

Nominee: Emerson Network Power

Nomination title: Liebert® EFC: the Highly Efficient Indirect Evaporative Freecooling Solution Enhancing Data Center Efficiency

The Liebert EFC is an indirect evaporative freecooling unit equipped with the most advanced industry technology. The system includes indirect air-to-air heat exchange and evaporative cooling technology all in one footprint. The Liebert EFC is capable of reducing air temperatures by leveraging on the evaporative cooling principle. The process involves the evaporation of pressurized water which as a consequence cools the surrounding air. Through this technology, the Liebert EFC can thus achieve pPUE levels of 1.03 ensuring top energy efficiency, as well as minimized operating costs.

The unit has been specifically designed to select the most appropriate operating mode based on the external environment conditions, leveraging both the evaporative and freecooling principles in order to deliver significant energy savings. The use of the evaporative cooling, allows freecooling operation to be maximized and compressor-related cooling to be reduced to a minimum, thus optimizing operating costs even further.

Moreover, its innovative iCOM™ Control exploits the function of a single unit operation as well as multiple units working together (teamwork mode). This is extremely important to maximize energy efficiency within a data center environment. In addition to teamwork, the user-friendly 7" touch screen iCOM Control also exploits the management of energy and water. The system collects information from the different units' key parameters and operating modes while taking into account water and electricity costs. The control predictively calculates and then implements the combination, which optimizes operating costs.

In addition to this, LIFE, a remote diagnostics and preventive monitoring service, delivers increased uptime and operational efficiency by enabling continuous monitoring of customers' equipment, combined with expert data analysis and field engineering expertise.

The Liebert EFC, moreover, guarantees cooling continuity even in case of water outages while the direct expansion or chilled water integration match the cooling requirement also at the highest peak design conditions in terms of temperature and humidity.

The Ultracapacitor option, on the other hand, keeps the control always active, even during power outages thus guaranteeing the customer's peace of mind.

One of Liebert EFC key differentiator can be found in its state-of-the-art iCOM™ Control which guarantees water management and energy optimization both at unit and teamwork level.

The user friendly iCOM Control collects information from the different units' key parameters and operating modes (dry, wet and DX/CW) while taking into account water and electricity costs. This allows the control to predictively calculate and then implement the combination which optimizes operating costs.

The Liebert® EFC also offers a constant control of data center air via its integrated control logic, ensuring dew point temperature is lower than heat exchanger surface temperature, thus avoiding unrequired dehumidification which may take place especially during extreme winter operation (i.e. temperatures <-20°C) where the unit's unrequired internal dehumidification can cause it to exceed ASHRAE recommended minimum humidity levels.

The SmartAisle™ control logic, moreover, optimizes internal air volumes and temperatures according to specific server needs. SmartAisle logic allows Liebert EFC to exactly match the servers' airflow needs, ensuring that not even a single Watt is wasted in moving or cooling unrequired air.

Another key differentiator can be found in our Thermal Management Customer Experience Center which features a dedicated area to test the state-of-the-art Liebert® EFC indirect evaporative freecooling unit. The scope of the Evaporative Customer Validation Area is to provide customers, consultants and data center specialists with the most complete testing area to experience the capabilities of our evaporative technology at peak conditions. Testing parameters include IT loads up to 400 kW an airflow of up to 100,000 m³ per hour at any external ambient temperature required to simulate typical peak conditions across EMEA region.

All our measuring tools are periodically tested to adhere to the current international quality procedure ISO9001. This guarantees that all our measurements are in line with the metrological laboratories' standards (Accredia/EA/ILAC) and that our equipment precision level is also compliant with the European EN14511 standard.

Every customer visit is accompanied by a complete final report which includes each and every tested parameter as well as the relevant outputs for the specific Thermal Management unit validated. With our constant focus on our customers' needs, we guide them through a first-hand experience with full transparency and flexibility enabling them to achieve the highest standards of technical excellence.

Emerson Network Power also takes meticulous effort to identify the actual customer needs and, most importantly, the future needs and technology trends. This has allowed it to ensure appropriate product development and guarantee that it truly satisfies its customers' needs. It does not stop at offering a competitive product but also provides its customers with thorough support on the best tailor-made unit selection. Emerson Network Power also provides commissioning and service facilities with predictive maintenance through remote monitoring. It supports the entire critical infrastructure and enhances the network availability with the largest global service organization.

Emerson Network Power processes are regulated by the current international standard ISO9001, which includes the following phases: design, production, service, and product review. The company's product life cycle phase follows 2 processes, an internal procedure, known as the New Product Development Process, and an external one, known as ECAM. The former one is divided into 8 phases and 8 gates, where in order to move from 1 gate to another, the approval of the 1st step is necessary. The latter process, on the other hand, involves a 3rd-party entity that annually examines a project and provides it with the indications to improve the product under examination.

Why nominee should win

- The Liebert EFC delivers substantial reductions and savings in terms of electrical infrastructure and equipment. With the unit being installed externally, the available internal white space is maximized ensuring ease of system installation. All of these features significantly reduce data center TCO.
- To guarantee ASHRAE recommended guidelines, provide precise temperature and airflow control and to optimize water and electricity costs.
- Emerson Network Power's Thermal Management division has an extensive industry-leading product portfolio, covering any customer needs in terms of efficiency and energy

savings. It covers the entire application, with products that match and exceed customer expectation.

- To conclude, Emerson Network Power's global network ensures that industry expertise, technology, and resources are made globally available to address our customers' growing business challenges. With over 3,500 service professionals, Emerson Network Power offers customer support 24/7 anywhere in the world.