

The Smart Heating Solution for Commercial Systems

RHEOS



LAARS
Heating Systems 

Rheos™
Smart Boiler / Water Heater

Small enough in size to fit through a 3'-0" door...



...big enough in BTU's to handle any heating or hot water need

- Smart boiler/water heater technology combines the precise control of state-of-the-art modulation electronics that sense the existing conditions and automatically adjusts the boiler performance to meet the required heating load. At 87% combustion efficiency, the Rheos will greatly cut fuel costs by as much as 30%.
- Rheos sets a new standard in boiler design with its high-density heat exchanger that uses a unique double row finned tube design to maximize the heating surface area. This design yields the highest density of heat transfer per square foot of floor space.
- Low emissions burner enables Rheos to deliver the highest environmental performance. Meets building codes and environmental regulations in all 50 states and Canada, including NOx emission standards.
- Compact, space-saving footprint is less than 34½ inches wide, so it fits easily through a standard 3'-0" doorway — perfect for new construction as well as replacement. Rheos only takes up half the floor space of conventional units.
- Flexible venting alternatives allow you to locate the boiler where you need it. Rheos can use vertical or horizontal venting configurations to make the installation placement easier. Since the Rheos is a sealed combustion system, outside air can be ducted directly to the unit. Its powerful blower will bring in filtered combustion air and, at the same time, propel flue gases to the vent through side walls — up to 50 feet away.
- Reliable LAARS Heating Systems quality — backed by more than a half century of experience in the design and manufacture of the world's best commercial boilers and water heating systems.



Easy Side Access

Convenient service panels on both sides allow easy access to the heat exchanger.

Sealed combustion system uses no inside air

Rheos also solves the problem of inside air depletion by using a completely sealed combustion system with a high-power blower that draws all combustion air from the outside and vents flue gases simultaneously. Intake air is passed through a permanent filter, which is easily removed from the front for cleaning. Rheos can be installed inside or outside, even on the roof. Because of its versatile design, it can be vented through the roof or a sidewall.



Low NOx and high efficiency certified in all 50 states and Canada

Rheos is also one of the "greenest" and most environmentally sound heating systems in the marketplace. It offers extremely low levels of both NOx and CO greenhouse gases and is fully certified for commercial use in all 50 states and Canada, meeting ASHRAE 90.1, ANSI Z21.13 and ANSI Z21.10.3 codes. It also meets all domestic and international codes and regulations for greenhouse gas emissions. In addition, Rheos has been designed to meet or exceed the efficiency and pollution standards used by the gas utility industry for environmental rebates and commercial incentive programs for non-condensing equipment.



Quick-Change Washable Filter

Combustion air filter can be removed, washed, and re-installed easily and quickly.

Standard Features

- Modulating proportional firing control system (50-100%)
- All waterways are copper or glass-lined
- Low-water cutoff with test light and manual reset button
- Manual reset high-limit
- High gas pressure switch
- Low gas pressure switch
- Air pressure switch
- ASME CSD-1
- Water flow switch
- Vertical or horizontal (Category IV) venting options
- Pump time delay
- Low-fire start time delay
- 160 lb. w.p. heat exchanger
- 75 psi pressure relief valve (boiler)
- 125 psi pressure relief valve (water heater)
- Temperature and pressure gauge
- Low water volume heat exchanger
- Washable combustion air filter
- Dry alarm contacts
- Diagnostic and status indicator lights
- Easy seismic securing
- Selector switch for internal or external (0-10 VDC) control
- Weatherproof jacket for outdoor installations

