



湖北亿纬动力有限公司

产品规格书

Product Specifications

文件编号: LF100L-50160

版 本: Rf

生效日期: 2020-11-09

产品名称: 方形铝壳磷酸铁锂电池

产品型号: LF100L

产品规格: 3.2V/100Ah

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1 适用范围 Application Scope

本标准描述了湖北亿纬动力有限公司生产的方形铝壳磷酸铁锤电池的产品类型、基本性能、测试方法和注意事项。本产品适用于储能系统等。

This standard describes the product types, basic properties, test methods and precautions of square aluminum shell phosphate hammer batteries produced by Hubei EVE Power Co., Ltd. This product is suitable for energy storage systems, etc.

2 产品类型 Product Type

- 产品名称：方形铝壳磷酸铁锥电池
Product Name: Square Aluminum Shell Iron Phosphate Cone Battery
- 型号规格 Model Specifications: LF100L

3 标称技术参数 Nominal Technical Parameters

No	项目 Item		参数 Data	备注 Remark
1	标称容量 Nominal Capacity		100Ah	(25±2)°C, 标准充放电。 (25±2)°C, standard charge and discharge.
2	标称电压 Nominal Voltage		3.2V	
3	内阻 (1KHz) Internal Resistance		≤0.5m Ω	
4	标准充放电 Standard charge and discharge	充/放电电流 charge/discharge current	0.5C/0.5C	(25±2) °C
		充 / 放电截止电压 Charge/discharge cut-off voltage	3.65V/2.5V	
5	最大充/放电电流 Maximum charge/discharge current	持续充电 / 放电 Continuous charge/discharge	1C/1C	参考持续 / 脉冲充放电电流表 Refer to continuous/pulse charge and discharge ammeter
		脉冲充电 / 放电 (30s) Pulse charge/discharge (30s)	2C/2C	
6	推荐SOC使用窗口 Recommended SOC to use windows		10%-90%	N.A.
7	充电工作温度 Charging working temperature		0°C- 55°C	参考持续 / 脉冲充放电电流表 Refer to continuous/pulse charge and discharge ammeter
8	放电工作温度 Discharge working temperature		-20°C- 55°C	

9	存储温度 storage temperature	短期(1 个月内) Short term (within 1 month)	-20°C- 45°C	N.A.
		长期(1 年内) Long term (within 1 year)	0°C- 35°C	
10	存储湿度 Storage humidity		< 95%	
11	月自放电率 Monthly self-discharge rate		3%/月 3%/Month	(25 ± 2)°C , 30%-50% SOC storage
12	尺寸 Size	非折边区宽度Unfolded area width		160.0±0.5mm
13		折边区宽度Folded area width		160.0±0.8mm
14		厚度 Thickness (30%-40%SOC 200kgf)		49.9±0.5mm
15		高度（总高） Height (Total height)		118.5±0.5mm
16		高度（主体高） Height (Body height)		115.7±0.5mm
17		极柱中心距 Pole center distance		97.0±0.3mm
18	电池重量 Weight		1.98±0.05kg	
19	包膜方式 Envelope method		U型包膜 U-shaped envelope	

4 测试条件 Test Conditions

4. 1测试环境条件 Test Environmental Conditions

温度 Temperature: (25±2)°C
相对湿度 Relative Humidity: 15%-90%
大气压力 Atmospheric Pressure: 86KPa-106KPa

4. 2标准充电 Standard Charge

在环境温度 (25±2)°C的条件下，对电池以0.5C (A) 恒流充电至充电限制电压3.65V后再恒压充电，直至电流小于0.05C (A)。

Under the condition of ambient temperature (25 ± 2)°C, charge the battery with a constant current of 0.5C(A) to the charging limit voltage of 3.65V, and then charge it with a constant voltage until the current is less than 0.05C(A).

