

**STIEBEL ELTRON**

**Simply the Best**

## Heat Pump Water Heaters, not “hybrids”

For 35 years we've been manufacturing heat pumps.  
We don't do it like the others.  
We do it better.

**Accelera® 220 E**

**Accelera® 300**



## Accelera® HEAT PUMP WATER HEATERS

- › Designed to provide comfort plus lowest possible energy costs
- › Reduces hot water costs by up to 80%
- › Engineered in Germany, Stiebel Eltron heat pump water heaters have been the largest seller in Europe for over 30 years
- › Backed by a 10-year warranty



Intertek  
Conforms to ANSI/UL  
Std. 174 & 1995  
Certified to CAN/CSA Std.  
C22.2 No. 110-94 & 236-05



Tested & certified by WQA  
to NSF/ANSI 372 for  
lead free compliance.



ENERGY STAR  
HIGH EFFICIENCY  
HAUTE EFFICACITÉ

**800.582.8423**

[www.stiebel-eltron-usa.com](http://www.stiebel-eltron-usa.com)

# These are not “hybrids.” They are Stiebel Eltron heat pump water heaters.

## With decades of heat pump experience

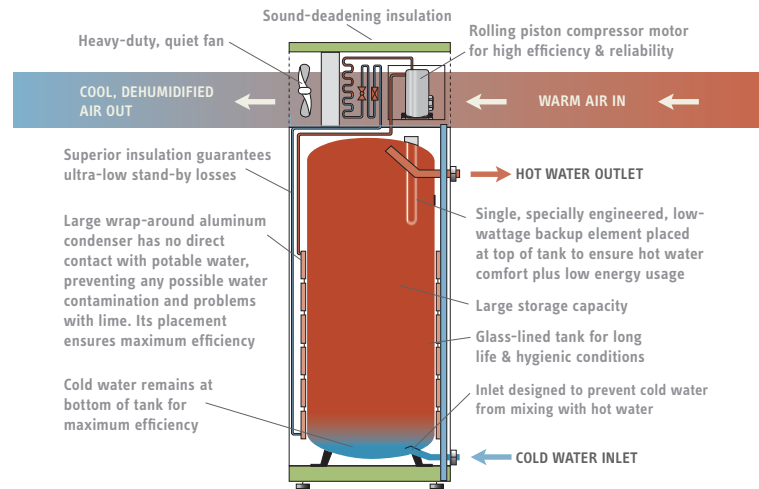
It has been obvious to us that a heat pump water heater ought to make hot water with the heat pump, and not with a back-up element. This simple solution seems to have escaped others. Yet it has made our heat pump water heater the largest seller in Europe for over 30 years.

Heat pump water heating technology means the amount of energy needed to heat water is greatly reduced compared to conventional water heaters. Until now, the best “high efficiency” water heaters only approach making the equivalent of 1 watt of hot water for every watt of energy they consume. Heat pump water heater technology redefines water heater efficiency. For every watt an Accelera’s compressor and fan uses, the equivalent of 3-5 watts of hot water are generated.

In warm climates, an Accelera® is placed either in the garage, where it uses the heat from the outside air to make hot water, or inside the house, where it helps with the air conditioning load. In cooler climates, the unit is typically placed in the basement where it also acts as a dehumidifier. You get hot water at a discount plus a drier basement as well.

## State and Local Rebates & Incentives

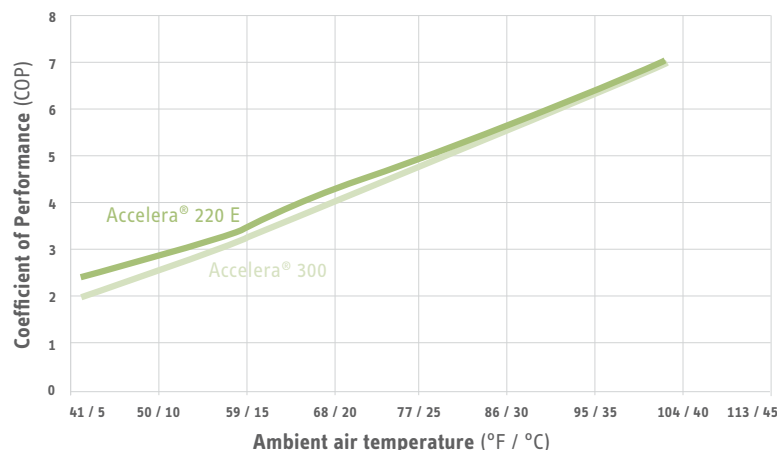
Regional incentives for the Accelera® Heat Pump Water Heaters are available in many locations. The U.S. Dept. of Energy’s Database of State Incentives for Renewables & Efficiency website has up-to-date details at: [www.dsireusa.org](http://www.dsireusa.org)



