Li-ion Battery Specification

锂离子电池技术规格书

Customer Code 客户代码: **S11.216**

Product Name 产品名称：**锂电池 Li-ion Battery**

Product Model 产品型号：**25.6V100AH**

Product Code 产品代码: **GDCP.05.0308**

SPEC Edition 规格书版本: **A0**

Customer Approved 客户承认	Test 检验	Verification 审核	Permission 批准

Shengbang acknowledges 盛邦承认	Made 拟　定：	Verification 审　核：	Salesman Verification 销售审核：	Permission 批　准：
	刘振峰			

Revision history 变更履历

版本 Revision	变更原因 Reason for Change	修改 Modify	批准 Approved	日期 Date
A0	初版发行Original issue	刘振峰	毛金验	2025.09.18

1 .Product Summary 产品概要

This standard specifies the basic performance, technical requirements, testing methods, and precautions of lithium-ion rechargeable batteries. This product specification is applicable to lithium-ion batteries provided by SunBond Energy Co., Ltd.

本标准规定了锂离子可充电池的基本性能、技术要求、测试方法及注意事项，本产品规格书适用于盛邦能源有限公司提供的锂离子电池。

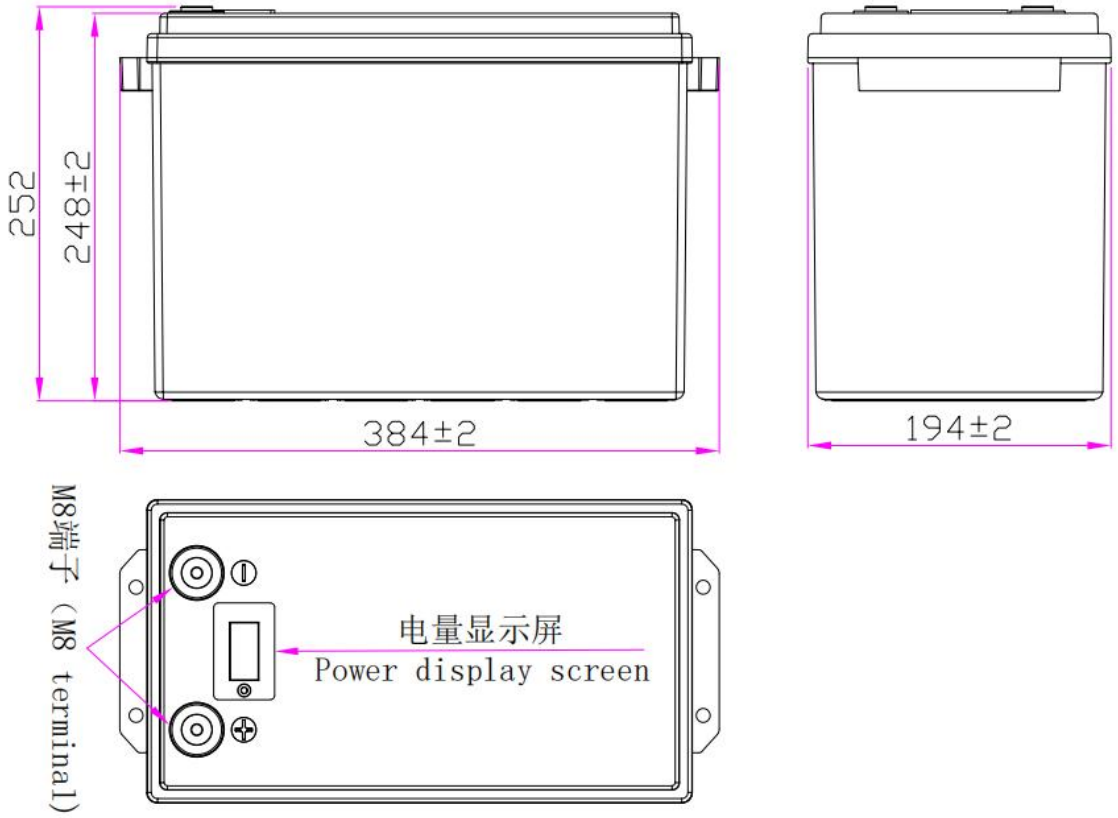
2. Specification 技术要求

2. 1 Product basic parameter 电池基本技术参数

NO	Items 项 目	Parameter 参 数		Remarks 备 注
1	Cell Technology 电芯类型	3.2V-100Ah		
2	Nominal Voltage 额定电压	25.6V		
3	Rated Capacity 标称容量	Nominal:100Ah (by standard charge@0.2C and discharge@0.2C) 典型值：100Ah（标准充电@0.2C、放电@0.2C） Minimum:97Ah(by standard charge @0.2Cand discharge@0.2C) 最小值：97Ah（标准充电@0.2C、放电@0.2C）		
4	Series-Parallel 组合方式	8S1P（25.6V 100Ah）		
5	Initial Impedance 内阻	≤20	m Ω	50% SC ，交流 1kHz;
6	Max charge current 最大充电电流	≤50	A	
7	Max. Charge voltage 充电限制压	29.2	V	CC+CV Charge 恒流恒压充 电 Temperature of 25 ±5 ℃ humidity of 65±20% 室温 25±5℃，湿度 65±20%
8	Max continuous discharge current 最大持续放电电流	≤100	A	
9	Discharge cut- off voltage 放电截止电压	18.4	V	CC Discharge 恒流放 电 Temperature of 25 ±5 ℃ humidity of 65±20% 室温 25±5℃，湿度湿度 65±20%
10	Open circuit voltage delivery 出货时开路电压	25≤U≤27	V	Voltage within 1 week after delivery (出 货后 1 周 以内测 定)
