



*Ningbo Yiyang New Energy Technology Co., LTD*

Ningbo Yi Yang New Energy Technology Co., Ltd .

Tel.: 180672444546 Fax: 0574-87419383

Document number:

BSJ-LI001

Page number: 2 of 6

Effective Date: 2022-07-07

# Lithium Battery Specification

product name: Lithium battery pack

product model: 18650 3V.7 6000mAh

Drafter	Position
Wei Jia	Technician

Company website: <http://yiyanglithium.1688.com><sup>1</sup>

Top secret ☐ secret ☒ General ☐



Ningbo Yi Yang New Energy Technology Co., LTD

Ningbo Yi Yang New Energy Technology Co., Ltd .

Tel.: 180672444546 Fax: 0574-87419383

Document number:

BSJ-LI001

Page number: 2 of 6

Effective Date: 2022-07-07

## 1: Basic characteristics of the battery

project	characteristic	remarks
Battery combination mode	3 and 1 string-18650	
Typical capacity	6000m A h	(25 ± 5) In °C environment, 0.2C constant current discharge to overdischarge protection
minimum capacity	5800m A H	(25 ± 5) In °C environment, 0.2C constant current discharge to overdischarge protection
nominal voltage	3.7 V	
Charging cut-off voltage	4.2±0.1 V	
final discharging voltage	2.4±0.1V	
Standard continuous charging current	0.2C	
Maximum sustained, charging current	1C	
Standard continuous discharge current	0.2C	
Maximum continuous discharge current	1C	
internal resistance	<60mΩ	The cell
operating temperature range	0~60°C	
Storage temperature range	0~45°C	
Storage environment humidity	5%~90%	
operative norm	QB/T 2947.3-2008	
Charge / discharge interface	According to the drawings	
Case material	PVC	
size	57*20*68mm	

Company website: <http://yiyanglithium.1688.com><sup>2</sup>

Top secret ☐ secret ☒ General ☐



Ningbo Yiyang New Energy Technology Co., LTD

Ningbo Yi Yang New Energy Technology Co., Ltd .

Tel.: 180672444546 Fax: 0574-87419383

Document number:

BSJ-LI001

Page number: 2 of 6

Effective Date: 2022-07-07

Note: All of the above parameters can be designed according to the customer requirements

## 2. Basic characteristics of the protection plate

type	function	project	parameter	accuracy
fender apron	specifications	1S 10A		
	Series number	1S		
defend protect exploit ability	Overcharge protection	Overcharge protection voltage (V)	4.28 V	$\pm 50(\text{mV})$
		Overcharge protection delay (mS)	1000	$\pm 100(\text{mS})$
		Overcharge protection release voltage (V)	4.1V	$\pm 25(\text{mV})$
	Over-release protection	Overput protection voltage (V)	2.4V	$\pm 100(\text{mV})$
		Overput protection delay (mS)	200	$\pm 50(\text{mS})$
		Overput protection release voltage (V)	3V	$\pm 50(\text{mV})$
	overcurrent protection	Overcurrent protection value (A)	20-40	$\pm 5(\text{A})$
		Overcurrent protection delay (mS)	20	$\pm 10(\text{mS})$
		Overcurrent protection recovery conditions	Charge activation or voltage above 3V automatic recovery	
	Self-consumption of electricity	Static self-consumption (uA)	<25	

Note: All of the above parameters can be designed according to the customer requirements

## 3. Test conditions

3-1 Unless specifically specified, all tests were performed in a temperature of  $15^{\circ}\text{C} \sim 35^{\circ}\text{C}$ , relative humidity 25% to 85%, and atmospheric pressure 86 kpa  $\sim$  106 kpa.

Company website: <http://yiyanglithium.1688.com><sup>3</sup>

Top secret ☐ secret ☒ General ☐



*Ningbo Yiyang New Energy Technology Co., LTD*

Ningbo Yi Yang New Energy Technology Co., Ltd .

Tel.: 180672444546 Fax: 0574-87419383

Document number:

BSJ-LI001

Page number: 2 of 6

Effective Date: 2022-07-07

3-2 for measuring instruments

A) The accuracy of the DC voltmeter used for measuring the voltage shall not be lower than the 0.5 level, and the internal resistance of the voltmeter shall not be lower than  $1 \text{ k}\Omega / \text{V}$ ;

B) The accuracy of the ammeter used for measuring the current is not less than the 0.5 level;

C) The thermometer used for measuring the temperature shall have an appropriate range, and its separation value shall not be greater than  $0.5^{\circ}\text{C}$ ;

D) The timer for measuring the measurement time shall be on time, minute and second, at least  $\pm 1\%$ .

