

DATASHEET

BME2500/480NIMH48 Battery

48VDC Intelligent NiMH Battery for Edge Distributed Power Architecture



The OmniOn BME2500 Nickel-Metal Hydride battery utilizing technology developed with FDK for the Edge Power Cabinet Architecture is an intelligent battery intended to simplify the installation and operation of data center power solutions. The Edge system's 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 present state of the battery and any potential issues that may prevent the battery from operating as needed when AC power is lost to the system. The modular battery allows installation of the specific amount of reserve required to back-up the installed equipment. Since the battery is hot-pluggable, additional modules can be installed for future needs. This allows strategic back-up power configurations for specific application needs, while not relying on a centralized battery solution. Being hot-pluggable allows for simple, toolless installation. Each battery is identified by the system controller and is configured automatically, thus minimizing potential installation and operation issues.

Applications

- The BME2500 NiMH batteries are an integral part of the Edge Power Architecture, providing localized battery backup close to the load equipment.
- Monitoring/Control: the battery monitors its parameters and functions and communicates this information to the system controller over the system's robust isolated RS485 interface. If required, the system controller or battery can utilize its integrated disconnect to remove itself from the system DC bus.
- 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 form factor provides high rate discharge battery for short term discharges as well as some longer term dischargers.
- Flexible Output: Initially provides 4.8kW for 5 minutes, up to 6.0kW of backup for short 2 minute discharges, and up to 2.5kW for 10 minute discharges.
- Thermal Management: Designed to comply with UL1973 with no thermal runaway. Eliminates concerns of thermal runaway, chemical spills, and toxic or flammable gas venting.
- Capacity Management: Operates in concert with the system controller to indicate health and capacity rating of each module (SOC, Life Estimator, Alarm management, etc.).
- UL1973 Tested and Listed (File MH49602)
- Wide Temperature Range: Operates 0°C to 40°C Charge /50°C Discharge.
- Fail-Safe Performance: hot insertion/removal capabilities allow for battery replacement without system shutdown.
- Touch-Safe: Integrated solid state devices disconnect power from output terminals until battery is plugged into shelf and communicates with controller; protects output DC connections from accidental shorts and user from bus level voltages.
- Plug and Play: installation of the battery in a shelf connected to a system controller initializes set-up parameters, automatically.