11	Weight 重量	18.61±0.3	Kg	
12	Operating Temperature (Charge) 工作温度 (充电)	-0≤T≤60	℃	
13	Operating Temperature (Discharge) 工作温度 (放电)	-20≤T≤60	℃	
14	Storage temperature 储存温度	-25℃~45℃	≤1 month	charged to about 40% to 60% of capacity 应充到 40%至 60%的电量
		-20℃~35℃	≤3 month	
		-20℃~25℃	≤1 year	
19	Static power consumption of the battery电池静态功耗	≤800μA		
		/		
20	Authentication 认证	UN38.3		

3. Product Dimension 产品尺寸

3.1 Size 尺寸：长*宽*高（L*W*H）384×194×H248mm（误差值±2mm）



3.2 Printing requirements 贴纸要求

320*200mm

70*50mm

3.3 Waterproof 防水

The waterproof rating of the battery is IP65
电池的防水等级 IP65

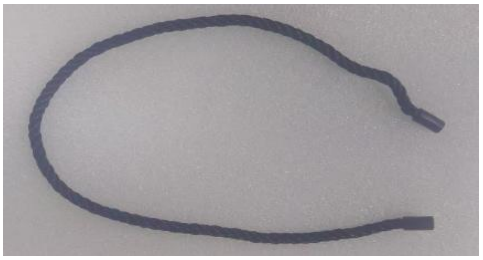
3.4 Interface definition 接口定义

No. 序号	Name名称	Picture图片	Describe描述
1	/	/	/

3.5 Finished product figure 成品图

3.6 Accessories List 配件清单

No.序号	Name名称	Picture图片	Description	Qty数量
1	**Bolt** 螺栓		M8*1.25*12mm	2PCS

2	Plastic handle **塑胶把手**		90*13*H13mm	2PCS
3	**Handle roper** 提手绳		L=430±10mm	2PCS
4	**Screw cap** 螺丝帽		φ23.3*7.5mm	2PCS

4. Battery Performance Test 电池性能测试

4.1 Appearance 外观

There shall be no such defect as scratch, bur and other mechanical scratch, and the connector should be no rust dirt.

电池的表面应无明显的划痕毛刺及其其它机械划伤，外露的金属端子应无锈蚀污垢。

4.2 Test Equipment 测试设备要求

1) Dimension Measuring Instrument 尺寸测量设备

The dimension measurement shall be implemented by instruments with accuracy no less than 0.01mm.

测量尺寸的仪器的精度应不小于 0.01mm。

2) Voltmeter 电压表

Class with national standard or more sensitive class. Total external resistance including ammeter and wire is less than 0.01Ω .

国家标准或更灵敏等级，内阻不小于 10 K Ω/V。

3) Ammeter 电流表

Class with national standard or more sensitive class. Total external resistance including ammeter and wire is less than 0.01Ω .

