

# carbon



## LEAD-CARBON DEEP CYCLE BATTERIES

### WHY CHOOSE CARBON PLUS?

Lead – carbon batteries use a specialised negative electrode that incorporates carbon nanoparticles. The carbon component stores a static charge and **reacts similarly to a supercapacitor**, absorbing heavy currents without causing the battery to overheat. This provides **faster and more efficient charging and discharging** and a **lower internal resistance** compared to a conventional deep cycle battery.

In normal deep cycle batteries, both AGM and Gel, sulfate crystals form on the negative electrode when discharged too far and under heavy loads. This process, called sulphation, is the number one reason deep cycle batteries 'die'. In lead – carbon batteries, **sulphation is inhibited**, resulting in a battery that can be safely discharged to 80% empty thousands of times, can tolerate heavy loads, and is far more tolerant of heat. Lead – carbon batteries require a **lower float voltage**, which means that once they are fully charged you **use far less energy on standby**.

In addition to the benefits of their composite negative electrode, Carbon Plus batteries use thick, high quality plates to maximise cycle life and cope with the fluctuating demands of off grid applications. Just compare the weight to other deep cycle batteries! Their robust construction makes them **the perfect low maintenance, set – and – forget battery for an off grid system that needs to be absolutely bulletproof**.

### 2V1000Ah BATTERY SPECIFICATIONS

#### AUSTRALIAN DISTRIBUTION:

[plusenergystorage.com.au](http://plusenergystorage.com.au)

#### WHOLESALE ENQUIRIES:

[wholesale@plusenergystorage.com.au](mailto:wholesale@plusenergystorage.com.au)



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#### PERFORMANCE CHARACTERISTICS

- Higher charge / discharge Rate.** More than double the charge rate of conventional deep cycle batteries.
- Extremely long cycle life.** 4500 cycles at 30% depth of discharge - 1600 cycles at 80% depth of discharge.
- Better heat tolerance.** Operating temperatures of up to 60 degrees celsius.
- Low internal resistance.** Especially useful for off grid applications with many charge / discharge cycles throughout the course of a day.
- Inhibits sulfation.** The #1 killer of deep cycle batteries.
- Integrate with existing cells.** New cells can be mixed with old to extend battery bank life. Especially useful for larger banks or modular applications.
- Lower float voltage.** Increase efficiency and reduce electrolyte loss.
- Low maintenance.** No worries.
- No complex electronics.**
- Low self-discharge.**

#### PRODUCT PARAMETERS

|                                 |  |        |
|---------------------------------|--|--------|
| Rated Voltage                   | 2v   |        |
| Rated Capacity                  | 1000Ah ( 10hr, 1.80v/Cell, 25°C )  |        |
| Approximate Weight ( Kg, ± 3% ) | 69.0 kg  |        |
| Terminal                        | Copper M8  |        |
| Ambient Temperature             | -40 ~ 60°C   |        |
| Dimensions ( ± 3% )             | Length   | 471 mm |
|                                 | Width  | 171 mm |
|                                 | Height   | 330 mm |
|                                 | Total Height   | 342 mm |
| Case                            | ABS  |        |
| Application                     | Household solar/wind system, off-grid or on-grid power station, distributed energy storage power station, solar/wind communication base station, solar/wind street light, mobile energy storage system, solar traffic light, solar building system, etc. |        |



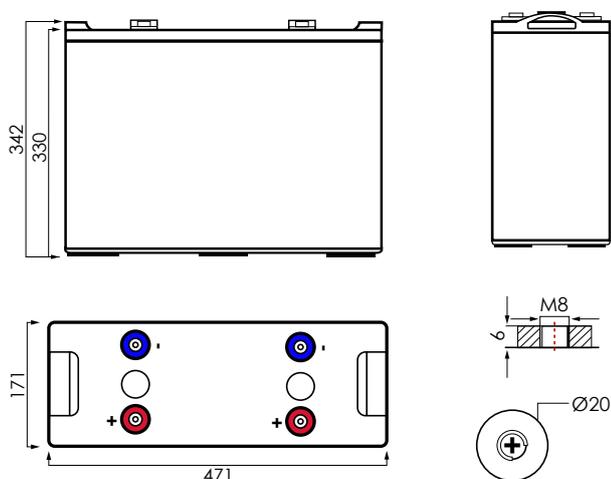
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# carbon **PLUS** LEAD-CARBON DEEP CYCLE BATTERIES

