



LIR18650-26I • High Discharge Battery



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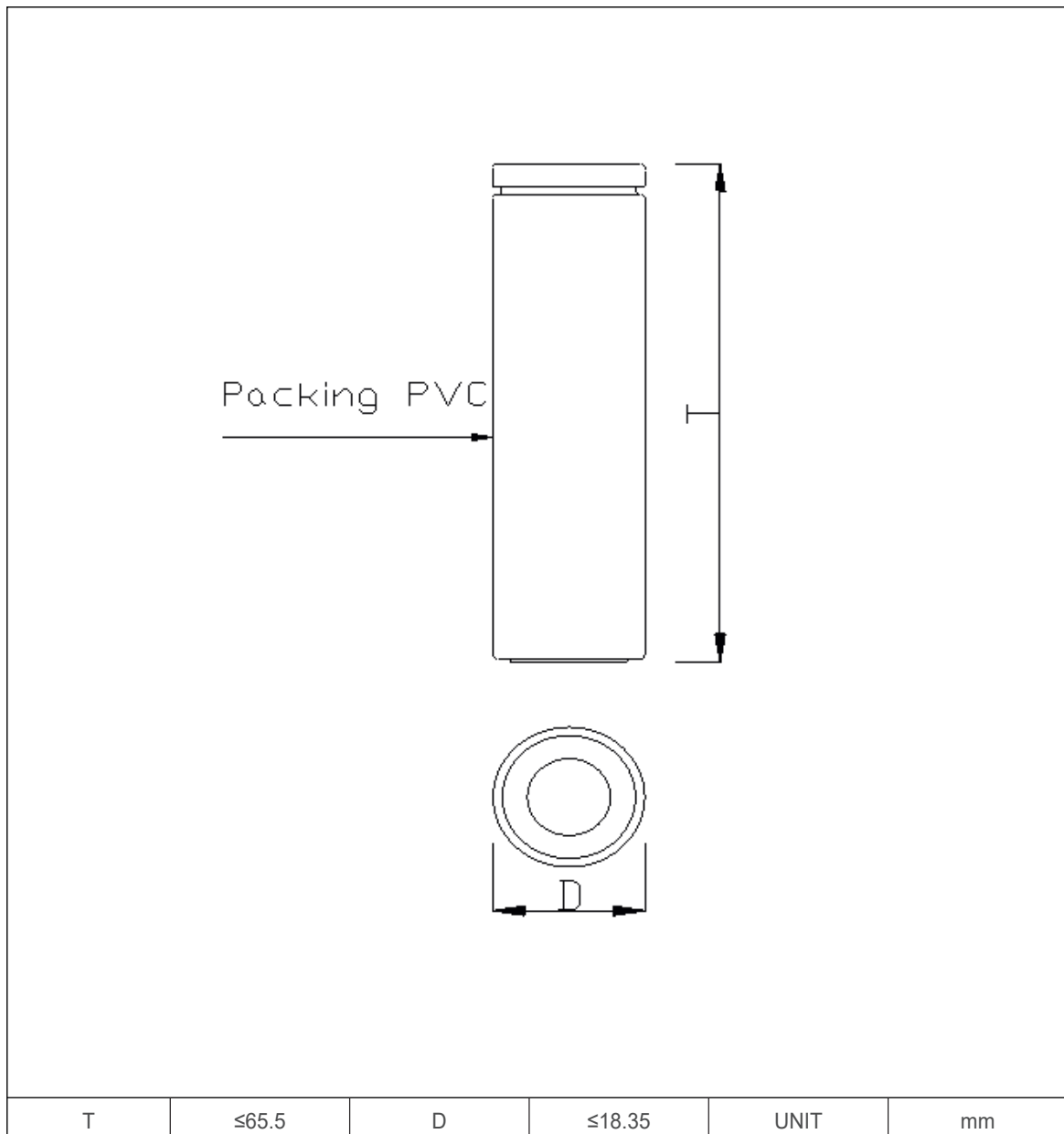
1. Model

LIR18650-26I

2. Scope

This specification describes the basic performance, technical requirement, testing method, warning and caution of the Li-Ion cylindrical rechargeable battery. The specification only applies to FULLWAT.

3. Initial dimension



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4. Specification

NO.	Item	Specifications	
4.1	Nominal capacity	2600mAh	
	Min. capacity	2550mAh	
4.2	Nominal voltage	3.6V	
4.3	Charge current	Standard Charge: 780mA Rapid charge: 1300mA	
4.4	Standard charging method	780mA (constant current) charge to 4.2V, then CV (constant voltage 4.2V) charge till charge current decline to ≤ 26 mA	
4.5	Charging time	Standard Charging Approx 5 hours Rapid charge Approx 2.5hours	
4.6	Max.charge current	Constant Current 1300mA Constant Voltage 4.2V 26mA cut-off	
4.7	Max.discharge current	8000 pulses<5s at 25 \pm 3 $^{\circ}$ C	
4.8	Discharge current	Standard 1300mA Fast 2600mA Max. Continuous 5200	
4.9	Discharge lower limit voltage	Constant current 8000mA end voltage 2.75V	
4.10	Charge upper limit voltage	4.20V \pm 0.05V	
4.11	Working temperature	Charge: 0 $^{\circ}$ C~55 $^{\circ}$ C; Discharge: -20 $^{\circ}$ C~60 $^{\circ}$ C	
4.12	Weight	Approx. 45 \pm 2g	
4.13	Cycle characteristic	1000 times (100%DOD) 1500 times (80%DOD) 2000 times (50%DOD)	
4.14	Storage temperature	-20 $^{\circ}$ C~60 $^{\circ}$ C	Percentage of recoverable capacity no less than 80% of the initial capacities
		-20 $^{\circ}$ C ~45 $^{\circ}$ C	
		-20 $^{\circ}$ C ~20 $^{\circ}$ C	
4.15	Recoverable capacity	Constant current 1000 charge to 4.2V, then constant voltage charge to current declines to 100mA, rest for 10min. constant current 400 discharge to 2.75V, rest for 10min. Repeat above steps 3 times, recording the maximum capacity	
4.16	Storage humidity	$\leq 75\%$ RH	
4.17	A ppearance	Without scratch,distortion,contamination and leakage	
4.18	Standard environmental condition	Temperature: 23 \pm 5 $^{\circ}$ C Humidity: 65 \pm 20%RH Atmospheric Pressure: 86-106 Kpa	

