

BIMINI LEV

51.2V 150Ah

LiFePO₄ Battery System

Premium Power • Integrated Diagnostics • Long-Term Dealer Support

Bimini's battery system is being developed as an integrated part of the vehicle, not simply selected as an off-the-shelf battery.

The Bimini configuration combines a 51.2V 150Ah LiFePO₄ battery, EVE LF150 prismatic cells, intelligent battery management, CAN communication, Bluetooth diagnostics, digital instrumentation, and integration with the Navitas-powered Bimini drivetrain.

The objective is straightforward: dependable power delivery, strong electrical protection, production consistency, diagnostic visibility, serviceability and long-term dealer support.

51.2V NOMINAL VOLTAGE	150Ah NOMINAL CAPACITY	7.68kWh NOMINAL ENERGY
250A STANDARD DISCHARGE	25A STANDARD CHARGER	10 Years LIMITED WARRANTY

BIMINI SYSTEM

Built around the actual Bimini vehicle - battery, BMS, Navitas controller and motor treated as one integrated electrical system.

BIMINI BATTERY PROGRAM

An Integrated Vehicle System

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**DEALER
OBJECTIVE**

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System Snapshot

LiFePO₄ BATTERY CHEMISTRY	16S1P CELL CONFIGURATION	EVE LF150 CELL TYPE
CAN + RS485 + Bluetooth COMMUNICATIONS	100A continuous REGEN CAPABILITY	CPLFP-512150-02 BATTERY MODEL

Dealer-facing design priorities

- Integrated vehicle-level calibration
- Diagnostic visibility
- Production consistency and traceability
- Dealer serviceability
- Long-term warranty support

**BIMINI
APPROACH**

The battery, BMS, Navitas controller and motor are being treated as one integrated electrical system, with specifications established around the demands of the actual Bimini vehicle.

TECHNICAL SPECIFICATION

Core Battery Specifications

Battery architecture, charging limits and high-current ratings.

Specification	Bimini Battery System
Battery Type	Lithium Iron Phosphate - LiFePO ₄
Nominal Voltage	51.2V
Nominal Capacity	150Ah
Nominal Energy	7.68kWh
Cell Configuration	16S1P
Cell Type	EVE LF150 150Ah Prismatic LiFePO ₄
Battery Model	CPLFP-512150-02 - Bimini Configuration
Standard Charge Current	50A
Maximum Approved Charge Current	100A
Charge Cutoff Voltage	58.4V
Standard Discharge Rating	250A
Maximum Continuous Discharge Rating	300A*
BMS High-Current Protection	452A / 10 seconds*

* 300A maximum continuous discharge remains subject to final Bimini thermal and vehicle-level validation. The 452A / 10-second figure is the BMS overcurrent-protection threshold and should not be interpreted as a normal operating-current recommendation.

TECHNICAL SPECIFICATION

Core Battery Specifications - Continued

Regenerative charging, communications, cycle life, physical package and warranty.

Specification	Bimini Battery System
Regenerative Charge Capability	100A continuous
Pack-Level Cycle-Life Specification	≥1,500 cycles at 80% DOD*
Communications	CAN + RS485 + Bluetooth
Standard Charger	25A
Approximate Charge Time	Approximately 6 hours
Battery Dimensions	Approx. 19.84 × 12.99 × 10.63 in.
Battery Weight	Approx. 130-132 lb.
Warranty	10-Year Limited Warranty

* The ≥1,500-cycle specification applies under the manufacturer's defined pack-level test conditions at 80% depth of discharge.

EVE LF150 Prismatic LiFePO₄ Cells

At the center of the Bimini battery system are EVE LF150 150Ah prismatic LiFePO₄ cells.

Bimini's production requirements are being established around new, Grade-A cells from controlled production lots, with cell matching and production traceability incorporated into the battery manufacturing process.

Bimini also intends to control critical component substitutions. Cell manufacturer, cell model, BMS, firmware and other major components form part of the approved Bimini battery configuration.

Long-term battery performance depends on considerably more than the capacity number printed on the case. Cell quality, consistency, matching, thermal management, BMS calibration and production quality control all influence how a battery performs over years of service.

