Benchmark® E

Electric Boiler



AERCO.com

AERCO®
A WATTS Brand

A Powerful, Emission-Free Electric Boiler

Benchmark E is a powerful, emission-free electric boiler that offers the superior reliability and energy savings of the original, compact gas-fired Benchmark boiler, in addition to new technology such as Peak Load Management and Hybrid Plant capability.

In addition to effectively meeting local regulations and codes on building electrification and decarbonization, Benchmark E features powerful technology that maximizes system efficiency and optimizes plant management. Up to 16 boilers can be easily sequenced – including gas-fired Benchmark boilers for a hybrid plant – and peak loads can be easily managed to reduce electricity usage. Benchmark E also pairs seamlessly with AERCO's SmartPlate® EV indirect water heater for a fully electric heating and hot water plant solution.

Available in five sizes from 216 kW to 684 kW, equivalent to ~750 MBH to 2500 MBH output.



Zero emissions and near 100% efficiency

Durable Incoloy sheathed elements

Compact, lightweight and fits in freight elevator

Integrated Edge® X Controller

Manage electricity usage with Peak Load Management

Easy hybrid plant control and boiler sequencing

Extremely quiet, reliable operation

Easy service access from front and top

Industry-leading warranty for greater peace of mind

A Forward-Thinking Solution with Immediate Benefits

Electric power is key to moving towards a more sustainable future. The Benchmark E is a powerful, clean heating solution that effectively addresses efforts to decarbonize and electrify the built environment.

Meet Building Electrification Requirements

Where building codes require building electrification, Benchmark E is a perfect choice. Benchmark E is 100% electric, burns no fuel, and is an extremely environmentally friendly solution when electricity is sourced from renewables. Benchmark E can also be paired seamlessly with AERCO's SmartPlate EV indirect water heater for a fully electrified heating and hot water plant.

Effectively Address Decarbonization Efforts

Many states have set targets to reduce carbon emissions, including requiring buildings to move toward more efficient solutions that use cleaner energy. With Benchmark E, emissions from the building heating plant can drop to zero – instantly. Benchmark E can also be used in a hybrid plant with existing fossil fuel-based boilers for a highly effective, cost-focused approach to meeting decarbonization requirements.

Save Time and Money on Installation

Benchmark E requires no venting for air intake and exhaust and, since it runs on electricity, no fuel piping is needed either. The result is a quicker, less expensive, and simpler installation process that can save time and money and a boiler that takes up less space in the mechanical room. A completely vent-free, electric heating and hot water plant solution is possible when paired with AERCO's ultra-compact SmartPlate EV indirect water heater.

Spend Less Time on Maintenance

With no gas line, venting or consumables and fewer moving parts that can break down or need regular servicing, Benchmark E requires less maintenance than gas or oil-fueled boilers to save on labor and replacement costs.

Built to Perform Reliably

Benchmark E is designed and built by AERCO, a trailblazer in boiler designs. Key features include:

- ASME Section IV rated for 150 PSIG at 250°F
- Sequence up to 10 stages with stage sequencer
- SSR controlled element group for exceptional modulation and superior low-load control
- Durable incoloy sheathed elements resistant to poor water quality
- Easily replaceable individual elements and unit can continue to operate even in the event an element fails
- Capable of variable primary flow Installations
- Real-time clock
- Full-port drain valve
- Easy open access for service
- Lifting lugs

Sized to Meet a Range of Loads

Model					
Available in	216 kW	360kW	432kW	576kW	684kW
Equivalent to	737 MBH	1230 MBH	1474 MBH	1965 MBH	2334 MBH

A Reliable, Longer-Lasting Boiler Backed by a Superior Warranty

Benchmark E comes with AERCO's Industry-leading warranty:

- ✔ 10-year warranty on the pressure vessel
- ✔ 1 year on parts
- ✔ 1-year first year service policy
- ✔ 1 year on electrical elements
- ✔ 2 years on the Edge X Controller

Pair with SmartPlate EV

Benchmark E pairs seamlessly with AERCO's SmartPlate EV indirect water heater for a fully electric heating and hot water plant that boosts system efficiencies and simplifies management.

- ✔ Lower overall heating capacity required
- ✔ Reduce installation costs as no venting or gas connections required
- ✔ Operate units together and with ease
- ✔ Save space in the mechanical room with a compact footprint

Learn more at **aerco.com/combination**



Unlock the Full Potential with Smart Controller

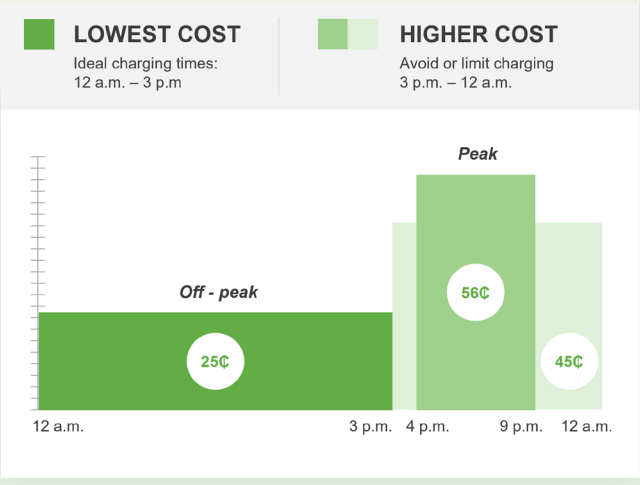
Benchmark E features the Edge X Controller, an integrated smart controller featuring precise temperature and operating controls, outdoor reset, onboard boiler sequencing and other functions to optimize system efficiency and boiler operation.



