





Specifications for Alkaline Battery
<p>LRV08 (23A)</p> <p>(SY002 19)</p>

* No Mercury added.

26/July/2019

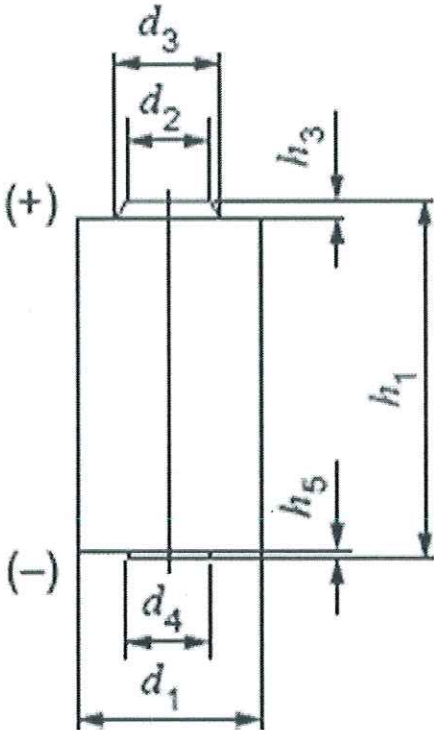
Panasonic Energy (Shanghai) Co., Ltd.			
Director	Factory Manager	Quality Assurance Technical Department	
Approved	Checked	Checked	Described
			

Panasonic Energy (Shanghai) Co., Ltd..

Product Specifications				SY002 19			
LRV08				Alkaline Battery			
Reference IEC60086-2							
<div>1. Designation : LRV08</div> <div>2. Nominal Voltage : 12V</div> <div>3. Product weight : 7.92 g</div> <div>4. Performance</div> <div>4.1 OCV shall satisfy Table-1 after the test mentioned in 8.(testing).</div> <div>4.2 Minimum Average Duration (MAD): Duration shall be over the value mentioned in Table-1 after the test of 8. (Testing).</div> <div>4.3 Resistance to leakage shall satisfy Table-1 after the test of 8. (Testing).</div>							
Table-1 : Performance							
		Testing condition		PECSH SPEC ⁽¹⁾			
		Load (Ω)	Discharging time per day	End point (V)	Unit	Initial	20 °C
							After 12 months
OCV ⁽²⁾		—	—	—	V	Min. (12.4)	Min. (12.08)
Minimum Average Duration (MAD)		470	24h	6.0	m	50	40
		20K	24h	6.0	h	92	85
Resistance to Leakage	Over discharge	Cf. Table-2		There shall be neither evidence of electrolyte leakage on the surface of any battery nor deformation of the specified dimension.			
	Under high temperature	Cf. Table-2		There shall be neither evidence of electrolyte leakage on the surface of any battery nor deformation of the specified dimension.			
<div>Note ⁽¹⁾ Expiration: The period during which a battery operates normally and satisfies characteristic MAD values given in Table 1.The expiry code with 36 months is applied to this battery.</div> <div>⁽²⁾ The value with parenthesis is informative.</div>							
<div>5. Dimensions: As per attached drawings.</div> <div>6. Terminals: (+)Cap, (-) Base</div> <div>There should be no rust or deformation, which will cause hindrance on use.</div> <div>7. Appearance: There should be no stain, scratch and deformation which will cause hindrance on use.</div> <div>The marking on surface shall be clear.</div>							
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Product Specifications		SY002 19
LRV08		Alkaline Battery
8. Testing		
8.1 Storage and testing condition: If not specified, the temperature is $20 \pm 2\text{ }^{\circ}\text{C}$ and the relative humidity shall be $(60 \pm 15)\%$. However, during 3 months that it is short period only, it may be $20 \pm 5\text{ }^{\circ}\text{C}$.		
8.2 Testing method : Refer to Table-2		
Table-2 : Testing method		
Open Circuit Voltage	After storing more than 8 hours, measure with a voltmeter mentioned below under the condition of 8.1. The accuracy of voltmeter shall be within 0.25% of the nominal voltage. The resistance shall be with minimum $1\text{M}\Omega$.	
Service Life	Battery shall be discharged as specified condition until the voltage on load drops for the first time below the specified end point.(service life under the intermittent discharge should be accumulated the time on load) a) Commencement: after storing more than 8 hours under the condition of 8.1. b) Discharging method: Base on Table-1 c) Calculation of average service life. Test eight batteries and calculate the average.	
Resistance to Leakage at Over Discharge	Test under the condition. After usual discharging test, the discharge is repeated until CCV drops for the first time below 0.6V.	
Resistance to Leakage at High Temperature	After storing for 30 days in $45\pm 2^{\circ}\text{C}$ below 70%(RH)	
Dimensions	Measure with a caliper, which has under 200mm measuring range and 0.05mm minimum scale value as specified JIS B 7507 or an instrument, which has more accuracy.	
Terminal	Inspect by visual.	
Appearance	Inspect by visual.	
9. Marking		
Specified as the drawing of designs		
10. Scope		
These specifications are applied to the Alkaline Batteries made by Panasonic Energy (Shanghai) Co., Ltd.		

Product Specifications		SY002 19
LRV08		Alkaline Battery



Drawing-1 LRV08

Unit:mm

	Max.	Min.
h_1	28.5	27.7
h_2		
h_3		
h_4		
d_1	10.3	9.8
d_3		
d_6		
d_7		
ϕP		
Pip		

Reference drawing: IEC60086-2

Note 1. Numerical value with parentheses: informative

2. The symbols of dimensions are as following.

- h_1 :Overall height
- h_2 :Distance between (+) and (-) terminals, excluding pip.
- h_3 :Projected height of (+) contact, excluding pip.
- h_4 :Recess of (-) flat contact surface from outside cover.
- d_1 :Diameter of the battery.
- d_3 :Diameter of the specified projection of (+) terminal.
- d_6 :Outer diameter of (-) flat contact surface
- d_7 :Diameter of concave part of central (-) terminal.
- ϕP :Concentricity of the positive contact
- Pip :Height of pip.