



## **Powerware® BladeUPS™ Frequently Asked Questions**

### **General questions**

**1. What is the Powerware BladeUPS?**

Powerware BladeUPS is a new rack-mounted UPS system designed to protect today's high-powered servers and high-density computing environments.

**2. Is Powerware BladeUPS a three-phase system?**

Yes, Powerware BladeUPS is a three-phase input and output system, with base designs at 208V for the North American market and 400V for international markets.

**3. Why is this new product a “name” rather than a “number”?**

The Powerware BladeUPS platform is so revolutionary that we feel a name is warranted. Going forward, Eaton will also consider product names rather than numbers for additional products as appropriate.

**4. Where is the Powerware BladeUPS system manufactured?**

Powerware BladeUPS is currently manufactured in North Carolina.

**5. What is the kVA and kW rating of each module?**

Each module is rated for 12kVA and/or 12kW. It's important to note that the kW rating is more important than kVA for this specific product due to the very high power factor (typically .95 - .99) of the computing equipment that Powerware BladeUPS is designed to support.

**6. Does this unit come in any other kW ratings?**

Today we only offer the 12kW module. In the future, we may offer a smaller line cord, rated at only 30 amps, which would enable the system to be installed as an 8kW system.

**7. How much rack space does one Powerware BladeUPS occupy?**

Each Powerware BladeUPS module takes up 6U of rack space based on the EIA industry standard. Each “U” is equal to 1.75 inches, so each module is 10.5 inches tall.

**8. What colors do the Powerware BladeUPS systems come in?**

Powerware BladeUPS is currently offered in a textured black finish that blends well with many of the black servers and IT devices on the market today.

**9. Is Powerware BladeUPS available for international voltages and frequencies?**

Yes, the Powerware BladeUPS is offered at 400V line-to-line or 230V line-to-neutral. This version is also compatible for countries with voltages ranging from 380 to 415 VAC. The Powerware BladeUPS provides auto-frequency sensing. The unit adapts to and runs at the input frequency it senses at start-up.

**10. Does Eaton offer data center cooling products?**

While Eaton does not currently manufacture a data center-cooling product, many of Eaton's manufacturer representatives and large distributors do carry these products within their selling portfolios.

**11. Does Eaton offer Transient Voltage Surge Suppression (TVSS) products to help protect my data center?**

Eaton has a full line of TVSS products; including one of the industry's few "internal to the electrical panel" mounted products. This TVSS provides you with the highest level of protection from lightning and other transient or surge events.

## Availability and shipping questions

**12. When will the Eaton Powerware BladeUPS be available?**

Eaton plans to begin shipping Powerware BladeUPS products for North American customers (208V) shortly after Christmas 2006, and to begin shipping 400VAC units in late February or early March 2007.

**13. When will parallel Powerware BladeUPS systems be available?**

The first Powerware BladeUPS systems shipped will be capable of parallel configuration and the requisite paralleling hardware is also anticipated in that same timeframe.

**14. Will the Powerware BladeUPS system ship fully configured?**

The Powerware BladeUPS system is one of the easiest systems on the market to install, configure and deploy. All systems go through full system testing before they are shipped, so customers can rest assured that components will work together, right out of the box. Even the future expansion of paralleling modules will only require a very simple install then "plug and power" procedure. Therefore, while Eaton will offer on-site configuration services, we won't offer fully configured systems from the factory.

**15. Does the Powerware BladeUPS ship with batteries installed?**

To ensure the cabinet isn't damaged by the excess weight of the batteries, Powerware BladeUPS modules will ship with the batteries removed. This will also be beneficial for installation since the batteries will not need to be removed from the UPS chassis prior to mounting the system in the IT rack or enclosure. The electronics module and battery packs include a "blind" or self-aligning connector at the rear of each pack, to make them very easy to install or remove.

## Engineering and topology questions

**16. What type of UPS topology does Powerware BladeUPS offer?**

Powerware BladeUPS is the first product on the market to offer a "hybrid" power technology. This innovative design considers the design capabilities of the actual computer power supplies in such a manner that the UPS furthers that capability, thereby providing a very robust and effective power protection solution.

**17. What type of efficiency does the Powerware BladeUPS system get?**

During normal operation, the system provides a minimum efficiency of 97%.

**18. How does the system obtain this high level of efficiency during normal operation?**

The Powerware BladeUPS adapts to the incoming power source and provides the uninterrupted power the load requires while dynamically selecting the most effective mode of operation. So the Powerware BladeUPS protects critical loads from poor power quality.

**19. Does Powerware BladeUPS work well with a generator?**

Powerware BladeUPS works extremely well with generators. We designed in frequency acceptance windows that help keep the system operating off of the generator, even if the generator isn't as stable as it should be. This ensures your equipment keeps operating from the generator rather than running the batteries down.

**20. Why did Eaton come up with this hybrid technology?**

As today's companies deploy the latest high-performance IT equipment, increasing energy costs and heating problems have become issues within their data centers. Eaton went to this design to help our customers combat these issues with an efficient and cost effective UPS solution.

**21. Does this system work well with data center or IT applications?**

Absolutely. With its exceptional efficiency and flexibility, the Powerware BladeUPS was designed specifically for data center and IT applications, from a single rack to an enterprise data center.

**22. Will Powerware BladeUPS protect against transients from the power company?**

Yes. The Powerware BladeUPS was designed with input filtering capability that meets several engineering specifications to protect IT equipment from lightning or other transients typically seen on AC input.

**23. If I have noise on the utility input, will that be seen on the output of the UPS?**

No. Noise on the input is filtered out through the input design of the system.

**24. Will the system still provide protection if the generator frequency gets erratic?**

The Powerware BladeUPS system was designed to adapt intelligently to changing conditions such as this. In fact, Powerware BladeUPS is smart enough to run unsynchronized with the varying input frequencies, therefore giving the output a stable 60 or 50Hz output frequency. In fact, it does this without resorting to battery backup, saving battery capacity for retransfer when utility voltage returns.

**25. Do I need an external maintenance bypass for this UPS?**

No. Every Powerware BladeUPS base chassis includes an automated maintenance bypassing mechanism.

- *In a single Powerware BladeUPS system*, the mechanical maintenance bypass automatically actuates if hot-swappable electronics or battery modules are removed. This feature ensures that power to protected loads is not accidentally interrupted by human error.
- *In a multi-module parallel configuration*, the system first determines if it is operating in redundancy or capacity mode.
  - If Powerware BladeUPS modules have been paralleled for redundancy, removing an electronics or battery module will not force a transfer to maintenance mode. Only the UPS unit being serviced goes offline, while its load is automatically transferred to other units in the configuration.
  - If Powerware BladeUPS modules have been paralleled for capacity, and maintenance activities could potentially cause an overload condition on other modules, removing a module or taking a unit offline would trigger an automatic transfer to maintenance bypass.

To find out more about how the Powerware BladeUPS can protect your high-density computing applications, visit our Web site at [www.powerware.com/bladeups](http://www.powerware.com/bladeups), or contact us at 1-800-356-5794.