



**Intec Industries Co., Ltd.**  
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# SPECIFICATION

<b>Type:</b>	Ni-MH Cylindrical Cell
<b>Model No.:</b>	IMH-1000AS
<b>Prepared:</b>	HML
<b>Approved:</b>	LFX
<b>Date:</b>	Aug 15, 2009



## 1. PREFACE

This specification applies to the Intec Nickel-Metal Hydride Cylindrical batteries or battery packs. Intec reserves the right to alter the product design or amend this specification without prior notice.

## 2. TYPE

This specification applies to the following sealed Nickel-Metal Hydride battery.

Type: IMH-1000AS.

Size : 2/3 A.

## 3. CHARACTERISTICS

- ★ Nominal voltage: 1.2 V.
- ★ Nominal capacity: 1000 mAh (0.2C/5).
- ★ Standard charge: 100 mA × 15hr.
- ★ Quick charge: 500 mA × 2.4hr, (- Δ V=0~5 mV).
- ★ Trickle charge: 30 ~ 50 mA.
- ★ Discharge cut-off voltage: 1.0 V/unit (20°C).
- ★ Operating temperature range. (Max relative humidity: 85%)

Standard charge	0 ~ + 45°C
Trickle charge	0 ~ + 45°C
Quick charge	10 ~ + 45°C
Discharge	-20 ~ + 60°C
- ★ Storage temperature range. (Max relative humidity: 85%)

Within two years	-20 ~ + 30°C
Within two months	-20 ~ + 45°C
Within one month	-20 ~ + 50°C
Within one week	-20 ~ + 60°C

## 4. DIMENSION/WEIGHT

4.1. Dimensions:  $\Phi 16.3^{+0.5} \times 27.4^{+0.8}$  (mm);

4.2. Gross weight: 19 (g);

## 5. CELL PERFORMANCE

### 5.1. TEST REQUIREMENTS

The following conditions are for new batteries (within one month after delivery under the test method of 5.2.2).

Environmental Temperature: +15 ~ +25°C; Relative humidity: 45% ~ 85%.



**5.2. TEST METHOD AND PERFORMANCES**

**5.2.1. APPEARANCE**

The cell should be free from stretches, dents, dirt and rusts.

**5.2.2. CAPACITY**

Charge with 0.1C for 14 hours then discharge with 0.2C to the end-voltage 1.0 V/unit, the capacity shall be more than 1000 mAh.

**5.2.3. OPEN-CIRCUIT VOLTAGE**

The open-circuit voltage within one hour after full charge shall be more than 1.25 V/unit.

**5.2.4. INTERNAL IMPEDENCE**

Within one hour after full charge, the internal impedance shall be less than 48 mΩ /cell.

**5.2.5. SELF-DISCHARGE**

The capacity shall be more than 650 mAh after the storage of 28 days for the fully charged battery.

**5.2.6. SAFETY DEVICE OPERATION**

The battery shall be no disrupt or burst, but the leakage of electrolyte and the deformation of the battery are allowed when the battery discharged at 0.2C (at 20±5°C) until 0V then discharged at 1C for 2 hr.

The battery shall be no disrupt or burst, but the leakage of electrolyte and the deformation of the battery are allowed after the battery is charged at 0.1C for 16hr and short-circuit the battery for 1hr.

**5.2.7. OVER DISCHARGE**

The battery shall not cause salting, leakage or deformation when charged at 0.1C for 48 hr.

**5.2.8. LIFE-SPAN(CUSTOM)**

The capacity shall be more than 650 mAh after 500 cycles with the test conditions as follow:

**TEST CONDITION**

Cycle-th	Charge	Rest	Discharge
1	Charge at 0.1C/5 for 14 hours	None	Discharge at 0.25C/5 for 2.33 h
2 ~ 48	Charge at 0.25C/5 for 3.2 hours	None	Discharge at 0.25C/5 for 2.33 h
49	Charge at 0.25C/5 for 3.2 hours	None	Discharge at 0.25C/5 to 1.0V/unit
50	Charge at 0.1C/5 for 14 hours	1 ~ 4 hours	Discharge at 0.2C/5 to 1.0V/unit

**5.2.9. STORAGE**

Within 14 days, the battery shall not cause leakage at 30-60°C with the relative humidity at 75%-85%.