- › Engineered in Germany, Stiebel Eltron heat pump water heaters have been the largest seller in Europe for over 30 years
- › Optimal storage capacity combined with a design minimizing booster element usage allows both high efficiency and low operating cost, and reduces hot water costs by up to 80%
- › 10-year warranty backed by over 90 years of engineering and manufacturing reliability
- › Engineered for efficiency in a wide operating temperature range and a wide range of climates, with a Coefficient of Performance typically between 3–6
- › 240 V, 15 A circuit breaker

### Accelera® 220 E & 300 Efficiency Rate

COP measured according to EN 255.3 as function of ambient air temperature at 70% relative humidity based on 59°F / 15°C cold water temperature





## Here are some of the features of our heat pump waters and why they have them:

### Digital display

An electronic control unit on the Accelera® 220 E provides easy access to all information about performance for both installer and end user. In addition to other data, the display gives information on total volume of hot water available. The ECU is also “smart meter” ready and capable of external signaling to give priority to renewable energy sources if available to lower utility bills.



### Easy access for service

The entire top of an Accelera® 220 E can be quickly removed for easy servicing from all sides.

### Redesigned air flow

Air intake and exhaust on the Accelera® 220 E have been redesigned to allow more opportunity for installation in compact spaces. In addition, noise is reduced by separating the airflow from the refrigerant loop with a baffle and increasing the fan diameter.

### Impressed current anode corrosion protection

The Accelera® 220 E comes equipped with a closed loop controlled electronic anode for maintenance-free corrosion protection. The minimum current necessary to provide protection is always used as opposed to a steady-on system.

### The condenser

Both the Accelera® 220 E and the Accelera® 300 have a roll-bond wrap-around condenser because it prevents refrigerant contamination of the water, mitigates hard water problems (in conjunction with the glass-lined tank), and is the best solution for energy efficiency.

### The evaporator

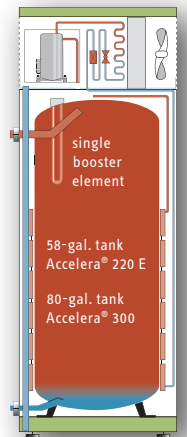
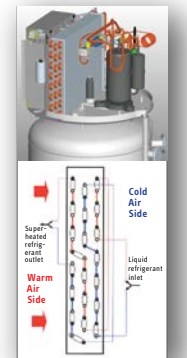
The coating on the Accelera® evaporator protects against corrosion. It also provides for quick water drainage to increase air flow for greater heat transfer and efficiency, and dispenses with the need for a filter. Both models also have a dual-path refrigerant flow through the evaporator to provide cold climate performance in addition to performance in warm climates.

### The cold water inlet

Both models have been designed to prevent incoming cold water from cooling the hot water in the tank during a draw. Our goal is to provide the greatest amount of hot water as possible without using the booster heating element so that maximum efficiency is achieved at the lowest electrical cost. This feature also allows a small cold water reservoir to remain in the very bottom of the tank to promote heat pump efficiency.

### Large tank + single heating element

A heat pump water heater's recovery time is slower than a standard tank. But with the correct balance engineered between tank size and heat pump capacity, both efficiency and comfort are possible. The tank in an Accelera® 300 is 80 gallons because, with 30 years of heat pump experience, we know that is the optimal size to satisfy as much annual average household hot water demand via the heat pump as possible. Similarly the Accelera® 220 E tank is 58 gallons because it is a perfect fit for smaller households. With both models, if more hot water is needed, the single back-up element at the top of the tank near the outlet ensures comfort without sacrificing efficiency.



# What's the difference?

"Hybrid" Water Heaters	Accelera® Heat Pump Water Heaters
<p>Their most efficient mode provides the greatest savings they're capable of. Water heater operates only with the heat pump.</p> <p>"Hybrids" must be set to the correct mode in order to either save energy or provide comfort.</p>	<p><b>Heat Pump Mode</b></p> <p>This is our main setting. Accelera® is engineered to satisfy 90% of hot water needs through the use of the heat pump alone. In cases of high demand, one specially-designed electric "booster" element is located at the very top of the tank. Positioned near the hot water draw point, the element has been designed and engineered to run as little as possible so that comfort is maintained and savings maximized.</p>
<p>Two standard electric elements activate for fast water temperature recovery. System allows heat pump to work once demand has been met via electric elements.</p>	<p><b>Hybrid Mode</b></p> <p>Accelera® is designed to satisfy hot water needs without having to pick a setting. There is nothing to remember to choose in order to have both comfort and savings.</p>
<p>Two standard electric elements activate sooner and stay on longer than in their "hybrid" mode.</p>	<p><b>High Demand Mode</b></p> <p>Accelera® is engineered to work as a harmonious whole to offer comfort and savings without having to ask, "what setting do I need to choose today?" In cases of extraordinarily high demand the Accelera® 220 E has a user-accessible booster function that will engage the booster element.</p>
<p>Heat pump is disabled and, just like a standard electric tank, two electric elements heat the water. "Hybrids" don't have active defrost and must enable this mode so the evaporator can defrost. This mode is also selected if the heat pump fails.</p>	<p><b>Standard Mode</b></p> <p>We engineered the Accelera® so the heat pump doesn't need to be disabled for a defrost cycle. We also engineered for reliability. Why pay extra for a heat pump water heater if you're just going to end up with a standard electric tank?</p>
<p>Water heater maintains a very low temperature in the tank then reheats the water the day before you return.</p>	<p><b>Vacation Mode</b></p> <p>Our super-insulated tank keeps water hot in an Accelera® during a 2-week vacation for less than \$4. No one has to worry if vacation mode was set to wake up on the correct day.</p>