**INSTALLATION
NOTE**

Physical dimensions and weight are approximate; final production configuration and installed envelope should be confirmed for vehicle-specific service or replacement applications.

VALIDATED OPERATING ENVELOPE

Power Delivery

The Bimini battery is designed around a 250A standard discharge rating, with a current manufacturer specification of up to 300A maximum continuous discharge.

The BMS also incorporates a 452A / 10-second overcurrent-protection threshold above the intended normal operating range.

Those numbers serve different purposes:**250A**

STANDARD DISCHARGE -
CURRENT BASIS FOR THE
PRESENT BIMINI/NAVITAS
VEHICLE CALIBRATION.

300A

MAXIMUM CONTINUOUS -
CURRENT MANUFACTURER
RATING, SUBJECT TO FINAL BIMINI
THERMAL VALIDATION.

452A / 10 sec

BMS PROTECTION -
OVERCURRENT THRESHOLD, NOT
THE RECOMMENDED NORMAL
OPERATING CURRENT.

Bimini's approach is to calibrate the vehicle around the battery's validated operating envelope, rather than simply using the largest current value that the BMS can tolerate.

This provides additional engineering margin for:

- acceleration under load;
- multi-passenger operation;
- hill climbing;
- stop-and-go driving;
- low-state-of-charge operation;
- regenerative braking;
- elevated ambient temperatures.

**PERFORMANCE
OBJECTIVE**

The objective is strong repeatable performance without unnecessary thermal stress or nuisance BMS shutdowns.

VEHICLE-LEVEL INTEGRATION

Navitas-Integrated Powertrain

The battery is being developed as part of Bimini's complete electrical system:

**The system also integrates:**

- DC/DC Converter
- Charger
- Digital Battery Display
- Vehicle Electrical System
- CAN Communications
- Regenerative Braking

The Navitas controller's 600A rating is not the same as battery current. The controller, motor and battery are calibrated as a complete system so that battery current remains within the approved Bimini operating envelope.

SYSTEM-LEVEL DESIGN

This system-level approach allows Bimini to calibrate the battery, controller and motor together instead of treating each component as an unrelated standalone product.

BATTERY PROTECTION & COMMUNICATIONS

Intelligent Battery Management

The battery incorporates a dedicated 16-cell BMS responsible for monitoring and protecting the battery during charging, driving, regenerative braking and storage.

The system monitors or manages:

- Individual Cell Voltage
- Pack Voltage
- Charge & Discharge Current
- State of Charge
- Battery Temperature
- Cell Balancing
- Overvoltage Protection
- Undervoltage Protection
- Overcurrent Protection
- Short-Circuit Protection
- High- and Low-Temperature Protection
- Charge & Discharge Protection
- Fault Recording
- Cycle Count
- CAN Communication
- RS485 Communication
- Bluetooth Diagnostics

**DEALER
DIAGNOSTIC
FOUNDATION**

The BMS also supports communication of battery information to other vehicle systems, providing the foundation for deeper controller integration and dealer diagnostics.

Protection Is Different From Performance

Bimini distinguishes between normal operating specifications, maximum ratings and protection thresholds. Protection settings are not intended to be marketed as routine operating targets.

ENERGY RECOVERY & DURABILITY

Regenerative Braking Integration

The Bimini battery system is designed to operate with the vehicle's regenerative braking strategy.

REGENERATIVE CAPABILITY

Up to 100A continuous regenerative charging with short-duration BMS protection above the continuous range.

Regenerative charging is managed around battery temperature, individual cell voltage and state of charge so that energy recovery does not compromise battery protection.

Final regenerative calibration is matched specifically to the Bimini/Navitas vehicle configuration.

Cycle Life & Long-Term Battery Health

The current Clouds Power pack-level specification provides for:

PACK-LEVEL SPECIFICATION

≥1,500 cycles at 80% depth of discharge under the manufacturer's defined test conditions.

That figure should be distinguished from separate cell-level cycle-life claims. Bimini does not automatically convert a laboratory cell-life number into a complete battery-pack claim.