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**5.2.10. VIBRATION**

The battery shall not cause damage to its performances when tested with the amplitude at 4 mm (0.158 inch) and the frequency at 1000Hz.

**5.2.11. DROP TEST**

The battery shall keep normal when dropped from a height of 450 mm (17.716 inch) to the wooden board.

**5.2.12. SHORT CIRCUIT**

The fully charged battery shall not explode when shorted directly by wires.

**5.2.13. INCORRECT POLARITY CHARGE**

The battery shall not explode when charged for 5 hours with the polarity being reverse.

**5.2.14. OVER CHARGE II**

The battery shall not explode when charged at 1C for 1 hour.

**6. CAUTION**

- A. The end-voltage is recommended at  $1.0 \pm 0.1V$ /unit.
- B. The battery may go fail when shorted, over-charged or charged with incorrect polarity.
- C. Avoid soldering directly to the battery.
- D. Do not dispose of in fire and keep away from damage.

**7. REFERENCE**

Please refer to Intec's Customer Service if there is any question on using batteries.

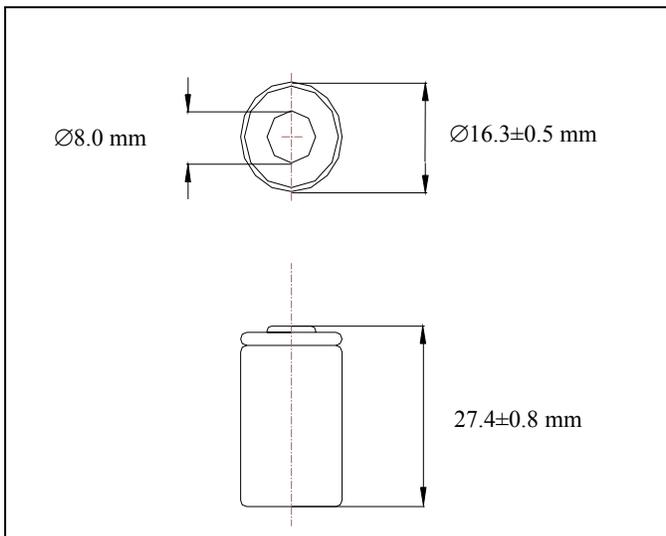


**Specifications**

<b>Nominal voltage</b>		<b>1.2V</b>		
<b>Capacity (mAh)</b>		<b>C/5</b>	<b>C</b>	
	<b>Nominal</b>	<b>1000</b>	<b>850</b>	
	<b>Typical</b>	<b>1030</b>	<b>890</b>	
<b>Diameter</b>		<b>0.64 ± 0.02 in 16.3 ± 0.5 mm</b>		
<b>Height</b>		<b>1.08 ± 0.03 in 27.4 ± 0.8 mm</b>		
<b>Weight</b>		<b>19g</b>		
<b>Internal impedance at 1000Hz.</b>		<b>48mΩ (After charge)</b>		
<b>Charge</b>	<b>Standard</b>	<b>100mA × 15hrs.</b>		
	<b>Quick</b>	<b>500mA × 2.4hrs. -ΔV = 0~5mV</b>		
	<b>Trickle</b>	<b>Max.</b>	<b>50mA</b>	
		<b>Min.</b>	<b>30mA</b>	
<b>Ambient temperature</b>	<b>Charge</b>	<b>Standard</b>	<b>0°C ~ 45°C</b>	
		<b>Quick</b>	<b>10°C ~ 45°C</b>	
	<b>Discharge</b>	<b>-20°C ~ 60°C</b>		
	<b>Storage</b>	<b>-20°C ~ 60°C</b>		

Note:

1. Nominal capacity, rated at C/5, 20°C.
2. Other capacities are for reference.
3. Weight and internal impedance are for reference.



**Typical characteristics**

