

# **Lithium ion Battery Specification**

## **Battery Type: 12.8V50Ah**

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## 1. Description and Model

1.1 Battery Classification: LiFePO4

1.2 Battery Type: 12.8V50Ah

## 2. Basic Characteristics

Cell Parameter			
Item	Condition	Specification	Remark
Nominal capacity	Discharge capacity at 1C	50Ah	
Internal resistance	Measured at 1000 Hz	≤0.4 mΩ	
Nominal voltage		3.2V	
Dimension	Diameter	149±0.8 mm	For details of the graph structure, see Figure 3-1.
	Thickness	39.8±0.5 mm	
	Height	101.75±0.5 mm	
Weight	(Cell Only)	1.15±0.05 kg	
Charge cut-off voltage	Constant Current Charging	3.65V	
Charge method	Standard charging	≤0.5 C at CC/CV	
Discharge cut-off voltage	Constant current discharge	3.65V	
Cycle Life	0.5 C/ 80 % DOD	≥4000 cycles	
Operating temperature range	Charge	0—55℃	
	Discharge	-20—55℃	
	Storage	0—45℃	
Appearance	No cracks, scratches, deformation, stains, electrolyte leakage, etc.		
Battery Pack Parameter			
Item	Specification	Remark	
Configuration	4S1P	Total 4pcs	
Nominal capacity	50Ah		
Internal resistance	≤100mΩ		

<b>Nominal voltage</b>		12.8V	
<b>Dimension</b>		229*138*208mm	Dimensions of terminals without plastic shells
<b>Weight</b>		Around 7Kg	
<b>Charge cut-off voltage</b>		14.6V	Single cell charge cut-off voltage 3.65V
<b>Charge method</b>		≤0.5C at CC/CV	
<b>Discharge cut-off voltage</b>		9.2V	Single cell discharge cut-off voltage 2.3V
<b>Standard Discharge Current</b>		25A	
<b>Maximum continuous discharge current</b>		50A	
<b>Maximum peak discharge current</b>		100A	5S
<b>Standard charge current</b>		25A	
<b>Maximum continuous charge current</b>		50A	
<b>Cycle Life</b>		≥4000 cycles	25°C±2°C; 80%DOD;
<b>Operating temperature range</b>	<b>Charge</b>	0—55°C	
	<b>Discharge</b>	-20—55°C	
	<b>Storage</b>	0—45°C	
<b>Terminal</b>		M6	