4. 3标准放电 Standard Discharge

在环境温度 (25±2)°C的条件下，对电池以0.5C (A) 恒流放电至终止电压2.5V

Under the condition of ambient temperature (25 ± 2)°C, discharge the battery with a constant current of 0.5C(A) to the end voltage of 2.5V



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5 电池性能 Battery Performance

5.1 电池性能 Battery Performance

No.	项目Item	技术要求 Requirement	测试方法 Test Method
1	25°C倍率放电性能 25°C rate discharge performance	放电容量 / 标称容量x100% Discharge capacity/nominal capacity x100% A)0.5C(A)≥100% B)1C(A)≥98%	电池标准充电后, 搁置0.5h, 分别以0.5C(A)、1C(A)进行放电至2.5V, 如果放电容量达不到技术要求, 此项试验允许重复3次。 After the standard charging of the battery, put it on hold for 0.5h, and discharge it to 2.5V at 0.5C(A) and 1C(A) respectively. If the discharge capacity does not meet the technical requirements, this test is allowed to be repeated 3 times.
2	不同温度放电性能 Discharge performance at different temperatures	放电容量 / 标称容量x100% Discharge capacity/nominal capacity x100% A)55°C 1.0C≥95% B)-20°C 1.0C≥70%	A) 电池标准充电后, 在55±2°C条件下搁置4h, 以1.0C(A)放电至2.5V。 B) 电池标准充电后, 在-20±2°C条件下搁置4h, 以1.0C(A)放电至2.0V。 A) After the standard charging of the battery, put it on hold for 4h at 55±2°C, and discharge it to 2.5V at 1.0C(A). B) After the standard charging of the battery, put it on hold for 4h under the condition of -20±2°C, and discharge it to 2.0V at 1.0C(A).
3	25°C荷电保持与恢复能力 25°C charge protection and recovery capability	容量保持率: 剩余容量/标称容量≥95% 容量恢复率: 恢复容量/标称容量≥97% Capacity retention rate: Remaining capacity/nominal capacity≥95% Capacity recovery rate: Recovery capacity/nominal capacity≥97%	1) 电芯标准充电后, 25±2°C下静置28天; 2) 存储结束后, 电芯在25°C下以0.5C恒流放电至2.5V, 静置30min; 计算容量保持率; 3) 电芯在25±2°C下以0.5C恒流恒压充电至3.65V/0.05C截止, 静置30min; 4) 电芯在25°C下以0.5C恒流放电至2.5V, 静置30min。计算容量恢复率; 5) 3-4步容量恢复步骤允许重复3次。 1) After the standard charging of the cell, let it stand for 28 days at 25±2°C; 2) After the storage, the cell was discharged to 2.5V with a constant current of 0.5C at 25°C, and left standstill for 30min; the capacity retention rate was calculated; 3) The cell is charged at 25±2°C with 0.5C constant current and constant voltage to 3.65V/0.05C cut-off, and let stand for 30min; 4) The cells are discharged to 2.5V at a constant current of 0.5C at 25°C, and let stand for 30min. Calculate the capacity recovery rate; 5) The 3-4 step capacity recovery steps are allowed to be repeated 3 times.
4	25°C循环寿命 25°C cycle life	≥4000次 @1.0C/1.0C ≥4000Times @1.0C/1.0C	(25±2)°C, 电池在200kgf夹具下: 以1.0C(A)恒流恒压充电至3.65V, 截止电流0.05C(A), 搁置30min, 以1.0C(A)恒流放电至2.5V, 搁置30min, 再进行下一循环, 至容量衰减为标称容量的80%止。 (25±2)°C, battery under 200kgf fixture: charge to 3.65V with 1.0C(A) constant current and constant voltage, cut-off current 0.05C(A), set aside for 30min, and discharge with 1.0C(A) constant current

