



Liebert Nfinity™

Power Availability

MAXIMUM PROTECTION FOR MISSION-CRITICAL NETWORK APPLICATIONS



An Easily Scalable, Incredibly Intelligent,

Remarkably Redundant UPS That Takes

Systems Availability To The Next Level

Nfinity™



THE PROBLEM IS THAT YOU DEPEND ON YOUR NETWORK MORE THAN EVER

The digital lifeblood of many organizations — computers, servers, phones, datacom links — now resides on networks...outside of the traditional “glass house” protection. This may make companies more flexible and responsive, but it also makes them far more vulnerable to power problems, and the threat of catastrophic losses in sales, customers, productivity...your business lifeblood.

The solution is a UPS designed like never before

Now for the first time, you can achieve the highest levels of UPS reliability in a system that is sized to protect network applications. The Liebert Nfinity UPS is designed for use with workstations, servers, networks, telecommunications equipment or other sensitive electronics. It provides continuous, high-quality AC power to your mission-critical systems, protecting them from any power aberrations due to blackouts, brownouts, surges or noise interference.

Power protection

The Liebert Nfinity power system is available in two models: scalable 4-16 kVA & scalable 12-20 kVA, designed with N+x parallel redundancy to provide a fault-tolerant network of power protection for maximum systems availability. Its modular design makes Nfinity the most adaptable UPS on the market, offering easy upgrades and servicing.

The Five Keys To “High Nines” Reliability

“High nines” reliability means 99.99999% system availability. In practical terms, that means “zero downtime” for mission-critical applications.

Each of these five reliability needs must be met individually, and the entire protection plan must integrate faultlessly. It requires a new level of protection planning, and a dedication to seamless execution.

Only Liebert Offers
A Single Source For Multiple Solutions

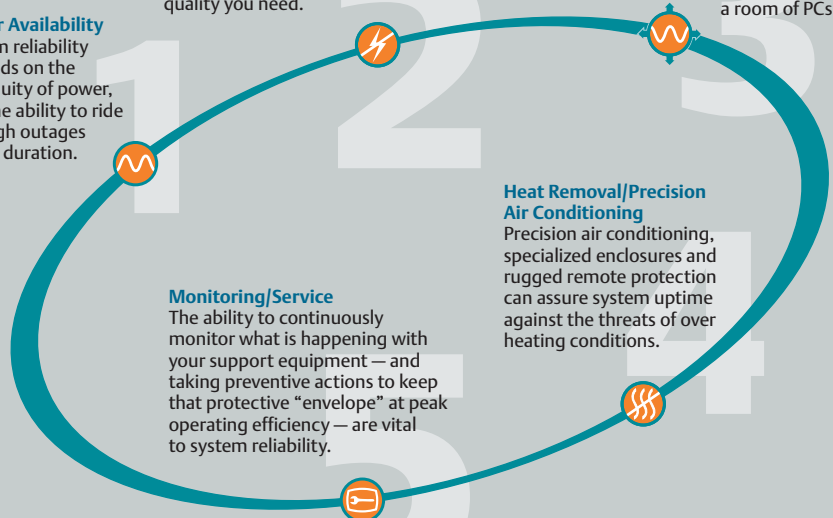
Power Availability
System reliability depends on the continuity of power, and the ability to ride through outages of any duration.

Power Protection
Utility power is often far too “dirty” for sensitive systems, resulting in unexpected software glitches or even hardware damage. In these situations, surge suppression and power conditioning can deliver the power quality you need.

Power Conversion/Distribution
Improper power distribution can actually inject disturbances into your electrical lines. The right power distribution system for a microprocessor-controlled stamping press is far different than what is required for a room of PCs.

Heat Removal/Precision Air Conditioning
Precision air conditioning, specialized enclosures and rugged remote protection can assure system uptime against the threats of over heating conditions.

Monitoring/Service
The ability to continuously monitor what is happening with your support equipment — and taking preventive actions to keep that protective “envelope” at peak operating efficiency — are vital to system reliability.