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5. General performance

No.	Item	Test methods and condition	Criteria
5.1	0.2C Capacity	After standard charging, rest battery for 10min, then discharging at 400mA to voltage 2.75V, recording the discharging time.	≥300min
5.2	1C Capacity	After standard charging, rest battery for 10min, then discharging at 2000mA to voltage 2.75V, recording the discharging time.	≥54min
5.3	Cycle life	Constant current 1000mA charge to 4.2V, then constant voltage charge to current declines to 100mA, rest 10min, constant current 2000mA discharge to 2.75V, rest 10min. Repeat above steps till continuously discharging capacity Higher than 80% of the Initial Capacities of the Cells	≥300 times
5.4	Capability of keeping electricity	20±3°C, After standard charging, rest the battery 30days, discharging at 400mA to voltage 2.75V, recording the discharging time.	≥240min

6. Environment performance

No.	Item	Test methods and condition	Criteria
6.1	Discharge at high temperature	After standard charging, rest the cells 4h at 60±2°C, then discharging at 2000mA to voltage 2.75V, recording the discharging time.	≥54min
6.2	Discharge at low temperature	After standard charging, rest the cells for 16h at -100±2°C, then discharging at 400mA to voltage 2.75V, recording the discharging time.	≥210min
6.3	Thermal shock	Put the cells in the oven. The temperature of the oven is to be raised at 5±2°C per minute to a temperature of 130±2°C and remains 30 minutes.	No fire, no explosion

7. Safe characteristic

No.	Item	Test methods and condition	Criteria
7.1	Over charge testing	Cell fully discharged. Then overcharge with 6000mA to 10V/cell. Monitor cell temperature during testing. Stop the test when cell temperature decays to room temperature.	No explosion on fire.
7.2	Over discharge testing	Standard charge first, then discharge battery with 400mA to 250% of capacity.	No fire, no explosion, no leakage.

Note - Above testing of safe characteristic must be with protective equipment.

8. Battery Protection

The battery shall be with the over-charging prevention, over-discharging prevention, and over-current prevention during use. Protective circuit shall have protective functions as follows:

1. Over-charging protection

Overcharging prevention stops charging if any cell of the battery pack reaches 4.25V.

2. Over-discharging protection

The Over-discharging protection monitors the voltage of every cell in the pack and works to avoid a drop in the cell voltage to 2.8V or less.

3. Over-current protection

The cell shall be discharged at less than the maximum discharge current specified in the Specification Approval Sheet. A high discharging current may reduce the discharge capacity significantly or cause overheating.

9. Caution in use

To ensure proper use of the battery please read the manual carefully before using it.

Handling

- Do not expose to, dispose of the battery in fire.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Avoid shorting the battery
- Avoid excessive physical shock or vibration.
- Do not disassemble or deform the battery.
- Do not immerse in water.
- Do not use the battery mixed with other different make, type, or model batteries.
- Keep out of the reach of children.

Charge and discharge

- Battery must be charged in appropriate charger only.
- Never use a modified or damaged charger.
- Do not leave battery in charger over 24 hours.

Storage

- Store the battery in a cool, dry and well-ventilated area.

Disposal

- Regulations vary for different countries. Dispose of in accordance with local regulations.

10. Battery operation instruction

Charging

- Charging current: Cannot surpass the maximum charging current stipulated in this Datasheet.
- Charging voltage: Cannot to surpass the maximum voltage which in this specification book stipulated in this datasheet.
- Charge temperature: The battery must be charged in the ambient temperature with temperature range stipulated in this datasheet.

Uses a constant current and the constant voltage way charge. Do not reverse polarity. If the anode and cathode of the touch the battery, can be damaged.

Discharging current

The discharging current does not have to surpass the maximum current stipulated in this datasheet. A higher discharge current can reduce battery capacity and also can heat the battery.

Discharge temperature

The battery must be discharged in the ambient temperature within temperature range stipulated in this datasheet.

Over-discharges

A single short time overdischarge cannot affect battery performance, but a long time overdischarge or several short time overdischarges can affect battery performance. A battery long time store due to self-discharge feature of batteries, can also be overdischarged. To avoid this battery should be maintained with a certain charge level.

Storing the Batteries

The battery should store in the temperature range stipulated in this datasheet. If storage time is above six months we suggest you carry on a battery charging process.

11. Period of Warranty

The period of warranty is one year from the date of shipment. FULLWAT guarantees to give a replacement in case of cells with defects proven due to manufacturing process. FULLWAT will not replace a new cell due to customer abuse or misuse.

12. Other The Chemical Reaction

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

13. Note:

Any other items which are not covered in this specification shall be agreed by both parties.