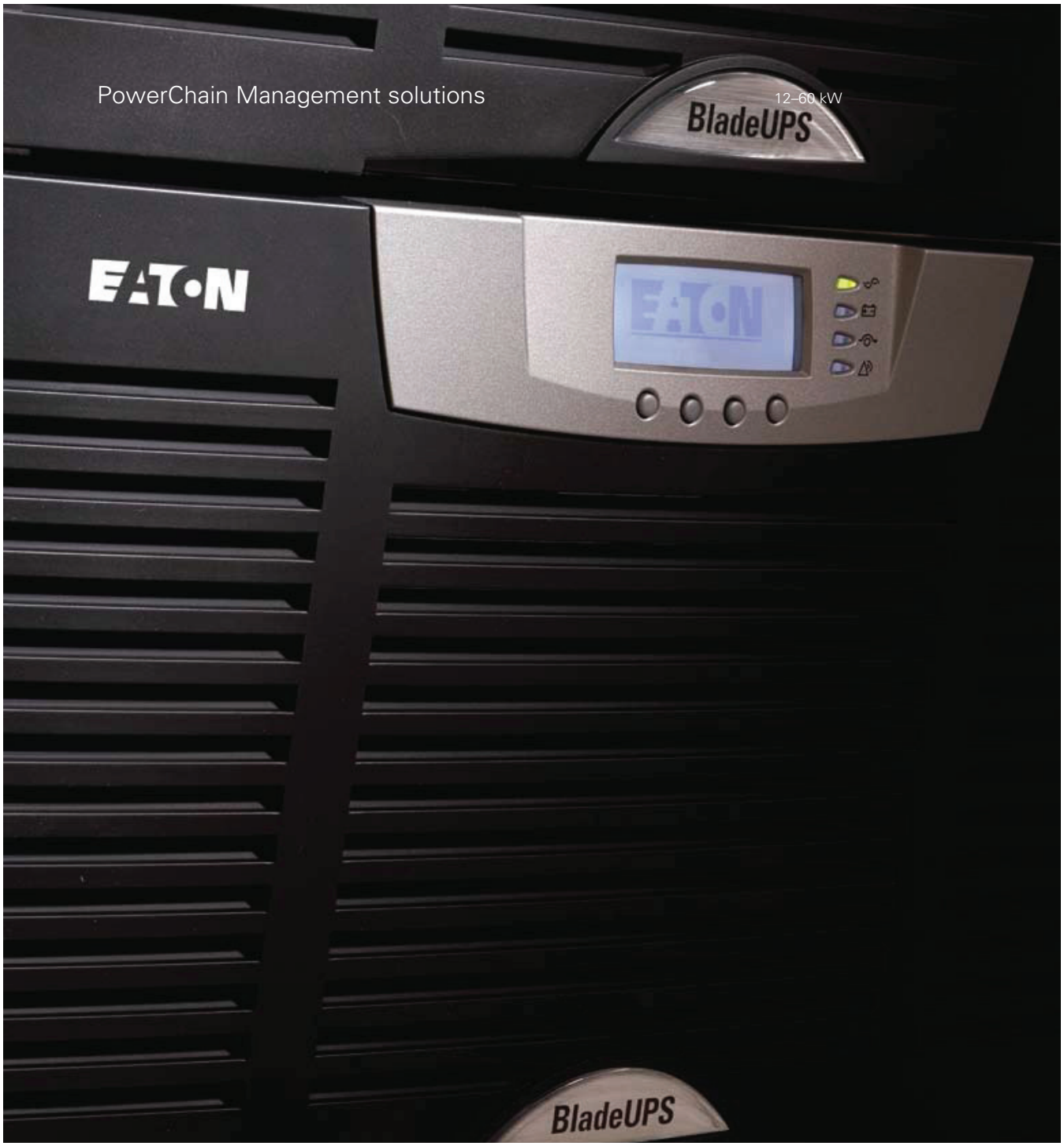

EATON
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High-density computing environments demand more power

Today, the management of a data center or network operations center places you under the intense pressure to reduce costs while dealing with inescapable operational realities:

Expanding power demands. The blade servers that are satisfying business demands can also raise the demands for power consumption in the same footprint. Rack power requirements that were once at 60 watts per U may now have to be delivered at levels up to 600 watts per U with redundant power supplies.

Increasing power costs. Utility rates have a common recurrence, they always go up. Energy costs are emerging as the second highest operating cost (behind labor) in 70% of data centers worldwide. (Gartner, 2009). To this point, many organizations are researching and developing plans to implement efficient and affordable power solutions in their facilities.

