

LiFe 50-12

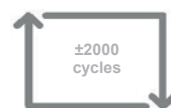
12V / 50Ah

Lithium - Iron Phosphate



Features

High energy density
Automatic protection with battery management system (internal)
Low self-discharge
Long cycle life
Excellent performance in all operating temperatures
Cost effective
Fast charge
Drop-in replacement
Guaranteed Safety



Nominal characteristics

Nominal Voltage	: 12.8V
Nominal capacity	: 50Ah
Energy	: 640Wh
IR	: $\geq 23\text{m}\Omega$ @100% SOC
Efficiency	: $\geq 99.5\%$
Maximum Modules in Series	: 2 (Single Use)

Mechanical characteristics

Case Material	: ABS
Dimensions (LxWxH)	: 229x138x213 mm
Weight	: 8kg $\pm 3\%$
Terminal Type	: F11 (M6)
BCI Group	: 22
Cell Type-Chemistry	: Prismatic LiFePO ₄

Charge & discharge characteristics

Voltage Window	: 10.8-14.6V
Max. Continuous Charge	: 50A
Max. Continuous Discharge	: 50A
Peak Discharge Current	: 100A (10s $\pm 1\text{s}$)
Recomm. Charge Current	: 25A
Recomm. Discharge Current	: 25A

Operating Conditions

Cycle Life	: ≥ 2000
Operating Temperature	: Charge 10°C ~ 45°C Discharge -20°C ~ 55°C
Storage Temperature	: 20°C ~ 30°C
Storage Duration	: 12 months at 25°C

BMS characteristics

Primary Charging Protection	: Current	60~70A
	: Delaytime	15 $\pm 2\text{s}$
Secondary Charging Protection	: Current	$\geq 70\text{A}$
	: Delaytime	3 $\pm 2\text{s}$
Primary Discharging Protection	: Current	78~105A
	: Delaytime	15 $\pm 2\text{s}$
Secondary Discharging Protection	: Current	105~170A
	: Delaytime	5 $\pm 2\text{s}$
Over-charge Voltage Protection	: Voltage	$\geq 14.8\text{V}$
	: Delaytime	1~2s
Over-discharge Voltage Protection	: Voltage	$\geq 9.6\text{V}$
	: Delaytime	3s
Temperature Protection	: PCB Temp.	$\geq 90^\circ\text{C}$
	: Recover	$\leq 65^\circ\text{C}$

Constant Current Discharge Data (Amp @25°C)

	1h	2h	3h	5h	10h
Cut-off voltage (10.8V)	50A	25A	17A	10A	5A

Constant Power Discharge Data (Watt @25°C)

	1h	2h	3h	5h	10h
Cut-off voltage (10.8V)	576W	291W	196W	119W	60W

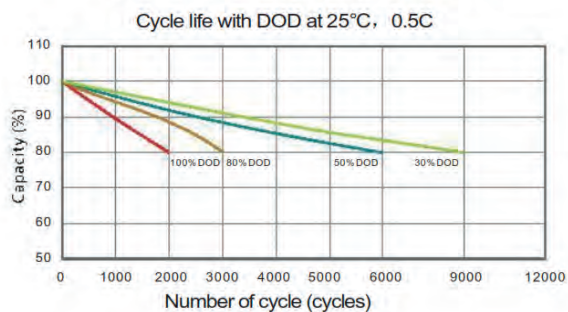
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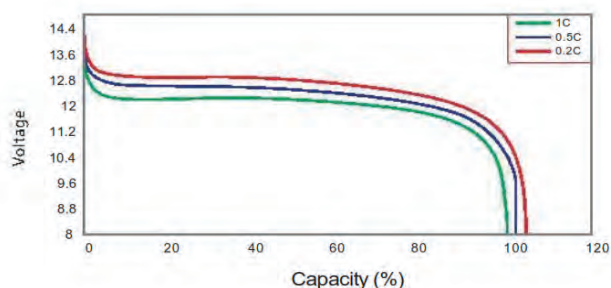
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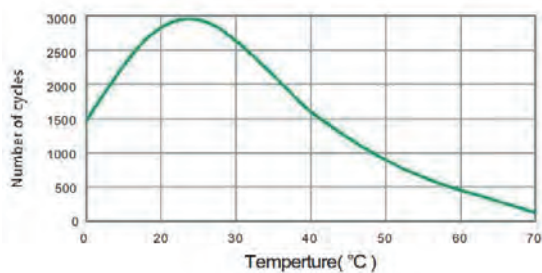
Number of Cycles Vs. DOD



Discharge Performance at R.T.

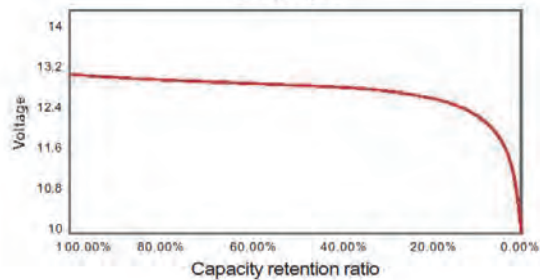


Cycle Life in Relation to Temperature



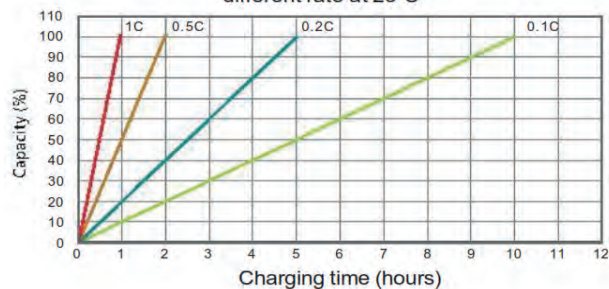
Battery Capacity (C) Vs. Open Circuit Voltage (OCV)

SOC Vs OCV



Battery Capacity Vs. Charging Time

Charging capacity(%) VS time with different rate at 25°C



Temperature Effects on Capacity