## We design heat pump water heaters.

At Stiebel Eltron, our goal is to provide energy efficiency in addition to comfort. [And, of course, engineering and manufacturing excellence.]

Our heat pump water heaters are designed from the ground up to rely on the heat pump, not on the back-up element. We don't call the Accelera® heat pump water heaters "hybrids." They're not.

Our tanks are large, because large is the best for a heat pump water heater. Even our "50-gallon" heat pump water heater is actually 58 gallons. Large capacity means the water you are using, as much as possible, was heated the most efficient way – with the heat pump.

We super-insulate our tanks, because minimizing stand-by losses means less energy is wasted. In order to deliver all the energy savings a heat pump water heater can, in addition to all the hot water comfort it holds, it makes no sense to skimp on the insulation and increase energy consumption.

We use a single resistance element for back-up water heating during times of high demand. Our single booster element is located in the most efficient place – at the very top of the tank because that's where the hot water is drawn from.



Accelera® 220 E:  
Winner of the world's  
major prize for  
innovation

Engineered in Germany, Stiebel Eltron heat pump water heaters have been the largest seller in Europe for over 30 years.

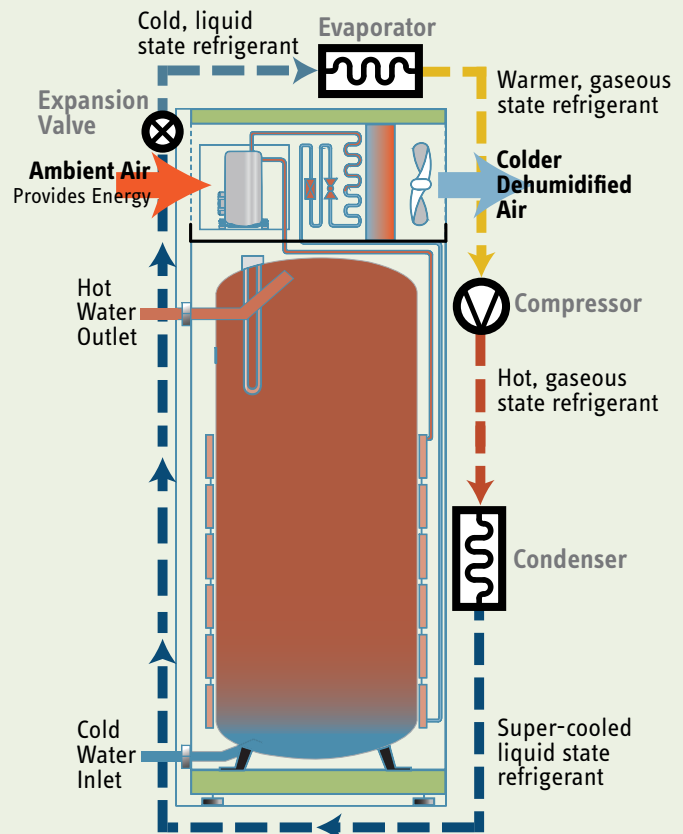
An Accelera® can extract up to 80% of its energy requirements from the energy in the air around it.

### How a heat pump works in an Accelera®

An Accelera® works like an air conditioner, but instead of transferring the heat outdoors, it transfers it into the tank of water. This process is many times more efficient than any other water heater. It works like this:

- The fan moves room air through the **evaporator**, which contains liquid refrigerant that extracts heat from the ambient air as it evaporates. As the refrigerant warms, it changes into a gas.
- The warm gaseous refrigerant passes through the **compressor** which increases its pressure. As the pressure increases, the temperature of the refrigerant rises until it becomes hot.
- The hot refrigerant then passes through the **condenser** wrapped around the water tank. Because heat travels from hot to cold, the heat in the refrigerant transfers to the water in the tank.
- The refrigerant, now a super-cool liquid, passes through the **expansion valve** to become a warmer, yet still cold, liquid, ready to become a gas again in the **evaporator** and continue the cycle.

