

## Individual Heat Pump Water Heaters (240V)

The below water heaters all rely upon heat pumps - no resistance models are shown due to their inefficiency. These products rely on 30-80 gallons of water storage and collect 3-5 units of heat for every one unit of electricity powering the air source heat pump. Some have a 4000 BTU compressor integrated on top of the tank, others use a 12,000-36,000 BTU separate compressor outside that produces more BTUs at a higher efficiency. These models can be used as either serving one dwelling unit or can be combined in a distributed central plant to feed multiple units.

	<b>Sanden CO2</b> 	<b>Rheem</b> Prestige Hybrid 	<b>AO Smith</b> Voltex Hybrid 	<b>Bradford White</b> AeroTherm 	<b>Steibel Eltron</b> Accelera 
Description	Split heat pump water heater	Hybrid (WiFi option adds \$150/tank)	Hybrid	Hybrid	Hybrid
Gallons	43, 83	50, 65, 80	50, 66, 80	50, 80	58, 80
Voltage (V)	208/230	208/240	208/240	208/240	220/240
Dimension (ft)	27.5H x 35W x 11D	74H x 24Diam.	69H x 27Diam.	71H x 25Diam.	60H x 27Diam.
Ref. Type	R744 (CO2)	R134a	R134a	R134a	R134a
Ambient Temp. Range (F)	<b>-20 – 110</b>	37 – 145	45 - 109	35 – 120	42 – 108 / 6 – 42
Power (W)			4,500	550 – 4,500	650 - 1500
Max Amps (A)	13	15 – 30	30	30	15
Heating (BTUh)	15,400	4,200	-	-	5,800
Heating (COP)	5.0	-	-	-	-
Energy Factor	3.09 – 3.84	3.55 – 3.70	3.06 – 3.61	2.40 – 3.39	3.05 – 3.39

## Small Demand and Low Voltage Applications (120V)

Electric resistance water heaters are best used where hot water is needed in small amounts or when a project requires strict voltage limitations. Tankless water heaters can be used in a restaurant or office bathroom, or a 120 sf tiny house that has no room for a 50-gallon tank or that is not sharing water system with other tiny homes. Electric resistance uses 3-5 times more energy than a heat pump but can be the right size for the right demand and they are helpful when there is no 220V electricity available. The 2 to 7-gallon tanks on the market use 120V, while anything larger uses 240V for more heating capability.

	<b>Stiebel Eltron</b> Mini-E Series 	<b>Stiebel Eltron</b> SHC Series 	<b>Bosch Tronic</b> 3000 Series 
Description	Tankless, Point of use	Mini tank, Point of use	Mini tank, Point of use
Gallons	0.21 (gpm)	6, 4, 2.7	7, 4, 2.7
Voltage (V)	120/110	110/120	120
Dimension (ft)	6H x 7W x 3D	20H x 15W x 15D	17H x 17W x 14D
Power (W)	1,800	1,300	1,440
Max Amps (A)	15	11.3	12
Heating (COP)	0.98	0.98	0.98