

MINI-THERM

JX

Boiler

Model JX Indoor

Sizes, **050, 075, 100, 125, 150, 200**

Specification



Date:

Bid Date:

Project #:

Location:

Project Name:

Engineer:

Contractor:

Prepared By:

Contractor shall supply and install Qty.: _____ Laars Model No. JX _____ boiler(s).

The boiler shall be a Laars Mini-Therm Model JX _____, rated at the input and output shown on the schedule. The unit(s) shall be design certified to comply with the current edition of the Harmonized ANSI Z21.13 / CSA 4.9 Standard for Gas-Fired Low Pressure Steam and Hot Water Boilers. The unit(s) shall be designed and constructed in accordance with the ASME Boiler & Pressure Vessel Code, Section IV requirements for 30 psi (207 kPa) working pressure, and shall bear the ASME "H" Stamp. The unit(s) shall be constructed to comply with the efficiency requirements of the latest edition of ASHRAE Standard 90.1.

Boilers shall have a minimum A.F.U.E. of 84%. The unit shall be atmospheric combustion, and designed for Category I vertical venting with standard B-vent, and shall be built with an integral draft diverter. Each unit shall be shipped with an automatic vent damper, with harness for easy connection.

The water tube heat exchanger shall be a straight tube design with 5/8" (16mm) inner diameter integral finned copper tubes. The tubes shall be rolled directly into cast iron wet walls, rated for 30 psi (207 kPa) working pressure. The heat exchanger shall be a low water volume design. All gaskets shall be non-metallic, and outside the combustion chamber, to eliminate deterioration from heat. Headers shall permit access for viewing the inside surface of all tubes, and the heat exchanger shall carry a 20 year prorated, limited warranty.

A low loss header and pump assembly shall be standard equipment on models 125-200, and shall be optionally available for field installation on models 50-100. Pumps without the low loss header assembly shall be available to ship with models 50-100.

Burners shall be multi-port design, and shall be constructed of high temperature stainless steel. The burners shall be designed to mix air and gas, and burn cleanly. Burners shall be easy to inspect, clean and remove.

Refractory tile shall be in the front and rear of the combustion chamber, and the combustion chamber shall be lined with lightweight foil-faced fiber insulation. 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. The boiler shall be built with an integral draft diverter, such that an external draft hood is not required. The boiler shall be approved for indoor installations in closets, and for placement on approved combustible flooring.

The boiler shall have a natural gas valve that features dual automatic combination gas control, including a manual valve, two automatic operators and a pressure regulator in one valve body. The valve shall be easily convertible to propane with a regulator/spring kit. Flanges or unions shall be used before and after the gas valve, to permit easy removal.

The boiler's controller shall be a multi-function control that includes temperature control, ignition control, low water cutoff and high limit. The control shall allow the user to choose from three modes of operation: Economy; Outdoor Reset; Setpoint. Economy mode shall include seven sub-modes that match boiler water temperature to the heating needs of the space by monitoring how often the home's thermostat calls for heat. Outdoor reset mode sets boiler water temperature based on outdoor air temperature when outdoor sensor is used, to help match heat loss to boiler output. Economy and outdoor reset modes shall both allow for warm weather shutdown when when outdoor sensor is used.

The control's integrated ignition system shall be spark to pilot, and the control circuit shall be 24V. Unit shall be 120V, single phase, less than 12 Amps, for use with a 15 Amp breaker.

Low water cutoff shall be field-selectable for automatic or manual reset mode, and shall have a manual reset button with test feature.

The control shall have temperature display and LEDs that indicate boiler call for heat, high temperature met, low water cutoff active, low water detected, economy mode active and economy mode target temperature is displayed. Ignition LEDs shall include temperature limits, vent damper power has been sent, vent damper & air (if used) proving switch has been made, and pilot flame lit. A blinking flame LED shall indicate that pilot flame has not been sensed or flame was lost. The control shall have user-selectable °F or °C display, and shall allow the user to restore factory default settings.

Control shall have connections for the boiler pump, a system pump, and a pump for indirect water heating (with the optional DHW pump control kit). Indirect domestic water shall have priority over space heating when used. Indirect DHW priority shall be active until the indirect heater is satisfied, or the boiler temperature reaches 170°F. It shall have a time limit of 45 minutes, at which time the space heating will be re-engaged.

The boiler shall have field interlock terminals that allow for external devices to stop the boiler operation. The boiler shall have terminals for power venters or air makeup equipment that include line voltage contact closure and proving switch connection.

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

- ASME "H" stamp
- Integral low water cutoff
- Digital temperature display
- Rheostat temperature set point
- 7 Economy run modes
- Outdoor reset
- Warm weather shutdown
- Indirect DHW priority
- Spark to pilot ignition
- Low voltage terminal block
- Field interlocks for external devices
- Powered relay contacts for external devices
- Single-point power connection
- Integral base for approved combustible flooring
- Low loss header with boiler pump (125-200)
- Contacts to control boiler pump, system pump, and DHW pump
- Built-in draft diverter
- Vent damper included
- Temperature & pressure gauge
- 30psi pressure relief valve
- 20-year limited warranty