XCell®

Art.-Nr: 123409
Bezeichnung: X4300SCR

Customer recognition	Signature confirmation	
Please carefully verify all the function of the Product, After signing recognize that function of product is Correct by customers, and all the function of products are in line with specifications of the customers.	Approval:	
	Sign:	Date:

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Remarks:

1. C_5 means the value of the nominal capacity of a cell.

***A.* Basic index**

Type		Sealed Rechargeable Ni-MH
Model		GLH-SC4300-10C
Size		SC
Nominal Voltage (V)		1.2V
Minimum Capacity (mAh)		4200 mAh
Typical Capacity (mAh)		4300 mAh
Typical Weight		64g
Dimension	Height	43.8(±0.2mm)
	Diameter	22.9(±0.2mm)
Standard Charge	Current (mA)	430(0.1C_5)
	Time (min)	960 min
Quick Charge	Current (mA)	2150 (0.5C_5)
	Time (h)	-▽V 5mv
Rapid Charge	Current (mA)	4300 (1C_5)
	Time (min)	-▽V 5mv
Operation Temperature(℃)	Standard Charge	0~45℃
	Quick Charge	0~40℃
	Rapid Charge	0~40℃
	Discharge	-20~55℃
Storage Temperature(℃)	≤12 months	-20~25℃
	≤3 months	-20~35℃
	≤1 month	-20~40℃
Trickle Charge (mA)		39~65
Maximum Discharge (mA)(continuous)		30A—43A
Internal Impedance (mΩ)		≤ 5 (1000Hz)
Charge Retention(20℃)		≥70%
IEC Cycle Life (Times)		≥500
30A Discharge Cycle Life (Times)		≥60

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B. Test Report

Tests are carried out within one month of delivery under the following conditions:

Room Temperature 20±5℃

Relative Humidity 65%±20%

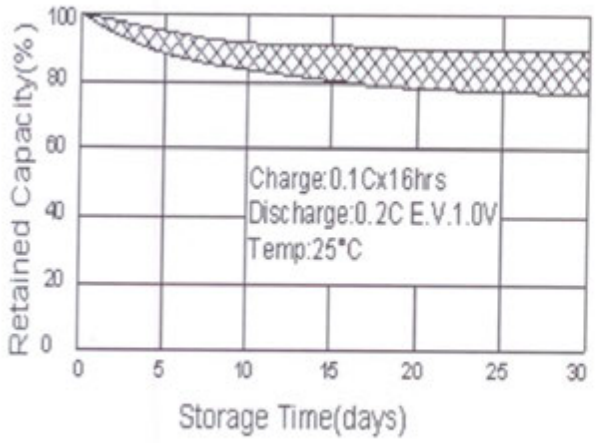
And all the test standards are conformed to IEC61951-2 standards

Test items	Test condition	Test results
Internal Impedance	After the battery is fully charged, within 4 hour, the impedance is tested by 1000Hz AC source.	≤ 5 mΩ
Capacity (Quick Charge)	Discharging at 860 mA to1.00V/ pack. Charging at 430mA for 15 hour, Discharging at 860mA to 1.0V/ pack. Measuring the discharge time	Up to 3 cycles are allowed ≥300min
30A Capacity MPV	Discharging at 2150mA to 1.0V，Charging at 2150mA for-▽V 5mv, 30A discharge to 0.9V Measuring the discharge Capacity Mean Voltage	Up to 3 cycles are allowed Minimum Capacity ≥4200mAh MPV ≥1.16V
30A Discharge Cycle Life (Times)	Discharging at 2150mA to 1.00V/ pack. Charging at 2150mA for-▽V5mv 30A discharge to 0.9V Stand Ting for 90min，life-cycle test： Charging at 2150mA for-▽V5mv 30A discharge to 0.9V Stand Ting for 90min，Cycle No 60	Cycle No 60：Residual capacity ≥3900mAh（90%）
Charge Retention	The fully charged battery is held under temperature of 20±2ºC for 28 days, the capacity is measured at 860mA discharging rate	≥210min
Voltage Retention	Discharging at 2150mA to 1.00V/ pack.Charging at 1000mA for 2.2 hour，20±5℃ stored 6 months	Volt≥1.10V
	Discharging at 2150mA to 1.00V/ pack.Charging at 1000mA for 2.2 hour，30±5℃ stored 4 months	Volt≥1.10V

