



Air-To-Water Heat Pumps

COMFORT
WHEN YOU
NEED IT



SPACEPAK 
HYDRONICS



COMFORT WHEN YOU NEED IT

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.

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.

Perfect Match

SpacePak's Solstice products allows custom control not obtainable by most traditional refrigerant-based systems. Heat pumps use hydronics (water) to provide unparalleled load matching by utilizing adjustable water flow, water temperature, and airflow settings.



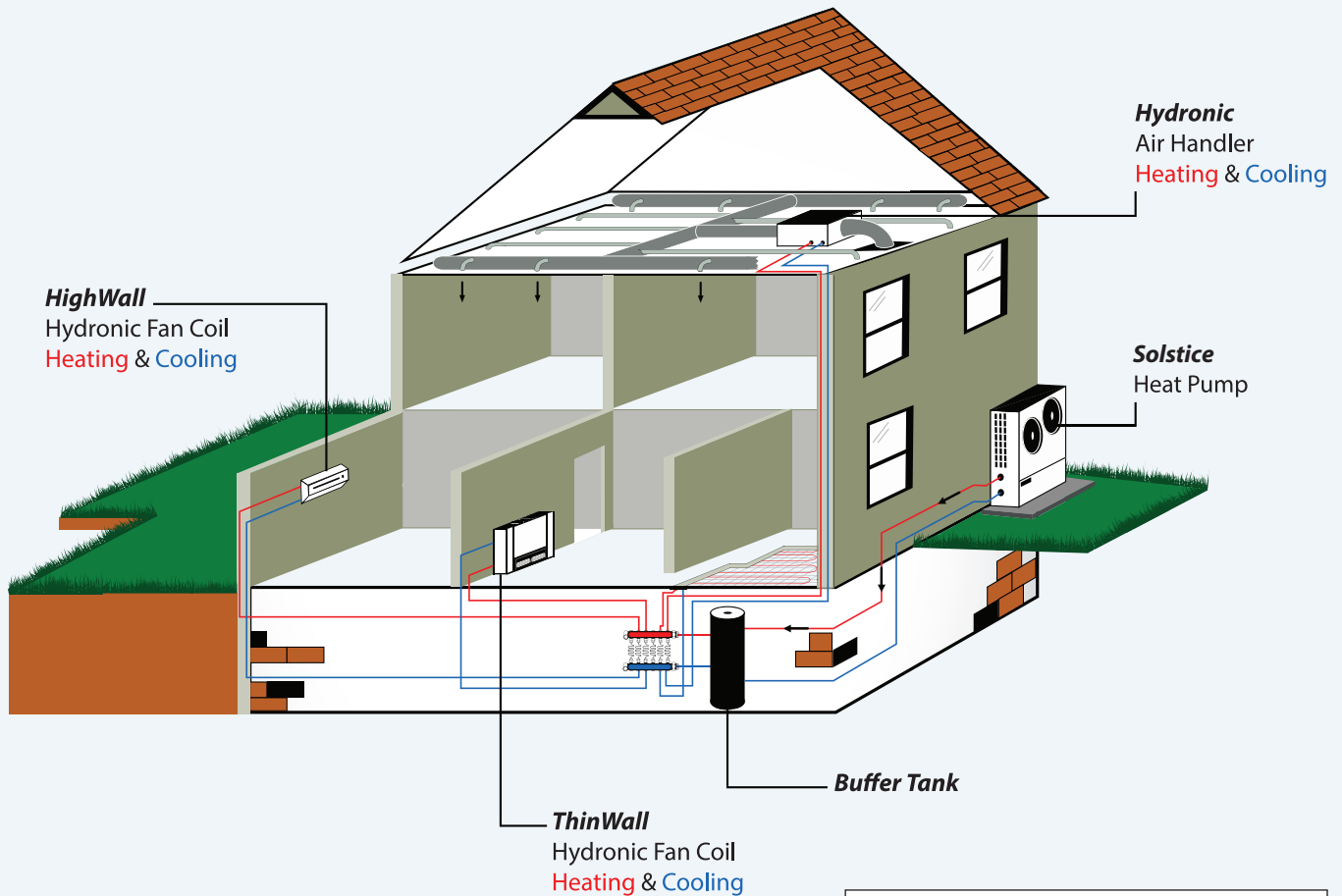
Green by Nature

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 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.