Scalability is Just the Start of the Value

- Configure the system that's right for you today and tomorrow
- Everything you need shipped complete, ready for final connection

Intelligence Means Maximum Performance

- Power responsiveness
- The ability to communicate
- Self diagnosis

Highest Levels of Redundancy Mean Maximum Systems Availability

- Redundancy at all the critical points of UPS operation
- Maintainability without shutdown

Liebert Puts It All Together In The Liebert Nfinity UPS System

It looks and works like no UPS we've offered before. Liebert Nfinity's unique frame design houses all of the modular system components. It contains bays to hold the power modules, battery modules and system control modules. The modules offer hot-swap capability, making it easy to add capacity or replace modules. The Liebert Nfinity class of power protection offers a variety of advantages.



EASILY SCALABLE

Nfinity's modular design was devised to provide easy scalability to users as their power demands grow. By simply installing additional power or battery modules, you can expand your current system, extend your backup runtime or add redundancy.

Scalability Provides The Flexibility To Expand

Liebert Nfinity's patent-pending frame design provides the user with the maximum adaptability that is demanded in today's ever-changing network environment.

Because Liebert Nfinity is scalable for redundancy, power capacity or battery run time, you have greater flexibility in how you can use the system. Configurations can be cost-effectively upgraded without re-investing in a new system or installation.

Longer Battery Run Time

The system's flexible frame design allows battery backup times to be customized to customer needs while maintaining a smaller footprint. To extend run times, just add battery modules.

12-Bay And 8-Bay Models Available

Using an 8 Bay, 16 kVA frame, Liebert Nfinity provides capacities up to 16 kVA in a non-redundant mode and up to 12 kVA in an N+1 redundant mode - with an incredibly small footprint (only 20"W x 28"D x 41"H). The 12 bay, 16 kVA frame provides capacities up to 16 kVA in an N+1 redundant mode while the 12 bay, 20 kVA frame provides capacities up to 20 kVA in an N+1 redundant mode (both in only 20"W x 28"D x 54"H).

