

PRODUCT SPECIFICATION

Longlife 3R12

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REV. No.	REASON	CONTENTS	DATE	REMARK
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0	Initial Release		2020-01-03	

Longlife 3R12

1. Type designation: IEC 3R12P

JIS: 3R12P

2. Chemical system:

Zinc Chloride-Zinc-Manganese Dioxide (Mercury Free)

3. Dimension: Length: 60.0-62.0mm**Width: 20.0-22.0mm****Height: 63.0-67.0mm****4. Nominal voltage: 4.5Volts****5. Nominal weight:**The weight of each battery is approximately: **110g****6. Heavy Metal content (%):****Mercury**≤1ppm**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.

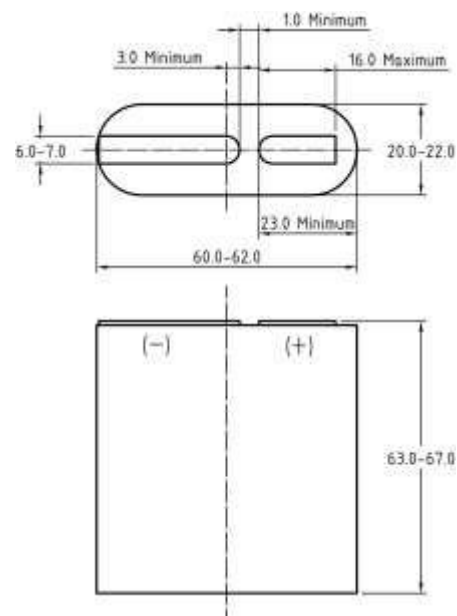
8. Battery capacity: (Test environment: 20±2°C, 60%±15%R.H)

(Load resistance:**20ohms**, Daily period:**24h/d**, Cut off voltage:**2.7V**; According to as the above the same discharge condition, the capacity of each battery is approximately:**950mAh**)

9. Storage characteristics:

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

After 24 months storage at 20°C, 80% capacitance of fresh cells.



10. Electrical characteristics:

Item	Initial	After 12 months storage
OCV (V)	≥4.80	≥4.65
CCV (V)	≥4.60	≥4.40
SCA (A)	≥5.0	≥4.0

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

Remark2: Test environment:20±2°C,60%±15%R.H,Load resistance: 20ohms, Measure time: 0.3S

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 Resistance	Daily Period	Cut off Voltage	Initial	After 12 months storage
Portable lighting	20Ω	1h/d	2.7V	380min	360min
Radio	270Ω	4h/d	2.7V	96h	86h

Remark1: Test environment:20±2°C,60%±15%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=9pcs (for per discharge test).

12. Safety test (Test environment: 20±2°C,60%±15%R.H):

Test item	Test method	Quantity	Requirements
Over-discharge leakage test	20ohms (24h/d) to 1.8V	9	No leakage
One piece of battery Short circuit test	The terminal of an undischarged battery is connected by wire. The circuit is completely for 24hours or until the case temperature has return to environment.	10	No explosion
Free fall test	The battery free drops from one-meter height for 6 times, then store for 1h.	10	No explosion
Impact under high and low temperature	Undischarged battery store in test box under 70±2°C for 24h,then change to -20°C for 24h, repeat the above condition for 10 cycles.	20	No explosion
Storage after partial discharge	50% discharged battery stored under 45±5°C for 30days.	9	No leakage No explosion

13. Expiry period: 3 years

14. Discharge curve:

