



# ***NICKEL METAL HYDRIDE BATTERY NH-4/5AA1200***

## **BRIEF SPECIFICATION**

Model: NH-4/5AA1200

Nominal Voltage: 1.2V

Nominal Capacity: 1200mAh

Weight: Approx. 18g

Manufacturer: EEMB Co., Ltd.

Website: <http://eemb.com>

## 1. Preface

This specification is suitable for the performance of the Ni-MH rechargeable battery produced by EEMB CO.,LTD

## 2. Model

NH-4/5AA1200

## 3. Appearance

There shall be no such defects as deformation, flaw, stain, discoloration or electrolyte leakage.

## 4. Nominal Specification

Description		Specification	
Model		NH-4/5AA1200	
Size		4/5AA	
Dimensions	Diameter (mm)	14.5+0/-0.7	
	Height (mm)	43.0+0/-1.5	
	Weight (g)	Approx. 18g	
Nominal Voltage (V)		1.2	
Nominal Capacity (mAh)		1200	
Internal Impedance (mΩ)		≤45	
Discharge Cut-off Voltage		1.0V	
Ambient temperature	Charge	standard	0°C to 40°C
		fast	10°C to 40°C
	Discharge		-10°C to 50°C
	Storage	<1 year	-10°C to 30°C
		<3 months	-10°C to 40°C
		The relative humidity should keep with in 65±20%.	

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## 5. Characteristics

Unless otherwise specified, the standard range of atmospheric conditions for test as follows:

Ambient temperature:  $20 \pm 5^{\circ}\text{C}$   
 Relative humidity:  $65 \pm 20\%$   
 Atmospheric pressure:  $960 \pm 100\text{mbar}$

Accuracy of voltmeters and amperometers to be used in testing shall be equal to or better than grade 0.5.

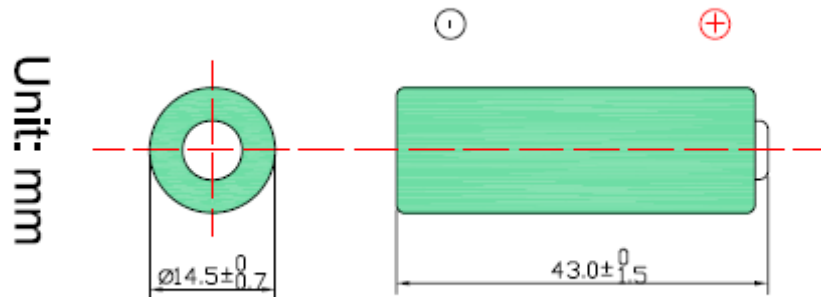
Test item		Condition	Specification
1. Charge	Standard	Charge at 0.1C for 16 hours	Ta=0~40°C
	Fast	Charge at 0.5C to $-\Delta V=0-5\text{mV}$	Ta=10~40°C
	Trickle	(0.03C)-(0.05C)	Ta=0~40°C
2. Discharge		At 0.2C to 1.0V	
3. Discharge cut-off voltage			1.0V
4.Capacity (mAh)	Minimum	Standard charge/discharge	1150
	Typical	Standard charge/discharge	1200
5. Internal resistance		After fully charge,rest 1 hour, measured at 1000Hz	$\leq 45\text{m}\Omega$
6.High Rate Dicharge(0.5C)		Standard charge 1hour rest Before Discharge by 0.5C to 1.0V	$\geq 116\text{minutes}$
7. Self-Discharge		The charged battery is stored for 28 days at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . And the discharge time is measured at standard discharge	$\geq 180\text{minutes}$
8. Overcharge		230mA(0.1C) charge 28 days	No leakage nor deformation
9. High temperature test		Store at 40°C、50°C、60°C for 2 hours then charge/discharge	No leakage
10. Low temperature test		Store at 0°C for 2 hours then charge/discharge	No leakage
11. Short circuit test		Short circuit after fully charge	No explode

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12. Drop test		Free fall on the concrete from 1 meters after fully charged		No leakage No short-circuit
13. Leakage test		standard charge stand for 14days		No leakage nor deformation
14. Cycle life	Charge	Rest	Discharge	Capacity retention ≥60% after 500cycles
1	0.1C for 16h	0	0.25C for 2h20min	
2~48	0.25C for 3h10min	0	0.25C for 2h20min	
49	0.25C for 3h10min	0	0.2C to 1.0V	
50	0.1C for 16h	1~4h	0.2C to 1.0V	