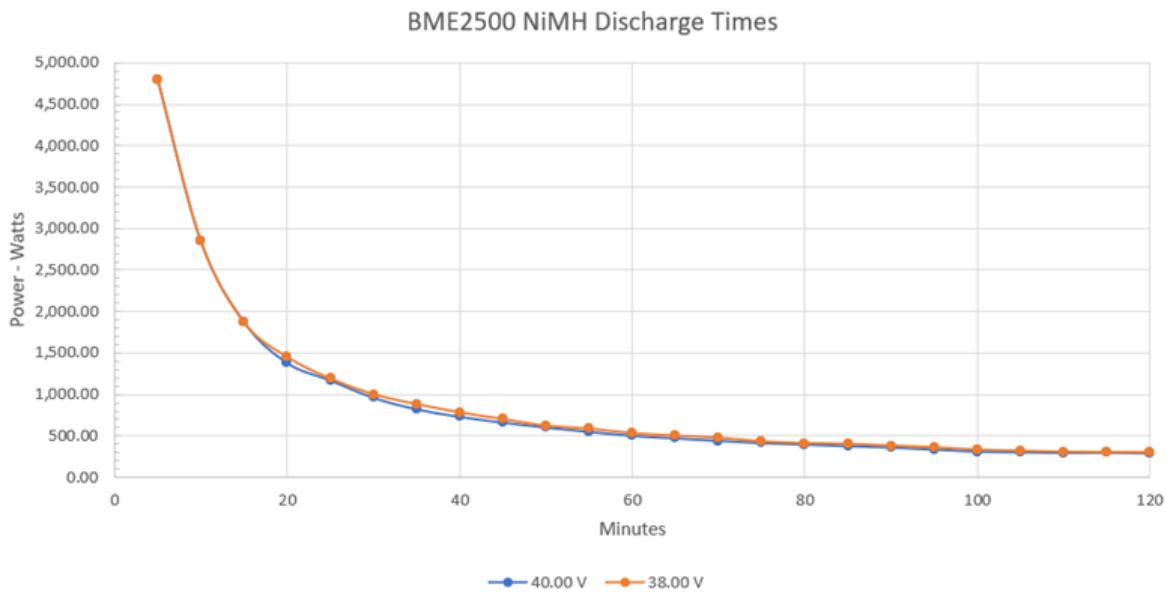
Technical Specifications

Electrical Specifications for System Design

Electrical Performance

Nominal Voltage	Nominal Float Voltage 55.0 Volts (40 cells); Float Current <200mA. Float/Standby Voltage Range: 54.5 to 56.0 Volts.
Initial Nominal Capacity @25°C End Voltage – 38.0V (Range: 38.0 to 56.0V)	2-Min Rate: 6000W 5-Min Rate: 4800W 6-Min Rate: 4000W 10-Min Rate: 2.5kW
Rated Module Capacity Wh/AH	465 Wh / 16.2AH
Max Peak Discharge Current	150A
Input Charge Current	3.5A; *Limited by module
Charge Time	≤ 24 Hours @ 25°C
Output Impedance	50 mΩ
Shelf Life @ ≤25°C	>9 months unpowered

Note: Due to Self-Discharge, it is necessary that batteries are charged within 9 months of storage.



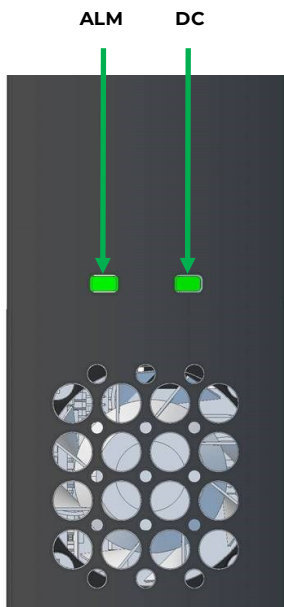
Initial Output to 38V End Voltage @ 25°C (Watts Versus Minutes)

Technical Specifications (continued)

Environmental, Compliance & Physical

Operating Temperature	0 to +40°C Charge; +50°C Discharge
Storage Temperature	-20 to +40°C (Transportation -20 to +40°C)
Operating Relative Humidity	5 to 95% (non-condensing) for use in a controlled environment
Heat Release	15 Watts max.(51.2 BTU/hr. max.) at maximum recharge. < 10°C above ambient
Height x Width x Depth	1.72 x 19 x 23.6in (43.7 x 483 x 600mm)
Weight (Battery Only; Packaged)	38.5 lbs. (17.5kg); 46.5 lbs. (21.1kg)
Sulfuric Acid Content	None
Electromagnetic Compatibility	FCC Part 15, EN 55032 (CISPR32), EN 55035 (CISPR 35), Level A
Agency Certifications	UL1973 Listed