## 2V1000Ah BATTERY SPECIFICATIONS



### CHARGE PARAMETERS

|                                      | Cell  | 12v Bank  | 24v Bank  | 48v Bank  |
|--------------------------------------|---|---|---|---|
| Absorption Voltage                   | 2.35v   | 14.2v   | 28.4v   | 56.8v   |
| Float                                | 2.25v   | 13.5v   | 27v   | 54v   |
| Max. absorption time (hours)         | 2   | 2   | 2   | 2   |
| Equalisation (for up 12 hours)       | 2.4v  | 14.4v   | 28.8v   | 57.6v   |
| Temperature compensation             | -0.0035V/ °C, any higher than 25 degrees      | -0.021V/ °C, any higher than 25 degrees         | -0.042V/ °C                                     | -0.084V/ °C                                     |
| Low voltage cutout / generator start | 1.8v (absolute minimum)<br>1.9v (recommended) | 10.8V (absolute minimum)<br>11.4V (recommended) | 21.6v (absolute minimum)<br>22.8v (recommended) | 43.2v (absolute minimum)<br>45.6v (recommended) |



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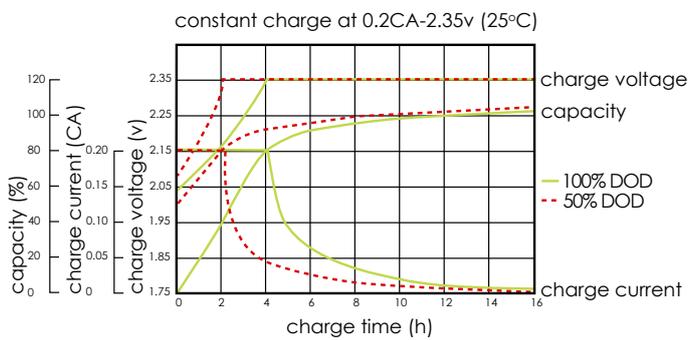


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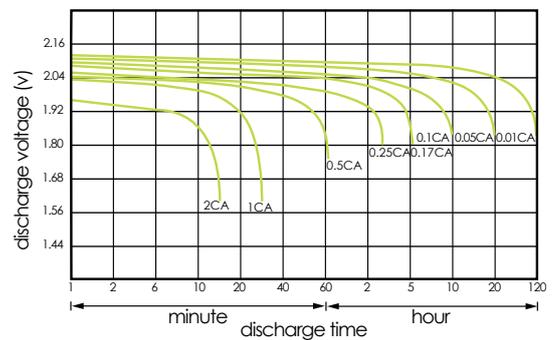
## 2V1000Ah BATTERY SPECIFICATIONS

### CHARACTERISTICS CURVE

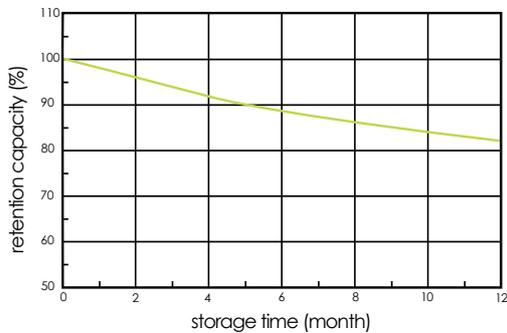
**Charging Time & Charging Rate**



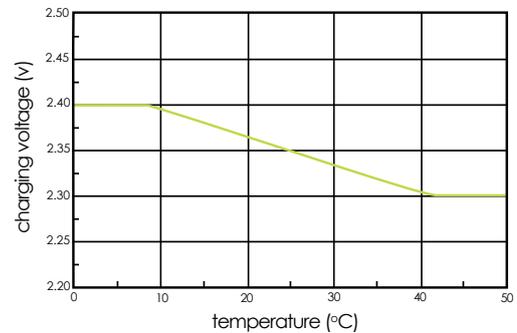
**Discharging Curve**



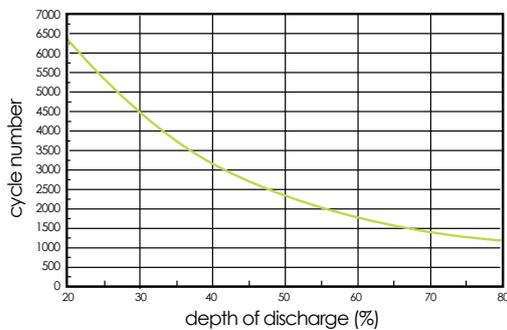
**Self-discharge Characteristics (25°C)**



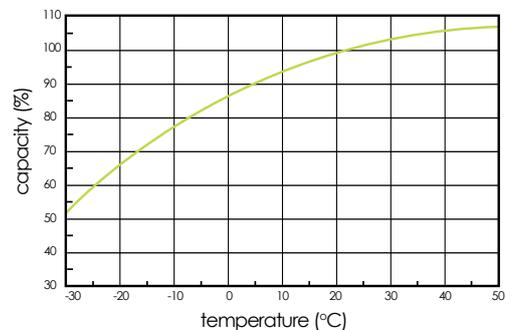
**Charging Voltage & Temperature**



**Cycle-life & Depth of Discharge (25°C)**



**Capacity & Temperature**



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