



# Deep Cycle GEL Battery 12 Volt 200Ah



## RENOGY DEEP CYCLE GEL BATTERY 12 VOLT 200AH

Renogy 12V Deep Cycle GEL battery is a perfect option for both standby and cyclic use applications under extreme environments owing to its advantages over flooded batteries. Featuring the maintenance free and leak-proof design, it can reliably supply emergency power to telecommunication systems, security systems, and emergency lighting systems, helping prevent any damage that may be caused by sudden loss of mains power. It is also suitable for RVs, boats, medical equipment, and lawn mowers, where repeated charge and discharge are highly required, given its long service life and outstanding cycle capacity. Moreover, with its high power-to-weight ratio, it can provide maximum storage for any solar or wind system. With the finest materials, the state-of-the-art production techniques, and the strictest quality control procedures, Renogy GEL batteries aim to provide the most reliable, convenient, and economic rechargeable battery solution.

### KEY FEATURES

#### Maintenance Free

Manufactured with gel suspended electrolyte and advanced valve regulated technology, Renogy Deep Cycle GEL Batteries save you from acid leakage and frequent maintenance.

#### Extended Service Life

Corrosion resistant grids enable a design life of up to 12 years in standby applications and more than 750 charge/discharge cycles at 50% DOD in cyclic applications.

#### Long Shelf Life

Made of high purity materials, Renogy DRenogy Deep Cycle GEL Batteries reduce the monthly self-discharge rate below 3% at 77°F (25°C), which is 5 times lower than their flooded counterparts.

#### Deep Discharge Recovery

Proprietary plate composition and patented gel electrolyte ensures excellent recovery capability after excessive deep discharge.



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# Specifications

| Electric Characteristics         |                               |
|----------------------------------|-------------------------------|
| Nominal Voltage                  | 12V                           |
| Number of Cells                  | 6                             |
| Capacity (77°F/25°C)             | 200Ah (20 Hour Rate to 10.8V) |
| Internal Resistance              | 4.2 mΩ                        |
| Self-discharge Rate (77°F/25°C)  | <3%                           |
| Float Charge Voltage (77°F/25°C) | 13.6V-13.8V                   |
| Cycle Use Voltage (77°F/25°C)    | 14.2V-14.4V                   |
| Max Charge Current               | 60A                           |
| Max Discharge Current            | 2000A (5 Seconds)             |

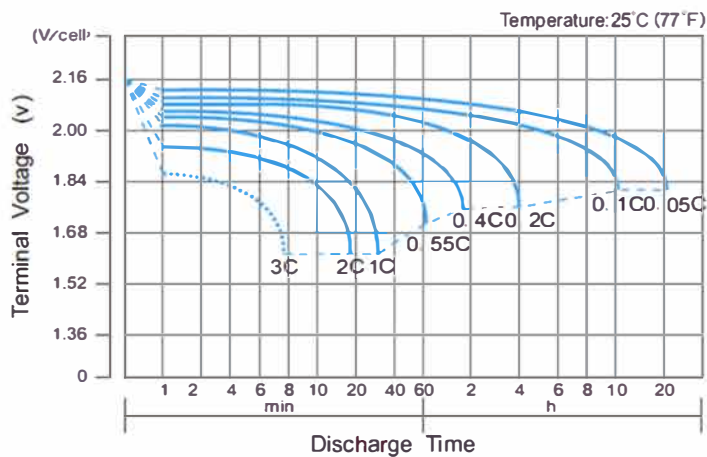
| Temperature Parameters       |                                    |
|------------------------------|------------------------------------|
| Normal Operating Temperature | 77°F±9°F (25°C±5°C)                |
| Operating Temperature Range  | Discharge: -4°F-140°F (-20°C-60°C) |
|                              | Charge: 32°F-122°F (0°C-50°C)      |
| Storage Temperature Range    | -4°F-140°F (-20°C-60°C)            |

| Mechanical Properties |  |
|-----------------------|--|
| Terminal              | M8   |
| Container Material    | ABS  |
| Weight                | 127.9 lbs. (58kg)                          |
| Dimension (L x W x H) | 20.6 x 9.4 x 8.8 inch (522 x 240 x 224 mm) |

