

DATASHEET

BME2500/120VRLA48 Battery

48VDC Intelligent VRLA Battery for Edge Distributed Power Architecture



The OmniOn BME2500 VRLA battery for Edge Power Architecture is an intelligent battery intended to simplify the installation and operation in data center power solutions. The Edge system controller communicates with the battery to provide a seamless integration into the overall power solution. The battery provides real-time data to the system controller including the

current state of the battery and any potential alarms that may prevent the battery from operating as needed when AC power is lost to the bay. It's modularity allows the specific amount of reserve capacity required to back up the equipment in only the enclosure the battery and power is installed. This allows strategic back up power configurations for specific application needs, while not relying on a centralized battery solution. The battery is hot pluggable allowing for simple, toolless installation. Each battery is automatically identified and configured by the system controller, thus eliminating potential installation and operation issues.

A True System Solution

- The BME2500 batteries are an integral part of the Edge Power Architecture, providing localized battery backup close to the load equipment.
- Monitoring/Control: The integrated Low Voltage / Emergency Power Disconnect, battery shunt and thermal monitors allow management and monitoring of critical battery functions thru communication with the system controller using its integrated isolated RS485 serial interface and proprietary Galaxy Protocol.
- Designed and qualified in the Edge Power Architecture with integrated power and distribution to be a safe, reliable and low cost way to provide five nines data center reliability.

Features

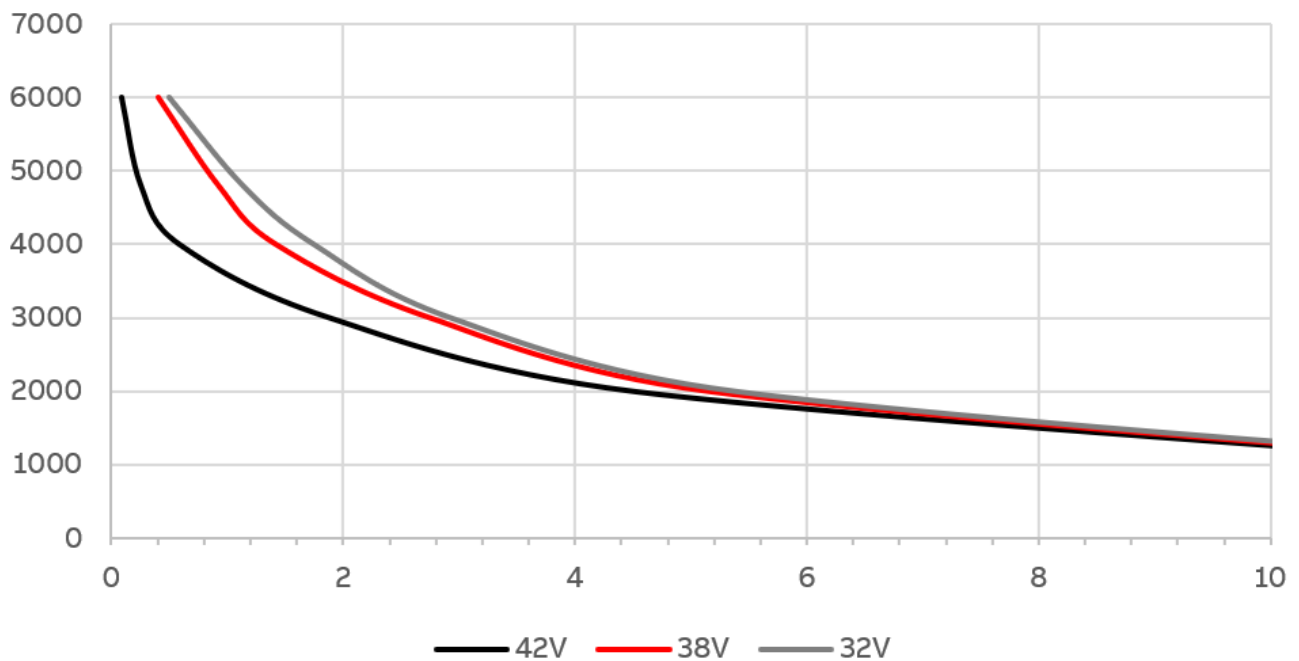
- Compact: 1RU x 19" form factor provides high rate discharge battery for short term discharges.
- Flexible Output: Provides 2.5kW of backup for 2 minutes, up to 4kW for 30 second, and up to 865W for 15 minute discharges.
- Thermal Management: System Slope Thermal Management to help prevent thermal runaway protecting the battery and equipment.
- Capacity Management: Operates in concert with the system controller to indicate health and capacity rating of each module.
- Wide Temperature Range: Operates 0°C to 40°C.
- Fail-Safe Performance: Hot insertion capabilities allow for battery replacement without system shutdown.
- Touch-Safe: Integrated LVD disconnects power from output terminals until battery is plugged into shelf and communicates with controller; protects output connections from accidental shorts and user from hazardous voltages.
- Plug and Play: Installation of the battery in a shelf connected to a system controller automatically initializes set-up parameters.