#### 4. Safety performance test

test item	test method	technical requirement
short-circuit test	After the battery charge, it was shelved for 1h at $20 \pm 5^{\circ}\text{C}$ . Take the battery pack through an external short circuit of 10min, and the external line resistance should be less than $5\text{m}\Omega$	No explosion, no fire
squeezing test	After the charging of the battery pack, Test according to the following conditions. 1) Extrusion direction: the pressure is applied perpendicular to the battery module plate direction. 2) Extrusion head area: not less than $20\text{cm}^2$ . 3) Extrusion degree: until the battery shell breaks or the internal short circuit (the battery voltage changes to 0V).	No explosion, no fire
heat run	Place the battery pack in an $80 \pm 2^{\circ}\text{C}$ incubator and heat for 120min	No explosion, no fire
Overdischarge test	Battery pack charging. Was ved for 1h at $20 \pm 5^{\circ}\text{C}$ . Then, under the same temperature condition, the	No explosion, no fire, no leakage

Company website: <http://yiyanglithium.1688.com><sup>4</sup>

Top secret ☐ secret ☒ General ☐



*Ningbo Yiyang New Energy Technology Co., LTD*

Ningbo Yi Yang New Energy Technology Co., Ltd .

Tel.: 180672444546 Fax: 0574-87419383

Document number:

BSJ-LI001

Page number: 2 of 6

Effective Date: 2022-07-07

	battery pack is discharged with 1 / 3C (A) current, until the battery voltage of A single cell reaches 0V (if there is an electronic protection line, the discharge electronic protection line should be temporarily removed)	
Over-charging test	<p>Charge according to the following two charging methods (choose one of the two charging methods).</p> <p>(1) Charge 90min with 1C (A) current or a single battery voltage reaches 5.0V (one of the conditions is preferred to stop the test).</p> <p>(2) Charge with 3C (A) current to A single cell battery voltage reaches 10.0V to stop the test.</p>	No explosion, no fire

## 5. Notes for use

▲ Do not put the battery pack into the water or wet it;

▲ Do not charge the battery pack under the fire source or extremely hot conditions! Do not use or store the battery pack near a heat source (such as fire or heater)! If the battery leaks or smells, immediately remove it close to the open flame. The first time to use the battery, the battery should be fully charged before use;

▲ Do not connect the positive and negative poles;

▲ Do not put the battery pack into the fire or heat the battery pack;

▲ Do not short circuit with the lead or other metal objects;

Company website: <http://yiyanglithium.1688.com><sup>5</sup>

Top secret ☐ secret ☒ General ☐



*Ningbo Yiyang New Energy Technology Co., LTD*

Ningbo Yi Yang New Energy Technology Co., Ltd .

Tel.: 180672444546 Fax: 0574-87419383

Document number:

BSJ-LI001

Page number: 2 of 6

Effective Date: 2022-07-07

- ▲ It is forbidden to puncture the battery pack shell with nails or other sharp objects, or hammer or pedal the battery pack;
- ▲ It is forbidden to break down the battery pack and the battery in any way;
- ▲ Do not place the battery pack in a microwave oven or pressure vessel;
- ▲ The battery pack shall not be used if it emits peculiar smell, heat, deformation, discoloration or any other abnormal phenomenon; if the battery pack is in use or charging, it shall be immediately removed from the electrical appliance or charger and stopped using;
- ▲ Do not use battery packs in an extremely hot environment, such as direct sunlight or hot day cars. Otherwise, the battery pack will overheat, which will affect the performance and shorten the service life of the battery pack;
- ▲ If the battery leaks into the eyes after the electrolyte, do not wipe, should immediately rinse with water, seek medical assistance immediately. If not handled in time, the eyes will be hurt;
- ▲ The Ambient temperature will affect the discharge capacity. When the ambient temperature exceeds the standard environment ( $25 \pm 5^{\circ}\text{C}$ ), the discharge capacity will be reduced.

### special remarks!

- ▲ In the battery pack in the process of charging, if there is an odor, abnormal sound, please immediately stop charging;
- ▲ In the process of battery pack discharge, if there is an odor, abnormal sound, please immediately stop discharging;
- ▲ If the above phenomenon occurs, please contact the manufacturer, do not disassemble without permission.

#### 6. Product responsibility

The Company shall not be responsible for any accident caused in violation of the provisions of this Specification.

The contents of this specification are changed due to improving product quality or upgrading related technical parameters without prior notice. For the latest product information, please contact us for request.

### Special warning!

If the battery two end voltage has more than human body safety voltage, for safety, using the body and contact with the battery on both ends, the battery used in the process, the battery on both ends and the metal conductor exposed part insulation treatment, prevent any possible short circuit, and do a good

Company website: <http://yiyanglithium.1688.com><sup>6</sup>

Top secret ☐ secret ☒ General ☐

job of safety related work.

If you have any questions, please contact us as below:

Company name: Ningbo Yiyang New Energy Technology Co., LTD

Tel.: 18067244546

Fax: 86-0574-87419383