

# 电池产品规格书

## BATTERIES SPECIFICATIONS

产品型号(MODEL NO.): GMCELL-LR20 D 1.5V

文件标号(FILE NO.): GMCELL14-D-SA-01

客户编号(CUSTOMER NO.): \_\_\_\_\_

制定(PREPARED): 周树明

审核(CHECKED): 吴永会

批准(APPROVED): 黄金平

|                              |                                                          |                 |
|------------------------------|----------------------------------------------------------|-----------------|
| 客户审批<br>Customer<br>Approved | 审核<br>CHECKED                                            |                 |
|                              | 批准<br>APPROVED                                           |                 |
|                              | 请签名盖章确认后回传我司<br>Please sign and return<br>one copy to us | 盖章处<br>Seal the |

GMCELL reserve the right to alter or amend the design, model and specification without prior notice  
高巨能公司保留在没有预先通知的情况下改变和修正设计及规格说明书的权力。

## 修订履历

## MODIFIED LIST

## 产品变更履历表

### Product Modified Record List

[illegible]

## 一、产品简介 Product Specification

品名: LR20 无汞碱性电池

Description: LR20 Mercury free Alkaline Battery

电化学体系： 锌-锰系列

## Chemical System: Zinc-Manganese Dioxide

化学成分: Zn/KOH—H<sub>2</sub>O/MnO<sub>2</sub>

Chemical System: Zn/KOH—H<sub>2</sub>O/MnO<sub>2</sub>

标称电压: 1.5V

Nominal Voltage: 1.5V

电池总高: 60.6~61.0 mm

Nominal Height: 60.6~61.0mm

电池直径: 33.0~33.3mm

Nominal Dimension: 33.0~33.3mm

平均重量: 140 克

Average weight: 140g

包装：铝膜

Jacket: Foil Label

保质期：5 年

Shelf Life: 5 Year

参考标准 Reference document: IEC60086-2: 2000, IEC60086-1: 2000,  
GB/T7112-1998

### 重金属含量 Heavy Metal Contents:

|        |       |         |
|--------|-------|---------|
| Hg     | Cd    | Pb      |
| <1 ppm | <1ppm | <10 ppm |

## 二、额定值 Rating

|                                                 |                           |            |
|-------------------------------------------------|---------------------------|------------|
| 额定电压/Nominal Voltage                            |                           | 1.5V       |
| 使用温度范围<br>Temperature<br>Range for<br>operation | 标准温度 Standard Temperature | 20℃±2℃     |
|                                                 | 专用温度 Special Temperature  | 30℃±2℃     |
|                                                 | 高温 High temperature       | 45℃±2℃     |
| 相对湿度范围<br>Humidity Range<br>for Storage         | 标准相对湿度 Standard Humidity  | 35%~75%    |
|                                                 | 专用相对湿度 Special Humidity   | 35%~65%    |
| 尺寸<br>Dimension                                 | 直径/Diameter               | 33~33.3mm  |
|                                                 | 高度/Height                 | 60.0~61 mm |
| 近似重量/Approx weight                              |                           | 138g       |

### 三、电性能特征 Electrical Characteristic

| Battery status                       | 开路电压<br>(V)Off-load<br>voltage (V) | 负荷电压<br>(V)On-load<br>voltage (V) | 短路电流 (A)<br>Short circuit<br>current (A) | 验收标准<br>Acceptance Standard                    |
|--------------------------------------|------------------------------------|-----------------------------------|------------------------------------------|------------------------------------------------|
| 新 电(30 天内)Initial<br>within (30days) | $\geq 1.610$                       | $\geq 1.500$                      | $\geq 10.0$                              | GB2828 一般检验水<br>平 commonly<br>sampling AQL=0.4 |
| 常 温 12 个月 After 12<br>months         | $\geq 1.600$                       | $\geq 1.450$                      | $\geq 8.0$                               |                                                |

(条件: 负荷电压  $3.9\Omega$ , 精度 $\pm 0.5\%$ , 测量时间 0.3 秒, 测量温度  $20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , 短路电流用指针式安培表, 精度 $\pm 0.5\%$  (0.5 级))。

Conditions: $3.9\Omega\pm 0.5\%$  load resistance, measuring time 0.3 seconds, temperature at  $20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , the hair spring type ampere meter with  $\pm 0.5\%$  accuracy ( 0.5level) shall be used.

