Lithium Iron Phosphate (LiFePO4) Battery
CMP20512-BL5 (12.8V, 120AH)

Features of the *CMPower* LiFePO4 Battery

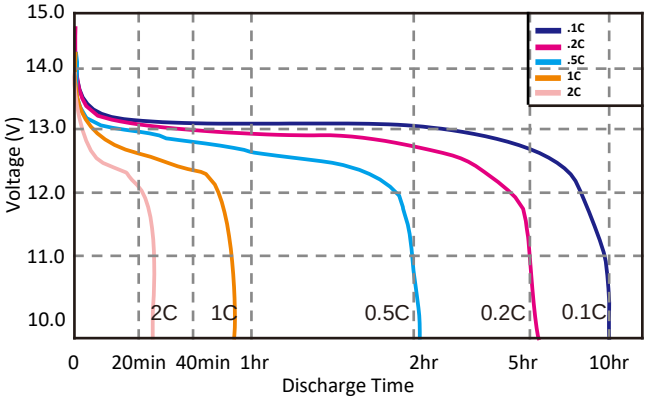
- **Bluetooth Battery Monitor:** Built in real time monitoring of battery State-of-Charge
- **Longer Cycle Life:** Up to 10 times longer cycle life and 5 times longer calendar life than lead acid batteries.
- **Lighter Weight:** Up to 50% lighter than a comparable lead acid battery. Up to 4 times more power per pound than lead acid batteries.
- **Efficient charging and discharging:** Up to 20% more efficient; store 20% more generated charging power.
- **Superior Safety:** LiFePO4 chemistry eliminates the risk of combustion due to overcharging, short circuit, high impact.
- **Increased Flexibility:** Modular design enables deployment of up to 4 batteries in series and up to 10 batteries in parallel.
- **Compatibility:** The built in BMS (Battery Management System) compensates for various charging profiles and protects the LiFePO cells.
- **Applications:** House battery bank, trolling motor, engine start (<50hp), bow thruster, windlass

Specifications

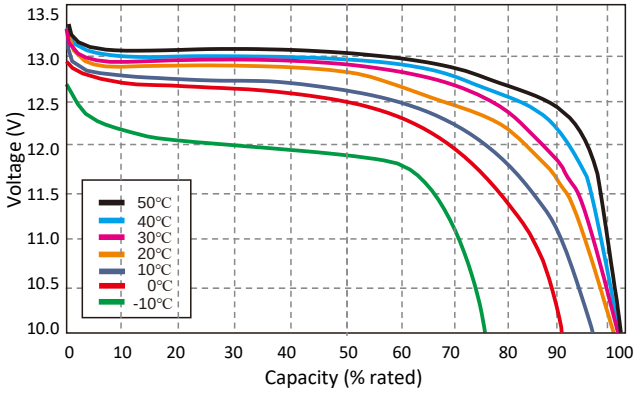
Electrical Characteristics	Nominal Voltage	12.8V
	Nominal Capacity	120Ah
	Energy	1,536 Wh
	Internal Resistance	≤20mΩ
	Cycle Life	>2000 cycles @1C 100% DOD, >3000 cycles @1C 80% DOD
	Months Self Discharge	<3%
	Efficiency of Charge	100% @0.5C
	Efficiency of Discharge	96~99% @1C
Standard Charge	Charge Voltage	14.4±0.1V
	Charge Mode	0.2C to 14.4V, then 14.4V,charge current to 0.02C (CC/CV)
	Charge Current	24-60A
	Max Charge Current	120A
	Charge Cut-off Voltage	14.6V±0.1V
Standard Discharge	Continuous Current	150A
	Max. Pulse Current	300A(<3s)
	Discharge Cut-off Voltage	10V
Environmental	Charge Temperature	0 ℃ to 45 ℃ (32F to 113F) @60±25% Relative Humidity
	Discharge Temperature	-20 ℃ to 60 ℃ (-4F to 140F) @60±25% Relative Humidity
	Storage Temperature	0 ℃ to 40 ℃ (32F to 104F) @60±25% Relative Humidity
	Water Dust Resistance	IP56
Mechanical	Cell & Method	32700 6000mAH
	Plastic Case	ABS+PC UL V-0 flame resistant
	Dimensions (mm./in.)	L340*W170*H210mm / L13.4*W6.7*H8.3 in.
	Weight (kg./lbs.)	16kgs/35lbs.
	Terminal	M8
	Features	Bluetooth APP