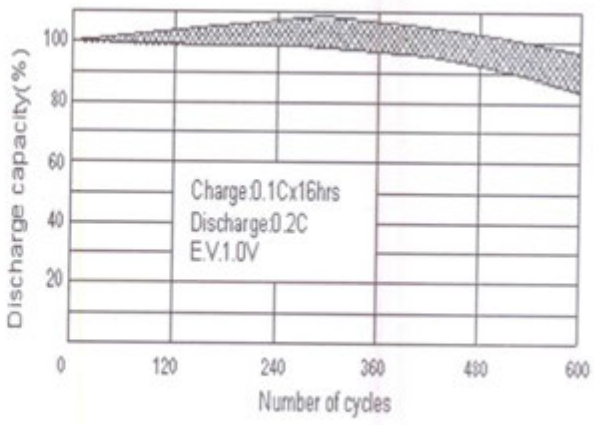
Overcharge test	The cell is charged continuously for 60 hour at 0.1C	No functional change,No leakage
IEC Cycle Life	IEC61951-2(2003)7.4.1.1	≥500
Low Temperature Discharge	Standard Charge, Storage:24hrs at 0±2℃ 0.2C discharge at 0±2℃	≥180min
Short circuit test	The is fully charged cell is shorted for 1 hour with a load or lighter with its resistance less than 100mΩ. This test must be carried out in a protective chamber	Operation of safety valve No explosion Leakage may occur
Bump test	The bump test is carried out under the following conditions: Peak acceleration: 98m/s2 Corresponding duration of pulse：16ms Corresponding velocity change：1.00m/s Number of bumps: 1000times： 1000 次	No functional change,No leakage
Free falling(drop)	Charge at 0.1C for 16hrs,and then leave for 24hrs,check battery before / after drop Height: 100 cm Thickness of wooden board: 20mm Direction is not specified Test for 6 times	△V<0.02V/cell △Ri<5%/cell

