

LiFe 20-12

12V / 20Ah

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	: 20Ah
Energy	: 256Wh
IR	: $\geq 35\text{m}\Omega$ @100% SOC
Efficiency	: $\geq 99.5\%$
Maximum Modules in Series	: 2 (Single Use)

Mechanical characteristics

Case Material	: ABS
Dimensions (LxWxH)	: 181x77x167 mm
Weight	: 3.3kg $\pm 3\%$
Terminal Type	: F13
IP Grade	: -
Cell Type-Chemistry	: Prismatic LiFePO ₄

Charge & discharge characteristics

Voltage Window	: 10.8-14.6V
Max. Continuous Charge	: 20A
Max. Continuous Discharge	: 30a
Peak Discharge Current	: 80A (10s $\pm 1\text{s}$)
Recomm. Charge Current	: 10A
Recomm. Discharge Current	: 10A

BMS characteristics

Primary Charging Protection	Current	40~60A
	Delaytime	15 $\pm 2\text{s}$
Secondary Charging Protection	Current	$\geq 60\text{A}$
	Delaytime	3 $\pm 1\text{s}$
Primary Discharging Protection	Current	40~80A
	Delaytime	15 $\pm \text{s}$
Secondary Discharging Protection	Current	80~133A
	Delaytime	3 $\pm 1\text{s}$
Over-charge Voltage Protection	Voltage	$\geq 14.8\text{V}$
	Delaytime	1~2s
Over-discharge Voltage Protection	Voltage	$\geq 9.2\text{V}$
	Delaytime	1~2s
Temperature Protection	PCB Temp.	$\geq 90^\circ\text{C}$
	Recover	$\leq 65^\circ\text{C}$

Operating Conditions

Cycle Life	: ≥ 2000
Operating Temperature	Charge $10^\circ\text{C} \sim 45^\circ\text{C}$
	Discharge $-20^\circ\text{C} \sim 55^\circ\text{C}$
Storage Temperature	: $20^\circ\text{C} \sim 30^\circ\text{C}$
Storage Duration	: 12 months at 25°C

Constant Current Discharge Data (Amp @25°C)

	1h	2h	3h	5h	10h
Cut-off voltage (10.8V)	20A	10A	6.6A	4A	2A

Constant Power Discharge Data (Watt @25°C)

	1h	2h	3h	5h	10h
Cut-off voltage (10.8V)	249W	122W	86W	50W	25W

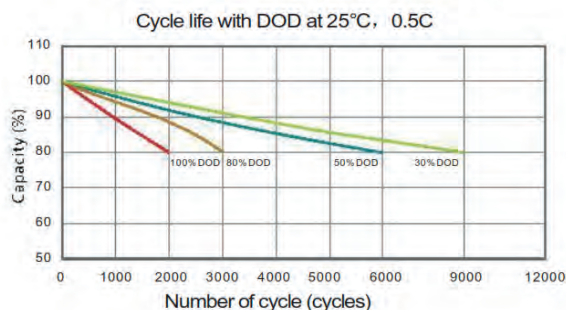
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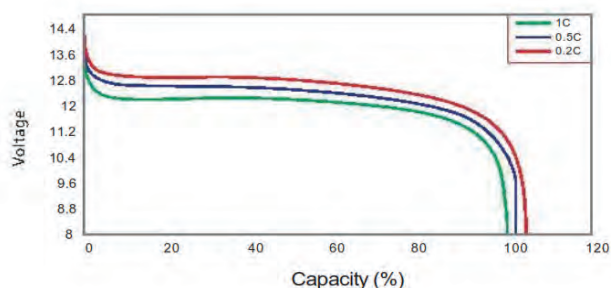
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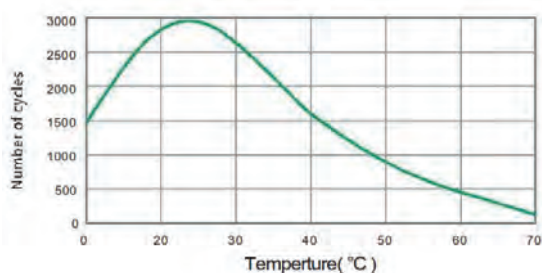
Number of Cycles Vs. DOD



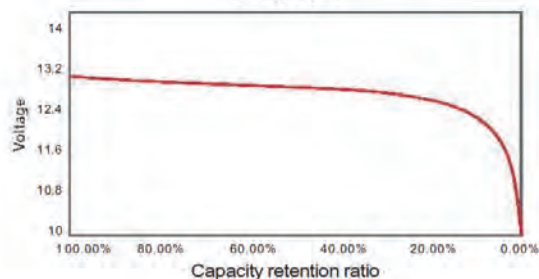
Discharge Performance at R.T.



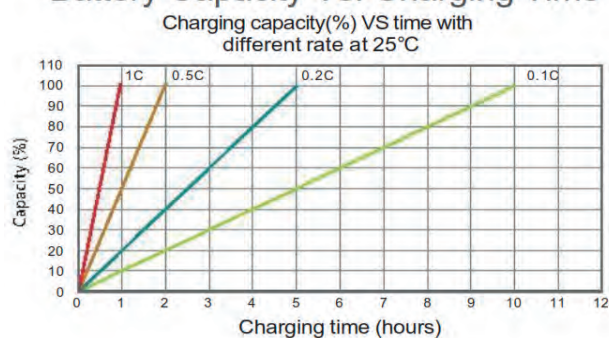
Cycle Life in Relation to Temperature



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



Battery Capacity Vs. Charging Time



Temperature Effects on Capacity

