



**Deep Cycle Series Battery**

NPD series VRLA batteries are superior deep cycle design with thick plates, high-density active materials And Slightly stronger electrolyte, Which can withstand repeated deep cyclic applications. Deep cycle series Batteries are the special design batteries with 5 years floating design life at 25°C. Meet with IEC, BS, JIS and Eurobat standard.



**Application**

- \*Emergency Power System
- \*Communication equipment
- \*Telecommunication systems
- \*Uninterruptible power supplies
- \*Electric bicycle and wheelchairs, etc.
- \*Power tools
- \*Golf cars and buggies
- \*Marine equipment
- \*Solar and wind power system

**General Features**

- \*Safety Sealing
- \*Non-spillable construction
- \*High power density
- \*Excellent recovery from Deep discharge
- \*Thick plates and high active materials
- \*Longer Life and low self-discharge design

**Construction**

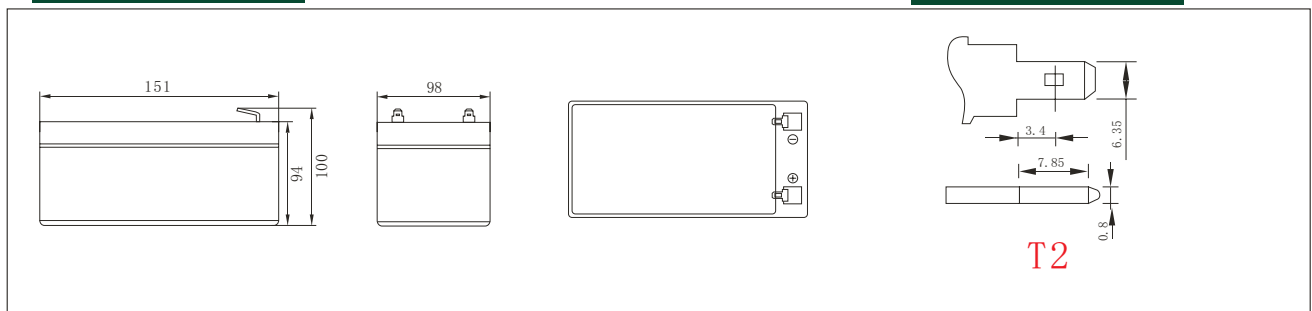
- \*Positive .....Lead dioxide
- \*Electrolyte .....Sulfuric acid
- \*Separator .....Fiber glass
- \*Container .....ABS(UL94-HB), Flammability Resistance of UL94-V2 can be available upon request
- \*Negative .....Lead
- \*Safety Valve .....EPDR
- \*Terminal .....Copper

**Specification**

Battery Model	Nominal Voltage	12V			
	Rated capacity(20 Hour rate)	12Ah			
Dimensions	Length	Width	Height	Total Height	
	151mm (5.94 inches)	98mm(3.86 inches)	94mm(3.70 inches)	100mm (3.94 inches)/T2/T1	
Approx Weight	3.65kg(8.04lbs)±3%				
Capacity 25°C (77°F)	20 hour (0.6A,10.8V)	10hour(1.1A,10.5V)	5 Hour ( 2.04A,10.2V)	1 Hour (7.2A,9.6V)	
	12.0Ah	11.0Ah	10.2Ah	7.2Ah	
Max. discharge current	120A(5 Sec.)				
Internal Resistance	Full charged at 25 °C: Approx 13.0mΩ				
Capacity affected by Temp. (20 HR)	40°C (104 °F)	25°C (77°F)	0°C (32°F)	-15°C (5°F)	
	102%	100%	85%	65%	
Self Discharge at 25°C (77°F)	After 3 months storage		After 6 months storage	After 12 months storage	
	91%		82%	64%	
Charge method 25°C (77°F)	Cycle Use			Float Use	
	14.40-14.70V (Initial charging current less than 4.8A)			13.50-13.80V	

