

Protecting Our Information, Protecting Our Resources
Energy Efficient Power And Cooling For IT And Telecommunications Network Infrastructures



The Challenge You Face Is Clear: Use Less Energy

You realize the need to protect the reliability and security of the critical IT network and communications infrastructure that serves our nation.

Now energy efficiency must also be part of your systems availability strategy.

We Understand The Energy Issues You Are Facing Today

Emerson Network Power and Liebert are dedicated to designing the most energy efficient products possible — while maintaining the reliability that is an absolute necessity to protect mission-critical networks and systems. We recognize your need to meet new government mandates for increased energy efficiency and reduced environmental impact.

We are working closely with many of the major IT equipment manufacturers to provide more energy efficient solutions for data center operations. Liebert is committed to designing and manufacturing products that meet government requirements for energy usage and the need to provide critical system availability.



A Commitment To Energy Efficiency

For over 40 years, Emerson has been committed to developing energy efficient and environmentally friendly products. Since Liebert built the industry's first precision air conditioning unit in 1965, we have delivered a critical continuity platform to improve uptime while making our products more energy efficient.

Today, Emerson is an EnergyStar company. We are the only organization in the systems protection industry that has both a proven track record in systems support and an ability to provide the energy saving and environmentally sound solutions you demand.



A Recognized Need

There are new, more stringent requirements in place calling for government agencies to make more energy efficient choices in equipment purchases and facility operations. As a result, there is a need for federal buildings to be “green” — use less energy and become more environmentally friendly.

Our equipment meets the criteria to qualify for federal and state energy-saving incentive programs. This enables both public and private sector organizations to receive money back for installing energy efficient equipment.



The energy reduction requirements facing government agencies are substantial.

There are many industry standards and government requirements for energy and environmental concerns that must be met:

- The LEED (Leadership in Energy and Environmental Design) Green Building Rating System
- ENERGY STAR
- Title III of the Energy Conservation and Production Act (42 U.S.C. 6831 et seq.)
- ASHRAE Standards
- DoD “green procurement” policy (GPP)
- Executive Order 13148 (“Greening the Government Through Leadership in Environmental Management”)
- Executive Order 13123 (“Greening the Government Through Efficient Energy Management”)
- 2003 National Defense Authorization Act (Section 314)

What Can Liebert Do For You?

Facility Support Solutions That Truly Meet Today's Needs For Energy Efficiency



Power — AC & DC

Liebert uninterruptible power supply (UPS) and power distribution systems feature advanced energy efficiency features such as digital controls, IGBT-based power conversion components, transformerless operation and high efficiency ratings. The high efficiencies of our DC power equipment also reduce power consumption for lower operating costs.



Precision Air Conditioning

Liebert precision air conditioning systems feature a variety of energy efficiency features ranging from four-step and digital scroll compressors to high-efficiency condensers, low system energy efficiency rating (EER), green refrigerants, dual source cooling and lower blower speeds. We also offer high-efficiency supplemental cooling systems specifically designed to address the higher heat loads generated by a tightly packed electronic rack enclosures.



Monitoring

Emerson Network Power offers critical facility management software used for remote supervision of AC and DC UPS systems, power systems, climate systems, batteries, standby generators and energy-related products in any type of IT or telecommunications network.



Service

Preventive maintenance and testing techniques are used by Emerson service specialists to help keep critical power support equipment operating at the peak of efficiency.



We offer best of class products that also meet energy efficiency requirements. Liebert solutions cover the four main areas of critical infrastructure protection:

Energy saving innovations include:

- Digital signal processors (DSPs) and application specific integrated circuit (ASIC) technologies allow our UPS systems to use less energy during operation.
- Liebert UPS systems are designed for both partial and full load efficiencies.
- Our two-stage power distribution systems minimize energy loss and cable runs by moving the power closer to the equipment itself.
- Flywheel power storage systems that can decrease or eliminate a power system's dependence on storage batteries, lessening the environmental impact caused by disposing of spent batteries and reducing energy losses associated with battery charging.

Other energy saving features include:

- Energy saving innovations such as the Digital Scroll Compressor available in Liebert DS precision cooling systems.
- The innovative Liebert iCOM™ control system provides intelligent communications between multiple cooling units allowing them to work together as a single system to optimize operating and energy efficiency.
- Our Liebert XD™ System high heat density cooling solutions, which provide targeted cooling right at the rack level. They are more efficient and use far less floor space, allowing you to add more servers in the same space. The Liebert XD System can save more than 30 percent of the energy typically used to cool the data center.

