

BIMINI LEV

CURRENT PRODUCTION TECHNICAL SPECIFICATION



INTEGRATED ELECTRIC POWERTRAIN

6.3 kW AC TRACTION MOTOR | NAVITAS 600 A FOC CONTROLLER

51.2 V 150 Ah LiFePO₄ BATTERY | 300 A INTELLIGENT BMS

250 A

STANDARD DISCHARGE

300 A

MAX CONTINUOUS

452 A

10-SECOND PEAK

7.68 kWh

NOMINAL ENERGY

10 YEARS

BATTERY WARRANTY

Specifications reflect current written manufacturer information and approved Bimini program requirements as of July 2026. Final production records, approved calibration, controlling warranty documents, and model-specific release documentation govern.

01 SYSTEM ARCHITECTURE

Four primary propulsion components. One coordinated electrical architecture.

Configured for the Bimini LEV vehicle platform manufactured in Cambodia, this system integrates the traction motor, motor controller, battery, BMS, charging equipment, communications, driver display, and protected electrical connections as one calibrated powertrain.

6.3 kW AC TRACTION MOTOR		51.2 V, 150 Ah LiFePO4 BATTERY	
	7.68 kWh NOMINAL ENERGY		

Specification Basis

	Bimini LEV Configuration	
Battery production model	Clouds Power CPLFP-512150-02	
Battery specification control	Version A/1 - effective July 26, 2025	
Battery warranty basis	Clouds Power warranty statement dated January 1, 2026	
Controller basis	Navitas OEM controller specification and warranty documentation	
Motor basis	Nameplate data for AC traction motor model IM151402	
RATING DISCIPLINE Motor output, controller phase-current capability, battery discharge current, charging current, and BMS protection thresholds describe different functions. They must not be presented as interchangeable performance ratings.		

Document Guide

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• 04 Battery Architecture	• 05 BMS and Electrical Performance
• 06 Charging, App, and Gauge	• 07 Integration, Hardware, and Environment
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02 6.3 kW AC TRACTION MOTOR

Immediate Torque. Precise Feedback. Purpose-Built Propulsion.



Representative motor visualization; published ratings are controlled by the photographed nameplate.

	Bimini LEV Configuration	
Motor type / model	AC traction motor / IM151402	
Nameplate output	6.3 kW / approximately 8.4 hp	
Duty classification	S2-60-minute short-time duty	
Rated motor voltage / current	31 V AC / 125 A	
Rated speed / frequency	3,000 rpm / 102 Hz	
Pole count	4	
Calculated rated shaft torque	Approximately 14.8 lb-ft at 3,000 rpm	
Speed feedback	Integrated speed sensor - nameplate designation: 64	
Insulation / maximum ambient	Class H / 104°F	
Control / regenerative braking	Navitas FOC control / controller managed	
Production identification	Individually serialized and date coded	
Warranty	2-year limited warranty	
MOTOR-RATING CLARIFICATION The 31 V rating is the controlled AC voltage delivered by the inverter/controller. The vehicle energy system uses a 51.2 V DC battery. The 6.3 kW rating applies under the stated S2-60-minute duty classification and is not represented as indefinite S1 continuous output.		

Vehicle-Level Calibration and Validation

• Throttle mapping, acceleration response, and torque delivery	• Regenerative-braking strength and energy recovery
• Low-speed drivability and hill-climbing response	• Sustained load, repeated acceleration, and temperature recovery
• Motor phase current, voltage, frequency, and speed feedback	• Final-drive ratio, tire diameter, passenger load, and cargo load

03 NAVITAS 600 A INTELLIGENT MOTOR CONTROLLER

Precision Control. Configurable Performance. Proven Reliability.



Powered by Navitas Vehicle Systems.

	Bimini LEV Configuration
Controller rating / control method	600 A / FOC field-oriented control
Protection / operating range	IP65 sealed design / -40°F to 185°F
Connectivity / application	Built-in Bluetooth / Navitas App
Telematics / steep-hill protection	Compatible / integrated
Electrical protection	Overvoltage, undervoltage, overcurrent, overtemperature
Electrical connections	Sealed controller connectors
Vehicle calibration	OEM-configurable
Compliance / quality	CE compliant / Navitas ISO 9001:2015 certified
Warranty	3-year limited warranty - controller, first installation

Bimini-Specific Calibration

• Maximum motor phase current and battery current	• Motor duty-cycle, final-drive ratio, tire diameter, and maximum speed
• Throttle, acceleration, speed, torque, and regenerative-braking calibration	• Controller voltage protection and BMS current limits
• Low-state-of-charge and high-temperature derating	• Battery temperature limits and overcurrent safety margin
600 A CONTROLLER RATING The 600 A rating describes controller and motor-phase-current capability. It is not a motor power rating and does not mean the controller continuously draws 600 A from the battery.	

