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保温包电源 Heating Bag Battery

产品规格书 Specification

电池型号 Model: JLS-1210-NCM标称容量 Nominal capacity: 10.05Ah

客户名称 Customer: _____

客户确认 Customer confirm: _____

日期 Date: 2018-11-23

PREPARED	CHECKED	APPROVED

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1.电源功能参数 Battery parameter:

容量 Capacity (0.2C5A)	标称值 Nominal	10.05Ah
	最小值 Minimum	9.96Ah
额定电压 Rated Voltage	11.1V	
最大充电电压 Max. Charge Voltage	12.6V	
放电截止电压 Discharge Cut-off Voltage	8.9V	
最大充电电流 Max. Charge Current	3A	
最大放电电流 Max. Discharge current	6A	
电池长度 Battery Length (Max.)	170mm	
电池宽度 Battery Width(Max.)	173mm	
电池高度 Battery Height (Max.)	25mm	
电池重量 Battery Weight (Approx.)	About 0.76Kg	
电池输出线 Battery Outlet Cable (mm)	外露 80mm Length 80mm	
内阻 Resistance (Max, at 1000Hz.)	≤200 mΩ	
温度功能模式 Temperature Setting Range	70°C . 75°C. 80°C. 85°C. 90°C	
5V USB 输出 5V USB Output	USB1: 1A。 USB 2: 2.1A	
与发热体接口 Discharge Cable	4 芯接头, 2 芯用于检测温度信号 4 Cores connector, 2 cores is for detecting temperature signals	
充电接口 Charge Cable	卡侬接头公头(1 正 2 负 3 空) Canon male connector(1positive 2negative 3 empty)	
LCD 显示屏尺寸 LCD display screen size	40*20mm	
LCD 显示内容 LCD display content	1,电量数字显示, 2,当前温度档位显示, 3,C/F 显示, 两种温度规格显示 1, the power digital display, 2, the current temperature gear display, 3, C / F display, two temperature specifications display	
操作温度 Operation Temperature	充电 Charge	0°C ~45°C; 32oF~113oF
	放电 Discharge	-20°C ~60°C; -4oF~149oF
	贮存 Storage	-20°C ~45°C; -4oF~113oF

2.电源操作说明 Battery Operation Instructions

2.1.、空载状态按钮操作 No-load status button operation

空载状态时按住按钮 3s 钟后 LED 显示当前电量, 此时电源与发热体接口有电压; 如果松开按钮 3s 后未进行任何操作则, LED 熄灭, 此时电源与发热体接口无电压。

When the button is pressed for 3 seconds in the no-load state, the LED displays the current power. At this time, the battery has a voltage with the heating pad discharge interface; if no operation is performed after the button is released for 3 seconds, the LED is extinguished, the battery and the heating pad interface have no voltage.

2.2、负载状态按钮操作 load status button operation

负载状态时按住按钮 3s 后电源开始工作, 此时数码显示管显示当前温度及电量, 双击按钮可进入温度设置界面, 此时点按按钮可设置温度, 温度设置完成 2s 自动保存回到温度显示界面。

Load state, when the button is pressed for 3 seconds, the battery starts to work. At this time, the digital display tube displays the current temperature and power. Double-click the button to enter the temperature setting interface. Press the button to set the temperature. The temperature setting is completed after 2s automatically saves and returns to the temperature display interface

