Intec Industries Co., Ltd.
Room 2703, Well Tech Centre
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SPECIFICATION

Type:	Ni-MH Cylindrical Cell
Model No.:	IMP-9000DHH
Prepared:	HML
Approved:	LFX
Date:	Mar 20, 2010

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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 with high hat button.

Type: IMP-9000DHH
Size: D (with high hat button)

3. CHARACTERISTICS

★ Nominal voltage: 1.2 V.
★ Nominal capacity: 9000 mAh(0.2C_5).
★ Standard charge: 900 mA×15hrs.
★ Quick charge: 2700 mA×4.0hrs, (-Δ V= 5 mV)
★ Discharge cut-off voltage: 1.0 V/unit (20℃).
★ Max current of constant discharge: 10A (20℃, unit cell)
★ Operating temperature range: (Max relative humidity: 85%)

Standard charge	0 ~ +45℃
Fast Charge	0 ~ +40℃
Discharge	-20 ~ +60℃

★ Storage temperature range: (Max relative humidity: 85%)

Within two years	-20 ~ +25℃
Within two months	-20 ~ +30℃
Within one month	-20 ~ +35℃
Within one week	-20 ~ +45℃

4. CELL DIMENSION/WEIGHT

4.1 Dimensions: Φ32.1±0.5 × 60.5±0.8 (mm).

4.2 Gross weight: 170 (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).
Environmental temperature: +15 ~ +25℃. Relative humidity: 45% ~ 85%.

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5.2 TEST METHOD AND PERFORMANCES

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

5.2.2 CAPACITY
Charge with 0.1C for 15 hours then discharge with 0.2C to the end-voltage 1.0 V/unit, the capacity shall be more than 9000 mAh.

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

5.2.4 INTERNAL IMPEDENCE
Within one hour after full charge, the internal impedance shall be less than 8 mΩ/cell.

5.2.5 SELF-DISCHARGE
The capacity shall be more than 5850 mAh after the storage of 28 days for the fully charged battery.

5.2.6 OVER-CHARGE
The battery shall not cause salting, leakage or deformation when charged at 900 mA for 48 hours.

5.2.7 OVER DISCHARGE
The battery shall not cause deformation when it is discharged for 24 hours with the external resistance at 0.1 Ω.

5.2.8 LIFE-SPAN(CUSTOM)
The capacity shall be more than 5850 mAh after 500 cycles with the test conditions as follow:

TEST CONDITION

Cycle	Charge	Rest	Discharge
1st	Charge at 0.1C for 16 hr	None	Discharge at 0.25C for 2.33 hr
2nd ~ 48th	Charge at 0.25C for 3.17 hr	None	Discharge at 0.25C for 2.33 hr
49th	Charge at 0.25C for 3.17 hr	None	Discharge to 1.0V/unit
50th	Charge at 0.1C for 16 hr	1 ~ 4 hours	Discharge at 0.2C to 1.0V/unit

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

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 1000 cpm.

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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.

6. CAUTION

A. The end-voltage is recommended at 1.0±0.1V/unit.

B. The battery may go fail when shorted, over-charged or charged with incorrect polarity.

C. Avoiding 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.

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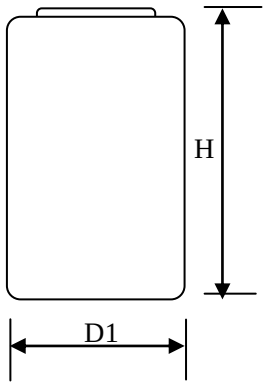
Specifications

Nominal voltage			**1.2V**	
Capacity (mAh)			**C/5**	**C**
	Typical		**9000**	**7650**
Diameter			**32.1±0.5 mm**	
Height			**60.5±0.8 mm**	
Weight			**170g**	
Internal impedance at 1000Hz (After charge)			**8mΩ**	
Charge	**Standard**		**900mA×15hrs**	
	Quick		**2700mA×4.0hrs**	
Ambient temperature	**Charge**	**Standard**	**0℃～45℃**	
		Quick	**0℃～40℃**	
	Discharge		**-20℃～60℃**	
	Storage (suggested)		**-20℃～35℃**	

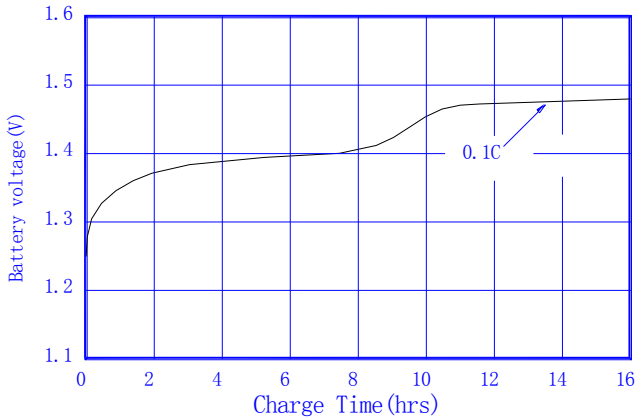
Note:

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

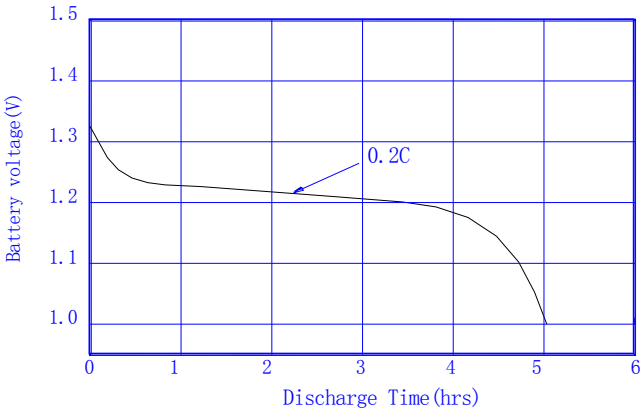


D1 = 32.1 +/- 0.5 mm
H = 60.5 +/- 0.8 mm
Typical Weight (g): 170

Characteristic Curves



Typical charge curve(at 0.1C 20±5℃)



Typical Discharge curve(at 0.2C 20±5℃)