Technical Specifications

Electrical Specifications for System Design

Electrical Performance

Nominal Voltage	48 Volts (24 cells) Float/Standby: 54.5 Volts nom (54.0 to 55.2 Volts) Cyclic: 57.6 to 60.0 Volts (2.4A max, float <90mA)
Nominal Capacity End Cell Voltage – 38.4V	1-Min Rate: 3810W 1.6Ah 2-Min Rate: 3177W 2.8Ah 5-Min Rate: 1863W 4Ah 10-Min Rate: 1167W 5.1Ah 15-Min Rate: 815W 5.3Ah
Max Discharge Current (5 min)	45A
Internal Resistance (approx.)	60mW
Shelf Life	□9 months @ 20°C
Note: Due to Self-Discharge, it is necessary that batteries are charged within 6 months of storage. Permanent loss of capacity may result if this procedure is not kept.	



Output to end cell voltage @25°C (Watts/Minutes)

Technical Specifications (continued)

Electrical Specifications for System Design

Environmental, Compliance & Physical

Operating Temperature	Charge: 0 to +40°C Discharge: -20 to +50°C
Storage Temperature	-20 to +50°C (Transportation -50 to +60°C) Note: temperatures above 20°C affect shelf life
Operating Relative Humidity	0 - 95% (non-condensing) for use in a controlled environment
Heat Release	11 Watts, or 37.5 BTU/hr. at maximum recharge
Height x Width x Depth	1.72 x 19 x 23.6in (43.7x483x600mm)
Weight (Battery Only; Packaged)	44.0 lbs. (20 kg); 51.25 lbs. (23.2 kg)
Sulfuric Acid Content	4.9 lbs. (2.22 kg) Non-Spillable absorbed content
Electromagnetic Compatibility	FCC Part 15, EN 55032 (CISPR 32), EN 55035 (CISPR 35), Level A, GR-1089
Agency Certifications	CAN/CSA C22.2 No. 60950-1-03, UL 60950-1, 1ST Edition. Battery: UL1989, UL 94 V0

