

Typical Specification for HTP Elite FT Boiler
Models: EFT-55 / 80 / 110 / 155 / 199 / 285 / 399 Btu / Hr

Guide Specification Sheet
Elite FT Boiler

The Elite FT Boiler, manufactured by HTP, Inc., includes seven (7) models with inputs ranging from 55,000 Btu to 399,000 Btu. Model EFT- _____, having a modulation input range of _____ Btu / Hr., shall operate on either Natural _____ or LP _____ gas.

The boiler shall be National Board Listed and bear the ASME "H" Stamp with a working pressure of 30 PSI (80 PSI for EFT-285 and 399 models). The boiler shall have top and bottom supply and return connections (bottom supply and return connections only on EFT-55, 80, and 110 models). The boiler shall be used in a closed loop pressurized system and require a properly sized thermal expansion tank to meet local codes. The boiler shall be ETL Listed and exceed the latest minimum efficiency requirements of ASHRAE 103 with an AFUE rating up to 96.3% and thermal efficiency up to 93.2.

The boiler heat exchanger shall be constructed of 439 stainless steel and use a qualified welding process to ensure weld quality. The heat exchanger shall be passivated after welding to resist surface corrosion. The heat exchanger shall be of vertical fire tube design, which provides optimal condensation drainage and produces self-cleaning action inside the boiler. The boiler is built and tested in accordance with the harmonized ANSI Z21.13 standard for the US and Canada. The complete heat exchanger assembly shall carry a twelve (12) year limited warranty.

The boiler jacket shall be constructed with a heavy gauge steel jacket assembly, with built-in support brackets for wall-mounting. The boiler can also be mounted on an optional floor stand. The floor stand shall have three different supply and return port orientations to ease piping. The sealed boiler cabinet shall provide an additional sealed control compartment with vents to assure reliable operation and eliminate the potential for excessive moisture on electronic components.

The boiler shall be equipped with 90 degree orientation on the blower inlet to provide easy access to the combustion system components. The burner is constructed of high temperature metal woven fiber, which provides operating reliability through the modulation range of the boiler. The negative pressure regulation gas valve operates at low or high gas pressure with a range of 3.5 to 14" water column. An observation mirror eases flame monitoring during operation.

The boiler shall have an **integrated digital control system** ("Total System Control") that utilizes an algorithm to fully adjust firing rate while maintaining desired output temperature. Combustion gas and air are premixed prior to introduction to the burner through the gas valve and variable speed fan. The control uses pulse width modulation to send a command signal to the fan which adjusts the volume of combustion air and gas supplied to the burner.

The boiler shall feature a digital 2 line 20 character per line LCD display that provides boiler operation information, as well as programming and monitoring capabilities. The control has push button arrows to allow the installer to navigate through boiler programming parameters and monitor operation, and reset and enter keys to confirm or change system parameters. LED light indicators assist in detecting fault and maintenance intervals, and also highlight the master boiler in cascade operation with multiple boilers. If the control senses a problem, the display will show a fault code and narrative to aid in troubleshooting.

The control shall monitor outdoor temperature through an outdoor sensor, provide outdoor reset to increase boiler efficiency, and disable operation based on a programmed outdoor temperature. The control shall have a dry contact output to connect to an optional alarm monitoring device. To provide domestic hot water, an indirect fired water heater can be installed with the boiler, and an indirect sensor connected to the control will automatically prioritize domestic hot water demands. The control shall have integrated multiple boiler

management (cascade system) to regulate up to 8 boilers with sequence options and rotation capability to assure equal run time and maximum efficiency. This allows for greater turndown ratios and provides system back-up capability. The control may also be connected to a 0 – 10 volt input from a building management system to control modulation rate or set point temperature to the system.

The boiler shall be equipped with a field connection board for wiring line voltage and low voltage outputs. The line voltage connection shall provide outputs for system pump, boiler pump, domestic hot water pump, and alarm output. The low voltage connection shall provide inputs for thermostat, indirect sensor, outdoor sensor, and BMS 0 – 10 volt input. The field connection board will provide two CAT 3/5 connectors for connection points to multiple boilers, Vision 2 zone panel, or Modbus adapter. The boiler shall have Molex connectors to accept optional safety devices, such as a UL 353 low water cut-off, manual reset high limits, and high and low gas pressure switches.

The boiler will have a sealed combustion system, with separate, sealed ULC-636 PVC, CPVC, Polypropylene, or Stainless Steel pipes taking outside air for combustion and exhausting flue gasses.

The boiler's total combined equivalent vent length, including fitting allowances for both intake and exhaust, shall not exceed 200 feet (150 total equivalent feet for the EFT-285). The vent connections shall be located on the top of the boiler.

Horizontal Venting shall be done as a balanced system only, thus requiring both intake and exhaust to 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. (Refer to boiler's installation manual venting section for additional venting requirements.)

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

Refer to boiler installation manual venting section for additional venting requirements.

The boiler shall be in compliance 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 heater as packaged by the manufacturer for shipping.

The boiler shall operate at altitudes up to 4,500 feet above sea level without additional parts or adjustments.

Maximum unit dimensions shall be: Length _____ inches, Width _____ inches and Height _____ inches. Maximum unit Weight shall be _____ pounds.

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

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