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SPECIFICATION

Type:	Ni-MH Cylindrical Cell
Model No.:	IMH-3500D
Prepared:	HML
Approved:	LFX
Date:	July 25, 2008



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-3500D

Size: 1/2D

3. CHARACTERISTICS

- ★ Nominal voltage: 1.2 V.
- ★ Nominal capacity: 3500 mAh(0.2C₅).
- ★ Standard charge: 350 mA × 15hrs.
- ★ Quick charge: 1750 mA × 2.4hrs, (- Δ V = 5 mV)
- ★ Discharge cut-off voltage: 1.0 V/unit (20°C).
- ★ Max current of constant discharge: 7A (20°C, unit cell)
- ★ Operating temperature range: (Max relative humidity: 85%)

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

Within two years	-20 ~ +25°C
Within two months	-20 ~ +30°C
Within one month	-20 ~ +40°C
Within one week	-20 ~ +50°C

4. CELL DIMENSION/WEIGHT

4.1 Dimensions: Φ32.5±0.5 × 35.5±0.5 (mm).

4.2 Gross weight: 85 (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°C. Relative humidity: 45% ~ 85%.



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 3500 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 18 mΩ/cell.

5.2.5 SELF-DISCHARGE

The capacity shall be more than 2450 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 350 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 2450 mAh after 500 cycles with the test conditions as follow:

TEST CONDITION

Cycle	Charge	Rest	Discharge
1 st	Charge at 0.1C for 16 hr	None	Discharge at 0.25C for 2.33 hr
2 nd ~ 48 th	Charge at 0.25C for 3.17 hr	None	Discharge at 0.25C for 2.33 hr
49 th	Charge at 0.25C for 3.17 hr	None	Discharge to 1.0V/unit
50 th	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°C 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 $1.0 \pm 0.1V$ /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.

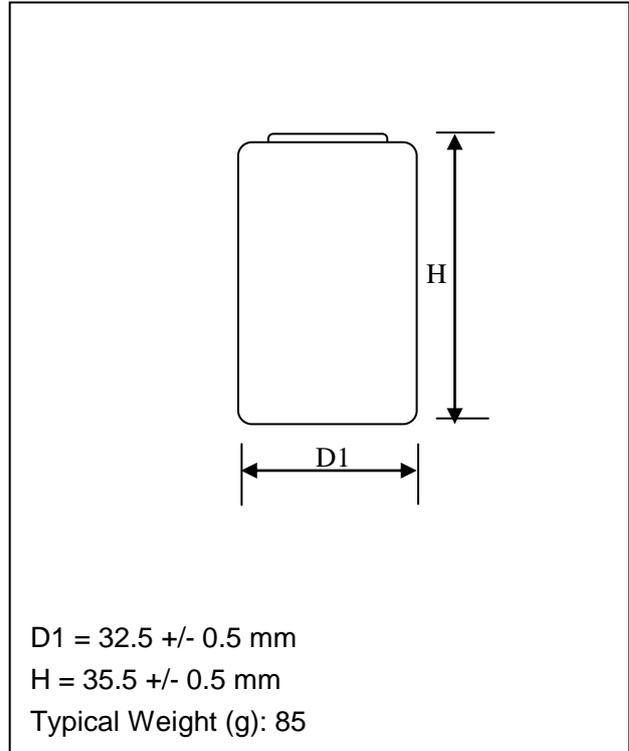


Specifications

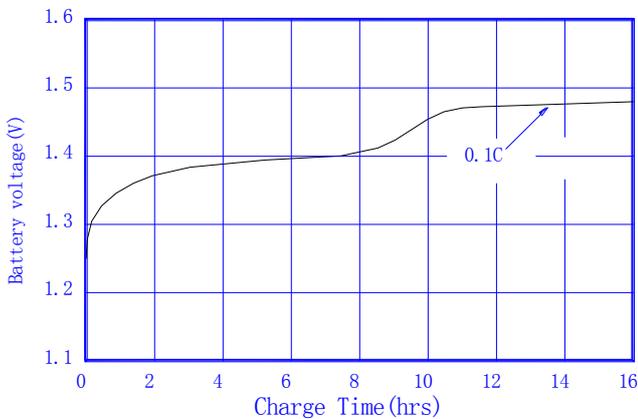
Nominal voltage		1.2V	
Capacity (mAh)		C/5	C
	Typical	3500	3150
Diameter		32.5 ± 0.5 mm	
Height		35.5 ± 0.5 mm	
Weight		85g	
Internal impedance at 1000Hz (After charge)		18mΩ	
Charge	Standard	350mA × 15hrs	
	Quick	1750mA × 2.4hrs	
Ambient temperature	Charge	Standard	-10°C ~ 45°C
		Quick	0°C ~ 45°C
	Discharge		-20°C ~ 60°C
	Storage (suggested)		-20°C ~ 35°C

Note:

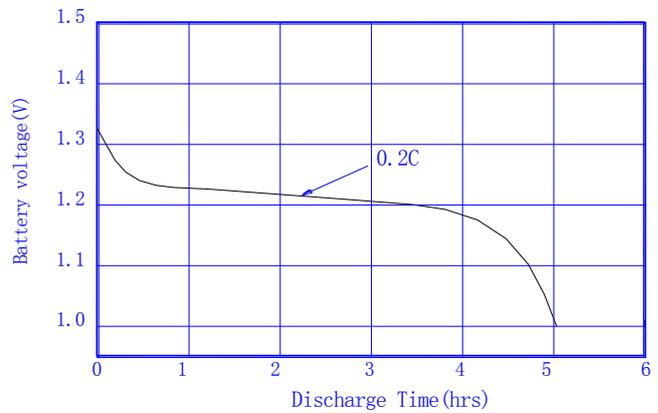
1. Nominal capacity, rated at C/5, 20°C.
2. Other capacities are for reference.
3. Weight and internal impedance are for reference.



Characteristic Curves



Typical charge curve (at 0.1C 20±5°C)



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