

# Xtra-Power-Li-ion Battery Individual Data Sheets

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## 1. Preface

The purpose of this product specification is to provide technical information for the rechargeable Lithium-ion cylindrical battery ICR17335UL, manufactured and supplied by Xtra-power.

## 2. Description and Model

2.1 Description Rechargeable Lithium-ion cylindrical battery  
2.2 Model ICR17335UL

## 3. Specification

3.1 Capacity           Nominal           650mAh  
                                  Typical           680mAh  
3.2 Charging Voltage           4.20V  
3.3 Nominal Voltage           3.7V at 0.2C<sub>5</sub> mA  
3.4 Standard Charging Method   Constant current:350mA Constant voltage 4.20V  
3.5 Cut-off Discharge Voltage   3.00V  
3.6 Max.Discharge Current       1050mA  
3.7 Max.Charge Current         650mA  
3.8 Cycle Life                    >500 cycles at 0.5C mA discharge  
3.9 Ambient Temperature  
    for Standard Charge           0°C ~ 45°C  
    for Discharge                 -20°C ~ 60°C  
3.10 Storage  
    for within the temperature     -20°C ~ 60°C  
    for within the humidity        Smaller or equal to 75%  
3.11 Energy Density  
    Wh/L                         ~320  
    Wh/Kg                        ~150  
3.12 Weight of Bare Cell         ~26g  
3.13 Charge State Internal Impedance <80mΩ

## 4. Appearance

Appearance shall be free from any remarkable scratch, flaws, rust, discoloration or electrolyte leakage (visible or by smell)

## 5. Standard Test condition

### 5.1 Environment Conditions

Unless otherwise specified, all test stated in this Product Specification are conducted within the temperature 15~25°C and the humidity 45~85%RH.

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### 5.2 Test Equipment

#### (1) Impedance meter

The impedance meter with AC 1kHz should be used

### 6. Test Procedure and Its Standard

Item	Measuring Procedure	Standard
6.1 Appearance	Visual	No Defect and Leak
6.2 Dimension	Caliper	As item 8
6.3 Weight	Scale	As item 3.12
6.4 Maximum Charge Current	CCCV(Constant Current Constant Voltage)	650 mA
6.5 Full charge	CCCV	CC-0.2C <sub>5</sub> mA CV- 4.2V End-Current 7mA
6.6 Open Circuit Voltage	Within 1hr after full charge,measure Open circuit voltage	>4.10V
6.7 Internal Impedance	Measure the battery with 1kHz AC	<80mΩ
6.8 Discharge Capacity	Within 1hr after full charge,discharge until final discharge,at 0.2C mA and measure the capacity	>650mAh
6.9 Maximum Discharge Current	Until final discharge voltage	1050mA
6.10 Charge/Discharge Cycle Life	Charge:CCCV,CC- 0.5CmA,CV- 4.2V End-Current 6mA Discharge:0.5CmA to 3.00V,This charge/discharge shall be repeated 500 times	Discharge capacity should be >70% of item 6.8
6.11 Leakage Proof	After full charging,the battery shall be stored at 40±2°C and humidity 80±5%for 21 days	No leakage should be observed by visual inspection
6.12 Temperature Characteristics	1)After full charge at 20±5°C ,stand at -20±2°C for 18h,then discharge at 0.2C mA and measure the capacity 2)After full charge at 20±5°C ,stand at 55±2°C for 2hrs ,then discharge at 1C <sub>5</sub> mA and measure the capacity	Discharge capacity should be>60% of item 6.8 and no abnormality on its appearance and stucture
6.13 Charge Retension	After full charging,stand at 20±5°C for 28 days,measure the discharge capacity according to item 6.8	Discharge capacity should be>85% of item 6.8

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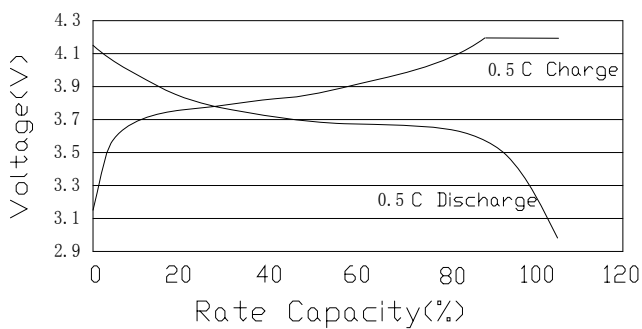
## Charge/Discharge Characteristics

Charge : CC/CC 4.2V, 350mA(0.5C),

End Current 7mA

Discharge: 350mA(0.5C) Cute-off at 3.00V

Temperature : 25°C

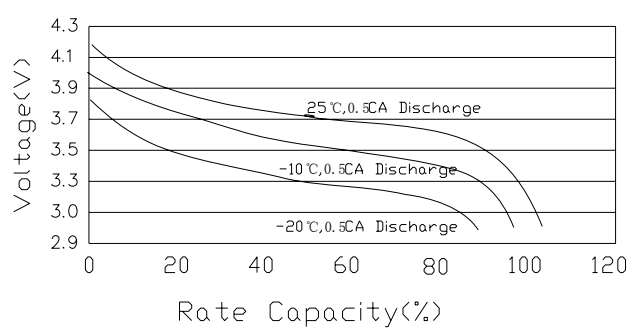


## Temperature Characteristics

Charge : CC/CV 4.2V, 0.5CmA

End Current 7mA

Discharge: 0.5CmA to 3.00V

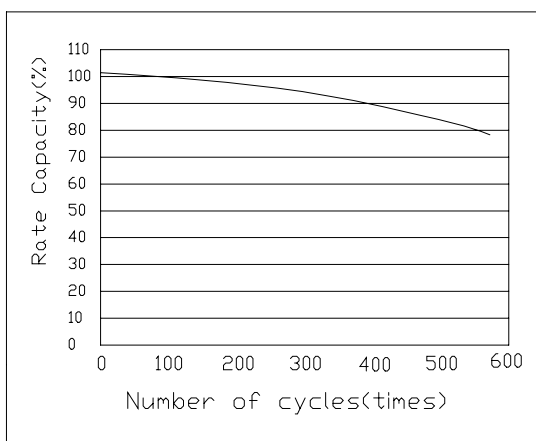


## Charge/Discharge Cycle Life

Charge : CC/CV 4.2 V, 0.5CA, End Current 7mA

Discharge : 0.5CmA Cut-off at 3.00V

Temperature : 25°C



## 8.Dimension (Bare Cell) mm