国家标准或更灵敏等级，外部总体内阻包括电流表和导线应小于 0.01Ω。

4) Impedance Meter 内阻测试仪

Impedance shall be measured by a AC impedance method (AC 1kHz LCR meter).
内阻测试仪测试方法为交流阻抗法(AC 1kHz LCR)。

4.3 Test conditions 测试条件

Unless otherwise specified, the default is to follow the following conditions.
除非其他特殊要求说明，默认按照下列条件执行。

1) At the ambient temperature of 25±2℃ and humidity of 15%~75% .
2）标准温度(25±2℃)及标准湿度(15%~75%)的条件下.

4.4 Common Performance 产品的常规性能

No	Items/项目	Test Methods and Condition 测试方法和条件	Criteria 标准
1	Cycle Performance 循环寿命	Under the condition of 25 ± 5 ℃, the battery is charged in a constant current and constant voltage manner. The charging voltage is the charging limit voltage, and the charging current is the standard charging current. When the charging current is less than or equal to the nominal capacity multiplied by 0.05A, the charging is stopped. After standing for 0.2 hours, the battery is discharged to the cut-off voltage according to the standard discharge current for cycling. When the discharge capacity is less than 60% of the initial capacity for two consecutive times, the service life is terminated. 在 25±5℃条件下电池按 恒流恒压方式充电，充电电压为充电限制电压，充电电流为标准充电电流，直到充电电流小于或等于标称容量乘以 0.05A 时，停止充电，静置 0.2h 后，按标准放电电流放电至截止电压的方式进行循环，当连续两次放电容量＜初始容量 80%时寿命为终止	≥6000 times. 循环寿命≥6000 次 Specific parameters refer to items 3.1 具体参数参照3.1项
2	Charged Storage Characteristics 荷电保持能力	The battery is charged according to the standard charging current. When the terminal voltage reaches the charging limit voltage, it switches to constant voltage charging. When the charging current is less than or equal to 0.05C, charging stops; After placing the battery in an open circuit at 25 ± 5 ℃ for 28 days, discharge it to the discharge cut-off voltage with standard discharge current, record the discharge capacity, and compare the measured capacity with the initial discharge capacity at 25 ± 2 ℃ temperature. 电池按标准充电电流充电，当端电压达到充电限制电压时改为恒压充电，当充电电流小于或等于 0.05C 时，充电停止；将电池开路放置在 25±5℃条件下 28 天后，以标准放电电流放电至放电截止电压 ，记录放电容量，所测容量与 25±2 ℃温度下初始放电容量对比	容量保持率≥90% Specific parameters refer to items 3.1 具体参数参照3.1项
3	Storage Characteristics	After charging batteries with a capacity of 40-50% according to the standard charging current for less than 3 months from the production date to the experimental date, they should be stored in an open circuit environment with a temperature of 25 ± 5 ℃ and a humidity of 45-85% for 6 months. When the batteries are charged to the charging limit voltage	放电容量/初始容

	存放性能	according to the standard charging current, they should be changed to constant voltage charging. After being fully charged; Let it stand for 0.2 hours, then discharge it with standard charging and discharging current until the discharge cut-off voltage, and record the discharge capacity. 将生产日期到实验日期不足 3 个月的电池按标准充电电流充入 40~50% 容量后，放置在温度 25±5℃、 湿度为 45~85%的环境中开路存放 6 个月后， 电池按标准充电电流充电至充电限制电压时改为恒压充电，充饱后； 静置 0.2h ，再以标充放电电流放电至放电截止电压，记录放电容量。	量 ≥80% Specific parameters refer to items 3.1 具体参数参照3.1项

