

# Product Specification

### General

Batteries, in all their aspects, should be in accordance with IEC 60086-1 and IEC 60086-2

1. Model no. **PRO-ELEC** Alkaline LR20

2. Nominal voltage 1.5Volt

Open circuit voltage 1.5Volt + 0.15/ - 0

3. Nominal capacity 15,000mAh

(Test condition:3.9Ω Load, continuous discharge, and end voltage 0.9V)

4. Average weight 135±4 g

5.Shelf life 60Month

6. Performance

Battery service life should meet the values as stated in Table I

Table I

<b>Discharges</b>					
<b>Test condition</b>			<b>Average duration<sup>1)</sup> at 20°C</b>		
Load	Daily period	End voltage	Initial	After 12 months storage <sup>2)</sup>	After 36 months storage <sup>2)</sup>
10Ω	4 h/d	0.9	100 h	93h	85h
3.9Ω	continuous	0.9V	32.5h	30h	27.5h
2.2Ω	continuous	0.8V	17h	15.6h	14.5h

3.9Ω	1 h/d	0.9V	35.5h	32.6h	30.2h
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- 1) Average service life will be calculated without the highest and the lowest of 9 samples
- 2) Storage conditions: temperature  $20\pm 2^{\circ}\text{C}$  and the Relative Humidity shall be  $65\pm 20\%$

7. Heavy metal content: Mercury(Hg) content should be less than 1 PPM  
Cadmium (Cd) content should be less than 5 PPM  
Lead (Pb) content should be less than 15 PPM

## 8. QUALITY ASSURANCE

DESCRIPTION	AQL
Battery dimensions	0.65%
Appearance	1.00%
Off load voltage	0.65%
On load voltage	1.00%
Service Output	Note 1
Leakage 6.1	0.65% ( Note 2 )
6.2	Note 3
6.3	Note 4

Note 1 : Acceptance/rejection in accordance with IEC publication  
( 1993 ) 86-1

Sub-clause 8.8.

Note 2 : Leakage on arrival at warehouse is within two months after shipping.

Note 3 : Sample size :  $n = 20$   
Judgement :  $Ac = 1, Re = 2$

Note 4 : Sample size :  $n = 20$   
Judgement :  $Ac = 0, Re = 2$

## 9. PACKAGING

Packaging shall be a form agreed by both parties.

### **PRECAUTION & HANDLING**

- (1) Do not disassemble or short-circuit batteries.
- (2) Do not recharge batteries.
- (3) Do not dispose of batteries in fire.
- (4) Do not allow metal objects to contact the battery terminals.
- (5) Do not mix with used or other battery type (such as alkaline with carbon zinc).
- (6) Do not solder the batteries directly. If soldering or welding connection to the battery is required, consult our engineer for proper methods.
- (7) Do not over-discharge batteries. Force discharging batteries by external power source in a series may cause explosion.
- (8) To install or remove batteries, follow the equipment manufacturer's instructions.
- (9) Keep battery away from small children. If swallowed, consult a physician at once.
- (10) Remove batteries from device when it is not in use.

### **STORAGE**

- (1) Store in cool, dry place before use.
- (2) Do not keep batteries at temperature of  $45^{\circ}\text{C}$  or above.
- (3) Do not keep batteries at relative humidity of 75% or above.

### **Drawing 1: Dimensions of Battery (LR20 /D Size)**

