

PRODUCT SPECIFICATION

Type Designation : LR03(AAA) Extra Long life

Issued Date : 2022-5-13

CHANGE HISTORY				
Type Designation:		LR03(AAA) Extra Long life		
Rev.	Reason	Contents	Date	Prepare
A0	Initial		2020-10-30	
A1	Update performance	8.Battery capacity 11.Discharge test (service life)	2022-5-13	
A1	The IEC60086 standard updated IEC60086	Test environment: "20±2°C,60%±15%R.H" to "20±2°C,55%±20%R.H" 11.Discharge test quantity 13.Safety test	2022-5-13	

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LR03(Extra Long life) battery specification

1.Type designation: IEC: LR03

JIS: AM4

ANSI: 24A

2.Chemical system:

Electrolyte-zinc-manganese dioxide (mercury & cadmium free)

3.Dimension: **Diameter: 9.8-10.5mm**

Height: 43.5-44.5mm

4.Nominal voltage: 1.5Volts

5.Nominal weight:

The weight of each battery is approximately: **11.2g**

6.Heavy Metal content(%):

Mercury	Cadmium	Lead
≤1ppm	≤10ppm	≤40ppm

7.Appearance and terminal:

Battery shall be clean and have no dirt, no leakage, and no deformation which may affect their performance and actual use and shall have clearly visible markings.

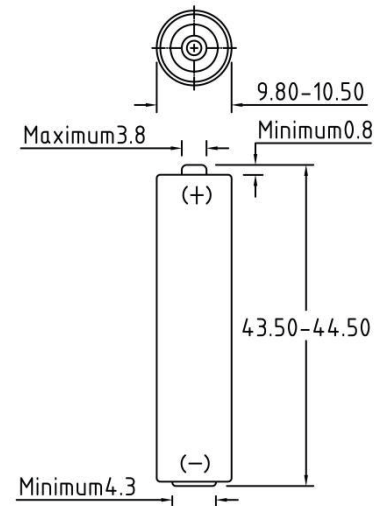
8.Battery capacity: (Test environment: 20±2°C,55%±20%R.H)

(Load resistance:**75ohms**, Daily period:**24h/d**, Cut off voltage:**0.8V** ; According to as the above the same discharge condition, the capacity of each battery is approximately:**1200mAh**)

9.Storage characteristics:

After 12 months storage at 20°C, 90% capacitance of fresh cells.

After 24 months storage at 20°C, 85% capacitance of fresh cells.



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10. Electrical characteristics:

Item	Initial	After 12 months storage
OCV (V)	≥1.59	≥1.57
SCC (A)	≥7.0	≥5.0

Remark1: OCV: Open Circuit Voltage; SCC: Short Circuit Current.

Remark2: Test environment: 20±2°C, 55%±20%R.H.

Remark3: All samples shall be normalized for a minimum of 8 hours at the above environment prior to measurement.

11. Discharge test (service life):

Applications	Load	Daily Period	Cut off Voltage	Initial	After 12 months storage
Remote control	24Ω	15s/min, 8h/d	1.0V	21.0h	19.5h
Portable lighting	5.1Ω	4min/h, 8h/d	0.9V	250min	235min
Digital audio	50mA	1h/12h, 24h/d	0.9V	22.5h	21.0h
Toy	5.1Ω	1h/d	0.8V	4.4h	4.1h

Remark1: Test environment: 20±2°C, 55%±20%R.H

Remark2: The initial discharge test shall commence within 30 days of manufacture.

Remark3: The discharge time is the minimum average duration (MAD).

Remark4: Test quantity: n=8pcs (for per discharge test).

12. Leakage-proof structure:

12.1 The sealing location of the battery is provided with double beading scores to make the structure tighter.

12.2 Using special nylon sealing ring, with more reliable leakage-proof performance.

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13.Safety test (Test environment: 20±2°C,55%±20%R.H)

Test item	Test method	Quantity	Requirements
Storage after partial use	See IEC 60086-5 Edition 5.0 6.3.2.1 Test A– Storage after partial use	5	No leakage No fire No explosion
Transportation-shock	See IEC 60086-5 Edition 5.0 6.3.2.2 Test B-1– Transportation-shock	5	No leakage No fire No explosion
Transportation-vibration	See IEC 60086-5 Edition 5.0 6.3.2.3 Test B-2– Transportation-vibration	5	No leakage No fire No explosion
Climatic-temperature cycling	See IEC 60086-5 Edition 5.0 6.3.2.4 Test C– Climatic-temperature cycling	5	No fire No explosion
Incorrect installation	See IEC 60086-5 Edition 5.0 6.4.2.1 Test D– Incorrect installation(four batteries in series)	20	No fire No explosion
External short circuit	See IEC 60086-5 Edition 5.0 6.4.2.2 Test E– External short circuit	5	No fire No explosion
Overdischarge	See IEC 60086-5 Edition 5.0 6.4.2.3 Test F– Overdischarge	20	No fire No explosion
Free fall test	See IEC 60086-5 Edition 5.0 6.4.2.4 Test G– Free fall test	5	No fire No explosion

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14.Expiry period: 5 years

15.Expiry period marking:

15.1 Expiry date marked on the bottom plate of finished battery .

For example:“2027-08” means the expiry date is August 2027.

15.2 For private label, can mark according to customer’s requirement.

16.Discharge curve:

