

ALPHA 3 / LITE

LiFePO₄ BATTERIES 12.8V 300Ah



Safety & Structural Reliability

Automotive-grade LiFePO₄ cells ensure long-term stability and thermal safety.

Advanced BMS ensures comprehensive multi-level electrical and thermal protection.

UL94 V-0 flame-retardant housing and IP65 waterproof construction for enhanced durability.

Long Lifespan & Energy Efficiency

Industry-leading cycle life (80% DoD): LITE 4,000+ | ALPHA 3 5,000+.

Delivers high usable energy output (3,840Wh) with ≤5% monthly self-discharge.

Maintenance-free LiFePO₄ chemistry provides clean, stable, and efficient power output.

All-Weather Operation & Cold Protection

Wide operating range: Charge 32–131°F | Discharge –4–140°F.

Built-in low-temperature charging protection with automatic recovery for safe winter operation.

Internal Heating System (ALPHA 3 only): Activates below 37.4°F and stops above 46.4°F to support safe charging in freezing climates.

Smart Integration & Expandability

Bluetooth Monitoring (ALPHA 3 only): Track SOC, voltage, current, temperature, cycle count, and system status via the RICH SOLAR App.

Supports up to 4 units in parallel (4P) for RVs, marine, off-grid cabins, and backup power systems, making the ALPHA 3 Series ideal for high-capacity energy needs.

Backed by a 5-year warranty.

SPECIFICATIONS

BATTERY

Model	RS-B123	RS-B123S
Product Name	ALPHA 3 LITE	ALPHA 3
Nominal Voltage	12.8V	12.8V
Rated Capacity	300Ah	300Ah
Nominal Energy	3,840Wh	3,840Wh
Cell Chemistry	LiFePO ₄	LiFePO ₄
Cycle Life (80% DoD)	4,000+	5,000+
Parallel Expansion	Up to 4 units (4P)	Up to 4 units (4P)
Bluetooth	No	Yes
Internal Heating	No	Yes (100W)
Certifications	UN 38.3, MSDS	UN 38.3, MSDS

ELECTRICAL PERFORMANCE & CHARGING

Charging Method	CC/CV
Max Charge Voltage	14.4V
Recommended Charge Voltage	14.2V
Discharging Cutoff Voltage	10.0V
Recommended Charge Current	150A
Max Charge Current	300A
Max Continuous Discharge Current	300A
Max Output Power	3,840W

ENVIRONMENTAL

Charge Temperature	32°F to 131°F
Discharge Temperature	-4°F to 140°F
Storage Temperature	-4°F to 113°F (<1 Month) / 32°F to 95°F (>3 Months), ≤90% RH
Low-Temperature Charging Protection Auto Recovery	Yes
Ingress Protection	IP65

MECHANICAL

Terminals	M8
Housing Material	UL94 V-0 flame-retardant plastic
Dimensions (L × W × H)	20.6 × 10.6 × 8.7 in
Net Weight	71.3 lbs71.7 lbs

MODEL COMPARISON SUMMARY

Model	ALPHA 3 LITE	ALPHA 3
Bluetooth	×	✓
Internal Heating	×	✓
Cycle Life (80% DoD)	4,000+	5,000+

BMS CAPABILITIES (COMMON ACROSS ALL MODELS)

Voltage Protection	Over-Charge Protection	Yes
	Over-Discharge Protection	Yes
Current Protection	Charging Over-Current Protection	Yes
	Discharging Over-Current Protection	Yes
Circuit Protection	Short-Circuit Protection	Yes
Temperature Protection	High/Low Temperature Charging Protection	Yes
	High/Low Temperature Discharging Protection	Yes
	Internal FET Over-Temperature Protection	Yes
Cell Management	Passive Cell Balancing	Yes