1、SCOPE

This specification governs the performance of the following Nickel-Cadmium Cylindrical cell and its stack-up batteries。

Model: CD-AA1000

Cell Size: AA ($\Phi 14.1^{\pm 0.2} \times 50.0^{\pm 0.5}$)

2、DATA OF STACK UP BATTERIES

All data involves voltage and weight to stack-up battery are equal to the value of unit cell times the number of unit cell which consisted in the stack-up batteries

Example: Stack-up battery consisting three unit cells

Nominal voltage of unit cell=1.2V

Nominal voltage of stack-up batteries=1.2V×3=3.6V

3、RATINGS

Description	Unit	Specification	Conditions
Nominal Voltage	V/Cell	1.2	Unit cell
Nominal Capacity	mAh	1000	Standard Charge/Discharge
Standard Charge	mA	100(0.1C)	T_1= 0~50℃(see Note1)
	Hour	14~16	
Quick Charge	mA	300(0.3C)	-Δ V=0-5mV/Cell or Timer CutOff=120 % nominal capacity or Temp.Cutoff=55℃, T_1= 10~50℃
	hour	4.0hrs approx. (see Note 2)	
Trickle Charge	mA	(0.05C)~(0.1C)	T_1= 0~50℃
Standard discharge	mA	200(0.2C)	T_1= -30~60℃ Humidity: Max.85%
Discharge Cut-off Voltage	V/Cell	1.0	
Storage Temperature	℃	-30~65	Discharged state、Humidity、Max.85%
Typical Weight	Gram	25	

4、PERFORMANCE

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

Ambient Temperature, T_1: 20±5℃

Relative Humidity: 65±20%

Notes: Standard Charge/Discharge Conditions:

Charge: 100mA (0.1C)× 14 hours

Discharge: 200mA(0.2C) to 1.0V/Cell

Test	Unit	Specification	Conditions	Remarks
Capacity	mAh	≥1000	Standard Charge /Discharge	up to 3 cycles are allowed
Open Circuit Voltage(OCV)	V/ Cell	≥1.25	Within l hour after standard Charge	
Internal Impedance	mΩ / Cell	Max≤25	Upon fully charge(lKHz)	
High Rate Discharge(1C)	Minute	≥54	Standard Charge, l hour rest Before discharge by 1000mA (1C)to 1.0V/cell	up to 3 cycles are allowed
Charge Retention	mAh	≥700(70%)	Standard Charge, Storage: 28 days, Standard Discharge	
IEC Cycle Life	Cycle	≥500	IEC285(1993)4.4.1	(see Note 3)
Accelerated Cycle Life	Cycle	≥400	Charge:300mA(0.3C) Discharge:1000mA(1C) To 1.0V/Cell, end-of:80% nominal capacity	Cycling charging cut-off condition : -△V=0~5mV/cellor Timer cut -off=110% Nominal capacity input or Temp.cutoff=55℃
Leakage		No leakage nor deformation	Fully charged at 300mA(0.3C) For 4.0 hrs Stand for 14 days	
Vibration Resistance		Change of voltage should be under 0.02V/ Cell, Change of impedance should be under 5 mΩ / Cell	Charge the cell 0.1C 14hrs,then leave for 24hrs,check Cell before/after vibration, Amplitude 1.5mm Vibration 3000 CPM Any direction for 60mins.	
Impact Resistance		Change of voltage sho-uld be under 0.02V/ Cell Change of impedance should be under 5 mΩ / Cell	Charge the cell 0.1C 14hrs Then leave for 24hrs,check bat-before/after dropped, Height 80cm Woodcn board(thickness 30mm) Direction not specified,3 times.	

5、CONFIGURATION, DIMENSIONS AND MARKINGS

Please refer to the attached drawing.

6、EXTERNAL APPEARANCE

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

7、WARRANTY

One year limited warranty against workmanship and material defects.

8、CAUTION

(1)Reverse charging is not acceptable.

(2)Charge before use. The cells/batteries are delivered in an uncharged state.

(3)Do not charge/discharge with more than our specified current.

