# EVE POWER Co., Ltd
# Product Specification

| | | |
|---|---|---|
| File No | : | LF100LA-56160 |
| Version | : | A |
| Effective Date | : | 2022-1-1 |

| | | |
|---|---|---|
| Product name | : | LFP Power Battery |
| Model name | : | LF100LA |
| Specification | : | 3.2V 100Ah |
| Draft | : | Peng Chen |
| Checked | : | Yong Zhang |
| Approved | : | Daniel Yuan |
| Customer Approved | : | |

Mail ： sales@evebattery.com

Address ： No .68 Jingnan Avenue, Duodao District, Jingmen High-tech Zone, Jingmen City, Hubei Province.

# History of specification

| Date | Contents | Remarks |
|---|---|---|
| 2022-1-1 | First issue | A |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

# Contents

# 1. Scope

This specification is applied to Rechargeable LFP Power Battery with aluminum shell (3.2V 100Ah) manufactured by EVE Energy Co., Ltd., in which the description and model, main performance, test conditions and precautions of the product are included.The product can be applied for Vehicle power supply, Storage system, etc.

# 2. Description and Model

2.1 Description：LFP Li-ion Power Battery with aluminum shell.

2.2 Model：LF100LA

# 3. General Technical Parameter

| # | Item | | Parameter | Remark |
|---|---|---|---|---|
| 1 | Nominal Capacity | | 100.0 Ah | (25±2)℃，Standard charge and discharge |
| 2 | Typical Voltage | | 3.2V | |
| 3 | AC Impedance Resistance(1KHz) | | ≤0.5mΩ | |
| 4 | Standard charge and discharge | Charge / discharge current | 0.5C/0.5C | (25±2)℃ |
| | | Cut off voltage of charge / discharge | 3.65V/2.5V | |
| 5 | Maximum charge / discharge current | Continuous charge / discharge | 1C/1C | According to continuous / pulse charge and discharge ammeters |
| | | Pulse charge / discharge (30s) | 2C/2C | |
| 6 | Recommended scope of SOC | | 10%～90% | N.A. |
| 7 | Charging Temperature | | 0℃～55℃ | According to continuous / pulse charge and discharge ammeters |
| 8 | Discharging Temperature | | -20℃～55℃ | |
| # | Item | | Parameter | Remark |

| | | | | |
|---|---|---|---|---|
| 9 | Storage temperature | Short term (within 1 month) | -20℃～45℃ | N.A. |
| | | Long term (within 1 year) | 0℃～35℃ | |
| 10 | Storage humidity range | | ＜95% | |
| 11 | Self-discharge rate per month | | ≤3%/month | Temperature：(25±2)℃，Storage scope of SOC：30%~50%SOC |
| 12 | Dimension | Hem width | 160 ±0.8mm | Refer to Appendix I |
| 13 | | Width of non hem | 160 ±0.5mm | |
| 14 | | Thickness(30% SOC 200kgf) | 50.1 ±0.5mm | |
| 15 | | High（total） | 118.5 ±0.5mm | |
| 16 | | High（subject） | 115.7 ±0.5mm | |
| 17 | | Tabs Distance | 97.0±0.3mm | |
| 18 | Battery weight | | 1.98±0.05 kg | |
| 19 | Encapsulation mode | | U-shaped capsule | |

# 4. Test conditions

### 4.1 Test environment conditions

Temperature： 25±2℃

Relative humidity (RH)： 15~90%

Atmospheric condition: 86KPa~106KPa

### 4.2 Standard Charge

The standard charge means charging the cell with charge current 0.5C(A) and constant voltage 3.65V at (25±2)℃, 0.05C(A )cutoff.

### 4.3 Standard Discharge

The standard discharge means discharging the cell with discharge current 0.5C(A) and cutoff voltage 2.5V at (25±2) ℃.