Lithium Iron Phosphate (LiFePO4) Battery 12.8V

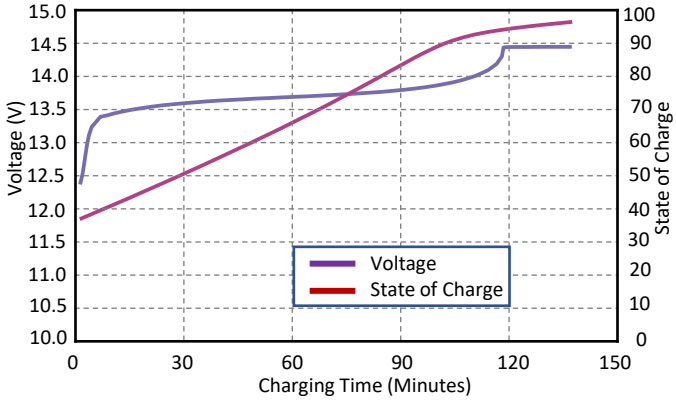
Rate of Discharge Curves @ 25°C



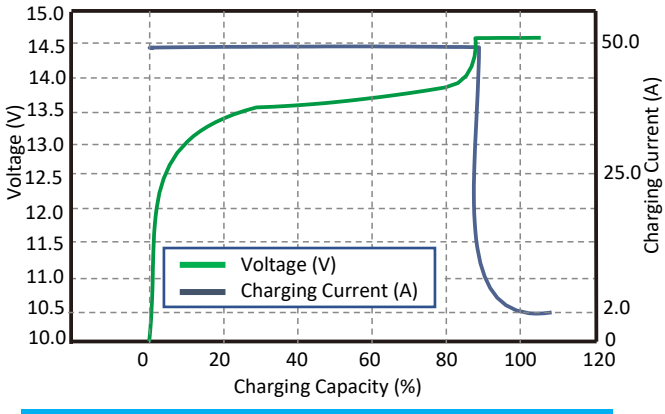
Temperature Discharge Curves @ 0.5C



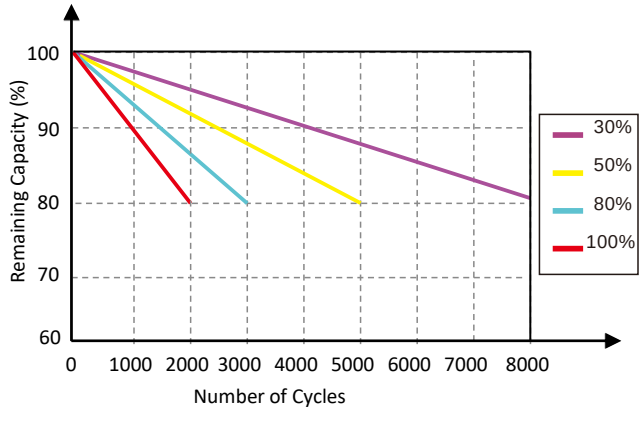
State of Charge @ 0.5 C 25°C



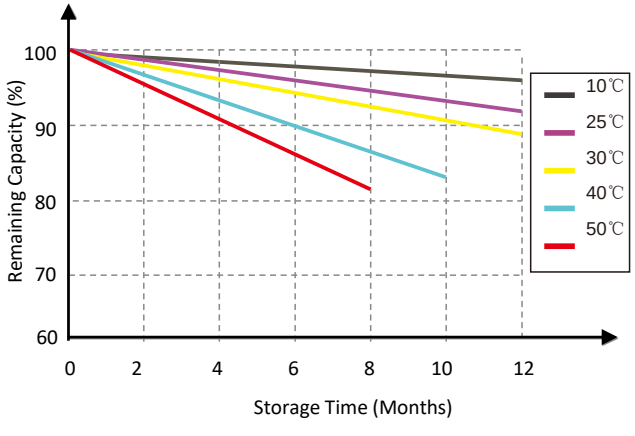
Charging Characteristics @ 0.5 C 25°C



Depth of Discharge Cycle Life @ 1C



Temperature - Self Discharge



Custom Marine Products

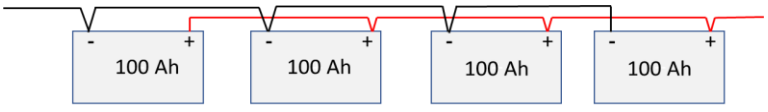
Phone: 248 705 8337 or 773 965 2546
Website: www.custommarineproducts.com
E-mail: info@custommarineproducts.com

Installation and Operating Considerations

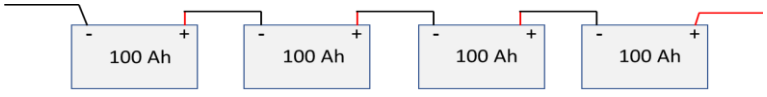
Mounting - The batteries can be positioned and secured in any direction; bottom or side. There is nothing to leak out. The area around the batteries should be ventilated for heat dissipation.

