identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

*Btu/h or Btu/hr* means British thermal units per hour.

**Combustion efficiency** for a commercial packaged boiler is determined using test procedures prescribed under §431.86 and is equal to 100 percent minus percent flue loss (percent flue loss is based on input fuel energy).

**Commercial packaged boiler** means a type of packaged low pressure boiler that is industrial equipment with a capacity (rated maximum input) of 300,000 Btu per hour (Btu/hr) or more which, to any significant extent, is distributed in commerce:

(1) For heating or space conditioning applications in buildings; or
(2) For service water heating in buildings but does not meet the definition of “hot water supply boiler” in this part.

**Condensing boiler** means a commercial packaged boiler that condenses part of the water vapor in the flue gases, and that includes a means of collecting and draining this condensate from its heat exchanger section.

**Flue condensate** means liquid formed by the condensation of moisture in the flue gases.

**Manufacturer of a commercial packaged boiler** means any person who manufactures, produces, assembles or imports such a boiler, including any person who:

(1) Manufactures, produces, assembles or imports a commercial packaged boiler in its entirety;
(2) Manufactures, produces, assembles or imports a commercial packaged boiler in part, and specifies or approves the boiler’s components, including burners or other components produced by others, as for example by specifying such components in a catalogue by make and model number or parts number; or
(3) Is any vendor or installer who sells a commercial packaged boiler that consists of a combination of components that is not specified or approved by a person described in paragraph (1) or (2) of this definition.

**Packaged boiler** means a boiler that is shipped complete with heating equipment, mechanical draft equipment and automatic controls; usually shipped in one or more sections and does not include a boiler that is custom designed and field constructed. If the boiler is shipped in more than one section, the sections may be produced by more than one manufacturer, and may be originated or shipped at different times and from more than one location.

**Packaged high pressure boiler** means a packaged boiler that is:

(1) A steam boiler designed to operate at a steam pressure higher than 15 psig; or
(2) A hot water boiler designed to operate at a water pressure above 160 psig or at a water temperature exceeding 250 °F, or both; or
(3) A boiler that is designed to be capable of supplying either steam or hot water, and designed to operate under the conditions in paragraphs (1) and (2) of this definition.

**Packaged low pressure boiler** means a packaged boiler that is:

(1) A steam boiler designed to operate at or below a steam pressure of 15 psig; or
(2) A hot water boiler designed to operate at or below a water pressure of 160 psig and a temperature of 250 °F; or
(3) A boiler that is designed to be capable of supplying either steam or hot water, and designed to operate under the conditions in paragraphs (1) and (2) of this definition.

**Thermal efficiency** for a commercial packaged boiler is determined using test procedures prescribed under §431.86 and is the ratio of the heat absorbed by the water or the water and steam to the higher heating value in the fuel burned.


**Test Procedures**

§ 431.85 Materials incorporated by reference.

(a) General. We incorporate by reference the following standards into subpart B of part 431. The material listed has been approved for incorporation by reference by the Director of the
§ 431.86 Uniform test method for the measurement of energy efficiency of commercial packaged boilers.

(a) Scope. This section provides test procedures that must be followed for measuring, pursuant to EPCA, the steady state combustion efficiency and thermal efficiency of a gas-fired or oil-fired commercial packaged boiler. These test procedures apply to packaged low pressure boilers that have rated input capacities of 300,000 Btu/h or more and are "commercial packaged boilers," but do not apply under EPCA to "packaged high pressure boilers."

(b) Definitions. For purposes of this section, the Department incorporates by reference the definitions specified in Section 3.0 of the HI BTS–2000, Rev 06.07 (incorporated by reference, see § 431.85), with the exception of the definitions for the terms "packaged boiler," "condensing boilers," and "packaged low pressure steam" and "hot water boiler."

(c) Test Method for Commercial Packaged Boilers—General. Follow the provisions in this paragraph (c) for all testing of packaged low pressure boilers that are commercial packaged boilers.

(1) Test Setup—(i) Classifications: If employing boiler classification, you must classify boilers as given in Section 4.0 of the HI BTS–2000, Rev 06.07 (incorporated by reference, see § 431.85).

(2) Instrumetns and Apparatus: (A) Follow the requirements for instruments and apparatus in sections 6 (Instruments) and 7 (Apparatus), of the HI BTS–2000 Testing Standard.