# 5. Main Performance

## 5.1 Electrical performance

| No. | Item | Requirements | Measuring Procedure |
|---|---|---|---|
| 1 | Rate discharge performance at 25℃ | Discharge capacity/nominal capacity×100%<br>A）0.5CA ≥100%<br>B）1.0CA ≥98% | After standard charge and 1h rest, discharge to 2.5V cutoff with the current of 0.5 C(A), 1.0C(A), respectively. If the discharge capacity fails to meet the technical requirements, this test is allowed to be repeated three times |
| 2 | Discharge performance at different temperature | Discharge capacity/nominal capacity×100%<br>A)55℃ 1.0C≥95%<br>B)-20℃ 1.0C≥70% | Measure the initial capacity and state of the battery： A) after standard charge and 5h rest at 55℃, discharge to 2.5V cutoff with the current of 1.0C(A)； B) after standard charge at 25±2℃ and 4h rest at -20℃±2℃, discharge to 2.0V cutoff with the current of 1.0C(A). |
| 3 | The capacity retention and recovery at 25℃ | Capacity Retention≥95%<br>Capacity Recovery≥97% | Measure the initial capacity and state of the battery, after standard charge and stored for 28 days, discharge to 2.5V cutoff with the current of 0.5C(A), calculate the remaining capacity, the retention can be expressed as a percentage of nominal capacity. After standard charged and 30mins rest, calculate the discharging capacity (Ah), the recovery can be expressed as a percentage of nominal capacity. The recovery is measured with discharge current 0.5 C(A) with 2.5V cut-off at (25±2) ℃. |
| 4 | cycle life at 25℃ | ≥5000 cycle @0.5C/0.5C | Under the 200kgf clamp, after standard charged and 30mins rest, discharge to 2.5V cutoff with the current of 0.5 C (A) at (25±2) ℃, and then start the next cycle， end with the capacity decreasing to 80% of the initial capacity. The number of cycles is defined as the cycle life of the battery. |
| 5 | cycle life at 35℃ | ≥3500 cycle @0.5C/0.5C | Under the 200kgf clamp, after standard charged and 30mins rest, discharge to 2.5V cutoff with the current of 0.5 C (A) at (35±2) ℃, and then start the next cycle， end with the capacity decreasing to 80% of the initial capacity. The number of cycles is defined as the cycle life of the battery. |

| | | | |
|---|---|---|---|
| 6 | cycle life at 45℃ | ≥2000 cycle @0.5C/0.5C | Under the 200kgf clamp, after standard charged and 30mins rest, discharge to 2.5V cutoff with the current of 0.5 C (A) at (45±2) ℃, and then start the next cycle， end with the capacity decreasing to 80% of the initial capacity. The number of cycles is defined as the cycle life of the battery. |
| 7 | End of life managem ent | capacity/nominal capacity ＜70% | During the use of the battery, the battery s hall be stopped when the end of life regul ations are exceeded. |

**5.2 Safety performance**

| No. | Item | Requirements | Measuring Procedure |
|---|---|---|---|
| 1 | Over Discharge | No fire、No explosion | Reference: GB / T 36276-2018《Lithium ion battery for electrical energy storage》 |
| 2 | Over Charging | No fire、No explosion | |
| 3 | Short-Circuit Test | No fire、No explosion | |
| 4 | Drop Test | No fire、No explosion | |
| 5 | Heating | No fire、No explosion | |
| 6 | Extrusion Test | No fire、No explosion | |
| 7 | Low pressure test | No fire、No explosion、No leakage | |
| 8 | Thermal runaway | No fire、No explosion | |

# 6. Transportation

Battery for shipping should be packed in boxes with the State of charge(30%~50%SOC). The Violent vibration, impact extrusion, sun and rain should be prevented during shipping.

