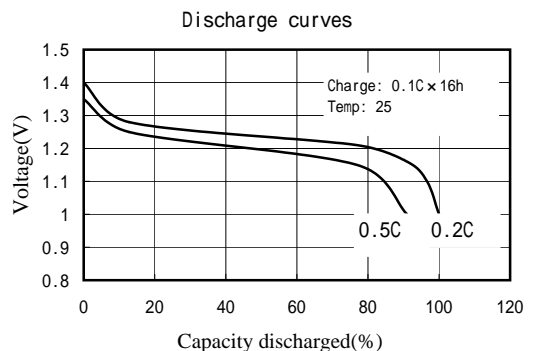
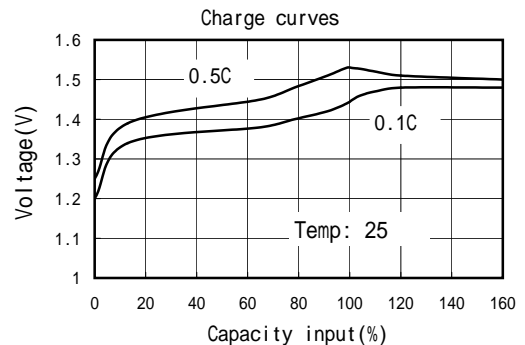
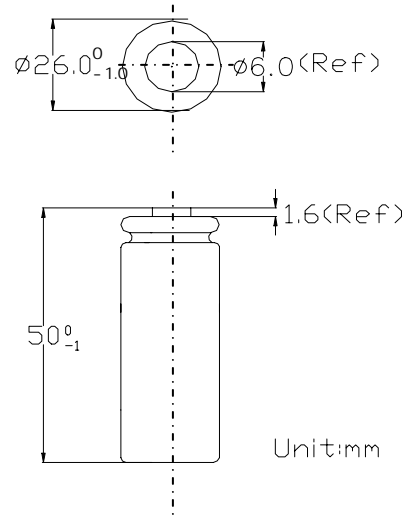


Data Sheet

Type : Sealed Rechargeable Nickel Metal Hydride Cylindrical Cell

Model No.	: LH400-CH50LF
Nominal Dimension	: ± 26.0 (-1.0mm)
(with sleeve)	: H=50.0 (-1.0mm)
Applications	: Recommended discharge current 400-2000mA
Nominal Voltage	: 1.2V
Capacity	: Minimum: 4000mAh : Typical: 4050mAh When discharged at 0.2C to 1.0V at 20
Charging Condition	: 400mA for 16hrs at 20
Fast Charge	: up to 2000mA (0.5C) : charge termination control recommended control parameters: - V: 0-5mV DT/dt : 0.8-1 /min TCO : 45-50 Timer : 110% nominal input
Permanent charge	: 120mA to 200mA
Max. overcharge current	: 400mA (up to 1 year)
Service Life	: > 500 cycles (IEC standard)
Continuous Overcharge	: 400mA maximum current for 1 year No conspicuous deformation and/or leakage
Weight	: 80g
Internal Resistance	: 30m (upon fully charged)
Max. Charging Voltage	: 1.5V at 400mA charging
Ambient Temperature	: Standard Charging : 0 to 45
Range	: Fast Charging : 10 to 40 : Discharging : -20 to 60 : Permanent charge : 0 to 45 : Storage (1year) : -20 to 35 : Storage(6 month) : -20 to 45 : Storage(1 month) : -20 to 55



1. CHARACTERISTICS

Unless special stated, tests should be carried out within one month of delivery.

Ambient conditions:

Ambient Temperature: 20 ± 5

Relative Humidity: $65 \pm 20\%RH$

Notes: 1)Standard charge/discharge condition

Charge: $400 \text{ mA}(0.1C) \times 16\text{hrs}$

Discharge: $800 \text{ mA}(0.2C)$ to $1.0V$

2)Except special explaining, the battery shall not leakage and PVC shall not breakage during the test.