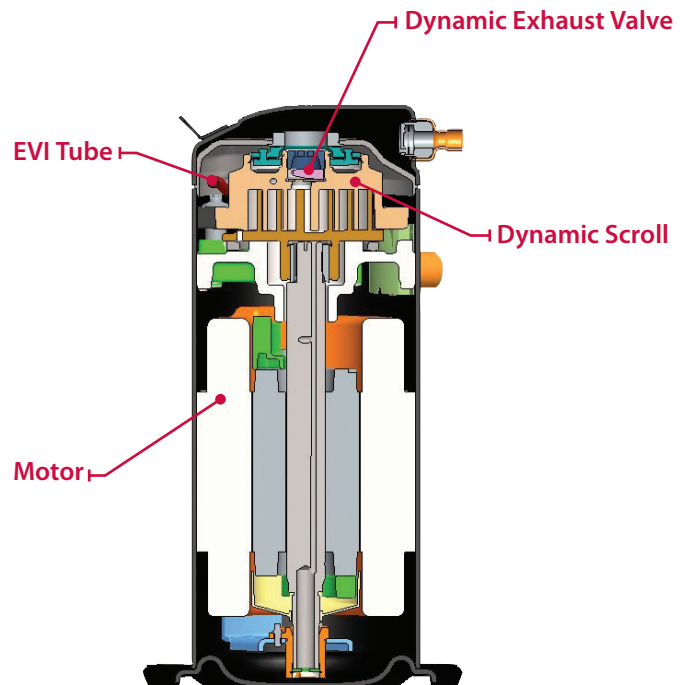
Standard Features

- Enhanced Vapor Injection
- 66,480 BTU/h at 47°F Ambient
- 3.3 Ton of Cooling at 95°F Ambient
- Simple Piping & Pumping
- Installation & Service Friendly
- Easily Zoned
- Proven Integrated Control
- Outdoor Reset
- Green Hydronic Energy – No Refrigerant in Occupied Space
- Low Ambient Freeze Protection



Enhanced Vapor Injection (EVI)

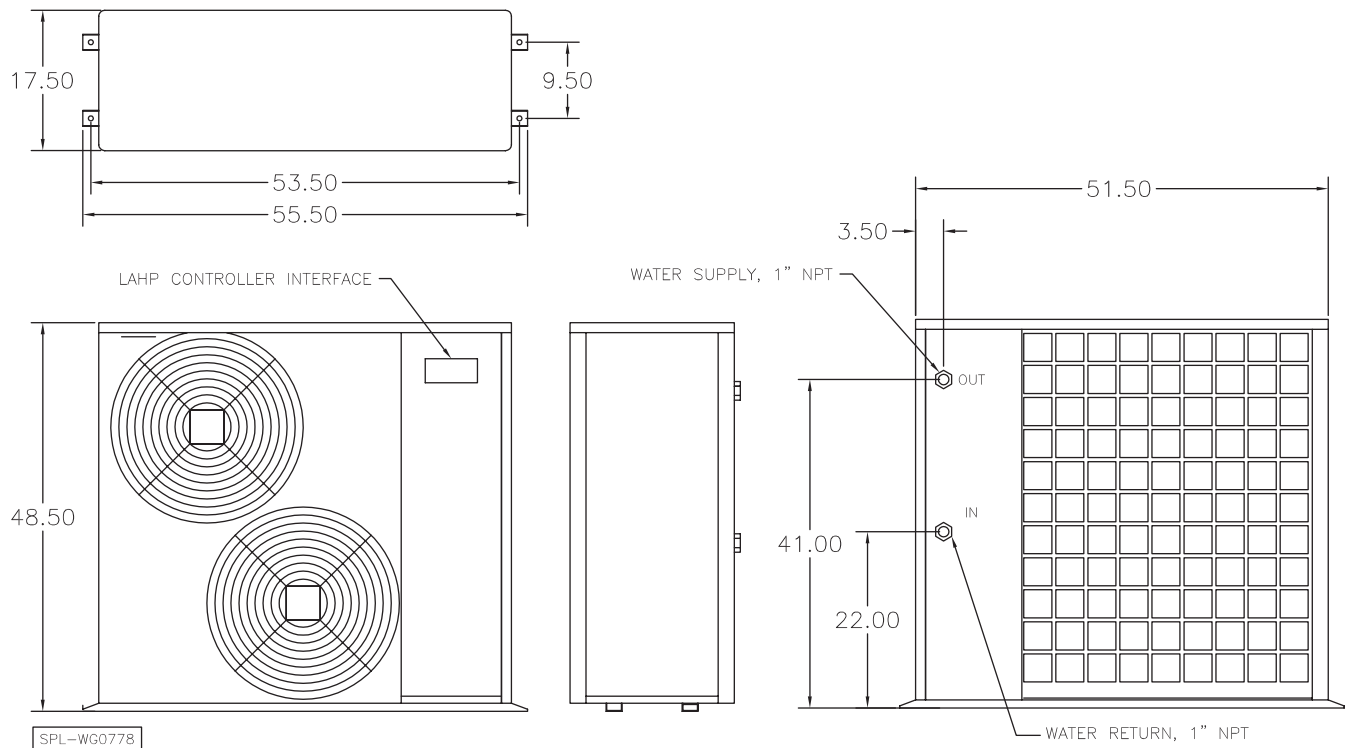
The award winning EVI technology and high efficiency condenser used in SpacePak low ambient heat pumps, provides improved efficiency, reliability and heating capacities. EVI increases heating capacity by over 30%, making it the perfect compressor for severe ambient conditions (0°F) in cold climates,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