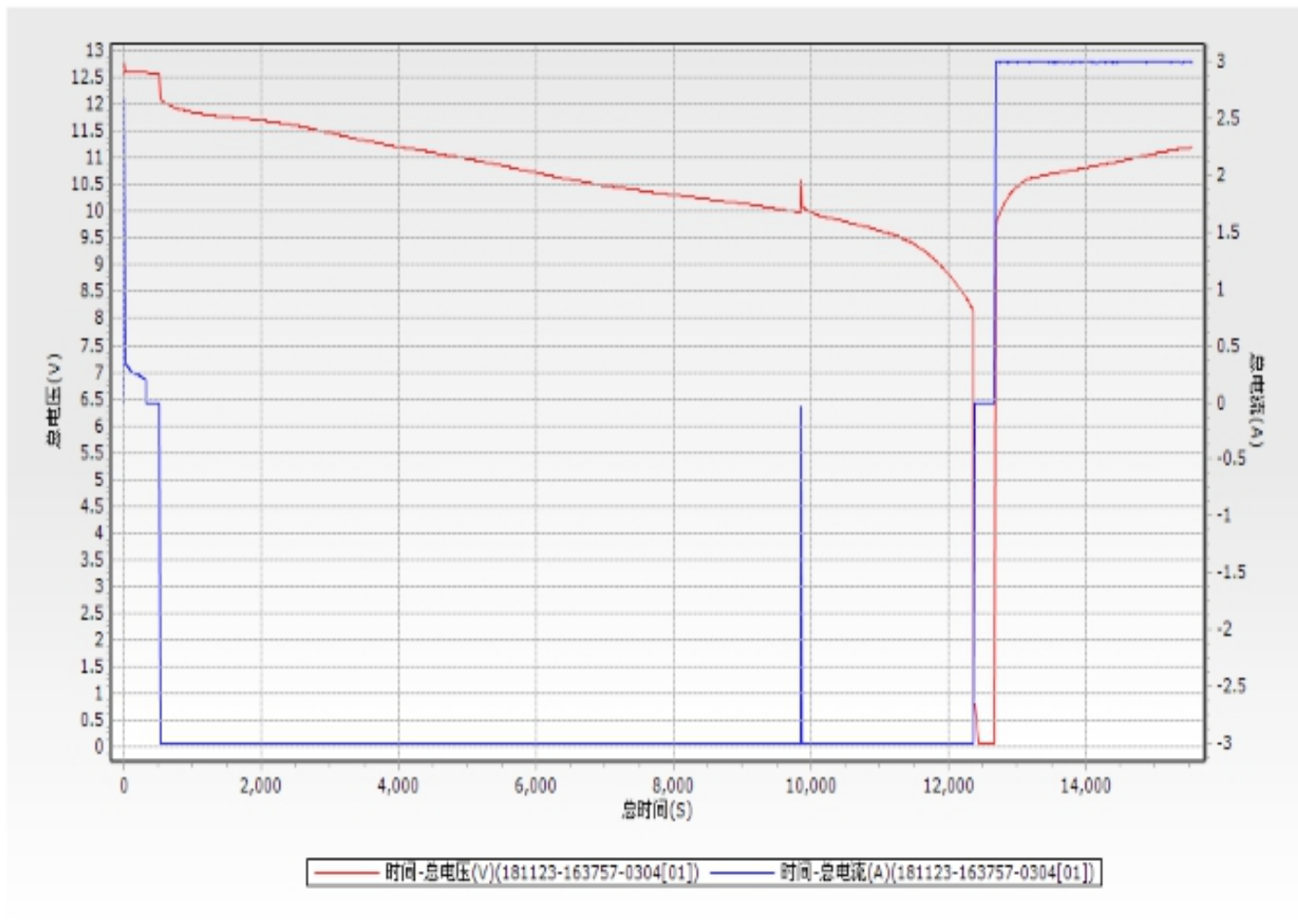
2.3 关机操作 Turn off operation

电源处于工作状态时长按按钮 3s 后关机 LED 熄灭, 无操作无负载状态 3s 后自动关机 LED 熄灭。

When the battery is in working state, press the button for 3s, the battery turn off and LED will be off. No operation, no load, after 3s, the battery will turn off and LED will be off automatically.



3,电源特性曲线图 Battery characteristic curve



4.1 电源电芯化学性能 Battery cell chemical properties

序号 No.	项目 Project	标准 Standard	测试方法 Testing method
1	常温放电性能 Nominal temperature discharge performance	放电容量 / 标称容量 Discharge capacity/ Nominal capacity×100% (A) 0.2C ₅ A ≥100% (B) 1C ₅ A ≥95%	在标准大气压，环境温度 25℃±5℃，相对湿度为 45%~80%的条件下，电池 0.2C ₅ A 标准充电后（以下若没有特别说明，均在此条件下放置，皆按此充电方式），搁置 10min，分别以 0.2C ₅ A、1C ₅ A 进行放电至下限电压 2.5V，循环三次，当有一次达到标准，即达到标准要求（下同）。 Under the condition of standard atmospheric pressure, ambient temperature 25 °C ± 5 °C, relative humidity of 45% to 80%, after the battery is charged with 0.2C ₅ A

