

STIEBEL ELTRON

Simply the Best

Accelera® E

HEAT PUMP WATER HEATERS



We've been manufacturing heat pumps for over 40 years.
Over the years we just keep making them better & better.

- › 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 40 years
- › Backed by a 10-year warranty



Conforms to UL Std.
1995, 174
Certified to CAN/CSA Std.
C22.2 No. 236, 110



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

ISO 9001
CERTIFIED

800.582.8423

www.stiebel-eltron-usa.com

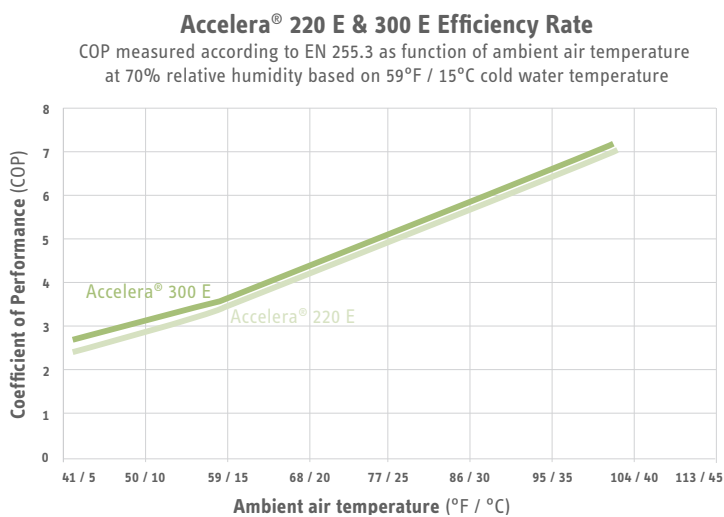
These are Stiebel Eltron heat pump water heaters.



IT HAS ALWAYS 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 40 years.

Until recently, the best “high efficiency” water heaters could only approach 100% efficiency. Heat pump water heater technology redefines water heater efficiency, producing efficiencies more than 3 times that. 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.



- › Reduces hot water costs by up to 80%
- › Optimal storage capacity and a design minimizing booster element usage allows for both high efficiency and low operating cost
- › Engineered for efficiency in a wide range of climates, with a Coefficient of Performance typically between 3–6
- › 240 V and only a single 15 A circuit breaker
- › 10-year warranty backed by over 90 years of engineering and manufacturing reliability

Digital display

The Accelera® 220 E and 300 E have a simple-to-operate end user menu that is accessed through the electronic display. The display also shows performance information, including total volume of hot water available. Accelera® is “smart meter” ready and options are accessed through the display.



