

Order code	Manufacturer code	Description
18-4152	n/a	AAA 1.2V 800MAH NIMH CELL RE

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The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007

HI-WATT RECHARGEABLE BATTERY CO., LTD.

Document Number :AAA800

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Document Title :Product Specification of Ni-MH AAA800 Batteries (or Stack-up Batteries) for Customer

1. SCOPE

This specification governs the performance of the following Hi-Watt Nickel-Metal Hydride Cylindrical cell and its stack-up batteries.

Hi-Watt Model : AAA800

Cell Size : AAA(Cusp Top) (D 10.5-0.5× H44.5-0.7) mm

AAA(Flat Top) (D 10.5-0.5× H43.5-0.7) mm

2. DATA OF STACK UP BATTERIES

All data involves voltage and weight to stack-up battery are equal to the value of unit cell time the number of unit cell which consisted in the stack-up batteries.

Example : Stack-up batteries consisting three unit cells.

Nominal voltage of unit cell = 1.2V

Nominal voltage of stack-up battery = 1.2V×3 = 3.6V.

3. RATINGS

Description	Unit	Specification	Conditions
Nominal Voltage	V	1.2	
Nominal Capacity	mAh	800	Standard Charge / Discharge
Standard Charge	mA	80 (0.1C)	T1=0~45°C (see Note 1)
	hour	16	
Fast Charge	mA	400 (0.5C)	-ΔV=5~15mV/cell Timer CutOff = 120% nominal capacity input or Temp. CutOff=55°C T1= 10~45 °C
	hour	2.4 (see Note 2)	
Trickle Charge	mA	(24~ 40) (0.03 ~ 0.05C)	T1= 0~45°C
Standard discharge	mA	160 (0.2C)	T1= -20~60°C , Humidity : Max. 85%
Discharge Cut-off Voltage	V	1.0	
Storage Temperature	°C	-20 ~ 65	Discharged state, Humidity : Max. 85%
Typical Weight	gram	12.5	

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4. PERFORMANCE

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

Ambient Temperature : $20 \pm 5^{\circ}\text{C}$

Relative Humidity : $65 \pm 20\%$

Notes : Standard Charge / Discharge Conditions :

Charge : 80 mA (0.1C) \times 16 hours

Discharge : 160 mA (0.2C) to 1.0V / cell

Test	Unit	Specification	Conditions	Remarks
Capacity	mAh	≥ 800	Standard Charge Discharge	up to 3 cycles are allowed
Open Circuit Voltage (OCV)	V	≥ 1.25	Within 1 hour after standard charge	Unit cell
Internal Impedance	m Ω	≤ 35	Upon fully charge (1KHz)	
High Rate Discharge (1 C)	minute	≥ 54	Standard Charge, 1 hour rest Discharge : 800 mA (1C)	
Overcharge	N/A	No leakage nor explosion	80 mA (0.1C) Charge 28 days	
Charge Retention	mAh	$\geq 520(65\%)$	Standard Charge, Storge : 28 days , Standard Discharge	
IEC Cycle Life	Cycle	≥ 500	IEC 61951-2 (2003) 7.4.1.1	(see Note 3)
Accelerated Cycle Life	Cycle	≥ 300	Charge : 400 mA (0.5C) Discharge : 400 mA (0.5C) to 1.0V/cell, End-of-life : 60% nominal Capacity.	Cycling charging cut-off condition : - $\Delta V=5\sim 15\text{mV/cell}$ and Timer cut-off=120% nominal capacity input and Temp.cutoff= 55°C
Leakage	N/A	No leakage nor deformation	Charge : 400 mA (0.5C) for 2.4 hrs Stand for 14 days	
Vibration Resistance	N/A	Change of voltage should be under 0.02V/cell,Change of impedance should be under 5 milli-ohm/ cell.	Charge the battery 0.1C 14hrs, then leave for 24hrs, check battery before/after vibration , Amplitude 1.5mm Vibration 3000 CPM Any direction for 60mins.	Unit cell
Impact Resistance	N/A	Change of voltage should be under 0.02V/cell ,Change of impedance should be under 5 milli-ohm/cell	Charge the battery 0.1C 14hrs then leave for 24 hrs, check battery before/after dropped, Height 50 cm Wooden board (thickness 30 mm) Direction not specified, 3 times.	Unit cell

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5. CONFIGURATION,DIMENSIONS AND MARKINGS

Please refer to the attached drawing

6. EXTERNAL APPEARANCE

The cell / battery shall be free from cracks, scars, breakage, rust, discoloration,leakage nor deformation.

7. WARRANTY

One (1) year limited warranty against workmanship and material defects.

8. CAUTION

- (1) Reverse charging is not acceptable.
- (2) Charge before use. The cells/ batteries are delivered in an uncharged state.
- (3) Do not charge/discharge with more than our specified current.
- (4) Do not short circuit the cell/battery .Permanent damage to the cell/battery may result.
- (5) Do not incinerate or mutilate the cell/ battery.
- (6) Do not solder directly to the cell/ battery.
- (7) The life expectancy may be reduced if the cell/ battery is subjected to adverse conditions like : extreme temperature, deep cycling, excessive overcharge / overdischarge.
- (8) Store the cell/ battery uncharged in a cool dry place. Always discharge batteries before bulk storage or shipment.

Notes :

- (1) T1 : Ambient Temperature.
- (2) Approximate charge time from discharged state, for reference only.
- (3) IEC 61951-2 (2003) 7.4.1.1 Cycle Life :

Cycle No.	Charge	Rest	Discharge
1	0.1C ×16 h	None	0.25C × 2h 20min
2 - 48	0.25C× 3 h 10 min	None	0.25C × 2h 20min
49	0.25C × 3 h 10 min	None	0.25C to 1.0V/cell
50	0.1C × 16 h	1 - 4h	0.2C to 1.0V/cell

Cycles 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3 h.