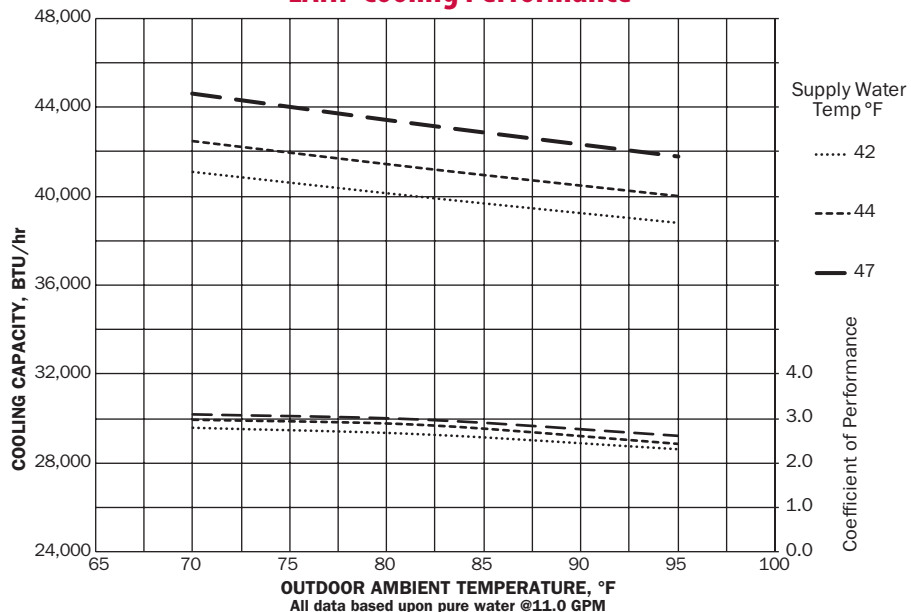
Supply Water Temp °F	Ambient Temp °F	Capacity BTU/hr	Water DP ft WC	Watts	COP	Supply Water Temp °F	Ambient Temp °F	Capacity BTU/hr	Water DP ft WC	Watts	COP
110	-5	37,500	14.6	3,880	2.30	42	70	41,100	15.0	4,298	2.80
	17	44,800	14.6	3,970	2.70		82	39,950	15.0	4,414	2.65
	47	60,580	14.6	4,263	3.75		95	38,800	15.0	4,897	2.32
120	-5	38,500	14.6	4,513	2.00	44	70	42,500	15.0	4,190	2.97
	17	46,440	14.6	5,790	2.35		82	41,250	15.0	4,238	2.85
	47	66,480	14.6	5,963	3.26		95	40,000	15.0	4,820	2.43
130	-5	40,425	14.6	5,249	1.86	47	70	44,600	15.0	4,240	3.08
	17	48,762	14.6	5,371	2.18		82	43,200	15.0	4,274	2.96
	47	69,804	14.6	5,768	3.04		95	41,800	15.0	4,708	2.60

All data based upon pure water @ 11.0 GPM

LAHP Heating Performance



LAHP Cooling Performance





The Solstice Inverter Monobloc (SIM) air-to-water heat pump uses inverter compressors and DC driven fan motors for optimal load matching and has an advanced touch screen control for easy user interface.

Keeps all refrigerant conveniently located outside the home and is capable of low ambient cooling.

Available in 3 and 5 ton models.

Features and Benefits

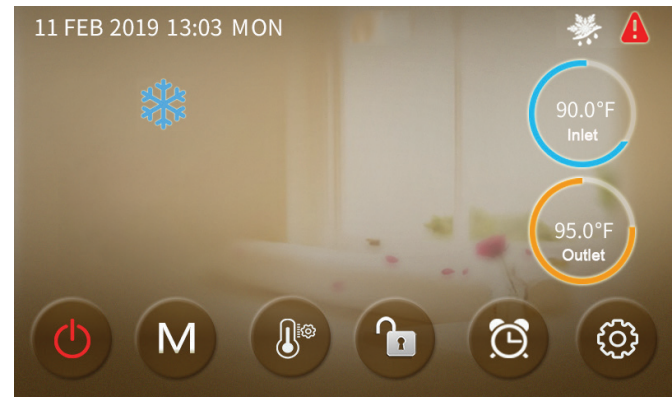
- Reliable Mitsubishi Inverter Compressor
- User Friendly Touch Screen Control
- Precision Temperature Control Platform
- Monobloc Design (No On-Site Refrigerant Charging)
- Low Ambient Cooling
- Freeze Protection
- Low Amp Draw with Ultra Quiet Operation
- 30% More Efficient than Traditional Heat Pumps

