

1、SCOPE

This specification governs the performance of the following CT Nickel-Cadmium cylindrical cell and its stack-up battery.

Model: D4500

Cell Size: Dcrew cut(32.1±0.1×59.0±0.5)mm

Dcusp(32.1±0.1×60.5±0.5)mm

2、DATA OF STACK UP BATTERIES

All data involve voltage and weight of stack-up batteries are equal to the value of unit cell multiplied by the number of unit cell which consisted in the stack-up batteries.

Example : Stack-up batteries consisting three unit cells

Nominal voltage of unit cell=1.2V

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

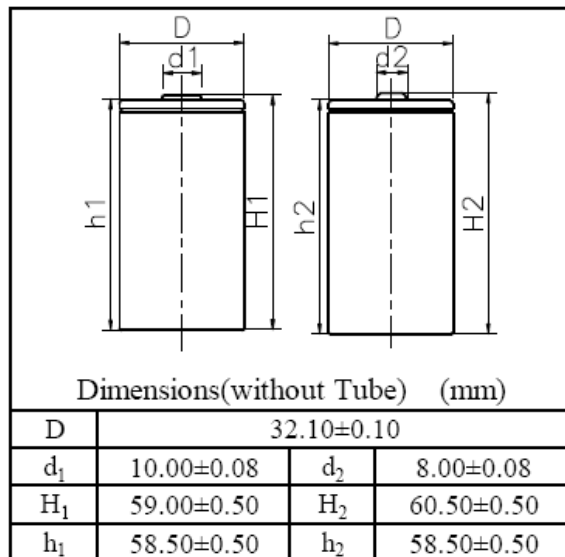
3、RATINGS

Description	Unit	Specification	Condition
Nominal Voltage	V/cell	1.2	Unit cell or stack-up batteries
Nominal Capacity	mAh	4500	Standard Charge/Discharge
Standard Charge	mA	450 (0.1C)	T ₁ =20±5℃ (See Note 1)
	hour	16	
Fast Charge	mA	1350 (0.3C)	- ΔV=0~15mV/cell , Timer Cutoff=120%nominal capacity , Temp.Cutoff=55℃ , dT/dt=0.8℃/min, T ₁ =20±5℃
	hour	4 approx (See Note 2)	
Trickle Charge	mA	(0.03C)~(0.05C)	T ₁ =20±5℃
Standard discharge	mA	900 (0.2C)	T ₁ = 20±5℃ Humidity: Max85%
Discharge Cut-off Voltage	V/cell	1.0	
Storage Temperature	℃	-20~30(Within 1 year)*	Discharged state Humidity: Max85%
		-20~40(Within 6 months)	
		-20~50(Within 1 month)	
		-20~60(Within 1 week)	
Typical Weight	Gram	120	unit cell

*To keep the best performance for those not used for a long time,we recommend to charge and discharge the cells/batteries at least once in every 6 months.

PX 1.2-D45001.2V 4500mAh D
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Test	Unit	Specification	Condition	Remarks
Capacity	mAh	≥ 4500	Standard Charge / discharge	up to 3 cycles are allowed
Open Circuit Voltage(OCV)	V	≥ 1.25	Within 1 hour after standard charge	
Internal Impedance	m Ω	≤ 9	Upon fully charged(1KHz)	
High Rate Discharge(1C)	min	≥ 51	Standard Charge, 1 hour rest before discharge by 1C to 1.0V/cell	up to 3 cycles are allowed
Charge Retention	mAh	≥ 2925 (65%)	Standard Charge,Storage: 28 days,Standard Discharge	$T_1=20\pm 5^\circ\text{C}$
IEC Cycle Life	Cycle	≥ 500	IEC61951-1(2003)7.4.1.1	see Note 3
Leakage		No leakage nor deformation	Fully charged at 450 mA for 28 days	
Vibration Resistance		Change of voltage should be less than 0.02V/cell,change of impedance should be less than 5milliohm/cell	Charge the battery at 0.1C for 14hrs,then leave for 24hrs,check battery before/after vibration,amplitude 1.5mm,vibration 3000 CPM,any direction for 60mins.	
Impact Resistance		Change of voltage should be less than 0.02V/cell,change of impedance should be less than 5milliohm/cell	Charge the battery at 0.1C for 14hrs,then leave for 24hrs,check battery before/after dropped,height 50 cm wooden board(thickness 30mm)direction not specified,3 times.	

**Specification**

Nominal Capacity		4500 mAh	
Nominal Voltage		1.2 V	
Charge current	Standard	450 mA	
	Fast	1350 mA	
Charge time	Standard	16 Hrs	
	Fast	4 Hrs	
Ambient Temperature	Charge	Standard	0 $^\circ\text{C}$ ~45 $^\circ\text{C}$
		Fast	10 $^\circ\text{C}$ ~45 $^\circ\text{C}$
	Discharge	-30 $^\circ\text{C}$ ~60 $^\circ\text{C}$	
	Storage	-20 $^\circ\text{C}$ ~60 $^\circ\text{C}$	
Internal Impedance(m Ω) (After Charge)		≤ 9	
Weight		120 g	

PX 1.2-D4500

1.2V 4500mAh D
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