

SPECIFICATION

HIBAR LR03- Economic ALKALINE BATTERY

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Specification for LR03-Economic

1. Summary

This specification applies to Economical Performance LR03 AAA AM-4 alkaline battery produced by SuZhou Xinlvzhou Electronics Co., Ltd

1.1 Model No.

IEC: LR03

Other: AAA

JIS: AM-4

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 and cadmium

3. Nominal Voltage: 1.5 Volt

4. Average Weight: 10.5g

5. Nominal Capacity: 800 mAh (Conditions: with 10Ω resistive load, 24h/d, End voltage: 0.9V. Operating Temperature: 20±2° C)

6. Electrical Performance

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	≥1.40	MIL-STD105E, II , AQL=0.4
Storge after 12 months under the normal temperature	≥1.56	≥1.35	

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7. Discharge Performance

(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	5.1Ω	4m/h, 8h/d	0.9V	210min	200min	190min	torch
	5.1Ω	1h/d	0.8V	3.7h	3.5 h	3.3 h	toy
	24Ω	15s/m, 8h/d	1.0V	18.0h	17.0h	16.0h	remote control
	75Ω	4h/d	0.9V	60.0h	58.0h	56.0h	radio/clock
	100mA	1h/d	0.9V	8.5h	8.0h	7.5h	Digital audio
	600mA	10s/m, 1h/d	0.9V	280time	220time	200time	photoflash lamp
	3.9Ω	24h/d	0.9V	140min	130min	120min	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 50ppm within one year.

8. Resistance to leakage

Item	Conditions	Testing Time	Results	Accepted Levels
Over discharge test	Discharge continuously under 20Ω 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
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: $20 \pm 2^{\circ}\text{C}$	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 of the label:

Model: LR03

Registered Trademark: WARRIORS

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.

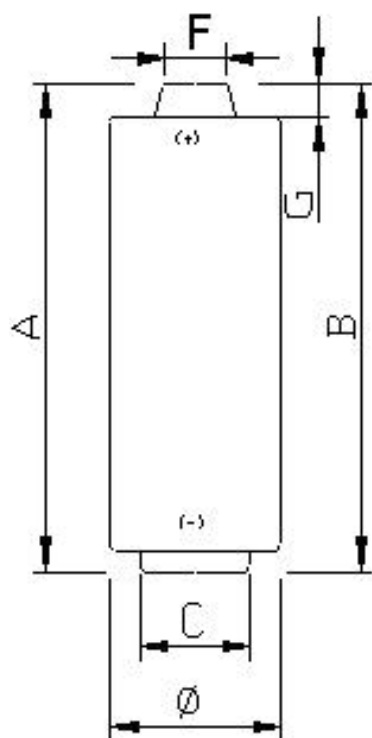
12. Expiry Date

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

4 years Under the normal temperature

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13. Dimension and structure of LR03 AAA AM-4 battery:



MODEL	LR03
DIMENSIONS (MM)	
A (Max)	44.5
B (Min)	43.5
C (Min)	4.3
F (Max)	3.8
G (Min)	0.8
Ø (Max)	10.5
Ø (Min)	9.8