Easy access for service

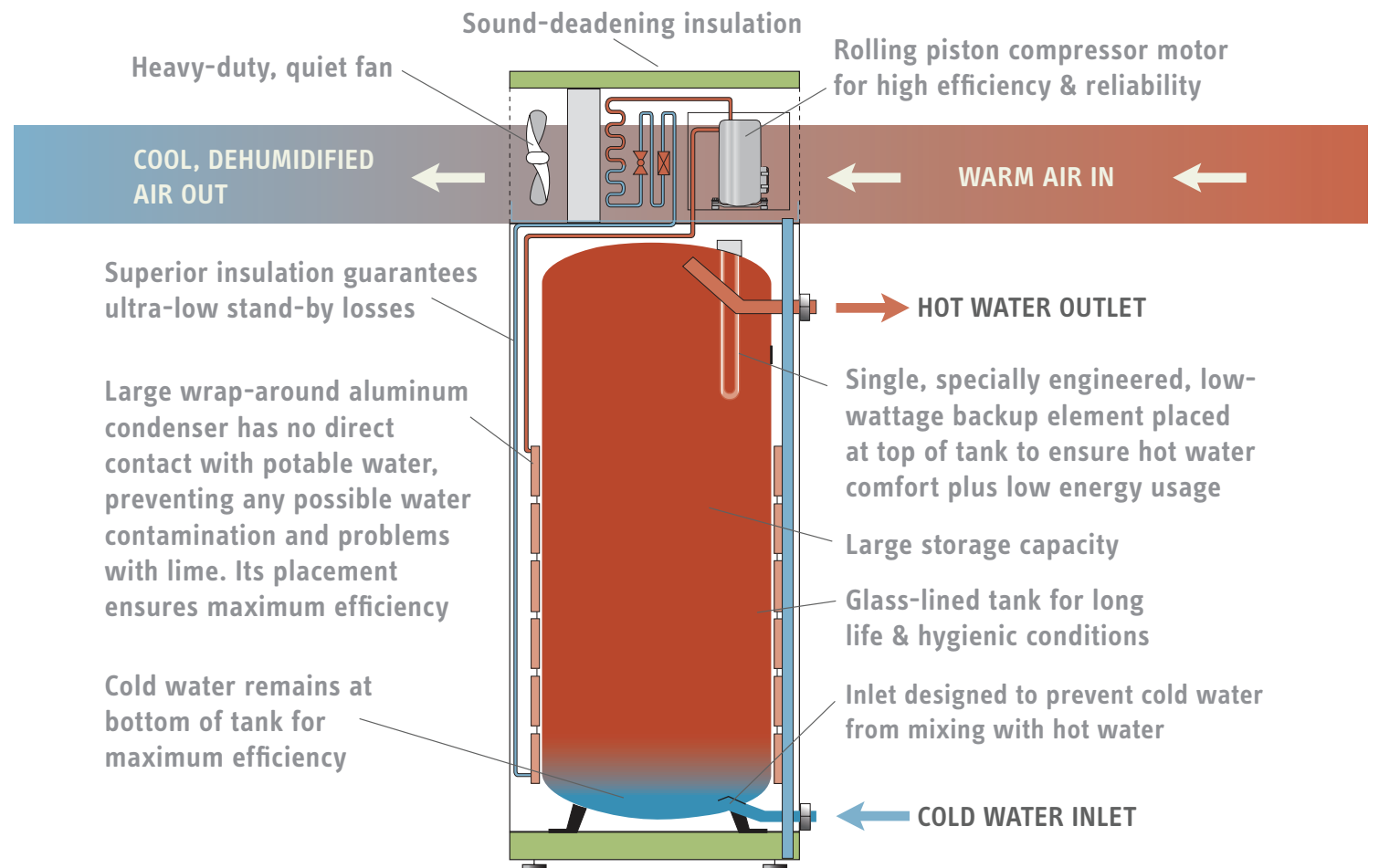
The entire top of an Accelera® 220 E and 300 E can be quickly removed for easy servicing from all sides.

Redesigned air flow

Air intake and exhaust are angled to allow opportunity for installation in compact spaces. In addition we decreased noise by separating the airflow from the refrigerant loop and increasing fan diameter.

Impressed current anode corrosion protection

The Accelera® 220 E and 300 E are equipped with an electronic anode for maintenance-free protection instead of an anode rod. This system also provides protection with the minimum current necessary as opposed to a steady-on system.



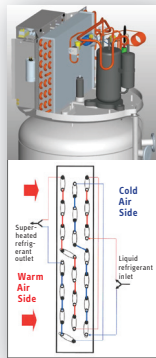
The condenser

The Accelera® 220 E and 300 E 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 and also allows quick water drainage for increased air flow and greater heat transfer and efficiency. Because the evaporator is self-cleaning no filter is required. A dual-path refrigerant flow provides cold climate performance in addition to warm climate performance.



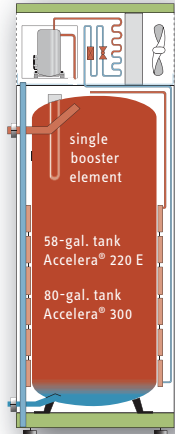
The cold water inlet

Even the smallest thing is not overlooked. The cold water outlet is designed to prevent incoming cold water from cooling the hot water in the tank during a draw. This helps provide the greatest possible volume of hot water without using the booster heating element. This feature also increases heat pump efficiency by allowing a small cold water reservoir to remain in the very bottom of the tank.



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 E is 80 gallons because we know that is an optimal size to satisfy average annual household hot water demand as much as possible via the heat pump. Similarly the Accelera® 220 E tank is 58 gallons because it is an optimal size 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.



