Pioneering Lithium-Ion Battery and UPS Deployment With DataVita's Brand New Data Center in Scotland

A Vertiv Case Study



Background

The recent deployment of a lithium-ion battery system in Scotland serves as a resounding testament to our unwavering dedication to pioneering innovation and crafting bespoke solutions for our valued customers.

This groundbreaking implementation perfectly aligned with DataVita's premier data center given the company needed to ensure availability as a leading provider of multi-cloud services. Specifically integrated within the new DV2 facility located in Glasgow, this milestone marks Scotland's first metro data center, setting a new benchmark within the region's technological landscape.

The collaboration between Vertiv and DataVita signifies a progressive stride toward revolutionising the data center industry, bolstering reliability, efficiency, and sustainability.

Challenge

Finding a robust space-saving solution

Given the city-center setting, challenges related to space became a distinct obstacle, necessitating an innovative strategy to maximise space utilisation without sacrificing performance or efficiency. In addressing these constraints, the choice of batteries stood out as the ideal solution due to compact design and high energy density.

The streamlined form factor of Vertiv™ Vision LiFePO4 batteries and their ability to store significant energy in a smaller footprint seamlessly integrated into the available area within the DV2 facility.

This project represents a seamless fusion of advanced technology and thoughtful design, optimising space usage while maintaining unwavering reliability and efficiency.

DATAVITA

Challenge:

With a city location, space emerged as a crucial consideration in this project.

Solution:

- Vertiv™ Liebert® EXL S1 UPS modules
- Vertiv™ Vision LiFePO4 batteries

Result:

- Future-ready UPS environment - critical power technology that ensures availability of services for current and future customers.
- Functionality that enables dynamic power usage for optimised efficiency, reduced energy dissipation, and improved operating costs.
- Advanced battery technology enables longer service life and reduced time for recharge.
- Compact battery footprint with energy storage capabilities that support highdensity compute while maximising space utilisation.

Solution

Powering using lithium-ion technology

The project features two Vertiv™ Liebert® EXL S1 uninterruptible power supply (UPS) modules rated at 500 kVA/500 kW (unity power factor) – products that provide high performance and ensure uninterrupted power during brief outages.

Each module boasts an 8-minute battery autonomy provided by two matching lithium-ion battery cubicles containing Vertiv™ Vision LiFePO4 batteries, which offer high safety and reduce the risk reduce the risk of thermal runaway. The built-in battery management system prevents deep discharge and helps ensure the robust batteries are safe.



Vertiv™ Liebert® EXL S1 UPS

Results

This UPS environment embodies a forward-looking ethos, designed to withstand future demands and technological advancements. Its core focus revolves around cost reduction and energy efficiency, achieved through intelligent ECO modes that dynamically adjust power usage, curbing unnecessary consumption while responding adeptly to load variations. This deliberate approach not only minimises operational costs, but also aligns with sustainability goals, reducing the environmental impact from energy use. Complementing this efficiency, the system integrates paralleling features that optimise resource utilisation during partial loads, ensuring peak efficiency even under varying demands.

Central to its innovation are lithium-ion LiFePO4 batteries, pivotal for their extended lifespan, space optimisation, and enhanced energy efficiency. These batteries not only ensure sustained reliability but also reduce maintenance costs over time. Their compact design optimises space utilisation, crucial in constrained environments, while their rapid recharging capability and lower power consumption contribute significantly to the system's overall energy efficiency and responsiveness. Together, these components shape a UPS infrastructure that not only meets current requirements but also sets the standard for adaptable, efficient, and sustainable power solutions.

This achievement underscores Vertiv's dedication to delivering cutting-edge technology while maintaining the highest standards of safety and security. It demonstrates our ability to provide innovative solutions that meet customers' power requirements and address specific space-saving needs.

We are committed to delivering reliable and safe power protection solutions, and this project with DataVita in Scotland is a testament to our delivery of excellence in the field.



Vertiv™ Vision LiFePO4 batteries



High-power and safe LiFePO4 battery modules

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