DATASHEET AND

Specifications

Model: LFP05048LCD
48V 50AH // MAX CHARGE/
DISCHARGE CURRENT: 50A/50A

RoHS Compliant

Elker

LFP05048LCD

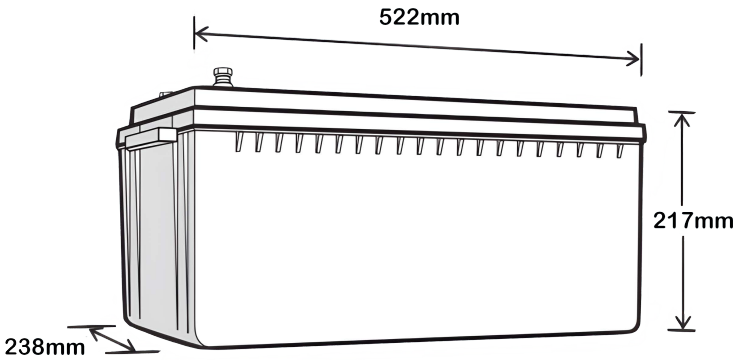
The LiFePO4 battery pack LFP05048LCD has a built-in BMS system with various protection measures.

Although this 48V 50Ah battery pack may only be used in parallel systems; it has significant advantages as a backup battery for various applications. The LFP05048LCD features high power density, small size, long service life, resistance to high temperature, fast charging and discharging, and an effective design.

CHARACTERISTICS

1. Positive electrodes made of LiFePO4 (LFP), ensuring higher safety and a long service life.
2. Compatible with a variety of power supply devices.
3. Built-in BMS system with multiple protections, which ensures high reliability of the battery pack.
4. Low internal resistance, with efficient internal balance of the battery control circuit.
5. Wide working temperature range and high reliability.
6. Support for parallel connection of battery packs.
7. 4000+ Life Cycles

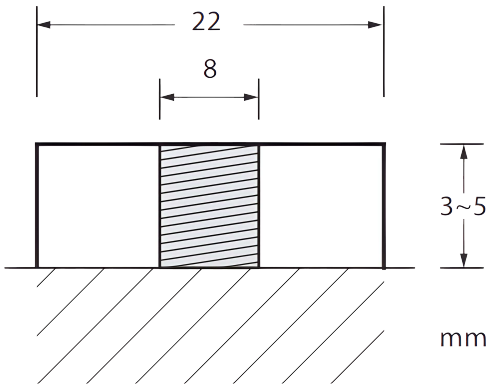
BATTERY DIMENSIONS



FEATURES

- Built-in BMS with Charging current limitation.
- Built-in automatic protection for over-charge, over-discharge, low-temprature, and over-temperature conditions.
- Internal cell balancing.
- Maintenance free system.
- Plug And Play replacement for Lead Acid batteries

TERMINAL DIMENSIONS



SPECIFICATIONS

Voltage	51.2 V
Nominal Capacity (0.2°C, 5A)	50 Ah
Normal Energy (0.2°C , 5A)	2560 Wh
Max. Charge Current	50 A
Max. Constant Discharge Current	50 A
Charge Voltage	56.8V - 58.4V
Cut-off Voltage	40 V
Charging Standard	CC: 0.2C to 57.6V CV: 57.6V Floating: 54.4V – 55.2V Charging end current: 0.01C
Calendar Life (25°C)	>10 years
Cycle Life (0.2C, 25°C)	8000 with 50% DOD 4000 with 80% DOD 3000 with 100% DOD
Operating Temperature	Charging: -0°C ~ +65°C Discharging: -20°C ~ +75°C
Storage Time / Temperature	-20°C ~ +60°C

GENERAL INFORMATION

Casing Material	ABS case
Assembly	16S1P Single cell Capacity 50Ah
Recommended Charging Type	CC-CV-Float charge
BMS	Inegrated

MECHANICAL SPECIFICATIONS

Dimensions (L x W x H) in mm	522 * 238 * 217 *
Weight	24kg
Terminal	M8
Mounting Options	Any Directions

GENERAL WARNINGS

All other warnings are indicated on battery package:

- Use the recommended charger stated on package.
- Don't throw battery into water, fire, or expose to hot temp.
- Do not dissassemble the battery.
- LFP05048LCD batteries ***cannot*** be used in series.