Specifications

Model		SIM-036	SIM-060
Max Heating Capacity* (90hz)	BTU/h	39240	56300
Min Heating Capacity* (30hz)	BTU/h	11950	21986
Max Cooling Capacity** (90hz)	BTU/h	34121	49476
Min Cooling Capacity** (30hz)	BTU/h	11341	16445
COP *		Up to 5.01	Up to 4.67
EER**		Up to 13.4	Up to 15.6
Max Running Amps	A	18	21
Compressor Rating Load	A	9.7	19
Locked Rotor Amps	A	35	50
Minimum Circuit Ampacity	A	20	26
Max Fuse or Circuit Breaker	A	30	40
Power Supply		230/1N~/60Hz	230/1N~/60Hz
Compressor Quantity		1	1
Compressor Model		Mitsubishi Rotary	Mitsubishi Rotary
Fan Quantity		1	2
Fan Power Input	W	200	200x2
Fan Rotate Speed	RPM	750	750
Sound @ 3ft	dB(A)	54	58
Water Pressure Drop	ft H2O	6	10
Water Connection	in.	1	1 1/4
Water Flow Volume	GPM	7	13
Unit Net Dimensions (L/W/H)	in.	39x18x35	39x17x52
Unit Shipping Dimensions (L/W/H)	in.	41x19x36	42x18x53
Net Weight	lb.	242.5	326
Shipping Weight	lb.	271	368