			to 2.5V, set aside for 30min, and then proceed to the next cycle until the capacity decays to 80% of the nominal capacity.
5	35°C循环寿命 35°C cycle life	≥2800次 @1.0C/1.0C ≥2800Times @1.0C/1.0C	(45±2)°C, 电池在200kgf夹具下: 以1.0C(A)恒流恒压充电至3.65V, 截止电流0.05C(A), 搁置30min, 以1.0C(A)恒流放电至2.5V, 搁置30min, 再进行下一循环, 至容量衰减为标称容量的80%止。 (45±2)°C, battery under 200kgf fixture: Charge to 3.65V with 1.0C(A) constant current and constant voltage, cut-off current 0.05C(A), leave it for 30min, discharge with 1.0C(A) constant current to 2.5V, set aside for 30min, and then perform the next cycle until the capacity decay is 80% of the nominal capacity.
6	45°C循环寿命 45°C cycle life	≥1800次 @1.0C/1.0C ≥1800Times @1.0C/1.0C	(45±2)°C, 电池在200kgf夹具下: 以1.0C(A)恒流恒压充电至3.65V, 截止电流0.05C(A), 搁置30min, 以1.0C(A)恒流放电至2.5V, 搁置30min, 再进行下一循环, 至容量衰减为标称容量的80%止。 (45±2)°C, battery under 200kgf fixture: Charge to 3.65V with 1.0C(A) constant current and constant voltage, cut-off current 0.05C(A), leave it for 30min, discharge with 1.0C(A) constant current to 2.5V, set aside for 30min, and then perform the next cycle until the capacity decay is 80% of the nominal capacity.
7	寿命终止管理 End-of-life management	容量/标称容量<70% Capacity/nominal capacity<70%	电池使用过程中, 超出寿命终止规定时, 应停止使用电池。 During the use of the battery, when the end-of-life specification is exceeded, the battery should be discontinued.

5.2 安全性能 Safety Performance

No	项目Item	技术要求 Requirement	测试方法 Test Method
1	过放电 Overdischarge	不爆炸、不起火 No explosion, No fire	参考: GB/T 36276-2018 《 电力储能用锥离子电池》 Reference: GB/T 36276-2018 "Cone-ion battery for electric energy storage"
2	过充电 Overcharge	不爆炸、不起火 No explosion, No fire	
3	短路 Short circuit	不爆炸、不起火 No explosion, No fire	
4	跌落 Fall	不爆炸、不起火 No explosion, No fire	
5	加热 Heating	不爆炸、不起火 No explosion, No fire	
6	挤压 Extrusion	不爆炸、不起火 No explosion, No fire	
7	低气压 Low pressure	不爆炸、不起火、不漏液 No explosion, No fire, No leakage	
8	热失控 Thermal out of control	不爆炸、不起火 No explosion, No fire	

6 运输 Transportation

电池应在荷电态 (30%-50%SOC) 下包装成箱进行运输，在运输过程中应防止剧烈振动、冲击或挤压，防止日晒雨淋。

Batteries should be packed in boxes for transportation in the state of charge (30%-50% SOC), and should be protected from severe vibration, shock or extrusion during transportation, and protected from sunlight and rain.

7 存储 Storage

电池应贮存（超过1个月）在环境温度为 0° C-35° C的清洁、干燥通风的室内。每6个月对电池进行一次充放电，贮存荷电态 (30%-50%SOC)。

Batteries should be stored (more than 1 month) in a clean, dry and ventilated room with an ambient temperature of 0° C-35° C. The battery is charged and discharged every 6 months to store the state of charge (30%-50% SOC).

8 注意事项 Precautions

- 1、对电池进行充放电时，应确保具有对电池电压、电流、温度监控及保护的条件。

When charging and discharging the battery, it should be ensured that there are conditions for monitoring and protecting the battery voltage, current, and temperature.

- 2、请将电池远离热源、火源等具有加热性及强酸、强碱等具有腐蚀性的环境。

Please keep the battery away from heat sources, fire sources and other corrosive environments such as strong acids and alkalis.

- 3、任何时候请勿对电池进行短接或进行不正确极性的安装。

Do not short or install batteries with incorrect polarity at any time.

- 4、请勿将不同型号或不同厂家的电池进行混合使用。

Do not mix batteries of different models or manufacturers.

- 5、请勿借用外力使电池坠落、冲击、穿刺，勿对电池进行拆解或改变外部结构。

Do not use external force to drop, impact or puncture the battery, and do not disassemble or change the external structure of the battery.

