

WISH I RAN ON  
LITHIUM-ION  
BATTERIES



## Transform your power infrastructure with lithium-ion batteries

While valve regulated lead acid (VRLA) batteries have long been the industry choice for uninterruptible power systems (UPS), new lithium-ion batteries offer additional benefits while still meeting required backup runtime.

Lithium-ion batteries are poised to become the preferred choice for UPSs in IT applications. The batteries last longer and recharge faster, saving time, saving money and reducing risk throughout the lifecycle of the UPS. The benefits of this lightweight solution well justify the upfront investment.

### Not all batteries are created equal

There are many different types of lithium-ion battery chemistries available in the market. Eaton utilizes a combination of lithium phosphate that creates a stable and safe battery for UPS applications. This type of chemistry does not create oxygen as an off-put should there be a thermal event, eliminating the harsh igniting potential of some lithium-ion battery chemistries.

Safety benefits	Installation benefits	Performance benefits
<ul style="list-style-type: none"><li>Lithium phosphate battery chemistry is stable and safe</li><li>Battery management system (BMS) actively monitors temperature and charge cycles</li><li>Common vendor for battery and BMS improves integration and safety</li></ul>	<ul style="list-style-type: none"><li>Save money on battery replacement costs</li><li>40% weight reduction eases installation</li><li>Shift your refresh cycle to be in line with your IT equipment</li></ul>	<ul style="list-style-type: none"><li>2-3X longer life allows you to set it and forget it</li><li>3X faster charge improves recovery</li><li>BMS provides up-to-date insight into battery performance</li></ul>

## By the numbers: 5P 1U 1500 VA UPS

Characteristic	VRLA battery	Lithium-ion battery	Lithium-ion benefit
Average battery life span	3-5 years	8 years	2X longer life
Recharge time (from 0% to 90% runtime capacity)	24 hours	6-8 hours	3X faster recovery
Battery weight	19 lb.	11 lb.	40% lighter weight
Battery replacement cost	\$520	\$0	\$0 OpEx expenditure
Warranty	3 years	5 years	1.7X warranty coverage

*\*One replacement*

## The future is bright

Beyond the initial positive impact of adding lithium-ion batteries to your power infrastructure, Eaton is reshaping the way we utilize batteries in power management by thinking outside of general UPS applications. Eaton's next step with lithium-ion batteries will be to conquer energy storage applications and implement predictive analytics.

### Energy storage

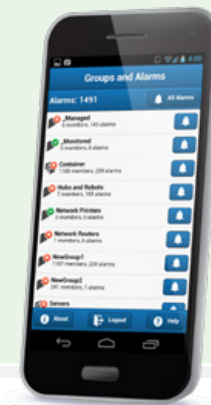
- Identify and monitor peak energy rates and initiate charging cycles based on non-peak hour pricing
- Provide extended backup time during a power event
- Reduce annual energy consumption costs and strain on electrical grid



*Eaton's xStorage offers a range of affordable, ready to use home energy storage solutions*

### Predictive analytics

- Through advanced charging techniques integrated into the BMS, Eaton will provide more accurate replacement notifications
- Localized temperature monitoring will identify the need for more cooling to offset environmental fluctuations
- Load shed equipment and migrate virtual machines based on battery-specific events to regulate temperature



*PredictPulse adds predictive analytics, shifting power monitoring from a reactive to a proactive model*