Excessive heat. Blade servers generate a lot of heat that translates into high demand for additional energy. A fully loaded rack of blade servers can use close to 30 kW of power. This equals over 100,000 BTU/hr in heat generation that requires cooling–wasted heat, which is not utilized in any way. Since cooling adds huge costs to data center operations, IT organizations are forced to increase their power efficiency to counteract the inefficient heat and cooling problems.

If you manage, engineer, or plan the present and future of a data center or network operations center, you are already aware of these critical issues and their impact on operations. Your challenge is to make decisions that provide efficient power protection and distribution for growing loads, while managing the heat. Eaton is ready to help you with these challenges.

Introducing the BladeUPS uninterruptible power system

Designed specifically for high-density computing environments, the Eaton® BladeUPS® delivers 12 kW of efficient, reliable power in only 6U of standard rack space, including batteries. Expand capacity by combining 12 kW modules in a building block fashion to deliver 60 kW of redundant backup power from a single rack enclosure. This powerful configuration delivers higher power density than competitive, modular solutions, while dissipating only one-third of the heat.

The standard internal batteries provide needed ride-through power until an auxiliary power source takes over or systems are gracefully shut down. Extend runtime up to 34 minutes at full load (or 76 minutes at half load) with extended battery modules (EBMs).

Power protection for:

- Blade servers
- Small, medium and large data centers
- Network closets
- PBX and VoIP equipment
- Networking applications: IPTV, security
- Storage devices: RAID, SAN
- Database clusters

Eaton BladeUPS—12 kW

Features

- Protects mission-critical applications with innovative backup power technology designed specifically for high-density computing environments
- Supports the constant moves, adds and changes of today's dynamic data centers with a modular, scalable, and flexible backup power architecture
- Conserves valuable rack space with 12 kW of power in only 6U of rack height, including batteries
- Accommodates growth by enabling building-block upgrades from 12 kW to 60 kW in a single rack enclosure
- Reduces energy costs and cooling needs through best-in-class efficiency performance
- Delivers highest levels of reliability at the rack with patented Powerware® Hot Sync® paralleling technology and intelligent bypass design, field proven in thousands of large data centers globally
- Simplifies installation and service with true plug-and-power connections and hot-swappable batteries and electronics modules
- Increases battery life through ABM® technology, resulting in more uptime and fewer battery replacements

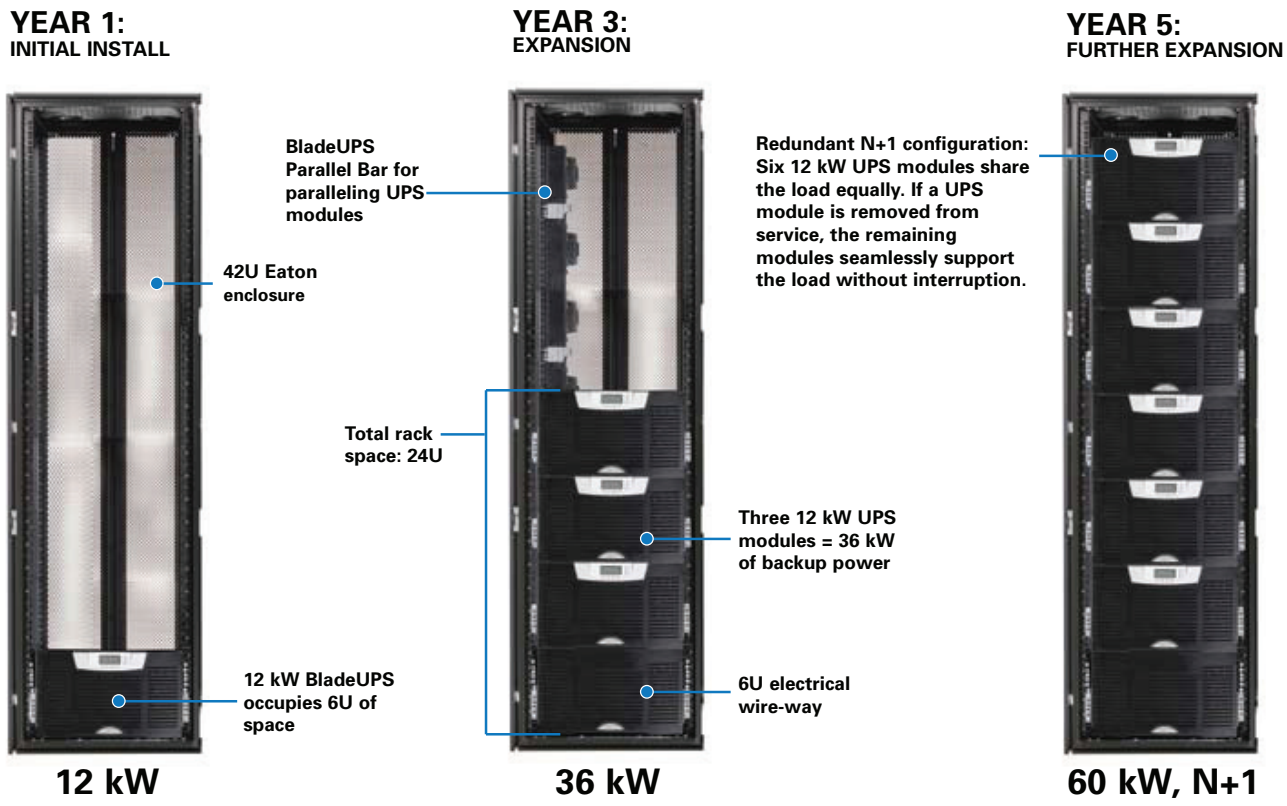
BladeUPS in a rack (60 kW, N+1 redundant)

