

# Innovation

Commercial Tankless Water Heaters



INN 600N • INN 800N • INN 1060N • INN 1350N

# Hot Water on Demand without the Tank

**The Innovation tankless water heater delivers reliable hot water on demand in a small footprint, saving money and space. It is ideal for a wide variety of commercial applications and is easy to install and service.**

Innovation is the only commercial tankless water heater that provides hot water on demand without the need for any significant storage volume to buffer load change and provide stable hot water temperatures. It features up to 96% efficiency with precise temperature control  $\pm 4^{\circ}\text{F}$  through its dynamic feed-forward sensing and unmatched turndown.

Due to its unique tankless design, Innovation features one of the smallest footprints for commercial water heaters in the industry. Because it eliminates storage needs and is able to use common venting, Innovation saves valuable facility space while lowering installation and operation costs.

Innovation is available in four sizes: 625, 800, 1060, and 1350 MBH (natural gas or propane) with a turndown ratio between 12:1 and 27:1. Its advanced Edge Controller features 'Water Heater Management System' (WHM) enabling users to efficiently sequence up to sixteen water heaters on the same system to meet load requirements and ensure maximum efficiency.



**Energy efficient and reliable design**



**Thermal shockproof and scale-resistant HX**



**Simpler, cost-effective installation**



**Lower operating and maintenance costs**



**Compact footprint and quiet operation**



**Advanced controls with sequencing technology**



## **Ideal for Green Building Designs**

High-efficiency Innovation water heaters can help sites meet stringent ESG requirements and goals, as well as help facilitate LEED certifications. More on page 8.

# Benefit from a Truly Tankless Water Heater Design

## Lower Installation, Maintenance and Operational Costs

Venting is one of the most expensive installation items. Innovation allows for common venting with different sized units, as well as in combination with AERCO's Benchmark boilers. This can significantly reduce the number of vent runs and wall/roof penetrations, which lowers overall installation costs.

Costs are lowered further because there's no need to purchase expensive storage tanks, circulators, and mixing valves. Operational costs are similarly decreased due to high efficiency, high turndown and reduced standby losses. With no need for hot water storage, less fuel is burned thereby increasing energy savings.

## The Safer Water Heater

Stored water in a tank must be maintained at a hot temperature of 140°F in order to prevent Legionella bacteria, which means the water needs to be heated up only to be cooled down for consumption. However, the tankless design of the Innovation water heaters allows the system to operate with a set point of 124°F – saving energy and reducing the risk of scalding while eliminating the need for costly mixing valves. Because water volume is kept to a minimum and continual circulation is maintained through the unit, the Innovation water heater mitigates the risk of Legionella bacteria growth.

## Longer Life Cycle

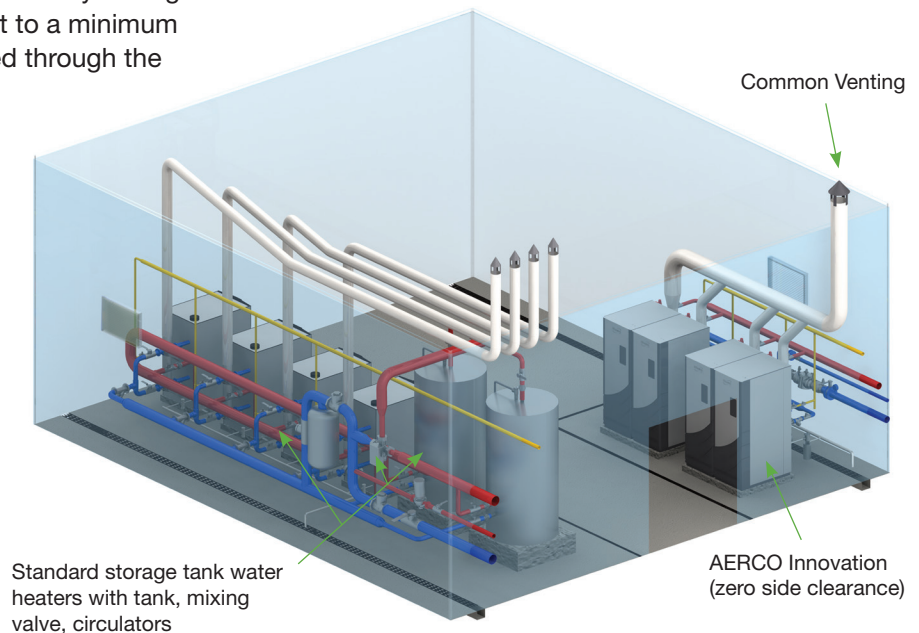
If maintained according to guidelines, the Innovation water heater may last 2-3 times longer than many tank-based heating systems, which typically requires replacement every 5-10 years since storage tanks are susceptible to rust, system failure and water damage.