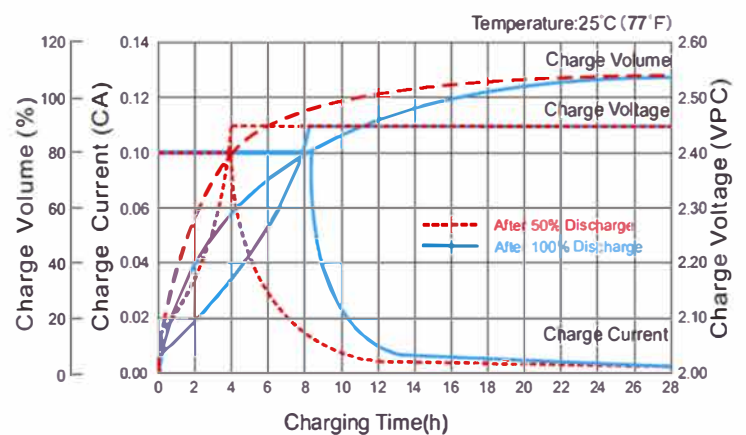
| Constant Current Discharge Characteristics (77°F /25° C ) Unit: A |       |      |      |      |      |      |      |      |      |      |      |       |       |
|---|-------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| F.V./Time   | 1hr   | 2hr  | 3hr  | 4hr  | 35-3 | 8hr  | 10hr | 20hr | 48hr | 50hr | 72hr | 100hr | 120hr |
| 1.60V   | 118.6 | 71.0 | 52.9 | 41.8 | 34.8 | 24.1 | 20.4 | 10.4 | 4.72 | 4.48 | 3.23 | 2.38  | 2.02  |
| 1.65V   | 116.3 | 69.8 | 52.1 | 41.3 | 34.2 | 23.8 | 20.2 | 10.3 | 4.67 | 4.44 | 3.20 | 2.35  | 2.00  |
| 1.70V   | 113.3 | 68.2 | 51.0 | 40.5 | 33.4 | 23.4 | 19.9 | 10.2 | 4.61 | 4.38 | 3.15 | 2.32  | 1.97  |
| 1.75V   | 109.3 | 66.0 | 49.5 | 39.5 | 32.3 | 22.9 | 19.5 | 10.0 | 4.52 | 4.29 | 3.09 | 2.28  | 1.94  |
| 1.80V   | 103.7 | 63.0 | 47.5 | 38.0 | 30.7 | 22.3 | 19.0 | 9.75 | 4.40 | 4.18 | 3.01 | 2.21  | 1.88  |
| 1.85V   | 95.8  | 58.6 | 44.6 | 35.9 |      | 21.3 | 18.2 | 9.40 | 4.22 | 4.01 | 2.89 | 2.12  | 1.81  |

| Constant Power Discharge Characteristics (77°F /25° C ) Unit: WPC |       |       |       |      |      |      |      |      |      |      |      |       |       |
|---|-------|-------|-------|------|------|------|------|------|------|------|------|-------|-------|
| F.V./Time   | 1hr   | 2hr   | 3hr   | 4hr  | 5hr  | 8hr  | 10hr | 20hr | 48hr | 50hr | 72hr | 100hr | 120hr |
| 1.60V   | 233.3 | 141.6 | 106.4 | 84.6 | 71.6 | 49.5 | 42.2 | 21.5 | 9.76 | 9.27 | 6.68 | 4.92  | 4.18  |
| 1.65V   | 231.3 | 140.2 | 105.4 | 83.8 | 71.0 | 49.1 | 41.9 | 21.4 | 9.68 | 9.20 | 6.63 | 4.88  | 4.15  |
| 1.70V   | 226.2 | 137.4 | 103.5 | 82.5 | 70.0 | 48.4 | 41.3 | 21.1 | 9.56 | 9.08 | 6.54 | 4.81  | 4.10  |
| 1.75V   | 219.2 | 133.6 | 100.9 | 80.6 | 68.6 | 47.5 | 40.6 | 20.8 | 9.39 | 8.92 | 6.43 | 4.73  | 4.02  |
| 1.80V   | 209.1 | 128.1 | 97.1  | 77.9 | 66.5 | 46.2 | 39.5 | 20.3 | 9.14 | 8.69 | 6.26 | 4.61  | 3.92  |
| 1.85V   | 194.4 | 120.0 | 91.5  | 73.8 | 63.4 | 44.2 | 38.0 | 19.6 | 8.78 | 8.35 | 6.01 | 4.43  | 3.77  |