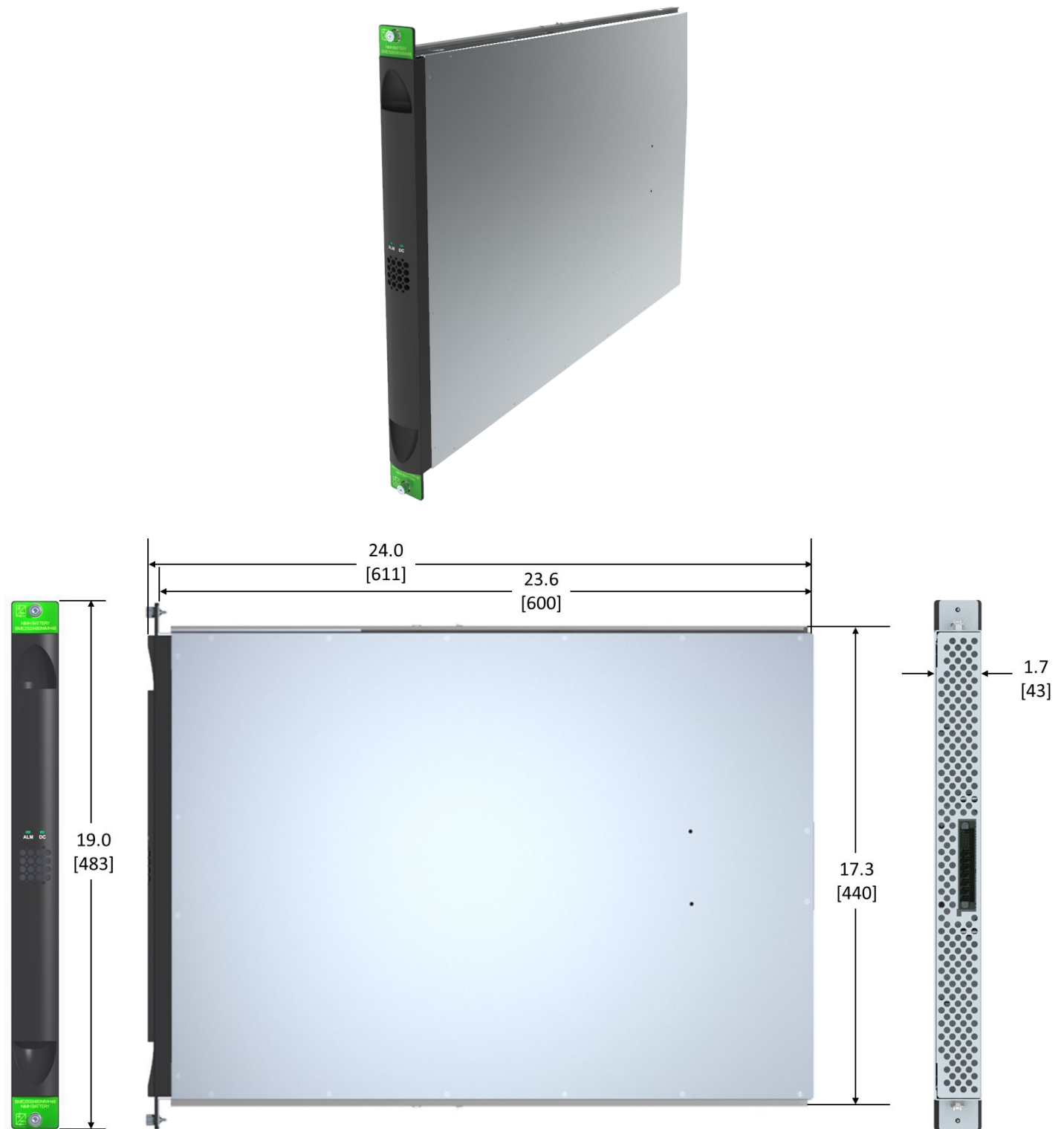
LED Reporting Table



	Battery Condition	LED State	
		ALM	DC
1	OK	Green	Green
2	GP Communication Fail	Red (Blink)	Green
3	EPO Activated	Red	Amber
4	Output Fuse Open	Red	Red
5	Internal Disconnect (LVD) Open	Red	Amber
6	Internal Disconnect (LVD) Fail	Red	Red
7	Very High Battery Temperature	Red	Amber
8	State of Charge (During Charge)	Green	Green (Blink)
9	State of Charge (During Discharge)	Green	Amber (Blink)
10	Battery Fail	Red	Red

Technical Specifications (continued)

Overall Dimensions



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