



**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 18 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

**Specification**

**Construction**

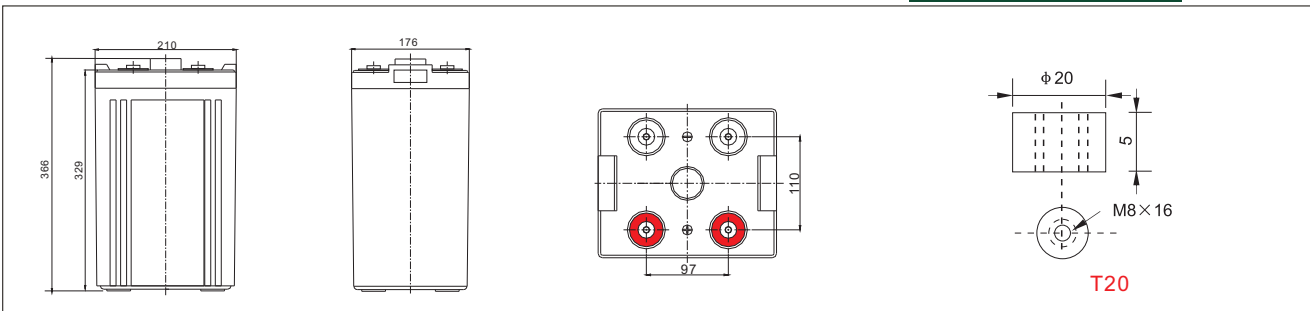
- \*Positive .....Lead dioxide
- \*Electrolyte .....Sulfuric acid
- \*Separator .....Fiber glass
- \*Container .....ABS(UL94-HB), Flammability Resistance of UL94-V2 can be available upon request
- \*Negative .....Lead
- \*Safety Valve .....EPDR
- \*Terminal .....Copper



|                                    |  |                          |                           |                           |
|------------------------------------|--|--------------------------|---------------------------|---------------------------|
| Battery Model                      | Nominal Voltage                                      |                          | 2V                        |                           |
|                                    | Rated capacity (10 Hour rate)                        |                          | 400Ah                     |                           |
| Dimensions                         | Length   | Width                    | Height                    | Total Height              |
|                                    | 210mm (8.27 inches)                                  | 176mm(6.93 inches)       | 329mm(12.95 inches)       | 366mm (14.41 inches)      |
| Approx Weight                      | 26.7kg(58.86lbs)±3%                                  |                          |                           |                           |
| Capacity 25°C (77°F)               | 10 Hour rate (40A, 1.80V)                            | 5 Hour rate (68A, 1.75V) | 3 Hour rate (100A, 1.70V) | 1 Hour rate (220A, 1.60V) |
|                                    | 400Ah  | 340Ah                    | 300Ah                     | 220Ah                     |
| Max. discharge current             | 4000A(5 Sec.)  |                          |                           |                           |
| Internal Resistance                | Full charged at 25 °C (77°F): Approx 0.40mΩ          |                          |                           |                           |
| Capacity affected by Temp. (10 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                 |                           |
|                                    | 2.35-2.40V (Initial charging current less than 160A) |                          | 2.25-2.30V                |                           |

