

Hallowell International, a veteran owned business in Bangor, Maine is pleased to present the Acadia Combined Heating and Cooling System. This American made, innovative new product has pushed the boundaries of residential split system air source heat pump products, offers efficient heating operation down to -30°F, and boasts an HSPF of 9.6 for ARI region IV. The Acadia is simply an air source heat pump using standard off the shelf components. The performance stems from its patented vapor cycle technology known as Boosted Compression™. This unique cycle allows for the elimination of expensive resistance heating elements or fossil fuel furnaces to maintain comfort in homes by replacing them with an efficient and effective refrigeration cycle. The end result is an affordable system that delivers geothermal performance and comfort, at a fraction of the installation cost, from an air source heat pump designed for use in cold climates.

Developed from the inside out by veteran compressor and refrigeration engineers, the Acadia has an industry leading 4 stages of heating capacity and 2 stages of cooling. The system maintains 100% of its nominal capacity at 0°F at a 2.2 COP and retains 60% of nominal capacity at -30°F maintaining a 1.9 COP. Also designed for 60% fewer defrosts and higher delivery air temperatures than conventional high efficiency air source systems, the Acadia is more comfortable than any other air source heat pump commercially available today.

The Acadia has earned acclaims like the AHR Innovation Award for heating in 2008 and the 2007 Dealer Design Award for ease of service and installation amongst the contracting and HVAC industries. Such awards have earned this system much interest and support from the electric utility industry as an economical competitor to fossil fuels in the northern U.S. and Canada. Extensive research programs through organizations like the National Rural Electric Cooperative Association have shown verified performance. The Acadia system has been shown to reduce utility peak loads by over 30% in the heating season which reduces the electricity that must be purchased when generation limits are exceeded by consumption.

The Acadia systems have been selected for use in 2,700 military homes at United Communities Fort Dix and McGuire Air Force Base in New Jersey. The systems were selected to move United Communities away from fossil fuels and expensive geothermal systems. The typical United Communities home using an Acadia system for heating and cooling uses 7,793 kWh annually compared to 11,329 by a 14 SEER heat pump; a reduction of 31%. The full 2,700 home community could use 9,547,200 fewer kWh annually when complete. Couple these savings with the thousands of Acadia systems sold throughout the U.S. and Canada and the energy savings are tremendous.

The current efficiency of the North American electric grid is 31% delivered. 69% of the energy used to produce electricity is lost. The Acadia's 2.81 Seasonal COP essentially brings the grid efficiency up to 87% as the Acadia delivers more energy as heat than it consumes in electricity. The Carnot Efficiency Limit of heating a room from 0°F to 70°F is 7.566 units of energy delivered for 1 energy unit consumed. This is a COP of 7.566. The Acadia COP at 0°F is 2.21, 29% of the theoretical limit. Looking to the future and the forthcoming second generation Acadia this COP at 0°F will increase to 2.8, 37% of the theoretical limit. As conventional technologies continue to improve, so will the Acadia. The Acadia will always deliver incredible performance without pushing the boundaries of commercially supported components making this system attainable to a broad market looking for alternatives to fossil fuel and expensive resistance heat.