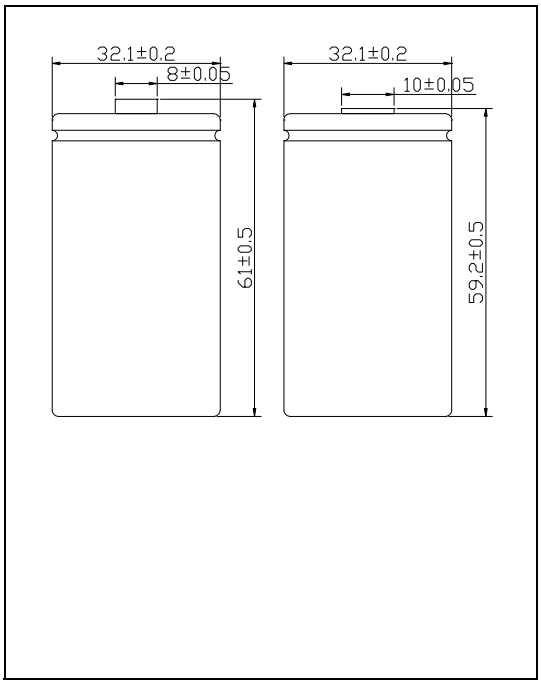
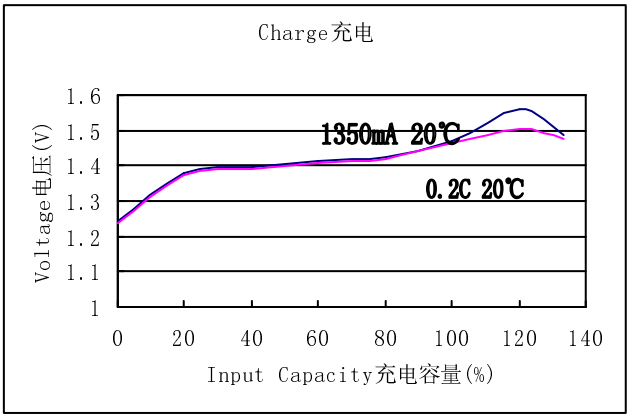
Cyber-Power Electronic Corporation

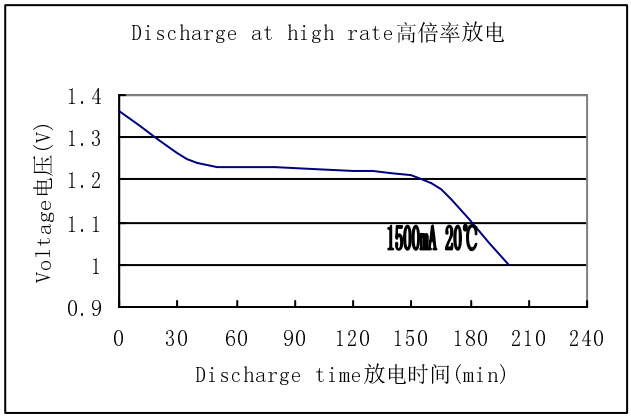
BATTERY SPECIFICATION **Model: CYK-60D5000**

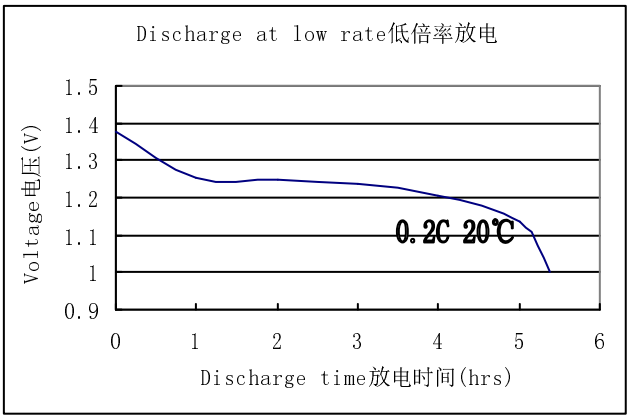


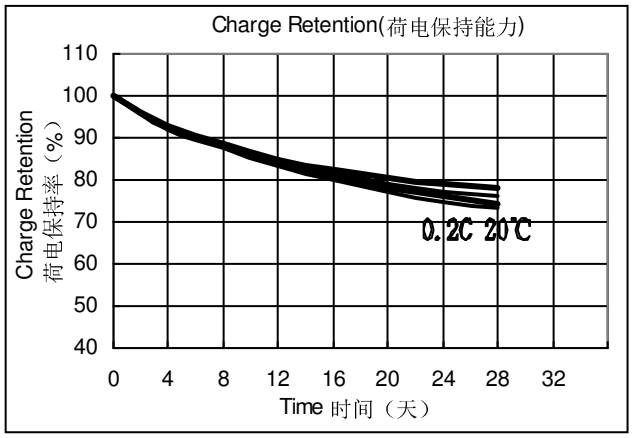
Specification

Nominal Capacity		5000 mAh
Nominal Voltage		1.2 V
Charge current	Standard	500mA
	Quick	1000mA
	Fast	1350mA
Charge time	Standard	14~16 Hrs
	Quick	6.0 Hrs
	Fast	5Hrs
Ambient Temperature	Charge Standard	0℃~35℃
	Charge Quick	10℃~35℃
	Charge Fast	10℃~35℃
	Discharge	-30℃~60℃
	Storage	-30℃~35℃
Internal Impedance(mΩ) (Upon fully charge)		Max≤13
Weight		122g









