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

| | |
|---|---|
| **Type:** | Ni-CD Cylindrical Cell |
| **Model No.:** | ICF-2500D |
| **Prepared:** | HML |
| **Approved:** | LFX |
| **Date:** | Aug 23, 2016 |

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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 ICF-2500D.

## 3. REFERENCE DOCUMENT

IEC 61951 2003《sealed Ni-CD cylindrical rechargeable single cells》.

## 4. GENERAL ELECTRICAL SPECIFICATION

| ITEM | SPECIFICATION | UNITS | NOTES |
|---|---|---|---|
| Intec Cell Designation | ICF-2500D | | |
| IEC Cell Designation | KR 33/36 | | |
| Nominal Voltage | 1.2 | Volt | |
| Rated Capacity | 2500 | mAh | At 20℃ |
| **Charge Current** | | | |
| Permanent | 125 | mA | 0.05C |
| Normal | 250 | mA | 0.1C |
| Quick | 1250 | mA | 0.5C |
| **Charge Duration** | | | |
| Normal | 14~16 | hrs | |
| Quick | 2~3 | Hrs | |
| Maximum continuous discharge current | 5.0 | A | |
| **Operating Temperature** | | | |
| Permanent Charge | 0 to 50 | ℃ | |
| Storage Recommended | 5 to 25 | ℃ | |
| Extended Storage | -20 to 50 | ℃ | Short duration (<1 month) |
| In discharge | -20 to 60 | ℃ | |

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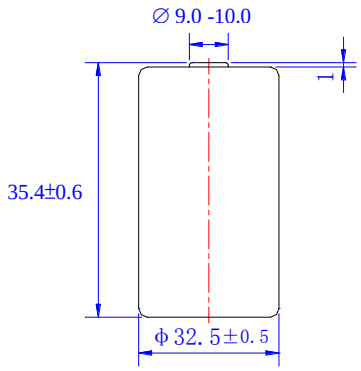
## 5. GENERAL MECHANICAL SPECIFICATION

| Bare Cell Drawing (mm) | Bare Cell Dimensions |
|---|---|
|  | Maximum Diameter(mm): 33.0<br>Maximum Height(mm): 36.0 |
| | Typical Weight (g): 88 |

## 6. CAPACITY

### 6.1 IEC capacity:

IEC capacity is rated as follow:
Temperature: 20±5℃;
Charge current: 0.1C=250mA;
Charge duration: 16h;
Rest: 1 to 4h;
Discharge current: 0.2C=500mA;
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 2.5Ah minimum.

### 6.2 Available capacity

The following table gives the typical available capacity of ICF-2500D battery under various charge and discharge conditions. The temperature is 20±5℃ and the batteries are fully charged prior to testing.

| ***Charge*** | ***Normal*** |
|---|---|
| Rate | 0.1C |
| Current(mA) | 250 |
| Duration(h) | 16 |
| Rest after charged(h) | 1 |
| ***Discharge**** | ***Capacity(mAh)*** |
| 0.2C(500mA) | 2500 |
| C(2500mA) | 2250 |
| 2C(5000mA) (to 0.8V/cell) | 2000 |

Discharge end voltage: 1.0V/cell.

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## 7. CHARGE

### 7.1 Permanent Charge

The ICF-2500D cells can be permanently charged between 15 to 45℃ with a constant current of 125mA(0.05C).

### 7.2 Standard Charge

0.1C (250mA) for 14 to 16h.
The temperature during charge is ranged 10 to 50℃.

## 8. TEMPERATURE CHARACTERISTICS

The following table gives the minimum available capacity of ICF-2500D battery under various charge and discharge temperatures.
Test condition: charge current 0.05C (125mA), duration 48h;
discharge current 500mA(0.2C), end voltage 1.0V.
Charge and discharge should be performed at the same temperature.

| ***Temperature*** | ***Available capacity*** |
|---|---|
| 40℃ | 0.9C |
| 20℃ | 1C |
| 0℃ | 0.8C |

## 9. CHARGE RETENTION

After 28 days' storage at 20±5℃, 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℃, 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℃;
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.