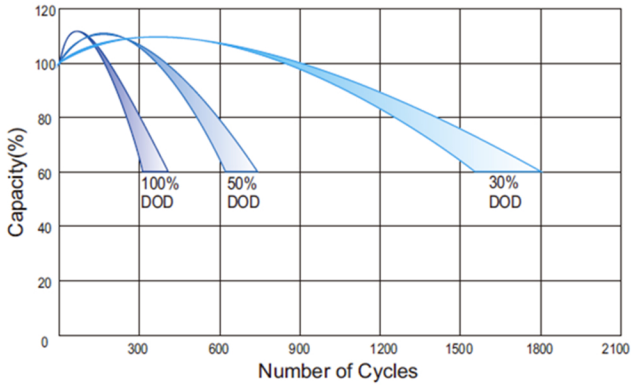
## Discharge Characteristics Curve



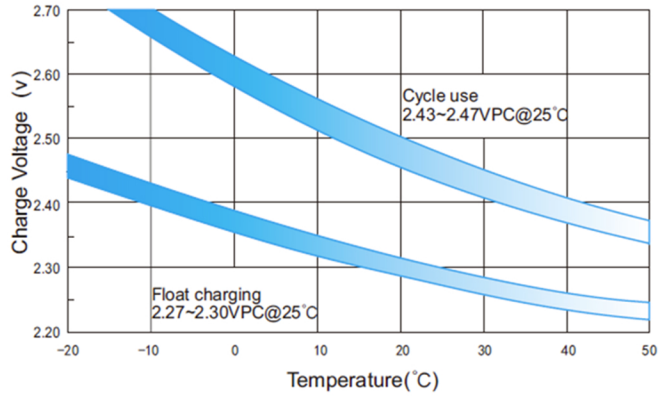
## Charge Characteristics Curve for Cycle Use



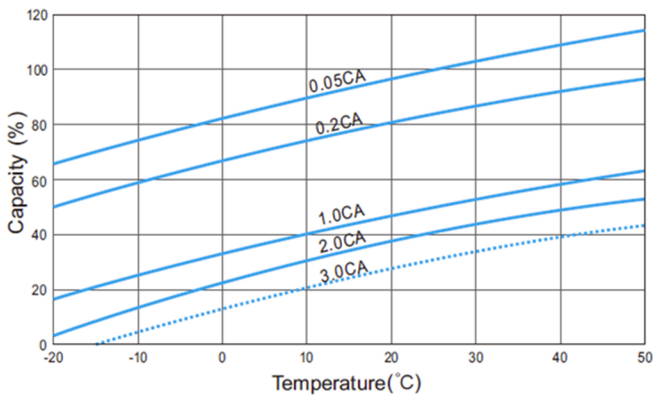
## Relationship between Cycle Life and DOD



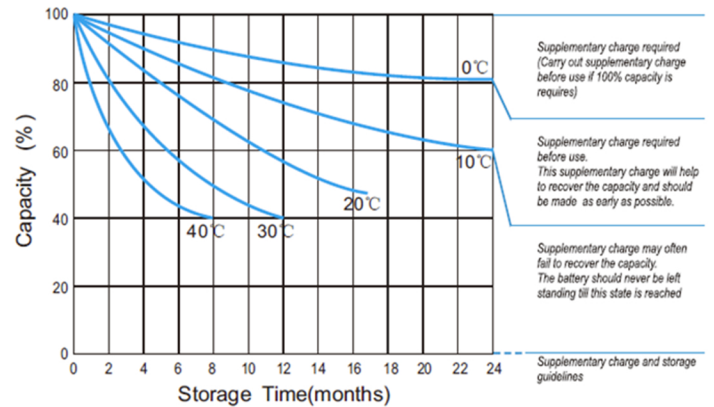
## Relationship between Charge Voltage and Temperature



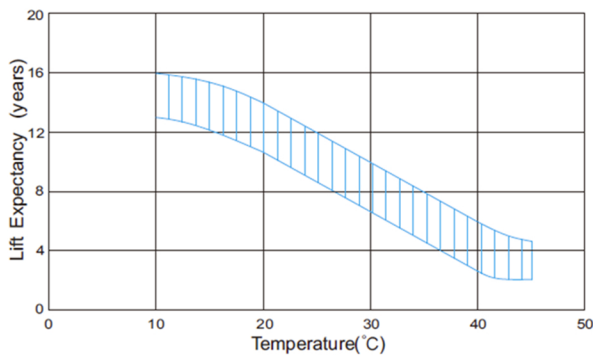
## Temperature Effects on Capacity



## Storage Characteristics



## Effect of Temperature on Long Term Life



## Relationship between OCV and State of Charge

