

## Liebert® Energy Efficient Cooling Solutions

Enable Data Centers To Meet Energy Mandates.

Depending on your data center's design, cooling costs could be taking a big bite out of your budget. Professionals the world over are implementing energy efficient Liebert technologies to conserve energy, without sacrificing quality and reliability.

Liebert cooling technologies from Emerson Network Power are **ideal for energy improvement renovations or new builds** across most any federal contract vehicles supporting DoD or civilian agencies. No matter how your facility is designed, there is an ideal Liebert cooling solution available.

### For Base Room Or Row Direct Expansion Packaged Cooling Without A Central Building Chiller

- **Liebert DSE™** - combines the industry's highest efficiency operation with maximum reliability. Ensures your data center meets and beats ASHRAE standards. The Liebert DSE air cooled model can utilize the EconoPhase pumped refrigerant economizer. This economizer provides one of the simplest, most effective cooling solutions available while leveraging the robust Liebert iCOM™ controls.



- **Liebert CRV™ Row-Based Cooling** - the Liebert CRV is the most energy efficient row-based cooling solution on the market (compared to equal sized units). You can monitor and control up to 10 racks from one cooling unit to ensure optimum efficiency, flexibility and IT performance. Liebert CRV is available in multiple capacities and configurations. 600mm wide: 20kW or 35kW air or water/glycol based, or 40kW chilled water-based cooling units; 300mm wide: 30kW chilled water unit.



- **Liebert DS™ Room Based Cooling** - these units feature advanced Liebert iCOM controls for robust, intelligent performance. Variable Speed Drives allow load-matching performance which in return can save significant energy cost per unit. Digital scroll technology allows for compressor cycling only when needed, to eliminate wasted performance.



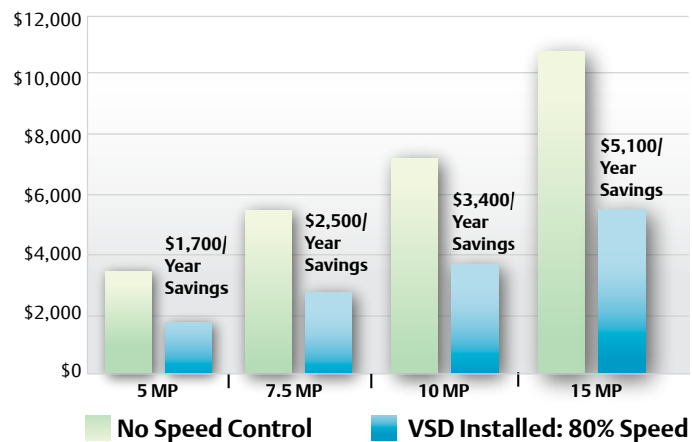
## More Energy Efficient Cooling Solutions To Serve Your Needs

### For Data Centers Utilizing a Central Building Chilled Water Supply

- Retrofit Your Existing Liebert Deluxe System/3 Chilled Water System:**

Installing a Variable Speed Drive can reduce energy consumption by 65% at 80% speed. The system can pay for itself in less than 12 months.

Annual Energy Cost to Run Unit (\$0.10/kWh)



- Install New Liebert® CW™ Systems**

into new builds and benefit from the high-capacity cooling and efficient design that includes the latest in EC plug fans on downflow models, or Variable Speed Drive motors on centrifugal fans in upflow or downflow configurations. Energy cost savings can provide an ROI of 12 months or less.



### For High Heat Density Applications

#### High Density Cooling Options for Any Room Configuration

Liebert XD™ systems can be installed on the top of the rack, suspended from the ceiling, in the row, or as a rear door fanless heat exchanger. Combined with precision based cooling, these high density solutions can solve problem zones or be designed to cool entire high density data centers. This approach brings flexibility while lowering energy usage 30-50%.



