VISION
Green Our Earth - Power Your Vision

V-LFP4850 (48V50Ah)

Vision Technology delivers safe lithium iron phosphate Battery solutions for Telecom application.

Overview

The V-LFP4850 back-up lithium iron phosphate battery system is developed for backup of Telecom equipment. Under normal condition, grid AC power supply to rectifier module and the Telecom loads and charge battery pack; When the AC power fail, rectifier module stop power supply, the battery serves for Telecom equipment, to ensure the Telecom equipment runs normally; when the AC power is switched on again, power rectifier module for Telecom equipment recover to while charge the battery pack.

Features

- RS485 communication output for monitoring
- Built-in BMS with Charging current limitation
- Built-in automatic protection for over-charge, Over-discharge and over-temperature conditions
- State of charge and state of health indication
- Built-in battery control for efficient operation
- Internal cell balancing
- Compatible with standard Telecom rectifiers
- Maintenance free

Specifications		V-LFP4850
Voltage		48 V
Number of cell		15 cell
Nominal Capacity (40°C , 0.5C)		50 Ah
Weight (Approximate)		29.6 kg± 3%
Energy	Normal energy (40°C , 0.5C)	≥2400Wh
	Volumetric energy density	≥100Wh/L
	Gravimetric energy density	≥80Wh/kg
Dimensions (W*D*H)	Width*Depth* Height	440mm*440mm*134.5mm
Impedance	(Max, at 1000Hz.)	<40mΩ
Standard Discharge 25°C	Max. constant current	50A
	Cut-off voltage	40.5-42V
Standard charge 25℃	Charge Voltage	53.5V~54V
	Max. constant current	50A
	Recommended charging current and time	10A(0.2C) for 5.2 hours
Round trip efficiency (%)		≥ 95%
Calendar life	25°C	＞12 years
Cycle life (0.2C, 25°C)		80% DOD 4000 cycles
Operating temperature		Charging: 0°C ~ 60°C
		Discharging: -20°C ~ 60°C
Storage temperature		Recommended range: 0℃ ~ 60℃

BMS Parameters.

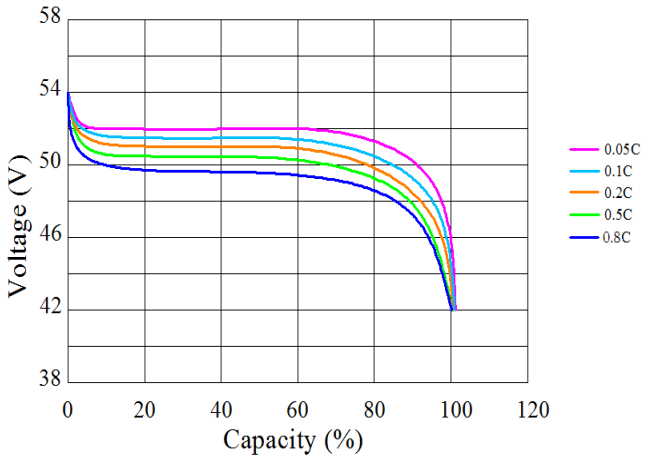
NO.	Type		Function	Setting value	Remarks
				V-LFP4850 48V50Ah	
1	Voltage	Charge	Cell Voltage Protection	3.9V Protection	Recover at 3.6V
2			Total Voltage Protection	55.8V Protection	Recover at 54V
3		Discharge	Cell Voltage Protection	2.7V Protection	Recover at 3.1V
4			Total Voltage Protection	40.5V Protection	Recover at 45V
5	Current	charge	Normal	≤50A	
6			Limit value	10A	
7			Protecting current 1	＞50A	Delay 20S, enter current limit
8			Protecting current 2	＞55A	Delay 0-3s, Enter current limit
9		Discharge	Normal	≤50A	
10			Over Current Protection 1	＞50A and ＜55A	Delay 20s , recovery in every 1min
11			Over Current Protection 2	＞55A and ＜300A	Delay 3s ,recovery in every 1min
12			Short Circuit Protection	≥300A	Delay 300uS
13	Temp	Cell Temp 1	Low temp protection	Charging ＜ -10℃ Discharging ＜ - 20℃	Delay 1~2S
14		Cell Temp 2	High temp protection	Charging ≥70℃ Discharging ≥75℃	Delay 1~2S
15		PCB	Range	≥115℃	Recovery at 85℃
16	Cell Balance	Balance	Make all cells be balance during charging process. Current: 150mA	$V_{Max.}$≥3.40V and $V_{Max.}$ - V_{Min}≥40mV, Start balance	All cell voltages＜3.4V or $V_{Max.}$ - V_{Min}≤40mV, or discharge Stop balance

Battery Status.