- 6、长时间不使用电池时，请将电池电荷处于30%-50%SOC状态，且避免处于强阳光直射或高温高湿度环境。

When the battery is not used for a long time, please keep the battery charge at 30%-50% SOC, and avoid direct sunlight or high temperature and high humidity environment

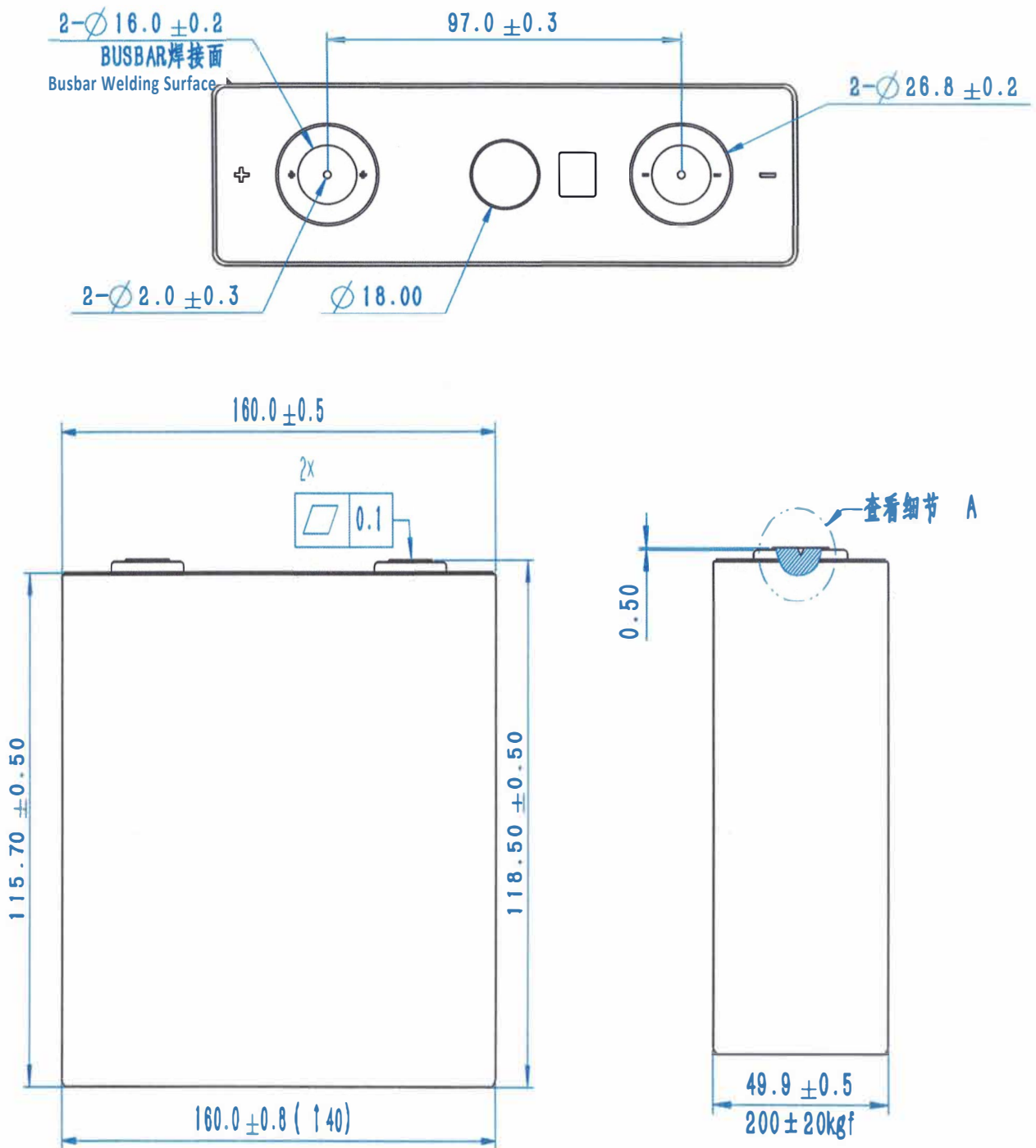
- 7、对电池进行操作时，需要佩戴橡胶手套等防护装置。

Wear protective equipment such as rubber gloves when handling the battery.

