



# 广东力王新能源股份有限公司

Guangdong Liwang New Energy Co.,Ltd

---

## 6LR61 TECHNICAL SPECIFICATION

SPEC.NO.: LW-SPEC-6LR61-005  
REVISION: A  
REPORTED: LJ Wang  
APPROVED: SS Yin  
Customer Name: Powerhouse  
Customer Approval: \_\_\_\_\_  
Date: 2015/05/20

Company address: Shima District, Tangxia Town, Dongguan, China

Tel: 0769-86201111 87885755 Fax: 0769-87887512

## 1 · Scope

This specification is applicable to the Alkaline Zinc Manganese Dioxide Battery 6LR61.

### 1.1 Type

IEC : 6LR61      JIS : 6AM6      Other : J

### 1.2 Reference standard

IEC 60086-1 -- Primary Batteries - Part 1: General

IEC 60086-2 --- Primary Batteries - Part 2: Physical and electrical specification

### 1.3 Execution standard

GB 8897.2-2013.

## 2. Chemistry System and Composition

### 2.1 Chemistry System

Zinc-Manganese Dioxide (Potassium Hydroxide Electrolyte)

### 2.2 Chemistry Composition

Zinc、 Manganese Dioxide、 Potassium hydroxide、 Graphite

## 3. Heavy metal content (% per cell or battery)

Hg < 0.0001      Cd < 0.0005      Pb < 0.0001

## 4. Nominal voltage

9V.

## 5. Battery weight :

Average weight 45g.

## 6. Permissible temperature range(°C) : -20°C~+50°C.

## 7. Nominal Capacity

Minimum 580mAh (condition: 620Ω load resistance, discharge 2hours per day at 20±2°C, 60±15%RH ,end-point voltage5.4V )

## 8. Electrical performance

( Test condition : Load Resistance ( ±0.5%) 5.0Ω, Time: 0.3s, Temperature: 20±2°C。 )

|                                  | O.C.V ( V ) | Accept Level               |
|----------------------------------|-------------|----------------------------|
| ≤ 30 days after delivery         | 9.5         | MIL-STD105E , II , AQL=0.4 |
| 45°C for 3 months                | 9.2         |                            |
| Normal temperature for 12 Months | 9.2         |                            |

## 9. Service Life and Capacity

( Test condition: 20°C±2°C and 60±15%RH )

| Discharge Method |        |                    | Minimum Average Duration |                         |  | Minimum Capacity |
|------------------|--------|--------------------|--------------------------|-------------------------|--|------------------|
| Load Resistance  | Time   | Cutoff Voltage (V) | Initial (MAD)            | 45°C for 3 months (MAD) | Normal Temperature for 12 Months (MAD) | Initial (MAD)    |
| 620Ω             | 2h/day | 5.4                | 50h                      | 47h                     | 47h                                    | 610mAh           |
| 270Ω             | 1h/day | 5.4                | 22h                      | 20h                     | 20h                                    | 590mAh           |

**Note:** Battery capacity is no less than 90% after 12months under nominal condition.

**Inspection Method/Satisfaction Standard:**

- 1) 9 pieces of battery will be tested for each discharging standard.
- 2) The result of the Minimum Average Duration from each discharging standard shall be equal to or more than the Minimum Average Duration requirement; and no more than one battery has a service output less than 80% of the specified requirement.
- 3) One re-test is allowed to confirm the previous result.

**10. Leakage and safety Characteristics**

| Item                                | Condition  | Test Duration          | Result                                 | Accept Level     |
|-------------------------------------|--|------------------------|--|------------------|
| Over Discharge Test                 | Test condition: 20°C±2°C<br>and 60±15%RH<br>Load Resistor: 20Ω<br>Time:24h/d | observe after 48 hours | no leakage shall occur during the test | N=90 , Ac=0,Re=1 |
| High heat and humidity storage test | 60 ±2°C Low 90% RH   | 30days                 |  | N=10 , Ac=0,Re=1 |

**11. Marking**

The label printed :

- (1) Type: 6LR61
- (2) Brand: Kendal
- (3) Normal voltage : 9V
- (4) Polarity: “+”or“-”
- (5) Warning: Battery may explode or leak if recharged or disposed of in fire.

12.Period of validity: 5 years after delivery under proper storage conditions.

**13. Caution for use**

- (1) Since the battery is not manufactured for recharging, there are risks of electrolyte leakage or causing damage to the device if the battery is charged
- (2) The battery shall be installed with its "+" and "-" polarity in correct position, otherwise may cause short-circuit.
- (3) Short-circuiting, heating, disposing of into fire and disassembling the battery are prohibited.
- (4) Battery cannot be forced discharged, which may result in bulging, leakage .
- (5) Direct soldering is not allowed, which will damage the battery.
- (6) Exhausted batteries should be removed from electric equipment to prevent over-discharge in time, which may cause leakage
- (7) New and used batteries cannot be used at the same time and batteries replaced should be the same brand type
- (8) Battery should be kept out of the reach of children to prevent swallow, in case of accident should contact physician at once.

### 13. Storage condition

The battery can be stored at 50°C, but avoid to affect battery performance. We suggest to store under: 20 ±2°C and relative humidity: 65 ±20%RH.

### 14. Discharge curve

Discharge Method: 620Ω 2 h/d (Ref to the Figure 1)      Temperature: 20 ±2°C



15. Dimensions