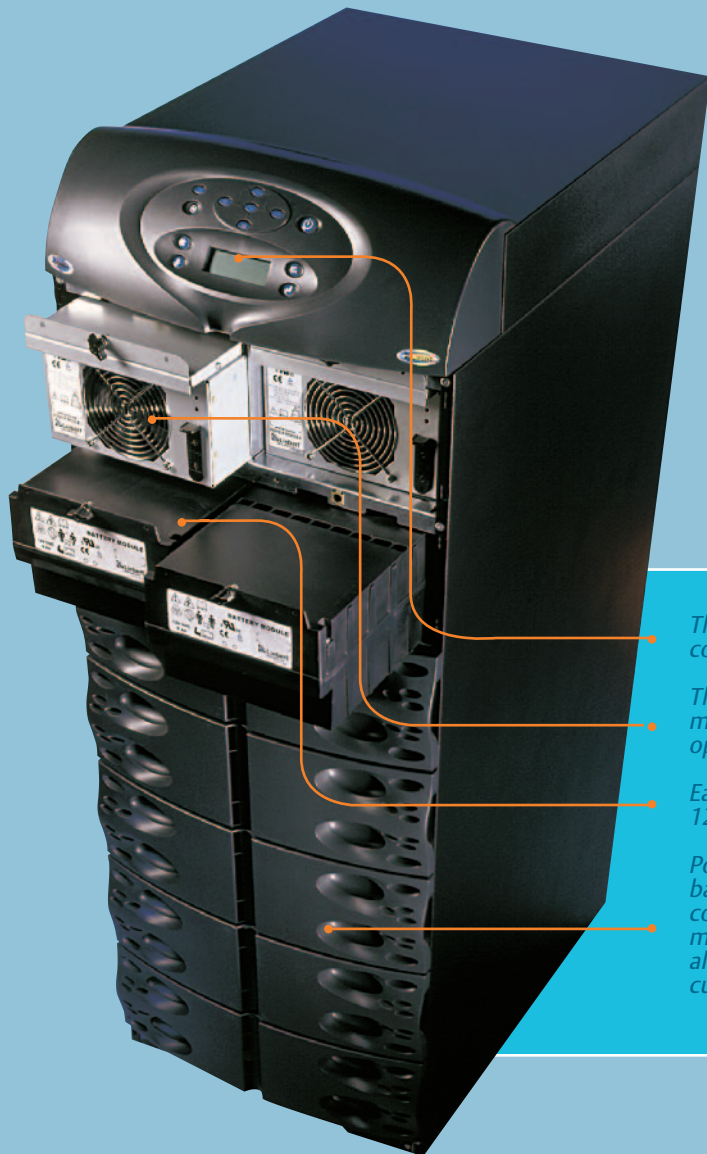


Hot-Swappable

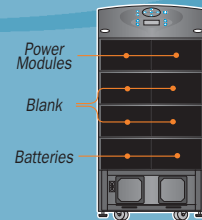
Hot-swappable modules allow you to add or replace power, battery, control, and display modules without shutting the load down or affecting power to it. In redundant mode, this means no downtime for repair. Liebert Nfinity's hot-swappable modules also make it easy for the user to handle basic service.

Cabinet Stands Small, Stays Small

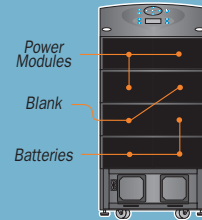
Liebert Nfinity's compact, efficient design allows you to pack more power and battery capability into a much smaller sized unit, so it takes up less of your valuable floor space.



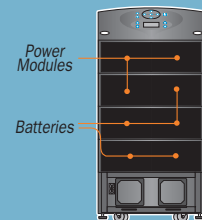
Initial System
4 kVA Redundant



Upgrade
System Capacity
8 kVA Redundant



Extend System
Run Time
8 kVA Redundant



The system control module provides communications and control for the unit.

The system utilizes independent 4 kVA power modules. Up to six power modules can be operating at one time.

Each battery module is composed of ten individual 12-volt batteries encased in a plastic housing.

Power and battery modules are housed in identical bays within the frame. Power modules must be contained in the top half of the frame, while battery modules can be utilized in any of the bays. This allows battery backup times to be configured to customer needs.

INCREDIBLY INTELLIGENT

Nfinity is the most intelligent power system we've ever built. The fault-tolerant design enables the power, battery and control modules to take themselves "off-line" if there is a problem, without compromising system integrity. System level and individual module microprocessor controls increase UPS functionality and reliability. When Liebert Nfinity modules are inserted, they perform a full self-diagnostic test before going on-line.

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IntelliControl™ Module — The system control module works with the user interface to provide vital information about the condition of the power and battery modules. The use of a paired system control provides full systems functionality in the event of any single failure and ensures that operations and communications are always available.

IntelliBattery™ Module — Liebert Nfinity's patented battery module technology continuously monitors the battery's voltage, current, and temperature to determine the state of its batteries and predict performance. Each module contains an intelligent battery sensing circuit that will take it off-line if a problem is detected, so as not to affect the performance of other battery modules in the system.

Intelligent Power Modules — provide protection against power outages, spikes, surges, noise, and sags. Designed in 4 kVA "building blocks," they utilize patent pending current sharing technology that ensures premium quality power. Liebert Nfinity power modules feature a power factor corrected (PFC) rectifier to create a sinusoidal input current waveform. This allows the system to use utility power more efficiently and reduces reflected distortion. A true on-line system, Liebert Nfinity provides continuous, regenerated sinewave output power.

Intelligent Bypass — The patent pending Intelligent Bypass technology provides seamless transfers to and from the bypass source to insure continuity of power and provide maximum system availability.



Communications Capability

The Liebert Nfinity UPS incorporates extensive firmware designed to provide a comprehensive range of control and operating information, as well as communications capability.

User Interface Control Panel

The user interface is the main source of communication between the Liebert Nfinity UPS and the user. It features an easy-to-read LCD display and LED mimic diagram. The control panel informs the user of the status of the UPS, including the power and battery modules, and allows you to configure the system to fit specific needs or preferences. You can also review the event log and even receive instructions on replacing modules.