PREVENTATIVE MEASURES

In order to prevent leaking, overheating, and or exploding, please read the following preventative measures:

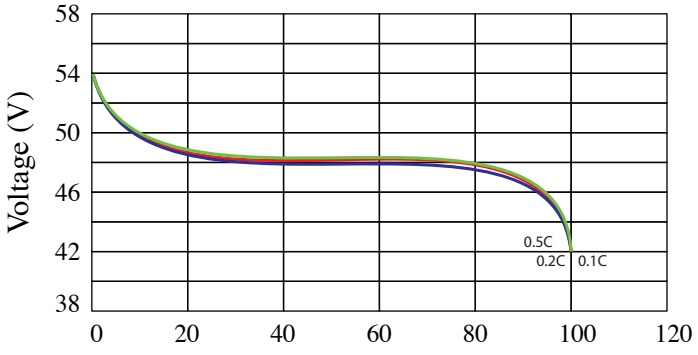
- Do not expose battery to water. Keep the unit under dry, shady, and cool conditions when not in use.
- Never keep the battery near high-temperature sources like fire, direct sunlight, dryer, heaters, ovens, etc.
- Please use the stated charger or a charger that meets the requirements and compatibility of the battery.
- Internal battery damage my occur if wiring is reversed between the positive and negative terminals.
- Refrain from cutting the battery into the socket directly.
- Prevent contact of metal materials near exposed positive and negative terminals. Especially when the unit is active.
- Never ship or store the battery together with metal or metallic items such as aluminum, copper, steel, etc.
- Keep the battery in a safe space where it cannot be knocked down, stepped on, or physically damaged.
- Take care to not cut or pierce the battery with a nail or other edged/sharp tools.
- Never use or keep the battery under high temperature. Doing so may compromise the battery and cause it to overheat, catch fire, lose functionality, or reduce its life.
- Never use the battery under strong static or magnetic felds. It may damage the BMS and cause malfunctions.
- If the battery is leaking; keep electrolyte away from eyes. If exposed, please do not rub eyes, wash eyes with water, and go to the nearest hospital for treatment ASAP.
- If the battery is emitting a peculiar smell, exhibiting overheating, distortion, or appearing in any way abnormal physically during use, storage, or charging, please take it out of the device, storage, or charger and stop using immediately. Place malfunctioning battery in a safe space where it cannot damage other items or cause a fire.
- If the terminal is dirty, please clean it before using.
- Please encase the terminals with the isolative paper if you wish to discard the battery and to prevent any fires.

BMS PARAMETERS

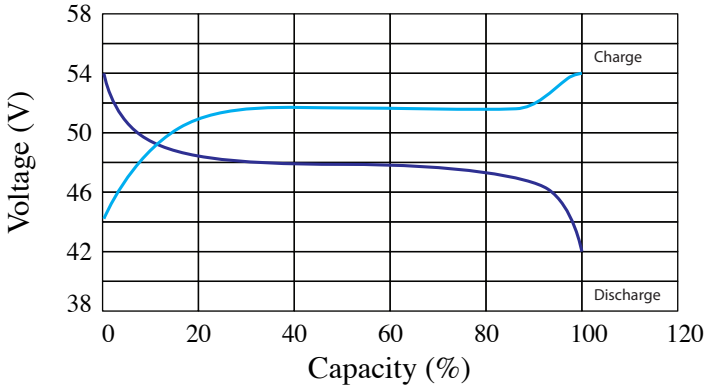
Type		Function	Setting value LFP05048LCD 51.2V 50Ah	Recovery
Voltage	Charge	Cell Voltage Protection	3.65V	Recover at 3.5V
		Total Voltage Protection	58.4V	Recover at 56.0V
	Discharge	Cell Voltage Protection	2.5V	Recover at 2.75V
		Total Voltage Protection	40.0V	Recover at 44.0V
Current	Charge	Over Current Protection 1	52A	Delay 10s, recovery 32sec
		Over Current Protection 2	>102A	Delay 3s, recovery 1min
	Discharge	Over Current Protection 1	52A	Delay 30s, recovery 32sec
		Over Current Protection 2	>102A	Delay 3s, recovery 1min
		Short Circuit Protection	>150A	Delay 1mS, Recovery 5 Ssec
Temp.	Cell Temp 1	Low temp protection	Charging $<$ 0°C Discharging $<$ -20°C	Delay 1mS
	Cell Temp 2	High temp protection	Charging $\geqslant$ 65°C Discharging $\geqslant$ 75°C	Delay 1mS
	PCB	Range	$\geqslant$ 95°C	Recovery at 74°C
Cell Balance	Balance	Balances cells during charging process.	$V_{Max.} \geqslant 3.40V$ and $V_{Max.} - V_{Min} \geqslant 40mV$, Start balance	All cell voltages $\leqslant 3.65V$ and $V_{Max.} - V_{Min} \leqslant 40mV$, Stop balance

