



**For Immediate Release**

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**Carrier Moves the Frontier on Efficiency**

CHARLOTTE, N.C., July 17, 2008 — Carrier Corp., a unit of United Technologies Corp. (NYSE:UTX), reached another frontier by demonstrating that it has improved chiller plant efficiency by more than 10 percent when compared with high-efficiency variable speed centrifugal alternatives. Already the lowest life-cycle cost chiller, the Evergreen<sup>®</sup> 23XRV with Foxfire<sup>™</sup> compression technology and HFC 134a non-ozone depleting refrigerant in series counter flow provides the highest efficiency as measured by Air-Conditioning and Refrigeration Institute (ARI) test standards.

Carrier demonstrated the efficiency breakthrough in its Charlotte, N.C., manufacturing facility at a laboratory demonstration event attended by more than 100 commercial customers from around the world. The theories presented were modeled with Carrier's Hourly Analysis Program (HAP) energy simulation tool and put to the test in Carrier's ARI-certified test laboratory. The full-load and part-load efficiencies recorded were 22 percent and 47 percent better than current ASHRAE 90.1 efficiency standards. Buildings utilizing the variable speed screw



chillers in series counter flow could qualify for (2) Leadership in Energy and Environment Design (LEED) points in the Energy and Atmosphere section.

Consulting engineers, building owners and contractors witnessed two Evergreen<sup>®</sup> 23XRV chillers with Foxfire<sup>™</sup> compression technology operating in a series counter flow arrangement at full-load efficiency of 0.500 kW/Ton.

Conditions were 44°F/60°F chilled water with variable evaporator flow and 85°F/3.0 gpm per ton for the condenser. After the test point was recorded, the entering condenser water temperature was raised to 95°F at the 30 percent load point so customers could observe the wide, flexible operating range of the 23XRV chiller.

“The 23XRV was already the lowest life cycle cost chiller,” said Scott McDonough, product manager, Carrier. “Now the new series counter flow system design leverages the inherent advantages of the 23XRV variable speed screw chiller for even greater efficiency. On top of this, we were thrilled to demonstrate that the same chillers that operated at 0.500 kW/ton could also be operated at extremely demanding conditions (95°F entering condenser water temperature). This is well beyond the capabilities of most other chillers and is truly a ‘no compromises’ solution for owners.”

Tom Franaszek, product business manager, added, “We are pleased that we achieved rock solid operation with extreme flexibility without compromising efficiency. The Evergreen 23XRV chillers with Foxfire compression technology in series counter flow improved the chiller plant efficiency (chillers, pumps and towers) by 11 percent over high efficiency variable speed centrifugal alternatives.



And, this application of the Evergreen 23XRV with Foxfire compression technology supports LEED® certification.”

An air-side design featuring chilled beams and dedicated outside air units was also presented. The air-side design allowed for separation of latent and sensible cooling significantly reducing cfm requirements and fan energy. Combining decoupled direct outside air system (DOAS) with active chilled beams helped the series counter-flow chiller plant achieve higher efficiency through higher chilled water delta-t and reduced chiller lift.

“For these applications, higher chilled water delta-t not only increases chiller plant efficiency but also allows lower pump energy. These benefits come together nicely for commercial building projects that seek to increase the number of LEED certification points,” stated Brian Key, P.E., LEED-AP, product and systems engineer.

The event wrapped up with a demonstration on how Carrier I-Vu® controls can monitor and trend HVAC performance to ensure the system is achieving optimal performance.

For further information on Carrier products and services, go to [www.carrier.com](http://www.carrier.com) .

### **About Carrier Corp.**

Carrier Corp., headquartered in Farmington, Conn., is the world’s largest provider of heating, air-conditioning and refrigeration solutions. With 2007 revenues of \$14.6 billion, Carrier has approximately 43,000 employees worldwide and operations in more than 170 countries. Carrier is part of United Technologies Corp., a Hartford, Connecticut-based provider of products and services to the aerospace and building systems industries worldwide. Visit [www.carrier.com](http://www.carrier.com) for more information.

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