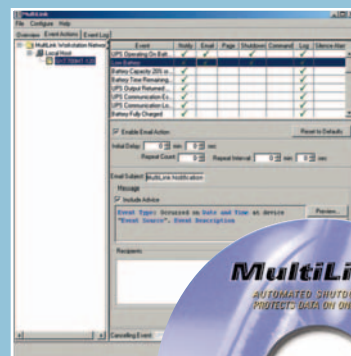
Communication Connections

Dry contacts and a serial communications port are standard. The unit also includes four Intellislot™ ports for multiple user options including:

- SNMP/WEB card that allows the Liebert Nfinity to communicate with an Ethernet network.
- MultiPort4 cards that enable up to four client computers to monitor UPS status.
- Relay contact cards to provide contact closures for remote monitoring of alarm conditions.
- The system also communicates to and monitors internal and extended battery cabinets.

Shutdown Monitoring Software

Liebert MultiLink™ is the perfect complement to the Liebert Nfinity UPS because it prevents unexpected server shutdowns, protects data and minimizes downtime. The software provides unattended, orderly shutdown for one computer or many, and is especially effective with large server farms. Liebert MultiLink has full event management and displays UPS instrumentation on screen. MultiLink is available for all popular operating systems and can be downloaded from the Liebert website at www.liebert.com.



REMARKABLY REDUNDANT

The modular design of Liebert Nfinity allows you to choose the amount of redundancy you need with greater flexibility than competitive systems. When in a redundant configuration, a failed module will automatically take itself off-line while the other modules continue to support the connected equipment.

Liebert Nfinity is a 4 to 20 kVA UPS designed with N+x parallel redundancy to provide a fault tolerant network of power protection for maximum systems availability. Factory preconfigured models are available from 4 to 16 kVA and 12 to 20 kVA.

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Redundant Power Modules — parallel redundancy is achieved by adding extra power modules that equally share the electrical load.

Redundant Battery Modules — multiple battery modules can provide redundancy capability in addition to extended run time.

Redundant System Controls — provide full functionality in the event of any single failure and ensure that operations and communications are always available.

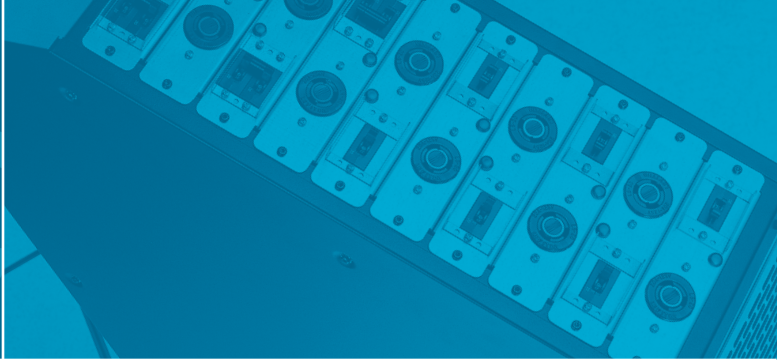
Internal Bypass — assures continuity of power to critical loads. A synchronized internal bypass provides seamless transfers to and from utility power.

Redundant Monitoring Options — multiple communications paths provide separate connections for contact closures, serial communications and four Intellislot™ communications ports to monitor the UPS system both in-band and out-of-band.

Engineered For Reliable Operation — Liebert Nfinity is designed with a lower parts count than other products in its class to help assure more reliable operation by reducing the potential points of failure. For even greater reliability, fan filters are included for dusty, back office environments.

Factory Pre-Tested And Shipped Ready To Install — Liebert Nfinity is the first redundant UPS of its kind that ships as a complete, pre-configured system that is fully tested at the factory. Everything you need is included in a single package that's ready to roll in and hook up.





Maintenance Bypass Cabinet

The Liebert Nfinity maintenance bypass cabinet provides complete “wrap around” protection, allowing the Liebert Nfinity UPS to be pulled from service without interrupting power to the protected loads. The maintenance bypass cabinet controls are located behind a lockable front panel to provide operational security. Controls include a manual bypass transfer switch, UPS input disconnect switch and a branch rated output circuit breaker. Indicator lamps provide visual confirmation that the UPS input, UPS output, and bypass source are available.



