

## Technical specification

# Li-ion cell LG MH1 3.7V 3200 mAh



## General Specification

High capacity 3200mAh Cylindrical rechargeable lithium ion battery LG MH1 (INR18650 MH1) in 18650 form factor suitable for handheld tools and other appliances. This cell provides discharge current up to 10A and fully comply with advantages of Li-ion technology means lightweight and reasonable price.

Item	Condition / Note	Specification
Energy ( Power )	Std. charge / discharge	Nominal 3200 mAh Minimum 3100 mAh
Nominal Voltage	Average	3.67V
Standard Charge	Constant current Constant voltage End current(Cut off)	0.5C (1550mA) 4.2V 50mA
Max. Charge Voltage		4.2 ± 0.05V
Max. Charge Current		1.0 C (3100mA)
Standard Discharge	Constant current End voltage(Cut off)	0.2C (620mA) 2.5V
Max. Discharge Current		10A
Weight		Max. 49.0 g
Operating Temperature	Charge Discharge	0 ~ 45°C -20 ~ 60°C
Storage Temperature	1 month 3 month 1 year	-20 ~ 60°C -20 ~ 45°C -20 ~ 20°C

## Dimension

Diameter:  $18.39 \pm 0.11$  mm

Diameter is defined as the largest data value measured on the "A" area of a cylindrical cell

Height :  $\leq 65.15$  mm



## Performance Specification

### Standard Charge

Unless otherwise specified, "Standard Charge" shall consist of charging at constant current of 0.5C. The cell shall then be charged at constant voltage of 4.20V while tapering the charge current. Charging shall be terminated when the charging current has tapered to 50mA. For test purposes, charging shall be performed at  $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

### Standard Discharge

"Standard Discharge" shall consist of discharging at a constant current of 0.2C to 2.50V. Discharging is to be performed at  $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$  unless otherwise noted (such as capacity versus temperature).

### High Drain rate Charge/discharge condition

Cells shall be charged at constant current of 0.5C to 4.20V with end current of 50mA. Cells shall be discharged at constant current of 0.5C to 2.50V. Cells are to rest 10 minutes after charge and 20 minutes after discharge.

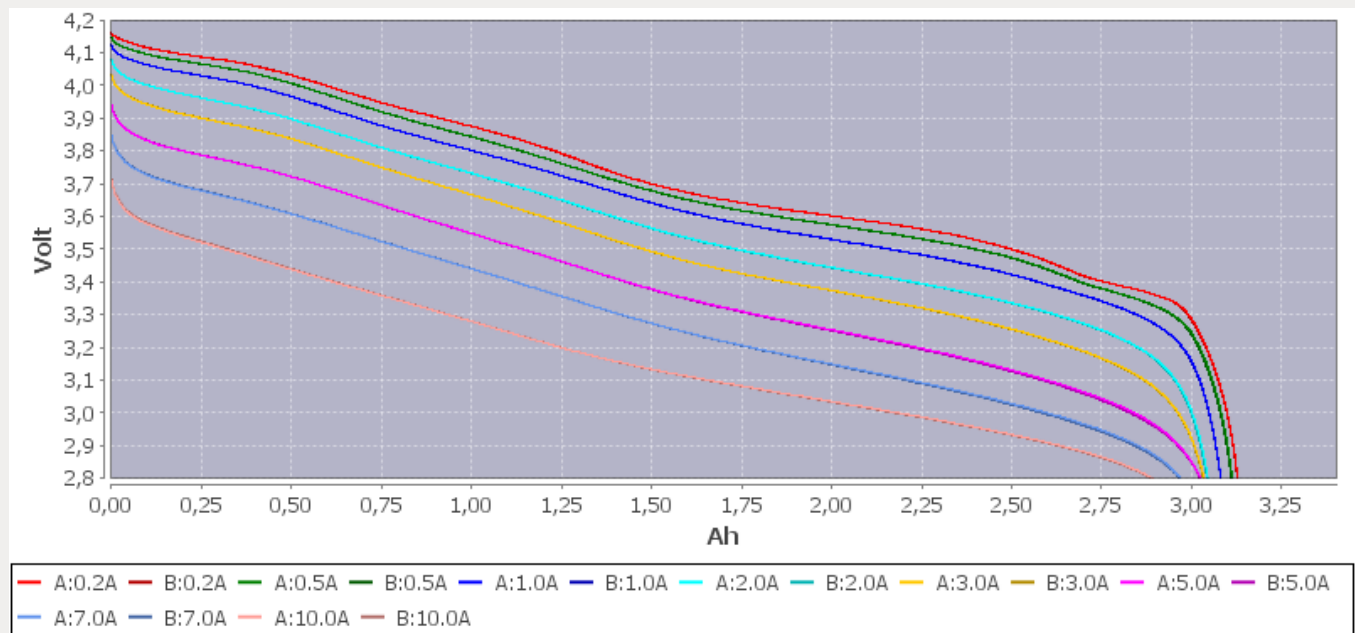
Item	Condition	Specification
Initial AC Impedance	Cell shall be measured at 1kHz after charge	≤ 40 mΩ, without PTC
Initial Power	Cells shall be charged and discharged within 1h after full charge.	≥ 3100 mAh
Cycle Life	Cells shall be charged and discharged 500 cycles. A cycle is defined as one charge and one discharge. 501st discharge power shall be measured	≥ 70 % (of Cmin in 2.1)
Storage Characteristics	Cells shall be charged and stored in a temperature-controlled environment at 23°C ± 2°C for 30 days. After storage, cells shall be discharged to obtain remaining power	Power remaining rate ≥ the90% (Pmin in 2.1)
High Temperature Storage Test	Cells shall be charged and stored in a temperature-controlled environment at 60°C for 1 week. After storage, cells shall be discharged and cycled for 3 cycles to obtain recovered power <sup>②</sup> .*	No leakage, Power recovery rate ≥ 80%
High Temperature and High Humidity Test	Cells are charged and stored at 60°C (95% RH) for 168 hours. After test, cells are discharged and cycled for 3 cycles to obtain recovered power.	No leakage, No rust Power recovery rate ≥ 80%
Thermal Shock Test	65°C (8h) ← 3hrs → -20°C (8h) for 8 cycles with cells charged. After test, cells are discharged and cycled for 3 cycles to obtain recovered power.	No leakage Power recovery rate ≥ 80%



