SPECIFICATIONS

FOR RECHARGEABLE LITHIUM-ION BATTERY

TYPE: cylindrical lithium-ion battery

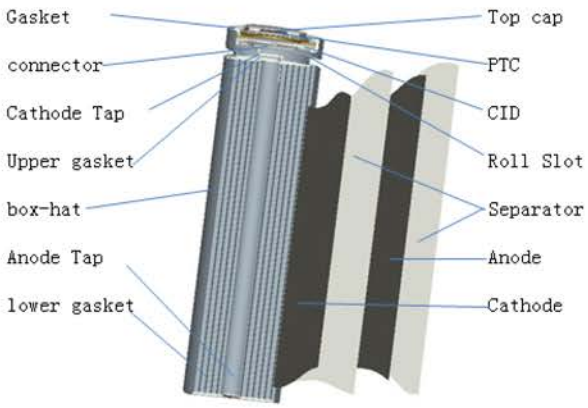
MODEL: ICR18650-2600mAh

PREPARED	CHECKED	APPROVED

1.0 SPECIFICATIONS

Model		ICR18650-2600mAh
Can Material		Ni-Iron
Rated Capacity		2600mAh
Min.capacit(0.2C_5A)mA		2550mAh
Nominal Voltage		3.60V
Max. Charge Voltage		4.20 V
Discharge Cut-off Voltage		2.75V
Max. Charge Current		1 C_5A
Max. Discharge Current		1 C_5A
Max. Diameter		18.4mm
Max.Height		65.0mm
Weight (Approx.)		46.0g
Impedance（Max. at 1000Hz.）		≤60mΩ (charged status)
Charge Method (CC/CV)	Standard	0.5 C_5A×7.5hrs
	Quick	1 C_5A×2.5hrs.
Operating Temperature	Charge	0℃～45℃ 32°F～113°F
	Discharge	-15℃～60℃ 5°F～140°F
	Storage	-20℃～45℃ -4°F～113°F