*47°F Amb. LWT 113°F

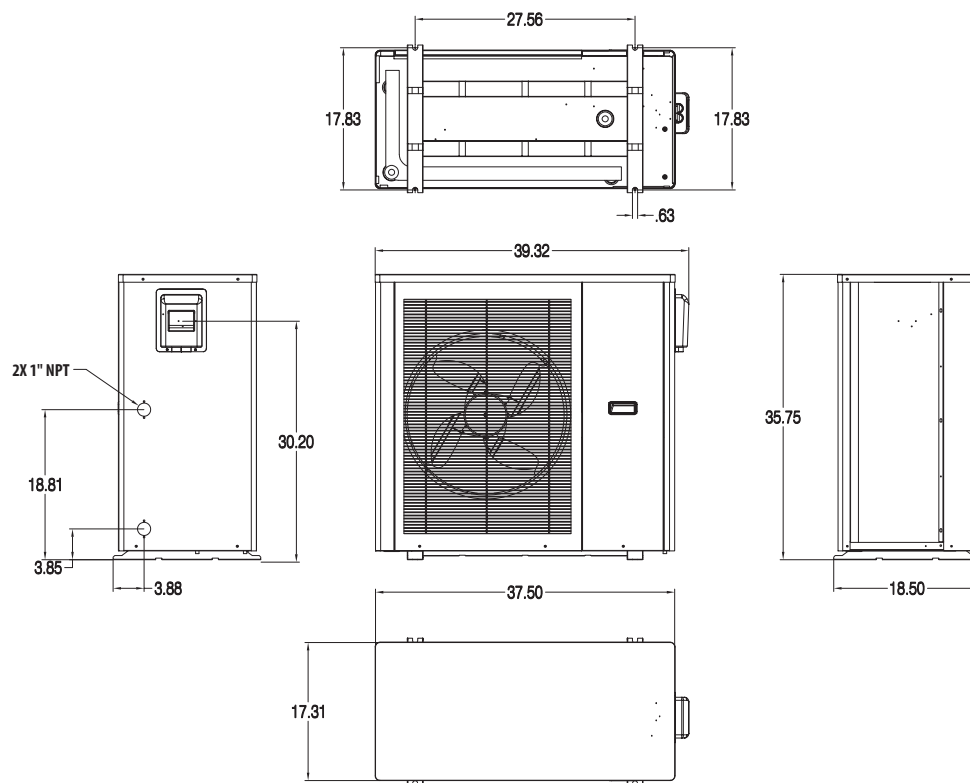
**95°F Amb. EWT 54°F/LWT 44°F



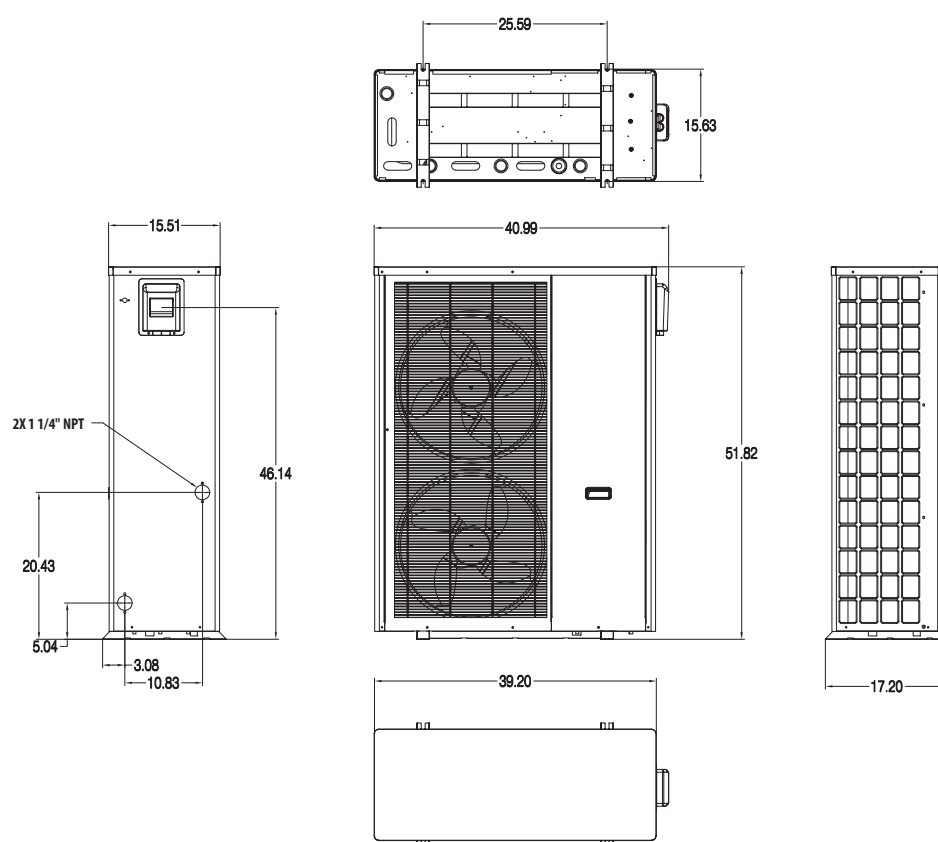
User friendly touch screen control allows for control outside by the unit or inside in the mechanical room.

Dimensions (In Inches)