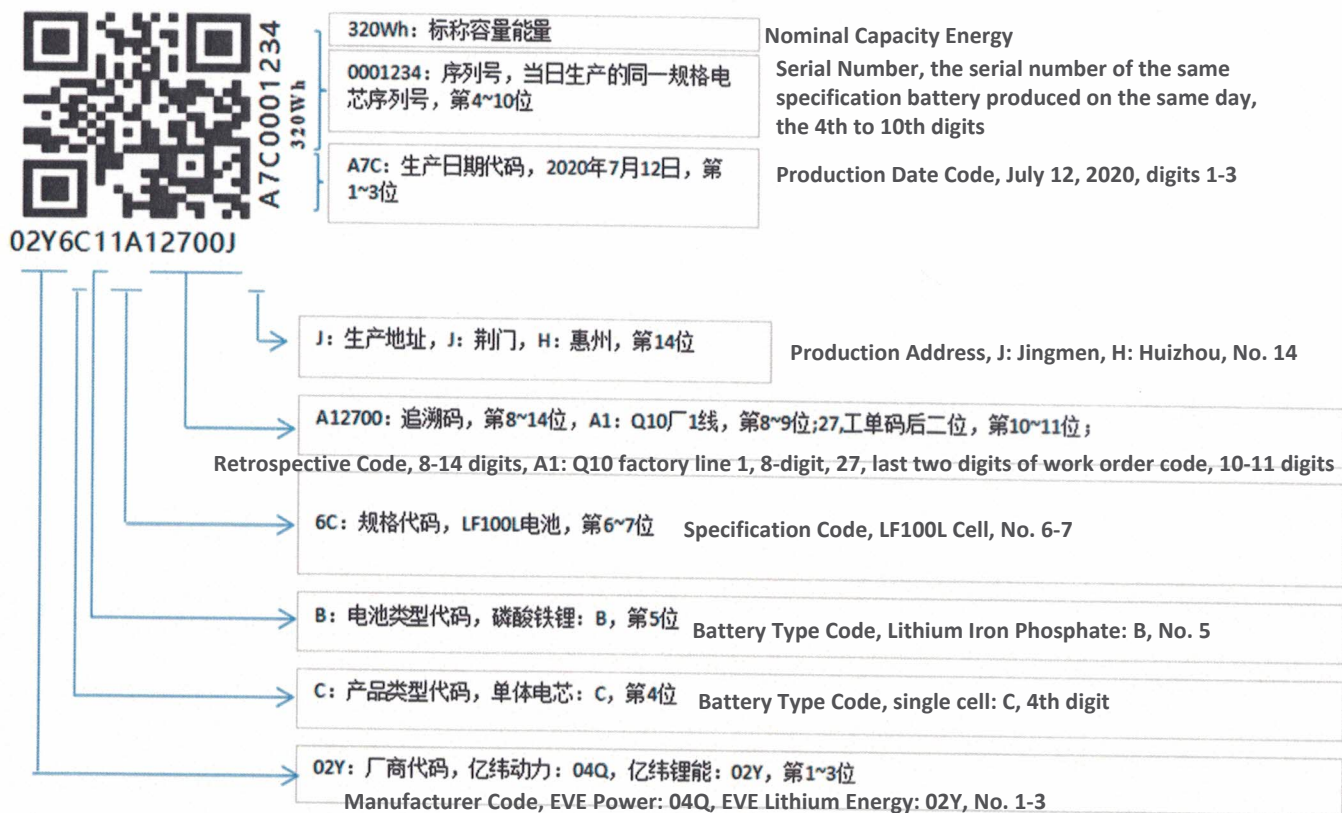
- 8、若电池发生漏液、冒烟或破损事故时，请立即停止使用，联系我司处理。

If the battery leaks, smokes or is damaged, please stop using it immediately and contact our company for handling

附录一: 电池二维图 Appendix I 2D Diagram of Battery



附录二: 电池刻码规则 Appendix 2 Battery QR Code Rules



附录三：电池外观照片（底部根据需要可选贴底部绝缘片）

Appendix 3: Appearance photos of the battery (the bottom insulation sheet can be selected as needed)