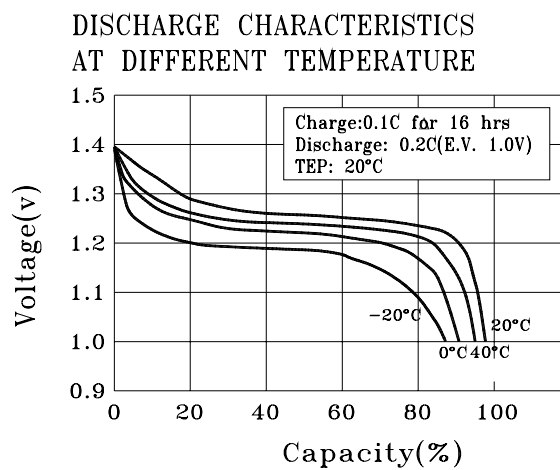
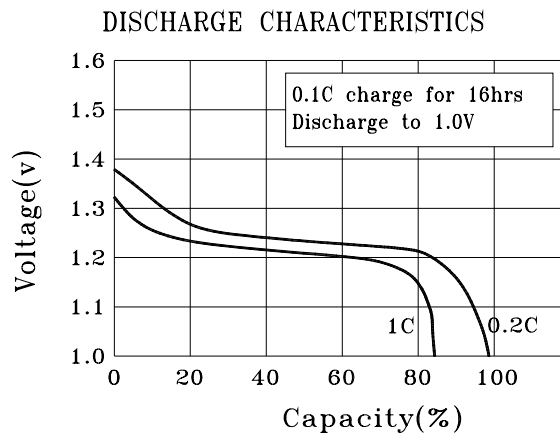
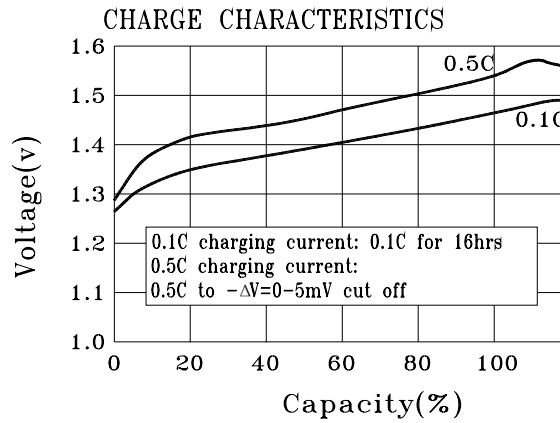
Note: Typical values relative to cells stored for one year or less at + 30°C max.

## 6. Dimensions



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## 7. Performance



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## 8. Precautions

- 8.1 Batteries should be charged prior to use.
- 8.2 When using a new battery for the first time or after long term storage, please fully charge the battery before use.
- 8.3 Use the correct charger for Ni-Cd or Ni-MH batteries.
- 8.4 Do not reverse charge batteries.
- 8.5 Do not short circuit batteries, permanent damage to batteries may result.
- 8.6 Do not incinerate or mutilate batteries, may burst or release toxic material.
- 8.7 Do not solder directly to cells or batteries.
- 8.8 Do not subject batteries to adverse condition such as extreme temperature, deep cycling and excessive overcharge/over discharge.
- 8.9 Store batteries in a cool dry place.
- 8.10 Do not mix EEMB batteries with other battery brands or batteries of a different chemistry such as alkaline and zinc carbon.
- 8.11 Do not mix new batteries in use with semi-used batteries, over discharge may occur.
- 8.12 Avoid batteries being used in an airtight compartment. Ventilation should be provided inside the battery compartment; otherwise batteries may generate hydrogen gas, which could cause an explosion if exposed to an ignition source.
- 8.13 When connecting a battery pack to a charger, ensure correct polarity.
- 8.14 If find any noise, excessive temperature or leakage from a battery, please stop its use.
- 8.15 When the battery is hot, please do not touch it and handle it, until it has cooled down.
- 8.16 Do not remove the outer sleeve from a battery pack nor cut into its housing.
- 8.17 When find battery power down during use, please switch off the device to avoid over discharge.
- 8.18 After use, if the battery is hot, before recharging it, allow it to cool in a well-ventilated place out of direct sunlight.
- 8.19 During long term storage, battery should be charged and discharged once every 3 months.
- 8.20 Do not attempt to take batteries apart or subject them to pressure or impact. Heat may be generated or fire may result. The alkaline electrolyte is harmful to eyes and skin, and it may damage clothing upon contact.

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