



# SEEGATE CORPORATION

## 3.7V HONGLI 1200 MAH CELL



[www.seegatecell.com](http://www.seegatecell.com)

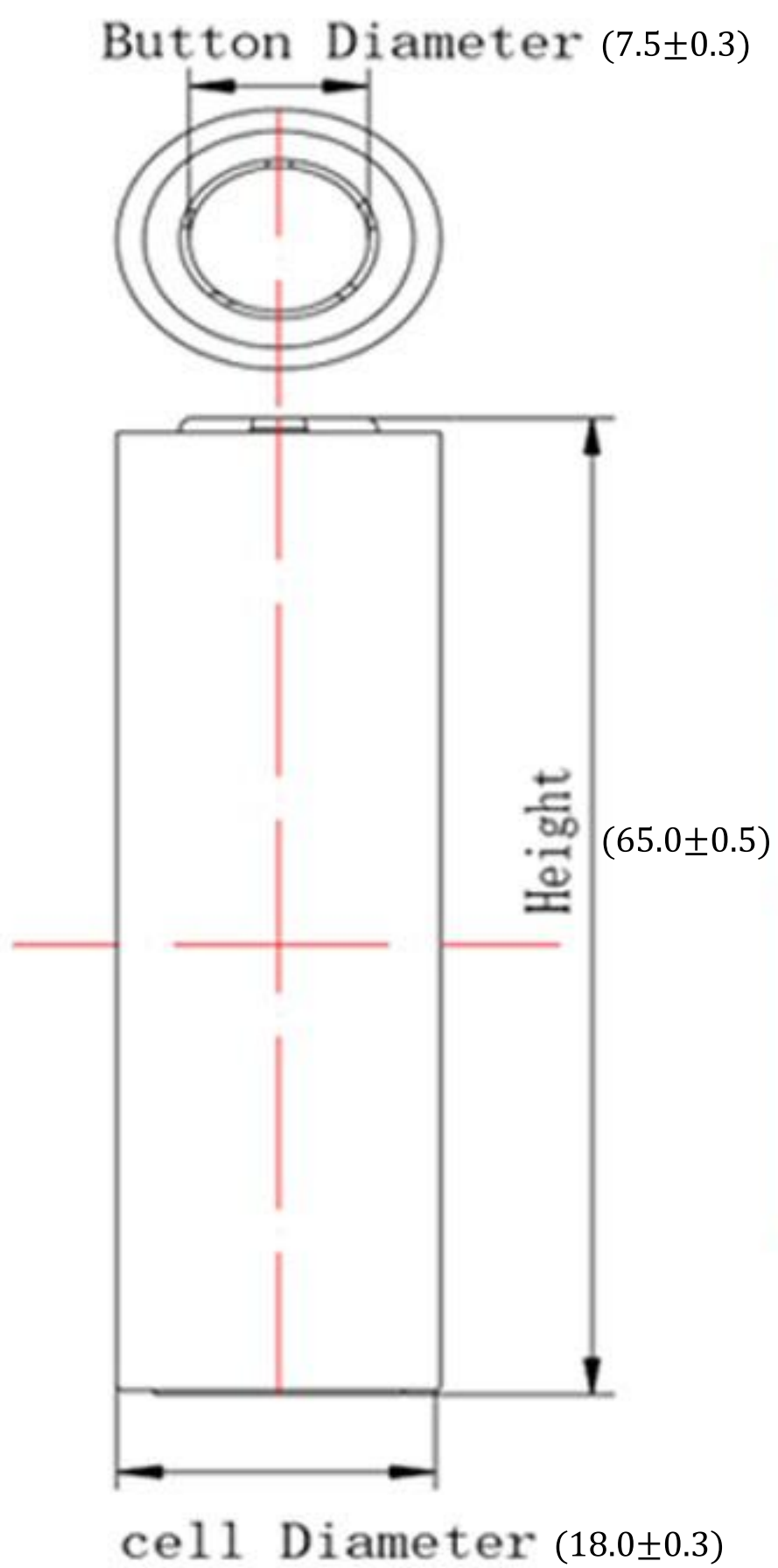
Email Id:  
[sales@seegatecorp.com](mailto:sales@seegatecorp.com)

Mobile No:  
+91 83697 10782 / +91 93214 84177

# Model:

ICR18650-1200mAh

# Dimensions:



Cell diameter (mm)	$18.0 \pm 0.3$
Cell Height (mm)	$65.0 \pm 0.5$
Button diameter (mm)	$7.5 \pm 0.3$

