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# SPECIFICATION

<b>Type:</b>	Ni-CD Cylindrical Cell
<b>Model No.:</b>	IC-5000DHH
<b>Prepared:</b>	HML
<b>Approved:</b>	LFX
<b>Date:</b>	June 15, 2011



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**1. PREFACE**

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

**2. SCOPE**

This specification applies to nickel cadmium cylindrical rechargeable single cell IC-5000DHH with high-hat button.

**3. REFERENCE DOCUMENT**

IEC 285-2003 《sealed Ni-CD cylindrical rechargeable single cells》 .

**4. GENERAL ELECTRICAL SPECIFICATION**

ITEM	SPECIFICATION	UNITS	NOTES
Intec Cell Designation	IC-5000DHH		
IEC Cell Designation	KR 33/61		
Nominal Voltage	1.2	Volt	
Rated Capacity	5000	mAh	At 20°C
<b>Charge Current</b>			
Permanent	250	mA	0.05C
Normal	500	mA	0.1C
Quick	1500	mA	0.3C
<b>Charge Duration</b>			
Normal	14~16	hrs	
Quick	3~4	hrs	
Maximum continuous discharge current	5	A	
<b>Operating Temperature</b>			
Permanent Charge	15 to 45	°C	
Storage Recommended	5 to 25	°C	
Extended Storage	-20 to 50	°C	Short duration (<1 month)
In discharge	-20 to 60	°C	



## 5. GENERAL MECHANICAL SPECIFICATION

Bare Cell Drawing (mm)	Bare Cell Dimensions
	Maximum Diameter (mm): 32.5 Maximum Height (mm): 60.5
	Typical Weight (g): 145

## 6. CAPACITY

### 6.1 IEC capacity:

IEC capacity is rated as follow:

Temperature:  $20 \pm 5^{\circ}\text{C}$ ;

Charge current:  $0.1\text{C}=500\text{mA}$ ;

Charge duration: 16h;

Rest: 1 to 4h;

Discharge current:  $0.2\text{C}=1000\text{mA}$ ;

Discharge end voltage: 1.0V/cell

The discharge continues until the voltage drops to 1.0V/cell, and the duration must not be less than 300 minutes. 3 Cycles are permitted. Therefore, the IEC capacity is 5.0 Ah minimum.

### 6.2 Available capacity

The following table gives the typical available capacity of IC-5000DHH battery under various charge and discharge conditions. The temperature is  $20 \pm 5^{\circ}\text{C}$  and the batteries are fully charged prior to testing.

<i>Charge</i>	<i>Normal</i>
Rate	0.1C
Current(mA)	500
Duration(h)	16
Rest after charged(h)	1
<i>Discharge*</i>	<i>Capacity(mAh)</i>
0.2C(1000mA)	5100
C(5000mA)	4500

Discharge end voltage: 1.0V/cell.



## 7. CHARGE

### 7.1 Permanent Charge

The IC-5000DHH cells can be permanently charged between 15 to 45°C with a constant current of 250mA.

### 7.2 Standard Charge

0.1C (500mA) for 14 to 16h.

The temperature during charge is ranged 10 to 40°C.

## 8. TEMPERATURE CHARACTERISTICS

The following table gives the minimum available capacity of IC-5000DHH battery under various charge and discharge temperatures.

Test condition: charge current 0.1C (500mA), duration 16h;

discharge current 1000mA(0.2C), end voltage 1.0V.

Charge and discharge should be performed at the same temperature.

<i>Temperature</i>	<i>Available capacity</i>
40°C	0.9C
20°C	1.0C
0°C	0.8C

## 9. CHARGE RETENTION

After 28 days' storage at 20±5°C, a fully charged cell should retain typically 70% of its rated capacity.

## 10. STORAGE

Batteries should be stored in cool dry places. The storage temperature should be conditioned within the range of 5 to 25°C, and relative humidity should be 65±5%.

## 11. CYCLE-LIFE

Battery service life depends mainly on battery temperature and overcharge capacity. When the capacity falls to 60% of initial capacity, the battery life is over.

At the following average operational conditions, the battery life is 4 years:

Battery operational temperature : 25°C;

Permanent charge current: 0.05C;

Discharge/month at 0.5C discharge rate.

## 12. REFERENCE

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