Liebert XDR™ No Fans



Liebert XDH™



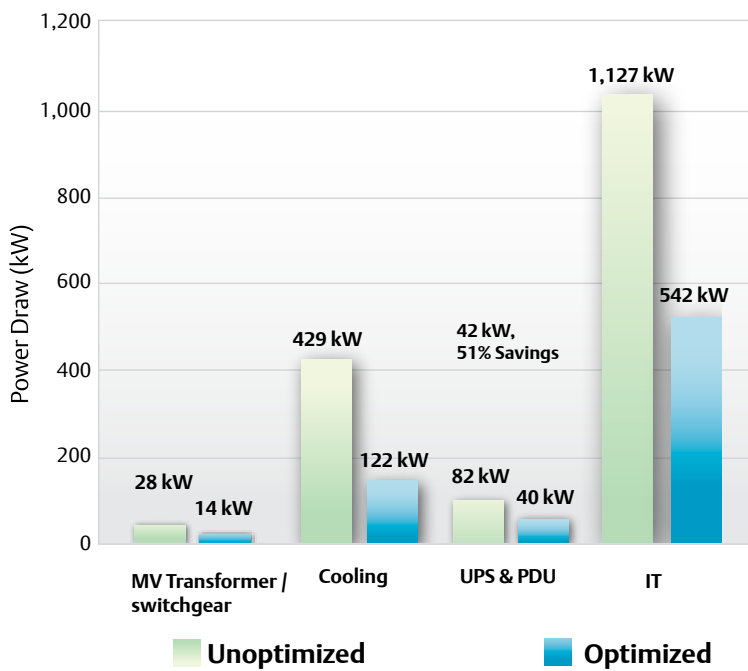
Liebert XDV™

## Logical Path to an Optimized Data Center

Emerson Network Power's Energy Logic™ operates as a roadmap that provides 10 strategies to improve overall data center efficiency. By focusing on root causes starting with the server, a cascading effect takes place that can improve the efficiency of the entire data center by up to 50%.

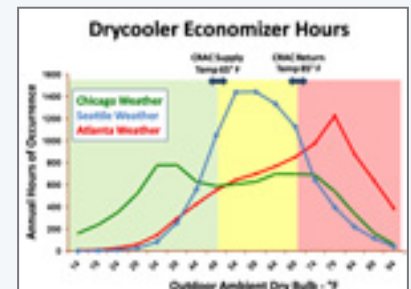
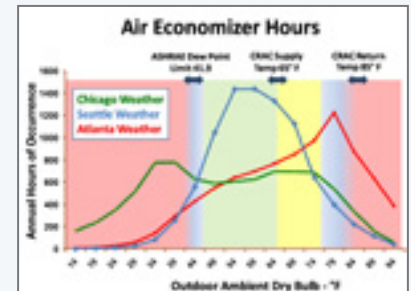
This approach has the added benefit of removing the three most critical constraints faced by data center managers today: power, cooling and space. In the model, the 10 Energy Logic strategies freed up two-thirds of floor space, one-third of UPS capacity and 40 percent of precision cooling capacity.

## Total Energy Logic Savings With All 10 Strategies Applied



Pick your starting place, then leverage one or all the recommendations. You will find a white paper on Energy Logic on our website at [www.liebert.com](http://www.liebert.com)

Emerson Network Power provides effective, efficient economizer solutions, from fluid-side to air-side and pumped refrigerant economization – Liebert technologies are also well suited to work with economization solutions from third-party providers.

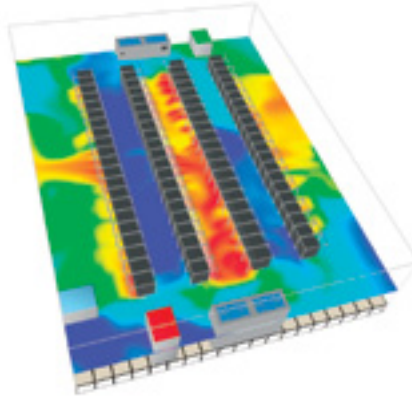


- No economizer
- Full economizer
- Partial economizer
- Potential dependant on dew point

## Need Help Getting Started?

A Data Center Assessment is often the first step in identifying areas of vulnerability or energy inefficiency. After analyzing your room, including thermal and electrical conditions, we'll arm you with detailed reports that clearly spell out the status with recommendations so you can effectively improve your operation's availability and energy performance.

Local experts are available to help you with any project.



## Optimize Your Data Center And Be Prepared For What's Next

Deploy new systems with assurance. Eliminate downtime, hot spots, rack/enclosure limitations and the inability to monitor critical systems while enhancing efficiencies.

- **Cloud computing:** The demand for flexible, dynamic, scalable computing that lowers costs, has at its heart - improved efficiency. Leverage our expertise with power and cooling solutions that deliver flexible capacity, high efficiency and reliable performance.
- **Virtualization:** The ability to improve IT utilization can reduce energy consumption as well. We'll help you manage density, capacity and availability, while optimizing efficiency.
- **Consolidation:** While creating larger operations to replace the multitude of smaller centers, improved efficiency and utilization usually follows. We have the higher capacity solutions you need
- **IP Telephony:** movement to VoIP needs more power, more cooling and an improved infrastructure. We have everything needed to ensure success.
- **Enhanced Security:** can mean opportunities to harden the data center. This often demands greater power protection, monitoring and uptime requirements.

**Rely on Emerson Network Power for answers when you need them. In addition to hundreds of local experts, our government experts are ready to help:**

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