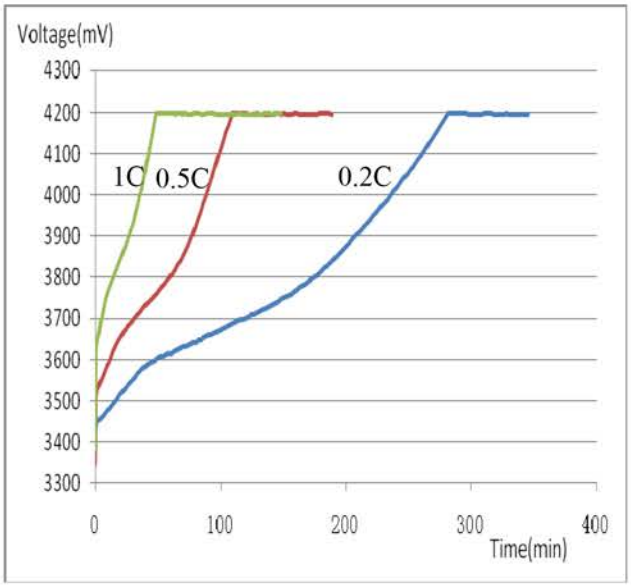
2.0 CONFIGURATION



3.0.Characteristic Curves

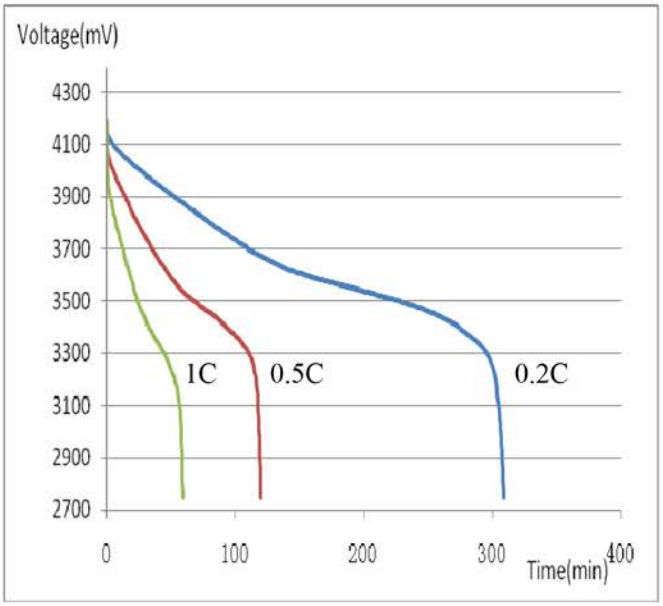
3.1.charging ratio curve

Operating Temperature：25℃ Charge：CC---CV：0.2C-0.5C-1C---4200mV



3.2.discharging ratio curve

Operating Temperature：25℃ Charge：CC---CV：0.5C——4200mV，Discharge：CC---CV：0.2C-0.5-1C---2.75V



4.0 CHARACTERISTICS

4.1 Electrical Characteristic

Without special instructions, before doing the following tests, the batteries should be discharged to the cut-off voltage at the suroundings of 86Kpa-106Kpa, 20℃±5℃ and 45%～75% RH. The following tests should be done within two weeks after receiving the products.

Comments: the definitions of some nomenclatures of this specification

（1） 0.2 C_5A Standard Charge: Charge with current 0.2C_5A to limit charge voltage 4.2V under the condition of 20℃±5℃ surrounding temperature, then change to charge with constant voltage till the current less than or equal to 0.01 C_5A.

（2） Standard Cycle：After standard charge at 0.5C_5A, rest for 30min, then discharge at 0.5C_5A to 2.75V.

（3） 1 C_5A /1 C_5A (1 C_5A /0.2 C_5A)：Charge at 1C_5A to limit charge voltage 4.2V, then change to charge with constant voltage until the current less than or equal to 0.01 C_5A, rest for 30 min, then discharge at 1C_5A(0.2C_5A) to 2.75V cut-off.

NO.	Item	Standard	Test Method
1	Discharge Characteristics	Discharge Time: (B) 0.5C_5A≥116min	After standard charged, rest for 30min and then discharge at 0.5C_5A to the discharge cut-off voltage to 2.75V. Charge/discharge cycle can be conducted for 5 times before meeting the Standards（the same below）.
2	Normal Storage	Discharge Time≥4.25h	Store for 28 days after standard charged, and then discharge at 0.2C_5A to the discharge cut-off voltage to 2.75V.
3	Cycle Life	Cycles≥300	Standard charged, then conduct 0.5C_5A /0.5 C_5A cycle untill the discharge time less than 96min for two continous cycles.
4	Long Time Storage	Discharge Time≥4h	Standard charged, Discharge to the state of 50% capacity. Store for 12 months at room temperature. Conduct 0.2 C_5A /0.2 C_5A cycle for 5 times before meeting the standard.

4.2 Safety Characteristic

NO.	Item	Standard	Test Method
1	Overcharge	No fire, No explosion	Standard charge. Charge at 1 C_5A to 10V, then change to charge with constant voltage till the current less than or equal to 0.01 C_5A. Observe the variation of the battery's appearance
2	Over Discharge	No fire, No explosion	Standard charge. Discharge at 0.2C_5A to 2.75V and then connect the positive and negative terminals with a resistor of 10Ω for 14 days. Observe the variation of the battery's appearance.
3	Short Circuit at Room Temperature	No fire, No explosion	Standard charge. Keep the battery into a ventilation cabinet and short-circuit the positive and negative terminals directly (general resistance shall be less than or equal to 100mΩ). Stop the test when the temperature falls to 10 ℃ lower than the peak value. Observe the variation of the battery's appearance.
4	Hot Oven	No fire, No explosion	Standard charge. Keep the battery connected with a thermocouple and put it into a gravity convection or circulating air oven. Temperature is raised at a rate of 5 ℃±2 ℃ per minute to a temperature of 130 ℃± 2 ℃ and remained for 30min at this temperature. Observe the variation of the battery's appearance.