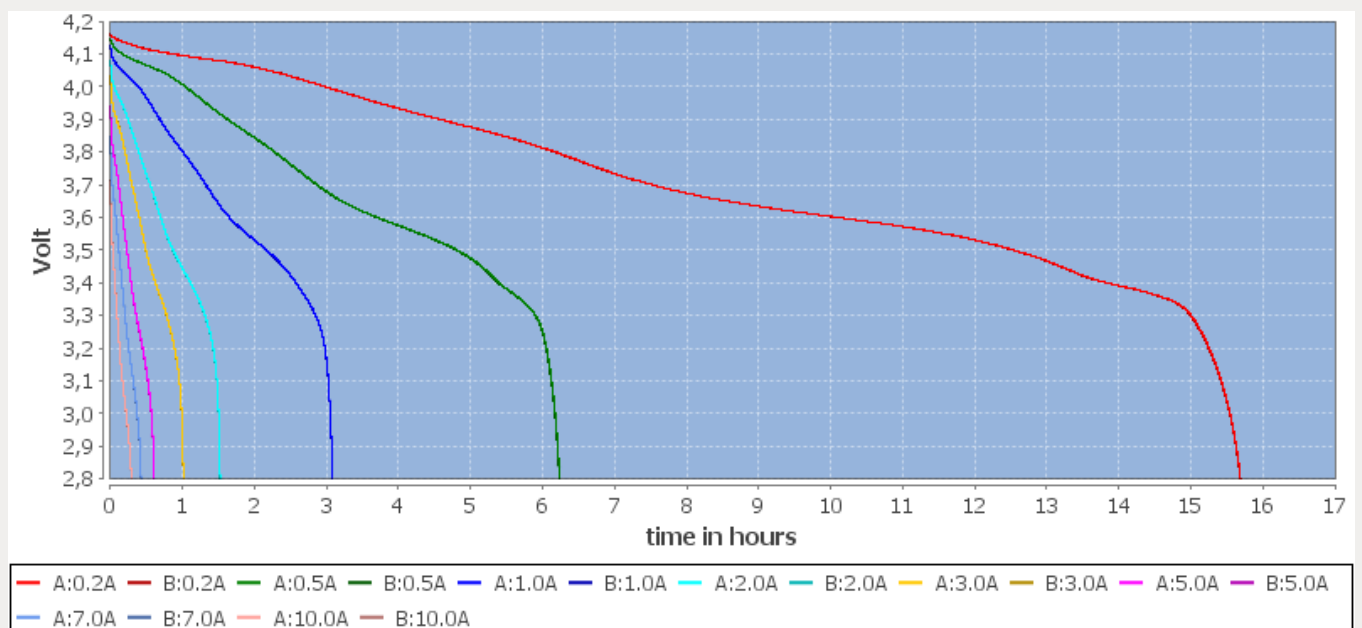
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### Capacity at various discharging currents



