



SPECIFICATION HIBAR LR6- SUPER ALKALINE BATTERY

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Specification for LR6 - SUPER

1. Summary

This specification applies to SUPER Performance LR6 AA AM-3 alkaline battery produced by Cell-O-Plus

1.1 Model No.

IEC: LR6

Other: AA

JIS: AM-3

1.2 Reference Standard:

IEC 60086-1:2015 --- Primary Batteries - Part 1: General

IEC 60086-2:2015--- Primary Batteries - Part 2: Physical and electrical specification

1.3 Execution Standard:

GB/T 8897.2-2013

2. Electrochemical system

Zinc Powder

KOH

Electrolyte Manganese Dioxide

No added mercury, cadmium and lead

3. Nominal Voltage: 1.5 Volt

4. Average Weight: 23.2g

5. Nominal Capacity: 2900 mAh (Conditions: with 10mA resistive load, 24h/d, End voltage: 0.8V. Operating Temperature: 20±2℃)

6. Electrical Performance

Testing Conditions: Load resistance (±0.5%) 3.9 Ω

Testing time: 0.3 seconds

Temperature: 20±2℃)

	OCV (V)	load voltage (V)	Accepted Levels
New battery (within 30 days of delivery)	≥1.58	≥1.45	MIL-STD105E, II , AQL=0.4

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Storage after 12 months under the normal temperature	≥ 1.56	≥ 1.40	
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7. Discharge Performance

(Testing Conditions: Temperature: $20 \pm 2^\circ\text{C}$, Relative Humidity $55 \pm 20\%$ RH)

	Discharge conditions			New battery discharge levels	Minimum Average Duration		
	Load	Daily period	End voltage		New battery	With $20 \pm 2^\circ\text{C}$ storage after 12 months	Applications
IEC ITEMS	$3.9\ \Omega$	1h/d	0.8V	8.0h	7.5h	7.2h	motor/toy
	$3.3\ \Omega$	4min/h, 8h/d	0.9V	360min	330min	320min	torch
	$24\ \Omega$	15s/m, 8h/d	1.0V	47.0h	46.0h	45.0h	remote control
	$43\ \Omega$	4h/d	0.9V	93.0h	92.0h	90.0h	radio/clock
	1000mA	10s/m, 1h/d	0.9V	450time	400time	370time	photoflash lamp
	250mA	1h/d	0.9V	8.2h	7.7h	7.4h	CD/ recreational machines
	100mA	1h/d	0.9V	24.0h	23.0h	22.0h	Digital Audio
	1500mW/2s 650mW/28	10T/h	1.05V	75time	70time	60time	Digital camera
	$3.9\ \Omega$	24h	0.9V	420min	400min	380min	Discharge test

Acceptance method:

- 1) Select 9 batteries for each testing item from a single delivery.
- 2) The conditions of test qualified:
The average result is greater than or equal to the minimum average discharge time, and the quantity of signal battery's discharge time which below minimum average of 80% is less than one.
- 3) It need a retest sampling if the first one unqualified. The second test is passed, it should be judged qualified.
- 4) Discharge rate drop is within 10%, and the leakage rate is controlled 30ppm within one year.

8. Resistance to leakage

Item	Conditions	Testing Time	Results	Accepted Levels
Over discharge test	Discharge continuously under $10\ \Omega$ in the condition of $20 \pm 2^\circ\text{C}$ and $55 \pm 20\%$ RH	Continuous discharge for 48hours	The deformation of the battery cannot exceed the size limit and cannot occur the leakage by naked eyes.	$N=9$, $Ac=1$, $Re=2$

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Temperature / Humidity test	Temperature: $60 \pm 2^{\circ}\text{C}$ Relative humidity $90 \pm 5\%$ RH	35days		N=20 , Ac=1, Re=2
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9. Safety Performance

Item	Test Conditions	Testing Time	Requirements	Accepted Levels
External short circuit	Temperature: $20 \pm 5^{\circ}\text{C}$	24h	There shall be no explosion during this test.	N=5, Ac=0, Re=1
Incorrect installation	Four undischarged batteries shall be connected in series with one reversed	24 h		N=20, Ac=0, Re=1

10. Identification

The contents printed on the label:

Model: LR6

Registered Trademark: CELL O PLUS

Nominal Voltage: 1.5V

Battery Poloidal: “+” and “-”

Warning words: Install and use correctly. Do not recharge, disassemble, heat and short-circuit.

11. Precaution and Handling:

- (1) Do not recharge the alkaline batteries. May leak or explode if charged.
- (2) To install batteries following the instructions of “+” and “-” .
- (3) Do not short-circuit, heat, dispose in fire or disassemble.
- (4) Do not over-discharge batteries. Over- discharging battery may destroy the appliance.
- (5) Do not mix with used or other battery type at the same time. Make sure use the same brand and replace all batteries.
- (6) Remove batteries from device when it is not in use. Over-discharge may destroy the appliance.
- (7) Do not allow metal objects to contact the battery terminals. It may destroy the battery.

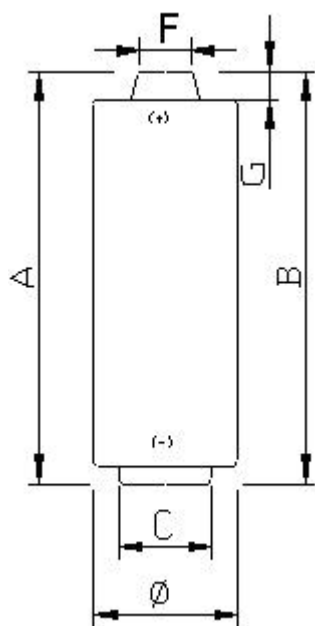
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12. Expiry Date

6 years (Temperature: $20 \pm 2^{\circ}\text{C}$, Relative humidity : $55 \pm 20\%$)

5 years Under the normal temperature

13. Dimension and structure of LR6 AA AM-3 battery:



MODEL DIMENSIONS (mm)	LR6
A (Max)	50.5
B (Min)	49.5
C (Min)	7.0
F (Max)	5.5
G (Min)	1.0
Ø (Max)	14.5
Ø (Min)	13.7