SIM-036



SIM-060



Performance

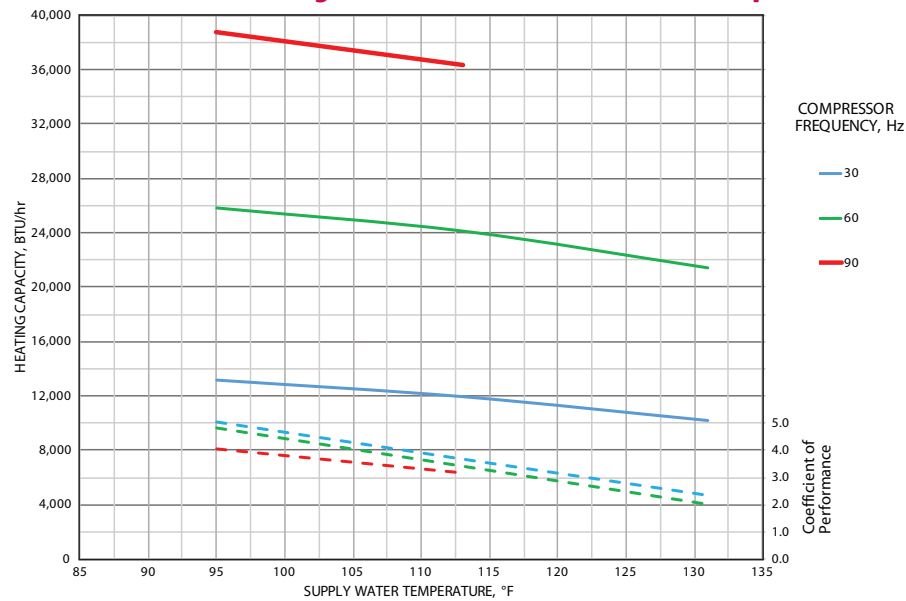
SIM-036 Heating, 45°F Ambient Temp

SIM-036 Cooling, 45°F Water Temp

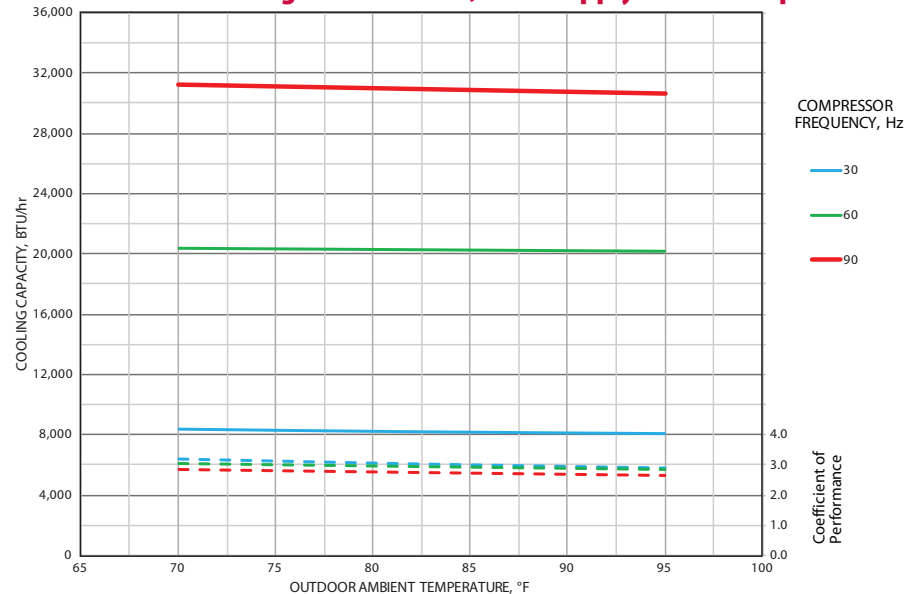
Compressor Frequency	Water Temp °F	Capacity BTU/hr	Water DP PSI	Watts	COP	Compressor Frequency	Water Temp °F	Capacity BTU/hr	Water DP PSI	Watts	COP
30	95	13,188	7.6	771	5.01	30	70	8,362	8.0	768	3.19
	113	11,942	7.6	959	3.65		82	8,169	8.0	792	3.02
	131	10,145	7.6	1,284	2.32		95	8,029	8.0	818	2.88
60	95	25,828	7.6	1,563	4.84	60	70	20,414	8.0	1,980	3.02
	113	24,147	7.6	2,062	3.43		82	20,306	8.0	2,023	2.94
	131	21,464	7.6	2,193	2.02		95	20,189	8.0	2,069	2.86
90	95	38,744	7.6	2,814	4.04	90	70	31,243	8.0	3,244	2.82
	113	36,355	7.6	3,371	3.16		82	30,948	8.0	3,317	2.73
	131	-	-	-	-		95	30,628	8.0	3,397	2.64