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)	

Dimensions (In Inches)





Performance

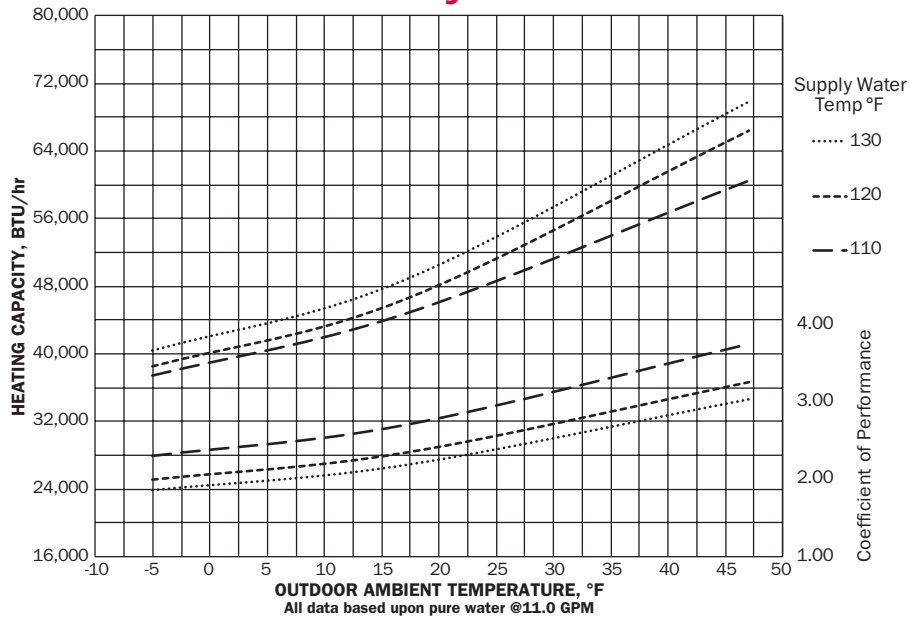
LAHP Heating Operation

LAHP Cooling Operation

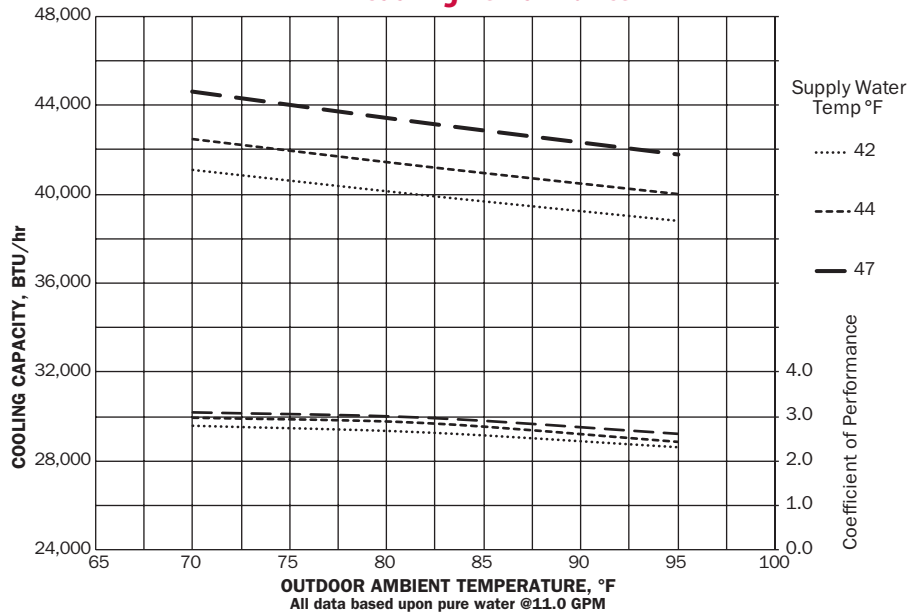
Supply Water Temp °F	Ambient Temp °F	Capacity BTU/hr	Water DP ft WC	Watts	COP	Supply Water Temp °F	Ambient Temp °F	Capacity BTU/hr	Water DP ft WC	Watts	COP
110	-5	37,500	14.6	3,880	2.30	42	70	41,100	15.0	4,298	2.80
	17	44,800	14.6	3,970	2.70		82	39,950	15.0	4,414	2.65
	47	60,580	14.6	4,263	3.75		95	38,800	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



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 on BT26 and BT40, 2" NPT on BT80) 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 (2) 3kW electric heating elements.

HighWall – Heating & Cooling

HighWall fan coils are the perfect indoor complement to our low ambient heat pumps, providing optimum heating and cooling in one classic design.



ThinWall – 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.





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