Areas of energy savings include:

- Critical system monitoring technologies that help to maximize the most efficient operation of support systems — while always maintaining the critical needs for IT systems availability.
- Intelligent power-control systems ranging from individually monitored and controlled power strips at the rack level to managed UPS systems.
- Rack row/room level environmental monitoring for maximum operating efficiencies.

Proper service is key to maximizing energy savings:

- Energy efficiency requires proper maintenance of power and cooling systems.
- Data center power and cooling assessments can help plan better power usage strategies to help save energy without sacrificing availability.
- On-site audits include a complete evaluation of your critical power and cooling equipment, a thermal and/or electrical evaluation, plus specialized testing such as circuit and fuse coordination, harmonic analysis and system grounding verification.

Creating A More Energy Efficient Data Center

The message from government organizations such as the EPA is clear: **slowing the growth rate of electric power usage for the nation's data centers is now a top priority.** No organization in the critical systems protection business is more ready to meet this challenge than Liebert.



How We Are Working With Other Manufacturers

Emerson Network Power is working with a number of industry leading computer equipment manufacturers to develop more energy efficient ways to power and cool data center IT systems without sacrificing computing capacity.

Emerson Network Power is a member of The Green Grid, a non-profit consortium dedicated to advancing energy efficiency in data centers and business computing ecosystems. We are working closely with The Green Grid's many members to develop meaningful operating standards, measurement methods, processes and new technologies to improve energy efficient performance of global data centers.

Liebert also has involvement in a number of projects that are certified for the LEED program, a voluntary, consensus-based national standard for developing high-performance, sustainable buildings developed by the United States Green Building Council.

Creating State Of The Art Energy Efficiency For The Data Center

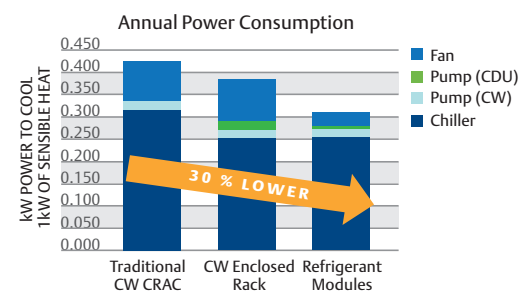
Our product development is at the forefront of energy efficient design:

The 97 percent efficiency rating of the Liebert NX UPS with Softscale technology exceeds the 95 percent "state-of-the-art" designation published by the U.S. Environmental Protection Agency in its August 2007 data center energy efficiency report to Congress, making the UPS ideal for organizations seeking to increase data center efficiency and reduce energy costs.

The Liebert XD family of cooling solutions can be deployed to decrease data center energy consumption. Depending upon capacity, the environmentally friendly refrigerant used by the Liebert XD is 27 to 54 percent more efficient than water as a coolant. Furthermore, adding a Liebert XD system provides even more cooling capacity, thus making fully populated racks possible, and increasing the quantity of servers that can fit in the rack by more than 400% compared to last generation servers.

Assuring Availability And Efficient Use Of Energy

These are now the two driving forces of today's data center. Both are necessary and it is no longer accepted practice to sacrifice one for the other. This is why Liebert is continuing to invest in the resources it takes to achieve the important balance between protecting our nation's information infrastructure and protecting our nation's environment.



- Pumped refrigerant (R134a) as a means of transporting heat due to its two phase process of absorbing heat
- Pump horse power is 20% the hp required versus using water as the fluid
- Fractional HP delivery system utilizes 50% less fan energy