Real-world battery life is influenced by:

- Depth of Discharge
- Charging Practices
- Temperature
- Current Demand
- Storage Conditions
- Cell Consistency
- BMS Calibration

For that reason, Bimini places greater emphasis on the complete battery system, controlled production, diagnostics and warranty support than on a single theoretical cycle-life number.

DEALER DIAGNOSTIC VISIBILITY

Bluetooth App & Diagnostics

The battery supports smartphone-based monitoring and diagnostics.

Available information includes:

- State of Charge (SOC)
- Battery Voltage
- Charge/Discharge Current
- Individual Cell Voltages
- Battery Temperatures
- Cycle Count
- BMS Status
- Historical Fault Records

This provides substantially greater visibility into battery condition than a simple voltage or SOC gauge alone.

Bimini and Clouds Power are also developing the framework for a Bimini-branded iOS and Android battery application, including battery registration, warranty integration and after-sales diagnostic support.

Digital Battery Display

Each Bimini battery package is planned to include a dedicated illuminated digital display providing key operating information directly to the driver.

SOC % STATE OF CHARGE	Voltage BATTERY VOLTAGE	Current REAL-TIME CURRENT
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The complete production package includes the required communication harness, mating connector and mounting hardware. Bimini-specific gauge branding is also available as part of the production configuration.

CHARGING & OPERATING ENVIRONMENT

Charging

The standard Bimini battery package includes a 25A LiFePO₄ charger designed around the battery's charging requirements.

Specification	Bimini Battery System
AC Input	100-240VAC
DC Charging Voltage	58.4V
Approximate Charging Time	Approximately 6 hours
Battery Standard Charge Capability	50A
Battery Maximum Approved Charge Capability	100A

The standard charger operates well below the battery's maximum approved charging capability, providing additional charging margin for normal overnight use.

Higher-output charging options remain under evaluation for future Bimini configurations.

Environmental & Coastal Durability

Bimini vehicles are intended for markets where batteries may routinely encounter heat, humidity, rain, coastal air and outdoor vehicle use.

Battery construction incorporates or targets:

- Steel Enclosure
- Durable Powder-Coated Finish
- Stainless-Steel Hardware
- Tinned Conductors
- Tinned-Copper Busbars
- Sealed Electrical Connections
- Moisture & Corrosion Protection

The current enclosure design has undergone IPX6 water-ingress testing.

QUALIFICATION NOTE	Final finished-pack environmental validation remains part of Bimini's production-qualification program.
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DEALER SUPPORT INFRASTRUCTURE

Production Quality & Traceability

Bimini's battery program is being structured around individual battery serialization and production traceability.

Production records are intended to connect each battery serial number to critical manufacturing information including:

- Cell Production Batch
- Battery Production Date
- BMS Model
- BMS Hardware Revision
- BMS Firmware Revision
- Charger Configuration
- Quality-Control Records
- End-of-Line Test Results

Production batteries are also subject to end-of-line inspection of major electrical, communication, charging and battery-management functions.

**DEALER
ADVANTAGE**

For dealers, this creates an important advantage: the battery can be traced back to its production configuration rather than being identified only by a generic model number.

Controlled Production Priorities

- Controlled cell sourcing
- No unapproved critical substitutions
- Serialized production records
- BMS hardware/firmware revision control
- End-of-line quality records
- Vehicle-level validation before final claims

DEALER SERVICE & DIAGNOSTICS

Serviceability

Bimini's battery strategy is designed around dealer serviceability rather than requiring dealers to diagnose a sealed battery blindly.

The support platform is being built around:

- Bluetooth/App Diagnostics
- Fault-Code Information
- Individual Cell Monitoring
- CAN Diagnostics
- RS485 Service Communication
- Battery Wiring Information
- Charger Diagnostics
- Gauge Diagnostics
- Replacement Harnesses & Service Components
- Warranty/RMA Support

The objective is to help a dealer determine whether a reported problem originates in the battery, BMS, charger, communication system or another part of the vehicle before unnecessary components are replaced.

