

Commercial Electric Boiler

Model EB

Date: _____ Bid Date: _____
Project #: _____ Location: _____
Project Name: _____ Engineer: _____
Contractor: _____ Prepared By: _____

Specification



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

The boiler shall be a Laars Electric Boiler Model _____, rated at the output shown on the schedule. The vessel shall be ASME "H" stamped and National Board registered with a maximum working pressure of 30 psi (optionally 125 psi). The unit(s) shall be fully tested using standard UL834, shall bear the CSA mark, and shall meet the requirements of ASME CSD-1.

The vessel shall have a capacity of 40 gallons. It shall have 3" NPT threaded inlet and outlet nozzles. The outlet nozzle shall be located on the top of the vessel. The inlet nozzle shall be located on the left side of the vessel. A ½" air vent shall be included. The immersion heating elements shall be installed in the top of the vessel and threaded into vessel for easy servicing (water draw-down not required.)

The boiler shall be available in 208V, 240V, 480V and 600V three phase voltages, and shall include a dedicated 15A 120V single phase control circuit (general service) that includes a primary pump relay. Terminals shall be provided on the boiler for connection to an emergency stop switch. Wiring within the main cabinet shall be rated at 75°C or higher.

The boiler shall have a built-in digital temperature control with display. The control shall include supply and return water temperature sensing. The control shall have multiple boiler, lead-lag capabilities, including provisions for stage rotation. Automatic turn-down as the load decreases, and outdoor reset with auto-detect feature shall be included. 0-10VDC connections shall be standard, to allow for external boiler control. Gateways for Modbus, BACnet and LonWorks protocols shall be available from the boiler manufacturer. The control assembly shall include a six-function alarm LED.

The boiler shall include a mounted low water cutoff with manual reset, a manual reset temperature high limit set at 220°F, an automatic reset high temperature limit set at 210°F, and a temperature and pressure gauge.

The heating elements shall be constructed using incoloy sheathing for long service life. The low-watt density heating elements shall be 30" long. Contactors used to operate the heating elements shall be rated for 500,000 cycles, and each contactor shall have a staging light. The boiler shall have a circuit breaker for each element, providing convenient and safe disconnection of individual elements.

The boiler shall be no more than 30" wide, to fit through a typical service door. The cabinet shall include a full-length hinged door with an included lockable T-handle. The inside dead front panel shall include an integral door safety interlock switch. The cabinet shall have a split cover top for easy access to the heating elements.

The vessel shall be wrapped with 3" insulation and be fully enclosed in a 14-gauge cabinet. The cabinet and vessel shall be attached to a 10-gauge structural steel base. The base shall include integral fork pockets for easy maneuvering during installation. Both base and cabinet shall be painted with powder coat enamel.

A mounted control enclosure shall be included. The control enclosure shall contain all boiler controls and adjustments. The boiler operator shall not be required to enter main cabinet for resets or other functions. A window shall be included on the door of the control enclosure to permit viewing of monitor and alarm LED's.

The boiler shall include a 5-year limited warranty on the vessel and a 1-year limited warranty on the parts.

Standard features shall include:

- ASME pressure vessel
- National Board & CRN registration
- Meets ASME CSD-1 requirements
- ASME 30 psi pressure rating and PRV (125 psi optional)
- SCCR rated at 5 kW
- Temp. & pressure gauge
- 3" inspection opening
- 3" NPT water connections
- Integrated ½" air vent
- Supply & return water temp sensing
- Digital temp control with display
- Multiple boiler lead/lag control
- 0-10VDC external boiler control
- Adjustable outdoor reset
- Manual reset high limit, 220°F
- Auto reset high limit, 210°F
- Low water cutoff with manual reset
- Stage active indicator lights
- Circuit breakers or fuse protection on each stage
- Emergency shut-down connection point
- Safety door interlock
- Lockable door latch



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