Engineered in Germany, Stiebel Eltron heat pump water heaters have been the largest seller in Europe for over 40 years.



Household size recommendation

Accelera® 220 E
2-3 people (possibly 4)

Accelera® 300 E
3-5 people (possibly 6)

Annual Savings*

\$250 – \$490

\$370 – \$740

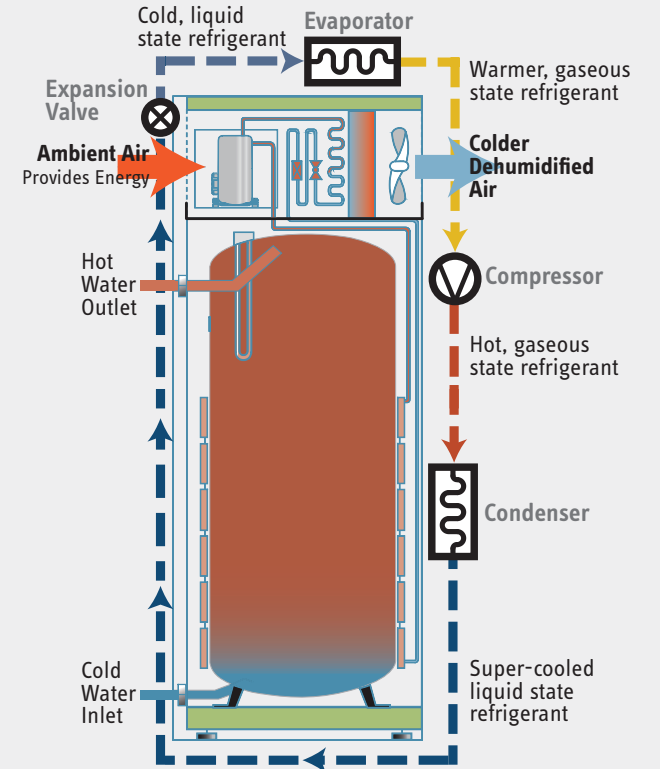
*based on Energy Star savings for heat pump water heaters

How the Accelera® heat pump works

An Accelera® works like an air conditioner, but instead of transferring the heat to the outdoors, it transfers heat into the tank of water. This process is many times more efficient than any other type of 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, having transferred its heat to the water is now a super-cool liquid. It then 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.



What's the difference?

Hybrid Heat Pump Water Heaters		Accelera® Heat Pump Water Heaters
<p>The most efficient mode that will provide the greatest savings they're capable of. Water heater operates only with the heat pump.</p> <p>The correct mode must be selected to save the most amount of energy.</p>	<p>Heat Pump Mode</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.</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>Hybrid Mode</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 hybrid mode.</p>	<p>High Demand Mode</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® has a user-accessible booster function that will engage the booster element.</p>
<p>Heat pump is disabled and, like a standard electric tank, two electric elements heat the water. This mode must be automatically enabled so the evaporator can defrost. This mode is also selected if the heat pump fails.</p>	<p>Standard Mode</p>	<p>We engineered the Accelera® so the heat pump doesn't need to be disabled for a defrost cycle.</p>
<p>Water heater maintains a very low temperature in the tank then reheats the water the day before you return.</p>	<p>Vacation Mode</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 our heat pump water heaters for efficiency.

At Stiebel Eltron, our goal is to provide energy efficiency in addition to comfort.

Our heat pump water heaters are designed from the ground up to rely on the heat pump, not on the back-up element because that is the most efficient way. Our "50-gallon" heat pump water heater is actually 58 gallons and our 80-gallon model is, well, 80 gallons, because large is the best for a heat pump water heater. 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. For maximum energy savings 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.