4.3 Adaptation to Environment Characteristic

NO.	Item	Standard	Test Method
1	Static Humidity	Discharge Time ≥36min No fire, no explosion	Standard charge. Put the battery into a 40℃±2℃ and 90% RH chamber for 48h, then get it out and store it for 2h at room temperature. Observe the variation of the battery's appearance and then discharge at 1C_5A to the cut-off voltage to 2.75V.
2	Drop	No fire, no explosion Discharge Time≥51min	Standard charge. Then let it self fall off from a height of 1m(the lowest height) to a smooth hardwood with the thick of 20mm. The drop is implement totally for 3times.Discharge to the cut-off voltage to 2.75V, then conduct 1C_5A/1C_5A cycle until meet the standard.The cycle can be done for 3 times.

3	High Temperature Discharge	No fire, no explosion Discharge time≥51min;	Standard charge. Then store for 2h at 55±2℃ and discharge at 0.5C_5A to the cut-off voltage to 2.75V. Put it in the room temperature for 2h.
4	Low Temperature Discharge	No fire, no explosion Discharge Time≥3h	standard charged at room temperature, store for 16h at -15±2℃ and discharge at 0.2C_5A.to the discharge cut-off voltage to 2.75V.
5	Vibration	No remarkable damage\ leakage\smoking \explosion	Standard charge. Equip it to the vibration platform, adjust and prepare the test equipment according to following vibration frequency and relevant swing, doing frequency sweeping from X, Y, Z three directions, each from 10Hz to 55Hz for 30 minutes of recycling, rating of which is 1oct/min: A)vibration frequency:10Hz～30Hz Displacement breadth (single swing): 0.38mm B) vibration frequency: 30Hz～55Hz Displacemen tbreadth(single swing): 0.19mm。

5.0 WARRANTY PERIOD& PRODUCT LIABILITY

Warranty period of this product is 12 months from manufacturing code.

Camelion Battery Co., Ltd. is not responsible for the troubles caused by mishandling of the battery which is clearly against the instructions in this specification.

When **Camelion Battery Co., Ltd.** find any new facts which require modification of this document, we will inform you.

6.0 WARNINGS AND CAUTIONS IN USING THE BATTERY

To prevent a possibility of the battery from leaking, heating or explosion, please observe the following precautions:

WARNINGS!

- Do not immerse the battery in water or seawater, and keep the battery in a cool dry surrounding if it stands by.
- Do not uses or leave the battery near a heat source as fire or heater.
- Use the battery charger specifically for that purpose when recharging.
- The battery only can be soldered on the Al/Ni composite strip of the bottom.
- Do not reverse the position and negative terminals.
- Do not connect the battery to an electrical outlet.
- Do not discard the battery in fire or a heater.
- Do not short-circuit the battery by directly connecting the positive and negative terminals with metal objects.
- Do not transport or store the battery together with metal objects such as hairpins, necklaces, etc.
- Do not strike, trample or throw the battery.
- Do not directly solder the battery and pierce the battery with a nail or other sharp objects.

CAUTIONS!

- Do not use or leave the battery at high temperature (for example, at strong direct sunlight or in a vehicle in extremely hot weather). Otherwise, it can overheat or fire or its performance will be degenerate and its service life will be decreased.
- Do not use the battery in a location where static electricity and magnetic field is great, otherwise, the safety devices may be damaged, causing hidden trouble of safety.
- If the battery leaks and the electrolyte get into the eyes, do not rub the eyes, instead, rinse the eyes with clean water, and immediately seek medical attention. Otherwise, it may injure eyes.
- If the battery gives off an odor, generates heat, becomes discolored or deformed, or in any way appear abnormal during use, recharging or storage, immediately remove it from the device or battery charger and stop using it.
- In case the battery terminals are dirty, clean the terminals with a dry cloth before use. Otherwise performance may occur due to the poor connection with the instrument.
- Be aware discarded batteries may cause fire or explosion; tape the battery terminals to insulate them.