Accelera® heat pump water heaters use environmentally-friendly R134a for refrigerant.



# Accelera<sup>®</sup> Heat Pump Water Heaters

## 35 Years Of German Technology

### Technical Data



Conforms to ANSI/UL Std. 174 & 1995 Certified to CAN/CSA C22.2 No. 110-94 & 236-05



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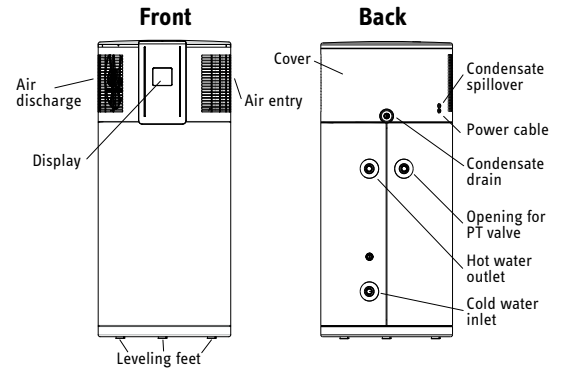
ISO 9001 CERTIFIED



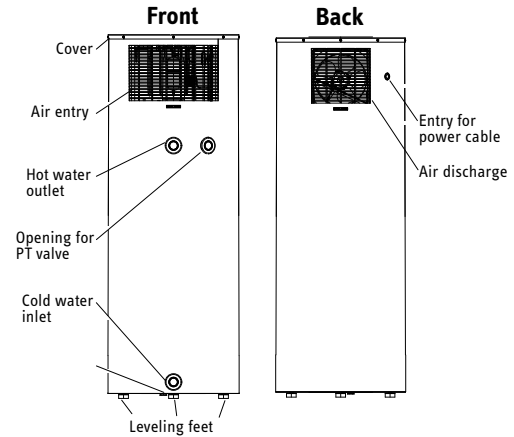
	Accelera <sup>®</sup> 220 E	Accelera <sup>®</sup> 300
Item no.	233058	222423
Tank capacity	58 gal / 220 l	80 gal / 303 l
Energy Star Energy Factor	3.09	2.73
DOE est. annual energy usage	1406 kWh/yr	1391 kWh/yr
First hour rating	50.3 gal / 190.4 l	76.2 gal / 288.4 l
Max. DHW temperature	149°F / 65°C	140°F / 60°C
Max. avail. amount of 104°F/40°C DHW	96 gal / 365 l	136 gal / 514.8 l
Heat-up time (59°F ambient air temp.)	6.98–8.70 hr	9.75 hr
Heat-up time (44°F ambient air temp.)	10.02–11.97 hr	13.41 hr
Voltage / Frequency (Single phase)	220–240 V / 60/50 Hz	240/208 V / 60/50 Hz
Required circuit breaker	15 A, Type C	
Maximum power draw	2150 W	2200 W <sup>1</sup>
Rated power, booster element	1500 W	1700 W
Sound pressure level at 3.3 ft / 1 m	52 dB(A)	55.2 dB(A)
Sound power level (EN 12102)	60 dB(A)	64.2 dB(A)
Operating temperature range	42–108°F / 6–42°C	
Max. permissible operating pressure, cold water/DHW	116 PSI / 0.8 MPa	87 PSI / 0.6 MPa
Refrigerant	R134a	
Height	60 <sup>13</sup> / <sub>16</sub> in / 1545 mm	73 <sup>5</sup> / <sub>8</sub> in / 1870 mm
Diameter	27 <sup>3</sup> / <sub>16</sub> in / 690 mm	26 in / 660 mm
Empty weight	264.5 lb / 120 kg	286.6 lb / 130 kg
Full weight	748.5 lb / 339.5 kg	952.4 lb / 432 kg
Condensate connection	3/4" male NPT to 1/2" barbed elbow	
Water connections	1" NPT	Union to 3/4" NPT
Type of anode	Impressed current anode	Sacrificial (replaceable)

<sup>1</sup> Tamb = 42 °C (108 °F), Twater = 60 °C (140 °F), 240 V

### Accelera 220 E



### Accelera 300



## Stiebel Eltron Family of Energy Saving Water Heating Products



Efficient tankless electric water heaters

### TANKLESS HOT WATER



Point-of-use Tankless



Whole House Tankless



Stiebel Eltron's plant in Holzminden, Germany.

Stiebel Eltron has been a world leader in the development of advanced water heating technology for almost 90 years. Our pursuit of engineering excellence and high-quality manufacturing results in products fulfilling the highest expectations of performance and reliability. They are...**Simply the Best.**

### RENEWABLE ENERGY



Collectors



Storage Tanks



Pump Stations



Solar thermal domestic hot water and radiant floor heating systems

Distributed by:

Due to our continuous process of engineering and technological advancement, specifications may change without notice.

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