C. General Characteristic

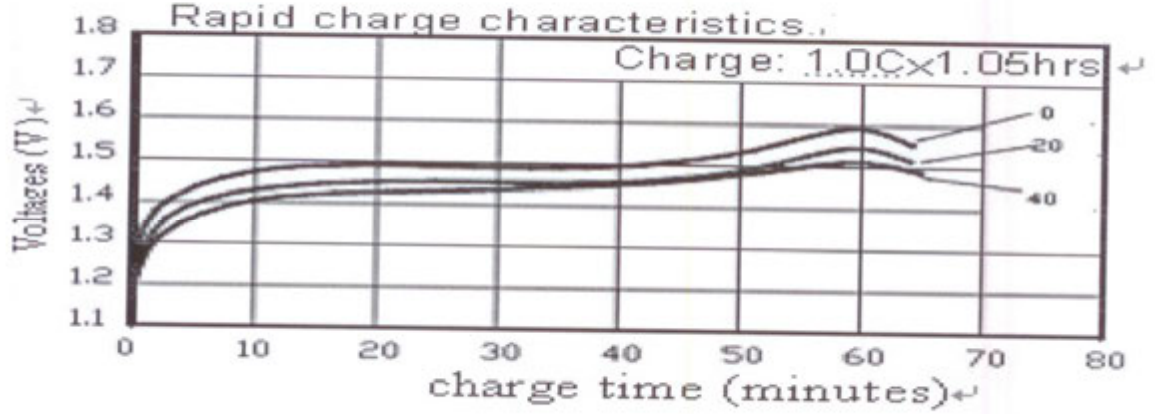
Storage Characteristics

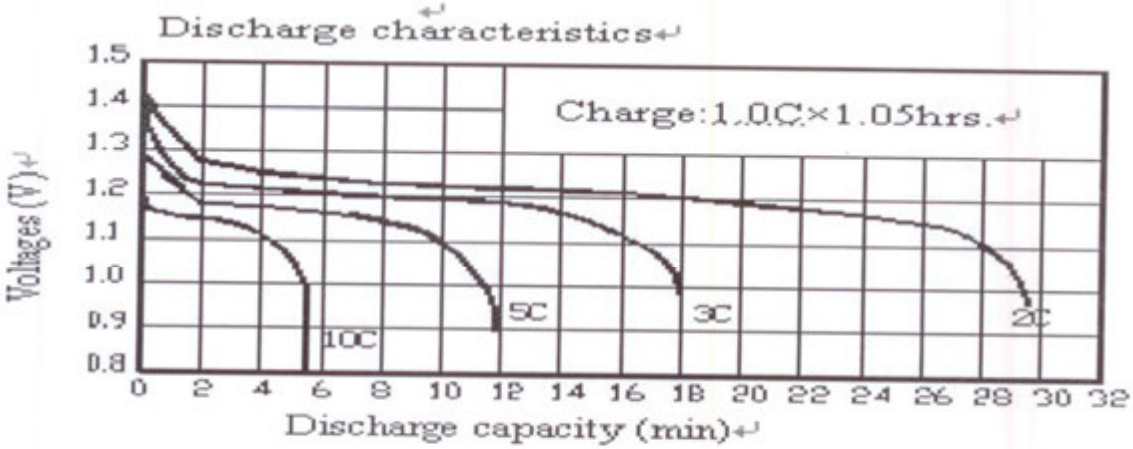


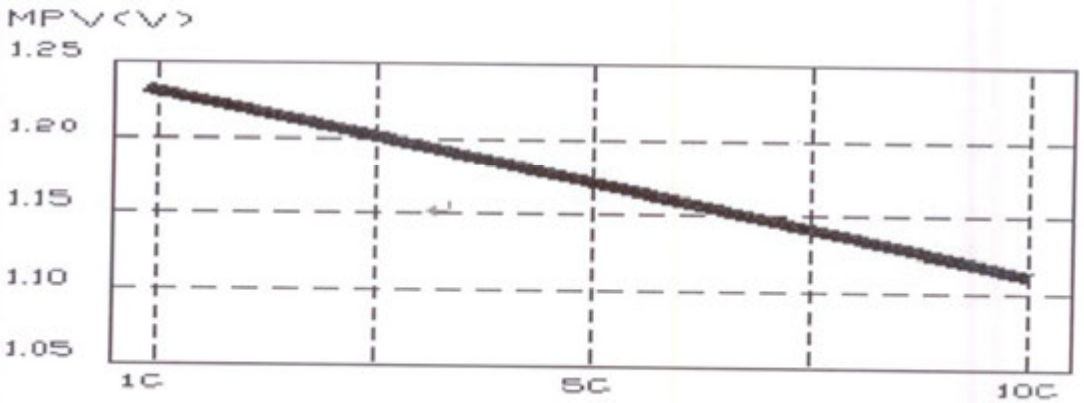
Cycle Life



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Rapid charge characteristics.
Charge: 1.0C×1.05hrs
Voltages (V)
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
0
10
20
30
40
50
60
70
80
0
20
40
charge time (minutes)


Discharge characteristics
Charge:1.0C×1.05hrs.
Voltages (V)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
10C
5C
3C
2C
Discharge capacity (min)


MPV(V)
1.25
1.20
1.15
1.10
1.05
1C
5C
10C

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D. Precautions:

1. Batteries should be charged prior to use.
2. When using a new battery for the first time or after long term storage, please fully charge the battery Before use.
3. For charging methods please referrence to our technical handbook.
4. Use the correct charger for Ni-Cd or Ni-MH batteries.
5. Do not reverse charge batteries.
6. Do not short circuit batteries, permanent damage to batteries may result.
7. Do not incinerate or mutilate batteries, may burst or release toxic material.
8. Do not subject batteries to adverse condition such as extreme temperature, deep cycling and excessive Overcharge / overdischarge.
9. Store batteries in a cool dry place.
10. Do not mix Gelong batteries with other battery brands or batteries of a different chemistry such as Alkaline and zinc carbon.
11. Do not mix new batteries in use with semi-used batteries, overdischarge may occur.
12. Avoid batteries being used in an airtight compartment. Ventilation should be provided inside the battery compartment; otherwise batteries may generate hydrogen gas, which could cause an explosion if exposedto an ignition source.
13. When connecting a battery pack to a charger, ensure correct polarity.
14. If find any noise, excessive temperature or leakage from a battery, please stop its use.
15. When the battery is hot, please do not touch it and handle it, until it has cooled down.
16. Do not remove the outer sleeve from a battery pack nor cut into its housing.
17. When find battery power down during use, please switch off the device to avoid overdischarge.
18. When not using a battery, disconnect it from the device.
19. Unplug a battery by holding the connector itself and not by pulling at its cord.
20. After use, if the battery is hot, before recharging it, allow it to cool in a well-ventilated place out of direct sunlight.
21. Never put a battery into water or seawater.
22. During long term storage, battery should be charged and discharged once every 4 months.
23. Do not attempt to take batteries apart or subject them to pressure or impact. Heat may be generated or fire may result. The alkaline electrolyte is harmful to eyes and skin, and it may damage clothing upon contact.
24. Keep away from children. If swallowed, contact a physician at once.
25. Please contact Gelong before conducting those destructive tests.

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E.Append: IEC Endurance in cycles

Before the endurance in cycles test, the cell shall be discharged at 0.2 1_tA to a final voltage of 1.0V/sell. The following endurance test shall then be carried out, irrespective of cell designation, in an ambient temperature of 20℃±5℃.Charge and discharge shall be carried out at constant current throughout, using the conditions specified in table 5.Precautions shall be taken to prevent the cell-case temperature from rising above 35℃ during the test, by providing a forced air draught if necessary.
NOTE-Actual cell temperature, not the ambient temperature, determines cell performance.

Table 5-Endurance in cycles

Cycle number	Charge	*Stand in* Charged condition	Discharge
1	0.1C_tA for 16 h	None	0.25 C_tA for 2 h 20 min[2)]
2 to 48	0.25 C_tA for 3 h 10 min	None	0.25 C_tA for 2 h 20 min[2)]
49	0.25 C_tA for 3 h 10 min	None	0.25 C_tA to 1.0V/cell
50	0.1 C_tA for 16 h	1h to 4h	0.2C_5A to 1.0V/cell
• It is permissible to allow sufficient open-circuit rest time after the completion of discharge at cycle 50,so as to start cycle 51 at an exact two-week internal. A similar procedure may be adopted at cycles 100,150,200,250,300,350,400and 450. • If cell discharge voltage drops below 1.0V/cell,discharge may be discontinued.			

Cycles 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3h at this stage, a further cycle as specified for cycle 50 shall be carried out. The endurance test is considered complete when two such successive cycles give a discharge duration less than 3h.
The number of cycles obtained when the test is completed shall be not less than 500.

Manufacturer reserve the right to alter or amend the design, model and specification without prior notice