DiVolta®

Product Specifications Model No.: DN-3300SCP

1. APPLICABILITY

This specification is applicable to DiVolta rechargeable sealed NiMH cylindrical cell, DN-3300SCP.

2. GENERAL

2.01	Type designation	:	DN-3300SCP
2.02	Nominal voltage	:	1.2V
2.03	Shape and dimension	:	Refer to Drawing 1
2.04	Typical weight	:	65g
2.05	Typical Capacity	:	3350mAh after standard charge and 0,2C discharge
2.06	Nominal Capacity	:	3300mAh
2.07	Standard charge	:	0.1C for 14hrs. to 16 hrs.
2.08	Fast charge	:	Up to 3300mA -delta V controlled: 5mV/cell dT/dt controlled: 1°C per min.
2.9	Trickle charge	:	0.03C to 0.05C
2.10	Operating Temperature	:	Charging: Standard: 0°C to 45°C Fast: 10°C to 45°C Discharging: -10°C to 65°C
2.12	Storage Temperature	:	< 1 year: -20°C to 35°C < 3 months: -20°C to 45°C
2.13	Maximum discharge current	:	66A
2.14	Discharge cut-off Voltage	:	0.8V/cell

3. APPEARANCE

There shall be no dirt, scratch or deformation detrimental to practical service in appearance.

4. TEST METHOD

4.1 Electrical

Time Frame	: Within one month of delivery.
Voltmeter	: Digital Voltmeter with the precision of 1mV (internal resistance not less than 1 Meg ohm)
Test temperature	: 20 ± 5 °C
Relative Humidity	: 65 ± 20 %

5. Performance

5.1 Standard Charge
Standard charge means charging the cell with a current of 0.1C for 14hrs. to 16hrs.

5.2 Capacity
The initial capacity is the discharge capacity of the cell measured with a discharging current of 0.2C within one hour after the standard charge. Up to three cycles are allowed in order to reach the minimum capacity.

5.3 Open circuit Voltage
The open circuit Voltage is above 1.25V within one hour after standard charge.

5.4 Initial Impedance
The initial internal resistance is measured at 1KHz within one hour after standard charge

5.5 High rate capacity
The high rate capacity is measured with a discharging current of 2C to a Voltage of 0.95V after standard charge.
High rate capacity >3000mAh

5.6 Charge retention
After standard charge and a storage time of 28 days at ambient temperature, the capacity is measured using standard discharge.
Capacity > 2310mAh

5.7 IEC cycle life
According IEC285 (1993) 4.4.1, the cycle life is 500 cycles.

5.8 Leakage
After charging at 1C and storage for 14 days at room temperature, no leakage nor deformation.

5.9 Short Circuit
After standard charge, the cell is short circuited for one hour with the following wire:
0.75mm^2 x 20mm
Leakage and deformation may occur, however, no explosion is allowed.

5.10 Safety Device Operation
This means the safety device of the cell will allow the escape of gas if the internal pressure exceeds a critical value. The cell shall be forced discharged at an ambient temperature of 20°C ± 5°C at a constant current of 0.2C to a final voltage of 0 V. The current shall then be increased to 1C and maintained in direction at the same ambient temperature of 20°C ± 5°C for 60 min.
Leakage and deformation may occur, however, no explosion is allowed.

5.11 Vibration Test

This means the endurance of the cell against vibrations

Conditions:	Amplitude:	1.5mm
	Vibration:	3000CPM
	Time:	60min.
Criteria:	No major mechanical damage nor functional loss.	

5.12 Drop Test

This means the endurance of the cell against drop

Conditions:	Height:	1m
	Direction:	Not specified
	Surface:	Wooden board 5 cm thick
	Number of tests:	Three times
Criteria:	No major mechanical damage nor functional loss.	

5.13 Overcharging

Avoid overcharging

6. Warranty

As long as the cell is treated in accordance with this product specification, one year limited warranty against workmanship and material defects is given.

7. Drawings and Dimensions

DN-3300SCP Cell

Sealed rechargeable Ni-MH cylindrical cell

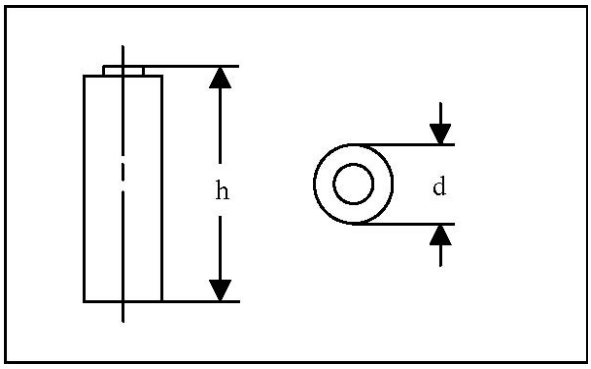
Cell dimensions (with shrink sleeve)

Diameter	22.7 – 0.4mm
Height	43.2 – 0.4mm
Approximate Weight	65g

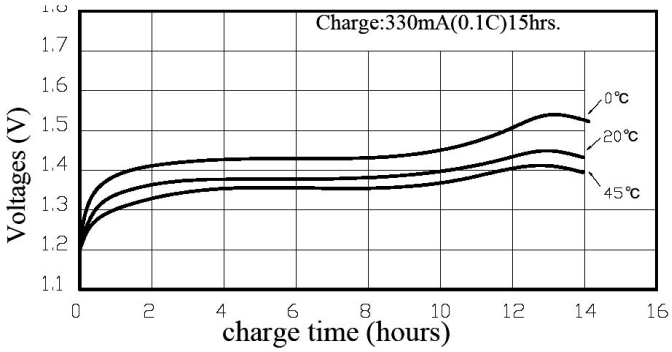
Specifications

Nominal Voltage			1.2V
0.2C Discharge Capacity*	Typical**		3350mAh
	Nominal		3300mAh
Typical Internal Impedance at 1kHz, fully charged, RT			10mOhm(max)
Charge	Standard		330mA for 14 to 16hrs.
	Fast***		Up to 3300mA - delta V or dT/dt controlled
Life Expectancy	500 cycles		
Operating Temperature	Charge	Standard	0ºC to 45ºC
		Fast***	10ºC to 40ºC
	Discharge		-10ºC to 65ºC
	Storage	< 1 year	-20ºC to 35ºC
		< 3 months	-20ºC to 45ºC

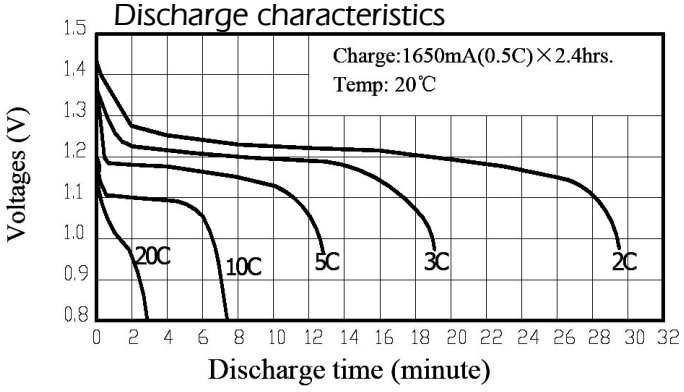
Dimensions



Charge characteristics



Discharge characteristics



* After charging for 14 to 16 hrs. with 0.1 C
** Average capacity
*** 5mV or 1°C per min.