

## AKUMULATOR EK NI-MH 2300mAh ROZMIAR AA

### 1. Scope

This specification is suitable for the performance of following nickel metal hydride cylindrical cell and its stack-up battery packs ;

Model: AA2300

Size: AA

The data involving nominal voltage and approximate weight of a battery pack shall be equal to the value of the single cell multiplied by the number of single cell in the battery pack. For example, a battery pack which consisting of 3 cells:

Nominal voltage of single cell=1.2V

Nominal voltage of the battery pack=1.2V×3=3.6V

### 2. Ratings

Nominal Voltage		1.2V	
Nominal Capacity		2300mAh	
Standard Charge		230mA ×16h	
Rapid Charge	Current 1150mA	Time cut off	150min
		-ΔV cut off	5~10mV
		T cut off	45□
		dT/dt	0.8~1□/min
Trickle Charge Current		69~115mA	
Discharge cut-off Voltage		1.0V	
Maximum continuous discharge current		2300mA	
Temperature Range For Operation	Standard Charge	0~45□	
	Rapid Charge	10~40□	
	Trickle Charge	0~45□	
	Discharge	-20~60□	
	Within 2 years	-20~30□	
	Within 6 months	-20~40□	
	Within 1 months	-20~50□	
Humidity for operation and storage		Ma×85%	
Dimension	Diameter	14.5 <sub>-0.7</sub> mm	
	Height	50.5 <sub>-1.5</sub> mm	
Approx. Weight		32g	

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### 3. Performance and test Methods

Unless specially stated, tests should be done within one month of delivery under the following Conditions:

Ambient Temperature ( °C ): 20±5.

Relative humidity ( % ): 65±20.

Ambient Humidity : 65±20%

Test Item	Test Conditions				Requirements
1. Standard Charge	First discharge to 1.0V at 460mA, then charge at 230mA for 16 hrs				/
2. Open-circuit Voltage	Rest 1 h after standard charge, then check OCV				≥1.3V
3. Capacity	Rest 30 min after standard charge, then discharge to 1.0V at 460mA. If the discharge time doesn't meet with the requirement, the test should be carried out more times but not over 3 times.				≥5h
4. Capacity (High-rate discharge)	Rest 30 min after standard charge, then discharge to 0.7V at 2300mA. If the discharge time doesn't meet with the requirement, the test should be carried out more times but not over 3 times.				≥54minutes
5. Cycle life	Cycle	Charge	Rest	Discharge	≥500cycles
	1	230mA×16h	None	575mA×140min	
	2—48	575mA×190min	None	575mA×140min	
	49	575mA×190min	None	575mA to 1.0V/cell	
	50	230mA×16h	1h	460mA to 1.0V/cell	
Cycles 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3 hrs. Note: refer to IEC61951-2					
6. Potential	Rest 30 min after standard charge, then discharge to 1.2V at 460mA				≥4h
7. Internal Resistance	The battery is measured at 1000Hz with full charge state.				≤25mΩ

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8. Over-discharge	Charge for 48 hrs at 230 mA.	No deformation And leakage
9. Over-discharge	Discharge is conducted with a 1.0Ω/cell load for 24 hours	No deformation And leakage
10. Self-discharge	The battery fully charged is stored for 28 days, and discharged to 1.0V at 460 mA	≥3h
11. Storage	Battery charged fully is stored for 12 months, then check capacity according to (3)	≥4h
12. Humidity	The charged battery is stored for 10 days, at 33±3°C and 80±5% of relative humidity	No leakage
13. Safe Valve Operation	Discharge to 0V at 460mA, then forced discharge at 2300mA for 30min.	Not explode or disrupt. *
14. External Short-circuit	The charged battery specified in item (1) is short-circuited for 1 hour.	Not explode*
15. Drop Test	The battery is subjected to a drop which has a height of 45cm(17.7inches) to an oak board of 10mm or more thick in a voluntary axis respectively 3 times	Mechanically and electrically normal

**NOTE:** \* Electrolyte leakage and deformation of battery are acceptable.

### 4. Suggestions & Cautions

- 4.1 Charge batteries prior to use.
- 4.2 Do not solder directly to battery.
- 4.3 Do not short circuit or reverse charge,
- 4.4 Do not dispose of in fire and keep away from damage.
- 4.5 Store batteries charged in a cool and dry place.
- 4.6 The batteries life may be reduced if they are subjected to adverse conditions such as: extreme temperature, deep cycling, and excessive overcharge/discharge.