All data based upon 7.4 GPM

SIM-036 Heating Performance, 45°F Ambient Temp



SIM-036 Cooling Performance, 45°F Supply Water Temp



Performance

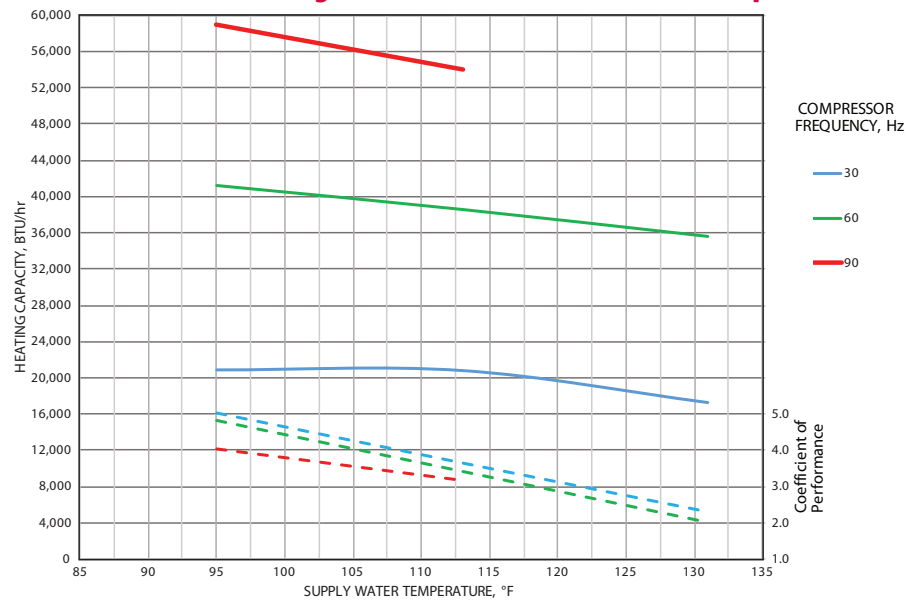
SIM-060 Heating, 45°F Ambient Temp

SIM-060 Cooling, 45°F Water Temp

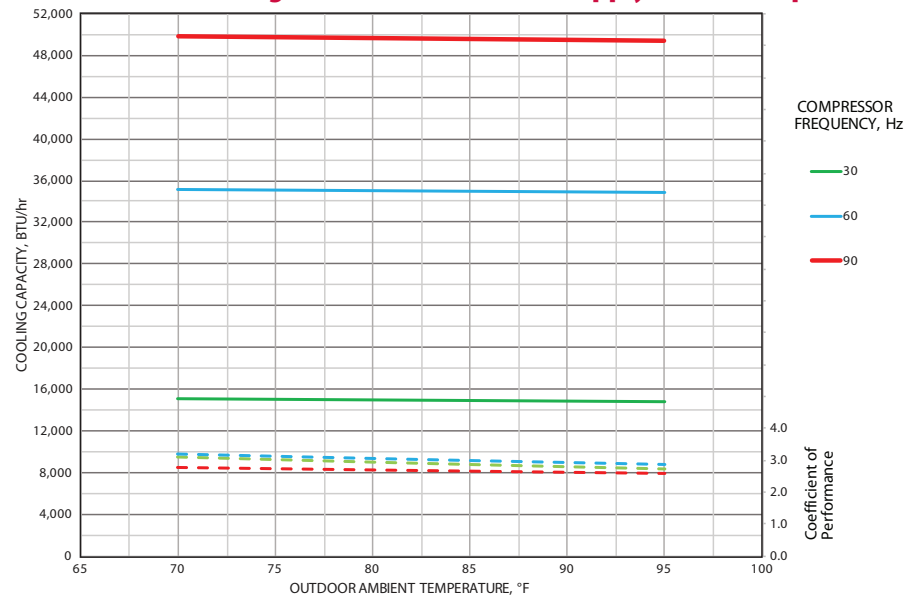
Compressor Frequency	Water Temp °F	Capacity BTU/hr	Water DP ft WC	Watts	COP	Compressor Frequency	Water Temp °F	Capacity BTU/hr	Water DP ft WC	Watts	COP
30	95	20,885	7.6	1,190	5.14	30	70	15,059	8.0	1419	3.11
	113	20,810	7.6	1,249	4.88		82	14,950	8.0	1499	2.92
	131	17,238	7.6	1,899	2.66		95	14,832	8.0	1585	2.74
60	95	41,287	7.6	2,696	4.49	60	70	35,117	8.0	3230	3.19
	113	38,632	7.6	3,262	3.47		82	34,958	8.0	3393	3.02
	131	35,648	7.6	4,852	2.15		95	34,785	8.0	3569	2.86
90	95	59,030	7.6	4,552	3.80	90	70	49,831	8.0	5277	2.77
	113	54,055	7.6	5,113	3.10		82	49,649	8.0	5431	2.68
	131	-	-	-	-		95	49,451	8.0	5597	2.59

All data based upon 10 GPM

SIM-060 Heating Performance, 45°F Ambient Temp



SIM-060 Cooling Performance, 44.6°F Supply Water Temp





SpacePak's newest air-to-water heat pump system incorporates ultra-high efficient inverter technology. SIS heat pumps use Panasonic EVI inverter compressors for optimum performance at temperatures down to -20°F. Its' split-type construction provides installers with the flexibility to eliminate the use of glycol in the hydronic loop and the convenience of simple piping similar to typical residential wall-hung boilers.

SIS units seamlessly adjust output for specific load-matching through modulation while maintaining precision temperature control. Our EC controlled modulating fan motors and integral control platform eliminate start/stop cycling resulting in superior performance with less wear and tear on the equipment.

Features and Benefits

- Reliable Panasonic EVI Inverter Compressor
- Simple Indoor Piping Similar to Wall Hung Boilers
- Designed for High Performance in all Temperature Ranges
- Extreme Low Ambient Heating Performance to -20°F
- SIS System Includes both Indoor and Outdoor Units
- Split Design Provides the Flexibility to Eliminate the Use of Glycol in the Hydronic Loop
- EC Controller Modulating Fans



Units use inverter driven compressors with EVI technology for superior performance efficiency at temperatures as low as -20°F.



EC controlled modulating fan motors combined with high efficiency blade profile ensure quiet end efficient operation while exchanging energy with the outdoor air.

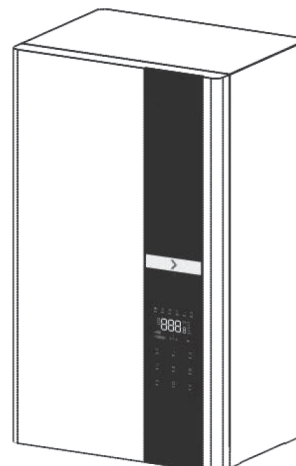
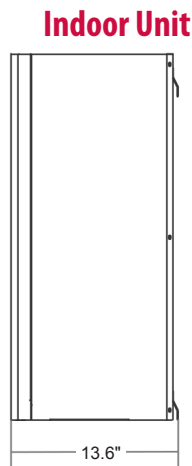
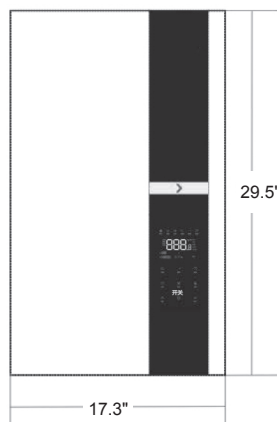


Outdoor Unit

Indoor Unit

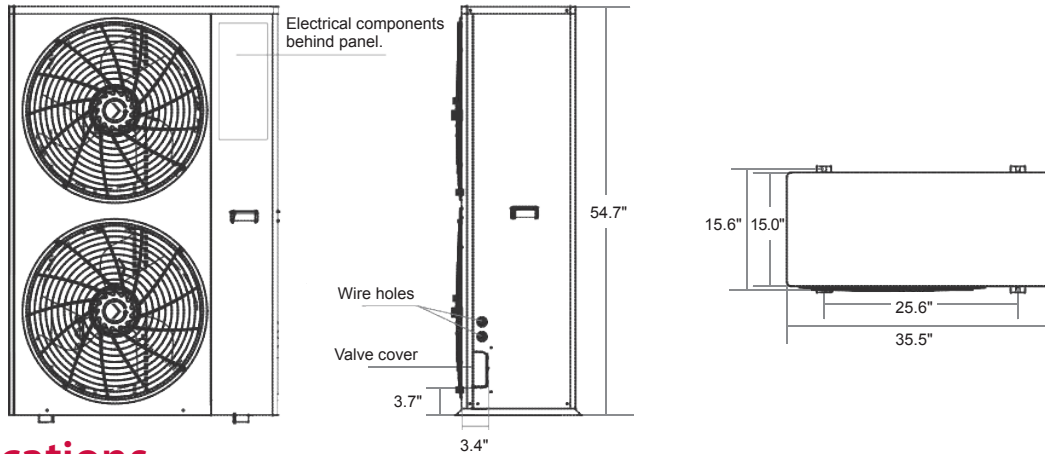


Dimensions (In Inches)



Dimensions (In Inches)

Outdoor Unit



Specifications

		Outdoor		Indoor	
Heating Capacity Range*	Btu/Hr	20,473-71,574			
Heating Efficiency*	COP	Up To 3.09			
Heating Capacity Range**	Btu/Hr	14,777-47,315			
Heating Efficiency**	COP	Up to 2.15			
Cooling Capacity Range***	Tons	2.5-5.2			
Cooling Efficiency***	EER	12.5			
Cooling Efficiency****	IPLV	17.14			
Water Temp Range	Deg F	41-130			
Compressor Frequency	Hz	30-90			
Power Supply	V/Ph/Hz	230/1/60			
MCA	Amps	40		15	
MOPD	Amps	50		15	
Refrigerant		R410A			
Refrigeration Connection		3/8 & 5/8 Flare			
Compressor		Panasonic Inverter-Drive EVI Scroll		N/A	
Water Connection	N.P.T.	N/A		1"	
Pressure drop (12 G.P.M)	P.S.I./ft W.C.	N/A		10.7/24.7	
Fan Motor (Modulating)		EC Controlled		N/A	
Noise Level (@3meters)	dbA	50		38	
Net Weight	Lbs	293		132	
Shipping Weight	Lbs	337		158	
Net Dimensions (L/W/H)	Inches	35x15x55		17x14x30	
Shipping Dimension (L/W/H)	Inches	37x17x55		33x21x17	
Operating Ambient Temp	Deg F	-20-110			

*Water out- 120°F, Ambient- 47°F, G.P.M-12

**Water out- 120°F, Ambient- 17°F, G.P.M-12

***Water out- 45°F, Ambient (DB/WB)@- 95°F/86°F, G.P.M-12

****IPLV is the recognized measurement of efficiency for Integrated Part Load Values in accordance with AHRI 550/590.

Ambient temp = 95°F. Delivered Water = 44°F (8.5GPM)