The Eaton BladeUPS is made in the U.S.A and is TAA Compliant.

Meet current and changing requirements with modular architecture

The building block of the BladeUPS system is a 6U rackmount module that provides 12 kW of backup power protection. The system expands easily to provide maximum results. As your data center grows, the system's modularity plays a key role in optimizing your capital planning and deployment. Using the patented and field-proven Powerware Hot Sync paralleling technology, up to six BladeUPS modules can be paralleled for extra capacity or redundancy, providing 60 kW of redundant backup power protection in one 19-inch rack.

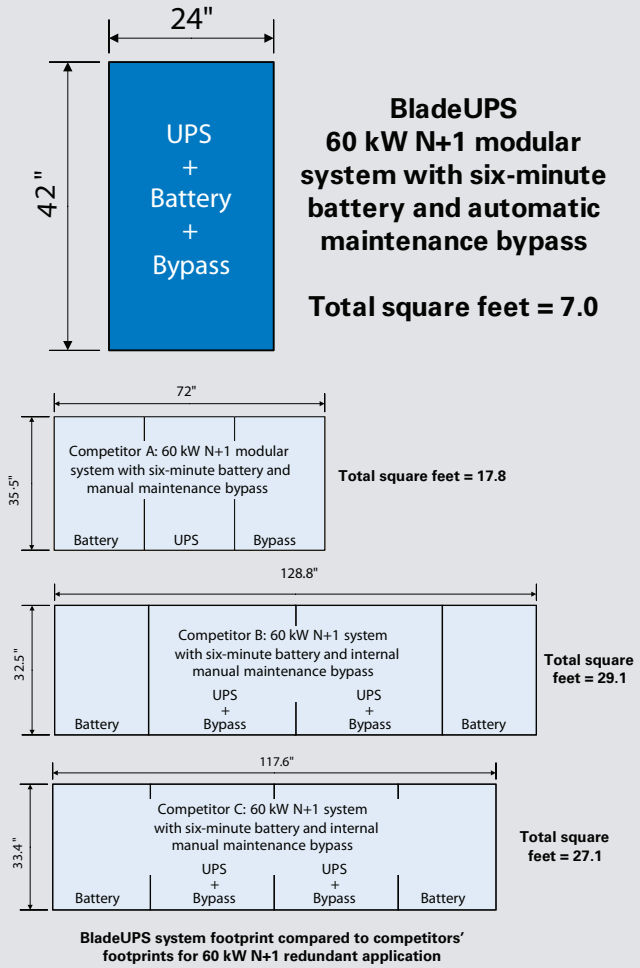
Patented load-sharing control intelligently distributes the workload among modules without requiring direct synchronization links among them. Any module can provide backup support for any other, with no interruption or downtime. For instance, in a redundant system you could perform full maintenance on any module without any interruption of conditioned power to the protected IT equipment.



The BladeUPS is designed to be extraordinarily flexible—configured as a single module or multi-module system (up to six modules) in a standard 19-inch rack enclosure. The modular design enables you to deploy just the right amount of backup protection at the right price for your current needs and expand later whenever needed.