Navitas reports more than 35 years of industry experience, engineering support from development through production, technical training and documentation, scalable supply, and support in key markets throughout the United States, Canada, Europe, and Asia.

04 BATTERY ARCHITECTURE

High-Density Energy. Confirmed Pack-Level Ratings. Controlled Production.



Bimini-branded production appearance; manufacturer model identification remains controlled by production records.

	Bimini LEV Configuration
Manufacturer / model	Suzhou Clouds Power Tech Co., Ltd. / CPLFP-512150-02
Battery type / cell configuration	LiFePO ₄ traction battery / 16S1P matched prismatic cells
Nominal voltage / capacity / energy	51.2 V / 150 Ah / 7.68 kWh
Charge cutoff / published discharge cutoff	58.4 V / 40.0 V
BMS low-voltage cutoff / recovery	41.6 V / 44.8 V
Self-discharge	Not greater than 1% per month under specified storage conditions
Series / parallel connection	Series not permitted / up to two identical approved batteries in parallel
Shipping classification	UN3480 lithium-ion battery

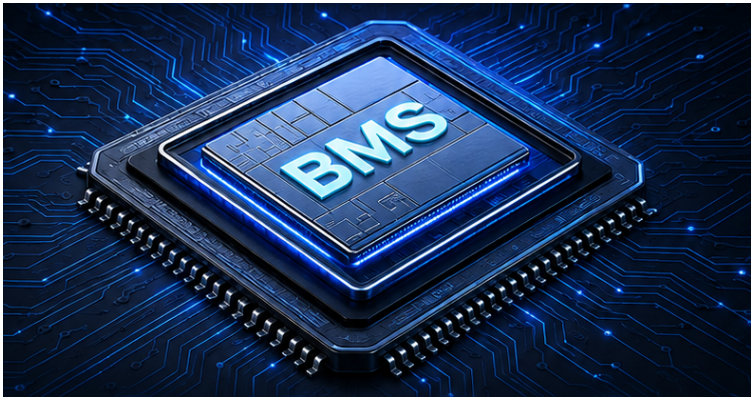
Cell Selection and Pack Integrity

Cells matched by capacity, open-circuit voltage, internal resistance, production batch, and manufacturing date	Designed for thermal stability, consistent voltage delivery, low internal resistance, and traction-current demand
Mixed-grade, reclaimed, second-life, used, or materially mismatched cells are not permitted	Production-batch and serial-number traceability required
THEORETICAL 25 A CAPACITY CALCULATION 150 Ah ÷ 25 A equals approximately 6 hours, or 360 minutes. This is a mathematical capacity calculation - not a tested reserve-capacity result. Actual runtime depends on usable capacity, voltage cutoff, temperature, system efficiency, load, and battery condition.	

MECHANICAL DATA CONTROL Final dimensions and weight are withheld because prior factory materials contain conflicting values. Public mechanical data must be taken from the controlling production drawing and verified production sample.

05 300 A INTELLIGENT BMS AND ELECTRICAL PERFORMANCE

Continuous Monitoring. Coordinated Protection. Confirmed Current Ratings.



Conceptual BMS visualization; electrical limits are controlled by the production specification and BMS settings.

Specification		Bimini LEV Configuration	
Peak discharge capability		452 A for up to 10 seconds, subject to BMS protection limits	
Discharge-overcurrent protection		452 A for 10 seconds	
Short-circuit protection		2,429 A for 384 microseconds	
Standard / maximum charging current		50 A / 100 A	
Charge-overcurrent protection		200 A for 1 second	
Monitoring and management		Cell balancing, SOC, temperature, charge, discharge, and fault monitoring	
Communications		CAN, RS-485, and Bluetooth	
Current production application		Clouds Power Battery App	
PEAK-CURRENT ENGINEERING MARGIN		The factory currently lists both the 452 A / 10-second peak capability and the 452 A / 10-second discharge-overcurrent setting. Final Navitas calibration must preserve margin below the protection boundary and account for current-sensor tolerance, temperature, state of charge, voltage sag, and repeated demand.	

Protection and Regenerative-Braking Integration

• Pack and cell overvoltage and undervoltage protection	• Cell-voltage imbalance, communication-fault, and internal-sensor monitoring
• Charge and discharge overcurrent protection	• Regenerative current limited by allowable charge current, voltage, temperature, and state of charge
• Short-circuit, overtemperature, and low-temperature charging protection	• Controller and BMS coordinated to prevent protection events during braking

06 CHARGING, CONNECTED INTELLIGENCE, AND DRIVER GAUGE

Defined Charge Limits. Current App Platform. Bimini-Specified Display.

Charging System

	Bimini LEV Configuration	
Supplied charger	25 A LiFePO ₄ -compatible CC/CV charger; silver finned enclosure; fan cooled	
Input / maximum DC output	110 V AC / 58.4 V DC	
Standard battery charging current	50 A	
Maximum battery charging current	100 A	
BMS charge-overcurrent protection	200 A for 1 second - protection threshold only	
Charging below 32°F	Prevented by the BMS	
Vehicle interface	Charging connector and vehicle-mounted receptacle	
25 A SUPPLIED CHARGER VS. BATTERY CHARGE CAPABILITY The standard package includes a 25 A charger. The confirmed standard battery charging current is 50 A and the maximum approved battery charging current is 100 A. Charging equipment above 25 A must be approved for the final Bimini configuration and matched to the BMS, conductors, connectors, and thermal limits.		

Battery Application

The production battery supports CAN Bus, RS-485, Bluetooth, and mobile-app communication. The current production platform is the Clouds Power Battery App for iOS and Android. A Bimini-branded white-label app remains subject to a separate development, ownership, maintenance, distribution, and support agreement.

• State of charge and battery status	• Temperature and available cell-level information
• Pack voltage and current information	• Warning and fault information supported by the production BMS

Bimini Standard Digital Gauge

	Bimini LEV Configuration
Display / information	Illuminated digital LCD / battery voltage, state of charge, and real-time current
Measurement and withstand capability	Up to 110 V
Included equipment	Gauge, wiring harness, mating connector, and mounting hardware
Branding / status	Bimini LEV / required production-BOM item

07 INTEGRATION, HARDWARE, AND ENVIRONMENT

Automotive-Grade Connections. Defined Accessories. Controlled Environmental Claims.

Powertrain Connection Architecture

The final integration uses keyed, locking, touch-safe, weather-sealed, vibration-resistant, reverse-connection-resistant connections and appropriately rated conductors. Exact part numbers and current-versus-time ratings remain controlled by the approved BOM and vehicle-level validation package.

• Main propulsion power and battery charging	• Charger interlock and service isolation
• CAN, RS-485, and diagnostic communication	• Protected routing, strain relief, and heat-source separation
• State-of-charge gauge and key-switch/enable signal	• Water-drainage provisions and emergency shutdown procedures

Included Battery-Package Hardware

• CPLFP-512150-02 battery pack	• Washers and mounting bolts
• 25 A LiFePO ₄ charger	• Charging connector and vehicle-mounted receptacle
• Switch outlet cable	• Bimini-branded digital LCD gauge
• Universal mounting bracket	• Gauge harness, mating connector, and mounting hardware

Environmental Specification

	Bimini LEV Configuration	
Official battery enclosure specification	IP65	
Factory-reported waterproof test	IP66 - report stated available; exact model scope pending Bimini review	
IP67 status	No IP67 test report for the exact production enclosure	
Charging / discharging temperature	32°F to 113°F / -4°F to 122°F	
Temperature protection	Low-temperature charge protection and high-temperature derating integrated	
Pressure / surface protection	Integrated breather / automotive-grade corrosion-resistant finish	
PUBLIC INGRESS-PROTECTION CLAIM Until the exact production-model IP66 report is reviewed, the published battery-enclosure rating remains IP65. No IP67 rating or capability claim is approved for CPLFP-512150-02.		

CONNECTOR-RATING CONTROL Battery output ratings do not automatically establish the rating of a connector, crimp, terminal, cable, or housing. The complete connection system must be validated for 300 A continuous operation and 452 A for up to 10 seconds with acceptable resistance and temperature rise.

08 SERVICE LIFE AND WARRANTY

Official Pack-Level Cycle Rating. Factory-Backed Limited Warranty Schedule.

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The official complete-pack cycle-life specification is at least 1,500 cycles at 80% depth of discharge. Higher cell-level cycle claims are not presented as the cycle-life rating of the complete production battery.

Component Coverage

Bimini LEV traction motor	2-year limited warranty
Navitas motor controller	3-year limited warranty - controller, first installation
Battery - Years 1-5	Full replacement at no replacement-battery cost for an approved claim
Battery - Years 6-10	Replacement battery available at 50% of the official MSRP in effect at the time of an approved claim

Principal Battery Warranty Conditions

• Begins from the applicable purchase date and applies to the original purchase	• Excludes damage from extended deep discharge or overcharging
• Requires proper installation, an approved golf-cart or similar LSV application, and a lithium-compatible charger	• Normal capacity loss of 30% or less during the first five years is not a warrantable defect
• Requires proof of purchase and cooperation with diagnostic and RMA procedures	• Return shipping charges may apply depending on location
• Excludes abuse, neglect, fire, flood, extreme freezing, tampering, unauthorized repair, and unapproved use	• Incidental and consequential damages are disclaimed to the extent permitted by law
BIMINI WARRANTY ADMINISTRATION Bimini customer warranty materials should incorporate the factory-backed schedule and define retail registration, dealer claim administration, freight, labor, replacement logistics, and the warranty applicable to a replacement battery.	

Cycle life and warranty are separate concepts. Actual service life depends on depth of discharge, temperature, charge rate, discharge demand, storage practice, maintenance, and the applicable BMS cycle-counting method.

Serialized Components. Controlled Substitutions. Model-Specific Documentation.

Serialized Powertrain Traceability

• Motor model, serial number, date code, and rated configuration	• Battery model and serial number, cell production batch, and BMS revision
• Navitas controller model, serial number, firmware, and calibration	• Charger model, vehicle production date, end-of-line inspection, and applicable certification configuration

Production Quality Assurance

• Motor nameplate, speed-sensor, rotation, and functional verification	• Charge-current, discharge-current, charger, and regenerative-braking verification
• Controller model, firmware, calibration, protection, and diagnostic verification	• CAN, RS-485, Bluetooth, app, gauge, and fault-code testing
• Battery model, BMS hardware/firmware, pack voltage, cell voltage, and cell-voltage deviation	• Enclosure, labeling, serial number, connector, routing, and vehicle-level functional inspection

No unapproved substitution may be made to the motor, speed sensor, controller, controller firmware or calibration, cells, BMS, BMS firmware, connectors, charger, enclosure, wiring, communication protocols, application, or other safety-critical components.

Documentation and Certification Status

	Bimini LEV Configuration	
Navitas controller	IP65; CE compliant; Navitas ISO 9001:2015-certified quality system	
Battery documents reported available	UN 38.3 test summary and MSDS	
Battery certifications reported available	UL 2580 and IEC 62619	
Charger documentation reported available	UL certification	
Publication control	Certification claims require review of exact model scope, holder, facility, validity, and production configuration	
FINAL RELEASE CONTROLS Before final public release, Bimini must verify the exact production-model certificate scopes, the IP66 report, final mechanical dimensions and weight, gauge model/BOM details, connector-current validation, and final Navitas battery-current and regenerative-braking calibration.		

DEALER SERVICE AND TECHNICAL SUPPORT

Structured diagnostics. Serialized records. Controlled configuration management.

Dealer Service and Diagnostic Framework

• Controller diagnostics and approved calibration through the Navitas App	• Serialized motor, controller, battery, BMS, charger, firmware, and calibration records
• Battery status, state of charge, pack voltage, current, temperature, and supported fault information through the production battery app	• Warranty claims supported by photos, voltage readings, fault codes, charger information, and authorized diagnostic records
• Immediate in-vehicle reference through the Bimini digital LCD gauge	• Firmware, calibration, and safety-critical component changes controlled through approved Bimini procedures
DEALER DOCUMENTATION STANDARD Service and warranty decisions should be tied to the applicable vehicle serial number, installed component serial numbers, approved firmware and calibration, diagnostic records, and the controlling production BOM.	

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Specifications reflect current written manufacturer information and approved Bimini program requirements as of July 2026. Final production records control.

DEALER TECHNICAL EDITION | CAMBODIA-BUILT VEHICLE PLATFORM | BIMINI LEV LLC