



# DEEP CYCLE AGM BATTERY 12 VOLT 200AH



## RENOGY DEEP CYCLE AGM GEL BATTERY 12 VOLT 200AH

Due to its outstanding performance, the Renogy 12V Deep Cycle AGM Battery is a favorite in a wide variety of applications. Maintenance-free and leak-proof, the battery is ideal for standby projects that require minimal monitoring. Beyond applications such as uninterruptible power supplies (UPS) and telecommunication systems, the battery can also handle cyclic uses, such as RVs, boats, medical equipment, and lawnmowers, thanks to its high discharge rate and wide operation temperature range. Its high power-to-weight ratio makes it suitable for solar and wind energy storage applications. With the finest materials, state-of-the-art production techniques, and the strictest quality control measures, Renogy AGM batteries aim to provide the most reliable, convenient, and economic rechargeable battery solution.

### KEY FEATURES

#### Maintenance Free

Manufactured with thick absorbent glass mat (AGM) separators and advanced valve regulated technology, Renogy Deep Cycle AGM Batteries save you from acid leakage and frequent maintenance.

#### Excellent Discharge Performance

Proprietary quinary alloy plates and specially treated plate grids enable low internal resistance and high discharge currents of up to 10 times the battery rated capacity.

#### Long Shelf Life

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

#### Wide Operation Temperature Range

Improved electrolyte formula ensures stable battery capacity and outstanding discharge performance at low temperatures below 32°F (0°C).



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## ELECTRIC CHARACTERISTICS

|                                  |                                    |
|----------------------------------|------------------------------------|
| Nominal Voltage                  | 12V                                |
| Number of Cells                  | 6                                  |
| Rated Capacity (77°F/25°C)       | 200Ah (20 Hour Rate to 10.5V)      |
| Reference Capacity (77°F/25°C)   | C3: 152.9Ah                        |
|                                  | C5: 172.3Ah                        |
|                                  | C10: 190.5Ah                       |
|                                  | C20: 200Ah                         |
| Internal Resistance              | 3.5 mΩ                             |
| Self-discharge Rate (77°F/25°C)  | <3% / month                        |
| Float Charge Voltage (77°F/25°C) | 13.6V~13.8V                        |
|                                  | Temperature Compensation: -18mV/°C |
| Cycle Use Voltage (77°F/25°C)    | 14.4V~14.8V                        |
|                                  | Temperature Compensation: -24mV/°C |
| Equalization Voltage (77°F/25°C) | 14.2V                              |
| 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 Bolt Size          | M8 x 1.25 x 16 mm                          |
| Recommended Terminal Torque | 88.5 inch·lb~106.2 inch·lb / 10 N·m~12 N·m |
| Container Material          | ABS                                        |
| Weight                      | 127.9 lb. / 58 kg                          |
| 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

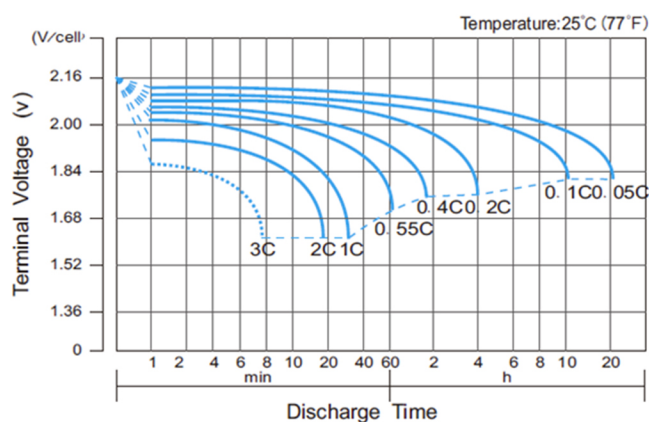
| F.V/Time | 10min | 15min | 30min | 1hr   | 2hr   | 3hr   | 4hr   | 5hr   | 8hr   | 10hr  | 20hr  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V    | 437.1 | 350.7 | 215.6 | 121.5 | 72.34 | 56.35 | 44.20 | 37.60 | 24.12 | 20.00 | 10.37 |
| 1.65V    | 402.6 | 327.9 | 204.3 | 117.3 | 69.92 | 54.62 | 42.88 | 36.42 | 23.93 | 19.81 | 10.31 |
| 1.70V    | 373.1 | 308.4 | 193.7 | 113.6 | 68.05 | 52.31 | 41.56 | 35.43 | 23.55 | 19.43 | 10.18 |
| 1.75V    | 342.3 | 288.9 | 186.0 | 110.0 | 65.44 | 50.96 | 40.42 | 34.45 | 23.17 | 19.24 | 10.00 |
| 1.80V    | 311.5 | 264.5 | 179.2 | 105.1 | 63.20 | 50.00 | 39.48 | 34.00 | 22.79 | 19.05 | 9.903 |
| 1.85V    | 243.8 | 218.9 | 151.9 | 93.83 | 57.80 | 46.54 | 37.02 | 31.30 | 21.46 | 17.90 | 9.811 |