Liebert Is The Industry Leader For Critical Infrastructure Support

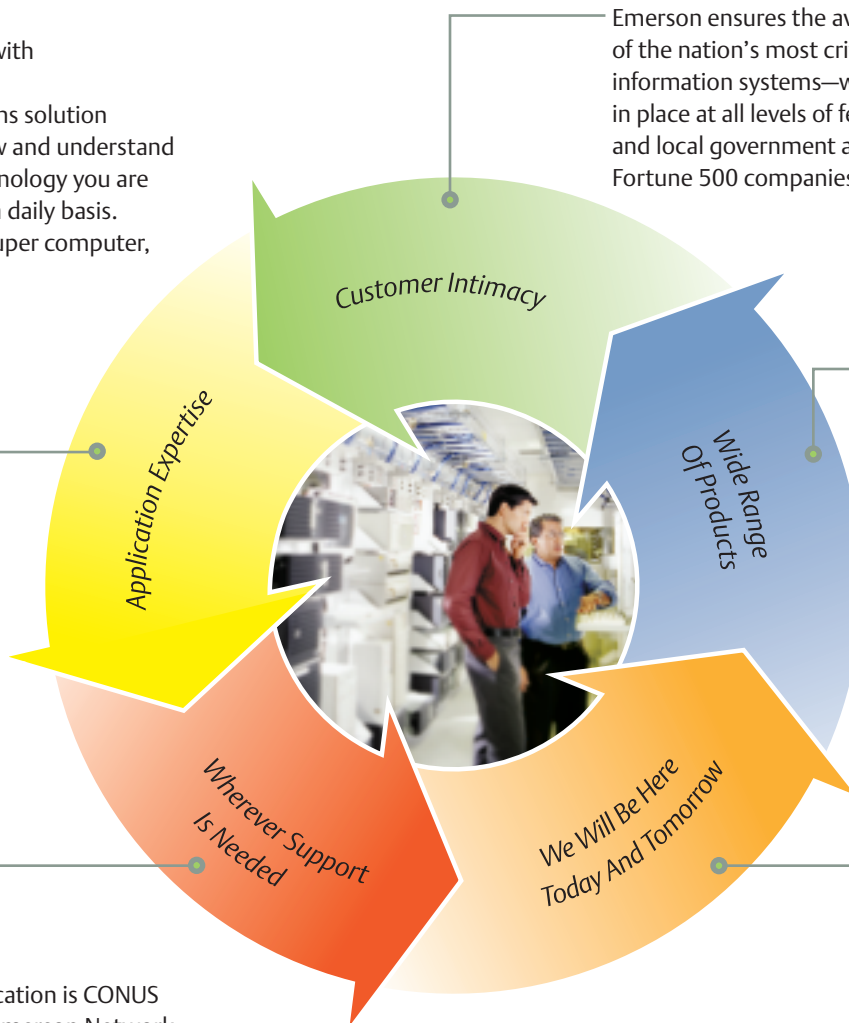
As your IT facility protection partner, our goal is to enhance the performance of your critical systems. You can be confident of the highest level of performance and quality when you put that protection in the hands of Emerson Network Power and Liebert.

We Are Here To Help

In addition to our product and service solutions, only Emerson can offer you so many key value-added benefits:

Because we work with the leading IT and telecommunications solution providers, we know and understand the advanced technology you are implementing on a daily basis. From desktop to super computer, Liebert is there.

Emerson ensures the availability of the nation's most critical information systems—with solutions in place at all levels of federal, state and local government and all the of Fortune 500 companies.



Emerson pioneered protection for critical information infrastructure over 40 years ago. Today, Liebert's technological superiority, product breadth, service infrastructure and global presence are unmatched in the industry.

We are backed by the full resources and financial stability of Emerson — a \$20.1 billion company, which has been in business for over 100 years and is a proven technology and engineering leader in the critical space arena.

Whether the application is CONUS or OCONUS, only Emerson Network Power can deliver global solutions through a network of local experts.

Ensuring The High Availability Of Mission-Critical Data And Applications.

Emerson Network Power, the global leader in enabling business-critical continuity, ensures network resiliency and adaptability through a family of technologies – including Liebert power and cooling technologies – that protect and support business-critical systems. Liebert solutions employ an adaptive architecture that responds to changes in criticality, density and capacity. Enterprises benefit from greater IT system availability, operational flexibility, and reduced capital equipment and operating costs.

Uninterruptible Power Supply Systems	Single and three-phase systems ranging from 300 VA to over 4000 kVA.
Precision Air Conditioning	In capacities from 1 to 65 tons.
Facility-Wide Surge Suppression	Power, data, telecommunications and controls protection.
Control	Monitoring, control and energy management solutions for power and environmental systems.
DC Power Systems	For communications and telecom applications.
Racks and Cabinets	Specialized enclosures for sensitive electronic equipment.
Service	Solutions that are designed to maintain and consistently enhance the performance and energy efficiency of your support equipment.

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The global leader in enabling *Business-Critical Continuity™*.

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- Embedded Computing
- Outside Plant
- Racks & Integrated Cabinets
- Connectivity
- Embedded Power
- Power Switching & Controls
- Services
- DC Power
- Monitoring
- Precision Cooling
- Surge Protection

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