			standard (if not specified below, all of them are placed under this condition, and the charging method is followed.), set aside for 10 minutes, discharge to 0.2C5A, 1C5A respectively to the lower limit voltage of 2.5V, cycle three times, when one time meets the standard, that is, meet the standard requirements (the same below).
2	<p>常温荷电保持能力</p> <p>Normal temperature charge retention capacity</p>	<p>剩余容量≥标称容量*95%</p> <p>Remaining capacity ≥ nominal capacity * 95%</p>	<p>电池标准充电后, 在 25°C±5°C 贮存 1 个月, 储存期满后, 以 0.2C5A 放电至终止电压 2.5V, 测量电池容量。</p> <p>After the battery is charged, it is stored at 25 °C ± 5 °C for 1 month. After the storage period is over, it is discharged at 0.2 C5A to a final voltage of 2.5 V, and the battery capacity is measured.</p>
3	<p>循环寿命</p> <p>Cycle life</p>	<p>容量≥标称容量*80%</p> <p>Capacity ≥ nominal capacity * 80%</p>	<p>0.2C 标准充电后,以 0.2C5A 放电至终止电压 2.5V 搁置 10min, 以此模式循环 2000 次。</p> <p>After charging at 0.2 C standard, it was discharged at 0.2 C5A to a final voltage of 2.5 V for 10 min, and was cycled 2000 times in this mode.</p>
4	<p>贮存性能</p> <p>Storage performance</p>	<p>贮存 12 个月的电池容量保持率≥80%</p> <p>Storage capacity retention rate of ≥80% after storage for 12 months</p>	<p>电池标准充电后, 开路放置 12 个月, 以 0.2C5A 放电至 2.5V, 测量电池的剩余容量; 0.2C/0.2C 测量电池的恢复容量。可循环三次, 当有一次达到标准, 即达到标准要求。</p> <p>After the battery is charged, open the circuit for 12 months, discharge to 2.5V at 0.2C5A, and measure the remaining capacity of the battery; 0.2C/0.2C to measure the recovery capacity of the battery. It can be cycled three times, and when it reaches the standard once, it meets the standard requirements.</p>

4.2 环境适应性能 Environmental adaptability

序号 No.	项目 Project	标准 Standard	测试方法 Testing method
1	<p>温度循环性能</p> <p>Temperature cycling performance</p>	<p>电池不冒烟、不起火、不爆炸</p> <p>The battery does not smoke, does not ignite, does not explode</p>	<p>电池标准充电后, 在环境温度为 60±2°C 的条件下开路放置 48h, 然后在 -10 °C±2°C 条件下开路放置 6h 然后在室温条件下开路放置 24h, 然后 0.2C5A 进行放电至 2.5V。以 0.2C/0.2C 连续做 3 次充放电循环。</p> <p>After standard charging of the battery, open the circuit for</p>

			48h under the condition of ambient temperature of 60±2°C, then open for 6h at -10 °C±2°C, then open for 24h at room temperature, then discharge to 2.5V at 0.2C5A. . The charge and discharge cycle was repeated three times at 0.2 C/0.2C.
2	<p>恒定湿热性能</p> <p>Constant damp heat performance</p>	<p>搁置后放电容量/标称容量×100%>60%</p> <p>电池外观无明显变形、不冒烟、不爆炸</p> <p>Discharge capacity / nominal capacity after shelving × 100% > 60%</p> <p>The battery has no obvious deformation, no smoke, no explosion</p>	<p>电池标准充电后,置于温度为 40±5°C,相对湿度为 90% 的恒温恒湿箱中,搁置 48h 后,取出电池搁置 2h,以 0.2C5A 放电至 2.5V。</p> <p>After the battery is charged, it is placed in a constant temperature and humidity chamber with a temperature of 40±5°C and a relative humidity of 90%. After leaving for 48 hours, the battery is taken out for 2 hours and discharged to 2.5V at 0.2C5A.</p>
3	<p>不同温度下的放电性能</p> <p>Discharge performance at different temperatures</p>	<p>搁置后放电容量/标称容量×100%</p> <p>Discharge capacity / nominal capacity × 100% after shelving</p> <p>(A)60 °C ≥95%;</p> <p>(B)0 °C ≥85%;</p> <p>(C)-10 °C ≥60%;</p> <p>电池不冒烟、不爆炸、不起火</p> <p>The battery does not smoke, does not explode, does not ignite</p>	<p>电池标准充电后,在 60±2°C 条件下恒温搁置 3h、以 1C5A 放电至 2.5V,然后在室温条件下标准充电,依此按照 0±2 °C/-10±2 °C 的顺序在相应的恒温条件下搁置 20h,以 0.2C5A 测量电池对应的终止容量,最后在室温状态下搁置 2h。</p> <p>After the battery is charged, it is kept at a constant temperature of 60±2°C for 3h, discharged at 1C5A to 2.5V, and then charged at room temperature. According to this, the corresponding constant temperature is in the order of 0±2 °C/-10±2 °C. The condition was set to stand for 20 h, the corresponding termination capacity of the battery was measured at 0.2 C5A, and finally left at room temperature for 2 h.</p>
4	<p>振动环境适应性表现</p> <p>Vibration environment adaptive performance</p>	<p>剩余容量≥初始容量*95%</p> <p>电压减少率≤3mV</p> <p>内阻增加率± 3 mΩ</p> <p>不爆炸,不起火</p> <p>Remaining capacity ≥ initial capacity * 95%</p> <p>Voltage reduction rate ≤ 3mV</p> <p>Internal resistance increase rate ± 3 mΩ</p> <p>No explosion, no fire</p>	<p>电池标准充电后,建立电池振动台板根据震动频率和相关移动距离来调节测试仪。从 X、Y、Z 三个方向。每个方向在 10Hz~55Hz 震动 30 分钟。速度是</p> <p>(1)震动频率: 10Hz~30Hz 移动距离: 0.38mm (2)震动频率: 30Hz~55Hz 移动距离: 0.38mm</p> <p>测试之后,0.2C5/0.2C5 测试剩余容量。</p> <p>After the battery is fully charged, the battery vibration platen is established to adjust the tester according to the vibration frequency and the relevant moving distance. From the X, Y, Z directions. Each direction vibrates for 30 minutes at 10 Hz to 55 Hz. Speed is</p> <p>(1) Vibration frequency: 10Hz ~ 30Hz moving distance: 0.38mm (2) Vibration frequency: 30Hz ~ 55Hz moving distance: 0.38mm</p> <p>After the test, 0.2C5/0.2C5 was tested for remaining capacity.</p>

