

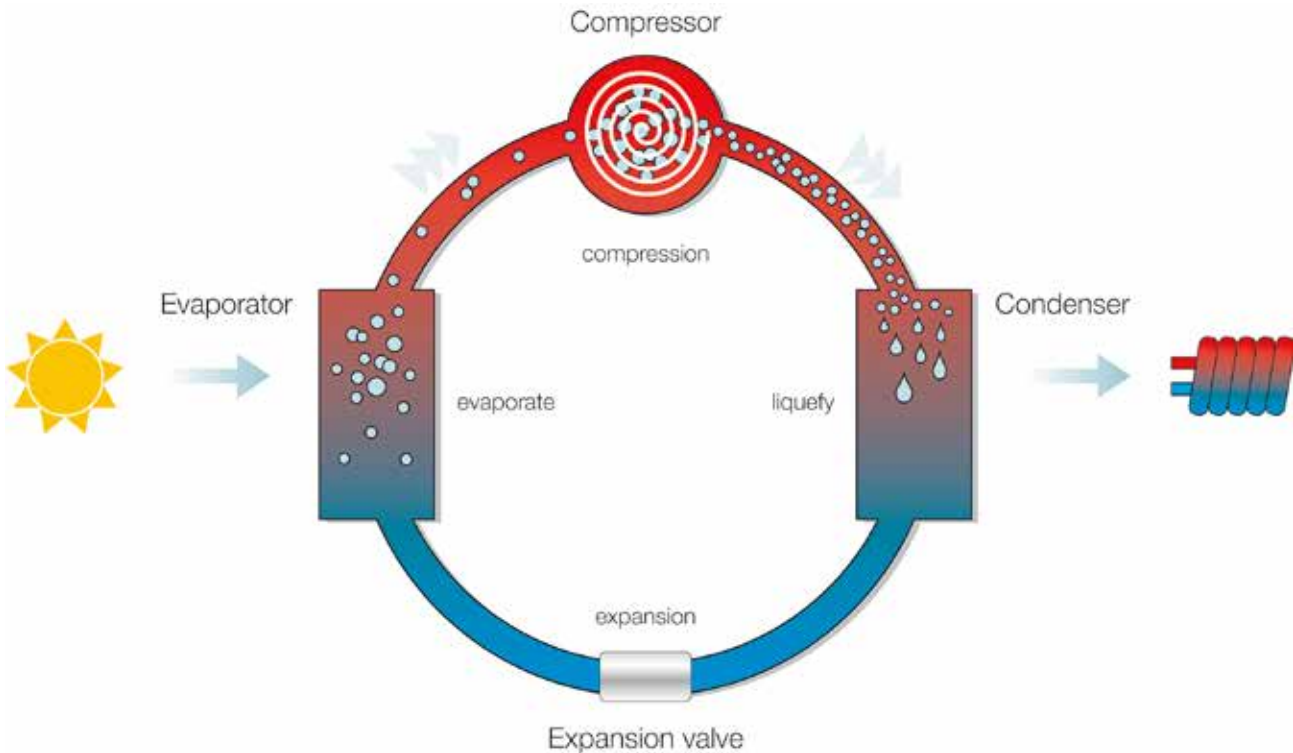


COMMERCIAL AIR SOURCE HEAT PUMP WATER HEATER VERSOPUMP - ET-H SERIES





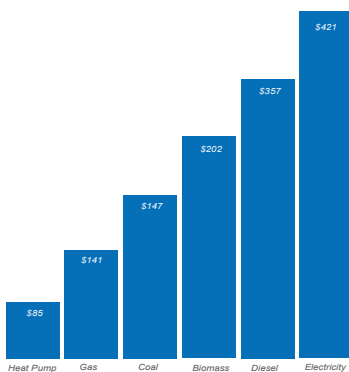
HEAT PUMP WORKING PRINCIPLE



Heat pump water heater extracts energy from the air or other heat source and uses it to heat water. It uses 1 time power to drive the compressor and brings 4.3 times heat to the water, this is what we called coefficient of performance (COP). With COP up to 4.3.

ENERGY RESOURCE COMPARISON

The data on the following drawing are calculated on the basis of 20hrs/day in 120 days.



Operating Cost Comparison						
Items	Heat Pump	Gas	Diesel	Electricity	Coal	Biomass
Calorific Value	860kcal/kWh	8600kcal/L	10200kcal/L	860kcal/kWh	5000kcal/Kg	4000
Unit Price	\$0.1/kWh	\$0.3/m ³	\$0.9/L	\$0.10/kWh	\$0.075/Kg	0.20
Heating Load			200kW			
η	468%	85%	85%	95%	35%	85%
Consumption Per Hour	43kW/h	24m ³ /h	20L/h	211kW/h	98Kg/h	51
Operating Cost Per Day	\$85	\$141	\$357	\$421	\$147	\$202
Operating Cost Per Year	\$10256	\$16941	\$42851	\$50526	\$17691	\$24282
Energy-Saving	/	19.05%	68.00%	72.86%	22.48%	43.52%



VERSOPUMP PRODUCT FEATURES

Large air volume, low noise fan motor: use airfoil shape, large chord, space distortion alloy blade, efficient internal rotor motor; large air volume, low noise, high efficiency and compact

Use stainless steel 304 material for heat exchanger side cover, fastener and other important parts etc..Does not rust or corrode easily and is more durable.

Environmental protection refrigerant: protect atmospheric ozone layer, small pressure loss, stronger heating capacity, better heat transfer performance.



Use heat pump water heater professional compressor, wider operation range , enhance the reliability greatly.

High precision electronic expansion valve: use electronic expansion valve to control, reach 500 steps adjustment, adjust super heat degrees accurately, achieve high efficiency operation system.

Compact Structure: Use the structure of V shape up&down design, convenient maintenance, reduce the occupied area effectively.

High efficiency shell and coil heat exchanger : It uses high efficiency fin tube, which heating area is 3.6 times than ordinary smooth tube, large diameter waterway design to make water-flow more smoothly, energy efficiency is more superior.



Professional compressor for heat pump water heater: Adopt Copeland or Panasonic top quality scroll compressor specially for heat pump water heater, with much wider operation range for different ambient temperature. Special design for high suction & exhaust temperature, and system high condensing temperature & pressure, Higher efficiency, Lower noise, Higher reliability, Longer service life.



Large air volume, low noise fan motor: Use airfoil shape, large chord, space distortion alloy blade, efficient internal rotor motor; High efficiency and compact.



Wifi function for option(Control by Apps on mobile phone).



High efficiency shell & tube heat exchanger: Adopt high efficiency internal thread copper coil, which heating area is 3.6 times than ordinary smooth coil, larger diameter water loop design to make water flow smoothly, energy efficiency is superior.



Stainless steel 304 material for side cover of finned tube heat exchanger, for all fastener and other important parts, not easy to rust and corrosion, more durable.



Low ODP refrigerant: Available in R410a series and R134a series.



High precision electronic expansion valve: use electronic expansion valve for controlling, reach 500 steps adjustment, adjust super heat degrees accurately, achieve high efficiency operation system.



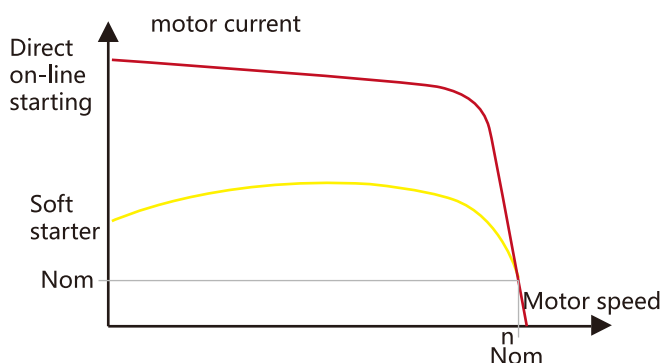
Controller: Adopt famous master chip, ensure stable running.

With lot of protection functions: High & low pressure protection, anti-freezing protection, high temperature protection, overload protection, lack phase and reverse phase protection, and so on.

Modular control for at most 16 heat pumps, can be combined freely according to the required capacity.