LED Reporting Table

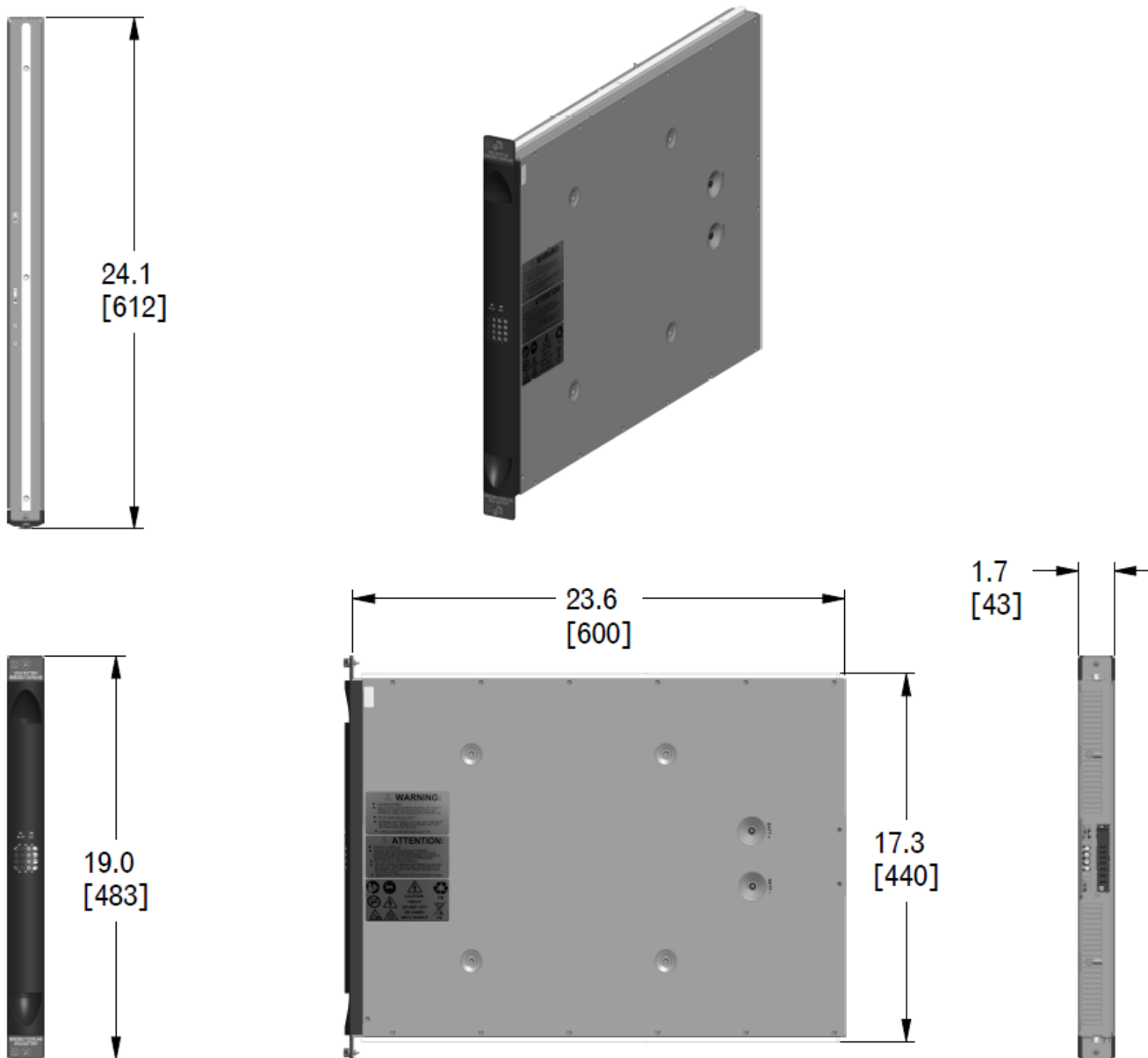


		LED State	
		ALM	DC
Battery Condition			
1	OK	Green	Green
2	GP Communication Fail	Red (Blink)	Green
3	Emergency Power Off (EPO) Activated	Amber	Amber
4	Output Fuse Open	Red	Red
5	Low voltage battery disconnect (LVBD) Open	Red	Amber
6	Low voltage battery disconnect (LVBD) Fail	Red	Red
7	Very High Battery Temperature	Red	Amber
8	Imbalance Alarm	Red	Amber
9	State of Charge (During Charge)	Green	Green (Blink)
10	State of Charge (During Discharge)	Green	Amber (Blink)
11	Battery fail	Red	Red

Item	Description	Comcode
VRLA Battery	BME2500/120VRLA48 VRLA Hot Pluggable Battery for Edge Architecture	1600283228A

Technical Specifications (continued)

Overall Dimensions



BME2500/120VRLA48 BATTERY [1600283228A]

Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
1.4	12-11-2021	Updated as per template
1.5	04-25-2023	Updated weight and LED reporting table
1.6	01-02-2024	Updated as per OmniOn template

OmniOn Power Inc.

601 Shiloh Rd.
Plano, TX USA

omnionpower.com

We reserve the right to make technical changes or modify the contents of this document without prior notice. OmniOn Power does not accept any responsibility for errors or lack of information in this document and makes no warranty with respect to and assumes no liability as a result of any use of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of OmniOn Power. This document does not convey license to any patent or any intellectual property right. Copyright© 2023 OmniOn Power Inc. All rights reserved.