4.3 安全性能 Safety performance

序号 No.	项目 Project	标准 Standard	测试方法 Testing method
1	过充性能 Overcharge performance	不爆炸、不起火 最高温度<150℃ No explosion, no fire Maximum temperature <150 ° C	电池标准充电后,保证电池状态正常(下同),以 3C ₅ A 电流充电至 5.0V,然后转恒压充电至截至电流 0.05C ₅ A 时终止,观察电池的温度及外观变化。 After the standard battery is charged, ensure that the battery status is normal (the same below), charge to 5.0V with 3C ₅ A current, and then terminate when the constant voltage is charged to the current of 0.05C ₅ A to observe the temperature and appearance change of the battery.
2	过放性能 Over discharge performance	不起火、不爆炸 No fire, no explosion	电池标准充电后,以 0.2C ₅ A 进行放电至 2.5V,然后用 10Ω的电阻将电池正负极相连,搁置 60min。 After the battery is charged, discharge it to 2.5V at 0.2C ₅ A, then connect the positive and negative terminals of the battery with a 10Ω resistor and leave it for 60min.
3	常温短路性能 Normal temperature short circuit performance	不爆炸、不起火 最高温度<150℃ No explosion, no fire Maximum temperature <150 ° C	电池标准充电后,置于防爆玻璃罩中直接短路其正负极(线路总电阻不大于 50mΩ),当电池温度下降到比峰值约低 10 °C 时试验结束。观察电池的温度及外观变化。 After the battery is charged, it is placed in the explosion-proof glass cover to directly short its positive and negative poles (the total resistance of the line is not more than 50mΩ). When the battery temperature drops to about 10 °C lower than the peak value, the test ends. Observe the temperature and appearance of the battery.
4	针刺性能 Acupuncture performance	不爆炸、不起火、 最高温度<150℃ No explosion, no fire, Maximum temperature <150 ° C	电池标准充电后,放在支座上,并与热电偶相连,然后用直径为 3mm 的铁钉在电池的高度方向中间的部位快速完全刺穿电池,观察电池外观及温度变化。 After the battery is charged, it is placed on the holder and connected to the thermocouple. Then, the battery is quickly and completely pierced by the nail with a diameter of 3 mm in the middle of the height direction of the battery to observe the appearance and temperature changes of the battery.
5	热冲击安全性能 Thermal shock safety performance	不爆炸、不起火 No explosion, no fire	电池标准充电后,放置于热箱中,并与热电偶相连,温度以 (5 °C±2 °C) /min 的速率升至 150 °C±2 °C 并保温 30Min。观察电池温度外观变化。 After the battery is fully charged, it is placed in a hot box and connected to a thermocouple. The temperature is raised to 150 °C ± 2 °C at a rate of (5 °C ± 2 °C) / min and kept at 30Min. Observe the change in the appearance of the battery temperature.

