

1. Preface

The specification only applies to INR-26650-5000 cell supplied by AA Portable Power Corp.

2. Definition

2.1 Rated capacity

Rated capacity: Cap=5000mAh. Under $22.5\pm 2.5^{\circ}\text{C}$, It means the capacity value of being discharged by 5-hours rate to end voltage 2.75 V, which is signed Cap, the unit is mAh.

2.2 Standard charge method

Under $22.5\pm 2.5^{\circ}\text{C}$, it can be charged to 4.20V with constant current of 0.5C, and then, charged continuously with constant voltage of 4.20 V until the charged current is 0.01C.

2.3 Standard discharge method

At $22.5\pm 2.5^{\circ}\text{C}$, it can be discharged to the voltage of 2.75 V with constant current of 1C.

3. Cell type and size

3.1 Description and model

Description: Cylindrical Li-ion rechargeable cell

Model: INR-26650-5000

3.2 Cell size

Cell physical dimension listed in Figure 1 (unit: mm).

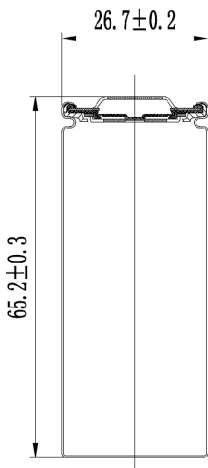


Figure 1



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4. Cell specification

Item	Specification
Nominal capacity	5000mAh @0.2C
Minimum capacity	4900 mAh @0.2C
Nominal voltage	3.60V
Max Charging voltage	4.20 ±0.05 V
Energy density	190 Wh / Kg
Discharge ending voltage	2.75 ±0.05 V
Standard charge current	0.5C
Max charge current	1C
Standard discharge current	1C
Max discharge current/	3C
Max recommended charge and discharge cell surface temperature	Charge: 0 ~ 45°C Discharge: -20 ~ 60°C
Storage temperature and time	1 year : -20 ~ 25°C 3 months : -20 ~ 45°C 1 month : -20 ~ 60°C
Internal resistance	≤20 mΩ (AC Impedance, 1000 Hz)
Cell dimension	Height : 65.5mm Diameter: 26.9mm
Weight	About 95g

5. Technical characteristics

5.1 Cell usage conditions

Temperature of charge : 0 ~ 45°C

Temperature of discharge : -20 ~ 60°C

5.2 Cell testing conditions

Unless otherwise specified, all tests stated according to following:

Temperature : 22.5±2.5°C

5.3 Requirement of the testing equipment

Voltage meter: The voltage tester internal resistance is ≥ 10 KΩ/V

Temperature meter: The precision is ≤0.5°C



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5.4 Electronic performance

No	Item	Criterion
5.4.1	Discharge rate capability	Temperature :22.5±2.5°C Charge: CC/CV 0.5C 4.20V ; End current: 0.01C Discharge: CC Test current ; End voltage: 2.75V Discharge capacity at 0.5C / Discharge capacity at 0.2C ≥ 97% Discharge capacity at 1.0C / Discharge capacity at 0.2C ≥ 95% Discharge capacity at 3.0C / Discharge capacity at 0.2C ≥ 90%
5.4.2	Cycle life	Temperature : 22.5±2.5°C Charge :CC/CV 0.5C 4.20V ; End current:0.01C ; Rest time:0.5h Discharge : CC 1C ; End voltage : 2.75V ; Rest time : 0.5h Discharge capacity of 701th cycle / Original capacity ≥ 70%
5.4.3	High-Low temperature discharge performance	Charge : CC/CV 0.2C 4.20V ; End current : 0.01C Discharge : CC 0.2C ; End voltage : 2.75V Discharge capacity at -10°C / Discharge capacity at 25°C ≥ 70% Discharge capacity at 0°C / Discharge capacity at 25°C ≥ 80% Discharge capacity at 60°C / Discharge capacity at 25°C ≥ 100%
5.4.4	Storage performance	A cell is charged in accordance with 2.2 ,and stored in an ambient temperature of 23°C±2°C for 28d, then discharged to cut-off voltage at a constant current of 0.2C. Residual capacity / Original discharge capacity ≥ 90%

