PROPANE
CLEAN AMERICAN ENERGY™

COMMERCIAL PROPANE APPLICATIONS:
BOILERS

FACT SHEET

Propane boilers offer value in commercial building applications by serving both space heating and hot water needs with high efficiency levels, reliable systems, and versatile designs.

PERFORMANCE

Commercial propane boilers are used to generate hot water or steam for various building applications. They can be categorized as either condensing or non-condensing types, with condensing units having higher efficiency ratings. In space heating applications, these boilers can work in conjunction with a number of heating delivery systems.

For hot water supply, propane boilers can provide high volumes of hot water for domestic consumption as well as related applications like laundry — typically with the same boiler that provides space heating. The ability to supply domestic hot water in addition to space heating makes propane boilers ideal candidates for commercial installations.

Propane boilers are available in a wide range of heating capacities to support many applications, with inputs reaching as high as 8,660,000 Btu/h. As seen in TABLE 1, propane offers both the smallest input and largest output rates when compared with heating oil boilers to suit different applications. Multiple boilers can also be banked together for larger system capacities, while also offering a redundant system design.

TABLE 1 COMMERCIAL BOILER SPECIFICATIONS FOR PROPANE, HEATING OIL

	MINIMUM RATING	MAXIMUM RATING
Propane Input (Btu/h)	100,000	8,660,000
Propane Output (Btu/h)	91,000	7,283,000
Heating Oil Input (Btu/h)	301,000	8,400,000
Heating Oil Output (Btu/h)	248,000	7,283,000

Note: Data for Commercial Boilers compiled from AHRI Directory of Certified Product Performance, March 2014.

ENERGY EFFICIENCY

Propane boilers have a range of efficiencies that work with many commercial building applications. Some propane boilers are Energy Star qualified and have AFUE ratings of 90 percent or greater, making them at least 11 percent more efficient than minimum efficiency models. Further, propane boilers qualifying for Energy Star's Most Efficient label — meaning an AFUE of 95 percent or greater — can save over 15 percent on energy costs over a minimum efficiency boiler.

APPLICATIONS FOR USE

- Restaurants
- Retail
- Education
- Hospitality
- Multifamily Buildings
- Hospitals

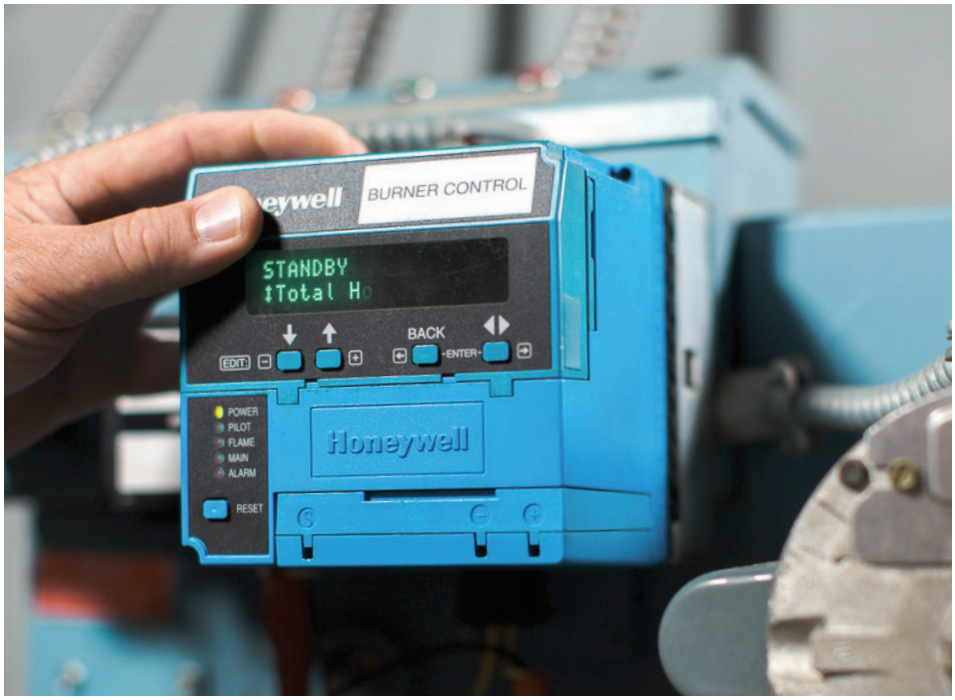
AT A GLANCE

- Used for both space heating and hot water applications.
- Capacity as high as 8,660,000 Btu/h input.
- Significantly more energy efficient and environmentally friendly compared with heating oil boilers.

ENERGY CONSUMPTION AND COSTS

In both new commercial buildings as well as retrofits, propane boilers can provide strong value. For example, in a recent retrofit of a YMCA in the Northeast United States, a high efficiency, propane-powered boiler system for both space heating and hot water purposes was installed, with an annual energy cost savings of roughly $23,500. With a first cost of approximately $120,000, the propane space/water heating system will completely pay for itself in about five years.

High efficiency propane boilers used for space heating and water heating systems may also qualify for a variety of federal, state, and utility credits or incentives. Rebates and incentives will reduce first costs and accelerate payback time frames. Visit the Database of State Incentives for Renewables & Efficiency (dsireusa.org) to see what incentives may apply.



ENVIRONMENTAL

High efficiency propane boiler systems deliver major environmental benefits compared with heating oil. Propane combustion is cleaner than heating oil, resulting in lower CO_2 emissions. For instance, the new combination space and water heating system at the YMCA project described above is keeping over 183,000 pounds of CO_2 from entering the atmosphere every year. In more tangible terms, this is like taking 17 cars off the road every year.

FOR MORE INFORMATION

To learn more about commercial boilers and the Propane Education & Research Council, visit **buildwithpropane.com**.

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The Propane Education & Research Council was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.

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