### 四、放电性能 Discharge Characteristic

| 放 电 条 件 Discharge condition           |                            |                                | IEC 标准<br>IEC<br>Standard | 最 小 平 均 放 电 时 间<br>Average minimum discharge<br>time |                                                                                                                                  |
|---------------------------------------|----------------------------|--------------------------------|---------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 放电负载<br>Discharge<br>load( $\Omega$ ) | 放电时间<br>Daily<br>discharge | 终止电压<br>(V) End<br>voltage (V) |                           | 新 电<br>(30 天内)<br>Initial within 30<br>days          | $20^{\circ}\text{C}\pm 2^{\circ}\text{C}$<br>储存 12 个月<br>After<br>12months<br>under<br>$20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ |
| $3.9\Omega$                           | 24h/d                      | 0.9                            |                           | $\geq 36\text{ h}$                                   | $\geq 35\text{ h}$                                                                                                               |
| $3.9\Omega$                           | 1h/d                       | 0.9                            | 25 h                      | $\geq 38\text{ h}$                                   | $\geq 36\text{ h}$                                                                                                               |
| 600mA                                 | 2h/d                       | 0.9                            | 10 h                      | $\geq 16\text{ h}$                                   | $\geq 15\text{ h}$                                                                                                               |
| $2.2\Omega$                           | 24h/d                      | 0.9                            |                           | $\geq 18\text{ h}$                                   | $\geq 17\text{ h}$                                                                                                               |
| $10\Omega$                            | 4h/d                       | 0.9                            | 81 h                      | $\geq 120\text{ h}$                                  | $\geq 110\text{ h}$                                                                                                              |

容量: 18.5AH (标准温度下 25mA 恒流放电至 0.8V)

Capacitance: 18.5AH (S.T. 25mA constant-current discharge to 0.8 V)

(验收标准: 每一种放电条件取 9 只电池进行放电。平均放电时间等于或大于规定值, 而且放电时间少于规定值的 80% 的电池数不大于 1, 则认为电池的放电时间符合要求。)

(Inspect standard: discharge 9 sample-batteries for each condition. It passes when average discharge time is no less than Rated Time and the quantity of the batteries which the value is under 80% of Rated Value is no more than one)

## 五、耐漏液性能/Anti-leakage characteristic

| 项 目 Item                                  | 条 件 Condition                                                                                                                      | 期 限 Period | 特 性 Characteristics                                                                                                    | 验 收 条 件 Inspect standard |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 过放电耐漏性能<br>Over-discharge characteristics | 3.9Ω 连续放电，温度：<br>20°C± 2°C,<br>相对湿度：55± 20%RH<br>3.9Ωcontinuous<br>discharges at temp.<br>20°C±2°C, relative<br>humidity 55%±20%RH | 0.6V       | 电池变形不超出<br>电池尺寸上限或<br>没有漏液情况。<br><br>no deformation<br>exceeding the<br>specified<br>dimensions nor<br>visible leakage | N=10<br>Ac=1<br>Re=2     |
| 贮存期耐漏性能<br>Storage characteristics        | 温度：60°C± 2°C,<br>相对湿度：90%RH<br>At temp. 60°C±2°C,<br>relative humidity<br>90%RH                                                    | ≥30 days   |                                                                                                                        | N=40<br>Ac=0<br>Re=1     |
|                                           | 室 温 At room temp.                                                                                                                  | 12 month   |                                                                                                                        |                          |

## 六、安全性能 Safety

| 项 目 Item                              | 条 件 Condition                                                                                                                                        | 期 限 Period | 特 性 Characteristics                      | 验 收 条 件 Inspect standard |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------|--------------------------|
| 短路性能<br>Short circuit characteristics | 温度 Temp.: 20°C± 2°C                                                                                                                                  | 24H        | 电池没有爆炸<br>There shall be<br>no explosion | N=8<br>Ac=0<br>Re=1      |
| 反充电性能<br>Abuse characteristics        | 4 只电池串联，<br>其中 1 只极性相反。<br>Short circuit 4 pieces of<br>battery in series, one of the<br>batteries has to be connected<br>with its polarity reversed | 24H        |                                          |                          |

## 七、标记 Marks:

在电池外标明以下内容:/the following marks will be printed or stamped on the batteries's body

- (1) 型号:/Model
- (2) 标称电压/Nominal Voltage
- (3) 极性/pole
- (4) 警告/Warning
- (5) 生产日期/到有效期日期（附电池标版） Manufactured Date /Exp date