All data based on pure water

Heating

Cooling

HZ	Water Temp	Ambient	Capacity	kW	COP	HZ	Water Temp	Ambient	Capacity	kW	EER
90	100	-20	35,967	6.28	1.68	78	45	76	74,489	5.19	14.34
		-4	42,109	6.46	1.91			89	66,912	5.89	11.36
		17	50,609	6.75	2.20			95	63,125	6.38	9.90
		47	76,023	7.26	3.07			101	58,449	6.79	8.60
	120	-20	33,863	7.50	1.32		60	76	60,396	5.09	11.87
		-4	39,645	7.70	1.51			89	54,253	5.77	9.40
		17	47,648	8.05	1.73			95	51,182	6.25	8.19
		47	71,574	8.66	2.42			101	47,391	6.66	7.12
	130	-20	33,694	8.28	1.19		45	76	60,396	3.59	16.81
		-4	39,368	8.73	1.32			89	54,253	4.07	13.32
		17	47,315	9.12	1.52			95	51,182	4.41	11.60
		47	71,074	9.81	2.12			101	47,391	4.70	10.09
60	100	-20	15,535	2.45	1.86	60	60	76	50,310	3.51	14.34
		-4	21,677	3.10	2.05			89	45,193	3.98	11.36
		17	32,388	3.45	2.75			95	42,635	4.31	9.90
		47	51,626	3.83	3.95			101	39,477	4.59	8.60
	120	-20	14,627	2.92	1.47		45	76	35,231	1.95	18.05
		-4	20,409	3.70	1.62			89	31,648	2.21	14.30
		17	30,493	4.12	2.43			95	29,856	2.40	12.45
		47	48,605	4.57	3.12			101	27,645	2.55	10.83
	130	-20	14,553	3.23	1.32		60	76	27,380	1.73	15.82
		-4	20,266	4.19	1.42			89	24,595	1.96	12.53
		17	30,280	4.66	1.90			95	23,203	2.13	10.92
		47	48,265	5.18	2.73			101	21,484	2.26	9.49
30	100	-20				30	45	-20			
		-4	11,137	1.60	2.05			-4	10,486	1.90	1.62
		17	15,696	1.69	2.73			17	14,777	2.01	2.15
		47	21,746	1.63	3.92			47	20,473	1.94	3.09
	120	-20					60	-20			
		-4	10,486	1.90	1.62			-4	10,412	2.16	1.42
		17	14,777	2.01	2.15			17	14,674	2.28	1.89
		47	20,473	1.94	3.09			47	20,330	2.20	2.71
	130	-20					60	-20			
		-4	10,412	2.16	1.42			-4	10,412	2.16	1.42
		17	14,674	2.28	1.89			17	14,674	2.28	1.89
		47	20,330	2.20	2.71			47	20,330	2.20	2.71



Hydronic buffer tanks are used as both hydraulic separators and hydronic buffer tanks. As a hydraulic separator, buffer tanks separate 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.

Buffer tanks 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.

Buffer tanks 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 piping connections built into the buffer tank units (1½" NPT on BT-13-H, BT26-H and BT40-H, 2" NPT on BT80-H). Two connections can be piped to the distribution system.

Features and Benefits

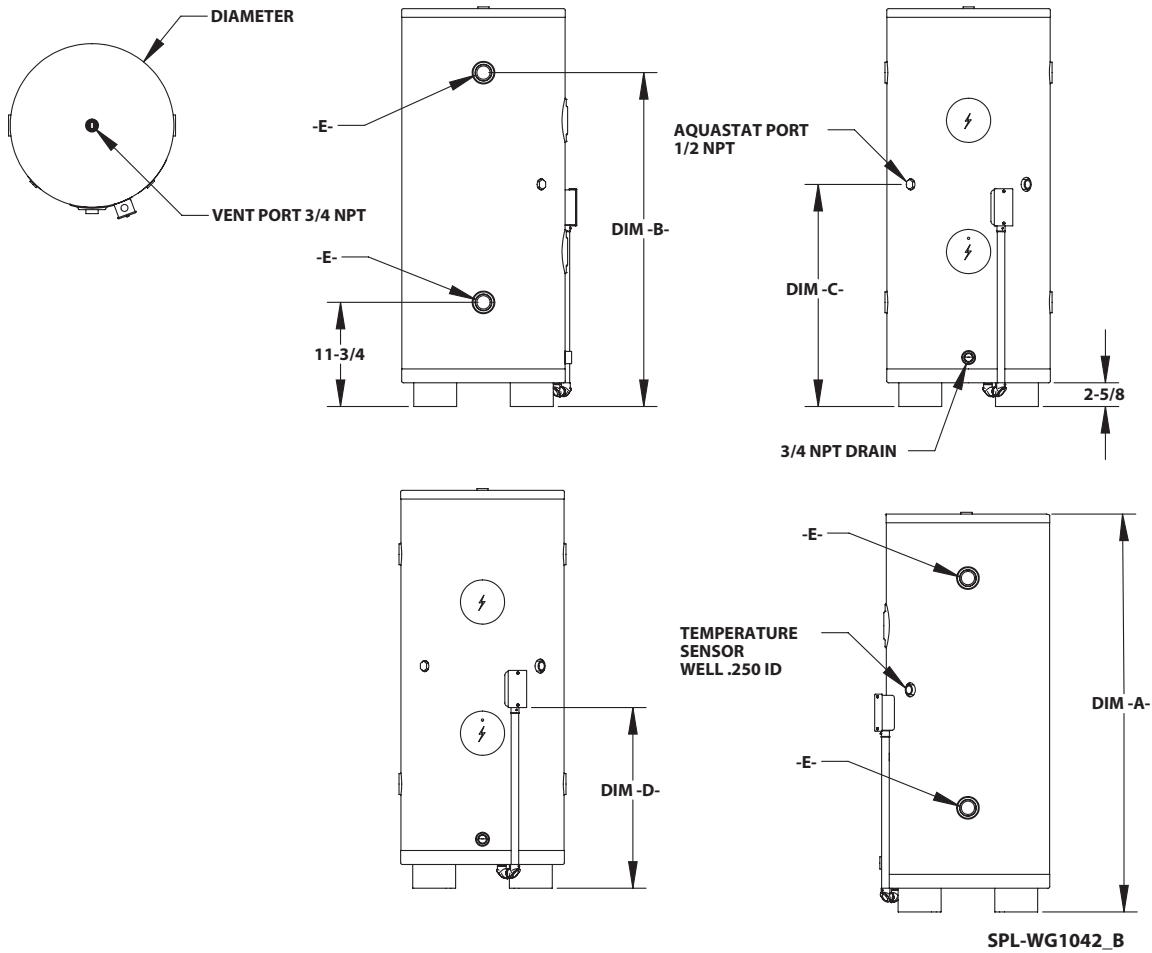
- Durable Stainless Steel Construction
- Polyurethane Resin Foam with R12 Insulation Valve
- Offered in 13, 26, 40, and 80 Gallon Capacities
- White Outer Housing
- ½" NPT Aquastat Port
- Standard 6KW* (2 each 3kw Heater Elements for BT26-H, BT40-H and BT80-H. Only one 3kW** heater element for BT13-H) Electric Heat 240VAC 1PH/60Hz

