

# Mighty Therm Pump-Mounted Water Heater

Date: \_\_\_\_\_ Bid Date: \_\_\_\_\_  
Project #: \_\_\_\_\_ Location: \_\_\_\_\_  
Project Name: \_\_\_\_\_ Engineer: \_\_\_\_\_  
Contractor: \_\_\_\_\_ Prepared By: \_\_\_\_\_

Model PW0500-1825 Indoor

## Specification

Contractor shall supply and install Qty.: \_\_\_\_\_ Laars Model No. PW \_\_\_\_\_ pump-mounted water heater(s).

The heater shall be a Laars Mightv Therm Model PW \_\_\_\_\_, rated at the input and output shown on the schedule, with a recovery rate of \_\_\_\_\_ gph (\_\_\_\_\_ L/hr) for a 100°F (56°C) water temperature rise. The unit(s) shall be design certified to comply with the current edition of the Harmonized ANSI Z21.10.3 / CSA 4.3 Standard for Gas Water Heaters. The unit(s) shall be designed and constructed in accordance with the ASME Boiler & Pressure Vessel Code, Section IV requirements for 160 psi (1103 kPa) working pressure.

The water tube heat exchanger shall be a straight tube design with 7/8" (22mm) inner diameter integral finned copper tubes. The tubes shall be rolled directly into ASME glass lined headers rated for 160 psi (1103 kPa) working pressure. The heat exchanger shall be a low water volume design. All gaskets shall be non-metallic, outside the jacket, and separated from the combustion chamber by at least 3.5" (89mm) to eliminate deterioration from heat. Headers shall have covers permitting visual inspection and cleaning of all internal surfaces.

The piping side header shall have removable flanges to facilitate maintenance and permit vertical removal of complete heat exchanger for service or replacement.

The heater shall come complete with a volute-mounted pump sized to provide the correct heater flow rate for the heater and 30 feet (9.1 m) of full-sized piping. Each unit shall be furnished with an EM<sup>2</sup> energy management monitor relay and pump timer. The timer shall be a high quality solid state electronic device. The device shall be user adjustable from 0.1 minutes to 10 minutes for continued pump circulation after the call for heat has been satisfied, to remove residual heat from the unit.

Unit shall have removable burner tray assembly for ease of inspection and maintenance.

The units shall use an intermittent electronic ignition with electronic flame supervision, which responds in less than 0.8 seconds upon flame failure. The control circuit shall be 24V. Unit shall be 120V, single phase, 12 Amps.

Burners shall be of the atmospheric type and constructed of stainless steel.

The combustion chamber shall be lined with a cast refractory of at least two inches (50.8mm) in thickness to retain heat, and approved for service temperatures of not less than 2000°F (1093°C). The outer jacket shall be a unitized shell finished with acrylic thermo-set paint baked at not less than 325°F (163°C). The frame shall be constructed of galvanized steel for strength and protection.

Heaters shall have an integral draft diverter to ensure efficient venting. The unit shall be designed for Category 1 venting with standard B-vent.

Heater gas train shall be for ON/OFF or TWO-STAGE or FOUR-STAGE or MOTORIZED MODULATING or MOTORIZED ON/OFF or MOTORIZED TWO-STAGE firing.

Heater shall include as standard equipment the following controls and trim:

- Spark ignition
- Water flow switch
- Gas pressure regulator
- Pilot gas regulator
- Redundant safety gas valve
- Manual gas shut-off valve
- Temperature and pressure gauge
- Operating Control
- Manual reset high limit
- 115/24 VAC power from class 2 transformer
- 125 psi (861 kPa) A.S.M.E. pressure relief valve
- Integral pump
- Pump time delay
- Terminal strip
- Power on light