### Discharging time at various currents

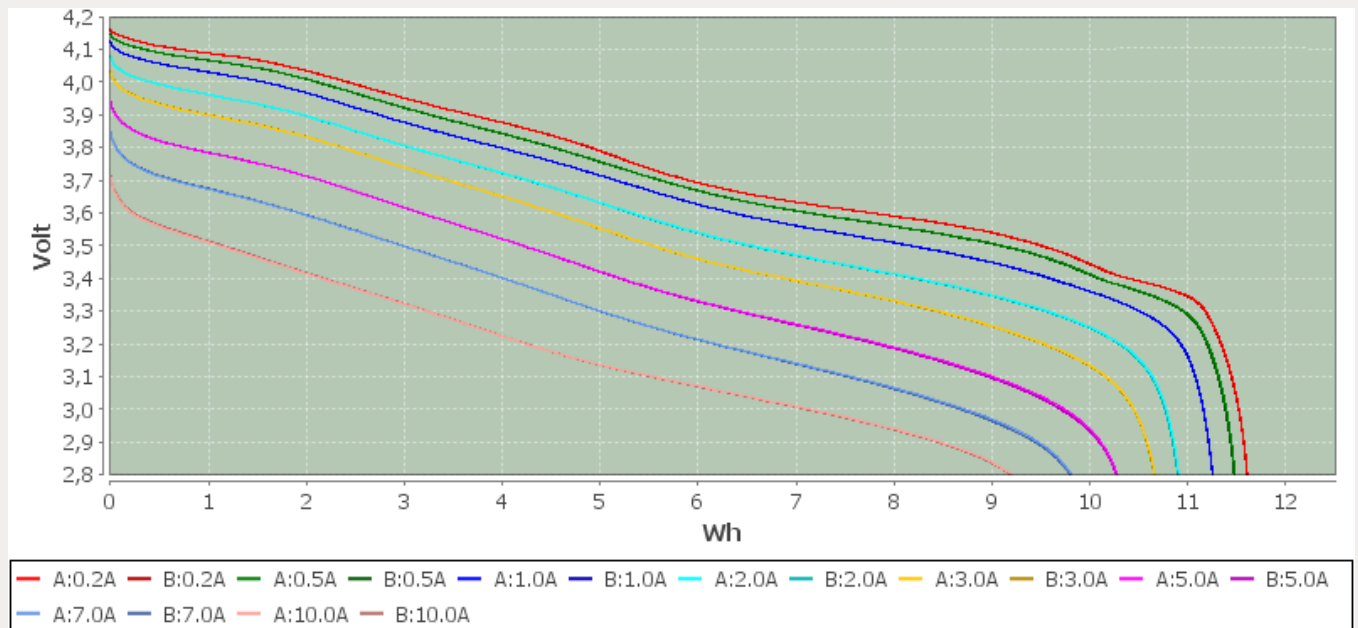




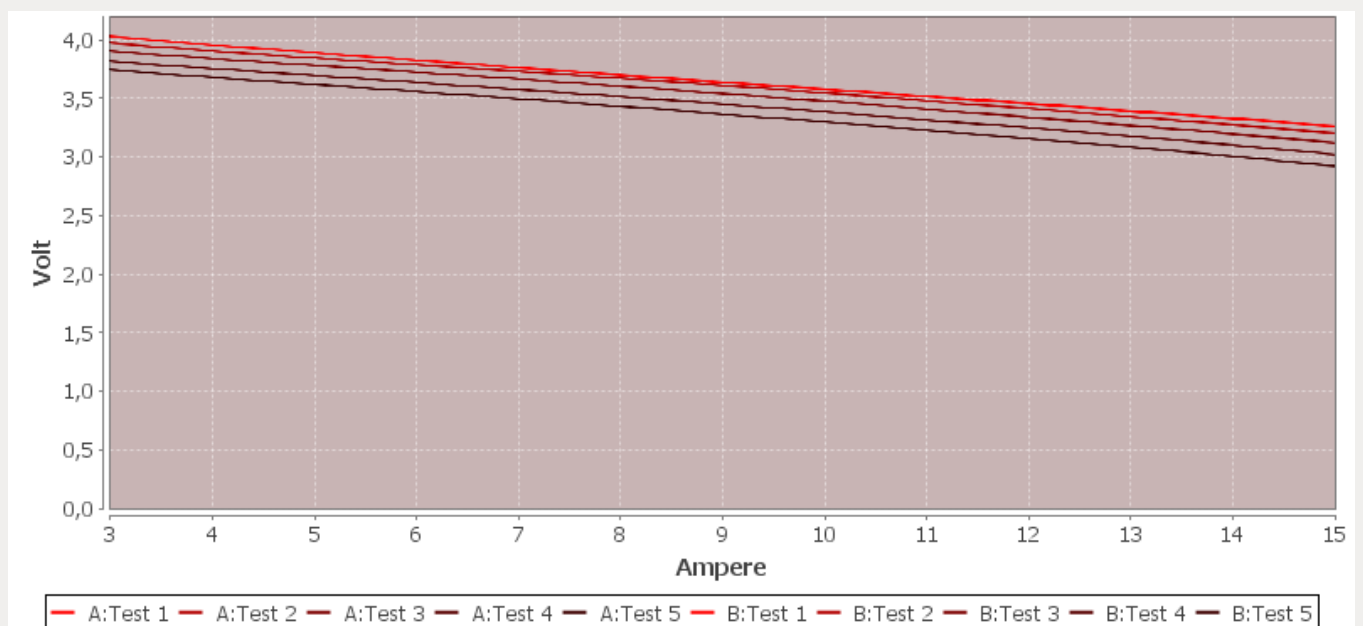
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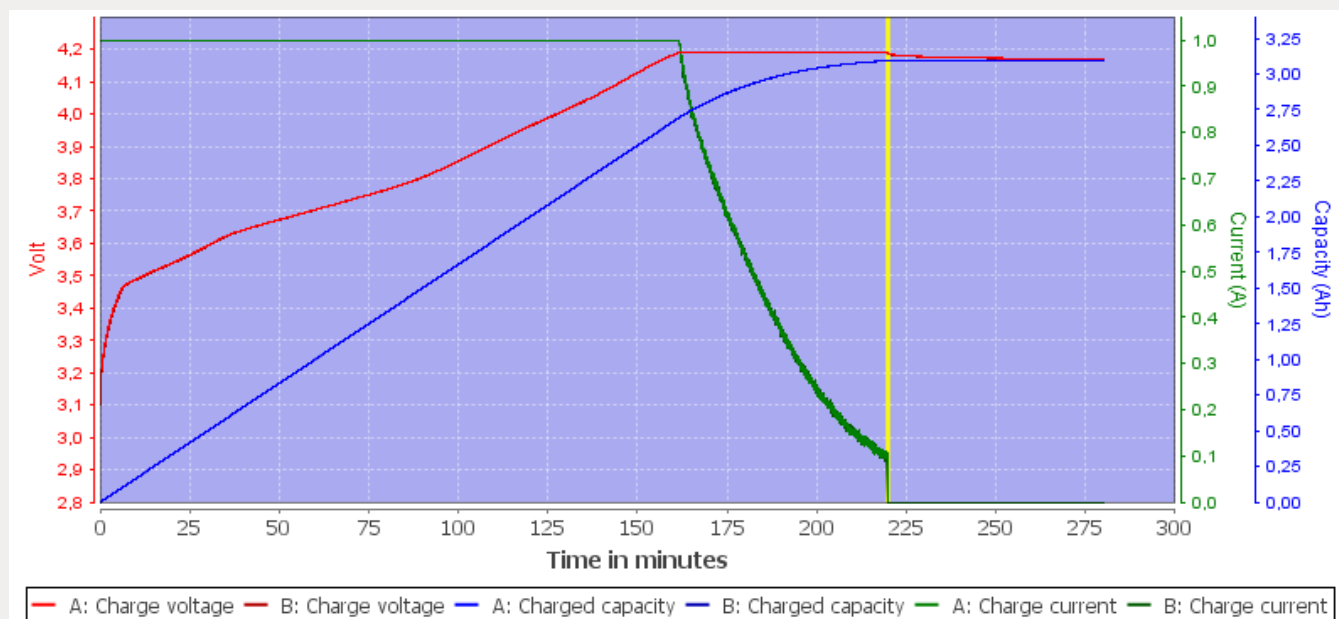
### Energy at various discharging currents



### Protection test



Charging capacity at charging current 1A



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