

12 V 420 Ah Lithium Iron Phosphate (LiFePO4) Li-ion Battery

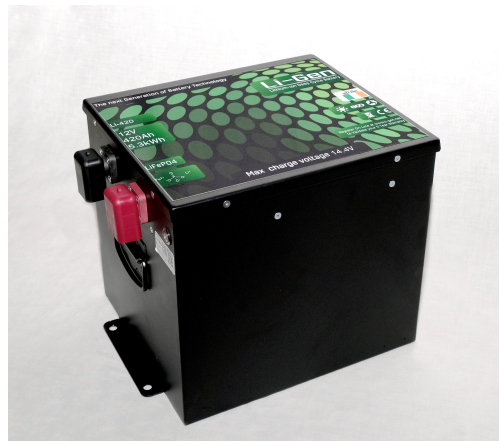
PN: Li-420

Features

- ◆ Drop-in compatible for lead acid battery, maintenance free
- ◆ 200 A discharge; charges in 2.25 hours
- ◆ Safe: Lithium Iron Phosphate cells, no hazardous gases
- ◆ Thousands of cycles, to 100% DOD, under normal conditions
- ◆ Built-in protector BMS with cell balancing: over-charge, over-discharge, over-current and over-temperature
- ◆ Wide temperature range:-20 °C– 60 °C
- ◆ Five-year limited warranty
- ◆ Some battery components may be recycled or repurposed

Applications

- ◆ UPS
- ◆ Mobility
- ◆ Electric Vehicle, E-bike, E-Rickshaw etc.
- ◆ Lighting
- ◆ Leisure and Marine

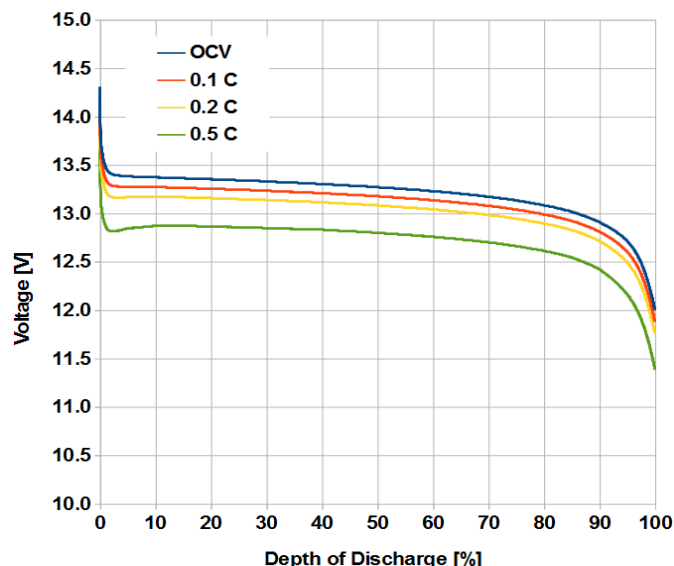


Product specifications			Min	Nom	Max	
Electrical	Voltage	Open circuit, 2 hour relaxation	12	13.3	14.4	V
	Capacity	1/20 C		420		Ah
	Energy	1/20 C		5.54		kWh
	Internal resistance	25 °C		2.25		mΩ
	Cycle life	0.5C charging/discharging, 25 °C, to 90% of nominal capacity		2000		Cycles
	Self discharge	25 °C			3.5	% / month
Mechanical	Dimension LWH		310 x 272 x 282			mm
	Connection		M8 Stud			-
	Mass			42		Kg
	Ingress protection	Powder-coated steel enclosure	IP55			-
Operating conditions			Min	Nom	Max	
CCCV charging	Constant current	CC stage ("bulk")			200	A
	Peak current	10 s max			210	A
	Constant voltage {CV}	CV stage ("absorption"), until current drops below 5 A, 2 hr max	13.7	13.8	14.4	V
	Float voltage			13.4	13.5	V
	Temperature	With heat pad	-10		45	°C
		Without heat pad	0		45	°C
Discharging	Continuous current				200	A
	Peak current	10 s max			210	A
	Cut-off voltage			11.2		V
	Temperature		-20		75	°C
Environmental	Humidity		35		75	%