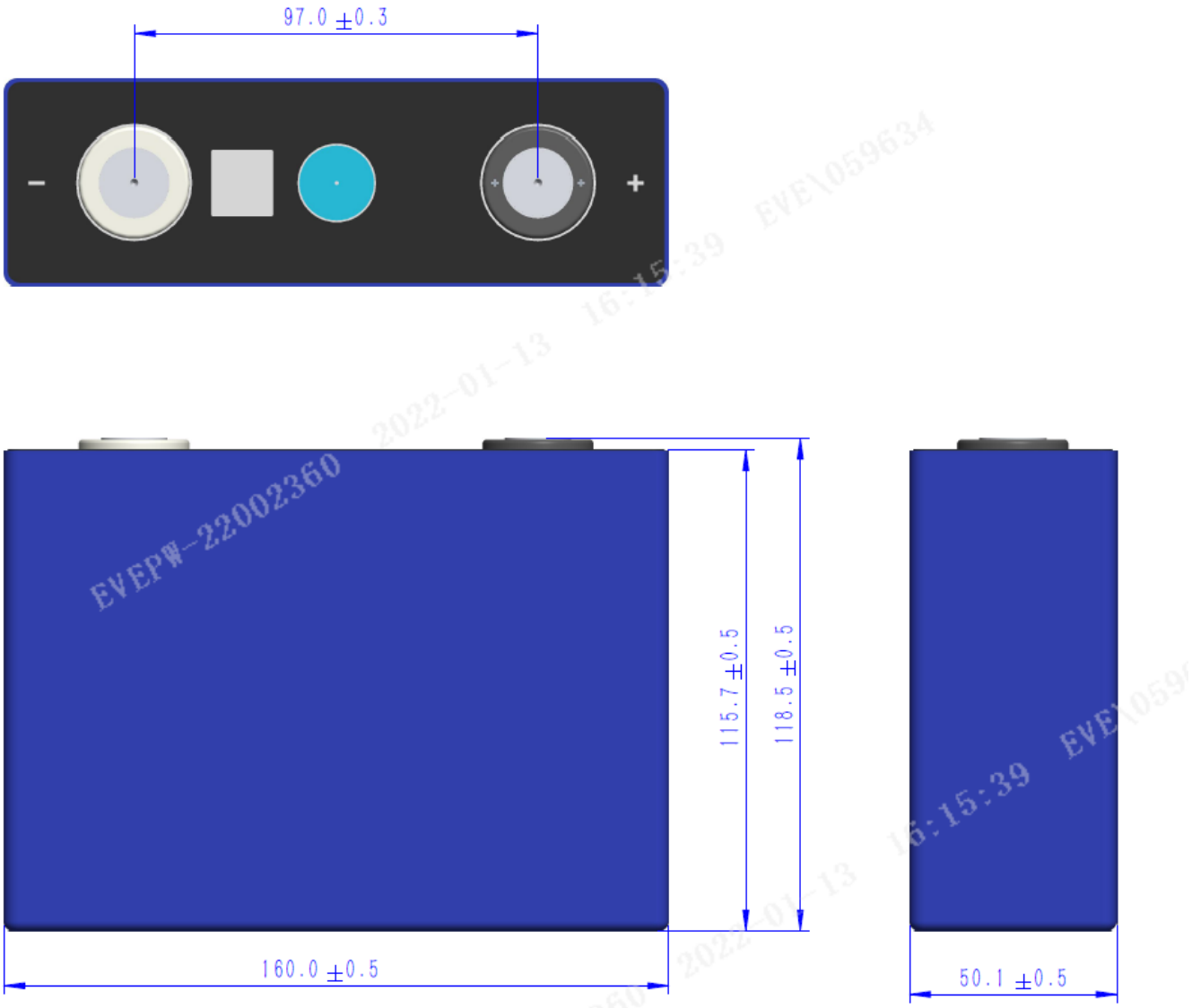
## 7. Storage

Batteries should be stored (more than 1 month) indoor with a dry and clean environment at 0 ℃~35 ℃. Avoiding contact with corrosive substances and staying away from fire and heat source. The battery should be charged and discharged every 6 months. The SOC for storage is between 30% ~ 50% .