Extended Battery Cabinets

The Liebert Nfinity extended battery cabinet is available when extra run time is critical to your protected loads. This unit has 12 bays that accept up to 12 standard Liebert Nfinity intelligent battery modules, allowing you to add battery capacity as needs change. A built-in microprocessor in each battery module provides the intelligence and communication capability to allow the module to automatically remove itself from the critical DC bus if necessary. The extended battery cabinet reports and tracks individual module capacity, temperature and charge level, as well as other data and reports this information to the Liebert Nfinity system control.

Configurable Output Distribution

The Liebert Nfinity configurable output distribution option provides the flexibility to easily connect multiple loads with various receptacle types and current ratings to the Liebert Nfinity. Receptacles range from 15A to 30A types and include a branch rated circuit breaker to protect each individual load. Other output distribution options include hardwire landing plates; both with and without branch rated circuit breakers. You can select a maximum frame size of 6, 8, or 10 distribution plates, as well as a choice of 6, 12, or 25 feet of cabled conduit between the Liebert Nfinity and the output distribution.



EXPERIENCE. AVAILABILITY. GLOBAL ACCESS. REPUTATION.

These are the attributes that make Liebert Worldwide Services the leader in uptime services for critical systems. Since 1965 – and through many generations of computers and peripherals – Liebert power and environmental products and support services have provided peace of mind to thousands of companies worldwide. Today, companies rely more than ever on complex facility systems and face greater risks when unexpected disaster strikes. These outages not only cause the loss of important data but also affect performance and profitability.

More than 35,000 customers in 70 countries around the world trust Liebert Worldwide Services to minimize critical system emergencies and interruptions. We're backed by the largest technical support and customer response system in the industry with more than 1,000 factory-trained and company-employed service professionals in more than 100 service centers ready to assist in maintaining your uptime, 24 hours a day, every day of the year.

To enhance the reliability and trouble-free operation of your Liebert Nfinity UPS, Liebert Worldwide Services offers a range of optional ServicePlus programs which include:

Start-Up

The best UPS system in the world can't operate right if it's not installed properly. During the start-up process, the proper installation and operation of your new Liebert Nfinity UPS is verified by our factory-trained customer engineer. This verification ensures that the unit, the installation and the environment meet published specifications for design use. Operator training is also provided.

Remote Monitoring

Remote monitoring is our comprehensive service program connecting your Liebert Nfinity UPS to our 24 x 7 Customer Response Center (CRC). The CRC continuously monitors your critical equipment, detects alarms, and initiates a response according to a customized, predetermined corrective action plan.

Customer Response Center

When a customer call or alarm is received at our Customer Response Center (CRC), it activates the Liebert Worldwide Services 24-hour service network. This network provides immediate two-way radio access to our factory-trained customer engineers through our wireless communication system. Our Customer Response Center, located in Columbus, Ohio, is staffed exclusively by Liebert Worldwide Services' associates.

Exclusive Guaranteed Six-Hour Response Time

We can guarantee a six-hour response time from the time your call is received at our CRC until a Liebert Customer Engineer arrives on-site. (Applicable in U.S. and Canada. Distance limitations apply).

Preventive Maintenance

Preventive maintenance visits are designed to assess the status of your installed equipment and make any necessary corrective adjustments or repairs. The level of service you select for your Liebert Nfinity UPS determines the number of scheduled visits.

Two-Year Factory Warranty Program

Liebert's two-year warranty provides for repair or replacement of your Liebert Nfinity UPS during the initial warranty period.

The Right Size For Your Network Protection Plans

Nfinity's modularity and scalability allow you to specify a system that is right for your needs today — but has the ability to expand with your requirements for the future.

Wider Input Voltage Window

A wider, variable input voltage range minimizes transfer to battery to increase battery life. For lighter loads, low line transfer can range down to 110V.

Generator Compatible

Full time output voltage and frequency regulation is provided — a necessity for sensitive electronic equipment and a must for sites with back up generators.

Highest Overload Capability

Liebert Nfinity offers the highest overload capability of any system in its class — capable of sustaining 110% of the system's rated load for an extended period of time.