备注：以上标准中的一些术语的定义；

Remarks: Definition of some terms in the above standards;

(1) 标准充电：在环境温度 $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 的条件下，以 $0.2\text{C}5\text{A}$ 充电，当电池端电压达到充电限制电压 3.65V 时，改为恒压充电，直到充电电流小于或等于 $0.05\text{C}5\text{A}$ 后停止充电

(1) Standard charging: charging at $0.2\text{C}5\text{A}$ under the condition of ambient temperature of $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$, when the battery terminal voltage reaches the charging limit voltage of 3.65V , it is changed to constant voltage charging until the charging current is less than or equal to $0.05\text{C}5\text{A}$. Stop charging

(2)初始状态：电池的初始外观、开路电压、交流内阻。

(2) Initial state: initial appearance of the battery, open circuit voltage, and AC internal resistance.

(3)最终状态：电池的最终外观、开路电压、交流内阻。

(3) Final state: final appearance of the battery, open circuit voltage, and internal resistance of the AC.

(4)剩余容量：电池经过特定的检测程序后的首次放电容量。

(4) Remaining capacity: The first discharge capacity of the battery after a specific test procedure.

(5)恢复容量：电池经过特定的检测程序后，通过反复充放电使状态恢复后的放电容量。

(5) Recovery capacity: The discharge capacity after the battery is restored by repeated charge and discharge after a specific detection procedure.

(6) $0.2\text{C}/0.2\text{C}$ ($0.2\text{C}/1\text{C}$, $0.2\text{C}/2.5\text{C}$)：以 $0.2\text{C}5\text{A}$ 充电，当电池端电压达到充电限制电压 3.65V 时，转为恒压充电，直到充电电流小于或等于 $0.05\text{C}5\text{A}$ 停止充电，充电完成后，搁置 10min ，再以 $0.2\text{C}5\text{A}$ ($1\text{C}5\text{A}$ 、 $2.5\text{C}5\text{A}$ 、) 恒流放电至终止电压 2.5V 。

(6) $0.2\text{C}/0.2\text{C}$ ($0.2\text{C}/1\text{C}$, $0.2\text{C}/2.5\text{C}$): charging at $0.2\text{C}5\text{A}$. When the battery terminal voltage reaches the charging limit voltage of 3.65V , it will be charged to constant voltage until the charging current is less than or equal to $0.05\text{C}5\text{A}$ stops charging. After charging is completed, it is left for 10 minutes, and then discharged at a constant current of $0.2\text{C}5\text{A}$ ($1\text{C}5\text{A}$, $2.5\text{C}5\text{A}$,) to a final voltage of 2.5V .

5.保护板基本参数 Protection board basic parameters

此保护板为全功能板，针对电池的过充、过放、过流实施有效的保护，保护 IC 采用普通保护 IC,具体保护项目及保护范围如下。The protection board is a full-featured board, which implements effective protection for overcharging, over-discharging and over-current of the battery. The protection IC adopts an ordinary protection IC. The specific protection items and protection scope are as follows.

序号 No.	项 目 Items	规 格 Specification	备 注 Remark
1	过充电保护电压 Overcharge protection voltage	$12.6\text{V}\pm 25\text{mV}$	
2	过放电保护电压 Overdischarge protection voltage	$8.7\text{V}\pm 80\text{mV}$	
3	过电流保护 Overcurrent protection	$6\text{A}\pm 50\text{mA}$	

4	过充电保护侦测延时时间 Overcharge protection detection delay time	1000mS±300mS(Typical)	
5	过放电保护侦测延时时间 Overdischarge protection detection delay time	20mS±10mS(Typical)	
6	过电流保护侦测延时时间 Over current protection detection delay time	32mS±8 mS (Typical)	
7	输出短路保护侦测延时时间 Output short circuit protection detection delay time	600uS(Typical)	
8	过充保护解除电压 Overcharge protection release voltage	12.3V±50MV	
9	过放保护释放电压 Over discharge protection release voltage	9V	
10	短路及过流保护恢复条件 Short circuit and overcurrent protection recovery conditions	断开负载 Disconnect load	
11	过放保护恢复条件 Over-discharge protection recovery condition	充电激活 Charging activation	
12	PCB 内阻 PCB internal resistance	≤60mΩ	
13	静态自耗电电流 Static current consumption	≤50uA	
14	工作温度 Operating temperature	-20~60℃	
<p>注明：以上规范中测试条件为 Note: The test conditions in the above specifications are: 温度 Temperature: 20±5℃, 相对湿度 relative humidity:45%--75%, 大气压强 Atmospheric pressure:86KPa—106KPa.</p>			