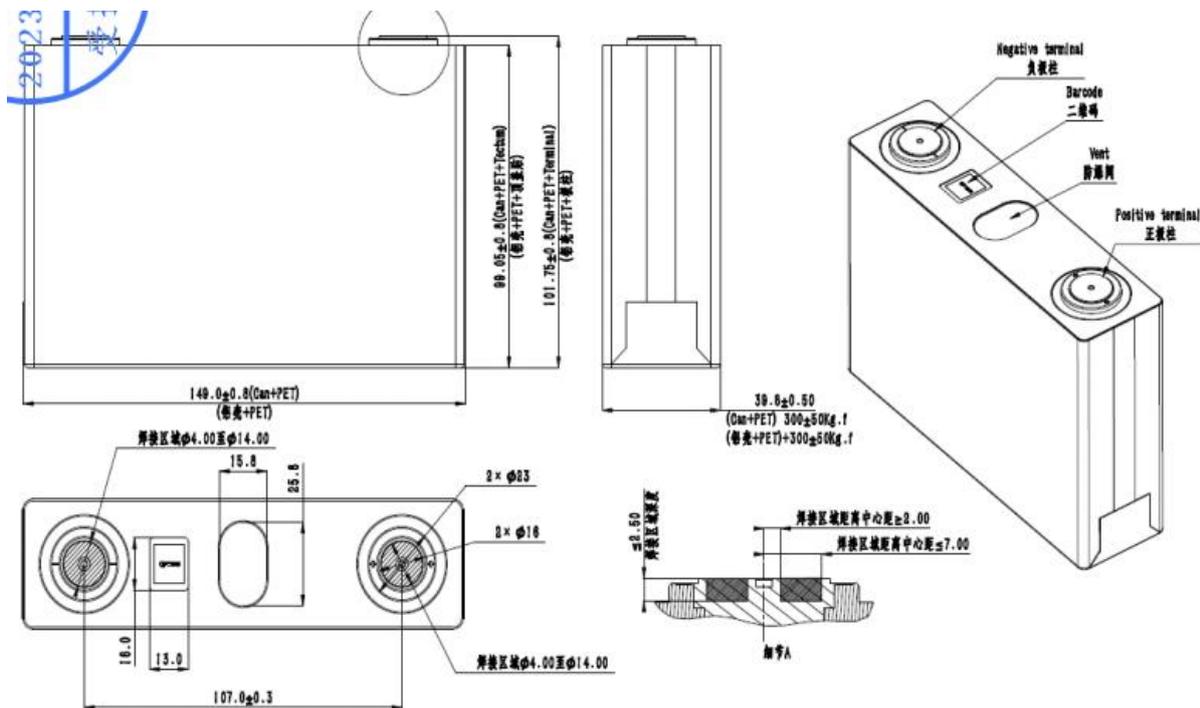
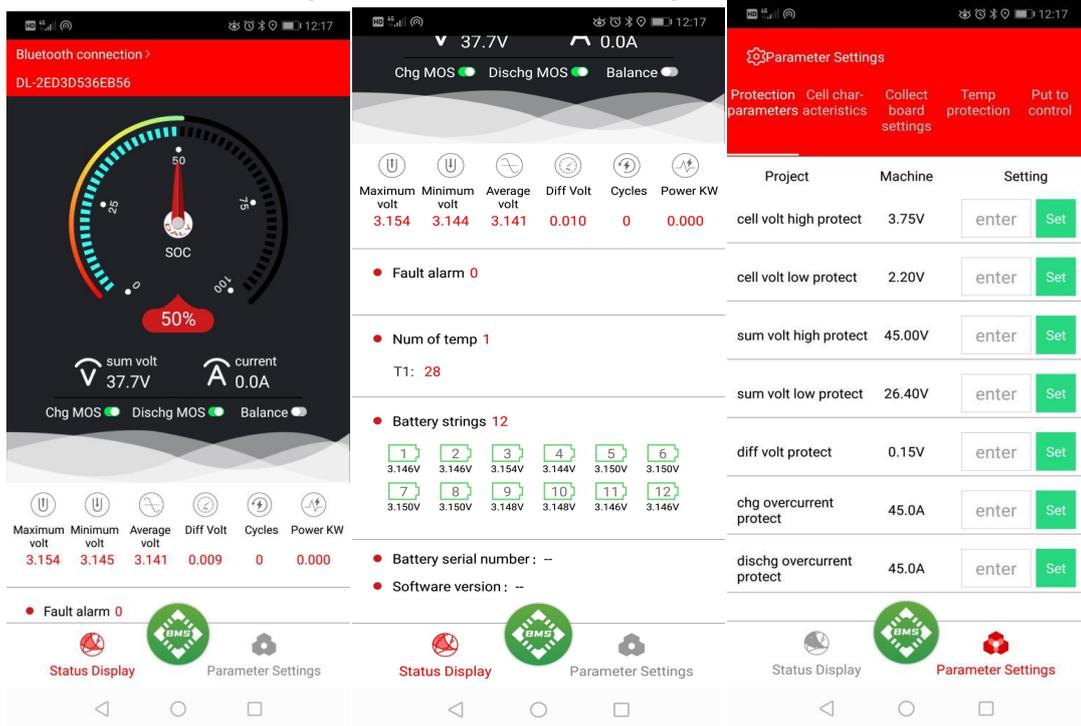