Specifications

| | | Scalable 4 - 16 kVA | | Scalable 12 - 20 kVA | | |
|---|------------|--|------|---|----------|---------------|
| General & Environmental | | Units | | | | |
| Unit Rating | kVA | 4 | 8 | 12 | 16 | 20 |
| | kW | 2.8 | 5.6 | 8.4 | 11.2 | 14 |
| Conducted and Radiated EMC Levels | | FCC Part 15, Class A | | | | |
| Compliant Safety Standards | | UL 1778; c-UL (Flame Retardant Batteries, suitable for Computer Room Applications) | | | | |
| Compliant Immunity Standards | | IEEE C62.41, Category B | | | | |
| Mechanical | | Units | | 8 Bay | | 12 Bay |
| Dimensions: Width | | | | 20 (508) | | 20 (508) |
| Dimensions: Depth | In (mm) | | | 28 (711) | | 28 (711) |
| Dimensions: Height | | | | 41 (1041) | | 54 (1372) |
| Environmental | | Units | | 4 | 8 | 12 |
| Operating Temperature (max) | F (C) | | | 32°-104° (0°-40°) | | |
| Relative Humidity | | | | 0-95% non-condensing | | |
| Maximum Operating Altitude | Ft. (M) | | | 10,000 (3,000) | | |
| Nominal Heat Dissipation | BTU/Hr | 1062 | 2124 | 3186 | 4248 | 5307 |
| Input Data | | Units | | | | |
| Nominal Input Voltage | VAC | | | 170 to 276 | | |
| | VAC | | | 110-276 (variable, based on output load) | | |
| Power Factor | Cos ϕ | | | >.98 | | |
| Input Frequency (nominal) | Hz | | | 60 | | |
| Input Frequency Range | Hz | | | 40-70 | | |
| Battery Module | | Units | | | | |
| Battery Capacity | A/hr | | | 9 | | |
| Autonomy Time (full load) | Mins | | | 7 | | |
| | | | | (With an equal number of Battery & Power Modules, in a non-redundant configuration) | | |
| Maximum Charge Current (full load) | A | | | 3 | | |
| Nominal Voltage | VDC | | | 120 | | |
| Recharge Time | Hrs | | | 3-5 (to 90% capacity) | | |
| Output Data | | Units | | | | |
| Output Voltage | VAC | | | 208/120 or 240/120 | | |
| Voltage Regulation | % | | | ±3 | | |
| Voltage Transient Response (100% step load) | % | | | ±7 | | |
| Voltage Stability (100% step load) | % | | | ±7 | | |
| Recovery Time | msec | | | 96 | | |
| Voltage distortion: | % | | | <3 THD, linear load | | |
| | | | | <7 THD, non-linear load | | |
| Output Frequency | Hz | | | 60 | | |
| Efficiency at 100% load | % | | | 89 | | |
| Output Overload Capability | % | | | 110-125% for 10 min | | |
| | | | | 126-150% for 10 sec | | |
| | | | | >151-200% for 2 cycles | | |

WE HELP YOU GET IT RIGHT — RIGHT FROM THE START.

Liebert Nfinity™

Power Availability

For over 35 years, Liebert has been providing tailored solutions for protecting the operation of critical electronic systems in a variety of industries. From communications to industrial business networks, we've used our expertise to tailor the right products, site monitoring and global service capabilities into a variety of specific solutions.

Liebert's years of experience and knowledge of leading edge technologies enables us to truly understand your needs — both in terms of overall reliability and specific areas of equipment protection. Whether it's a new or existing facility, we listen to you and your preferences to help us develop solutions that are right for your application.

We recognize that each situation has its own unique requirements and are better prepared than any other manufacturer to deliver the right level of reliability at the right price. We do this through a combination of knowledge, experience, product selection and service capability.

Someone Nearby To Help Before And After The Sale

Specifying a high-availability facility support system requires someone who is knowledgeable in all phases of environmental and power protection. Knowing where to turn for ongoing maintenance or service is just as important.

One of the many things that differentiates Liebert from others in our business is local presence. We have the most extensive sales and service network in the world. Liebert's extensive network of technical sales associates, backed by the industry's largest service organization, enables us to respond quickly to customer needs.

From power protection for a single PC to comprehensive environmental control, uninterruptible power and full-scale monitoring for a large facility — there is a Liebert product designed to precisely fit your application.



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