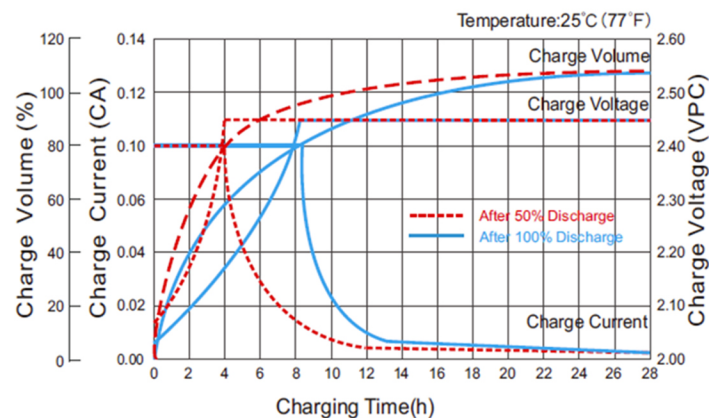
## CONSTANT POWER DISCHARGE CHARACTERISTICS (77°F/25°C) UNIT: WPC

| F.V/Time | 10min | 15min | 30min | 1hr   | 2hr   | 3hr   | 4hr   | 5hr   | 8hr   | 10hr  | 20hr  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V    | 744.2 | 611.7 | 391.8 | 228.0 | 136.8 | 107.0 | 85.19 | 71.17 | 47.00 | 39.22 | 20.69 |
| 1.65V    | 716.6 | 594.8 | 382.6 | 224.1 | 133.1 | 104.3 | 83.11 | 69.24 | 46.62 | 38.85 | 20.51 |
| 1.70V    | 668.8 | 563.0 | 364.2 | 217.6 | 129.8 | 100.3 | 80.47 | 67.51 | 46.06 | 38.09 | 20.32 |
| 1.75V    | 622.4 | 531.4 | 351.5 | 211.5 | 125.1 | 97.86 | 78.58 | 65.97 | 45.30 | 37.71 | 19.95 |
| 1.80V    | 573.4 | 491.2 | 340.1 | 202.9 | 122.3 | 97.31 | 77.07 | 65.09 | 44.55 | 37.34 | 19.77 |
| 1.85V    | 454.9 | 412.7 | 291.7 | 182.2 | 112.6 | 90.77 | 72.53 | 60.20 | 42.11 | 35.26 | 19.58 |