Save space with high power density UPS

The BladeUPS offers the smallest footprint of any UPS in its class, as well as double the power density of any other UPS on the market. This compact design leaves more space for IT equipment in the rack and data center.



BladeUPS system footprint compared to competitors' footprints for 60 kW N+1 redundant application

Expedite deployment with flexible installation options

The BladeUPS can be deployed in a variety of system architectures to support the specific requirements of your computer room or data center, and to support the desired level of redundancy (Tier I through Tier IV, as defined by the Uptime Institute).

Centralized power protection for small computer rooms. Start with one 12 kW module and expand to 60 kW with N+1 redundancy in single 19-inch rack enclosure.

Zone power protection for mid-sized computer rooms. Deploy 60 kW (N+1) in a 19-inch rack to protect a row of IT equipment racks.

Distributed power protection. Distribute 12 kW modules to protect one to three racks—thereby achieving zero footprint power protection.

Hybrid power protection. Stronger redundancy of power protection for equipment racks containing critical IT equipment.

- For dual-corded loads with one source on a central UPS and the other on utility power, you can back up selected loads with a local BladeUPS, deployed in a distributed or zone fashion.
- For dual- or single-corded loads on a central UPS, you can back up selected loads with a local BladeUPS (distributed or zone) in series with the central UPS. This configuration provides maximum reliability close to critical loads, with minimal heat dissipation and maximum efficiency.

With the flexibility to deploy and re-deploy a BladeUPS either in single or parallel systems—data center managers can tailor power protection to adapt to changing needs, often without the need for an electrician or service technician.

Eaton also offers an assortment of plug-and-play power distribution accessories with various input and output connections to distribute power from the BladeUPS to rack power strips or directly to high-power servers. You can choose from distribution designs with or without monitoring capability, for redundant or non-redundant applications spanning from 0U to full rack height.

Count on reliable system performance and uptime

Recognizing the mission-critical nature of data center operations, the BladeUPS has been designed for premium reliability and continuous operation. The rackmount BladeUPS incorporates leading technologies that Eaton developed for its largest UPSs, such as:

Robust paralleling. With Eaton's patented Powerware Hot Sync technology, UPS modules work in peer-to-peer fashion when configured in a parallel system. Most other paralleling systems on the market use a single central main controller with a backup controller. If the main controller fails, the system must recognize this and transfer control to the backup control, or the entire system fails. With Eaton's patented approach, each UPS module operates independently, yet is completely synchronized with the others. There is no change in control, therefore no single point of failure.

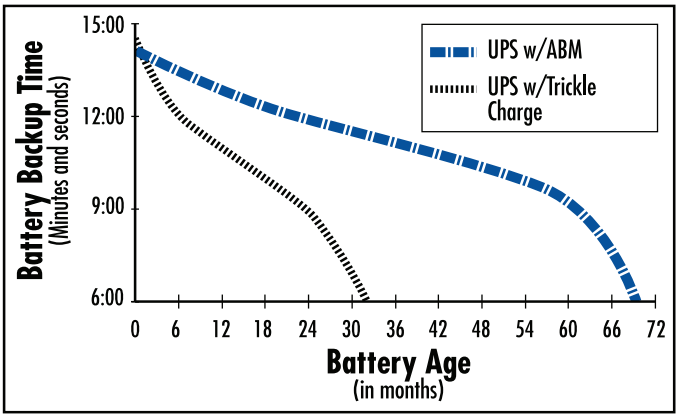
Intelligent maintenance bypass switch. The internal switch inside the UPS chassis automatically activates bypass mode whenever a power module is removed. This feature ensures that power to protected loads is not accidentally interrupted by human error. (If the UPS is in a parallel environment with N+1 redundancy, removing an electronics module only causes that particular UPS module to go offline while the protected equipment is supported by other modules in the configuration).

Static bypass switch. All BladeUPS modules have their own static switch for normal operations and for internal bypass in case of a high overload condition, output load fault or internal failure.

Hot-swappable electronics and battery modules. Replacing batteries or electronics modules can be done in minutes without interrupting power to IT equipment. This hot-swap capability helps reduce mean time to repair (MTTR) and dramatically improves the availability of the protected IT equipment.

Eaton's advanced battery management technique. ABM technology significantly extends battery service life with a unique three-stage charging technique. The UPS automatically tests battery health and provides advance notification when preventive maintenance is needed, allowing ample time to hot-swap batteries without ever having to shut down connected equipment.