# Specifications

<i>NO.</i>	<i>Item</i>	<i>Specification</i>
1.	Nominal capacity	1200mAh@ 0.2C (240mA)
2.	Minimal capacity	1200mAh@ 0.2C(240mA)
3.	Nominal voltage	3.7V
4.	Impedance	≤60mΩ
5.	Charge cut-off voltage	4.2 V
6.	Charge current	Standard charge : 0.2CsA Rapid charge : 0.5CsA
7.	Standard Charging method	0.2C5A constant current ( CC ) charge to 4 then constant voltage 4.2V ( CV )charge till charge current decline to≤0.02C5A
8.	Charging time	Standard charge : 7.5 h Rapid charge : 3.5 h (reference)
9.	Max. charge current	600mA
10.	Max. Continuous discharge current	600mA
11.	Discharge cut-off voltage	3.0 V
12.	Operating temperature	Charge : 0°C ~ 45°C Discharge : -20°C ~ 60°C
13.	Storage temperature	-10°C ~ 45°C
14.	Storage humidity	≤85%RH
15.	Cell Weight	Approx : 36g

# Battery Performance

<i>No.</i>	<i>Item</i>	<i>Requirements</i>	<i>Test Method</i>
1	Discharge Characteristics	A) 0.2C <sub>5</sub> A ≥5h B) 0.5C <sub>5</sub> A ≥116min C) 1C <sub>5</sub> A ≥54min	Standard charged under the condition of normal atmospheric pressure and the environmental temperature of 20°C±5°C and 45%~75%RH, then rest for 30min and discharge at 0.2C <sub>5</sub> A, 1C <sub>5</sub> A to the discharge cut-off voltage respectively. Charge/discharge cycle can be conducted for 3 times before meeting the Standards (the same below)
2	Norm Storage	Discharge Time ≥ 4.25h	Store for 28 days after standard charged, then discharge at 0.2C <sub>5</sub> A to the discharge cut-off voltage.
3	Cycle Life	Cdischarge ≥ 300times	Standard charged under the condition of normal atmospheric pressure and the environmental temperature of 20 °C ± 5 °C and 45 % ~ 75 % RH, then rest for 30min and discharge at 0.5C <sub>5</sub> A to the discharge cut-off voltage respectively. Nominal capacity get 70-80% cycle times.
4	Cell Voltage	As of shipment	3.85V-4.05V

# Adaptation to Environment Characteristic

No.	Item	Standard	Test Method
1	Thermal Cycle	No smoking, No fire, No explosion, No leakage	Standard charge the battery, then store it at $75\pm 2^{\circ}\text{C}$ for 48hrs, then $-20^{\circ}\text{C}$ for 6h and room temperature for 24hrs. Then discharge at $1\text{C}_{5\text{A}}$ to discharge cut-off voltage.
2	Static Humidity	Discharge Time $\geq 36\text{min}$ No explosion No fire	Standard charge. Put the battery into a $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 90% RH chamber for 48h, then get it out and store it for 2h at room temperature. Observe the variation of the battery's appearance and then discharge at $1\text{C}_{5\text{A}}$ to discharge cut-off voltage, measuring final capacity.
3	Drop	No fire, No explosion Discharge time $\geq 51\text{ min}$	Standard charge. Then let it self-fall off from a height of 1.0m(the lowest height) to a smooth wooden surface. The self-fall off should be conducted from every positive and negative direction. Then discharge at $1\text{C}_{5\text{A}}$ to discharge cut-off voltage. Conduct $1\text{C}_{5\text{A}} / 1\text{C}_{5\text{A}}$ cycle for 3 times.
4	low Temperature Discharge	No fire/explosion A) $55 \geq 90\%$ B) $0^{\circ}\text{C} \geq 80\%$ C) $-10^{\circ}\text{C} \geq 70\%$	Standard charge. Then store for 3h at $60\pm 2^{\circ}\text{C}$ and discharge at $0.2\text{C}_{5\text{A}}$ to discharge cut-off voltage. Then standard charge at room temperature and store for 20h according to the order of $0\pm 2^{\circ}\text{C} / 10\pm 2^{\circ}\text{C}$ and discharge at $0.2\text{C}_{5\text{A}}$ measuring corresponding discharge capacity.
5	Vibration	No remarkable damage No smoking No explosion No leakage	Standard charge. Measure initial status. Equip it to the vibration platform, adjust and prepare the test equipment according to following vibration frequency and relevant swing, doing frequency sweeping from X, Y, Z three directions, each from 10Hz to 55Hz for 30 minutes of recycling, rating of which is 1oct/min: A) vibration frequency: 10Hz~30Hz Displacement breadth (single swing): 0.38mm B) Vibration frequency: 30Hz~55Hz Displacement breadth (single swing) 0.19mm Measure final status after sweeping and Observe the variation of the battery's appearance.