(4)Do not short circuit the cell/battery Permanent damage to the cell/battery may result.

(5)Do not incinerate or mutilate the cell/battery.

(6)Do not solder directly to the cell/battery.

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

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

Notes:

(1) T_1: Ambient Temperature.

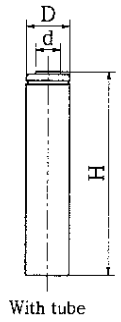
(2) Approximate charge time from discharged state, for reference only.

(3) IEC285(1993)4.4.1 Cycle Life:

Cycle No.	Charge	Rest	Discharge
1	0.1C×16h	None	0.25C×2h20min
2-48	0.25C×3h10min	None	0.25×2h20min
49	0.25C×3h10min	None	0.25C to 1.0V/ cell
50	0.1C×16h	1-4h	0.2C to 1.0V/ cell
Cycles l to so shall be repeated until the discharge duration on any 50th Cycle becomes less than 3 h.			

MODEL No: CD-AA1000(H=50)
Ni-Cd

Description:1000mAh AA SIZE

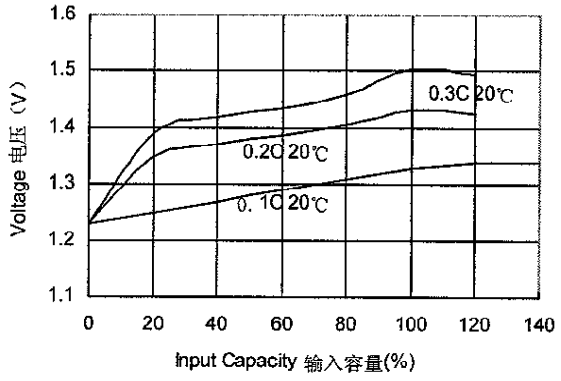


Dimension of the cell	
D	Φ14.1±0.2
d	Φ8.1±0.05
H	50.0±0.5

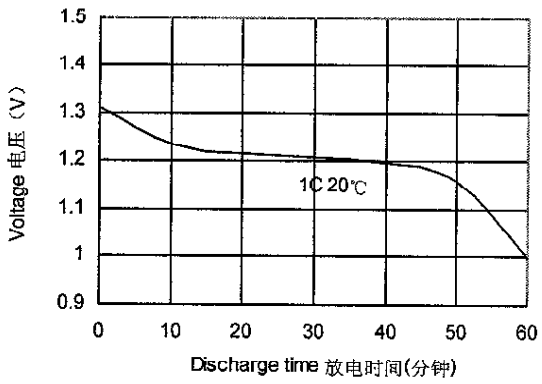
Specification

Nominal Capacity 额定容量			1000 mAh
Nominal Voltage 额定电压			1.2 V
Charge current 充电电流		Standard 标准	100mA
		Quick 快充	300mA
Charge time 充电时间		Standard 标准	14~16 Hrs
		Quick 快充	4.0hrs
Ambient Temperature 使用温度	Charge 充电	Standard 标准	0℃~50℃
		Quick 快充	10℃~50℃
	Discharge 放电		-30℃~60℃
	Storage 储存		-30℃~65℃
Internal Impedance(AC) (After Charge)充电后内阻			Max≤25
Weight 重量			25g

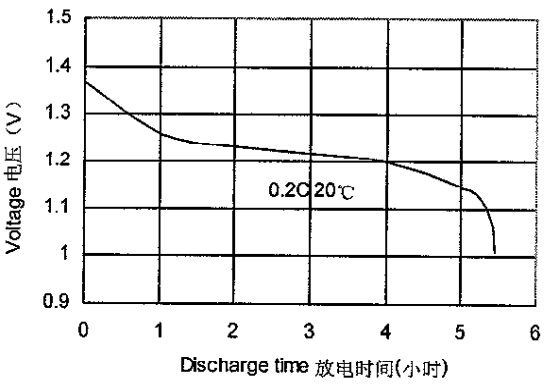
Charge (充 电)



Discharge at high rate(高倍率放电)



Discharge at low rate(低倍率放电)



Charge Retention(荷电保持能力)