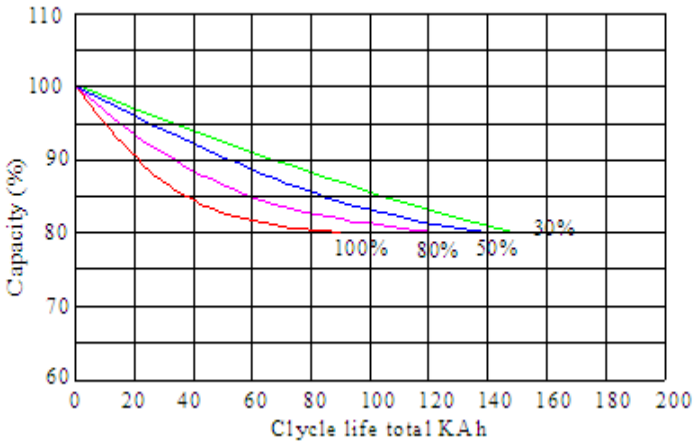
1. **Stop/Transport Mode**. In working mode, press Start/Stop button, Battery will go to STOP mode with low self-discharge. In STOP mode, charging MOS and discharging MOS are open, battery cannot charge, discharge or communicate.
2. **Working Mode**. In STOP mode, connect the battery to SMPS, press Start/Stop button, battery will go to working mode. In working mode, BMS will monitor battery voltage, current, and temp, and communication is available, charging MOS and discharging MOS are closed, Battery will operate as the settings.
3. **Sleep Mode**. After turn on the battery, if the battery voltage below low voltage protection, BMS will go to sleep mode in 1 minute. In sleep mode, charging MOS and discharging MOS are closed, BMS will check the current in every 1 min, if there is charging current connecting, battery will turn to working mode.
4. **Error Mode**. In working mode, if there is: ①.Battery cells, ΔU＞1V, or ②.Any cell voltage＞3.9V or ＜2.3V, or ③. Battery temp is ＜-20℃ or +75℃. BMS will go to error mode, ALM will bright and other LED will shut down, and go to STOP mode, charging MOS and discharging MOS are open. Need to make troubleshoot.

Performance Curve.

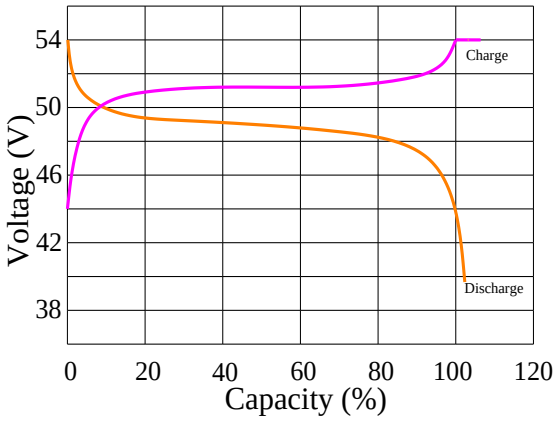
Discharge Performance at 25℃



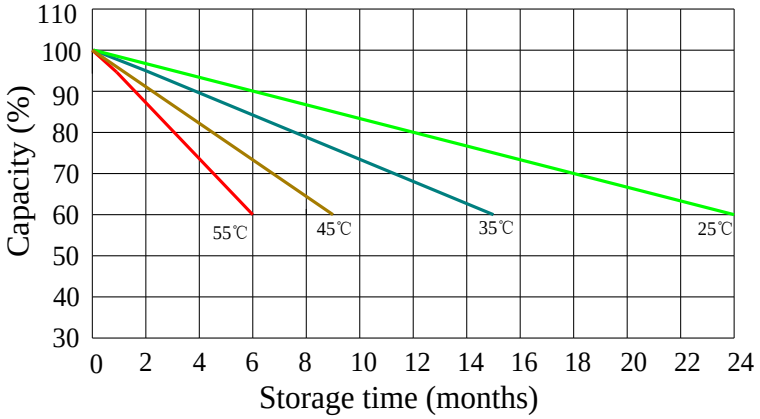
Cycles life total capcity with DOD at 25℃ 0.8C