**Outer dimensions (mm)**

**Terminal Type (mm)**

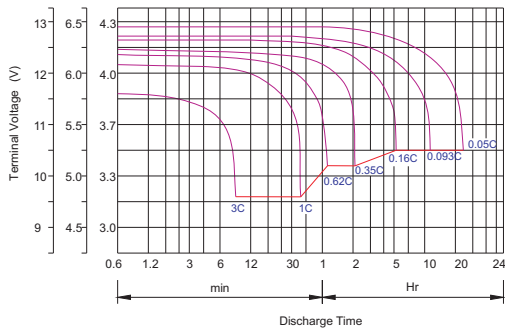


**Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C (77°F)**

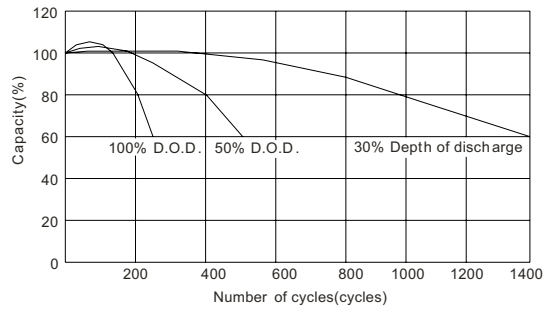
Time		5min	10min	15min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr	20hr
9.60V	A	43.20	28.30	21.00	13.80	7.20	4.20	3.09	2.48	2.11	1.39	1.13	0.62
	W	509.50	320.00	242.00	146.50	83.00	48.60	35.75	28.70	24.35	16.05	13.15	7.20
10.20V	A	39.60	27.00	19.30	13.10	6.76	4.03	3.00	2.40	2.06	1.37	1.12	0.61
	W	479.50	303.00	227.50	145.50	78.00	46.70	34.75	27.80	23.90	15.80	12.90	7.00
10.50V	A	36.10	25.30	18.00	12.70	6.54	3.95	2.95	2.28	2.04	1.35	1.10	0.60
	W	463.00	294.00	217.50	144.00	75.70	45.80	34.15	26.40	23.75	15.65	12.80	6.95
10.80V	A	34.60	24.20	16.80	12.40	6.32	3.85	2.90	2.24	1.95	1.31	1.07	0.59
	W	406.00	285.00	209.50	143.50	73.50	44.80	33.75	26.08	22.70	15.00	12.50	6.80
11.10V	A	32.00	22.80	15.60	12.00	6.10	3.75	2.75	2.20	1.87	1.28	1.05	0.57
	W	392.50	275.50	199.50	142.50	72.50	44.50	32.75	26.00	22.20	14.50	12.25	6.75



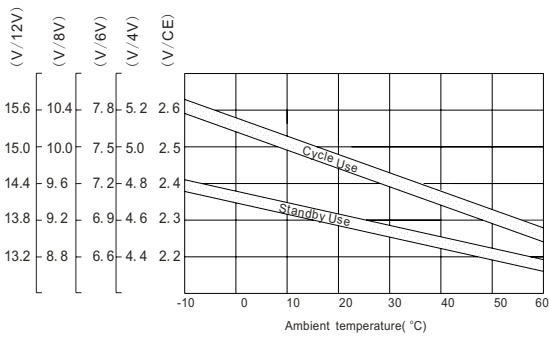
**Discharge characteristic Curve**



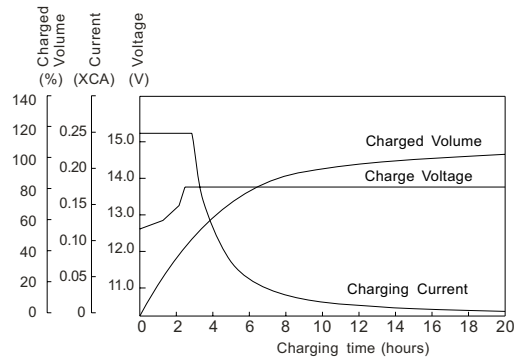
**Cycle service life in relation to depth of discharge**



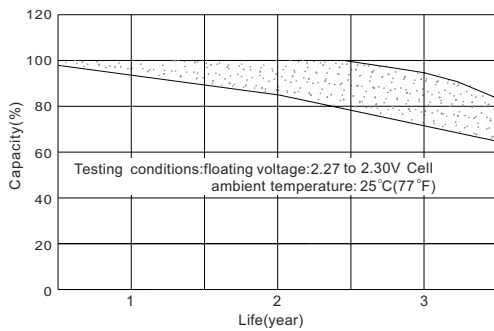
**Relationship between charging voltage and temperature**



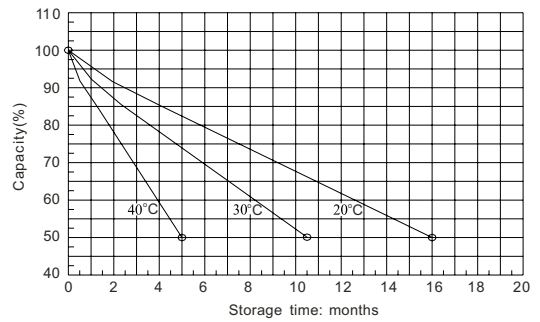
**Constant voltage charging characteristic (0.25CA, at 25°C)**



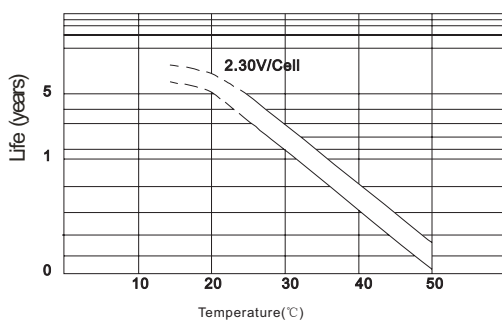
**Life characteristics of standby use**



**Self-discharge characteristic**



**Temperature effects on float life**



**Charge characteristic Curve for standby use**