**Outer dimensions (mm)**

**Terminal Type (mm)**

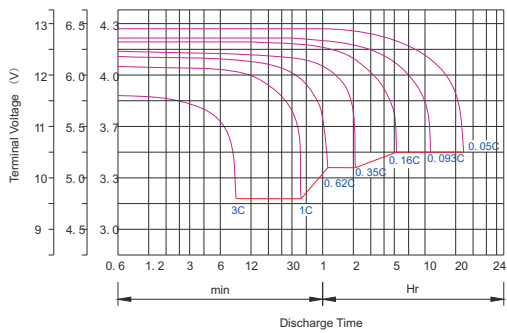


**Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C (77°F)**

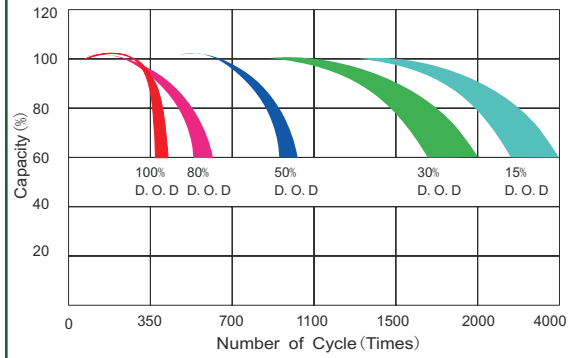
| Time  |   | 5min | 10min | 15min | 30min | 1hr   | 2hr   | 3hr   | 4hr   | 5hr   | 8hr  | 10hr | 20hr |
|-------|---|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1.60V | A | 1281 | 844   | 680   | 456   | 240.0 | 140.0 | 102.8 | 80.0  | 66.0  | 46.8 | 42.0 | 22.7 |
|       | W | 2204 | 1502  | 1216  | 817   | 432.0 | 256.2 | 190.7 | 150.0 | 125.1 | 89.4 | 80.9 | 44.0 |
| 1.70V | A | 1241 | 762   | 641   | 436   | 225.6 | 133.6 | 100.0 | 78.0  | 64.8  | 45.6 | 41.2 | 22.0 |
|       | W | 2209 | 1417  | 1195  | 816   | 425.3 | 256.6 | 193.0 | 151.2 | 125.9 | 88.9 | 80.7 | 43.0 |
| 1.75V | A | 1200 | 681   | 560   | 408   | 218.4 | 130.4 | 97.6  | 76.8  | 64.0  | 45.2 | 40.4 | 22.0 |
|       | W | 2185 | 1292  | 1066  | 783   | 421.5 | 252.1 | 189.5 | 149.8 | 125.1 | 88.6 | 79.7 | 43.3 |
| 1.80V | A | 1157 | 642   | 521   | 376   | 211.2 | 127.2 | 95.2  | 75.6  | 62.4  | 44.0 | 40.0 | 21.6 |
|       | W | 2163 | 1234  | 1000  | 726   | 409.7 | 248.3 | 187.1 | 148.8 | 122.9 | 86.9 | 79.2 | 42.9 |
| 1.85V | A | 1118 | 602   | 481   | 336   | 204.0 | 124.0 | 92.0  | 73.6  | 60.8  | 42.8 | 38.0 | 20.4 |
|       | W | 2113 | 1161  | 933   | 655   | 399.8 | 244.3 | 182.2 | 146.1 | 120.9 | 85.4 | 76.5 | 41.2 |



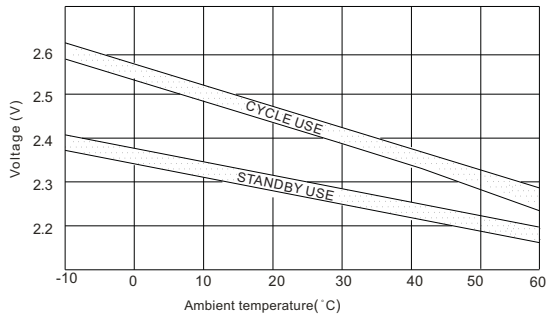
Discharge characteristic Curve



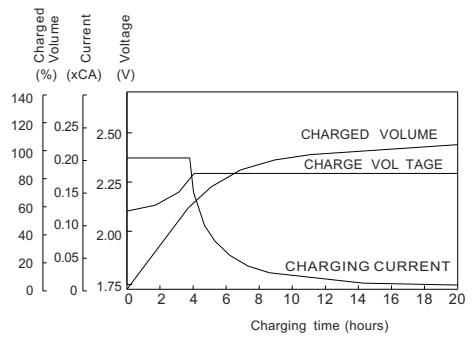
Cycle service life in relation to depth of discharge



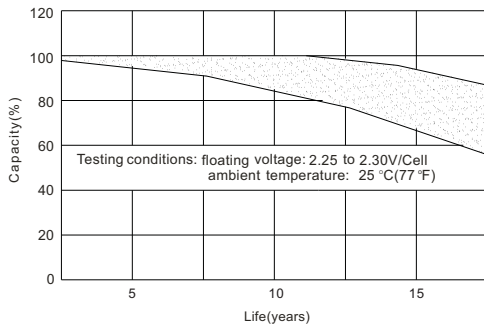
Relationship between charging voltage and temperature



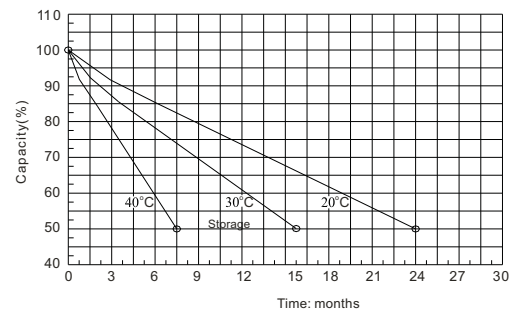
Constant voltage charging characteristic (0.25CA, at 25°C)



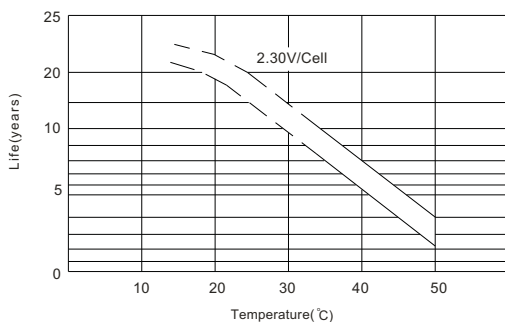
Life characteristics of standby use



Self-discharge characteristic



Temperature effects on float life



Charge characteristic Curve for standby use

