

# 12.8V 50Ah BASIC

## LiFePO4 Battery

Part Number: L12V50-50-BASIC-4-A38



### Basic Specification

|                                       |          |
|---------------------------------------|----------|
| Nominal Voltage                       | 12.8V    |
| Nominal Capacity                      | 50Ah     |
| Nominal Energy                        | 640Wh    |
| Internal Resistance                   | ≤40mΩ    |
| Function                              | BASIC    |
| Max. Continuous Output Power          | 640W     |
| BMS Board                             | 50A      |
| Max. Batteries in Series and Parallel | 4P4S     |
| System Max. Extended Power            | 10.24kW  |
| System Max. Extended Energy           | 10.24kWh |

### Charge Specification

|                                  |           |
|----------------------------------|-----------|
| Max. Continuous Charging Current | 50A(1C)   |
| Recommended Charging Current     | 10A(0.2C) |
| Recommended Charging Voltage     | 14.4±0.2V |

### Discharge Specification

|                                     |            |
|-------------------------------------|------------|
| Max. Continuous Discharging Current | 50A(1C)    |
| Peak Discharging Current            | 150A(3C)/s |

### Environment Specification

|                                 |                                |
|---------------------------------|--------------------------------|
| Storage Temperature Range       | -10°C - 50°C<br>(14°F - 122°F) |
| Recommended Storage Temperature | 10°C - 35°C<br>(50°F - 95°F)   |
| Charging Temperature Range      | 0°C - 50°C<br>(32°F - 122°F)   |
| Discharging Temperature Range   | -20°C - 60°C<br>(-4°F - 140°F) |

### Mechanical Specification

|                      |                                     |
|----------------------|-------------------------------------|
| Dimension(L * W * H) | 7.68*6.54*6.77 in<br>195*166*172 mm |
| Weight               | Approx. 11.6 lbs/ 5.29 kg           |
| Terminal Type        | M8*14mm                             |
| Terminal Torque      | 13±1 N·m                            |
| Case Material        | ABS                                 |
| IP Rating            | IP65                                |
| Cell Type-chemistry  | LiFePO <sub>4</sub>                 |
| BCI                  | A38                                 |

### Safety Specification

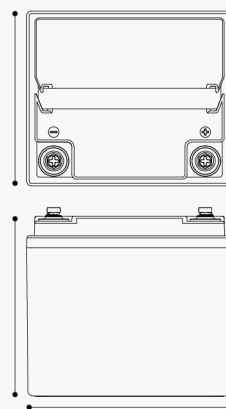
|                |                                                                         |
|----------------|-------------------------------------------------------------------------|
| Certifications | FCC,UL-1973,CE,RoHS,UN38.3                                              |
| Protection     | Over-temperature/Over-discharge/Over-current/Over-voltage/Short-circuit |

### Dimensions

6.54"  
(166 mm)

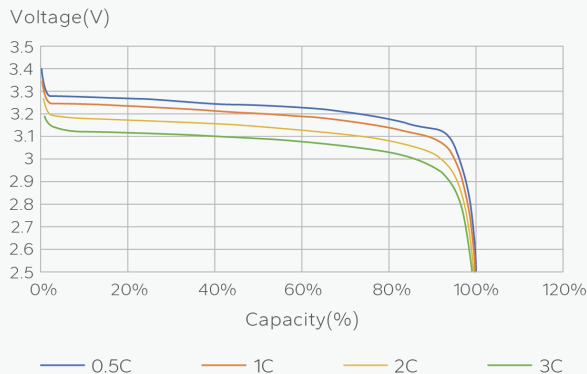
6.77"  
(172 mm)

7.68"(195 mm)

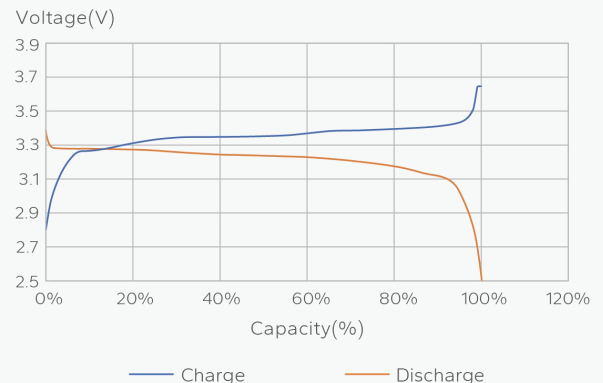


## Performance Curves

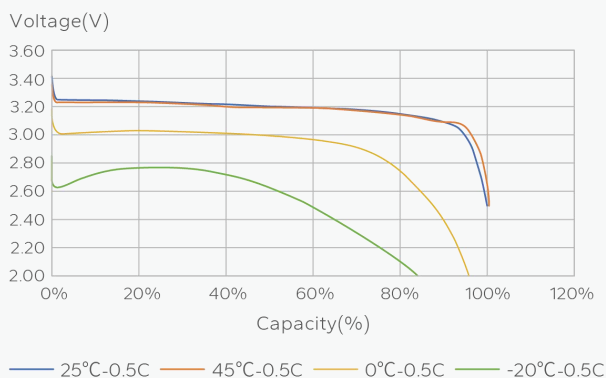
Discharge Performance at 25°C



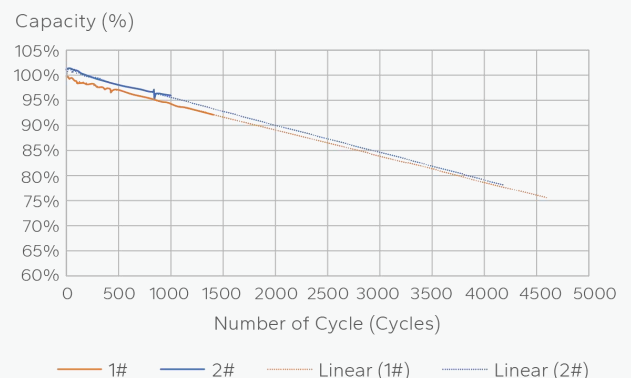
Charge and Discharge at 25°C, 0.5C



Discharge Curves at Different Temperature



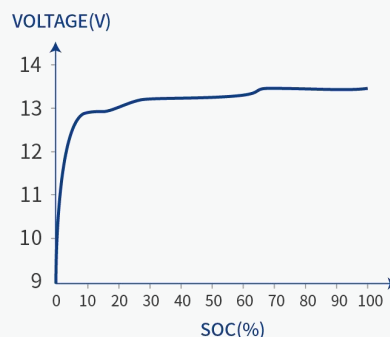
Cycle Life with DOD at 25°C



## How to Estimate the Battery Capacity

The battery capacity could be roughly estimated by its **resting voltage** (not charging/discharging voltage). Since the voltage of each battery is slightly different, and the voltage measurement is affected by the measuring instrument, ambient temperature, etc., the following parameters are for reference only.

**Resting Voltage:** The voltage is measured after the battery has been disconnected from the charger and loads with zero current, and left alone for 30 minutes.



| SOC (%) | VOLTAGE (V)   |
|---------|---------------|
| 0       | 10 to 12      |
| 25      | 13 to 13.15   |
| 50      | 13.15 to 13.2 |
| 75      | 13.3 to 13.33 |
| 100     | ≥13.33        |

① Based on the characteristics of LiFePO4 batteries, the voltage measured by all LiFePO4 batteries during charging/discharging is not the real voltage of the battery. Therefore, after charging/discharging and disconnecting the battery from the power source, the voltage of the battery will gradually drop/increase to its real voltage.