



*Thin*  
*Blade battery*

PackV: 52.81  
SOC: 0.00  
Temperature  
Cell Voltage

# ES-51.2V135Ah-Wall Mounted LITHIUM-ION BATTERY PRODUCT SPECIFICATION

*Thin*  
Blade battery



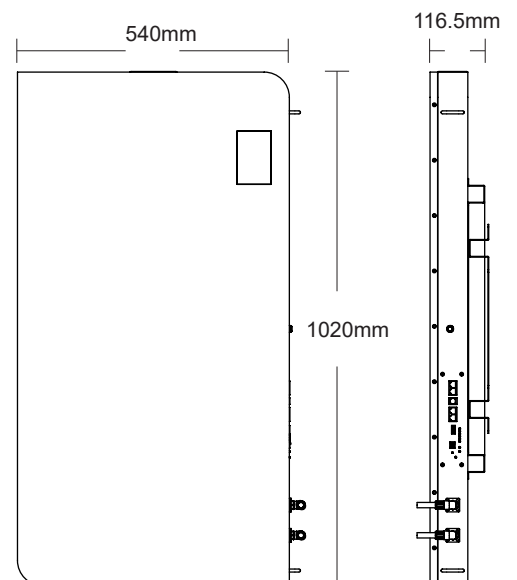
**51.2V135Ah-Wall**

# 1. Advantages



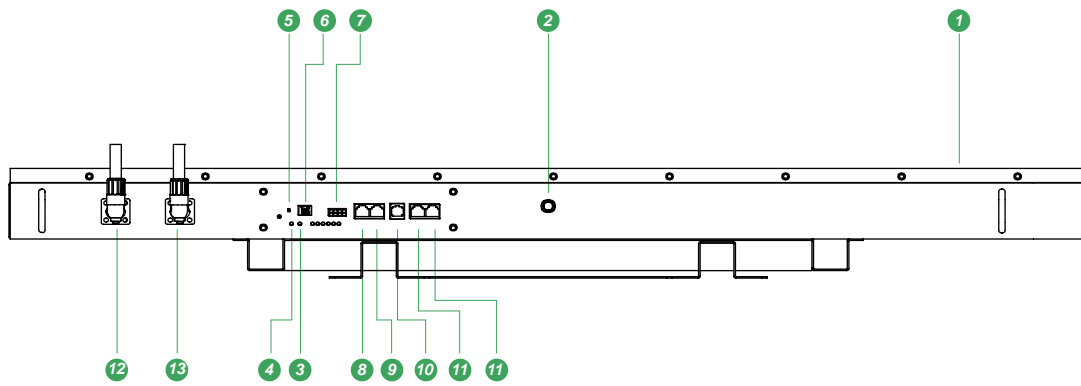
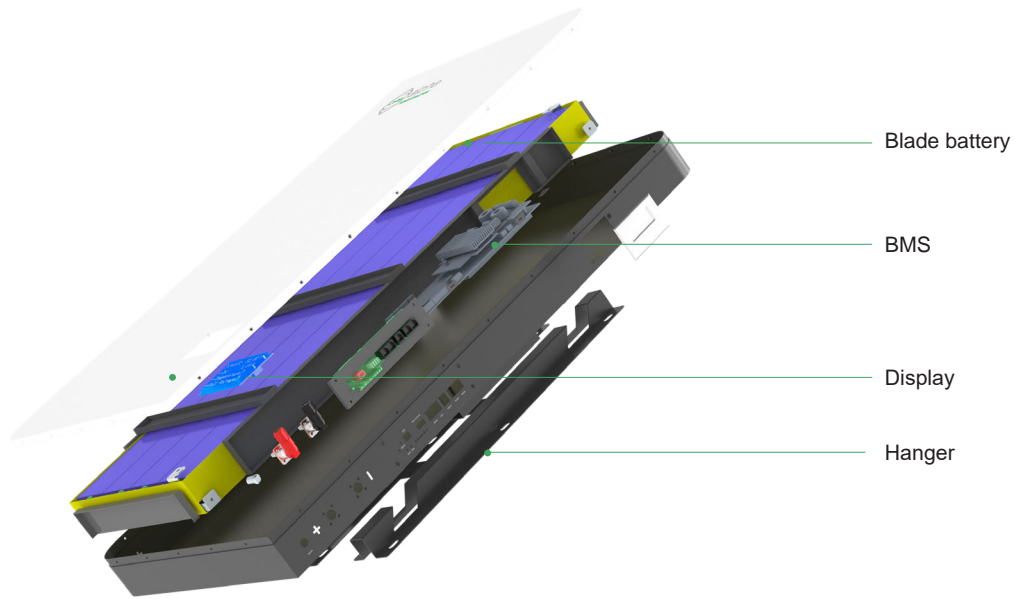
The battery module consists of single LFP cells, wire, BMS and container.