Test Items	Test Conditions	Requirements	Remark
Capacity	Standard Charge and Discharge	Discharge Capacity: 4000 mAh	up to three cycles are allowed
Internal Impedance(Ri)	At 1kHz internal impedance between the battery terminals shall be measured within 1 hour after standard charge	30 m	
Open-circuit Voltage (OCV)	Voltage between the battery terminals shall be measured within 1 hour after standard charge	1.25 V/cell	
High-rate discharge	After standard charge, rest for 1 hour before discharge to 1.0V at 2000 mA current.	108minutes	up to three cycles are allowed
IEC cycle life	IEC61951-2/2003/7.4.1.1 See Remark 1	500 cycles	
Self- discharge	Standard charged , stored for 180 days below 20 ,then standard discharge to 1.0V	Discharge Capacity: 85% original capacity	
	Standard charged , stored for 360 days below 20 ,then standard discharge to 1.0V	Discharge Capacity: 80% original capacity	
Over-charge	Charge at 400 mA (0.1 C) for 1 year.	No leakage, nor disrupt, nor burst.	
Over- discharge	After standard discharge , be conducted with constant load resistor 2 for 3 days Then standard charge and discharge	Discharge Capacity: 80%original capacity	
Vibration resistance	Standard charge. Then leave for 24 hours, check cell before/after vibration. Amplitude:1.5mm Vibration:3000CPM	Change of voltage: $V < 0.02V/ \text{cell}$ Change of internal impedance $R < 5m / \text{cell}$	Any direction for 60 minutes

Test Items	Test Conditions	Requirements	Remark
Drop resistance	After standard charge, rest for 24 hours, check battery before/after dropped: Height: 100 cm Thickness of the wooden board: 30 mm	Change of voltage: $V < 0.02V/ \text{ cell}$ Change of internal impedance: $R < 5m / \text{ cell}$ No breakage except impact point for PVC sleeves	Direction is not specified, Test for 3 times
Safety	The Reverse-charge is conducted for 60 minutes at current of 1C after pre-discharge at 0.2C current to 0V	The battery shall not explode, but leakage & deformation are acceptable	
External Short Circuit	After standard charge, short circuit the cell at 20 ± 5 until the cell temperature returns to ambient temperature. (The resistance of the inter-connecting circuitry shall not exceed 0.1ohm.)	The battery shall not fire and explode, but leakage & deformation are acceptable	

***REMARK :**

1.Cycle life: IEC61951-2/2003/7.4.1.1

Cycles	Charge	rest	Discharge
1	$0.1C \times 16\text{hrs}$	0	$0.25C \times 2\text{hrs } 20\text{mins}$
2~48	$0.25C \times 3\text{hrs } 10\text{mins}$	0	$0.25 C \times 2\text{hrs } 20\text{mins}$
49	$0.25 C \times 3\text{hrs } 10\text{mins}$	0	$0.25C$ to 1.0V/cell
50	$0.1 C \times 16\text{hrs}$	1~4hrs	$0.20C$ to 1.0V/cell
Repeat 1 to 50 cycles ,until the discharge time of any 50th cycle is less than 3hrs			

2.COSMETIC

Batteries should be without any flaw、stain、discoloration or leakage and deformation.

3.WARNING:

- 3.1 Do not dispose of cell into fire or dismantled under any condition.
- 3.2 Do not mix different cell types and capacities in the same battery assembly.
- 3.3 Charge and discharge under specified ambient temperature.
- 3.4 Short circuit leading to cell venting must be avoided.
- 3.5 Never solder onto cell directly.
- 3.6 Cell reversal should be avoided.

4. NOTICE:

- 4.1 Use batteries in extreme condition may affect the service life, such as: extreme temperature 、 deep cycle、 extreme overcharge and over discharge.
- 4.2 Batteries should be stored in a cool, dry place.
- 4.3 Once problems be found , stop using , send batteries to local agent.

5. STORAGE:

- 5.1 It is strongly recommended to stored Ni-MH batteries and cells in the temperature range from -20 to 35 ,and in low humidity and no corrosive gas environment, to maintain a reasonably high capacity recovery level.
- 5.2 Avoid storage higher (e.g. 35), lower temperature than -20 , or higher humidity which would result in deterioration or damage to the cells and batteries such as follows:
 - . Permanent capacity loss.
 - . Electrolyte leakage resulted from the expansion or shrinkage of organic material inside the cells.
 - . Rust of metal parts.
- 5.3 Up to three full cycles of charge/discharge after long-term storage may need to obtain highest capacity.

6. REFERENCE:

Please contact us if there is any question on using the batteries.