

## ***Safety, Reliability, Efficiency, Energetic***

- Independent patent property safety vent
- Solve capacity between vertical and horizon installation
  - Highest capacity in the world
  - Effectlively reduce voltage delay



# **Li-SOCl<sub>2</sub> Battery**

Equal lifetime to electronic devices





[Http://www.fansobattery.com](http://www.fansobattery.com)



# Lithium Battery

Equal lifetime to electronic devices







# FANSO

## Preface---Several key problems of battery in practical application

With the rapid and advanced development of Internet of thing, lots of intelligent instruments and meters are widely used, But in practical application, many different installation make significant impact on the service life and reliability of the equipments, battery as the most important power source, the capacity, lifetime, reliability and safety also affect the using of the equipment.

### Capacity difference

IQC and OQC inspection of batteries are vertically, The technicians or testers may ont realize whether there is a difference in the capacity between these two directions, especially obvious for the large size battery. In practical application, many batteries are not installed vertically. Fanso solves the problem of battery capacity difference between vertical and horizon.

### Voltage delay

Voltage delay is an inherent characteristic of lithium thinonyl chloride battery. When the battery store for a long time, tiny discharge current or store under high temperature, the loading voltage of the battery will be low. With technology innovation and improvement of production process, FANSO can well control the problem of capacity drop.

### Safety vent

The safety of battery is the most concerned problem, especially the spiral battery, which has a large reaction surface, once the heat is out of control, it will cause serious consequences. According to this feature of battery, FANSO independently developed the "—" type safety relief tank.Fano.is also the only primary lithium battery manufacturer with this core technology in China.

This introduction describes the relevant specific situation, safety and voltage delay, We believe that it can provide certain reference for various intelligent equipment and instrument.



Independent patent property safety vent

Highest capacity in the world

Effectively reduce voltage delay

Solve capacity between vertical and horizon installation





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# ER34615H

## Features

(Typical values relative to cells stored for one year or less at 30°C max)

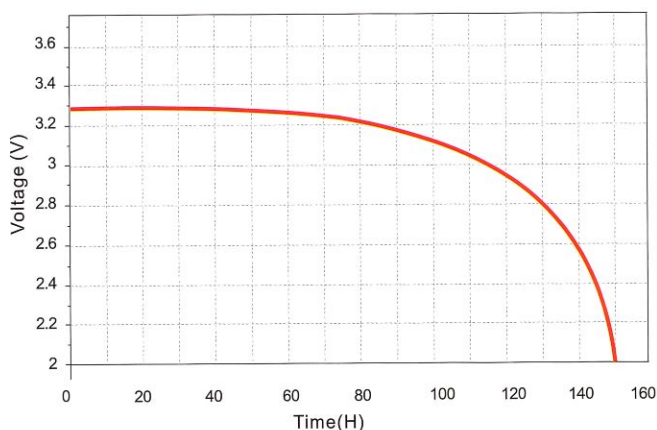
- Nominal capacity ..... 19000mAh
- Nominal voltage ..... 3.6V
- Max. constant current ..... 150mA
- Max pulse current ..... 250mA
- Operation temperature ..... -55°C to 85°C
- Weight ..... 103g



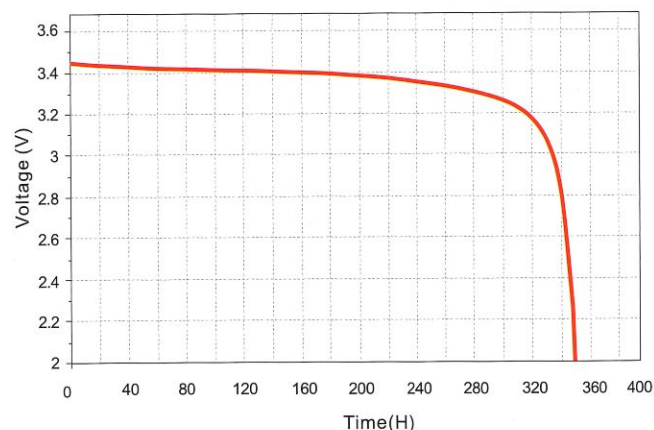
## Different discharge capacity in different current and attitude

### 1, Vertical discharge capacity test at room temperature

100mA discharge

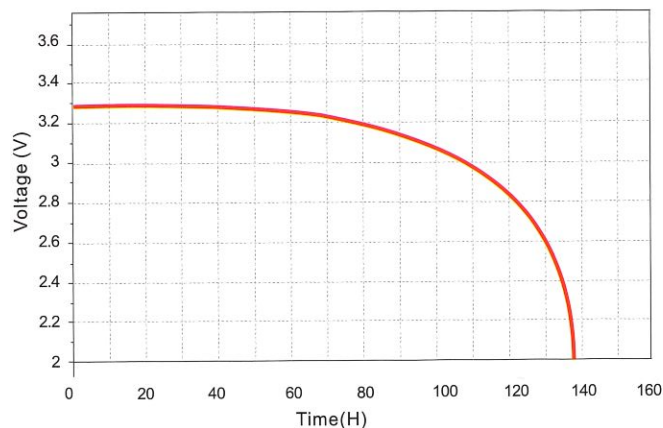


50mA discharge

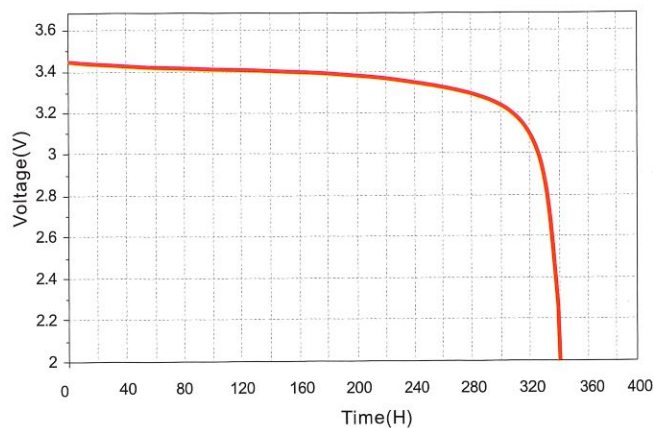


### 2, Horizontal discharge capacity test at room temperature

100mA discharge



50mA discharge

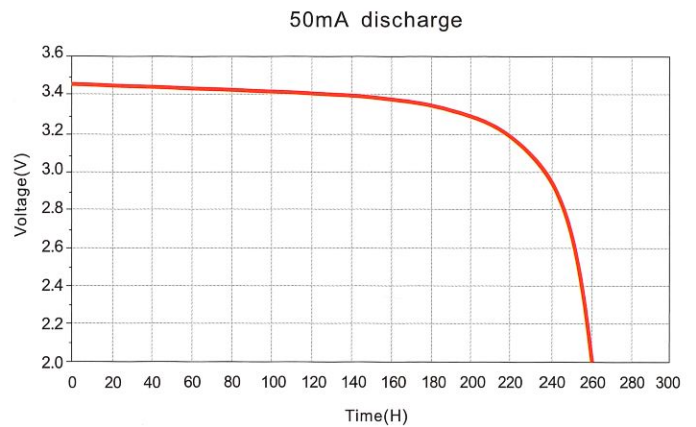
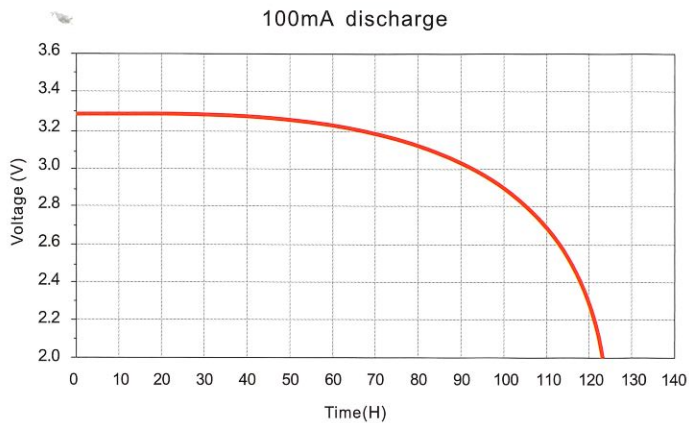






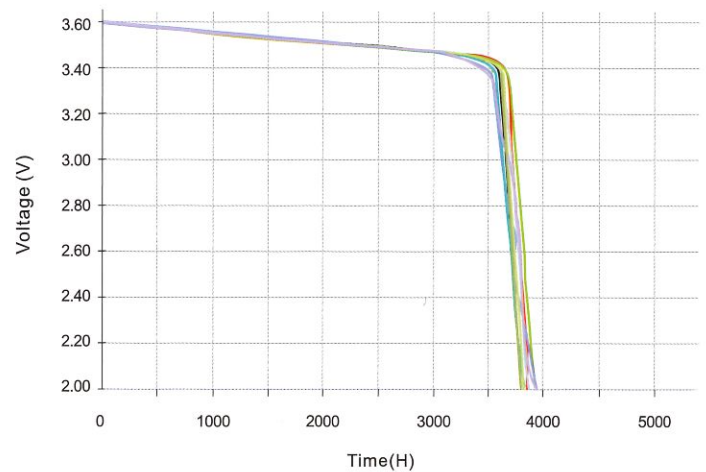
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### 3, Upside discharge capacity test at room temperature



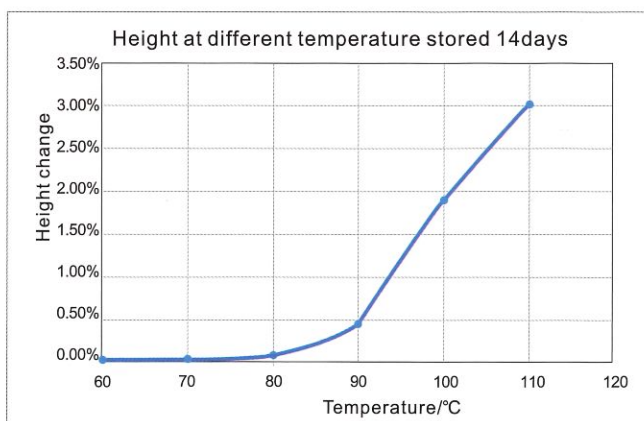
### 4, Standard discharge capacity test at room temperature

680 $\Omega$  discharge at room temperature,  
capacity reach up to 19Ah

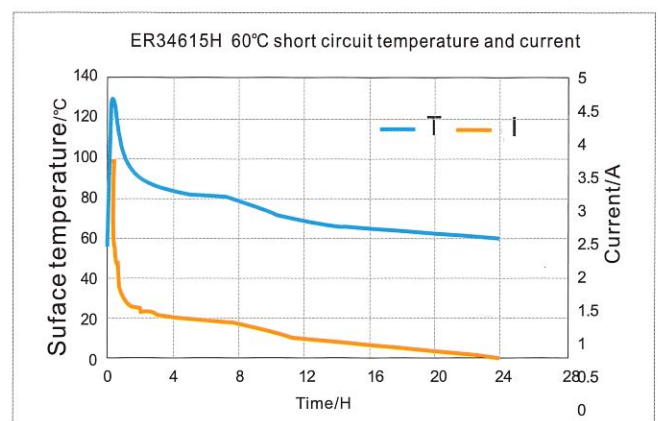


## Safety

#### Temperature deformation resistance of battery



#### Short circuit test at high temperature



After high temperature, short circuit test, the battery will not break, leak, fire, explosion and other abnormal phenomena, the battery is safe and reliable.

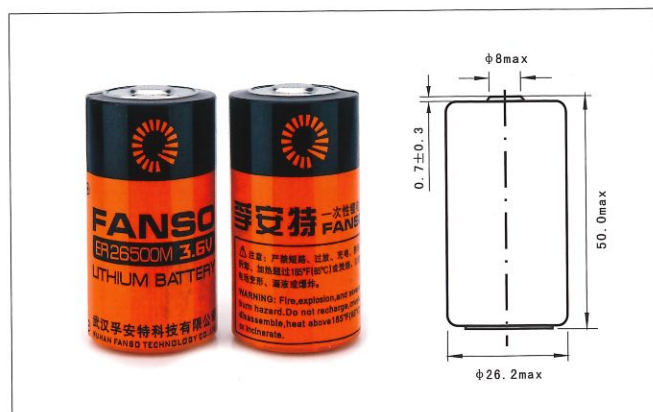
FANSO ER34615H battery ensure nominal capacity, reach 95% of the nominal capacity with medium current.  
The design of the battery consider actual application when installed horizontal, solves the problem of capacity difference.

# ER26500M

## Features

(Typical values relative to cells stored for one year or less at 30°C max)

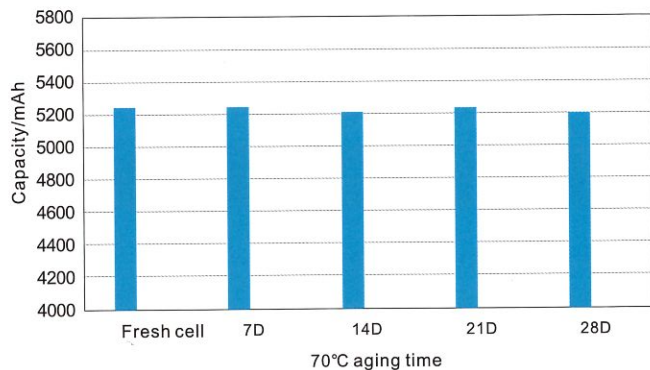
- Nominal capacity ..... 6000mAh
- Nominal voltage ..... 3.6V
- Max. constant current ..... 1000mA
- Max pulse current ..... 2000mA
- Operation temperature ..... -55°C to 85°C
- Weight ..... 57g



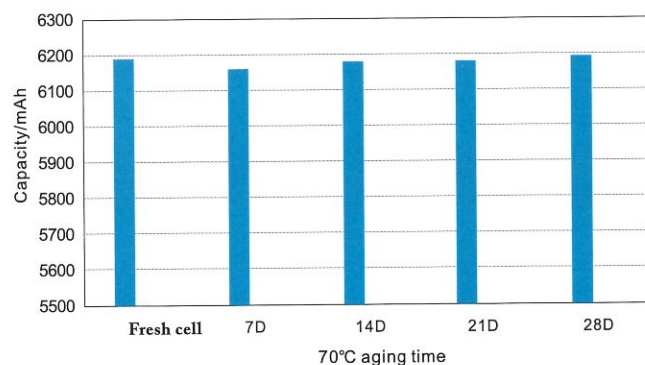
## Different discharge capacity and TMV voltage

### 1, Capacity after high temperature aging

550mA discharge



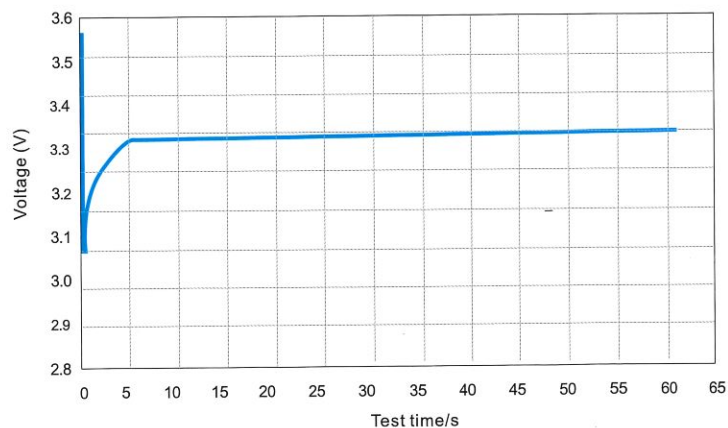
35mA discharge



After aging at 60 °C, the capacity of the battery is stable and the capacity drop is small

### 2, 60°C, 400ma TMV test after aging 28days

60°C storage for 30days  
TMV>3.0V, Voltage recover to 3.30V.



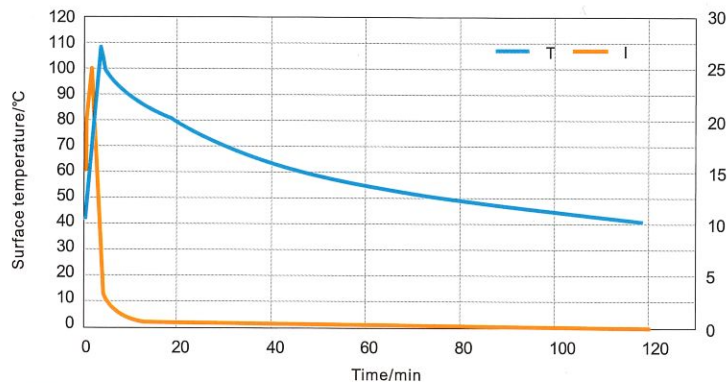




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## Safety

ER26500M short circuit test



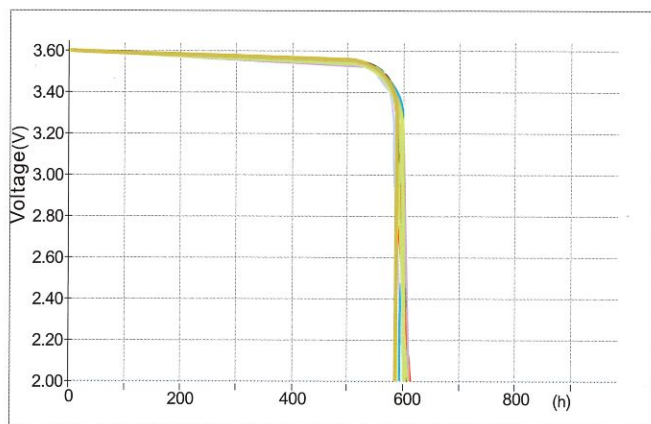
Pressure release



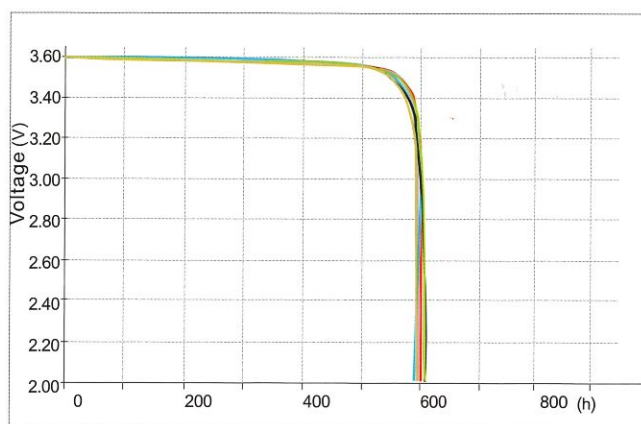
Directly connect positive and negative, current max up to 25A, surface temperature reach up to 110°C, battery bottom open up, no fire, explosion and other abnormal phenomena, other areas of the battery are normal

## Environmental adaptability

70°C, RH85% store 360hours, after that discharge with 330Ω



500 Circles between -40 and 70°C, after that discharge with 330Ω



After the environmental test, the capacity is normal, and no bulge or leak.

Conclusion: the spiral battery has good environmental adaptability, high safety and reliability, especially the special technical and patent safety vent.

# ER34615M

## Features

(Typical values relative to cells stored for one year or less at 30°C max)

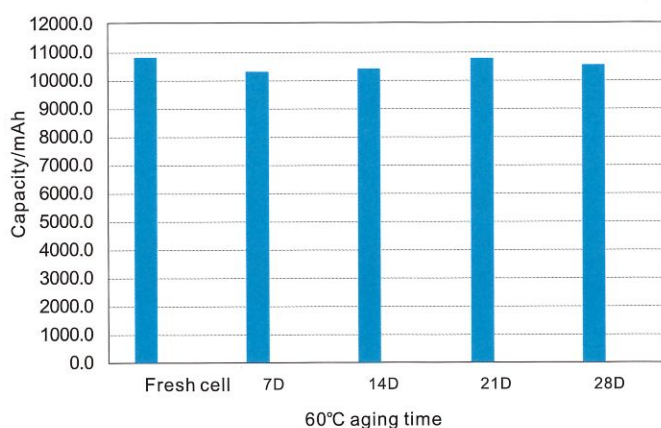
- Nominal capacity..... 13000mAh
- Nominal voltage ..... 3.6V
- Max. constant current ..... 1800mA
- Max pulse current ..... 3500mA
- Operation temperature ..... -55°C to 85°C
- Weight ..... 109g



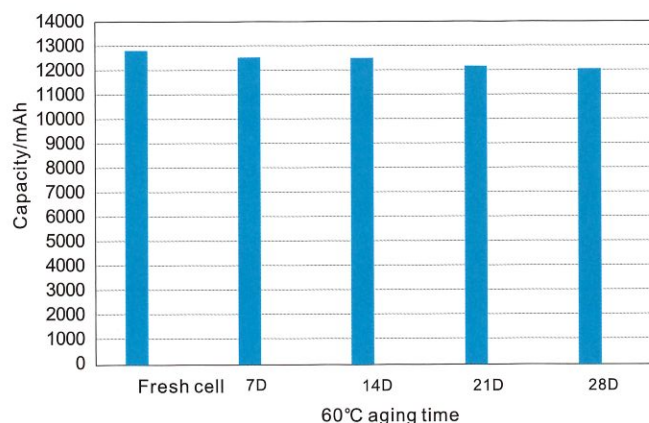
## Capacity discharge

### 1, Capacity after high temperature aging

1000mA discharge



100mA discharge

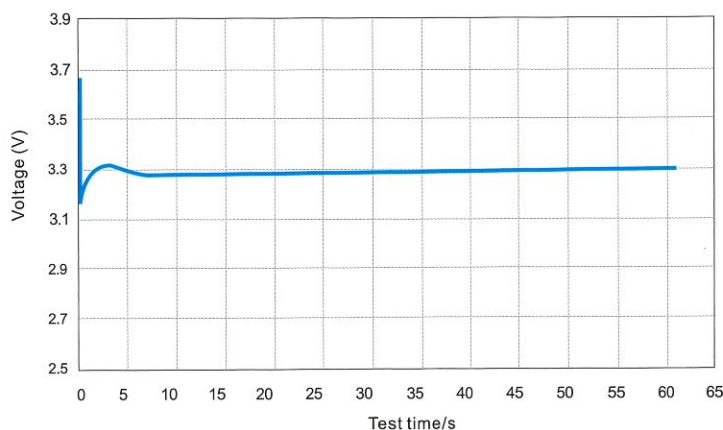


After aging at 60 °C, the capacity of the battery is stable and the capacity drop is small

### 2, 60°C, 500ma TMV test after aging 28days

60°C storage for 30days

TMV>3.0V, Voltage recover to 3.30V.



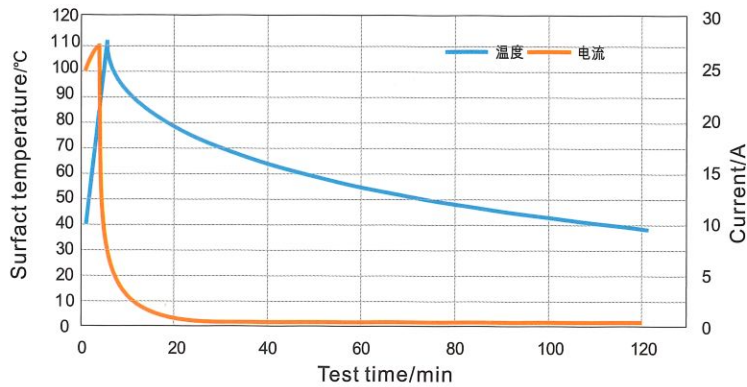




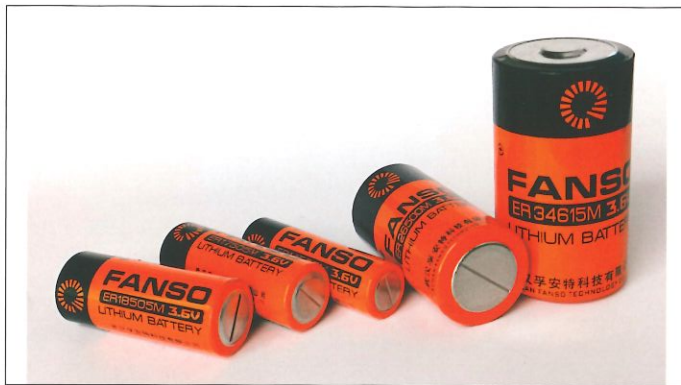
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## Safety

ER34615M short circuit test



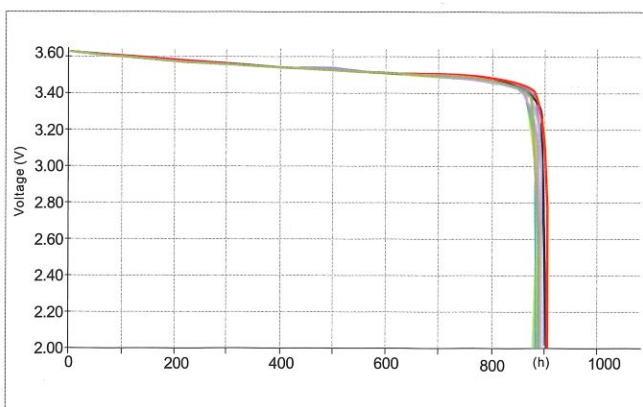
Pressure release



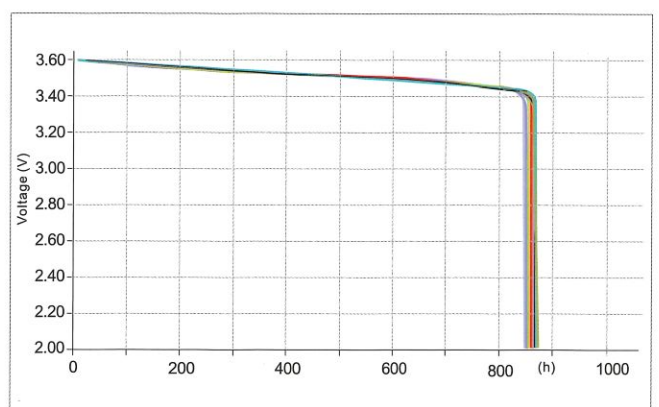
Directly connect positive and negative, current max up to 27A, surface temperature reach up to 110°C, battery bottom open up, no fire, explosion and other abnormal phenomena, other areas of the battery are normal

## Reliability

70°C, RH85% store 360hours, after that discharge with 240Ω



500 Circles between -40 and 70°C, after that discharge with 240Ω



After the environmental test, the capacity is normal, and no bulge or leak.

Conclusion: the spiral battery has good environmental adaptability, high safety and reliability, especially the special technical and patent safety vent.



## Terminals for single cells(can be customized)

<p>T=0.2</p> <p>-/T</p>	<p>T=0.2</p> <p>-/2PT</p>	<p>-/P</p>
<p>T=0.2</p> <p>-/3PT</p>	<p>T=0.2</p> <p>-/3TP</p>	<p>Connector Type1</p>
<p>T=0.2</p> <p>-/3PF</p>	<p>T=0.2</p> <p>-/3FP</p>	<p>Connector Type2</p>
<p>T=0.2</p> <p>-/4PT</p>	<p>T=0.2</p> <p>-/4PF</p>	<p>Case Type</p>

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