## Space-Saving Design

Innovation is delivered as a single, fully assembled unit. Its small, doorway-sized footprint and quiet operation make it ideal for both new construction and retrofit applications.

Its compact size allows it to be easily moved in and out of a mechanical room whether it is located in a cramped basement or in the penthouse of a 25-story building, eliminating the costs of tearing down walls or hoisting via helicopter. More available room can be used to generate income instead of storing hot water.

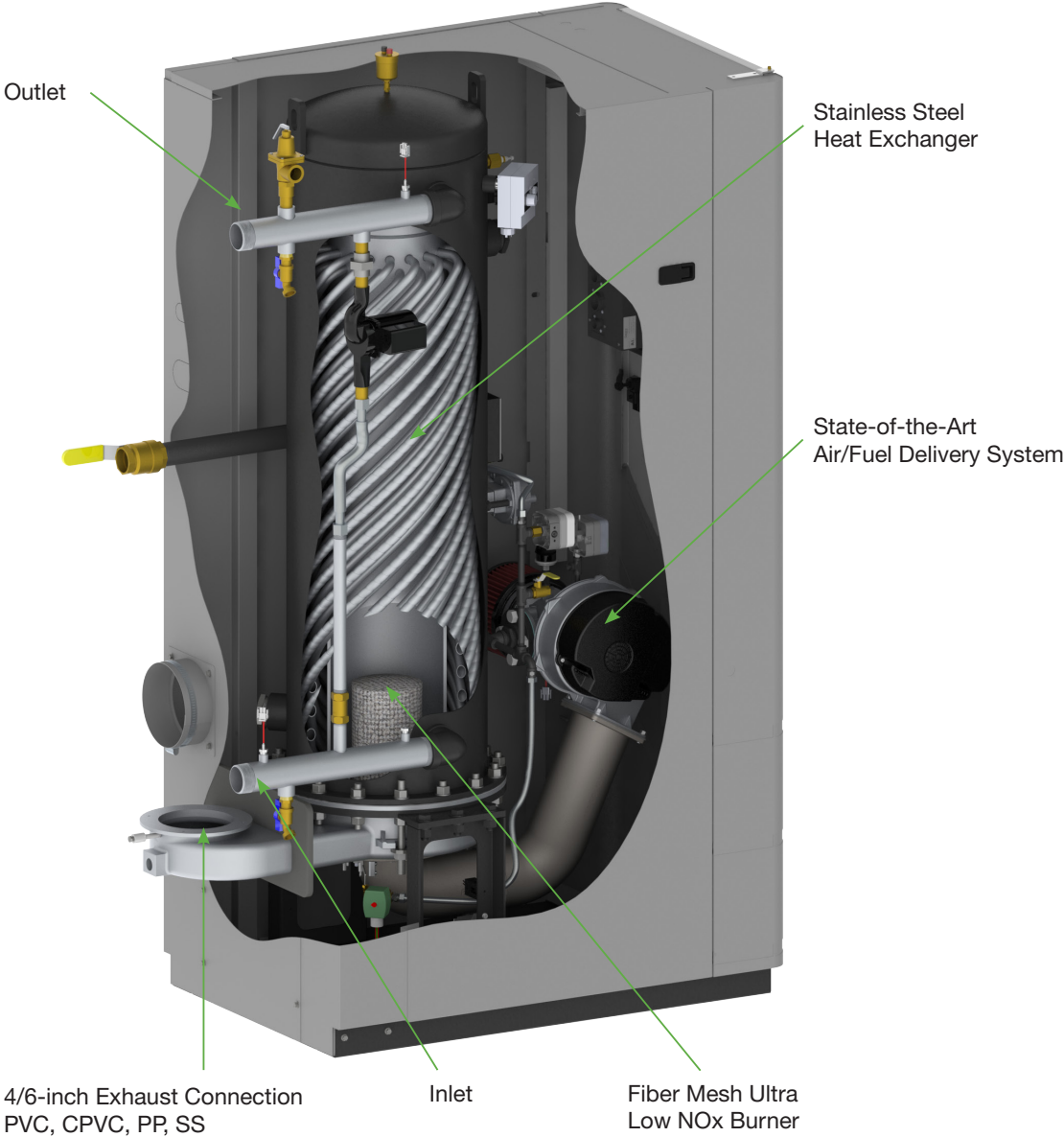
Four Innovations are 1/3 the footprint of four typical storage tank water heaters