4.5 Safety Performance 产品可靠性

No	Items/项目	Test Methods and Condition 测试方法和条件	Criteria 标准
1	High Temperature Characteristics 高温性能	Under the condition of 25 ± 5 ℃, after the battery is charged according to the standard charging current and charging limit voltage, it is placed in a constant temperature and humidity box at 50 ± 2 ℃ for 2 hours, and then discharged to the discharge cut-off voltage with the standard discharge current. The measured capacity is compared with the discharge capacity at 25 ± 2 ℃ temperature. 在 25±5℃条件下， 电池按标准充电电流与充电限制电压充电结束后，将电池放入 50±2℃的恒温恒湿箱中恒温 2h 后，然后以标准放电电流放电至放电截止电压 ，所测容量与 25 ± 2 ℃温度放电容量对比。	Capacity ≥95% 放电 容量 ≥95% Specific parameters refer to items 3.1 具体参数参照3.1项
2	Low Temperature Characteristics 低温性能	Under the condition of 25 ± 5 ℃, the battery is fully charged according to the standard charging current and charging limit voltage. Then, it is placed in an environment of -10 ℃ for 2 hours and discharged to the discharge cut-off voltage with the standard discharge current. The measured capacity is compared with the discharge capacity at a temperature of 25 ± 2 ℃. 在 25±5℃条件下，电池按标准充电电流与充电限制电压充满电，然后在-10℃环境 下搁置 2h 后，以标准放电电流放电至放电截止电压，所测容量与 25 ± 2 ℃温度放电容量对比。	Capacity ≥70% 放电 容量 ≥70% Specific parameters refer to items 3.1 具体参数参照3.1项
3	Overcharge Protection Characteristics 过充电保护性能	After the standard charging of the battery is completed, charge it to 1.1 times the charging limit voltage with the standard charging current, and then charge it at a constant voltage of 1.1 times the charging limit voltage for 7 hours. 电池标准充电结束后，以标准充电电流充电至充电限制电压的	No smoke or fire 不起火,不冒烟 Specific parameters refer to items 3.1

		1.1倍，然后再在充电限制电压的1.1倍 下恒压充电 7h。	具体参数参照3.1项
4	Over- discharge Protection Characteristics 过放电保护性能	Under the condition of 25 ± 5 ℃, the battery is discharged to the discharge cut-off voltage according to the standard discharge current, and then discharged for 24 hours with an external 30 Ω load 在25±5℃条件下，电池按标准放电电流放电至放电截止电压后,外接30Ω负载再 放电24h	No fire, no explosion 不起火,不爆炸 Specific parameters refer to items 3.1 具体参数参照3.1项
5	Short- circuit Protection Characteristics 短路保护性能	At 25 ± 5 ℃, after the battery is fully charged using the standard charging method, short-circuit the positive and negative terminals of the battery (with an external resistance of less than 100m Ω) for 1 hour, and then disconnect the positive and negative terminals of the battery 在 25±5℃条件下， 电池标充充电方式充满电后，将电池正负极短路（外接电阻小于 100mΩ）持续 1h ，再将电池正负极断开。	No fire, no explosion 不起火,不爆炸 Specific parameters refer to items 3.1 具体参数参照3.1项

5. Transportation and Storage 运输和贮存

5.1 Transportation 运输

1) The product can be transported by any means of transport, keep the product from collision, violent vibration, rain ,snow, water, etc.;
包装后的产品能用任何交通工具运输，运输中应避免碰撞、剧烈震动、雨雪淋袭、水浸等；

2) The product shall not be stored in open-air warehouse; 中途转运时不得存放在露天仓库中；

3) The products can’t have any damage and performance degradation after shipping; 运输后产品不能有任何损伤和性能下降；

5.2 Storage 贮存

1) The product should be stored in a clean, dry, ventilated, non-corrosive gas environment, there must be no direct sunlight, the storage temperature is- 10~40℃, and the relative humidity is not more than 65%;
产品应贮存在清洁、干燥、通风、无腐蚀性气体的环境中，不能有阳光直射，储存仓库温度 为-10~40℃ ，相对湿度不大于 65%；

6. Package 包装

7. Caution 注意事项

7.1 Use precautions 使用注意事项

1) Do not use or store the battery where is exposed to extremely hot, such as under window of a car in direct sunlight in a hot day. Otherwise, the battery may be overheated. This can also reduce battery performance and/ or shorten service life.

不要使用处于极热环境中的电池，如阳光直射或热天的车内。否则， 电池会过热，可能着火（点燃），这样就会影响电池的性能、缩短电池的使用寿命。

2) Do not use any chargers other than those recommended. 请使用专用充电器！

3) During the use of batteries, there should be no abnormal use such as overcharge (voltage > 3.65V), over discharge (voltage <2.3 V), over current charging and discharging (maximum current allowed by current temperature), etc. It is strictly prohibited to use cores in environments prone to static electricity and poor sealing (water, dust entering).

电池使用过程中，不能出现单体过充电（电压＞3.65V）、单体过放电（电压＜2.3V）、超 电流充放电（当前温度允许的最大电流）等不正常使用情况；严禁在易产生静电、密封不良（水、粉尘进入）等环境使用电芯。

4) Batteries with in high/ low temperature environment, using in vibration environment, using in bad environment and using in humid environment will reduce the service life of the core.