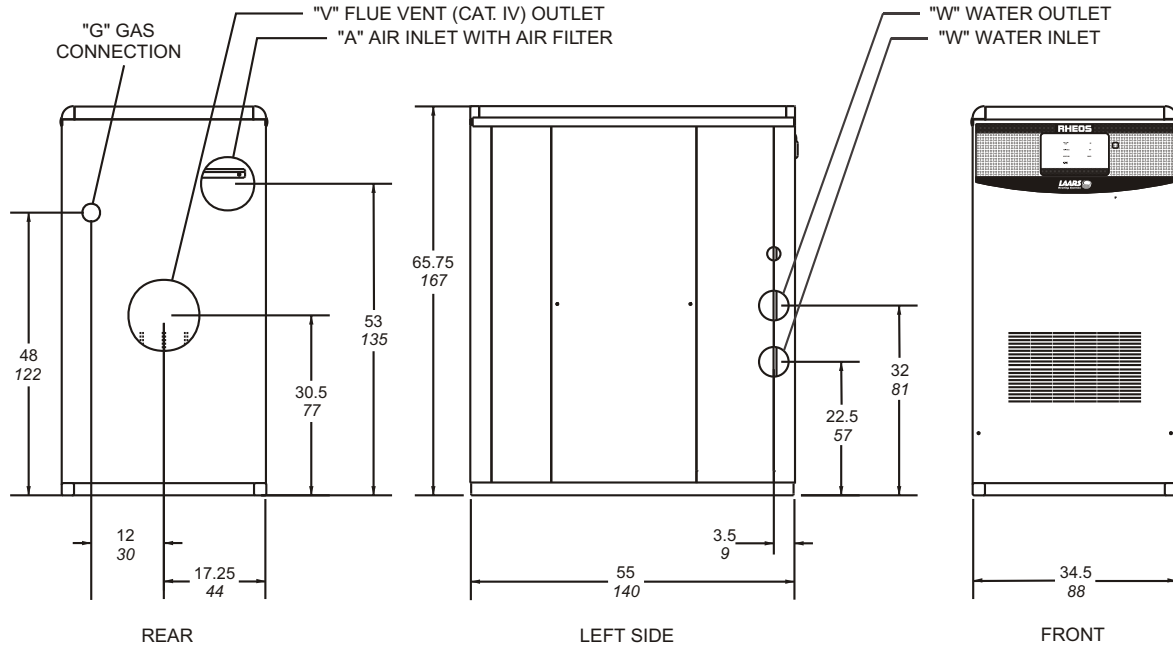
High Efficiency

The sophisticated gas and air introduction system, combined with a powerful low-NOx burner and patented heat exchanger, allows the Rheos to maintain its high efficiency throughout its modulation range.



Rheos Specifications

Nominal dimensions shown in inches, cm



Specifications

Model (Size)	1200		1600		2000		2400	
Input at High Fire	1,200,000 BTU/h	352 kW	1,600,000 BTU/h	469 kW	2,000,000 BTU/h	586 kW	2,400,000 BTU/h	703 kW
Output at High Fire	1,044,000 BTU/h	306 kW	1,392,000 BTU/h	408 kW	1,740,000 BTU/h	510 kW	2,088,000 BTU/h	612 kW
Input at Low Fire	600,000 BTU/h	176 kW	800,000 BTU/h	234 kW	1,000,000 BTU/h	293 kW	1,200,000 BTU/h	352 kW
Output at Low Fire	522,000 BTU/h	153 kW	696,000 BTU/h	204 kW	870,000 BTU/h	255 kW	1,044,000 BTU/h	306 kW
Water Connections	2½" NPT		2½" NPT		3" NPT		3" NPT	
Gas Connections	1" NPT		1½" NPT**		1½" NPT**		1½" NPT	
Vent Size (Cat. IV)	6"	15 cm	6"	15 cm	7"	18 cm	10"	25 cm
Combustion Air Size	6"	15 cm	6"	15 cm	8"	20 cm	8"	20 cm
Electrical Requirements*	120V / single phase / 20A		120V / single phase / 20A		120V / single phase / 20A		120V / single phase / 20A	
Shipping Weight, Non-Pump-Mounted	1220 lbs.	554 kg	1265 lbs.	574 kg	1295 lbs.	588 kg	1350 lbs.	613 kg
Shipping Weight, Pump-Mounted	1370 lbs.	622 kg	1415 lbs.	642 kg	1445 lbs.	656 kg	1500 lbs.	681 kg

*Electrical connection is for Rheos only. Pumps may require separate electrical connection.

**Connection shown is for standard gas train. Optional gas train connections may vary.

Required Water Temperature Rise °F / °C

Model	GPH L/h Delivered																	
	40°F	22°C	50°F	28°C	60°F	33°C	70°F	39°C	80°F	44°C	90°F	50°C	100°F	56°C	120°F	67°C	140°F	78°C
Size	GPH	L/h	GPH	L/h	GPH	L/h	GPH	L/h	GPH	L/h	GPH	L/h	GPH	L/h	GPH	L/h	GPH	L/h
1200	3133	11843	2507	9476	2089	7896	1790	6766	1567	5923	1393	5266	1253	4736	1044	3946	895	3383
1600	4178	15793	3342	12633	2785	10527	2387	9023	2089	7896	1857	7019	1671	6316	1393	5266	1194	4513
2000	5222	19739	4178	15793	3481	13158	2984	11280	2611	9870	2321	8773	2089	7896	1741	6581	1492	5640
2400	6267	23689	5013	18949	4178	15793	3581	13536	3133	11843	2785	10527	2507	9476	2089	7896	1790	6766

Clearances

	Piping Side	Opposite Side	Top	Back	Front	Clearance From Combustible Material		Vent
Service Access Clearance	18" 46 cm	1" 2.5 cm	24" 61 cm	36" 91 cm	36" 91 cm	1"	2.5 cm	Per UL1738 venting system supplier's instructions

The Rheos Smart Boiler / Water Heater can save up to 30% in fuel costs by adjusting to the precise heating load



The Rheos smart boiler / water heater is a breakthrough in commercial heating system design. Now, for the first time, engineers and heating contractors can choose a single high-efficiency, low-cost system for commercial installations requiring up to 2.4 million BTU/hour. Plus, the Rheos features the highest density and smallest footprint available, so it takes up far less floor space. In fact, it's so compact, it can fit through a standard 3'-0" doorway.

For more than 50 years, the Laars Heating Systems brand has stood for quality, reliability and innovation in heating products design. Now, Rheos builds on that tradition and sets a new standard with an entirely new generation of cutting-edge boiler technology designed especially for today's most demanding commercial environments.

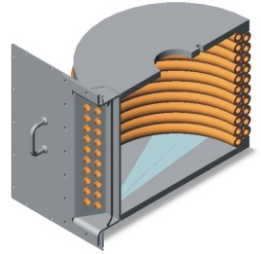
Smart boiler technology saves fuel costs

The innovative Rheos smart boiler technology controls the boiler operation by automatically down-firing to as low as 50% of full input. In addition, the system boasts an 87% combustion efficiency — one of the highest ratings in its class. Taking full advantage of high-efficiency combustion in addition to the boiler modulation, Rheos can cut operating costs by as much as 30% over conventional, non-modulating systems. The result is fuel cost savings that can amount to tens of thousands of dollars over the life of the equipment. In fact, in most installations, the Rheos will virtually pay for itself in a short period of time. Optional control packages are available to comply with regional code requirements.

Patented double-row heat exchanger

Rheos is far and away the most compact and cost-effective heating system in its rating class. The system uses a patented double-row coil configuration to create maximum heat transfer surface area and balanced water flow. Coupled with a powerful burner, the Rheos is able to provide industrial grade service for hydronic

and volume water applications. For water conditions requiring an upgrade, a cupro-nickel heat exchanger is available as an option.



Compact and easy to install indoors or out

The greatest advantage to the heating contractor is that Rheos is as simple to install for replacement, as it is for new construction. Convenient right or left-hand piping configurations make installing even easier. Because of its compact size, the Rheos boiler / water heater fits virtually anywhere. The same boiler can be installed either indoors or outdoors. A special gas train heating unit ensures reliable operation outdoors in cold climates. The unit measures just under 34½ inches wide.



*Swing open the front door panel
and lift it out for easy access*

RHEOS™

Laars Heating Systems has brought 50 years of quality, reliability and innovation in heating products design.

Now the Rheos builds on the same tradition, setting a new standard.

The Rheos delivers a new generation of cutting edge technology designed for today's most demanding commercial environments.



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