# State-of-the-Art Technology

Innovation water heaters utilize state-of-the-art technology to easily meet highly diverse, demanding commercial and industrial hot water requirements in a compact and reliable condensing design. Its durable, high-efficient, helical wound firetube heat exchanger is time-tested to be impervious to thermal stress for extended life.

Enhanced waterside flow distribution maintains constant minimum velocities above 4 ft/sec across the heat exchanger. This keeps solids in suspension and greatly reduces scale dropout to maintain high efficiency and long life. The all stainless steel construction maximizes longevity in the condensing application and will not need fireside cleaning. The corrugated tubes increase effective heat transfer surface area for optimal thermal efficiencies.



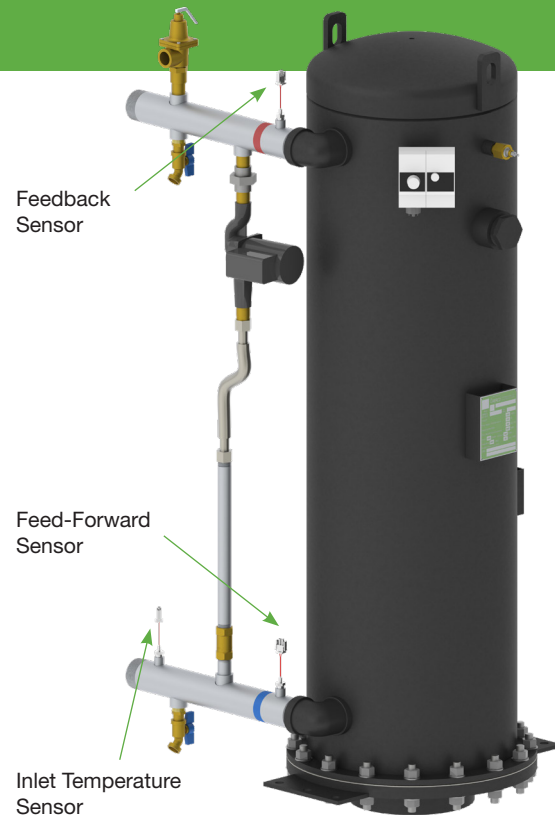
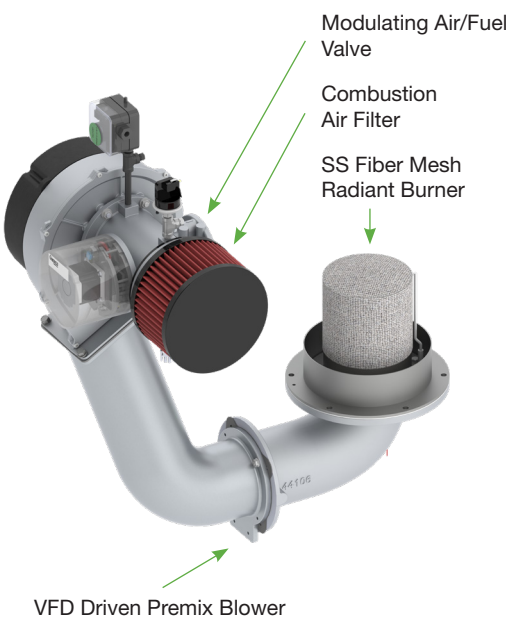
# Advanced Design for Maximum Performance Output

## Dynamic Load Anticipator

Further improving the efficiency of Innovation is AERCO's Dynamic Load Anticipator, an advanced control system that helps maintain precise modulation of the high turndown air/fuel delivery system. Field-proven for more than 60 years, dynamic feed-forward and feed-back sensors monitor inlet flow via the proportional change in mixed temperatures due to variations in the flow. The system's controls fire the unit to accurately match load requirements and produce tight  $\pm 4^{\circ}\text{F}$  outlet temperature control.

