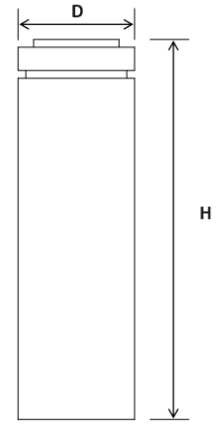
INR21700-40M

Lithium-Ion Rechargeable Battery

Primary characteristics	
Parameter	**Value**
Nominal voltage	3.6V
Rated capacity	4000mAh

Battery dimensions



Scope

The purpose of this product specification is to provide technical information for the rechargeable Lithium-ion cylindrical battery INR21700-40M.
The test shall be conducted in strict accordance with the method specified in this specification.
If you have any objection to the test items or test methods, please contact Akyga Battery.

Specification table		
Parameter	**Value**	
Model	INR21700-40M	
Typical voltage	3.6V	
Rated capacity	Typical	4000mAh
	Minimum	3900mAh
Standard charge	0.5C (2000mA)	
Rapid charge	1C (4000mA)	
Standard continuous Discharge	1C (4000mA), 2.75V, cut-off	
Maximum continuous Discharge	1C (4000mA)	60°C >T≥45°C
	2C (8000mA)	45°C >T≥35°C
	3C (12000mA)	35°C >T≥0°C
	1C (4000mA)	0°C>T≥-20°C
Charge/Discharge voltage range	4.20 ~2.75V	
Operation Temperature	Charge:	0~45°C
	Discharge:	-20~60°C
Storage Temperature	3 months to 12 months	-20 °C ~ +20°C
	Less than 3 months	-20 °C ~ +40°C
Cycle life	Discharge capacity (500th Cycle) ≥90% of 1st Cycle Capacity or Discharge capacity (1000th Cycle) ≥80% of 1st Cycle Capacity	
Size	Diameter	21.65 ±0.2 mm
	Height	70.95 ±0.2 mm
Weight Approx	< 71g	

Notes:

Rated capacity test conditions: Charge: 0.5C, 4.2V, CCCV 0.02C cut-off
Discharge: 0.2C, 2.75V, cut-off voltage

Cycle life: Charge: 0.5C, 2.0V, CCCV 0.02C cut-off
Discharge: 1.0C, 2.75V, cut-off voltage

Perform 0.5C/1C (2000mA/4000mA, 4.2~2.75V, charge cut-off current 400mA) cycle for 1000 times at room temperature, and record the final state of the cell after cycling. Note: During the cycle process, the rest time is 15 min after charge, and 15 min after discharge.

Standard Test condition:

Unless otherwise specified, all tests stated according to following:

- Temperature: 25±2°C; Humidity: ≤85%RH
- Use standard charge current and standard discharge current
- The cell used in the test is the cell sampled within one week of delivery

1. ***Temperature dependence of discharge capacity***
   Perform standard charge and discharge to obtain initial capacity at 25±2°C. Let the standard charged cell under 55±2°C (or -20±2°C) rest for 5h (or 24h). After that, the discharge capacity is measured at 1C rate (4000mA) under the corresponding temperature (55±2°C or -20±2°C). The discharge cut-off voltage under 55±2°C and -20±2°C are 2.75V and 2.5V.

Temperature	Discharge Efficiency
25 °C	100%
55 °C	≥95%
-20 °C	≥70%

Note: Relative capacity is divided by the 0.2C discharge capacity at 25°C

2. ***Storage***
   The Li-Ion battery pack should be stored in a dry (0~50%RH) and non-corrosive gas environment, do not allow the cell to bear any pressure, and there should be no condensed liquid attached to the surface of the cell.

Mechanical Characteristics

1. ***Drop test***
   Test method: Each fully charged cell is dropped three times from a height of 1.0m onto a concrete floor at 20±5°C. After standard charge, drop the cell with both ends from a height of 1.0m onto the cement floor. The cell shall be observed for 1h afterwards.
   Criteria: no fire, no explosion, no leakage

2. **Heating**
   After standard charge, put the cell in an oven at a heating speed of 5°C/min until the temperature of the oven reach 130°C. Keep the cell in the oven at 130°C for 30 minutes then stop heating. The cell shall be observed for 1h afterwards.
   Criteria: no fire, no explosion

3. **Seawater immersion**
   After standard charge, immerse the cell completely in 3.5wt%NaCl solution for 2h. The cell shall be observed for 1h afterwards.
   Criteria: no fire, no explosion

Caution

- Cells should be stored away from infants and toddlers. If cell swallowing occurs, seek medical attention immediately.
- Do not put cells in microwave ovens or other cooking utensils. Cells can catch fire due to microwave heating and electrical shock, to emit smoke, explosion, or emit heat.
- Don't mix it with other cells. Cells should not be mixed with other cells of different capacities, chemical systems or manufacturers. Don't Connect to other cells or mix other cells. Cells can catch fire, smoke, explode or emit heat.
- Do not use abnormal cells. Discontinue use if there are obvious abnormalities, such as odor, fever, deformity, or discoloration
- If the charging process does not end, stop charging. the cell cannot be charged within the specified time, please stop charging
- Do not use drain cells near flame. If the cell or cell with liquid running out produces a pungent odor, keep cells away from flame, it can cause fire or explosion.
- Do not touch the leaky cell. If fluid from the cell leaks into the eye, it can cause serious damage, flush immediately with fresh water and seek medical advice.
- in order to avoid short circuit or damage, please tightly pack the cell into a box or carton.

Disclaimer

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