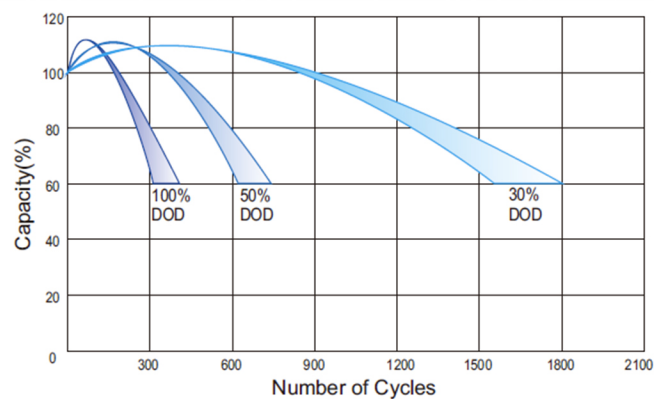
## Discharge Characteristics Curve



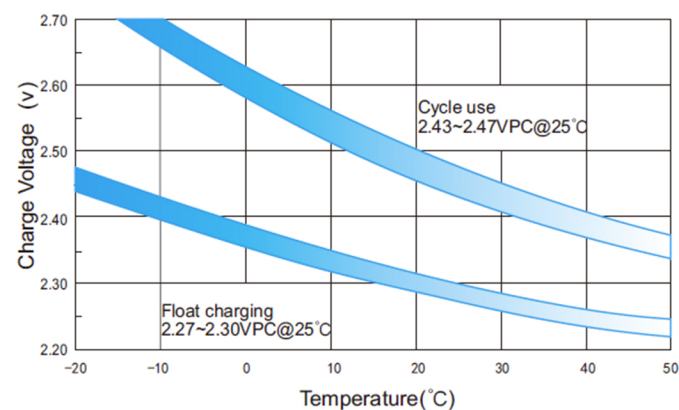
## Charge Characteristics Curve for Cycle Use



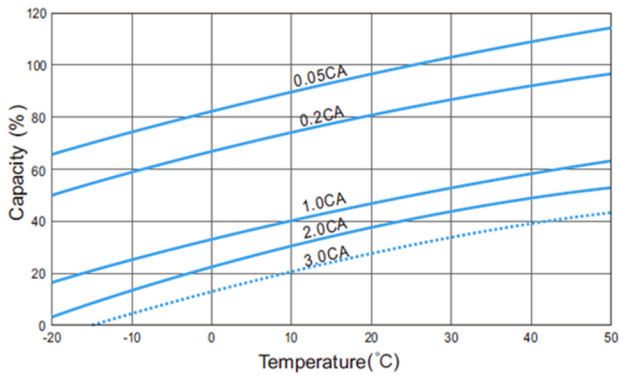
## Relationship between Cycle Life and DOD



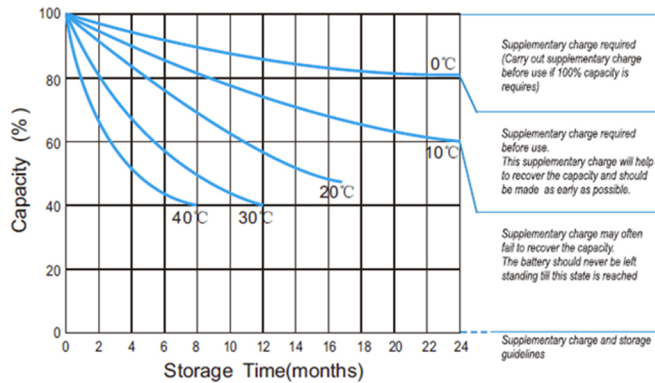
## Relationship between Charge Voltage and Temperature



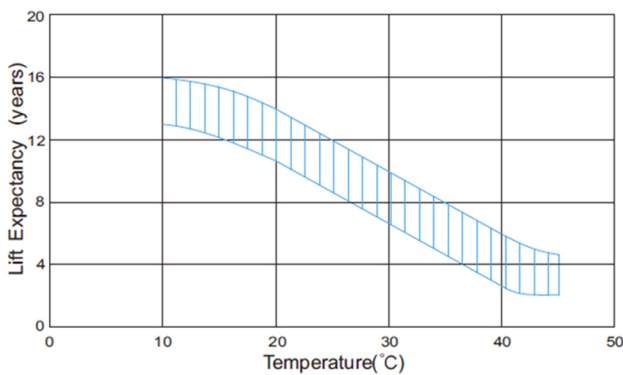
## Temperature Effects on Capacity



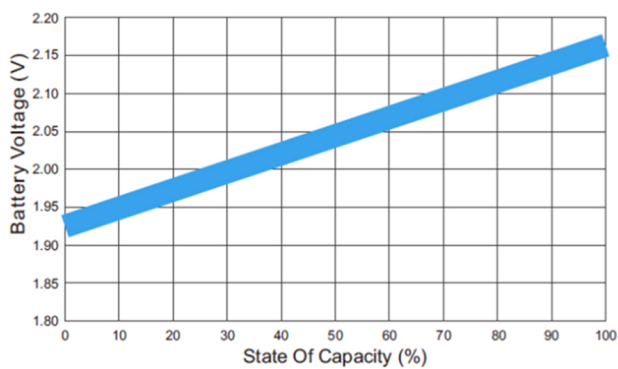
## Storage Characteristics



## Effect of Temperature on Long Term Life



## Relationship between OCV and State of Charge





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