## High Turndown Air/Fuel Valve Delivery System

Innovation's high turndown air/fuel delivery system consists of AERCO's patented fully modulating air/fuel valve, VFD driven premix blower, and fiber mesh radiant burner. The system guarantees safe, stable, reliable and efficient combustion with the lowest NOx and CO emissions, as well as eliminates wasted fuel and reduces operating costs, making Innovation the smart choice for "green" designs.



## Packed with Features and Benefits

- Thermal shockproof, scale-resistant AERguard™ stainless steel helical firetube heat exchanger
- 2-3 times warranty protection vs. competitors
- Precise temperature control  $\pm 4^{\circ}\text{F}$  due to dynamic feed-forward sensing and unmatched turndown
- Low operating, maintenance, & installation costs
- Operates efficiently with lower set point of  $124^{\circ}\text{F}$
- Reduce standby losses by +60%, compared to conventional tank-type heaters
- Easy installation and many venting options
- Low NOx and CO emissions
- Daisy-chain multiple units for over 1000 MBH applications
- No need for mixing valves, tank circulators or storage tanks
- 625, 800, 1060, or 1350 MBH

# Powerful Edge Controller with Advanced Technology

Innovation features the AERCO Edge Controller which combines temperature and operating controls, combustion safeguards and fault enunciator functions on a touchscreen, ensuring fail-safe heater operation if the external building controls fail.

## Key Features

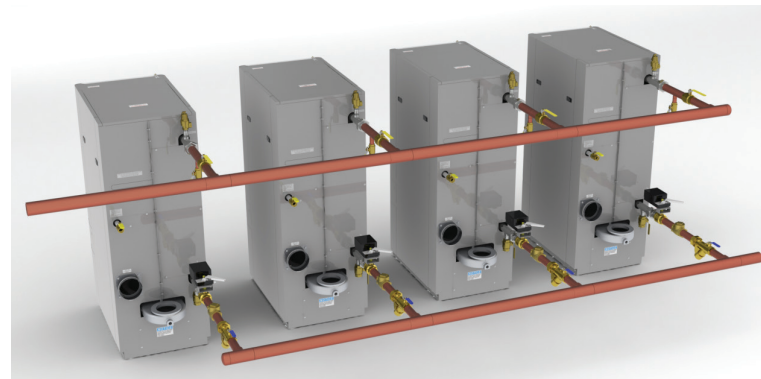
- Precise temperature control
- Valve control
- Water Heater Management (WHM)
- Intuitive touchscreen, graphical interface
- Step-by-step diagnostic menus and system status reports
- Integrated Modbus and BACnet Communication protocols
- Transfer settings and upgrade firmware through USB port
- Nexa compatible
- UL listed
- Mobile app (iOS and Android)

## Easily Sequence up to 16 Innovation Water Heaters

AERCO's Water Heater Management system (WHM) comes standard with the Edge Controller. WHM is designed to efficiently sequence up to sixteen water heaters on the same system to meet load requirements and ensure all water heaters in the system operate at maximum efficiency. It monitors the fire rate of all water heater sequences by opening or closing the motorized valve, as required, to meet hot water demand.

The result is the most energy-efficient and reliable water heating system design available. Only those units required to meet load demand are operating. Units in standby do not needlessly cycle to maintain set point, reducing system standby losses and unit wear to the bare minimum.

- Optimizes operating efficiencies at all load conditions
- Virtually eliminates standby losses
- Increases system reliability through reduced cycling
- Accurately tracks daily domestic hot water demands



# Real-time Monitoring, Insights and Alerts

Innovation water heaters are compatible with Nexa, the cloud-based water management software from Watts. Nexa provides detailed performance insights, event history, maintenance schedules and more to enable peak system performance; simplify service and maintenance; and reduce cost of ownership.