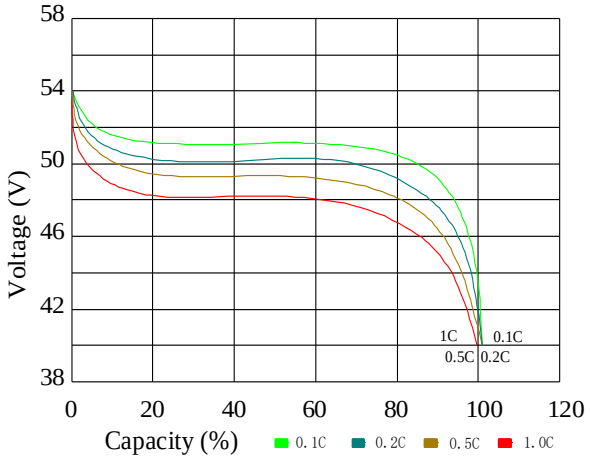
Charge and Discharge at 40℃, 0.5C



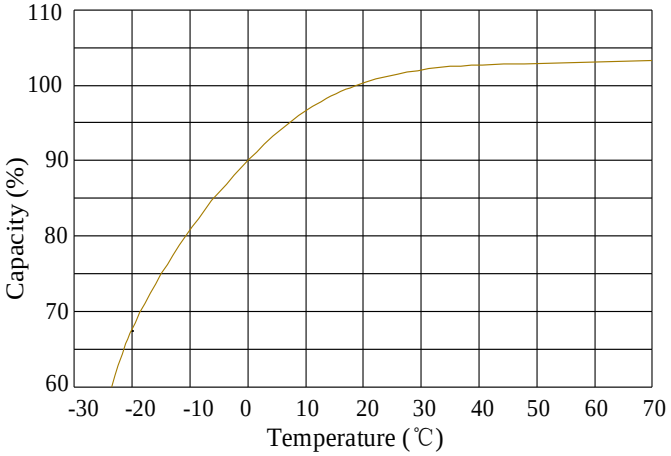
Self-discharge at different temperature



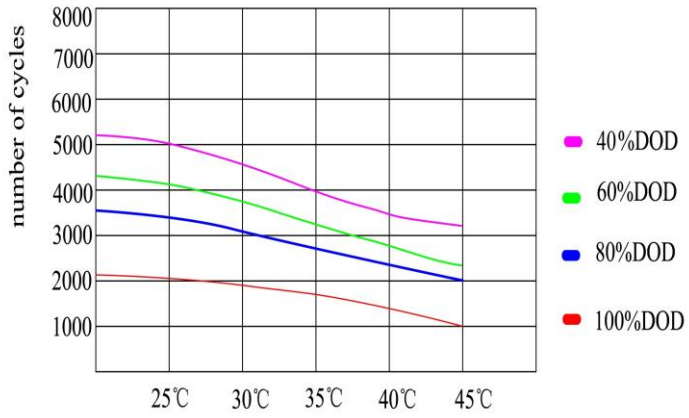
Discharge Performance at 45℃



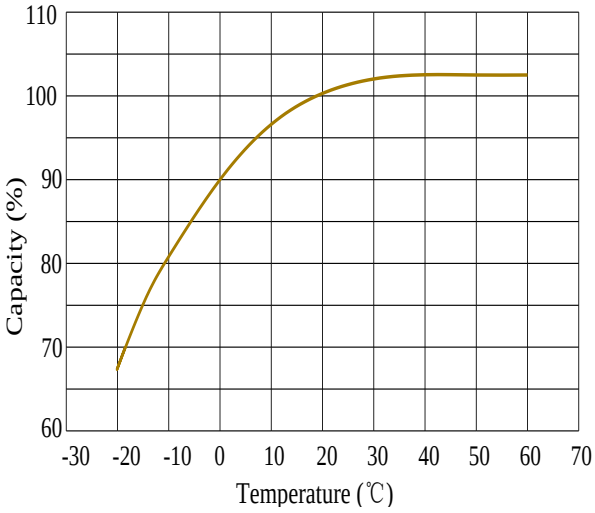
Temperature effects on capacity at 0.2C



Number of cycles VS DOD at different temp



Temperature effects on capacity at 0.5C



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.