BATTERY SPECIFICATION **Model: CYK-60D5000**

1. PERFORMANCE

Unless otherwise stated, tests should be done within one month of delivery under the following conditions：

Ambient Temperature：T：20±5℃ Relative Humidity：65±20%

<table>
<tr><th>Test Item</th><th>Test Conditions</th><th>Requirements</th></tr>
<tr><td>(1)Standard Charge</td><td>Charge is conducted continuously for 16 hours at the constant current of 500mA(0.1C) after pre-discharge at the constant current of 1000mA（0.2C）up to a cut-off voltage of 1.0V/cell</td><td></td></tr>
<tr><td>(2)Open-circuit Voltage</td><td>Voltage between terminals of the charged battery specified in item (1) is measured after rest for 1 hour</td><td>≥1.25V</td></tr>
<tr><td>(3)Capacity（0.2C）</td><td>Capacity of the charged battery specified in item (1) is measured at 1000mA (0.2C) up to a cut-off voltage of 1.0V after rest for 15 minutes. If the discharge time doesn’t reach the specified value, the test may be carried out further twice, up to three times in total.</td><td>≥5000mAh</td></tr>
<tr><td>(4)High rate discharge(1500mA)</td><td>Discharge time of the charged battery specified in item (1) is measured at 1500mA up to a cut-off voltage of 1.0V after lest for 15 minutes. If the discharge time doesn’t reach the specified value, the test may be carried out further twice, up to three times in total.</td><td>≥180minutes</td></tr>
<tr><td>(5)Fast charge（1350mA）</td><td>Charge: 1350mA ×5 hours (charging Cut off =-△V=5~10mV/cell or Temp.Cut off=50℃）</td><td></td></tr>
<tr><td>(6)Trickle charge current</td><td>165mA(0.033C)~250 mA (0.05C)</td><td></td></tr>
<tr><td>(7)Charge retention</td><td>Capacity of the charged battery specified in item (1) is measured at 1000mA(0.2C) up to a cut-off voltage of 1.0V after rest for 28 days at 20℃.</td><td>≥70%</td></tr>
<tr><td>(8)IEC Cycle life（ IEC61951-1（2003）7.4.1.1）</td><td colspan="2"><table>
<tr><td>Cycle No</td><td>Charge</td><td>Rest</td><td>Discharge</td></tr>
<tr><td>1</td><td>0.1C×16h</td><td>None</td><td>0.25C×140min</td></tr>
<tr><td>2-48</td><td>0.25C×190min</td><td>None</td><td>0.25C×140min</td></tr>
<tr><td>49</td><td>0.25C×190min</td><td>None</td><td>0.25C to 1.0v</td></tr>
<tr><td>50</td><td>0.1C×16h</td><td>1-4h</td><td>0.2C to 1.0v</td></tr>
</table>Cycles 1 to so shall be repeated until the discharge duration on any 50th cycle becomes less than 3h</td><td>≥500</td></tr>
<tr><td>(9)Accelerated cycle life</td><td>Charge: 1350mA ×5 hours (charging Cut off =-△V=5~10mV/cell or Temp.Cut off=50℃）;Discharge: 1500mA to 1.0V/cell,end-of:70% nominal capacity .</td><td>≥400</td></tr>
</table>

PERFORMANCE

Unless otherwise stated, test should be done within one month of delivery under the following conditions：

Ambient Temperature：T：20±5℃ Relative Humidity：65±20%

Test Item	Test Conditions	Requirements
(10)**Safety valve operation**	Forced discharge is conducted for 60 minutes at a constant current of 5000mA(1C) after pre-discharge at a constant current of 1000mA(0.2C) up to 0V	Leakage, No explode or disrupt
(11)**Leakage**	Fully charged at 1200mA for 5.0 hour stand for 14 days	No leakage nor deformation
(12) **Vibration Resistance**	Charge the battery 0.1C 16hrs,then leave for 24hrs,check Battery before/after vibration, Amplitude 1.5mm Vibration 4500 CPM Any direction for 60mins.	Change of voltage should be under 0.02V/cell,Change of impedance should be under 5 milli-ohm/cell
(13) **Impact Resistance**	Charge the battery 0.1C 16hrs Then leave for 24hrs,check bat-before/after dropped, Height 50cm Wooden board(thickness 30mm) Direction not specified, 3 times.	Change of voltage should be under 0.02V/cell Change of impedance should be under 5 milli-ohm/cell

2．EXTERNAL APPEARANCE

The cell/battery shall be free from cracks, scars, breakage, rust, discoloration, leakage nor deformation.

3．CAUTION

⑴Reverse charging is not acceptable.

⑵Charge before use. The cells/batteries are delivered in an uncharged state.

⑶Do not charge/discharge with more than our specified current.

⑷Do not short circuit the cell/battery Permanent damage to the cell/battery may result.

⑸Do not incinerate or mutilate the cell/battery.

⑹Do not solder directly to the cell/battery.

⑺the life expectancy may be reduced if the cell/battery is subjected adverse conditions like: extreme temperature, deep cycling, excessive overcharge/ over-discharge.

⑻store the cell/battery uncharged in a cool dry place. Always discharge batteries before bulk storage or shipment.

Note: All the above values subject to change without prior notice.