

# LIEBERT® INDIRECT EVAPORATIVE FREECOOLING UNIT

What's Cool in the Data Center



## BENEFITS

### Highly Efficient

- Mechanical PUE less than 1.2
- Low cost per kW without outside air
- Balanced capacity utilization and efficiency

### Greater Protection

- No outside air required for economization
- Anti-corrosion and anti-scale coatings on heat exchanger
- Advanced monitoring and event notification
- Finely tuned controls for more consistent unit supply air temperature and minimized swings across component ranges

### Lower Installation & Maintenance Costs

- Extended dry mode range
- Less water usage and treatment
- Downsized electrical infrastructure
- Controls require little if any customization

### Insight for Action

- Simplified access to real-time data and trending
- Faster and easier system diagnostics

## More efficiency. More choices. More experience.



Liebert Indirect Evaporative Freecooling Units deployed at Green House Data, Cheyenne, WY

### Custom Air Handling Units

Our mission-critical air handlers with Liebert® ICOM™ controls deliver efficient, reliable and cost-effective management of heat in large data centers.

We offer the largest selection of air handling solutions, combined with the expert guidance to help you select, implement and maintain the right technology to ensure **delivered performance for the lifetime of your data center.**

### Liebert Indirect Evaporative Freecooling Air Handlers

The Liebert Indirect Evaporative Freecooling AHU is the industry's most advanced indirect evaporative cooling system, delivering maximum thermal control and optimization. It features our highly efficient epoxy-coated aluminum air-to-air heat exchanger.

**More Economical.** The system uses much less water than traditional indirect evaporative cooling because our heat exchanger is more effective at dry heat exchange, and allows us to turn on the water only at much higher temperatures. And it uses far less peak power than heat wheels because of the evaporative cooling effect of water.

**Intelligent Controls.** The Indirect Evaporative Freecooling Unit features integrated Liebert ICOM unit controls to maximize data center protection, efficiency and insight. Liebert ICOM controls prevent over-cooling and under-cooling by self-optimizing thermal system operations through machine-to-machine communications and advanced algorithms.

**Local Service and Support.** All of our solutions are backed by local customer engineers with decades of data center experience and a network of factory-trained service technicians.

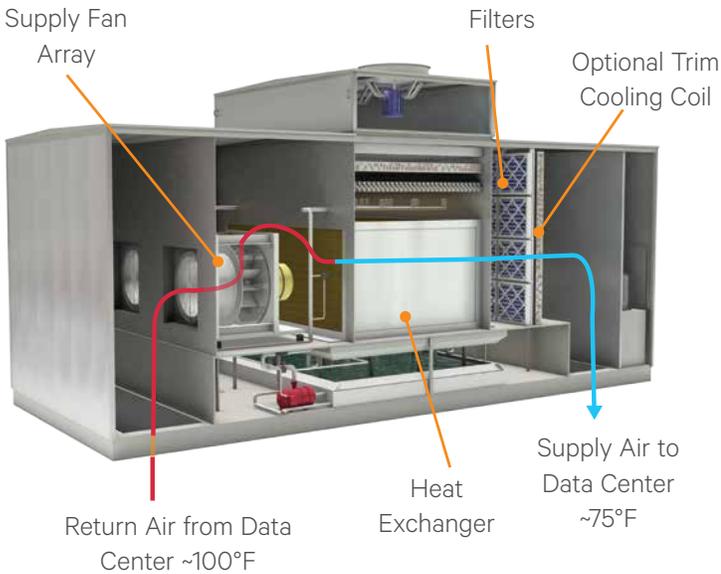
### Key Attributes

- High efficiency systems with mechanical PUE < 1.2
- Downsized electrical infrastructure
- No outside air required for economizing

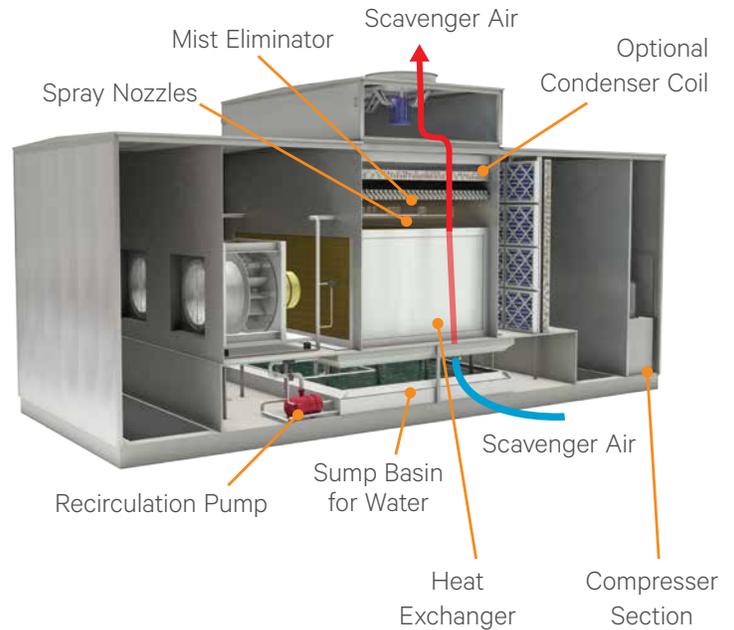
### Typical Deployments

- Large units deployed around the building perimeter or on the roof
- Full containment system with elevated supply and return temperatures for greatest efficiency

**Data Center Air Stream**



**Outdoor Air Stream**



**Industry-Leading Efficiency**

The Liebert® Indirect Evaporative Freecooling Unit achieves higher efficiency through economization without the risks of bringing outside air into the data center. During the majority of annual operating hours cooling of data center air is done by transferring heat to the scavenger air stream while passing through a coated aluminum heat exchanger. As ambient conditions increase to temperatures above ~60°F dry bulb the unit cools the scavenger air through use of the evaporative cooling effect of water to provide increased cooling capacity without the use of compressors. During exceptionally hot ambient conditions the supplemental trim cooling system will engage to provide additional cooling capacity.

This unit offers several significant advantages for large data center designs. The evaporative cooling effect offers a significantly lower peak power consumption compared to other large thermal management system. The exceptional dry mode effectiveness of the epoxy-coated aluminum heat exchanger reduces water usage and allows flexibility in operating modes to prioritize reduced water consumption, reduced power consumption, or a combination of both.