The blue hydrophilic aluminum foil fin heat exchanger adopts cross-type multi-flow path design to make the heat exchange more uniform; the internal thread copper tube design has higher heat transfer efficiency; at the same time, the hydrophilic fins are not easy to form water droplets, Spreading into a uniform water film completely on the surface of fins, eliminates the generation of water bridges, which greatly improves the heat exchange capacity and heat exchange efficiency between the aluminum foil and the flowing air.



Soft starter for option, reduce the starting current and starting stress, extend the service life of the motor and related equipment. Smooth start and soft stop avoid the surge problem and water hammer effect of traditional starting equipment.



VERSOPUMP - ET - H SERIES (COMMERCIAL AIR SOURCE HEAT PUMP)

	ET12-H	ET18-H	ET12-H	ET18-H	ET24-H	ET34-H	ET50-H	ET74-H	ET85-H	ET104-H	ET138-H	ET165-H	ET205-H	
Rated heating capacity (kW)	11.8	18.7	11.9	18.8	24.5	34.7	49.6	73.8	84.5	103.8	137.5	164.7	204.8	
Rated input power (kW)	2.83	4.44	2.85	4.45	5.86	8.16	11.95	17.66	20.02	24.95	33.25	39.17	48.89	
Rated input current (A)	15.13	23.74	5.41	8.45	11.53	15.89	20.91	35.78	38.24	48.38	63.15	74.39	92.86	
Maximum input power (kW)	3.84	7.32	3.82	7.31	9.68	11.47	17.38	27.20	31.28	39.11	42.15	49.58	66.15	
Maximum input current (A)	19.50	38.80	6.41	12.15	18.42	22.36	29.53	51.23	59.15	73.96	80.62	94.34	126.11	
Performance coefficient(COP)	4.17	4.21	4.17	4.22	4.18	4.25	4.15	4.18	4.22	4.16	4.14	4.20	4.19	
Rated hot water output temp (°C)	55													
Max. hot water output temp (°C)	60													
Rated hot water produce capacity (L/H)	253	401	253	401	525	744	1063	1582	1812	2226	2949	3532	4392	
Power supply	1N 220V~240V/50Hz			3N 380V~420V/50Hz										
Compressor	Type	Hermetic scroll type												
	Start Mode	Directly start(Soft start for option)												
	Quantity Set	1	1	1	1	1	2	2	4	4	4	4	4	4
Water side heat exchanger	Type	Shell & coil(tube) heat exchanger												
	Water flow (m³/h)	2.1	3.3	2.1	3.3	4.1	6.0	8.6	12.9	14.6	18.1	23.7	28.4	35.2
	Water Pressure Drop (kPa)	≤50	≤55	≤50	≤55	≤55	<60	<70	<70	<72	<72	<75	<75	<75
	Pipe size (DN)	DN20	DN25	DN20	DN25	DN25	DN32	DN32	DN50	DN50	DN50	DN80	DN80	DN80
Protections	1. High pressure and low pressure protection, 2. Anti-freezing protection, 3. High temperature protection, 4. Too big of the water temperature difference for outlet and inlet protection, 5. Overload protection, 6. Lack phase protection, 7. Reverse phase protection, etc..													
Refrigerant	Throttle Type	Electronic expansion valve												
	Quantity (kg)	1.9	2.6	1.9	2.6	4	2.6×2	4.0×2	2.6×4	3.2×4	4.0×4	6.0×4	7.2×4	9.2×4
Noise DB(A)	≤55	≤63	≤55	≤63	≤68	≤68	≤68	≤69	≤69	≤70	≤74	≤74	≤75	
length (mm)	700	820	700	820	820	1502	1502	1995	1995	1995	2074	2074	2074	
width (mm)	680	695	680	695	695	750	750	1165	1165	1165	1920	1920	1920	
height (mm)	875	1060	875	1060	1060	1060	1060	1105	1105	1105	2085	2085	2085	
Net Weight (kg)	110	160	110	160	190	255	400	600	725	855	1050	1230	1620	

Testing conditions:

1. Application side initial water temperature: 15°C, end temperature 55°C, max. temperature 60°C.

2. Ambient temperature dry bulb 20°C, wet bulb 15°C.

The above parameters are based on Refrigerant R410a, for parameters based on other refrigerant please contact us.