IT staff can easily replace battery modules.



Eaton's ABM technology significantly increases battery service life.

Flexibly distribute power to racks

With Eaton's rack power module (RPM)

Partner the BladeUPS with an RPM to create a highly flexible, adaptable power delivery architecture at the rack level. The RPM delivers up to 36 kW of power in an organized manner to loads of various voltages, power cords and layouts.

The 3U RPM can be deployed in the same rack with the UPS and IT equipment; there's no need for a dedicated infrastructure rack. The resulting architecture has fewer cables to manage, fewer distribution points to monitor and greater flexibility for IT personnel to make changes without an electrician.

Consider a Tier II data center with 42 racks at 5 kW per rack: the BladeUPS with RPM can meet power requirements with half the number of racks, 60 percent less rack space, 45 percent less cabling and 41 percent less square footage than other vendors' power distribution products that require dedicated racks. These advantages make the BladeUPS with RPM ideal for distributed protection in small to mid-sized data centers, or to add zone protection in large data centers that have centralized UPSs.

Eaton RPM

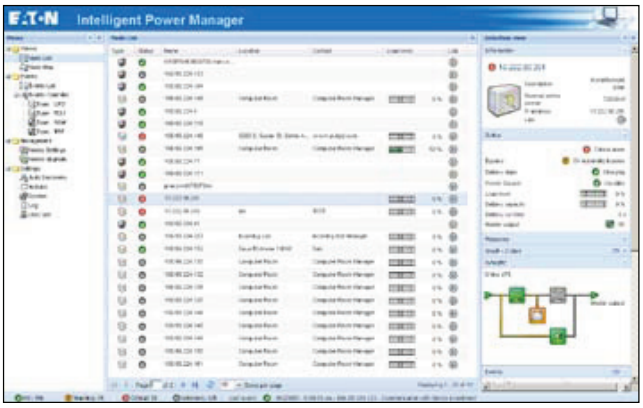
Monitor the power infrastructure from anywhere

You can monitor the BladeUPS over your LAN or the Internet to stay informed of conditions in the power protection infrastructure.

With Intelligent Power® Manager supervisory software, you get a global view across the network from any PC with an Internet browser. Exceptionally versatile, the software is compatible with power devices supporting a network interface, including other manufacturers' UPSs, environmental sensors, ePDUs, shutdown applications and more.

In the event of an extended power outage, Eaton's free NetWatch software works in conjunction with the ConnectUPS X-Slot® Web/SNMP card to allow you to gracefully and sequentially shut down connected devices, including virtual machines. NetWatch is compatible with ESXi and vSphere from VMware.

Eaton NetWatch Client 5.0 has tested compatible with Cisco Unified Communications Manager 4.3



Intelligent Power Manager supervisory software is included at no charge (up to 10 nodes) with the BladeUPS.

Using Power Xpert® software, you can also monitor the status of multiple UPSs and ancillary devices to accurately diagnose past events and predict future conditions.

FORESEER® software analyzes thousands of data points to proactively manage key equipment throughout an enterprise-wide infrastructure. This system interfaces with an extensive collection of devices from most major manufacturers of power and environmental equipment, as well as subsystems for fire detection and suppression, security, fuel handling and building controls.

Software and connectivity options provide a unified window into the state of IT and facilities systems. With this level of visibility, you can transform the power system into a powerful strategic asset.

Power Xpert software was designed to seamlessly handle Eaton's communicating equipment in a graphical manner without additional serial interfaces, protocols or customization.

Gain a new level of confidence

The innovative BladeUPS delivers reliable, energy-efficient backup power protection for your organization's critical IT systems today as well as the flexibility to support your changing needs tomorrow.

Eaton offers a full line of technology solutions designed to address the power crunch in IT infrastructures. In fact, Eaton offers solutions for the entire power system, from the point where utility power enters your facility all the way to the individual server. Eaton's solutions for the computer room include:

- Rackmount and freestanding power protection systems deliver computer-grade power with battery backup throughout a data center
- Versatile power distribution products and cable management accessories make it easy to deliver power exactly where needed, even as data centers adapt and evolve
- Attractive and functional enclosures and structured wiring closets turn any location into a virtual, secure data center

Learn more about complete, integrated solutions for protecting and organizing your IT equipment.

1.800.356.5794
www.eaton.com/bladeups

A configurable user interface displays critical data center information with FORESEER software.