*20,500 BTU/hr.

**10,250 BTU/hr.



Dimensions



Specifications

Model		BT13-H	BT26-H	BT40-H	BT80-H
Dimensions	Diameter	18-1/2"	18-1/2"	18-1/2"	23-5/8"
	A	29-1/6"	45"	60"	64-1/8"
	B	21-1/2"	37-3/4"	52-3/4"	55-1/2"
	C	19-5/8"	25 1/8"	34-1/8"	34-5/8"
	D	16-1/2"	20-1/2"	26-5/8"	32-1/2"
Port Diameter NPT	E	1-1/2"	1-1/2"	1-1/2"	2"
Capacity	US Gal	13	26	40	80
Max Water Flow	GPM	36	36	36	48
Ship Weight	lbs	40	84	104	130
Empty Weight	lbs	38	77	97	125
Full Weight	lbs	148	304	446	805
Min Circuit Ampacity	Amps	15	30	30	30
Max Working Pressure	P.S.I.	100			
Electric Heat Capacity	kW	3	6	6	6

*Not suitable for potable water

HighWall

HYDRONIC 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.

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

- Low Temperature - Max 160°F Operating Temperature
- DC Motor W/ Variable Speed Modulation using EC Motor Driver
- Motorized Adjustable Louvers
- Quiet Operation (33-58 dB)
- Elegant Modern Design
- Heating / Cooling Operation
- Stainless Steel Flexible Hose Connections
- LED Display / Remote Control
- Condensate Hose

Specifications

Model	Output (BTU/hr)						Dimensional Data			Ship Wt. (lbs)
	Heating			Cooling						
	Entering Water Temperature						Length	Width	Height	
	120°F	140°F	160°F	45°F	47°F	50°F				
HW-06-ECM	8123	11331	14266	7300	6416	5085	34-7/16"	8-2/3"	11-13/16"	28
HW-15-ECM	11843	16553	20853	10614	9420	7475				30
HW-18-ECM	14641	20444	25734	13106	11638	9249				32

ThinWall

HYDRONIC HEATING & COOLING

ThinWall fan coils are the ultra-sleek alternative to HighWall fan coils or can be used in conjunction with a HighWall unit 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.



Standard Features

- Quiet Modern Space-Saving Design
- Heating and Cooling
- Hydronic Based- No Refrigerant
- ECM Blower
- Glass Front Touch Screen Controller
- Remote Control

Specifications

Model	Output (BTU/hr)						Dimensional Data			Ship Wt. (lbs)
	Heating			Cooling						
	Entering Water Temperature						Length	Width	Height	
120°F	140°F	160°F	45°F	48°F	50°F					
UT-87	4600	6936	8700	3400	2846	2505	28"	5-1/4"	24-1/4"	41
UT-135	8500	10710	13500	6500	5442	4789	35.25"			52
UT-196	11400	15606	19600	8500	7116	6262	43"			60
UT-246	14600	20114	24600	11900	9963	8767	51"			69
UT-320	17800	26010	32000	14800	12391	10904	59"			79



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