## Prevent Premature Equipment Failure and Prolong Lifespan

Nexa makes it easy to monitor equipment performance to ensure it operates at peak performance. Instant alerts inform about a decline in performance enabling proactive issue resolution before it develops into costly repairs and lost revenue from facility downtime. Facility personnel are better equipped to protect the investment from unnecessary wear-and-tear, extending the life of the Innovation water heater and reducing cost of ownership.

## Reduce Service Calls and Avoid Unnecessary Ones

Nexa reduces unscheduled maintenance by identifying potential issues early and can help rule out the heating equipment when the source

of an issue stems from elsewhere. This results in fewer emergency calls, lower labor costs, and convenient scheduling of maintenance. Armed with performance and fault details, technicians can arrive prepared, conducting faster and more efficient maintenance, further saving on labor costs.

## Optimize Plant Performance and Efficiency

Identify energy-saving opportunities by trending multiple data points including cycles per hour, a host of temperature readings, blower output, etc. Easily generate reports that aid in decision making and cost-saving improvements by optimizing system performance and minimize system efficiency losses.



**Real-Time Alerts**



**Uncover Energy Savings**



**More Efficient Labor Usage**



**System Insight and Optimization**

## The Long List of Benefits with Nexa. And It's Free!

- Increase reliability and system performance
- Identify energy-saving opportunities and reduce fuel bills significantly
- Resolve issues quickly and prevent more serious ones from developing
- Avoid lost revenue from downtime due to undetected equipment issues
- Prevent unnecessary wear-and-tear of your equipment and extend system life
- Schedule service at your convenience and minimize facility disruptions
- Submit maintenance/service and startup forms via the Nexa platform
- Generate reports that aid in decision making and cost-saving improvements

nexa™

[nexaplatform.com](http://nexaplatform.com)

# Environmental Stewardship

High efficiency Innovation water heaters are perfect for green building designs satisfying stringent requirements associated with environmentally-conscious facilities, and helping to facilitate LEED certifications.

## Designed for Green Building (LEED credits)

- Site Development (maximize open space): compact footprint with flexible venting
- Water Efficient Landscaping: condensate can be recovered (neutralization required) and used for irrigation or other gray water applications
- Optimized Energy Performance: maximizes operating efficiency through Water Heater Management and high turndown (virtually eliminating standby losses)
- Low Emitting Materials (Adhesives and Sealants): incorporates Green Seal Standard GS-36 and Green Guard® compliant, Volatile Organic Compounds
- Low Emitting Materials (Paints and Coatings): uses corrosion and oxidation preventing paints, Green Seal Standard GS-03 compliant, Volatile Organic Compounds
- Indoor Chemical and Pollutant Source Control: ducted combustion capability eliminates the need for louvers or damper systems that can

potentially bring chemicals/pollutants from outside

- Innovation in Design: tankless, compact footprint and turndown minimize cycling

## Reduced Energy Consumption

The Innovation is constantly condensing (heating cold inlet water vs recovering hot water from a storage tank) and uses less electrical power (no circulator pumps).

## Premixed, Stainless Steel Fiber Mesh Burners

High-efficiency combustion and low pollutant levels of less than 20 ppm NOx.

## Low Vent Temperature

Modest venting temperatures allow units to be common vented using eco-friendly PolyPro.





# Venting Versatility Saves Space and Costs

## Venting Versatility

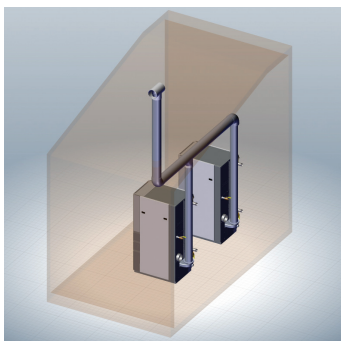
The Innovation provides a number of venting options including sidewall, through-the-roof, and ducted combustion capabilities (direct-vent). It's also approved for venting with PVC, CPVC, Polypropylene, or AL29-4C materials.