电池在高温环境/低温环境使用、震动环境使用、配组不良环境使用、潮湿环境使用会降低电 芯的使用寿命。

5) When batteries are used in series and in parallel, it is suggested that high voltage conductors should be covered with electromagnetic insulation to prevent electromagnetic wave damage to nearby devices and human body.

电池多串并配组使用时，建议高电压导线外套电磁绝缘罩，防止电磁波对临近器件、人体的 损伤；

6) Do not short- circuit the battery by connecting wires or other metal objects to the positive (+) and negative (-) terminals.

禁止用导线或其它金属物体将电池正负极短路，禁止将电池与项链、发夹或其它金属物体一 起运输或贮存！

7） The pack should be charged and discharged in strict accordance with the current specified in the specifications to ensure the service life and safety of pack.

电池应严格按照规格书规定的电流进行充、放电设计，保证电池的使用寿命及安全。

8） when the battery is used in combination, it is required to use the same capacity, internal resistance gear, the same batch and the same state of charge cell, and the combination standard is strictly in accordance with the technical agreement. During the operation of the battery pack, the temperature difference inside the battery pack shall be less than 5 ℃.

电池配组使用时，需使用相同容量、 内阻档位，相同批次以及相同荷电状态的电芯，配组标 准严格按照技术协议进行。 电池组工作过程中，电池包内部温差应小于5℃。

9） The pack should be stored at room temperature, charged to about 40% to 60% of capacity. In case of over- discharge, pack should be charged for one time every 3 months while storing and batteries should be discharge and charge after being stored more than a year in order to activate it and restore energy.

电池组合应当在室温下存放，应充到 40%至 60%的电量。为防止电池过放，建议每 3 个月进 行一次充电，如储存时间超过一年，建议每年进行一次充、放电以激活电池。

7.2 Safety precautions 安全注意事项

1） Do not immerse the battery in water or allow it to get wet.
勿将电池投入水中或将其弄湿！

2） Do not use or store the battery near sources of heat such as a fire or heater.

禁止在火源或极热条件下给电池充电！勿在热源（如火或加热器）附近使用或贮存电池！如 果电池泄漏或发出异味，应立即将其从接近明火处移开；

3） Do not connect the battery directly to wall outlets or car cigarette-lighter sockets.
勿将电池直接连接到墙上插座或车载点烟式插座上！

4） Do not put the battery into a fire or apply direct heat to it.
勿将电池投入火中或给电池加热！

5） Do not pierce the battery casing with a nail or other sharp object, break it open with a hammer, or step on it.

禁止用钉子或其它尖锐物体刺穿电池壳体，禁止锤击或脚踏电池！

6） Do not strike, throw or subject the battery to sever physical shock.
禁止撞击、投掷或者使电池受到机械震动！

7） Do not directly solder the battery
terminals. 禁止直接焊接电池端子！

8） Do not attempt to disassemble or modify the battery in any way.
禁止以任何方式分解电池！

9） Do not place the battery in a microwave oven or pressurized container.
禁止将电池置入微波炉或压力容器中！

10） Do not use the battery if it gives off an odor, generates heat, becomes discolored or deformed, or appears abnormal in any way. If the battery is in use or being recharged, remove it from the device or charger immediately and discontinue use.

如果电池发出异味、发热、变形、变色或出现其它任何异常现象时不得使用；如果电池正在 使用或充电，应立即从用电器中或充电器上取出并停止使用！

11) If the battery leaks and electrolyte gets in your eyes, do not rub them. Instead, rinse them with clean running water and immediately seek medical attention. If left as is, electrolyte can cause eye injury.
如果电池漏液后电解液进入眼睛，不要擦拭，应用水冲洗，立即寻求医疗救助。如不及时处 理，眼睛将会受到伤害。

12) Do not use the battery in combination with primary batteries (such as dry-cell batteries) or batteries of different Capacity type or brand.
禁止与一次电池（如干电池）或不同容量、型号、品种电池组合使用！

13) Do not immerse the battery in water or allow it to get wet.
勿将电池投入水中或将其弄湿！

Any matters that this specification does not cover should be conferred between the Supplier.
任何本规格书中未提及的事项，须经双方协商确定