

## MCR18500 Specification

### 1. Scope

The specification describes the Product Specification of the lithium-ion rechargeable battery cell supplied by *McNair New Power Co., LTD.*

### 2. Kind Of Products Specified

2.1 Name	Lithium-ion Rechargeable Battery cell
2.2 Type	MCR18500

### 3. Basic Characteristic (\*1)

Nominal Voltage		3.7V	
Capacity (from 4.20V to 2.75V at 280mA)		Minimum: 1400mAh	
Charge	Method		CC/CV (constant current/constant voltage)
	Charge Voltage		4.200±0.050V
	Max charge current		1400mA(1C)
	Charge time	Standard charge (0.5C)	3.0~4.0 hours
Rapid charge (1.0C)		2.0~3.0 hours	
Discharge	Max discharge current		1400mA(1C) (for continuous mode at standard conditions)
	Cut-off Voltage		2.75V
Cell Dimensions (*2)	Diameter		18.0±0.3mm
	Height		50.0±0.5mm
Internal resistance ( at 1KHz after complete charge)			Max 60mΩ
Cell Weight			About 30 g
Operating Temperature	Charge		0~45℃
	Discharge		-10~50℃
Storage Temperature	Long time storage		-20~45℃
Relative Humidity			65±20%

**Note:** \*1 Except for a special requirement, the tests are carried out under the following standard conditions: Temperature 20±5℃,Relative humidity 65±20%,Atmosphere pressure 86kPa~106kPa.

\*2 Measure the size without tube.

## 4. Electric Characteristics

Item	Description	Remark
4.1 Test conditions	Except for a special requirement, all of the tests are carried out under the following standard conditions: Temperature: $20 \pm 5^{\circ}\text{C}$ Relative humidity: $65 \pm 20\%$ Atmosphere pressure: $86\text{kPa} \sim 106\text{kPa}$	
4.2 Complete Charge	“Complete charge” means charging the battery with 700mA (0.5C) constant current and 4.20V constant voltage for 5 hours or until the current is less than 9.2mA.	
4.3 Initial Capacity	The capacity means the discharge capacity of the battery, which is measured with 280mA (0.2C) discharge current to 2.75V cut-off within 1 hour after complete charge.	The discharging capacity is not less than the minimum capacity 1400mAh.
4.4 Internal resistance	Internal resistance measured at 1KHz after complete charge.	Initial Internal resistance is less than $60\text{m}\Omega$ .
4.5 Storage	Capacity after 28days storage at $25^{\circ}\text{C}$ from complete charge.	Retention Capacity $\geq 85\%$ initial capacity.
	Capacity after 7days storage at $60^{\circ}\text{C}$ from complete charge.	Retention Capacity $\geq 80\%$ initial capacity.
4.6 Delivery Voltage	The battery is delivered as the open circuit voltage is more than 3.80~3.99V.	70% capacity.

### 4.7 Cycle Life

Measure the capacity after 500 cycles of complete charge and discharge at 700mA (0.5C) current to 2.75V cut-off.

Capacity is not less than 80% of the minimum capacity (1400mAh).

4.7.1 Measure the capacity after 400 cycles of complete charge and discharge at 700mA (0.5C) current to 3.00V cut-off.

Capacity is not less than 80% of the minimum capacity (1400mAh).

Charge: CC/CV, 700mA (0.5C)-4.2V×5hrs,  $25^{\circ}\text{C}$

Discharge: Constant current 700mA (0.5C), E.V 2.75V,  $25^{\circ}\text{C}$