PERFORMANCE CURVES

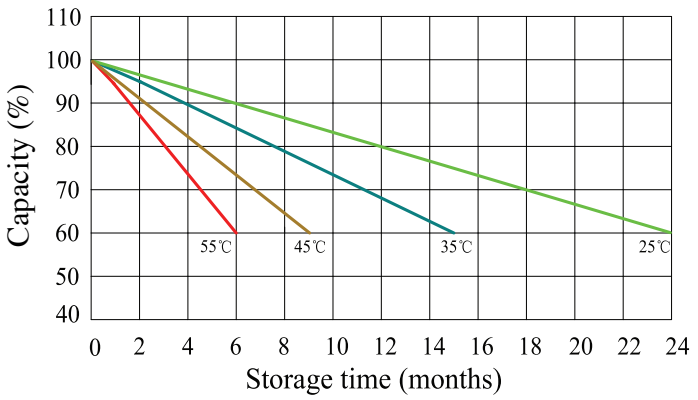
Discharge Performance at 40°C



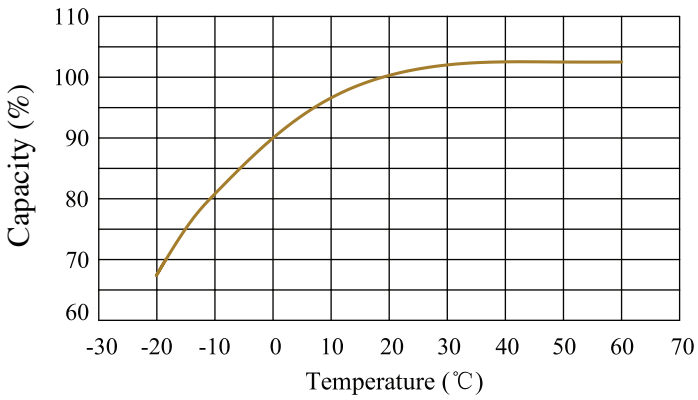
Charge and Discharge at 40C, 0.5C



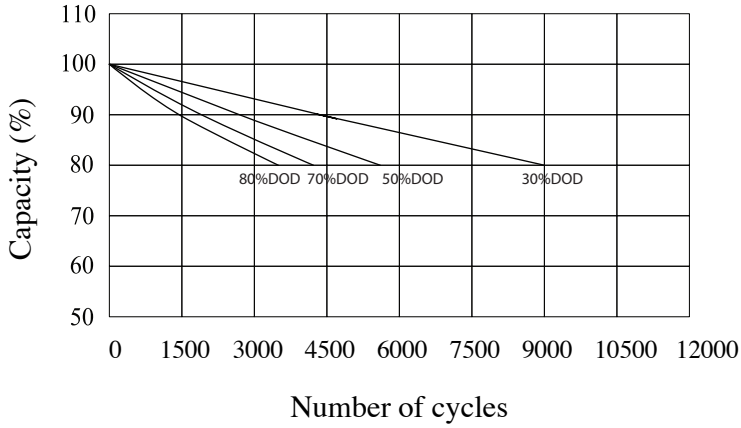
Self-discharge at different temperature



Temperature effects on capacity at 0.5C



Cycle Life with DOD at 35°C, 0.3C



Performance may vary depending on, but not limited to cell usage and application. If cell is used outside specifications, performance will diminish. All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate.