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Elite XL Commercial Boiler Specification Sheet

Model: ELX-400FBN / 500 / 650 / 800 / 1000 / 1500 / 2000

The boiler shall be an HTP model _____, having a modulation input range of _____ Btu/Hr, and shall operate on either Natural Gas (NG) _____ or Liquid Propane (LP) _____. [1500 and 2000 Models operate on Natural Gas (NG) ONLY]. The boiler shall be capable of full modulation with a turndown ratio of up to 10:1.

The boiler heat exchanger shall be certified and stamped for 160PSI and shall be National Board Listed. There shall be no banding material, bolts, gaskets, or “O” rings in the header configuration. The heat exchanger is removable from the cabinet for replacement without removing the entire boiler assembly from the site. The stainless-steel combustion chamber shall be designed to direct condensate to the rear of the chamber to ensure that condensation does not collect in the boiler. The complete heat exchanger assembly shall have a five (5) year basic or ten (10) year extended limited warranty.

The boiler shall be certified and listed by ETL under the latest edition of the harmonized ANSI Z21.13 test standard for the US and Canada. The boiler shall comply with the energy efficiency requirements of the latest edition of the ASHRAE 90.1 Standard and the minimum efficiency requirements of the latest edition of the ASHRAE 103 Standard. The boiler shall operate at up to **97%** thermal efficiency. The boiler shall be certified for indoor or outdoor installations.

NOTE: Outdoor installations with optional kit only. Two boilers may also be stacked with an optional kit.

The boiler shall be constructed with a heavy gauge steel jacket assembly, primed and pre-painted on both sides. The boiler jacket shall afford easy access to all components through easily removable access doors to facilitate service of all components. The combustion chamber shall be sealed and completely enclosed, independent of the outer jacket assembly, so that integrity of the outer jacket does not affect a proper seal. A burner/flame observation port shall be provided. The burner shall be a premix design and constructed of **high-grade stainless-steel** with modulating firing rates. The boiler shall be supplied with a gas valve designed with a negative pressure regulation pneumatic gas valve and be equipped with a variable speed blower system to precisely control the fuel/air mixture to provide modulating boiler firing rates for maximum efficiency. The boiler shall operate in a safe condition at a derated output with gas supply pressures as low as 3 ½ inches of water column.

The customer connection board shall be equipped with two types of screw connectors. The smaller green terminal blocks are designated for low voltage connection inputs including thermostat, DHW sensor, system sensor, outdoor sensor, 0-10VDC, external low water cut off input signals, bus wiring connections, and Low Voltage Output 0-10 volt - A (Modulating Pump Output) and Low Voltage B (see the status of various parameters through 0-10VDC output for the Fan Speed - Boiler Power - Cascade Power Alarm Status or Target temperature). The larger black barrier strips are designated for 120-volt connections for incoming power, central heat pump (CH), DHW pump (indirect water heater), and system pump operation with additional double pole relay rated at 5 amp for Alarm Output. The three pump outputs are 2-amp fuse protected in 400 – 1500 models, and 5-amp fuse protected in 2000 models. The control cabinet will also include two RJ-45 style jacks for cascade communication bus wiring using CAT 5 or CAT 3 cables. These connections and fuses are accessed from the outside of the boiler by removing an access door. The electrical supply for 400 – 1500 models shall be 120 volt / 60 hertz / 20A single phase; on 2000 models the electrical supply shall be 208 volt / 60 hertz / 3 phase wye 15A leg. Two additional electrical connections are provided internal to the boiler cabinet for the connection of optional high and low gas pressure switches. The boiler comes equipped with an Integrated UL 353 certified CSD-1 compliant low water cut-off with manual reset. An outdoor sensor is supplied with the boiler.

The boiler shall utilize a 120 VAC control circuit and components. The control system shall have a seven-inch (7”) color touch screen display for boiler setup, status, and diagnostics. All components shall be easily accessed and serviceable from the front, right, and left sides of the jacket. The boiler shall be supplied with a high resolution flow switch to ensure minimum flow rates through the heat exchanger, temperature/pressure gauge, ASME certified pressure relief valve, Dual Water Supply Temperature Sensor / High Limit (210°F), return water temperature sensor, blocked vent pressure switch, flue temperature sensor, built-in freeze protection, and an optional high limit temperature control with manual reset. The boiler shall also be equipped with an outdoor temperature reset function.

The boiler features the HTP Link system as standard equipment. HTP Link offers a WiFi connection, allowing the user to remotely monitor boiler operation, change system parameters to maximize boiler efficiency, and alerting the user when system issues occur to aid in troubleshooting. The boiler shall include an ON/OFF power switch and feature the 928 intelligent control system with color touch screen display with graphic indicators for System Pump, DHW Pump, Boiler Pump, Pump Service Mode, Flame On, and Fault Indication. Pump operation and the combustion system can be manually operated to assist the installer in system

commissioning. The control will have password protection for the installer to set limits and configure outdoor reset. The control will have freeze protection (which can be disabled for snowmelt applications), outdoor reset, indirect priority with operation time limits, and a 0-10V DC input for building management system (i.e. programmable to control either boiler temperature or firing). The boiler control shall have an optional gateway device which will allow integration of Modbus or BACnet Protocols. The boiler control is equipped for cascading up to eight boilers for greater system turndown and system backup.

The boiler shall be equipped with a condensate collection system equipped with an internal float switch which will protect the boiler from condensation backing up into the combustion chamber. The condensate collection system will be equipped with a 2" NPT threaded cleanout port to allow for easy cleaning and sediment removal.

The boiler will have a sealed combustion system, taking outside air for combustion and exhausting the flue gas with a 4" (400 / 500 models), 6" (650, 800 and 1000 models), or 8" (1500 and 2000 models) adapter. The Category IV vent system may be constructed with Stainless Steel, PVC, CPVC, or Polypropylene. The boiler's total combined equivalent vent length, including fitting allowances for both intake and exhaust, shall not exceed 125 feet (400 – 1000 Models), or 150 feet (1500 and 2000 Models).

The boiler can be vented in many methods, including:

Horizontal Venting shall be done as a balanced system only. Both intake and exhaust must terminate on the same side of the building.

Vertical Venting shall be done either as a balanced or unbalanced system. An unbalanced system shall ONLY be allowed when the exhaust is installed vertically and the intake horizontally. Both exhaust and intake must remain within the boiler's combined equivalent length.

Indoor Combustion Venting from a Confined or Unconfined Space – Where the exhaust runs vertically and combustion air is drawn either from the mechanical room or from outdoors.

Adequate combustion air must be supplied when drawing air from the mechanical room. Avoid the room contaminants listed in the installation manual. (Refer to appliance installation manual venting section for additional venting requirements.)

CAUTION: Foam core pipe is NOT an approved material for either intake or exhaust piping.

The boiler shall comply with the NOx emissions limit set forth in SCAQMD Rule 1146.2. The manufacturer shall verify proper operation of the burner, the combustion and control systems, as well as all related safety functions, to ensure the boiler will operate based on its designed parameters before shipping. Complete operating and installation instructions shall be furnished with every boiler as packaged by the manufacturer for shipping.

The appliance shall operate at high elevations without additional parts. However, adjustments to the combustion system may be required at any elevation. See installation manual for combustion system setting details.

Maximum unit dimensions shall be length inches, width inches and height inches. Maximum unit weight shall be pounds.

NOTE: Due to variations in CSD-1 requirements from state to state, please consult with the factory for all controls required in your jurisdiction.

NOTE: HTP reserves the right to make product changes or updates without notice and will not be held liable for typographical errors in literature.