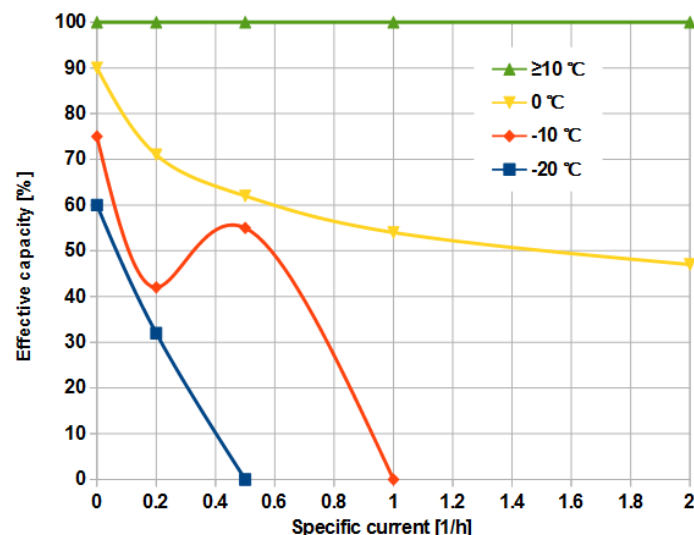
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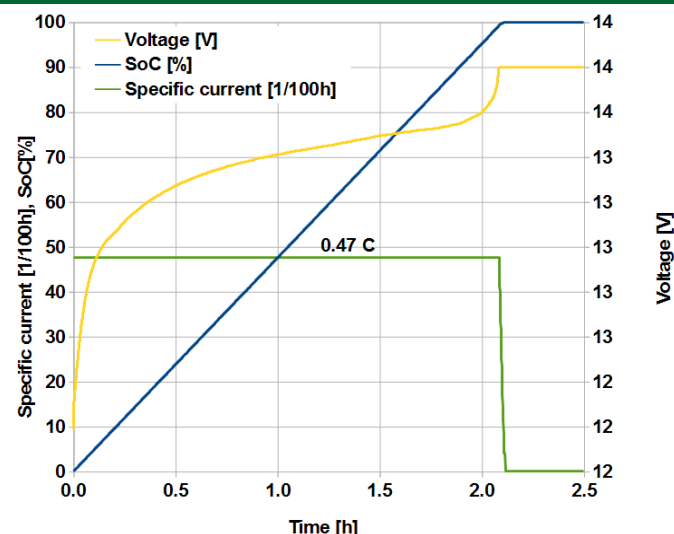
Discharge curves at various currents, 25 °C



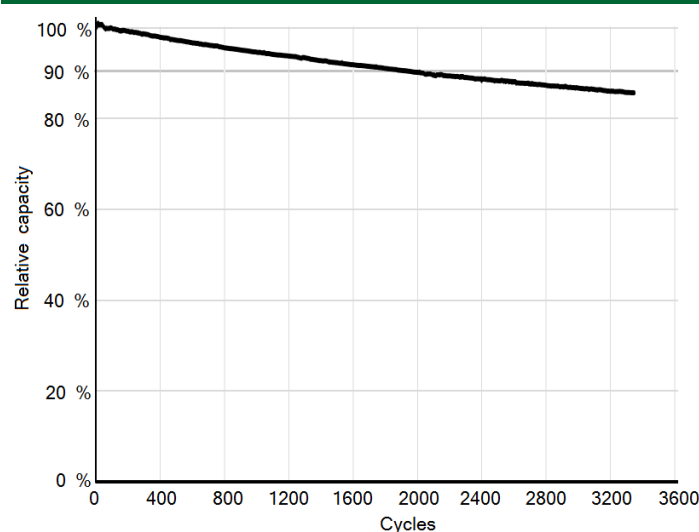
Effective capacity at various temperatures, currents



CCCV charge curve, @ recommended settings, 25 °C



Cycle life, 25 °C, 0.5 C



Battery care

- Storage:
 - Bring to ~50 % charge, then store in a cool, dry place
 - Do not drop
- Charging:
 - A CV stage that lasts too long degrades the battery rapidly
 - Stand-by applications: exceeding {CV} V degrades the battery
 - Charging is disabled below freezing; warm the battery first
 - Maximize capacity by regularly charging to the specified voltage
- Discharging:
 - If no voltage, the battery is off; charge it to wake it up

System design

- Though it may oriented in any direction, upright use is preferable
- Connect no more than 4 Batteries in Parallel.
- Do Not Connect in Series.

Refer to user manual for complete information.

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Performance specifications*			Min	Nom	Max	
Electrical	Energy storage	1-hour discharge, new	4.47			kWh
		10-hour discharge, new	5.58			kWh
		Derating, 1 cycle per day			-0.0164	%/day
		Derating, 1 cycle every 2 days			-0.0123	%/day
		Derating, 1 cycle every week			-0.0094	%/day
		Derating, not cycled			-0.0082	%/day
	Round-trip efficiency	1-hour discharge, 2-hour charge, new	96.5			%
		Derating, 1 cycle per day			-0.0055	%/day
		Derating, 1 cycle every 2 days			-0.0041	%/day
		Derating, 1 cycle every week			-0.0031	%/day
		Derating, not cycled			-0.0027	%/day
	Self discharge	Powered off, 100 % SoC to 0 % SoC, new		2.3		years
		Powered on, no load, 100 % SoC to 0 % SoC, new		23		days