- Large intuitive 7" touchscreen
- Effortless boiler startup and simplified diagnostic troubleshooting
- Performance trending and reset schedules
- Boiler Sequencing Technology (BST) of up to 16 units and hybrid plant control
- Peak Load Management
- BACnet IP, BACnet MS/TP, Modbus IP and Modbus RTU communication
- Ensures fail-safe boiler operation (if external building controls fail)
- Communication with AERCO's Benchmark gas-fired boilers and SmartPlate EV indirect water heaters

Peak Load Management

Benchmark E lowers building peak loads and operational costs by maximizing charging time during hours with off-peak electricity rates. The Edge Controller can limit power output by using a time schedule, Building Automation system (BAS) point, or analog input. The SSR controlled element group in the Benchmark E further enhances the effects of peak load management by providing superb low-load control.



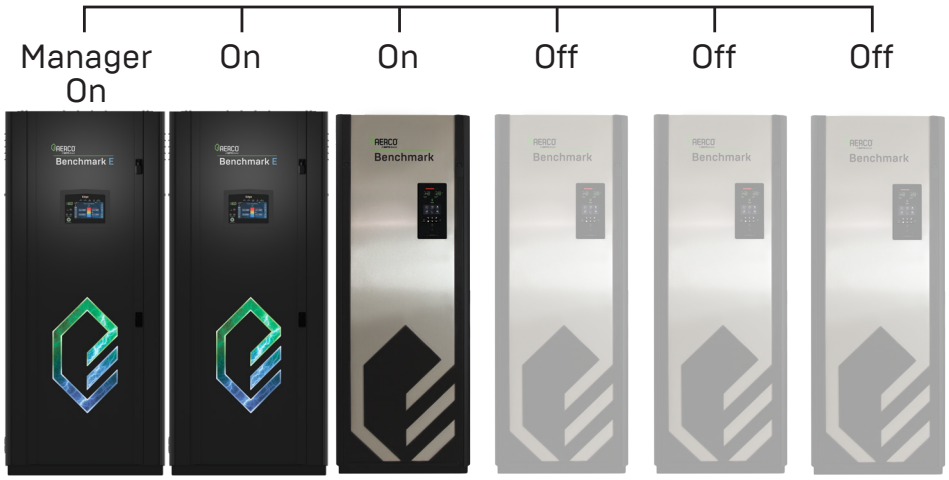
Sequencing a Hybrid Plant for Efficiency Boost

Enhanced System Efficiency with Boiler Sequencing Technology

Benchmark E boilers come standard with AERCO's Boiler Sequencing Technology (BST) to enable the load to be shared between up to 16 boiler units in order to maximize system energy efficiency. As individual boilers are added or taken offline for maintenance, the energy delivered is automatically adjusted to prevent fluctuations in the header temperature of the plant.

Hybrid Plant

The built-in BST also enables Benchmark E boilers to be sequenced with AERCO's gas-fired Benchmark boilers for a robust hybrid plant to optimize boiler operation.



Reduce Emissions: Prioritize the electric boiler to reduce building emissions while using gas to cover design load days

Reduce Cost: Prioritize the gas or electric boiler depending on local gas and electricity costs

Leveraging a Hybrid Plant - Three Units for the Price of One

Consider a site in Grand Rapids, Michigan, with three gas fired Benchmark 2000 boilers wants to reduce building emissions. Rather than switching out all three boilers, BST enables them to reduce emissions by nearly 90% by replacing just one of them with a Benchmark E. How?

With a 5000 MBH design load, the site can employ one Benchmark E 2000 (576 kw) and two gas-fired Benchmark 2000 for a 5400 MBH output capacity at 90% plant efficiency. ASHRAE bin data indicates 4000 heating hours are at <2000 MBH demand, suggesting that 89% of annual demand can be met by the single, emission-free Benchmark E boiler.

Specifications and Dimensions

	Benchmark E				
	216 kW (737 MBH)	360 kW (1228 MBH)	432 kW (1474 MBH)	576 kW (1965 MBH)	684 kW (2334 MBH)
Boiler Category	ASME Sect.IV				
Max. Allowed Working Pressure	150 PSIG				
Electrical Req. 480V/3PH/60Hz	260 A	433 A	520 A	693 A	823 A
Electrical Req. 600V/3PH/60Hz	208 A	347 A	416 A	555 A	659 A
Number of Elements	12	20	24	32	38
Number of Stages	6	10			
Water Connect. (Flanged)	4"				
Max. Water Flow (GPM)	350				
Water Volume Gallons	140				
Temp. Control Range	50°F to 220°F				
Ambient Temp. Range	0°F to 130°F				
Standard Listings & Approvals	ASME, UL-834, CSA-C22.2 No. 165, CSD-1				
Dry Weight	1450 lb				
Shipping Weight	1700 lb				
Width	34"				
Depth	56"				
Height	78"				



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