

**ELU Combi Boiler Specification Sheet**

***Models: Combi ELU-120WCN / ELU-150WCN / ELU-199WCN – Wall Mount Models***

The Elite UltraTM (ELU) Heating Combi Boiler manufactured by HTP includes three (3) models with inputs ranging from 120,000 to 199,000 Btu. Model ELU- , having up to an 11 to 1 turndown modulation and Btu/ Hr, shall operate on either Natural or LP gas. **NOTE:** An LP conversion kit is included with the boiler. The boiler ships ready for wall mounting.

The boiler shall be National Board Listed and bear the ASME Stamp with a working pressure of 50 PSI, be CSA Listed, and exceed the minimum efficiency requirements of ASHRAE 103 with an AFUE rating up to 96%. The boiler shall be used in closed loop pressurized system and require a properly sized thermal expansion tank to meet local codes.

The boiler cabinet shall be designed as a sealed chamber, allowing intake combustion air to input directly into the cabinet. The XTRATECH heat exchanger shall be constructed of Type 441 stainless steel, built and tested in accordance with the latest edition of the harmonized ANSI Z21.13 test standard for US and Canada. The complete heat exchanger assembly shall carry a fifteen (15) year warranty.

The boiler shall be equipped with an internal hydronic module that adapts to system requirements and includes a three-way motorized valve and high efficiency ECM circulation pump. An additional circuit to the internal stainless-steel brazed plate high efficiency heat exchanger produces large amounts of domestic hot water on demand. The boiler shall have two 1” (ELU-120WCN) or 1 ¼” (ELU-150WCN / ELU-199WCN) connections for the heating circuit (supply and return) and two 3/4” connections for the domestic hot water circuit. The hydronic module is also equipped with an internal by-pass valve, which eliminates the need for primary / secondary piping in smaller zoned systems. The gas connection shall be located near the hydronic module and connect directly to the internal gas valve supplied with the boiler.

The boiler shall have an **integrated digital control system** utilizing an algorithm to fully adjust firing rating while maintaining the desired output temperature. The combustion system has a specialized mechanical mixer with an internal shutter and gas injector to seal off a portion of the mixer opening, increase combustion system efficiency, and offer a turndown ratio of up to 11 to 1 without the need for an electronic or motorized valve. The specialized mixer is connected to the variable speed fan which controls the amount of air and gas injected into the burner for extremely clean, reliable combustion with very low emissions.

The boiler shall feature a digital 5-character LCD display with various icons that provides boiler and system operation information and enhances monitoring capabilities. The display push buttons allow the installer to navigate and program system parameters, adjust central heating or domestic setpoints, and customize boiler operation to optimize system efficiency. If the control senses a problem, the display will show a fault code to aid in troubleshooting. The display also provides service reminders to the user when normal maintenance is required (based on run time in months). The control will also have embedded WiFi capability to provide remote monitoring of the boiler.

The control shall monitor outdoor temperature with an outdoor sensor, allowing for a programmable outdoor heating curve which increases boiler efficiency by regulating operation based on the outdoor temperature. The optional parallel shift function can be programmed to temporarily override the outdoor heating curve to quickly heat a home or building (if the ambient temperature is too low) or reduce the boiler operating temperature (if the ambient temperature is too high).The boiler can be programmed with a domestic hot water comfort function to maintain base line temperature and ensure instant hot water on demand. When an optional connection card is installed, the control may be connected to a 0 – 10-volt input from a building management system to control modulation rate or system setpoint temperature.

The control shall have multiple low voltage inputs and outputs to connect various sensors and multiple thermostats to heat multiple zones at different temperature settings. This allows for greater turndown ratios and systemic control to maximize efficiency.

The control shall monitor many boiler safeties, including a water pressure switch, water temperature high limit, flue high limit, flame monitoring probe, condensate pressure switch, and internal bypass for heat exchanger overheat protection to ensure clean and safe operation. The boiler is also equipped to monitor supply and return temperatures, ensuring the system has adequate flow to eliminate short cycling or high temperature operation.

The boiler will have a sealed combustion system, take intake air either from the outdoors or the room for combustion, and exhaust flue gas to the outdoors. The included 5.5-inch length of 2” or 3” diameter CPVC pipe must be installed in the boiler exhaust adapter before continuing in 2” or 3” PVC, CPVC, PP, or Stainless-Steel vent material. Both the boiler intake and exhaust vent pipe runs must not exceed 100 feet in 2” pipe or 150 feet in 3” pipe. (**NOTE:** ELU-199WCN models must be vented in 3” pipe or greater. DO NOT reduce ELU-199WCN model intake or exhaust vent pipe.) The boiler intake connection of ELU-120WCN / ELU-150WCN models is designed to be flexible and allows connection on either the left or right-hand side on the top of the boiler. The exhaust vent connection is in the center of the top of the boiler.

The boiler shall allow three types of vent configurations:

**Direct Vent** - Shall be done as a balanced vent system only. Direct vents may run horizontally or vertically, but both the intake and exhaust must terminate out of the same side of building (sidewall or roof).

**Unbalanced Direct Vent** – These installations must always be installed with the intake running and terminating in the horizontal (sidewall) position and the exhaust running and terminating in the vertical (roof) position.

**Indoor Combustion Air from a Confined or Unconfined Space** – Intake combustion air is drawn either from the mechanical room or from outdoors through ducts or louvers. The exhaust always runs and terminates vertically through the roof.

**CAUTION: Foam core pipe is not approved material for either the intake or exhaust piping.**

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

The combustion chamber will be designed to drain condensation to a collection container which includes a clean-out cap for periodic maintenance. A condensate overflow switch shall be included to protect the heat exchanger from damage if condensate backs up.

The boiler shall comply with the NOx emissions limit set forth in SCAQMD Rule 1146.2. The manufacture shall verify through third party the proper operation of the burner and boiler emission levels.

The boiler shall operate at high elevations without additional parts. However, adjustments to the combustion system may be required at any of elevation to ensure proper operation of the boiler. See installation manual for combustion system settings details.

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.

Maximum unit dimensions shall be: Depth 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 your Authority Having Jurisdiction (AHJ) to determine 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.