Data center cooling system exceeds ASHRAE 90.1 minimum efficiency by 52 percent

Emerson Network Power introduced the Liebert DSE, the industry's most efficient room-based precision cooling system. The product currently is shipping to select customers in North America, with full production release for all global regions for mid-2012.

Designed specifically for medium to large data centers, the Liebert DSE is a higher efficiency, downflow-only version of the Liebert DS precision cooling system that provides a nominal 125 kW of net sensible cooling. With an energy-efficient SCOP (seasonal coefficient of performance) rating of 2.9, the Liebert DSE is 52 percent more efficient than the ASHRAE 90.1 (2010) minimum requirement of 1.9 for data center cooling units. It also incorporates an optional new-to-the-world "free cooling" technology feature, EconoPhase™. At full capacity, it is 114 percent more efficient than an air economizer, and mitigates the operational limitations or concerns commonly associated with air economizer technologies.

The Liebert DSE's integrated free cooling uses the same refrigerant circuit, coils and condenser in both economizer and non-economizer modes. This air-cooled system employs a two-phase refrigerant versus a traditional single-phase economizer solution, resulting in a simple and efficient cooling system that maximizes the hours available to use reliable free cooling. The Liebert DSE also uses the new Liebert condenser platform, the Liebert MC, that features an innovative micro-channel cooling coil design, EC (electronically commutated) axial fans and an ability to communicate with the indoor unit to optimize total system efficiency.

"The EconoPhase economizer is like no other in the industry. It is derived from knowledge and experience gained with our innovative Liebert XD system introduced in 2003," said Steve Madara, VP/general manager of Emerson Network Power's Liebert global precision cooling business. "Pairing the Liebert DSE with the new EconoPhase pumped refrigerant economizer creates the industry's most energy efficient room-based precision cooling unit, while providing a highly sustainable cooling solution that avoids introducing direct outside air or complex mechanical economizer transitions."

This solution provides improved total cost of ownership (TCO) over alternative economizer solutions such as:

· Outside air economizers

· Air-to-air heat exchangers

· Chilled water fluid economizers

· Glycol system fluid economizers

The Liebert DSE offers substantial energy savings at both full load and partial load conditions. Along with the EconoPhase economizer, the Liebert DSE incorporates several technologies that improve its overall energy efficiency. They include:

Copeland tandem digital scroll compressors optimize part-load energy savings. Electronic expansion valves enable operation at lower condensing temperatures, reducing compressor power and improving efficiency during lower ambient conditions and partial loads.

Variable speed, EC plug fans in the unit or under the floor automatically adjust unit air flows to match the IT server demands, improving air efficiency and reducing total system power consumption at full speed while following the fan affinity laws to save over 50 percent of the fan energy when the air flow requirement is only 80 percent.

Staged evaporator coils provide greater efficiency by enhancing the ability to enable partial free cooling especially with higher return air temperatures.

The Liebert DSE also features the Liebert iCOM control system, which provides advanced diagnostic and maintenance support while optimizing the various modes of operation to save energy. With intelligent control capabilities, data center managers can tune their cooling systems to dynamically adjust airflow patterns by controlling the speed of the EC (electronically commutated) plug fans to allow cooling unit capacities to adapt quickly to changing IT loads.

The Liebert DSE provides customers with the ability to have the most efficient data center design utilizing a modular building block approach allowing them to build out their mechanical infrastructure only as it is required thus saving both capital costs and operating costs.

For more information on the Liebert DSE data center cooling solution, or any other technologies and services from Emerson Network Power, visit www.Liebert.com [1].

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[1] http://www.Liebert.com