## 八、保存期限 Storage life

于常温及合适环境可储存 3 年

Under room temp and suitable environment, its shelf time is 3 years

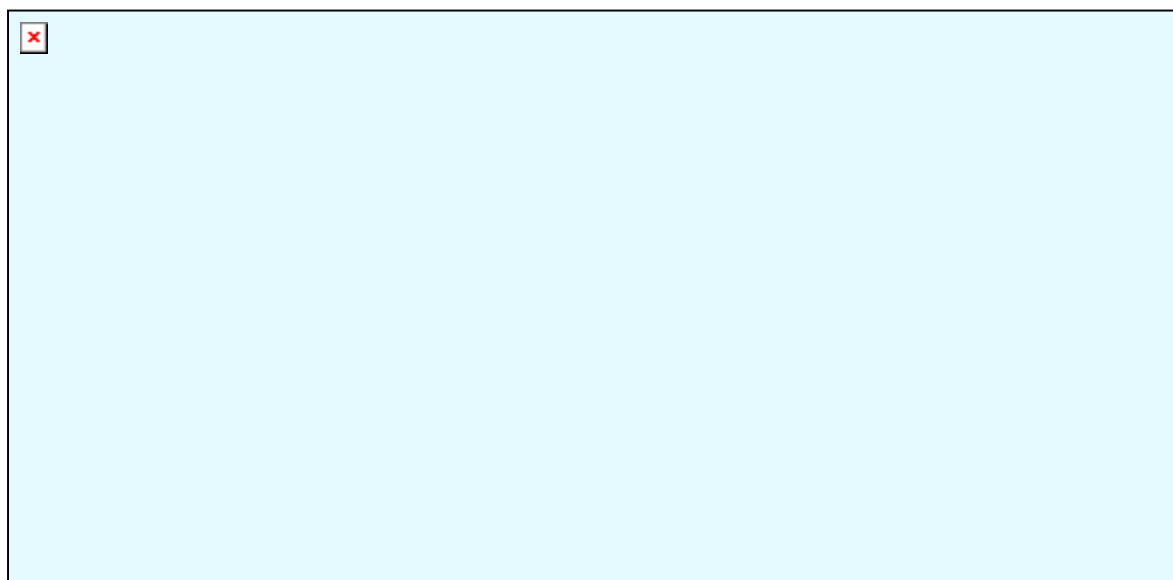
## 九、放电曲线 Discharge Curves

终止电压 End Voltage: 0.90V

放电方式 Discharge Pattern: 4min/h,8h/day

室 温 Temperature: 20°C±2°C

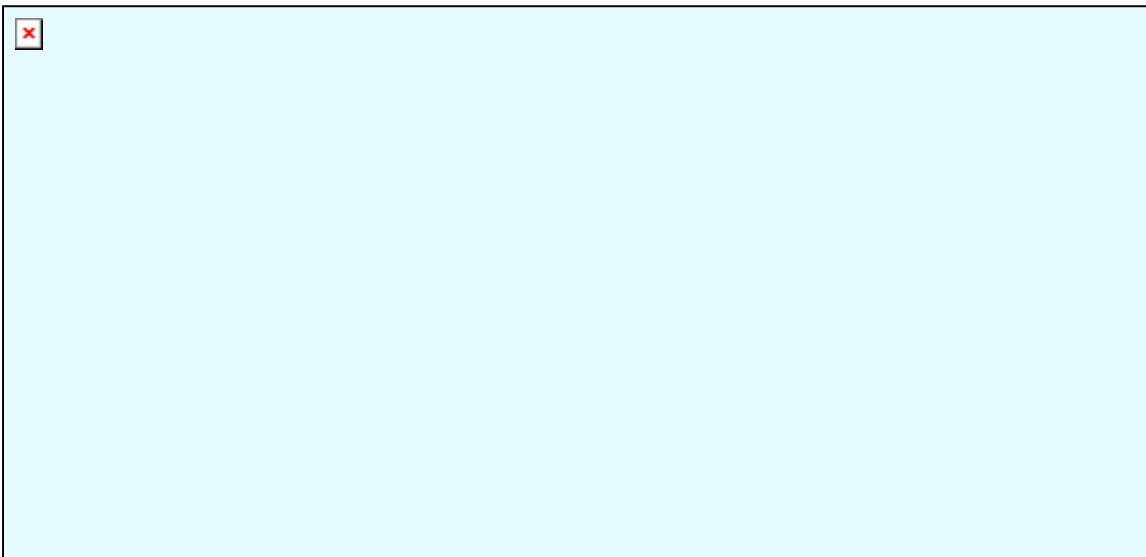
1)负载电阻 Load Resistance: 2.2Ω 标准时间 Minimum Duration: 810min



终止电压 End Voltage: 0.90V

放电方式 Discharge Pattern: 1h/day

2)负载电阻 Load Resistance: 3.9Ω 标准时间 Minimum Duration: 2340min



终止电压 End Voltage: 0.90V

放电方式 Discharge Pattern: 4h/day

3)负载电阻 Load Resistance: 10Ω

标准时间 Minimum Duration: 4800min

