**battery type:** Alkaline Manganese (Mercury free)

**battery size:** IEC: LR03; JIS: AM-4; ANSI: AAA; MN2400; Micro

**chemical system:** Zn / KOH-H₂O / MnO₂

**nominal voltage:** 1.5 V

**open circuit voltage:**
- 1.57...1.62 V new battery
- 1.55...1.62 V after 1 year storage at 20°C

**capacity**
- **rated:**
  - 1200 mAh discharge at 10mA load; 24hours/day
    End Voltage (EV): 0.8 V
  - 1070 mAh discharge at 75ohms load; 24hours/day
    End Voltage (EV): 0.8 V
- **minimum:**
  - 1050 mAh discharge at 20mA constant current
    End Voltage (EV): 0.8 V
  - 300 mAh discharge at 500mA constant current
    End Voltage (EV): 0.8 V

**typical service output (new batteries)**

<table>
<thead>
<tr>
<th>Time (cycles)</th>
<th>Load Resistor</th>
<th>End Voltage (EV)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 560 cycles</td>
<td>3.6ohms; EV: 0.9V</td>
<td>15s/m 24h/d</td>
<td></td>
</tr>
<tr>
<td>≥ 180 min</td>
<td>5.1ohms; EV: 0.9V</td>
<td>4min/h 8h/d</td>
<td></td>
</tr>
<tr>
<td>≥ 414 min</td>
<td>10ohms; EV: 0.9V</td>
<td>1h/d</td>
<td></td>
</tr>
<tr>
<td>≥ 16 h</td>
<td>20ohms; EV: 0.9V</td>
<td>24h/d</td>
<td></td>
</tr>
<tr>
<td>≥ 37 h</td>
<td>43ohms; EV: 0.9V</td>
<td>4h/d</td>
<td></td>
</tr>
</tbody>
</table>

**internal resistance:** ≤ 0.3 Ω at 1kHz, sine wave measurement according to IEC 896-2

**shelf life:** 7 years under proper storage conditions

**leakage resistance**
- **over discharge:** no leakage
- **high temperature:** no leakage

20Ω continuous discharge for 48h; ta: 20°C; RH: 60±15%

store 20days at ta: 60°C; RH:90±5%

**ambient temperature**

- Range: -10...50 °C

**recommended storage conditions:**

- 5...25 °C ambient temp.
- 45...75 % rel. humidity

**mechanical specifications**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter d1</td>
<td>10.4 - 0.5 mm</td>
</tr>
<tr>
<td>Diameter d2</td>
<td>3.6 - 0.4 mm</td>
</tr>
<tr>
<td>Height h1</td>
<td>44.4 - 0.6 mm</td>
</tr>
<tr>
<td>Height h2</td>
<td>1.2 - 0.35 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>11.5 ± 1.5 g</td>
</tr>
</tbody>
</table>

Manufacturer reserves the right to alter or amend the design, model and specification without prior notice.
battery type: Alkaline Manganese (Mercury free)
battery size: IEC: LR6; JIS: AM-3; ANSI: AA; MN1500; Mignon
chemical system: Zn / KOH-H₂O / MnO₂

nominal voltage: 1.5 V
capacity
rated: 2700 mAh discharge at 10mA load; 24hours/day End Voltage (EV): 0.8V
2400 mAh discharge at 750hrsms load; 24hours/day End Voltage (EV): 0.8V
minimum: 2200 mAh discharge at 35mA constant current End Voltage (EV): 0.8V
700 mAh discharge at 1000mA constant current End Voltage (EV): 0.8V

typical service output (new batteries)
≥ 330 cycles discharge at 1000mA; EV: 0.9V
discharge 10s/m 1h/d
≥ 79 h load resistor: 43ohms; EV: 0.9V
discharge 4h/d
≥ 38 min discharge at 1000mA; EV: 0.9V
discharge 24h/d
≥ 17.5 h load resistor: 10ohms; EV: 0.9V
discharge 24h/d
≥ 6.2 h discharge at 250mA; EV: 0.9V
discharge 1h/d

internal resistance: ≤ 0.25 Ω at 1kHz, sine wave measurement
according to IEC 896-2

shelf life: 7 years under proper storage conditions

leakage resistance
over discharge: no leakage 10Ω continuous discharge for 48h; ta: 20°C; RH: 60±15%
high temperature: no leakage store 20days at ta: 60°C; RH:90±5%

ambient temperature range: -10...50 °C

recommended storage conditions: 5...25 °C ambient temp.
45...75 % rel. humidity

mechanical specifications
cell dimensions
diameter d1: 14.4 ± 0.5 mm
diameter d2: 5.4 ± 0.5 mm
height h1: 50.4 ± 0.5 mm
height h2: 1.7 ± 0.5 mm
weight: 23 ± 2 g

Manufacturer reserves the right to alter or amend the design, model and specification without prior notice
battery type: Alkaline Manganese (Mercury free)
battery size: IEC: LR14; JIS: AM-2; ANSI: C; MN1400; Baby
chemical system: Zn / KOH-H₂O / MnO₂

nominal voltage: 1.5 V
open circuit voltage: 1.57...1.62 V new battery
1.55...1.62 V after 1 year storage at 20°C

capacity
rated: 7200 mAh discharge at 25mA load; 24h/day
End Voltage (EV): 0.8V
6800 mAh discharge at 200ohms load; 24h/day
End Voltage (EV): 0.9V
minimum: 5800 mAh discharge at 75mA constant current
End Voltage (EV): 0.8V
2250 mAh discharge at 1000mA constant current
End Voltage (EV): 0.8V

typical service output (new batteries)
≥ 18 h load resistor 3.9ohms; EV: 0.9V
discharge 4min/h 8h/d
≥ 18 h load resistor: 3.9ohms; EV: 0.8V
discharge 1h/d
≥ 31 h load resistor: 6.8ohms; EV: 0.9V
discharge 1h/d
≥ 16 h load resistor: 3.9ohms; EV: 0.9V
discharge 24h/d
≥ 100 h load resistor: 20ohms; EV: 0.9V
discharge 4h/d
 internal resistance: ≤ 0.2 Ω at 1kHz, sine wave measurement
according to IEC 896-2

shelf life: 7 years under proper storage conditions

leakage resistance
over discharge: no leakage 3.9ohms continuous discharge for 48h; ta: 20°C; RH: 60±15%
high temperature: no leakage store 20days at ta: 60°C; RH:90±5%

ambient temperature range: - 10...50 °C
recommended storage conditions: 5...25 °C ambient temp.
45...75 % rel. humidity

mechanical specifications
cell dimensions
diameter d1: 26.0 - 1.0 mm
diameter d2: 7.0 - 1.0 mm
height h1: 50.0 - 1.0 mm
height h2: 2.0 - 0.4 mm
weight: 72 ± 3 g

Manufacturer reserves the right to alter or amend the design, model and specification without prior notice
<table>
<thead>
<tr>
<th>Battery Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Battery Type:</strong></td>
<td>Alkaline Manganese (Mercury free)</td>
</tr>
<tr>
<td><strong>Battery Size:</strong></td>
<td>IEC: LR20; JIS: AM-1; ANSI: D; MN1300; Mono</td>
</tr>
<tr>
<td><strong>Chemical System:</strong></td>
<td>Zn / KOH - H₂O / MnO₂</td>
</tr>
<tr>
<td><strong>Nominal Voltage:</strong></td>
<td>1.5 V</td>
</tr>
</tbody>
</table>
| **Open Circuit Voltage:** | 1.57...1.62 V new battery  
1.55...1.62 V after 1 year storage at 20°C |
| **Capacity:**         | Rated: 16000 mAhr  
13500 mAhr |
|                       | Minimum: 11500 mAhr  
4500 mAhr |
| **Typical Service Output (New Batteries):** |  
- ≥ 18.5 h load resistor 2.2ohms; EV: 0.9V  
  discharge 4min/h 8h/d  
- ≥ 35 h load resistor: 3.9ohms; EV: 0.9V  
  discharge 1h/d  
- ≥ 20.5 h load resistor: 2.2ohms; EV: 0.8V  
  discharge 1h/d  
- ≥ 16.5 h load resistor: 2.2ohms; EV: 0.9V  
  discharge 24h/d  
- ≥ 112 h load resistor: 10ohms; EV: 0.9V  
  discharge 4h/d |
| **Internal Resistance:** | ≤ 0.15 Ω at 1kHz, sine wave measurement according to IEC 896-2 |
| **Shelf Life:**       | 5 years under proper storage conditions |
| **Ambient Temperature Range:** | -10...50 °C |
| **Recommended Storage Conditions:** | 5...25 °C ambient temp.  
45...75 % rel. humidity |
| **Mechanical Specifications:** |  
- Diameter d₁: 34.0 ± 1.0 mm  
- Diameter d₂: 9.0 ± 1.0 mm  
- Height h₁: 61.0 ± 1.4 mm  
- Height h₂: 3.0 ± 0.5 mm  
- Weight: 138 ± 7 g |

**Manufacturer reserves the right to alter or amend the design, model and specification without prior notice.**
battery type: Alkaline Manganese (Mercury free)
battery size: IEC: 6LR61; JIS: 6AM6; ANSI: E; MN1604; 9V-Block
chemical system: Zn / KOH-H₂O / MnO₂

nominal voltage: 9 V
open circuit voltage:
- 9.2...9.8 V new battery
- 9.0...9.8 V after 1 year storage at 20°C

capacity
- rated: 500 mAh discharge at 35mA load; 24hours/day
  End Voltage (EV): 5.4V
- minimum: 525 mAh discharge at 10mA constant current
  End Voltage (EV): 5.4V
- 350 mAh discharge at 75mA constant current
  End Voltage (EV): 5.4V

typical service output (new batteries)
- ≥ 13 h discharge at 35mA constant current; EV: 5.4V
discharge 24h/d
- ≥ 18 h discharge at 270Ω resistive load; EV: 5.4V
discharge 1h/d
- ≥ 47 h discharge at 620Ω resistive load; EV: 5.4V
discharge 2h/d
- ≥ 17 d discharge at 10KΩ resistive load (continuous); additional pulse load
  at 620Ω for 1sh/h; EV: 7.5V

internal resistance: ≤ 4 Ω at 1kHz, sine wave measurement
  according to IEC 896-2
shelf life: 5 years under proper storage conditions

leakage resistance
- over discharge: no leakage 20ohms continuous discharge for 48h; ta: 20°C; RH: 60±15%
- high temperature: no leakage store 20days at ta: 60°C; RH:90±5%

ambient temperature range: -10...50 °C
recommended storage conditions: 5...25 °C ambient temp.
  45...75 % rel. humidity

mechanical specifications
- cell dimensions
  - length L1: 26.5 ± 2 mm
  - length L2: 17.5 ± 2 mm
  - length L3: 12.7 ± 0.25 mm
  - height h1: 48.5 ± 2 mm
  - weight: 45 ± 3 g

- plastic battery box:
  - dimensions: 138 x 128 x 65 mm
  - weight (assembled): 1480 ± 50 g