# Safety Performance

<i>No</i>	<i>Item</i>	<i>Requirements</i>	<i>Test Method</i>
1	Overcharge	No fire, No explosion	Standard charge. Charge at 1 C5A to 5V, then change to charge with constant voltage till the current less than or equal to 0.01 C5A.
2	Over Discharge	No fire, No explosion	Standard charged. Discharge at 1C5A to discharge cut-off voltage and then connect the positive and negative terminals with a resistor of 10Ω for 14 days
3	Short Circuit at Room Temperature	No fire, No explosion Max. temperature < 150°C	Standard charged. Keep the battery into a ventilation cabinet and short-circuit the positive and negative terminals directly (general resistance shall be less than or equal to <0.1Ω). Stop the test when the temperature falls to value 10 °C lower than the peak value.
4	Short Circuit at High Temperature	No fire, No explosion Max. temperature < 150°C	Standard charged, Keep the battery into a ventilation cabinet of 60±2 °C and store for 3h. Short-circuit the positive and negative terminals directly (general resistance shall be less than or equal to <0.1Ω) at this temperature. Supervise the variation of the battery's temperature in the process of the test, stop the test when the temperature falls to value 10 °C lower than the peak value.
5	Crush	No fire, No explosion	Standard charge. Keep the battery connected with a thermocouple and put it into two iron sheets (the biggest surface of the battery should be parallel to the surface of the crush platform). Apply 13KN force to crush instantly.
6	Impact	No fire, No explosion	Standard charge. Keep the battery connected with a thermocouple and put it on a impaction platform, place a 15.8mm diameter bar across the center of the biggest surface, then let a 9.1kg heavy hammer self-fall off to the platform from a height of 610mm.
7	Hot Oven	No fire, No explosion	Standard charge. Keep the battery connected with a thermocouple and put it into a gravity convection or circulating air oven. Temperature is raised at a rate of 5 °C± 2 °C per minute to a temperature of 150 °C± 2 °C and remained for 30min at this temperature.

# Comments:

---

## Standard charge:

Charge with current 0.5C5A to limit charge voltage 4.2V under the condition of  $20\text{ }^{\circ}\text{C}\pm 5\text{ }^{\circ}\text{C}$  surrounding temperature, then change to charge with constant voltage till the current less than or to 0.01

## Residual Capacity

The first discharge capacity after being tested by the specific procedure.till the current less than or to 0.01

## Standard Cycle:

After standard charge at 0.5C, rest for 10min, then discharge at 0.5C5A to 3.0V.

## Recovery Capacity:

The discharge capacity by implementing charge-discharge cycle repeatedly after being tested by the specific procedure.

Test should be conducted with new batteries within one month after shipment from our factory, Unless otherwise defined.

# Visual Inspection

---

There shall be no such defect as scratch, flaw, crack, and leakage, which may adversely affect commercial value of the cell.

# Standard environmental test condition

---

Unless otherwise specified, all tests stated in this Product Specification are conducted at below condition:

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

Humidity: 25-85%RH

Atmosphere: 86KPa~106 kPa

# Storage and Others

---

## Long Time Storage :

If the cell is stored for a long time(exceed three months), the cell should be stored in drying and cooling place. The cell should be charged and discharged every six month. The cell's storage voltage should be 3.6~3.9V and the cell is to be stored in a condition as NO.7.

## Others

Any matters that this specification does not cover should be consulted between the customer and HUANYU.

# Warnings and Cautions in using the battery

---

To prevent the possibility of the battery from leaking, heating or explosion please observe the following precautions:

## WARNINGS!

---

Use the battery charger specifically for that purpose when recharging .

Do not discard the battery in fire or a heater.

Do not dismantle the battery .

Do not immerse the battery in water or seawater, and keep the battery in a cool dry surrounding if it stands by.

Do not use or leave the battery near a heat source as fire or heater.

Please choose lithium-ion battery charger when charging.

Do not reverse the position and negative terminals.

Do not connect the battery to an electrical outlet.

Do not short-circuit the battery by directly connecting the positive and negative terminals with metal objects.

Do not transport or store the battery together with metal objects such as hairpins, necklaces, etc.

Do not strike, trample or throw the battery.

Do not directly solder the battery and pierce the battery with a nail or other sharp objects.



# CAUTIONS!

---

Do not use or leave the battery at high temperature (for example, at strong direct sunlight or in a vehicle in extremely hot weather). Otherwise, it can overheat or fire or its performance will be degenerate and its service life will be decreased.

Do not use the battery in a location where static electricity and magnetic field is great, otherwise, the safety devices may be damaged, causing hidden trouble of safety.

If the battery leaks, and the electrolyte get into the eyes, do not rub the eyes, instead, rinse the eyes with clean water, and immediately seek medical attention. Otherwise, it may injure eyes.

If the battery gives off an odor, generates heat, becomes discolored or deformed, or in any way appear abnormal during use, recharging or storage, immediately remove it from the device or battery charger and stop using it.

In case the battery terminals are dirty, clean the terminals with a dry cloth before use. Otherwise performance may occur due to the poor connection with the instrument.

Be aware discarded batteries may cause fire or explosion, tape the battery terminals to insulate them.