



More heat, less energy

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Department of Energy Confirms Ultra-High Energy Efficiency of Cambridge Engineering

*Report Demonstrates Significant Savings in Direct Comparison
Between SA-Series HTHV Direct Gas-Fired Heaters and Standard Unit Heaters*

ST. LOUIS, November 17, 2014 – A report recently published by the U.S. Department of Energy (DOE) demonstrates significant energy savings in a field study comparison between Cambridge Engineering's SA-Series HTHV direct gas-fired heaters and standard unit heaters.

Commissioned by the Better Buildings Alliance (BBA), a DOE effort to promote energy efficiency for commercial buildings through collaboration with building owners, operators, and managers, the report seeks to encourage commercial building professionals to consider a more intelligent strategy for non-centralized space heating and evaluate the energy and cost savings they can experience with their climate, operations, and building design. With more than 200 members from both the public and private sectors controlling over 10 billion square feet of commercial building space, the BBA seeks to develop and deploy innovative, cost-effective, energy-saving solutions that lead towards a goal of 20% more efficient commercial buildings by 2020.

According to the DOE, unit heaters represent a major consumption of energy nationally, accounting for almost 18% of commercial space heating energy use, specifically in commercial and industrial areas like warehouses, loading docks, production areas, etc. “Commercial building owners know the pain of paying their monthly heating bills,” notes Randy Niederer, Director of Marketing for Cambridge Engineering. “With low efficiencies, significant stratification issues, and challenges in even air distribution throughout the building, owners and operators of buildings with unit heaters can find that pain to be significant.” The DOE report demonstrated that Cambridge SA-Series HTHV ultra-high efficiency gas heaters provided a 20% gas savings compared to a conventional gas heater “and could produce substantial energy savings if widely adopted.” As stated in the DOE’s report, “In addition to space heating savings, by bringing in 100% outside air, the technology could also satisfy minimum ventilation requirements for high-performance buildings”. While not the focus of this demonstration, previous studies have shown the savings increase dramatically when utilizing the system for both ventilation and heating purposes.

“Of course we’re pleased with the DOE’s findings, but hardly surprised,” adds Niederer. “While this baseline comparison demonstrates a *minimum* of 20% less natural gas used than conventional unit heaters it’s important to note that other Cambridge innovations such as automated, ‘smart’ controls, optional year-round ventilation modes and the most efficient burner technology on the market can lead to 40%-70% energy savings over both unit heaters and traditional boiler heating systems. And, because this is a weatherized system there is tremendous installation flexibility as to where and how the equipment can be installed.”

Department of Energy Confirms Ultra-High Energy Efficiency of Cambridge Engineering (Cont'd)

The field study was conducted in a 41,667 square foot warehouse and made direct comparison between four new Cambridge SA-250 HTHV direct gas-fired heaters and six existing gravity-vent unit heaters. Forty-five monitoring points were used including temperature at ground (5ft.) and ceiling (20ft.) heights, runtimes of newly installed Cambridge heaters and existing unit heaters, thermostat set-points, and operation of loading doors and ceiling lighting within the heated space. Additional data sources considered include natural gas utility bills and supply temperatures over a four-year span, annual heating degree day information from the National Weather Service (both 2013-2014 season and historical averages), the building's operating hours and surveys of the occupants regarding comfort, and indoor air quality.

The report concludes that significant savings are achieved with Cambridge SA-Series HTHV heaters in thermal efficiency (>90% compared to 78%-82% with unit heaters), seasonal efficiency (90% compared to 63-80% with unit heaters), and reduced temperature stratification between the floor and ceiling. By installing Cambridge equipment, the warehouse achieved an estimated cost savings of \$965 for an average heating season. Additional energy savings can be realized with Cambridge heaters due to their higher overall heat output (160° F, double that of unit heaters), improved temperature control, and reduced infiltration. To this last point, the study notes that because Cambridge space heaters use 100% outside air "the additional air creates a slight pressurization within the building and limits the effect of infiltration through building seams, cracks, etc." Because of this the HTHV direct-fired gas heater provides the necessary ventilation airflow while efficiently heating the space, reducing the infiltration saves energy.

The U.S. Department of Energy's full report can be viewed here

<http://energy.gov/eere/buildings/downloads/field-demonstration-high-efficiency-gas-heaters>.

About Cambridge Engineering, Inc:

Established in 1963, [Cambridge Engineering](#) is the leading manufacturer of energy-efficient Blow-Thru® direct gas-fired space heaters that save energy, reduce operating costs and safely improve indoor air quality for commercial and industrial facilities. More than one billion square feet of buildings are safely and efficiently heated with Cambridge space heaters. Cambridge supports building owners and managers in North America with factory trained mechanical contractors, sales representatives, and service technicians. For more information, visit cambridge-eng.com or call 800-899-1989.

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