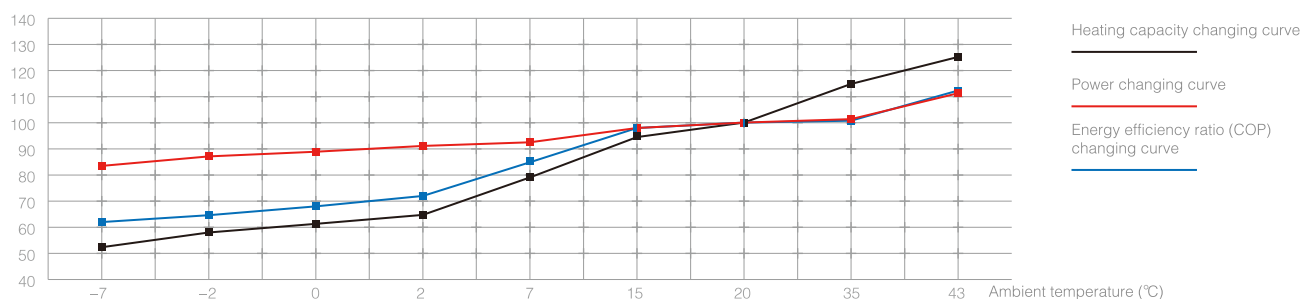
VERSOPUMP - ET-H HIGH TEMP SERIES (HIGH TEMPERATURE COMMERCIAL AIR SOURCE HEAT PUMP)																	
Model / Part No		ET8-H	ET13-H	ET8-H	ET13-H	ET17-H	ET26-H	ET34-H	ET55-H	ET64-H	ET78-H	ET108-H	ET130-H	ET153-H	ET186-H	ET305-H	
Rated Heating Capacity	kW	8.2	13.5	8.2	13.5	17.8	26.1	34.7	55.2	64.3	78.5	108.8	129.5	153.7	186.2	305	
Rated Power	kW	2.42	3.98	2.42	3.95	5.26	7.65	10.21	16.32	19.13	23.56	31.91	38.09	45.88	55.58	91.32	
Rated Current	A	10.58	17.56	4.58	7.52	9.99	14.55	19.35	30.95	36.33	44.71	60.60	72.34	87.14	105.56	173.45	
Max. Power	kW	3.14	5.17	3.14	5.13	6.84	9.95	13.27	21.22	24.88	30.63	39.88	47.62	57.36	69.49	114.17	
Max. Current	A	14.01	23.23	5.95	9.75	13.02	19.13	24.98	40.25	46.88	57.96	75.75	90.44	108.94	131.98	216.84	
Performance Coefficient	COP	3.39	3.39	3.39	3.42	3.38	3.41	3.40	3.38	3.36	3.33	3.41	3.40	3.35	3.35	3.34	
Rated Hot Water Supply	Δt40	L/H	175.7	289.3	175.7	289.3	381.4	559.3	743.6	1182.9	1377.9	1682.1	2042.5	2795.0	3440.0	3990.0	6535.0
	Δt60	L/H	117.1	192.9	117.1	192.9	254.3	372.9	495.7	788.6	918.6	1121.4	1559.0	1863.3	2293.4	2660.0	4357.0
Water Temp Out	°C	70°C(Default) Adjustable to 28-80°C															
Power supply		1N 220V/50Hz					3N 380V/50Hz					or 3N 380V 60Hz					
Compressor	Type	Hermetic Scroll Type															
	Quantity	Set	1	1	1	1	1	2	2	4	4	4	4	4	4	6	8
	Start Mode	Directly start(Soft start for option)															
Application Side Heat Exchanger	Type	Shell & Tube Heat Exchanger															
	Water Flow	m ³ /h	1.4	2.3	1.4	2.3	3.1	4.5	6.0	9.5	11.2	13.8	18.7	22.4	27.6	33.2	52.3
	Pressure Drop	KPa	≤45	≤53	<50	<55	<57	<60	<70	<70	<72	<72	<75	<75	<75	<77	<77
	Connection Size	DN	DN20	DN25	DN20	DN25	DN25	DN32	DN32	DN50	DN50	DN50	DN80	DN80	DN80	DN80	DN80
Connection type		BSP Female Thread							ANSI / DN Flange								
Protections		1. High pressure and low pressure protection, 2. Anti-freezing protection, 3. High temperature protection, 4. Too big of the water temperature difference for outlet and inlet protection, 5. Overload protection, 6. Lack phase protection, 7. Reverse phase protection, etc..															
Refrigerant	Type	R134a															
	Throttle Type	Electronic Expansion Valve															
	Quantity	kg	1.9	3.3	1.9	3.3	4.3	2.8x2	4.1x2	3.2x4	3.8x4	4.6x4	6.4x4	7.6x4	9.2x4	7.6*6	9.2*8
Noise	DB(A)	≤55	≤63	≤55	≤63	≤65	≤68	≤68	≤70	≤70	≤72	≤74	≤74	≤75	≤76	≤78	
Dimension	m	0.7*0.6*0.9	0.8*0.7*1	0.7*0.6*0.9	0.8*0.7*1	0.8*0.7*1.3	1.5*0.7*1.3		2*1.1*1.1	2*1.1*1.1	2*1.1*1.1	2*2*2	2*2*2	2*2*2	3*2*2	2*4.1*2.1	
Net Weight	kg	110	160	110	160	190	255	410	600	755	855	1050	1250	1620	2430	3240	
Remarks:																	
1. Water Heating Standard Condition: Application side initial water temperature: 15°C, end temperature 75°C, max. temperature 80°C.																	
2. Ambient temperature dry bulb 20°C, wet bulb 15°C.																	
3. The above parameters are based on Refrigerant R134a, for parameters based on other refrigerant please contact us.																	
4. Dimension & Weight are Tentative only. Get Final data sheet after confirmation																	
5. The above models are standard version. Bespoke designed model available upon request																	