**DEALER
SUPPORT
PRINCIPLE**

Diagnostic visibility should help isolate the system involved before parts are replaced, reducing guesswork and supporting more efficient service decisions.

Dealer-Level Visibility

Battery PACK CONDITION	BMS PROTECTION & FAULTS	Charger CHARGING SYSTEM
CAN / RS485 COMMUNICATION	Gauge DRIVER DISPLAY	Harnesses CONNECTIONS & SERVICE PARTS

LONG-TERM SUPPORT

10-Year Limited Warranty

The current battery warranty structure provides:

Years 1-5

Approved battery warranty claims receive a replacement battery at no charge for the replacement battery.

Years 6-10

Approved claims receive a replacement battery at 50% of the applicable agreed battery MSRP.

The warranty begins with retail delivery to the end customer, rather than while the vehicle is sitting in Bimini or dealer inventory.

The battery program is also being structured around U.S.-based warranty and replacement support, battery registration, serialized claim tracking and dealer-assisted diagnostics.

Final freight, labor, installation and RMA provisions are governed by the applicable Bimini warranty terms.

What Comes With The Battery

The standard Bimini battery package is planned to include:

- 51.2V 150Ah LiFePO₄ Battery
- 25A Charger
- Digital Battery Gauge
- Gauge/Communication Harness
- Charging Connector & Vehicle Receptacle
- Switch/Outlet Cable
- Universal Mounting Brackets
- Required Mounting Hardware

INTEGRATED PACKAGE

This allows the battery to be supplied as an integrated vehicle system rather than a bare battery pack.

DEALER POSITIONING

Bimini's Battery Philosophy

Bimini's objective is not simply to publish the highest possible amperage, cycle-life or environmental-protection number because it makes a specification sheet look stronger. The battery program is being developed around a more complete standard:

Quality Cells CONTROLLED SOURCING	High-Current Capability CONSERVATIVE PROTECTION
Vehicle-Level Calibration ENVIRONMENTAL DURABILITY	Production Traceability INTELLIGENT DIAGNOSTICS
Dealer Serviceability LONG-TERM WARRANTY SUPPORT	Reliability First VALIDATION BEFORE CLAIMS

The battery, BMS, Navitas controller and motor are being treated as one integrated electrical system, with specifications established around the demands of the actual Bimini vehicle.

**THREE
DIFFERENT
NUMBERS**

A normal operating specification, a maximum rating, and a protection threshold.

For Bimini dealers, the objective is simple:

Provide A Battery System You Can Sell, Service and Support

Reliability Before Maximum Advertised Numbers

CURRENT QUALIFICATION STATUS

Important Program Notes

The following statements are retained because they are part of the current Bimini battery program specification and define where validation, production qualification, or future configuration work remains in progress.

- **300A maximum continuous discharge:** Remains subject to final Bimini thermal and vehicle-level validation.
- **452A / 10 seconds:** Is the BMS overcurrent-protection threshold and should not be interpreted as a normal operating-current recommendation.
- **≥1,500-cycle specification:** Applies under the manufacturer's defined pack-level test conditions at 80% depth of discharge.
- **Regenerative braking:** Final regenerative calibration is matched specifically to the Bimini/Navitas vehicle configuration.
- **Bimini-branded app:** Bimini and Clouds Power are developing the framework for iOS and Android battery registration, warranty integration and after-sales diagnostic support.
- **Charging:** Higher-output charging options remain under evaluation for future Bimini configurations.
- **Environmental qualification:** The current enclosure design has undergone IPX6 water-ingress testing; final finished-pack environmental validation remains part of Bimini's production-qualification program.
- **Warranty administration:** Final freight, labor, installation and RMA provisions are governed by the applicable Bimini warranty terms.

**DEALER
POSITIONING**

The Bimini battery system is intended to give dealers a clearly defined operating envelope, vehicle-level calibration, diagnostic visibility, production traceability, and a long-term support structure - not just a capacity number on a battery case.

BIMINI LEV**51.2V 150Ah LiFePO₄ Battery System • Dealer Technical & Support Guide**