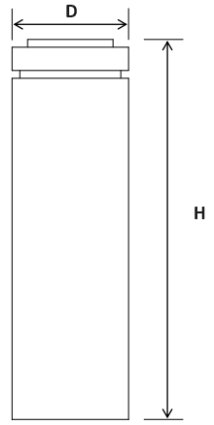
INR18650-40M

Lithium-ion Cylindrical 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 INR18650-40M.
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	INR18650-40M	
Typical voltage	3.6V	
Rated capacity*	Typical	4000mAh
	Minimum	3850mAh
Standard charge	CCCV 0.5C, 4.2±0.05V, 0.02C (80mA) cut-off	
Rapid charge	1C	45°C>T≥15°C
	0.5C	15°C>T≥5°C
	0.1C	5°C>T≥0°C
Standard continuous discharge	DC, 1C, 2.5V cut-off	
Maximum continuous Discharge	1C	60°C >T≥45°C
	2C	45°C >T≥0°C
	1C	0°C>T≥-20°C
Charge/Discharge voltage range	4.20~2.50V	
Operation Temperature	Charge:	0~45°C
	Discharge:	-20°C ~ 60°C
Storage Temperature	3 - 12 year	-20~20°C
	1 - 3 months	-20~40°C
Cycle life	After 500th cycles>70%	
Size	Diameter	18.35mm ±0.15
	Height	65.05mm ±0.15
Weight Approx.	50g	
Notes: Rated capacity test conditions: Charge: 0.5C (2000mA), CCCV, 4.2V, 0.02C (80mA) cut-off Discharge: 0.2C (800mA), 2.5V discharge cut-off		

Cycle life: Perform 0.5C/1C (2000mA/4000mA, 4.2~2.75V, charge cut-off current 400mA) cycle for 500 times at room temperature, and record the final state of the cell after cycling. Note: During the cycle process, the rest time is 30 min after charge, and 30 min after discharge.

***For another capacities or the possibility to produce custom battery packs please contact to Akyga Battery e-mail: sales@akygabattery.com**

Appearance:

There shall be no such defects as rust, discoloration, leakage which may adversely affect commercial value of the cell.

Standard Test condition:

Environment Condition –

Unless otherwise specified, all tests stated in this specification are conducted at temperature 25±2°C and humidity under 65% RH.

Measuring Equipment –

1. AMP-meter and volt-meter
   The amp-meter and volt-meter should have an accuracy of the grade 0.5mA and 0.5mV or higher
2. Slide caliper
   The slide caliper should have 0.01mm scale.
3. Impedance meter
   The impedance meter with AC 1kHZ should be used.

Characteristics

1. ***Standard Charge***
   Standard charge means charging the cell CCCV with charge current 0.2C, constant voltage 4.2V and 0.02C cut-off in CV mode at 25°C for capacity.
2. ***Rapid Charge***
   Rapid Charge means charging the cell CCCV with charge current 0.5C, constant voltage 4.2V and 0.02C cut-off in CV mode at 25°C
3. ***Standard Discharge Capacity***
   The Standard Discharge Capacity is the initial discharge capacity of the cell, which is measured with discharge current 0.2C with 2.5V cut-off at 25°C within 1 hour after the standard charge
   Discharge Capacity ≥ 4000mAh
4. ***Temperature dependence of discharge capacity***
   Capacity comparison at each temperature, measured after 3 hours storage at the test environment with discharge constant current 0.2C and 2.5V cut-off after the standard charge at 25°C

Item	Discharge temperature		
Temperature	-20°C	25°C	55°C
Relative Capacity	≥70%	100%	≥95%

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

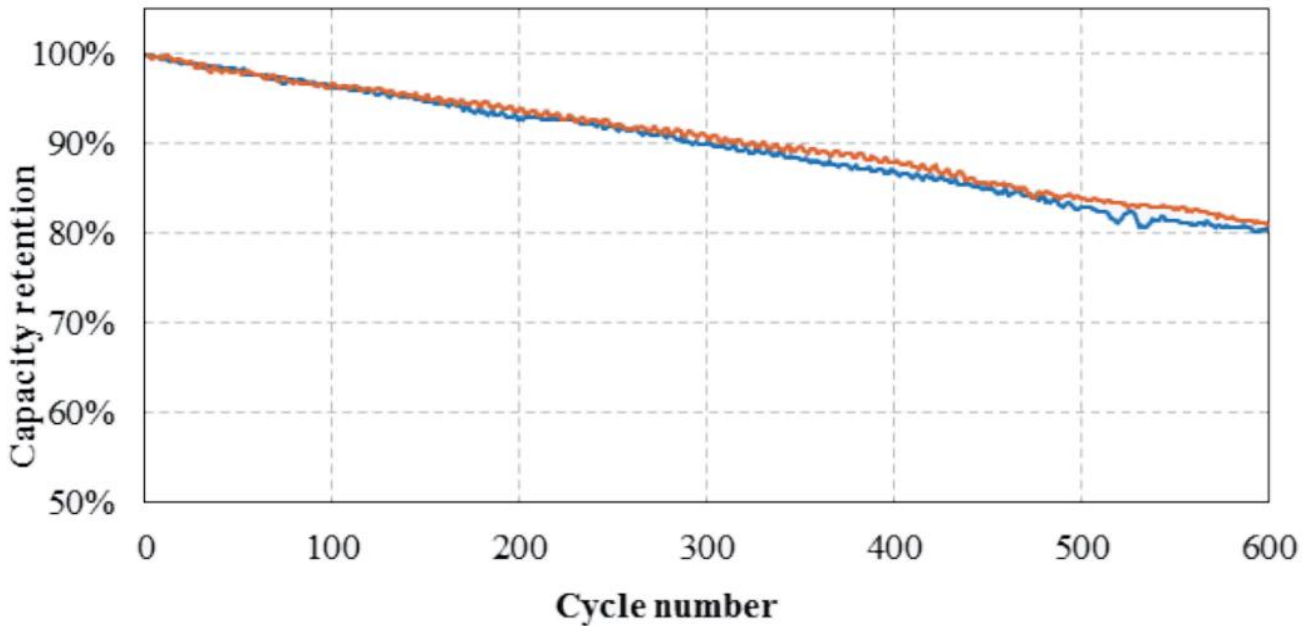
5. ***Storage***
   The Li-Ion battery pack should be stored in a cool, dry and well-ventilated area. Shall keep out of fire or heat and avoid touching corrosion elements. The batteries shall be charged every 6 months during storage.
6. ***Status of the cell as of ex-factory***
   The cell should be shipped in 3.55V to 3.60V charging voltage range.