## Engineering Support

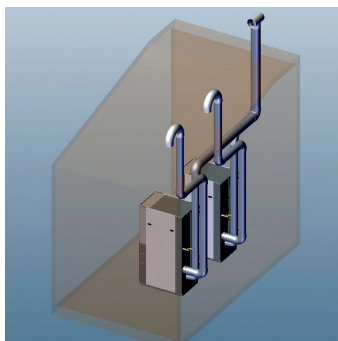
Customers can also leverage the vast experience of AERCO engineers who have devoted their careers to developing cost- and space-saving solutions. Standard services available include:

- AERCO engineers work with manufacturers to verify vent sizing/design for enhanced reliability
- AutoCAD drawings
- Submittal information
- Customer service

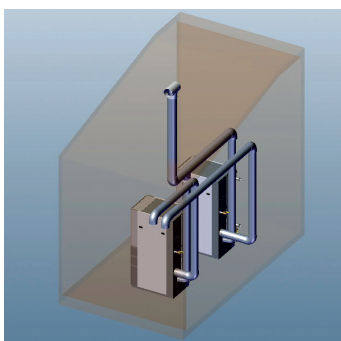
## Vent Configurations



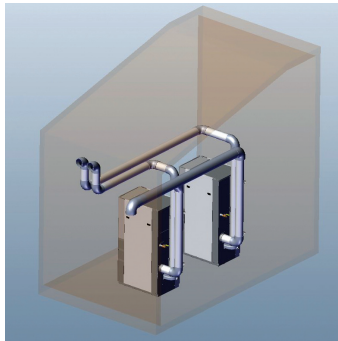
Common vertical vent/room air



Common vertical vent/  
individual vertical air



Common vertical vent/  
individual sidewall air



Individual sidewall vent/  
common sidewall air

# AERCO HeatSmart Sizing Tool

## A Guaranteed Way to Size Your Water Heaters

The proper sizing of water heaters is crucial to enhancing the lifespan of the water heating equipment, reducing maintenance needs and increasing the overall return on investment, while also contributing to a more sustainable and environmentally friendly operation.

An accurately sized water heater meets the specific demand without excessive oversizing, which can lead to unnecessary energy consumption and higher operational costs. It also prevents under sizing, which could result in insufficient hot water supply, disrupting operations and impact customer satisfaction.

AERCO's HeatSmart tool provides a user-friendly and cost-effective alternative to months of flow measurement and monitoring in order to properly size Innovation water heaters and other AERCO solutions to reap the benefits.

- **Proven Experience:** Leveraging 75 years of experience and empirical data, HeatSmart ensures accurate sizing and selection of AERCO's solutions for a variety of commercial applications.
- **Realistic and Economic Selection:** Through comprehensive data collection via its remote monitoring system, AERCO has visibility to numerous demand profiles for a variety of applications. It enables HeatSmart to generate a much more realistic and economic selection

proven to satisfy the specified load of your project without the excessive oversizing prevalent with most industry-standard sizing methods.

- **Energy Savings and ROI:** Properly sized water heaters save energy, optimize your system, and increase your return on investment.
- **Guaranteed Satisfaction:** AERCO guarantees that its selection will meet the building design load, provided accurate design conditions and fixture counts. This guarantee covers material and labor charges necessary to correct any system capacity issues.

## Flexible Sizing Options

- Size systems using building fixture count or input GPM
- Accommodate single systems with multiple applications, such as resorts with multiple restaurants
- Size multiple systems or zones within a single building or across a campus
- Incorporate storage tanks and add spare or redundant capacities
- Review and generate PDF reports for every sizing

Access HeatSmart at [hhws.watts.com](http://hhws.watts.com) to ensure the best-sized gas-fired water heater for your project.

