

High Efficiency Rooftop Units

Natural gas rooftop units are the most commonly used HVAC system for commercial buildings, specifically schools, restaurants, health care facilities, retail stores, small offices, public spaces, barracks, warehouses and correctional facilities. Natural gas rooftop units provide comfort and efficiency, offering:

- Fast morning warm-up and response times.
- Lower operating and maintenance costs.
- Longer equipment life than heat pump units.
- Easily maintainable and replaceable systems.



Conventional gas-fired rooftop heaters often have efficiency ratings between 78 and 82 percent. They are usually purchased with air conditioning units and provide both space heating and cooling in one system.

Heating capacities range from under 100,000 to over 500,000 BTU/hr¹. New technologies that employ modulating and condensing technology are now available.

Condensing gas rooftop units are the most energy efficient heaters available, with seasonal efficiencies between 89 and 97 percent². They include a secondary heat exchanger that extracts most of the heat remaining in the combustion by-products. Additional heat is captured from combustion exhaust gas, which is channelled through the secondary heat exchanger, where additional heat is extracted and released.

Time to Upgrade

Many commercial buildings are operating with old and inefficient HVAC systems. The average life expectancy of commercial HVAC equipment is 10 to 15 years—which means that many commercial buildings are ready for new natural gas rooftop units.

Technology improvements and demand have led to greater energy efficiency and more choices in systems. When purchasing a natural gas rooftop unit, make sure to consider the key components to any rooftop unit installation: sizing requirements and specific building needs. When installing HVAC equipment, it is important to contact a licensed contractor. Consider hiring a commissioning agent to guarantee your system is working at its optimal performance level. For information on commissioning providers, visit the Building Commissioning Association's website³.

When purchasing a rooftop unit, avoid choosing one that is significantly larger than needed. A system of the appropriate size will perform more efficiently than one that is too big. Look for systems that offer economizers, flexible flow positions and programmable controls to improve efficiency and cut costs. In addition, testing and balancing your air distribution system will save you even more money.

More Good News about Natural Gas Rooftop Units

In the Consortium for Energy Efficiency's (CEE) 2007 summer newsletter, CEE Natural Gas Program Manager Michelle Rosier said, "CEE's Natural Gas Committee is exploring

¹ www.uniongas.com

² www.uniongas.com

³ www.bcxa.org

opportunities for increased gas efficiency on the heating side of these units. For retailers to realize the full potential of energy savings in single package rooftop units, the next frontier is gas heating efficiency”⁴.

CEE is also highlighting work by national retail giant Wal-Mart, who has teamed up with Lennox International to install in their stores high-efficiency HVAC systems that include gas/electric single package rooftop units. The units feature efficiencies above 12.0 EER, as well as advanced airflow operation. The gas heating side of these units uses standard technologies, with performance levels of approximately 80 percent AFUE. “Most of the large retailers we work with purchase a tremendous amount of equipment and use an enormous amount of energy,” explains Mike Walker, Strategic Global Accounts Manager for Lennox International. “As a result, they are hungry to install energy-efficient products and lower their energy expenditures. Any help that CEE can provide to justify the business case for using energy-efficient products is extremely beneficial.”

Commercial Natural Gas Rooftop Unit Manufacturers

- Carrier Corp. www.global.carrier.com
- Goodman Manufacturing www.goodmanmfg.com
- Lennox Industries www.lennox.com
- Rheem www.rheem.com
- Trane Co. www.trane.com
- York International www.york.com

Additional Natural Gas Rooftop Unit Resources

- Energy Solutions Center www.energysolutionscenter.org
- Consortium for Energy Efficiency www.cee1.org
- U.S. DOE’s Federal Energy Management Program www1.eere.energy.gov/femp
- Gas Appliances Manufacturers Association (GAMA) www.gamanet.org

⁴ www.cee1.org