Mechanical Characteristics

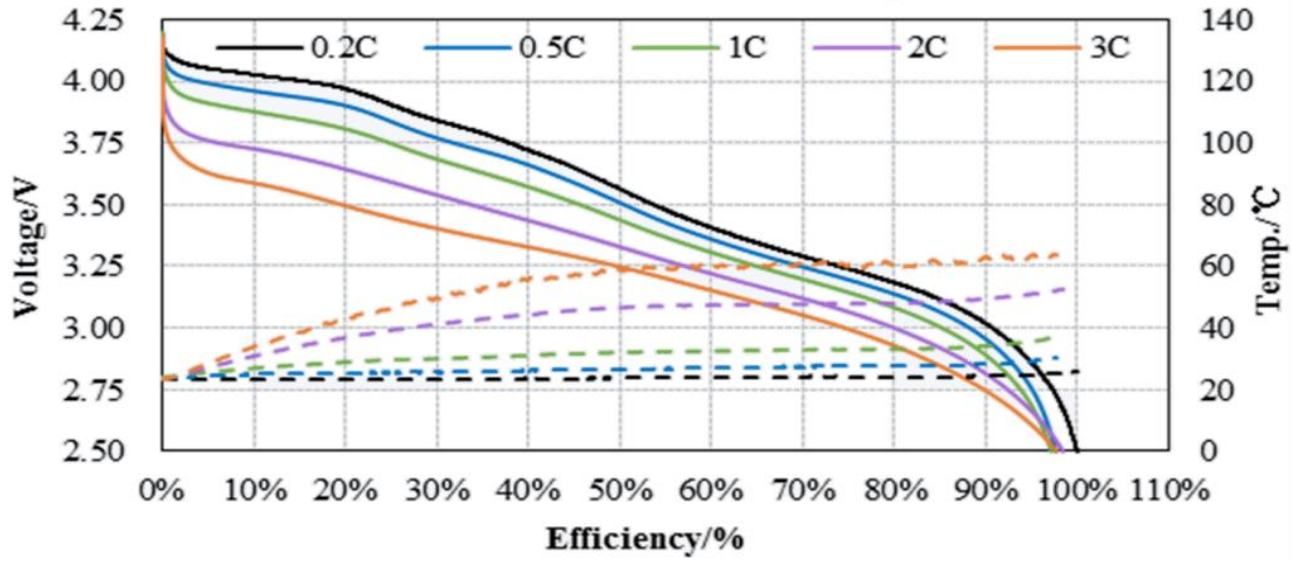
1. ***Drop test***
   Test method: Each fully charged cell is dropped three times from a height of 1.0m onto a concrete floor at 20±5°C. The cells are dropped so as to obtain impacts in random orientations. After the test, the cells shall be put on rest for a minimum one hour and then a visual inspection shall be performed.
   Criteria: no fire, no explosion.
   Drop test shall be performed with the IEC62133 standard.
2. ***Vibration test***

Test method: For X and Y axis with cylindrical cell 7Hz→200Hz→7Hz for 15 minutes, repetition 12 times totally 3 hours, the acceleration 1g during 7 to 18Hz, then amplitude 1.6mm and maximum 8g to 200Hz. Test are to be conducted at 20±5°C
Criteria: no fire, no explosion, no leakage, with less than 10% of OCV drop.
Vibration test shall be performed with the UN38.3 standard.

Cycle life +0,5C/-1C



Rate discharge



Caution
The battery used in this device may present a risk of fire or chemical burn if mistreated.
Do not disassemble, expose to heat above 100°C or incinerate it.
Do not expose the cell to extreme heat or flame.
Do not short circuit, over-charge or over-discharge the cell.
Do not subject the cell to strong mechanical shocks.
Do not immerse the cell in water or sea water, or get it wet.
Do not reverse the polarity of the cell for any reason.
Do not disassemble or modify the cell.
Do not handle or store with metallic like necklaces, coins or hairpins, etc.
Do not connect cell to the plug socket or car-cigarette-plug.
Do not make the direct soldering onto a cell
Do not touch a leaked cell directly.
Do not use Lithium-ion cell in mixture.
Do not use or leave the cell under the blazing sun (or In heated car by sunshine).
Keep cell away from children.
Do not drive a nail into the cell, strike it by hammer or tread it.
Replace battery with those of Akyga battery only.

Disclaimer

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