## Plant 1 Result

Total Plant Flow 62.4

Required Energy 3126908  
includes redundancy

Solution Preference Instantaneous

Select

\* indicates limited availability

Option:	Flow/Htr	QTY
<input type="radio"/> Innovation 1350MBH Water Heater	25.5	3
<input checked="" type="radio"/> Innovation 1060MBH Water Heater	20.3	4
<input type="radio"/> Innovation 800MBH Water Heater	15.4	5

# Specifications and Dimensions

	INN 600N	INN 800N	INN 1060N	INN 1350N
Adjustable Temperature Control	50°F to 190°F	50°F to 190°F	50°F to 190°F	50°F to 190°F
Ambient Temperature	0°F to 130°F	0°F to 130°F	0°F to 130°F	0°F to 130°F
Accuracy	+/-4°F	+/-4°F	+/-4°F	+/-4°F
Input	625 MBH (Natural Gas or Propane)	800 MBH (Natural Gas or Propane)	1,060 MBH (Natural Gas or Propane)	1,350 MBH (Natural Gas or Propane)
Certified Efficiency (DOE 10 CFR Part 431)	93%	94%	95%	96%
Turndown Ratio (up to)	12:1	16:1	21:1	27:1
Flue Size	6" Diameter	6" Diameter	6" Diameter	6" Diameter
Flue Material (per local code)	PVC, CPVC, PP or AL29-4C	PVC, CPVC, PP or AL29-4C	PVC, CPVC, PP or AL29-4C	PVC, CPVC, PP or AL29-4C
Water Inlet and Outlet	2" NPT Male	2" NPT Male	2" NPT Male	2" NPT Male
Gas Connection	1.5" NPT Male	1.5" NPT Male	1.5" NPT Male	1.5" NPT Male
Gas Pressure Requirements	14" WC Max; 4" WC Minimum @ Full Load (Natural Gas), 11" WC Minimum @ full load (Propane)	14" WC Max; 4" WC Minimum @ Full Load (Natural Gas), 11" WC Minimum @ full load (Propane)	14" WC Max; 4" WC Minimum @ Full Load (Natural Gas), 11" WC Minimum @ full load (Propane)	14" WC Max; 4" WC Minimum @ Full Load (Natural Gas), 11" WC Minimum @ full load (Propane)
Maximum Continuous Water Flow	50 GPM	50 GPM	50 GPM	50 GPM
Condensate Connection	3/4" NPT Female	3/4" NPT Female	3/4" NPT Female	3/4" NPT Female
Maximum Condensate Flow	4.5 GPH	6 GPH	8 GPH	11 GPH
Pressure Rating	160 PSIG @ 210°F	160 PSIG @ 210°F	160 PSIG @ 210°F	160 PSIG @ 210°F
NOx Emissions Certifications	SCAQMD, TCEQ	SCAQMD, TCEQ	SCAQMD, TCEQ	SCAQMD, TCEQ
Standard Listing and Approvals	UL, cUL, ASME (HLW)	UL, cUL, ASME (HLW)	UL, cUL, ASME (HLW)	UL, cUL, ASME (HLW)
Gas Train Options	FM Compliant	FM Compliant	FM Compliant	FM Compliant
Electrical Requirements	120VAC, Single Phase, 60 Hz 20 Amp (11 FLA)	120VAC, Single Phase, 60 Hz 20 Amp (11 FLA)	120VAC, Single Phase, 60 Hz 20 Amp (11 FLA)	120VAC, Single Phase, 60 Hz 20 Amp (11 FLA)
Water Pressure Drop @ 15 gpm	1.25 psi	1.25 psi	1.25 psi	1.25 psi
Water Pressure Drop @ 30 gpm	2 psi	2 psi	2 psi	2 psi
Water Volume	25.3 gallons	24.3 gallons	22.0 gallons	19.9 gallons
Weight, Installed	980 lbs (dry), 1,202 lbs (wet)	980 lbs (dry), 1,202 lbs (wet)	1,000 lbs (dry), 1,190 lbs (wet)	1,050 lbs (dry), 1,222 lbs (wet)
Weight, Shipping	1,080 lbs	1,080 lbs	1,100 lbs	1,150 lbs

Innovation	Depth	Width	Height
600/ 800/ 1060/ 1350	51"	28"	76"



U.S. Patent No.:  
9,243,848

75  
YEARS

of Innovation  
& Energy Savings



**Heating and Hot Water Solutions**

**AERCO International, Inc.** • 100 Oritani Drive • Blauvelt, NY 10913  
**USA:** T: (845) 580-8000 • Toll Free: (800) 526-0288 • [AERCO.com](http://AERCO.com)

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