5.5 Environmental characteristics

No	Item	Criterion	Testing method
5.5.1	Vibration	1.No scratch, No leakage , no fire, no explosion, no vent; 2.The voltage is not less than 3.6V.	A cell is charged in accordance with 2.2,then installed onto the vibration desk with clamps. Equipment parameters of frequency and amplitude are as follows(the frequency is to be varied at the rate of 1oct/min between 10 and 55 herts, and repeat vibration for 30min.The cell is to be tested in three mutually perpendicular directions): frequency:10Hz~30Hz amplitude: 0.38mm frequency:30Hz~55Hz amplitude:0.19mm



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5.5.2	Temperature	No leakage, no fire, no explosion, no vent.	A cell is charged in accordance with 2.2, then heated the cell to be in a oven. then the temperature of the oven is to be raised to the temperature of 65°C±3°C and remain for 4h at that temperature · then the temperature of the oven is to be dropped to the temperature of 20°C±3°C and remain for 4h at that temperature · then the temperature of the oven is to be dropped to the temperature of -20°C±3°C and remain for 4hrs at that temperature · repeat this for another 9 cycles, after that put the cell in room temperature for at least 24hrs, then check cell's appearance.
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5.6 Environmental characteristics

No	Item	Criterion	Testing method
5.6.1	Overcharge Test	No fire, no explosion	A cell is discharged to cut-off voltage at CC of 0.2C.then it is to be subjected to CC/CV power by connecting its positive & negative terminal, then set the current as 10A,the voltage as 10V,after that, Charge the cell up to 10V at CC of 10A ,until that last 7h at the voltage of 10V.
5.6.2	Forced-Discharge Test	No fire, no explosion	A cell is discharged to cut-off voltage 0V at a constant current of 1C.
5.6.3	Heating Test	No fire, no explosion	A cell is to be heated in a circulating air oven. The temperature of the oven is to be raised at a rate of 5°C±2°C per minute to a temperature of 130 °C ±2 °C and remain for 30min at that temperature before the test is discontinued.
5.6.4	Short-circuit Test	No fire, no explosion, Max Temp< 150°C	A oven is to be raised to the temperature of 55°C and remain for 10min at that temperature. A cell is to be placed into the oven and remain for 30min~40min.Then the Cell is to be short-circuited by connecting the positive and negative terminals of the cell with copper wire having a maximum resistance load of 50mΩ. Monitor its temperature while testing, the cell is to be discharged until the cell case temperature has returned to be 10°C less then peak temperature.
5.6.5	Drop Test	No leakage, no smoking, no fire, no explosion.	A cell is charged in accordance to standard charge method and stored for 1~4h, then dropped from a height of 1000mm to a wooden board(18-20mm thick) which is placed on the concrete ground. Cells shall be dropped from top, bottom and diameter side. Each side drop 3 and repeat two times.
Note	All above safety tests will be conducted at 22.5°C±2.5°C except where specified differently. Use proper ventilation with protective equipment.		



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6. **Warning and cautions in handling the lithium-ion cell**

To prevent the possibility of the cell from leaking, heating, explosion, please observe the following precautions:

- Don't immerse the cell in water.
- Don't use and leave the cell near a heat source such as fire or heater
- When charging, use a cell charger specifically for that purpose.
- Don't reverse the positive and negative terminals.
- Don't connect the cell to an electrical outlet directly.
- Don't discard the cell in fire or heater.
- Don't connect the positive and negative terminal directly with metal objects.
- Don't transport and store the cell together with metal objects such as necklaces, hairpins.
- Don't strike, throw or trample the cell.
- Don't pierce the cell with a nail or other sharp object.

Caution

- Don't use or leave the cell at very high temperature conditions (for example, strong direct sunlight or a vehicle in extremely hot conditions).
- If the cell leaks and the electrolyte get into your eyes, don't wipe eyes, instead, thoroughly rinse the eyes with clean running water for at least 15 minutes, and immediately seek medical attention. Otherwise, eyes injury can result.
- If the cell gives off an odor, generates heat, becomes discolored or deformed, or in any way appear abnormal during usage, recharging or storage, immediately remove it from the device or cell charger and stop using it.
- In case the cell terminals get dirty, clean the terminals with a dry cloth before use.
- If the cell beyond the useful-life, please fully discharged, sticks the cell with insulating tape, then put the cell to the specialized recycle bin.