- Packed with high performance LFP single cell, long life, safety and wide temperature range
- High energy density, small size, light weight, no pollution
- Packing with single cell container, fire retardant wire and laser welding, stable and safe
- Built-in BMS, with battery voltage, current, temperature and health management
- LED indicate the battery SOC and operating status
- LCD Screen display the battery voltage, current, temp., SOC detail information
- Support communicate with solar inverter bu CAN or RS485
- Update software by RS485 port
- Flexible customization of dimensions
- Stable performance, maintenance-free



## 2. Battery module specification

No.	Item	Specification	Notes	
1	Typical Capacity	135Ah	0.2C charge and discharge for cut-off voltage	
2	Minimum Capacity	130Ah		
	Initial Impedance	Pack $\leq 80\text{m}\Omega$	After standard charge, AC1KHz test	
3	Weight	Approx:85kG		
4	Nominal voltage	51.2V		
5	Charge limit voltage	58.4V		
6	Discharge cut-off voltage	43.2V		
7	Standard charge current	20A	0°C~45°C	
8	Maximum charge current	100A	10°C~45°C	
9	Standard discharge current	40A	-10°C~60°C	
10	Maximum discharge current	100A	10°C~60°C	
11	Unit voltage	45V-52V	40%-60%	
12	Operating temperature	0°C~45°C		Charging
		-10°C~50°C		Discharging
	Storage temperature	-10°C~ +45°C	less than 1 month	Recommended storage temperature: 25°C, at the shipment state
		-10°C~ +35°C	less than 6 months	
13	Recoverable capacity	Constant current 0.2C charge to 58.4V, then constant voltage 58.4V charge to current declines to 0.01C, rest for 10min, constant current 0.2C discharge to 43.2V, rest for 10min. Repeat above steps 3 times, recording the maximum capacity		
14	Cycle Performance	Under the temperature of $23\pm 2^\circ\text{C}$ , charge the battery with 0.2C, when the voltage reaches up to 58.4V charge with constant voltage until the charge current $\leq 0.02$ , then stop charging, then rest for 0.5h, then discharge with 0.2C to 43.2V. Cycle with the above mode, when the continuous discharge time <3H stop cycling. The cycle life is required $\geq 6000$ times.		
15	Storage Humidity	$\leq 75\%$ RH		
16	Appearance	Without distortion and leakage		
17	Standard testing condition	Temperature : $25\pm 2^\circ\text{C}$ Humidity : $\leq 75\%$ RH Atmospheric Pressure : 86-106 Kpa		



No.	Item	Description	Remarks
1	Display	/	
2	Main switch	ON/OFF	
3	LED	RUN	
4	LED	ALM	
5	Reset button	RST	
6	Dial switch	ADS	
7	Main connector	/	
8	RS485	RS485	
9	CAN	CAN	
10	RS232	RS232	
11	RS485	RS485	
12	Barrier terminal block	+	
13	Barrier terminal block - Neg	-	

## 4. BMS specification

BMS provides complete management and protection for the battery.

- Voltage warning and protection for module and each single cell.
- Current warning and protection, and the maximum operating current can be customized.
- Temperature warning and protection, 4 sensors for battery pack and 1 sensor for BMS.
- Battery module SOC and SOH calculation, display the accurate battery status.
- Communicate with inverter or PC monitor, report the battery data.
- Pre-charge/discharge logic, make sure safety use in whole process.
- Switch-off mode, sleep mode, and operating mode, different mode for different condition.

### BMS parameters.

Item	Details	Standard
Cell overcharge protection	Overcharge detection voltage	3.65±0.020V
	Overcharge detection delay time	Typical:1.0s
	Overcharge release voltage	3.50±0.020V
Cell over-discharge protection	Over-discharge detection voltage	2.5±0.02V
	Over-discharge detection delay time	Typical:1.0s
	Over-discharge release voltage	2.9±0.02V or charge release
Over-current protection	Charge over current, protect current.	120A
	Charge over current detection delay	10S
	discharge Over-current protection current	120A
	discharge Over-current detection delay time	10S
Short protection	Short protection current	360A
	Protection condition	External short circuit
	Protection release condition	Charging release
Temperature(T) protection	Charge high T protection	65°C
	Charge high T recover	50°C
	Discharge high T protection	65°C
	Discharge high T recover	50°C
	Charge low T protection	-10°C
	Charge low T recover	0°C
	Discharge low T protection	-10°C
	Discharge cryogenic recovery	0°C
Balance	Balance threshold voltage	3.45V
Communication	RS485 standard communication interface, it can real-time monitoring the capacity of battery bank, the voltage, current, environment temperature, and charging/discharging current.	
Alarm	It has over-temperature, over charge, under-voltage, over-current, short circuit alarm Function.	