Figure 3-1 Battery cell dimensions

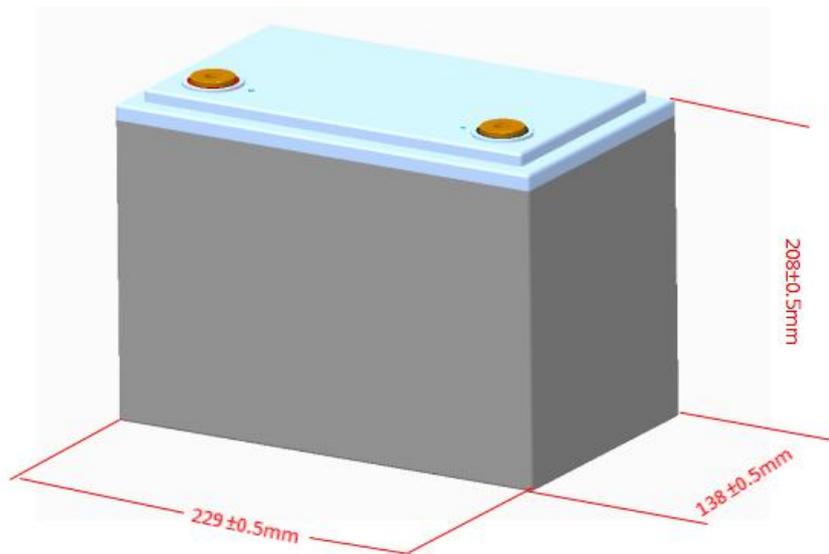
### 3. BMS Specification

<b>Voltage</b>	Charge Voltage	14.6V
<b>Working Current</b>	Continuous Current	50A
<b>Working Temperature</b>	Working Range	-20°C ~ +70°C
<b>Self-consumption</b>	Self-consumption while operating	≤50mA
<b>Internal resistance</b>		≤20mΩ
<b>Overcharge protection</b>	Protection voltage	3.65±0.05V
	Recovery voltage	3.55±0.1V
	Over-voltage protection delay	1.0S
<b>Over discharge protection</b>	Protection voltage	2.30±0.1V
	Recovery voltage	2.70±0.1V
	Protection delay	1.0s
<b>Discharge over-current</b>	Protection current	72 ± 3%A
	Protection delay	1.0S ± 0.8S
<b>Short circuit protection</b>	Protection delay	10-500uS
	Recovery condition	Disconnect load/charge release
<b>Charge balance</b>	Charging balance start voltage	3.5V
	Balance current	26-46mA

## Bluetooth Connection APP(for Android and IOS)



## 4. Product Appearance and Size



**Dimensions(L\*W\*H): 229±1\*138±1\*208±1mm**

## 5. Packing/Storage/Shipment

- Packaging Method: Regular carton, 1pcs/CTNS, 60pcs/PLTS, 600pcs per 20' container.
- The battery should be checked for voltage, resistance, and the function of the protective circuit before shipment.
- The battery should be transported to the factory assembly, to pay special attention to the packing, in order to avoid transport stress. We suggest using the same packaging when the battery is transported. Even if the package is opened, please pack with the components and materials the same as the original packing.
- The battery should be in a half state of charge (50%) in packaging boxes for transport. During the transport process, prevent severe vibration, shock, extrusion, and exposure to the sun and rain. Transport should be by automobile, train, ship, airplane, and other forms.
- When the battery pack is to be stored long-term, charge the battery pack to about 80% capacity, store in a dry and ventilated place, and charge and discharge once every 3 months. (Charge Current: 0.2C)
- The battery pack and charger should be stored in a clean, dry, and ventilated place, avoiding contact with corrosive materials and keeping them away from fire and heat.

## 6. Guarantee Period of Quality

We assume no responsibility for the accident of not operating in accordance with the specification. The guarantee period of quality is one years based on the delivery date. Our company would replace the battery due to manufacturing problems and it is not abnormal use if the battery appears during the abnormal situation.

## 7. Battery Handling Precautions

- Forbid to immerse battery in water or allow it to get wet!
- Don't charge, use and store battery near a heat source such as fire and heater! If the battery leaks or releases strange odor, please remove it from place near fire place immediately. Fully charge the battery before first-time using.
- Forbid to reverse the positive and negative pole!
- Forbid to throw the battery pack into fire or heat it!
- Forbid to short-circuit battery with wire or other metal objects!
- Forbid to nail, knock or trample battery!
- Forbid to disassemble the battery and battery pack in any way!
- Forbid to put the battery into microwave oven or pressure vessel!
- If the battery pack gives off odor, gets heat, deformation, discoloration or appears any abnormal phenomenon, stop using it; please remove the battery from electrical appliances and stop using it, when the battery is being used or charged!
- Forbid to use battery pack in a very hot environment, such as under direct sunlight or in car on hot day. Otherwise, the battery pack will overheat, which will affect battery performance and shorten battery life!
- If the battery leaks and electrolyte leakage enters into the eyes, do not rub, rinse with water immediately and seek immediate medical assistance. If not in time, eyes will be hurt!
- Ambient temperature will affect the discharge capacity, if the ambient temperature is beyond the standard environment (25±5), °C the discharge capacity will drop!

## Special Considerations:

- During charging, if there is odor and unusual noise, immediately stop charging.
- During discharging, if there is odor, unusual noise, immediately stop charging.
- If there are above phenomenon, please contact the manufacturer, do not disassemble by yourself.