

LR03

碱性电池规格书

Specification of alkaline battery

文件编号(File Number) : LW-SPEC-LR03-002

版 本(Version Number) : A/1

发行日期(Date issued) : 2020.10.23

制 作(Prepared by) : Guolin Lv

核 准(Approved by) : Xianbin You

1.0 概述 Summary

本规格书适用于广东力王新能源股份有限公司 LR03 碱性电池

This specification is suitable for LR03 alkaline battery of Guangdong Li Wang New Energy Co., Ltd.

1.1 名称 Designation

IEC: LR03 Other: AAA JIS: AM-4 LIWANG: LR03

1.2 参考标准 Reference standard

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

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

IEC 60086-5 Primary Batteries - Part 5: Safety of batteries with aqueous electrolyte.

GB/T 8897.1 Primary Batteries - Part 1: General.

GB/T 8897.2 Primary Batteries - Part 2: Physical and electrical specification.

GB 8897.5 Primary Batteries - Part 5: Safety of batteries with aqueous electrolyte.

2.0 电化学体系 Chemistry composition

锌/氢氧化钾/电解二氧化锰 Zinc , Potassium hydroxide , EMD

不添加水银和镉 0.00% Mercury & Cadmium

3.0 标称电压 Normal voltage : 1.5V

4.0 平均重量 Average weight (Ref.) : 约11.1g

5.0 标称容量 Nominal Capacity (Ref.)

1100mAh (条件: 75Ω负载, 每天放电 4 小时, 终止电压 0.9V , 放电环境: 20+/-2° C)

1100mAh (condition: 75Ω load resistance, discharge 4 hours per day at 20+/-2°C, end-point voltage 0.9V)

6.0 电性能 Electrical performance

(测试条件: 负载电阻 (±0.5%) 3.9 Ω , 测试时间: 0.3 秒, 温度: 20±2℃。)

(Test condition: Load Resistance (±0.5%) 3.9Ω, Time: 0.3s, Temperature: 20±2℃。)

条件 Condition	O.C.V (V)	C.C.V (V)	接收水平 Accept Level
新电池 3 个月内 ≤3 months after delivery	≥1.58	≥1.40	MIL-STD105E, II ,
储存 12 个月 leave with for 12 Months	≥1.56	≥1.35	AQL=0.65

7.0 放电性能 Service Life

放电条件 Discharge Method	最小平均放电时间 Minimum Average Duration			
放电负载 Load Resistance	放电方式 Discharge mode	终止电压 (V) Cutoff Voltage (V)	新电池 (30天内) ≤ 30 days after delivery	12个月后 After 12 months
5.1 Ω	4min/h, 8h/d	0.9	≥230 min	≥90%
5.1 Ω	1h/d	0.8	≥250 min	
50 mA	1h/12h, 24h/d	0.9	≥19 h	
24 Ω	15s/m, 8h/d	1.0	≥20 h	
3.9 Ω (Ref.)	24h/d	0.9	≥140 min	

验收方法 Inspection Method/Satisfaction Standard:

- 1) 每一交货批，每一放电项目，抽 9 个电池作放电测试。

9 pieces of battery will be tested for each discharging standard.

- 2) 放电平均结果大于或等于最小平均放电时间，且个体放电时间低于最小平均值的 80% 的电池个数不大于 1，则批次电池容量测试为合格。

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) 如果第一次测试不合格，则须重新抽样测试，重测结果合格，则整批货为合格。

One re-test is allowed to confirm the previous result.

8.0 耐漏性能 Leakage Resistance

项目 Item	条件 Condition	测试时长 Test Duration	结果 Result	接收水平 Accept Level
恒温恒湿测试 High heat and humidity storage test	60 ±2°C 相对湿度低于 90% RH 60 ±2°C Low 90% RH	30 天 30days	不能出现漏液 No leakage	N=5, Ac=0, Re=1

9.0 安全性/可靠性 Safety performance

项目 Item	条件 Conditions	要求 Request	接收水平 Accept Level
自由跌落 Drop test	从 1m 高度跌落,6 次 放置 1h Free drop from 1m height to floor for 6 times,keeping for 1 hour	无爆炸 no explore	N=5 Ac=0,Re=1
外部短路 External shorting	用 0.1 Ω 电阻连续放电 24h 或者电池外壳温度降至室温 short positive and negative terminals with 0.1 Ω resistor for 24 hours or battery temperature drop to room temperature	无爆炸 no explore	N=5 Ac=0,Re=1
不正确安装 Wrong Installation	4 个相同型号电池串联,其中 1 个反接 4 batteries connect in series with 1 battery reversed,until the reversed battery leak or OCV drop to nearly 0V	无爆炸 no explore	N=5 Ac=0,Re=1
过放电 Over discharge	1 个已放电电池与 3 个未放电电池串联直到总电压降至 2.4v Connect 3 new batteries and 1 discharged battery in series,until the whole voltage drop to 2.4V	无爆炸 no explore	N=5, Ac=0,Re=1

10.0 标识 Marking

电池标签上有以下信息 The battery label bears the following information:

- (1) 型号 Type: LR03
- (2) 商标, 制造商名称 Name or trade mark , manufacturer or supplier
- (3) 标称电压 Normal: 1.5V
- (4) 电池极向 Polarity: “+” or “-”
- (5) 警告字眼 CAUTION: Battery may explode or leak if recharged or disposed of in fire.

11.0 使用注意事项 Caution for use

- (1) 碱性锌锰电池是不可充电的, 如果对电池充电有可能发生漏液和爆炸的危险。

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) 请按+/-极的标示, 正确安装电池。

The battery shall be installed with its "+" and "-" polarity in correct position, otherwise may cause short-circuit.

- (3) 禁止对电池短路、加热、投入火中或试图拆解电池。

Short-circuiting, heating, disposing of into fire and disassembling the battery are prohibited.

- (4) 不要对电池过度放电, 这会引起电池泄漏而损坏用电器具。

Battery cannot be forced discharged, which lead to excess gassing and, may result in bulging, Leakage and de-crimping of cap.

- (5) 新旧电池，不同型号或品牌的电池，不能同时使用。如果更换电池时，请确认使用同一品牌且全部更换。

New and used batteries cannot be used at the same time, when replaced batteries recommend to replace all and with the same brand type.

- (6) 用完的电池请及时更换，以防止电池过度放电。否则有可能引起电池泄漏而损坏用电器具。

Exhausted batteries should be removed from compartment to prevent over-discharge, which Cause leakage damage to the device.

- (7) 禁止直接在电池上焊接，这样有可能损坏电池。

Direct soldering is not allowed, which will damage the battery.

- (8) 电池应放在儿童不可触及的地方，以防止儿童误吞。如果儿童误吞，请立即联系医生。

Battery should be kept out of the reach of children to prevent swallow, in case of accident should contact physician at once.

12.0 保质期 Period of validity

在合适的储存条件下储存3年 Store for 3 years under suitable storage conditions. （在温度 $20\pm 2^{\circ}\text{C}$ ，相对湿度 $65\pm 20\%\text{RH}$ 条件下）

(Temperature: $20\pm 2^{\circ}\text{C}$; Relative humidity: $65\pm 20\%\text{RH}$)

13.0 尺寸 Dimensions