VERSOPUMP - ET-H SERIES - HEATING PERFORMANCE CORRECTION COEFFICIENT (%)

Ambient temperature (°C)	-7	-2	0	2	7	15	20	35	43
Heating capacity (%)	54.0	58.8	61.9	66.5	79.8	96.0	100.0	116.0	127.0
Power (%)	85.8	87.3	89.7	90.3	93.6	98.0	100.0	108.9	112.0
Energy efficiency ratio (COP) (%)	62.9	67.4	69.0	73.6	85.3	98.0	100.0	106.5	113.4

HEATING PERFORMANCE CORRECTION COEFFICIENT CHANGING CURVE

Correction coefficient (%)

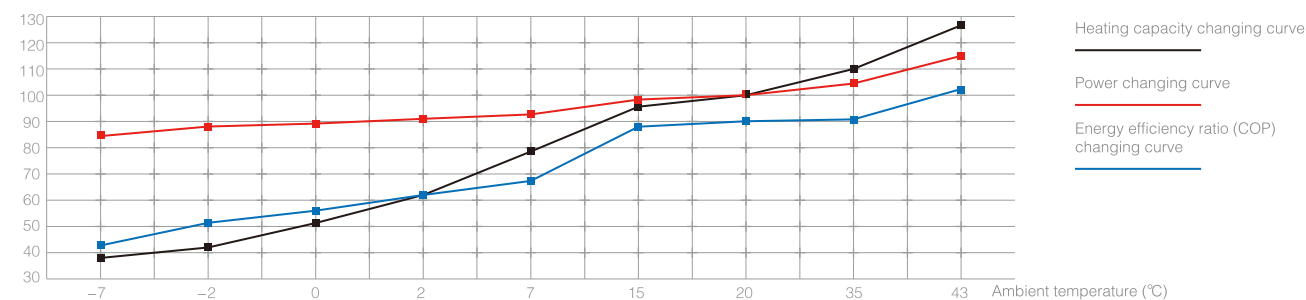


VERSOPUMP - ET-H HIGH TEMP SERIES - HEATING PERFORMANCE CORRECTION COEFFICIENT (%)

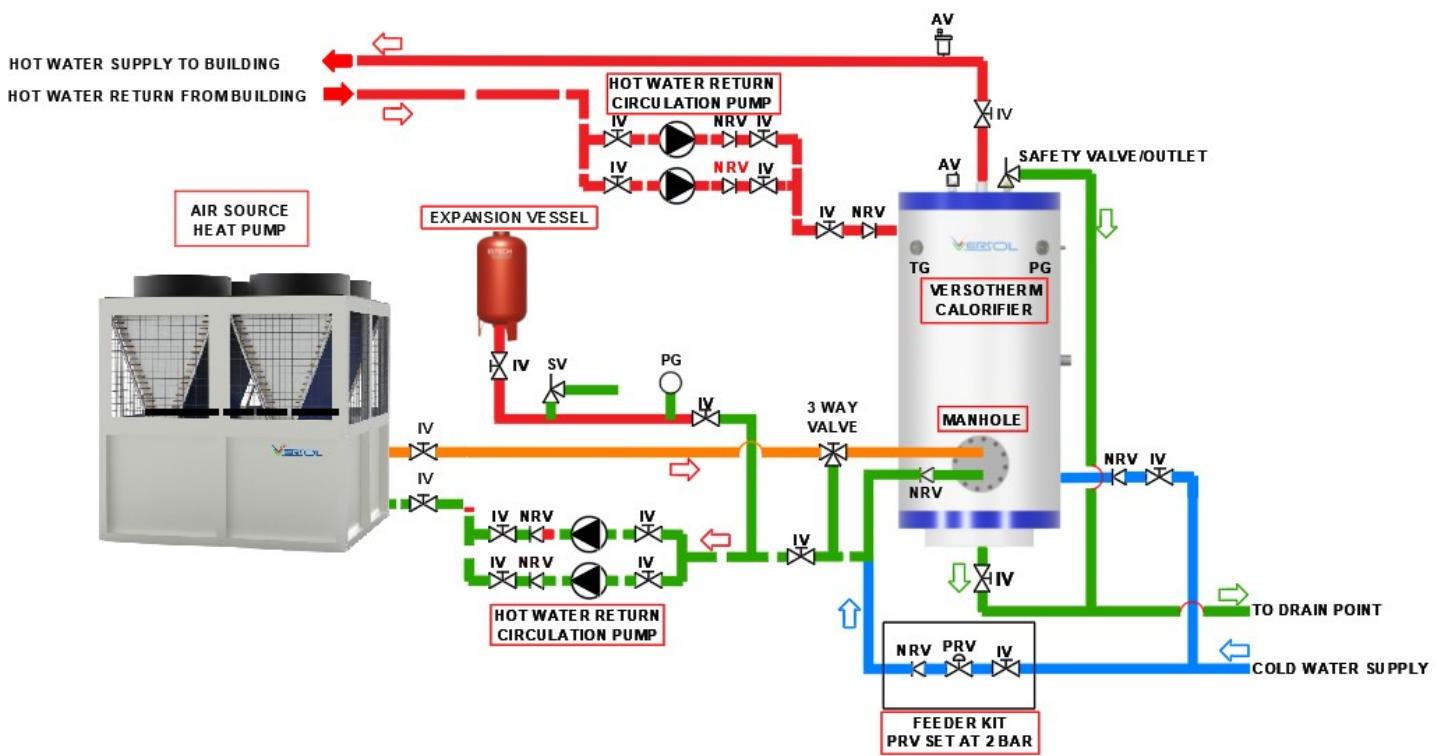
Ambient temperature (°C)	-7	-2	0	2	7	15	20	30	43
Heating capacity (%)	38.0	43.8	50.9	61.5	79.8	96.0	100.0	110.0	127.0
Power (%)	85.8	87.3	89.7	90.3	93.6	98.0	100.0	105.0	115.2
Energy efficiency ratio (COP) (%)	44.3	50.2	56.7	68.1	85.3	98.0	100.0	104.8	110.2

HEATING PERFORMANCE CORRECTION COEFFICIENT CHANGING CURVE

Correction coefficient (%)



APPLICATIONS SKETCH



Water Heating & Cooling Solutions

Solar Water Heaters

Heat Exchangers

Storage Calorifiers

Heat Pumps

Hot Water Boilers

Gas Fired Calorifiers

Electric Calorifiers

Steam Boilers



Corporate offices



Sales offices

Versol Poland | Versol Italy | Versol UK | Versol USA | Versol Middle East | Versol india