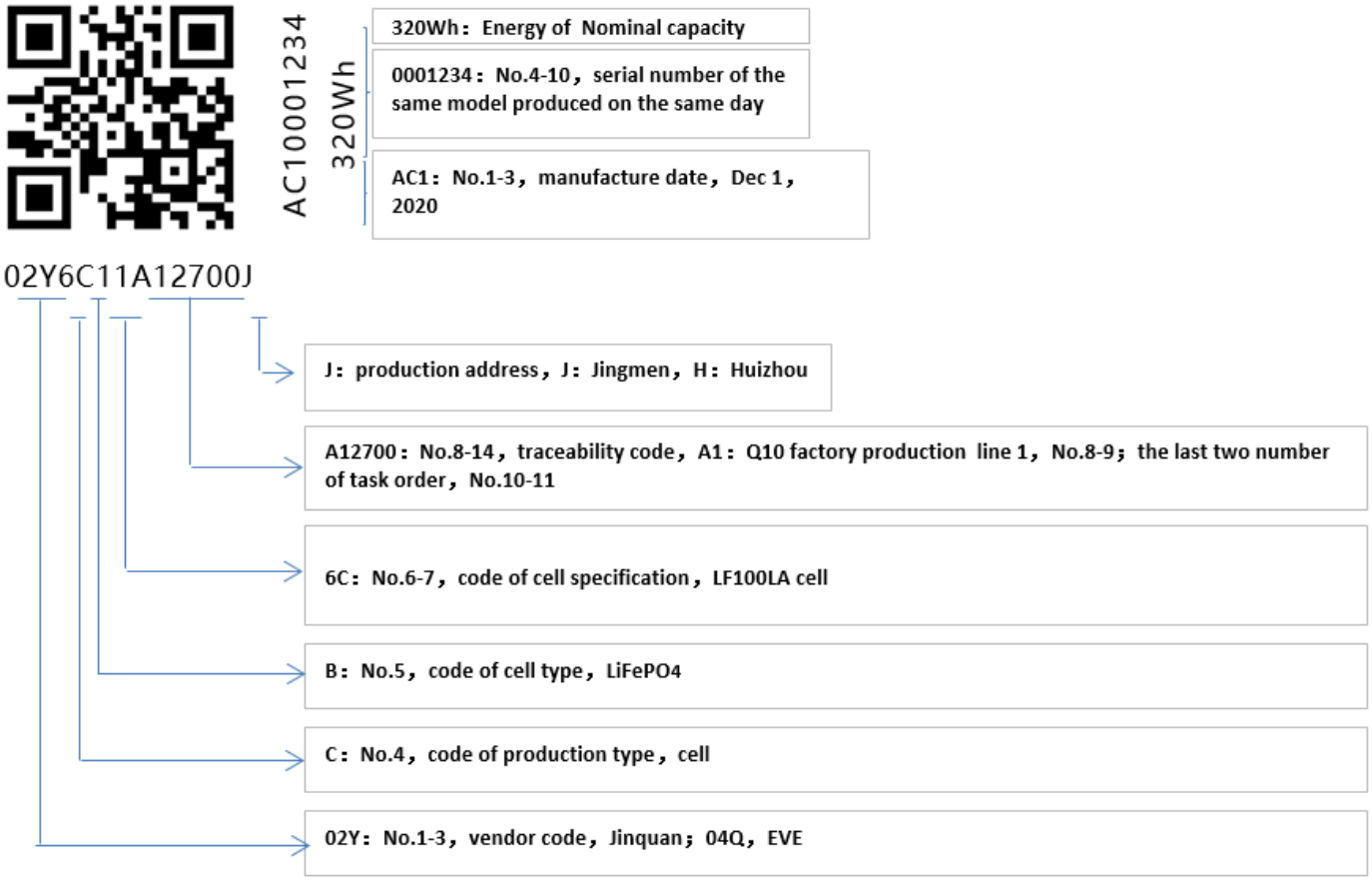
## 8. Points for attention

1. When the battery is charged and discharged, the conditions for monitoring and protecting the battery voltage, current and temperature shall be ensured.
2. Please keep the battery away from the heat source, fire source and other corrosive environments such as heating, strong acid and strong alkali.
3. Do not short circuit the battery or install it with incorrect polarity at any time， otherwise it can cause serious damage to the battery and cause danger.
4. Do not mix batteries of different models or manufacturers.
5. Do not use external force to make the battery fall, impact or puncture. Do not disassemble the battery or change the external structure.
6. When the battery is not used for a long time, please keep the battery in the state of 30%-50% SOC, and avoid the environment of strong direct sunlight or high temperature and humidity.
7. When operating the battery, it is necessary to wear rubber gloves and other protective devices.
8. In case of leakage, smoke or damage of battery, please stop using immediately and contact our company for handling.

## Appendix I: Two-dimensional graphs of Battery:



# Appendix II: Battery coding rules:



## Appendix III: photos of battery appearance: