

## Specification for LC 16340

### 1、 Scope

- 1.1 This Specification applies to the lithium-ion rechargeable Battery LC16340 .
- 1.2 This Specification shall be applied to single cell.

### 2、 Type and Model

#### 2.1 Type

Lithium-ion Rechargeable Battery

#### 2.2 Model

LC16340

### 3、 Specification

Item	Specification	
	standard	Test condition
3.1 Nominal capacity	650 mAh	Discharge current 0.2C <sub>5</sub> A cutoff voltage 2.75V
3.2 Nominal voltage	3.7 V	
3.3 Discharge cutoff voltage	2.75 V	
3.4 Charge voltage	4.2V(max.4.25V)	
3.5 Continuous maximum charge current	2C <sub>5</sub> A	Cell temp.25 °C or less
3.6 Continuous maximum discharge current	2C <sub>5</sub> A	Cell temp.25 °C or less
3.7 Standard weight	18.0±0.5 g	Cell only
3.8 Operating temperature range	Charge	0 °C ~+45 °C
	Discharge	-20 °C ~+60 °C

### 4、 Dimension& Appearance

#### 4.1 Dimension

Diameter: 16.3±0.2 mm

Length: 33.7±0.5 mm

#### 4.2 Appearance

There shall be no defects such as remarkable scratches, leakage or deformation.

### 5、 Performance

#### 5.1 Standard Test condition

Test shall be carried out at 23±2 °C temperature with 45% to 75% relative humidity and atmospheric pressure 86kPa to 106kPa, unless otherwise specified.

## 5.2 Testing Instruments and Apparatuses

5.2.1 Dimension shall be measured by instruments with equal or more precision scale or 0.01mm specified by JIS B 7502(out micrometer) or JIS B 7503(dial gauge)

### 5.2.2 Voltmeter and Ammeter

Voltmeter and ammeter shall be equal or more precision instruments specified by JIS C 1102 (Indication Electric Instrument level 0. 5)

### 5.2.3 Internal resistance Gauge

An internal resistance shall be measured by a sine wave alternate current process(1KHz).

## 5.3 Rated charge condition

Charging with  $0.2C_5A$ , and then charging by constant voltage for less 8 hours when voltage is 4.2V, terminating current is  $0.01C$ .

## 5.4 Rated discharge condition

A constant current of  $0.2C_5A$  down to a 2.75 V cutoff at  $23 \pm 2 \text{ }^\circ\text{C}$ .

## 5.5 Electrical characteristic

Item	standard	Test condition
5.5.1 Internal Resistance	90m $\Omega$ Maximum	Measure the battery with 1 KHz AC at $23 \pm 2^\circ\text{C}$ .
5.5.2 Rated Capacity	300 min Minimum	Duration time on rated discharge shall be measure after rated charge at $23 \pm 2^\circ\text{C}$
5.5.3 Battery Capacity 1	120 min Minimum	0.5C <sub>5</sub> A down to a 2.75V cut off discharge after rated charge at $23 \pm 2^\circ\text{C}$
5.5.4 Battery Capacity 2	51 min Minimum	1.0C <sub>5</sub> A down to a 2.75V cut off discharge after rated charge at $23 \pm 2^\circ\text{C}$
5.5.5 Cycle Life	300 cycles Minimum	Discharge(2.75V)after rated charge at $23 \pm 2^\circ\text{C}$ .Repeat the charge/discharge cycle 300 times.
5.5.6 Capacity Retention	255 min Minimum	Duration time on rated discharge shall be measured after rated charge and then storage at $20 \pm 5^\circ\text{C}$ for 28 days.
5.5.7 High Temperature Characteristics	51 min Minimum	Duration time shall be measured at rated charge then discharge 1.0C <sub>5</sub> A down to 2.75V at the temperature $55 \pm 2^\circ\text{C}$ .
5.5.8 Low Temperature Characteristics	210 min Minimum	Duration time shall be measured at rated charge then discharge 0.2C <sub>5</sub> A down to 2.75V at the temperature $-20 \pm 2^\circ\text{C}$ .

## 5.6 Reliability

Item	Standard	Test condition
5.6.1、Constant Heat and Humidity Test	36 min Minimum No remarkable deformation or explosion	Duration time shall be measured at rated charge then discharge 1.0C <sub>5</sub> A down to 2.75V after 48h at the temperature 40±2℃ with 90% to 95% relative humidity
5.6.2、Drop Test	No explosion or fire	Drop the battery form 1m height onto 18~20cm thick hardwood strip 1 times each of x, y, and z directions
5.6.3、Vibration	No remarkable deformation, explosion or fire	The full charged cell is fixed on a platform and vibrated in the X,Y and Z directions for 30 minutes at the speed 10ct/min Frequency: 10~30HZ, Vibration amplitude 0.38mm. Frequency: 30~55HZ, Vibration amplitude 0.19mm.

## 6、 Call condition at the shipment

About 60~65% charged

## 7、 Handling Instructions

### 7.1 Temperature range

\*charging: 0 °C ~45 °C

\*discharge: -20 °C ~60 °C

\*storage: -20 °C ~45 °C

### 7.2 Charging

\*The lithium-ion rechargeable battery must be charged with a maximum limit of voltage and current limit.

\* Maximum limit voltage: 4.25V

\*Maximum charging current: 2C<sub>5</sub>A

### 7.3 Discharging

\* Maximum discharging current: 2C<sub>5</sub>A

\* Avoid discharging below 2.75 V

### 7.4 Operation

\*The battery must not be connected with the charger not exclusively designed for this battery

\*The battery must not be applied for other equipment.

### 7.5 Protect circuits

The battery must possess three types of protective circuits follows.

#### 7.5.1 Over-charging protective circuit

The over-charging protective circuit shall operate at 4.25 to 4.35 volts, lower voltage is desirable;

#### 7.5.2 Over-discharging protective circuit

The over-discharging protective circuit shall operate at 2.0 to 2.75 volts, then discharge current must decrease to less than 10 uA.

#### 7.5.3 Excessive-current protective circuit

The protective circuit must operate at charging or discharging at over 3C current

## 8、 Warning for Using the Lithium Ion Rechargeable Battery

### 8.1 Observe the following in using the battery

- \*Do not beat or throw into the fire.
- \* Do not disassemble
- \* Do not set up or leave in high temperature (80°C or more) in device
- \* Do not short positive (+) and negative (-) terminal with a metal
- \* Do not wet in the water
- \* Do not give a hard shock or drop
- \* Do not solder lead lines to the battery in directs
- \* Do not use the battery without PCB

### 8.2 Charging

- \*Charge within the limits of 0°C to +45°C temperature
- \* Do not charge reversibly
- \* Charge only with charge exclusively designed for this battery

### 8.3 Discharging

- \*Discharge with the limits of -20°C to +60°C temperature
- \*Avoid discharging below 2.75V, do not over-discharge below 1.0V
- \*Discharge within a designated current
- \*Use only as a power source for a designated device

### 8.4 Storage

- \*Discharge completely for the long-term storage
  - \* Store under dry and the low temperature environment.
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