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

Type:	Ni-MH Cylindrical Cell
Model No.:	IMX-1600CsS
Prepared:	HML
Approved:	LFX
Date:	Mar 6, 2015

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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.

Type: IMX-1600CsS
Size: 4/5 Cs

3. CHARACTERISTICS

★ Nominal voltage: 1.2 V.
★ Nominal capacity: 1600 mAh (0.2C).
★ Standard charge: 160 mA×15h
★ Quick charge: 1600 mA×1.2h (-Δ V= 10 mV).
★ Discharge cut-off voltage: 1.0 V/cell(20℃).
★ Operating temperature range: (Max relative humidity: 85%)

Standard charge	-10 ~ +50°C
Quick charge	0 ~ +45°C
Discharge	-20 ~ +60°C

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

Within two years	-20 ~ +30°C
Within six months	-20 ~ +45°C
Within one month	-20 ~ +55°C
Within one week	-20 ~ +60°C

4. EXTERNAL DIMENSION/WEIGHT

4.1 Dimensions: $\Phi 22.2^{\pm 0.5} \times 33.2^{\pm 0.8}$ (mm).
4.2 Gross weight: 48 (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 battery 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 1600 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 IMPEDANCE
Within one hour after full charge, the internal impedance shall be less than 12 mΩ /cell.

5.2.5 SELF-DISCHARGE
The capacity shall be more than 960mAh 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 160 mA for 48 hours and the capacity shall be more than 1600 mAh.

5.2.7 OVER DISCHARGE
The battery shall not cause deformation when it is discharged for 24 hours with the external resistance at 0.2Ω.

5.2.8 LIFE-SPAN
The capacity shall be more than 960 mAh after 500 cycles with the test conditions as follow:

TEST CONDITION

Cycle-th	Charge	Rest	Discharge
1	Charge at 0.1C_5 for 15 hours	None	Discharge at 0.25C_5 for 2.33 h
2 ~ 48	Charge at 0.25C_5 for 3.17 hours	None	Discharge at 0.25C_5 for 2.33 h
49	Charge at 0.25C_5 for 3.17 hours	None	Discharge at 0.25C_5 to 1.0V/unit
50	Charge at 0.1C_5 for 15 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℃ 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 1000Hz.

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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.

5.2.13 INCORRECT POLARITY CHARGE

Discharge at $0.2C_5$ to the end voltage 0V, then discharge by force at $1C_5$ rate for 60 minutes, and the battery should not explode or break.

6. SUGGESTION & ADVICE

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

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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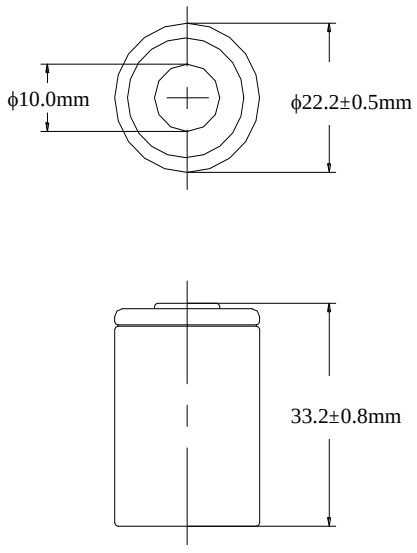
Specifications

Nominal voltage			**1.2V**	
Capacity (mAh)			**C/5**	**C**
	Nominal		**1600**	**1440**
	Typical		**1650**	**1500**
Diameter			**0.87±0.02 in 22.2±0.5 mm**	
Height			**1.31±0.03 in 33.2±0.8 mm**	
Weight			**48g**	
Internal impedance at 1000Hz.			**≤12mΩ (After charge)**	
Charge	**Standard**		**160mA×15hrs.**	
	Quick		**1600mA× 1.2hrs.**	
Ambient temperature	**Charge**	**Standard**	**-10℃ ~ 50℃**	
		Quick	**0℃ ~ 45℃**	
	Discharge		**-20℃ ~ 60℃**	
	Storage		**-20℃ ~ 45℃**	

Note:

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



Typical characteristics