



Meet Ray™, the first condensing cast iron low mass boiler engineered and built for the American home. Its performance allows contractors, architects, and homeowners to live the good life—for a good long time.

Patented Cast Iron Section Design

Unlike tubular heat exchangers in which functionality is dictated by the limitations of the forming process, Ray's cast iron sections have a patented design specifically engineered for condensing performance. From how flue gases are exhausted to how water circulates to maximize heat transfer, no detail has been ignored. Plus the entire appliance is cast, machined, and assembled in one integrated facility, so that every component works as a total package.



Proven Commercial Technology

The technology behind Ray has been up and running for years in the most demanding commercial applications. KN boilers, Ray's commercial cousin, provide life-sustaining heat in the Barrow Observatory, Barrow, Alaska, the northernmost permanent outpost within the United States.



Down Fired + Low Mass

The top-mounted burner directs flue gases counter to water flow. This maximizes efficiency and condensing performance in the cast iron exchanger. The lower mass of the internal water content means faster recovery of temperature and less heat loss between cycles—doubly so with cast iron.

Cast Iron + Condensing

Nothing lasts longer, holds heat better, or is more resistant to damage than cast iron. The Ray cast iron heat exchanger is built for a lifetime of low maintenance. This resilience allows it to fully recover the latent heat produced by the condensing process while standing up to its inherent corrosive effects.



Technical Features

SmartCycle™ Technology: An integrated digital system that monitors all elements of system performance and load, SmartCycle actually adapts to how, when, and where heat is called for once installed. It performs more efficiently as time goes on.

Simple Digital Control: With a bright screen with large characters and plain-English descriptions (not codes or colored lights), Ray's control interface simplifies system setup and diagnosis. One onboard controller can network up to 16 individual units.

No Fuel Conversion Kit: The symmetric air-to-fuel coupled burner not only adjusts automatically to altitude, it adjusts for either propane or natural gas with the turn of a single screw. No complicated adjustments, calculations, or extra parts.



Direct Spark Ignition: Choosing direct spark versus hot surface ignition is just one of many commercial-strength components engineered into Ray specifically for the condensing environment. No premature or unexpected ignition failure.

System Pump/Zone Valve: With commercial-strength componentry that accommodates today's variable speed pumps, Ray provides operational efficiency as well as easy integration with older systems that use zone valves and zone pumps.

Graphite Port Connectors: Water joints are sealed with graphite connectors, making ports impervious to contamination by water-borne corrosive substances. Graphite stands up to higher pressure than ordinary metal seals and requires no field preparation.

Steel Mesh Intake Filter: The easy-to-remove, easy-to-wash intake air filter takes out unwanted debris or contaminants before they enter the system. Its steel mesh construction won't tear. No filter replacement costs for the homeowner, no callback problems for contractors.



Get the complete story on the cast iron condensing appliance that's completely changing residential hydronics:

www.KnowSomethingMore.com

AFUE¹

(DOE seasonal efficiency) 92.7%

CSA input² (max.)

199,000 Btuh (58.6 Kw)

CSA input² (min.)

40,000 Btuh (11.7Kw)

Maximum allowable working pressure

100 PSIG (700 kPa)

Water supply and return connections

NPT 1 1/4"

Boiler water volume

4.75 Gallons (18.0 Liters)

Operating weight

530 Pounds (240 Kg)

Fuels³

Natural gas or propane

Line Gas Pressure Requirement

3" WC-14" WC

Vent connection size

3" (76.2 mm)

Vent options

Direct Vent or Category IV only
(pressurized vent, condensing)

Combustion air adapter size

3" (76.2 mm)

Voltage

120 vac/60 hz/1-phase

Current draw

(120-volt power line) 2.75 Amperes

Operating control⁴

Mestek SmartCycle™ Control

Control operation options⁴

Stand-alone
SmartCycle™ Network
BMS (boiler management system)

Control methods⁴

Heat demand
On/Off
BMS (4-20 ma input)
Staging
RS485 digital communication

1. DOE Heating capacity is based on standard tests specified by the United States Department of Energy.
2. All capacity ratings above are based on sea level. Input adjustments allow setting the high fire input and may compensate for moderate altitudes. For higher altitudes, the maximum boiler input will be derated slightly.
3. The gas valve is capable of operating with natural gas or L.P. See the Boiler Manual to adjust for the specific fuel used.
4. For additional information, refer to the Boiler Manual.



Ray is a product of Mestek, Inc., a leader in commercial and residential HVAC technologies.

