

AST-320 12.8V 320AH LiFePO4-Li Battery

Solmax New Energy B.V.
www.solarfam.nl
1.2025

Advantages of AST-320

Standard size & light weight: AST-320 has the same standard size (353mm*198mm*250mm) as conventional lead acid batteries and weighs less than half of the capacity-equivalent lead acid battery.

Cycle life: Longer than traditional lithium batteries, with up to 6,000 charge and discharge cycles, while other types of lithium batteries (such as lithium cobalt batteries) generally last for 500-1,000 cycles.

Body design: The entire body is made of ABS+PC flame-retardant material using a single mold. The product is aesthetically pleasing, has a robust structure and designed for easy standardization. The front of the battery displays the brand and specifications. Handrails are provided on both sides for easy handling. The cover features a QR code sticker that provides user instructions and supports mobile app connectivity.

PCB Board: The confluence and voltage detection are routed through the PCB board, featuring a simple wiring design that significantly reduces the failure rate. Each cell is connected in series with a fuse, which melts and disconnects the circuit in the event of constant over-current, effectively preventing fire risks.

BMS Protection: The Battery Management System (BMS) balances voltage to ensure optimal battery performance. Each AST-320 battery has an integrated BMS that protects it from extreme conditions, enhancing safety and reliability.

Anti-swelling Protection: An aluminum alloy plate is used to secure and position the battery cells, while the stainless steel hoop provide reinforcement for the entire battery cell group. Square battery cells have the tendency to swell after long-term use. When fixed with tape, the cells may swell over time, potentially damaging the battery shell. The purpose of the stainless steel hoop is to ensure adequate strength, preventing swelling and maintaining the structural integrity of the battery during extended use.

Heating function: Solve performance issues in low temperature environments and ensure that batteries can still work safely and efficiently in cold conditions.



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• Battery parameters

Nominal voltage	12.8V
Voltage range	9.2~14.6V
Nominal capacity	320Ah/4096Wh
parallel connection	Support
series connection	Support and up to 4 units in series ($\leq 51.2V$)
Control	Battery management system (BMS) 300A
Case material	ABS+PC
Cell assembly	324Ah square LFP battery cell *4pcs
Dimension	353mm(L)*198mm(W)*250mm(H)
Weight	27.2KG

• Charging parameters

Recharging current	$\leq 300A$
High temperature protection value in charging	60~70°C

• Discharge parameters

Discharge current	$\leq 300A$
High temperature protection value in discharging	70~80°C

• BMS parameters

Charger voltage (CC-CV)	14.4V
Overcharge protection voltage	3.620~3680V 1000~3000mS
Overcharge protection voltage	3.500~3.600V
Over-voltage release conditions	Discharging recovery Voltage self recovery If overcharge protection is triggered three times in a row, discharging is required to release the protection.
Balance model	Idle Balance
Balance type	Pulsed model
Balance function turn-on voltage	3.170~3.230V
Balance function turn-on/off voltage difference	15mV/8mV
Under-voltage	2.400~2.600V 1000~3000mS
Under-voltage release	2.450~2.650V
Under-voltage release conditions	Charging recovery Voltage self recovery If over-discharge protection is triggered three times in a row, the load must be disconnected or charging must occur to release the protection.
Over-current Charge protection value	305~345A 5~15S
Over-current Charge release conditions	Automatic recovery occurs after a 32-second delay. If charging over-current is triggered three times in a row, discharging is required to release the charging over-current protection.