6, 保质期及产品责任 Shelf life and product liability

保质期是从出厂日期开始起 **1 年**；电池在闲置不使用时请 3 个月保证充一次电！

The shelf life is one year from the date of manufacture; please keep charging for 3 months when the battery is not in use!

杰力斯公司对因没有按本规格书规定操作而导致的意外不负责任，当本规格书有一些变动时，杰力斯公司会通知购买方。

Genixgreen is not responsible for accidents caused by failure to operate in accordance with this specification. When there are some changes in this specification, Genixgreen will notify the purchaser.

7, 包装电池上的标识 Identification on the packaging battery

按照客户要求要求进行标识 Mark according to customer requirements

8, 电池使用时警告事项及注意事项

Warnings and precautions when using the battery

为防止电池可能发生泄漏,发热、爆炸,请注意以下预防措施:

To prevent possible leakage, heat and explosion of the battery, please pay attention to the following precautions:

警告 ! Warning!

- 严禁将电池浸入海水或水中,保存不用时,应放置于阴凉干燥的环境中.
- Do not immerse the battery in sea water or water. When it is not in use, it should be placed in a cool and dry environment.
- 禁止将电池在热高温源旁,如火、加热器等使用和留置.
- Do not use or leave the battery near the hot high temperature source, such as fire, heater, etc.
- 充电时请选用锂离子电池专用充电器.
- Please use lithium ion battery charger when charging.
- 只能在电池底部铝镍复合带处点焊
- Spot welding only on the aluminum-nickel composite strip at the bottom of the battery
- 严禁颠倒正负极使用电池.
- Do not use the battery with the positive and negative poles reversed.
- 严禁将电池直接插入电源插座.
- Do not plug the battery directly into the power outlet.
- 禁止将电池丢于火或加热器中.
- Do not throw the battery in a fire or heater.
- 禁止用金属直接连接电池正负极短路.
- It is forbidden to directly connect the battery to the positive and negative terminals with metal.
- 禁止将电池与金属,如发夹、项链等一起运输或贮存.
- Do not transport or store batteries with metal, such as hair clips, necklaces, etc.
- 禁止敲击或抛掷、踩踏电池等.
- Do not knock or throw, step on the battery, etc.
- 禁止直接焊接电池和用钉子或其它利器刺穿电池.
- Do not directly solder the battery and pierce the battery with nails or other sharp objects.

小 心 !Be careful !

- 禁止在高温下（炙热的阳光下或很热的汽车中）使用或放置电池,否则可能会引起电池过热、起火或功能失效、寿命减短.
- Do not use or place the battery at high temperatures (in hot sunlight or in very hot cars), as this may cause the battery to overheat, catch fire or malfunction, and shorten its life.
- 禁止在强静电和强磁场的地方使用,否则易破坏电池安全保护装置,带来不安全的隐患.
- It is forbidden to use in places with strong static electricity and strong magnetic field, otherwise it will easily damage the battery safety protection device and bring hidden dangers.
- 如果电池发生泄露,电解液进入眼睛,请不要揉擦,应用清水冲洗眼睛,并立即送医治疗,否则会伤害眼睛.
- If the battery leaks, the electrolyte enters the eyes, please don't rub it, rinse your eyes with clean water, and immediately send medical treatment, otherwise it will hurt your eyes.
- 如果电池发出异味,发热、变色、变形或使用、贮存、充电过程中出现任何异常,立即将电池从装置或充电器中移离并停用.
- If the battery emits an odor, heat, discoloration, deformation, or any abnormality during use, storage, or charging, immediately remove the battery from the device or charger and deactivate it.
- 如果电极弄脏,使用前应用干布抹净,否则可能会导致接触不良功能失效
- If the electrode is dirty, use a dry cloth before use, otherwise it may cause poor contact failure.
- 废弃之电池应用绝缘纸包住电极,以防起火、爆炸。
- Discard the battery with insulating paper to cover the electrode to prevent fire and explosion.