Wiring –

Parallel – Up to ten batteries may be connected in parallel to increase the current capacity of the battery bank. When batteries are connected in parallel, the voltage of the system does not change, but the current capacity of each battery is additive. For example, two batteries with a 150A continuous current rating connected in parallel can deliver 300A continuously. All cables and connections MUST be able to accommodate the high currents that can be delivered by the battery bank. Appropriate fuses and circuit breakers are also highly recommended to protect downstream appliances.



Series - Up to four 12V batteries may be connected in series to increase the voltage of the battery bank up to a 48V. When batteries are connected in series, current capacity remains the same, and the system voltage is additive. For example, two 12V 100A batteries connected in series can deliver 100A continuously at a nominal 24V.



It is important that all batteries be of equal charge greater than 70% before connecting them in series or parallel.

Operating and Storage Temperature Range - LiFePO4 batteries can be stored in temperatures of -10°F (-20°C) to 100°F (+38°C). It is recommended they not be charged and discharged at temperature below 0°F (-18°C) It is recommended that the negative terminals be disconnected for winter or long term storage so there is no chance of draining the batteries while in storage. Complete discharge of LiFePO4 batteries for an extended period of time will likely damage the cells. LiFePO4 batteries should be recharged every 6 months.

Disposal - LiFePO4 batteries marked with the recycling symbol must be processed via a recognized recycling agency. Batteries must not be mixed with domestic or industrial waste.

Charging - For the Bulk/Absorption stage, the ideal voltage is 14.2V to 14.6V ± .5V. Our batteries do not require a float stage for charging, however, a float voltage of 13.4V to 13.8V can be used. Equalization is not recommended for our batteries. If equalization cannot be turned off, a maximum voltage of 14.6V is acceptable. The recommended charging amperage is 2C to MAX .5C (C is the Ah rating of the battery).
Note: It is recommended that batteries wired in series be charged individually to ensure proper charging of each battery. Batteries wired in parallel may be charged as a group across the bank.

Temperature Compensation - Temperature compensation is not needed or recommended with our LiFEPO4 batteries.

Bluetooth Battery Monitoring

The built in Bluetooth feature enables the monitoring of each battery State-of-Charge (SoC) via a Smartphone APP. The APP displays the Amps currently charging or discharging from the battery at a point in time, the voltage of the battery, SOC %, the temperature of the battery, the time to full charge, the time to full discharge and the number of charge/discharge cycles the battery has incurred.

Loading the APP Android - Go to Google Play Store and search for Smartec-BMS. Download the SmarTEC-BMS App.

Loading the APP Apple - Go to the Apple Store and search for Smartec-BMS. Download the SmarTEC-BMS App .

Using the APP - Select the APP. The first screen lists the batteries paired with Bluetooth. Note: The rssi to the right of the battery listed indicates the strength of the Bluetooth signal. A higher rssi indicates a weaker signal. Select the battery to be monitored. The screen showing the amps, volts and SOC of the battery will appear. Slide right to left to see the temperature and charge level of the battery. Press the back key to exit the battery data, select Confirm to return to the battery list.

Caution

- Do not reverse polarity of the battery as this will damage both the battery and the devices being connected.
- Do not submerge the battery.
- Do not expose battery to excessive heat or fire.
- Do not short circuit the battery. Do not mishandle, drop, throw or apply excessive force to the battery.
- Do not operate with loose terminal connections
- Do not combine lead acid and LeFePO4 batteries in the same system.

All batteries should be of the same make and model. Be sure all batteries are at the same State-of-Charge before connecting in series or parallel. Recharge batteries every 6 months at a minimum when in not in use. Remove all connections from the negative terminal when storing for long periods of time.

Warranty

Custom Marine Products warrants each branded battery to be free of defects for a period of 1 year from the date of sale as determined by either the customer's sale receipt, or other proof of purchase plus an additional 4 years prorated. Within the warranty period CMP will credit, replace or repair the product and/or parts of the product if determined to be defective in material or workmanship. *CMPower* batteries are built to last a minimum of 2,000 cycles and still maintain 80% of rated energy capacity. This warranty applies to the original owner.