Technical Data

Model	Accelera® 220 E	Accelera® 300 E
Item no.	233058	233059
GENERAL DATA		
Operating temperature range	42 °F to 108 °F (6 °C to 42 °C)	
DHW temperature	149 °F (65 °C)	
Air flow rate	324 CFM	
Sound power level*	60 dB	
Sound pressure level* @ 3.3 feet (1 m)	52 dB(a)	
Capacity	58 gal (220 l)	79.8 gal (302 l)
Refrigerant / filling weight	R134a / 850 g	R134a / 900 g
Height	60 7/8" (1545 mm)	75 1/4" (1913 mm)
Diameter	27 1/8" (690 mm)	
Height of unit when tilted incl. packing	74 1/8" (1895 mm)	87 3/4" (2230 mm)
Weight dry	264.5 lb (120 kg)	297.6 lb (135 kg)
Weight wet	748.5 lb (339.5 kg)	956.6 lb (433.9 kg)
Water connection	1" male NPT	
Condensate connection	3/4" male NPT to 1/2" barbed elbow	
Safety condenser	Wraps around outside	
Operating pressure, water side	87 psi (600 kPa)	
High pressure cutoff, refrigerant side	348.1 psi (2.4 MPa)	
ELECTRICAL DATA & PERFORMANCE		
Voltage / Frequency	220-240 V / 60 Hz	
Circuit breaker	15 A	
Rated current compressor & fan	2.7 A	
Rated power consumption compressor and fan ²	650 W	
Rated power, booster heater	1500 W	
Heating output, heat pump ³	approx. 1700 W	
Uniform Energy Factor (UEF)	3.115	3.609
DOE est. yearly energy usage / cost	1040 kWh	1289 kWh
DOE est. yearly energy cost	\$169	\$155
First hour rating	50.3 gal (190.4 l)	74.2 gal (280.8 l)

¹ T_{amb} = 107.6 °F (42 °C) T_{water} = 149 °F (65 °C) / 240 V

² Test point to DIN 8497 at 59 °F (15 °C) air temperature, 70% rel. humidity and 113 °F (45 °C) water temperature

³ Test point at 59 °F (15 °C) air temperature, 70% rel. humidity, heating up water from 59 °F (15 °C) to 149 °F (65 °C), according to EN 255 T3, 240 V / 60 Hz

* Sound Power Level measures the sound energy emitted by a source. Sound Pressure Level (SPL) measures the sound level (loudness) at a distance from the source. SPL varies depending on the acoustic environment and the accuracy of the measurement device.

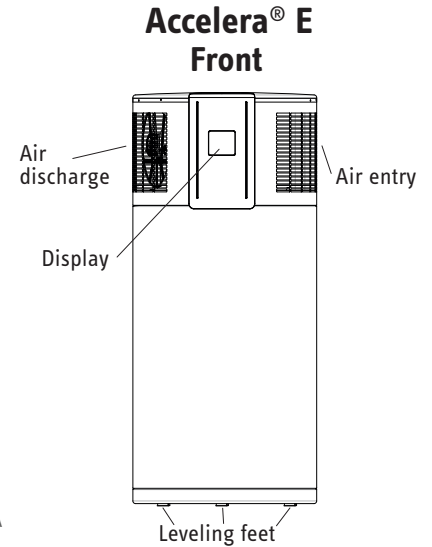
Accelera® Heat Pump Water Heaters 40 Years of German Technology



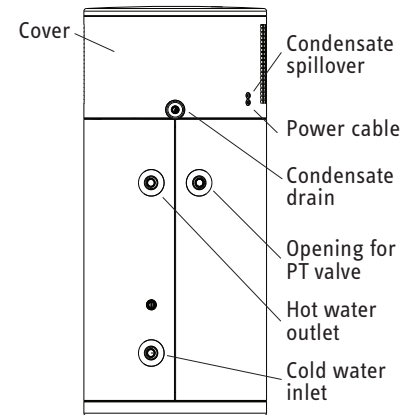
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Accelera® E Back



Stiebel Eltron Family of Energy Saving Water Heating Products



Efficient electric tankless water heaters

Tankless Water Heating



Point-of-use Tankless



Whole House Tankless



Stiebel Eltron's plant in Holzminde, 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.**

Renewables



Collectors



Storage Tanks



Pump Stations



Solar thermal domestic hot water and radiant floor heating systems

Distributed by:

STIEBEL ELTRON

17 West Street
West Hatfield, MA 01088

TOLL FREE 800.582.8423

PHONE 413.247.3380

FAX 413.247.3369

info@stiebel-eltron-usa.com

www.stiebel-eltron-usa.com

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