



ENGINEERED
IN THE USA



RB40

Voltage: 12.8V | Capacity: 40 Ah | Energy: 512 Wh

LITHIUM IRON PHOSPHATE BATTERY **LiFePO4**

ELECTRICAL SPECIFICATIONS

Nominal Voltage	12.8 V
Nominal Capacity	40 Ah
Capacity @ 25A	96 min
Resistance	≤50 mΩ @ 50% SOC
Efficiency	99%
Self Discharge	<3% per Month
Maximum Modules in Series	4

DISCHARGE SPECIFICATIONS

Maximum Continuous Discharge Current	40 A
Peak Discharge Current	80 A (7.5 s ±2.5 s)
BMS Discharge Current Cut-Off	170 A ±20 A (20 ±5 ms)
Recommended Low Voltage Disconnect	11 V
BMS Discharge Voltage Cut-Off	8 V (2.0 ±0.08 vpc) (140 ±60 ms)
Reconnect Voltage	10 V (2.5 ±0.1 vpc)
Short Circuit Protection	200-600 μs

TEMPERATURE SPECIFICATIONS

Discharge Temperature	-4 to 140 °F (-20 to 60 °C)
Charge Temperature*	-4 to 113 °F (-20 to 45 °C)
Storage Temperature	23 to 95 °F (-5 to 35 °C)
BMS High Temperature Cut-Off	176 °F (80 °C)
Reconnect Temperature	122 °F (50 °C)

*Refer to charge currents below 32°F (0°C)

MECHANICAL SPECIFICATIONS

Dimensions (L x W x H)	7.8 x 6.5 x 6.8" 197 x 166 x 173 mm
Weight	11.9 lbs (5.4 kg)
Terminal Type	M8 x 1.25 x 12mm
Terminal Torque	80 - 100 in-lbs (9 - 11 N-m)
Case Material	ABS
Enclosure Protection	IP66
Cell Type - Chemistry	Cylindrical - LiFePO ₄

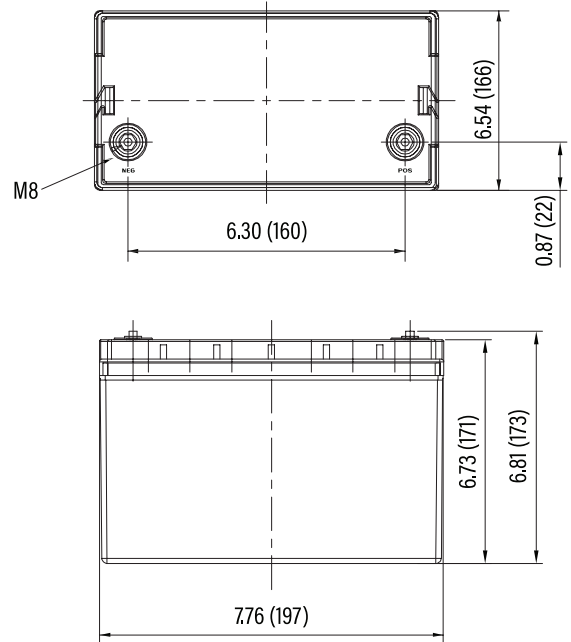
CHARGE SPECIFICATIONS

Recommended Charge Current	2 A - 20 A
Maximum Charge Current	40 A
Charge Current 14 to 32 °F (-10 to 0 °C)	≤0.1 C
Charge Current -4 to 14 °F (-20 to -10 °C)	≤0.05 C
Recommended Charge Voltage	14.2 V - 14.6 V
BMS Charge Voltage Cut-Off	15.2 V (3.8 ±0.025 vpc) (1.1 ±0.4 s)
Reconnect Voltage	14.4 V (3.6 ±0.050 vpc)
Balancing Voltage	14.4 V (3.6 ±0.025 vpc)

COMPLIANCE SPECIFICATIONS

Certifications	UN38.3 & CE (battery) UL1642 (cells) (File# MH62098) IEC62133 (cells)
Shipping Classification	UN 3480, CLASS 9

DIMENSIONAL SPECIFICATIONS





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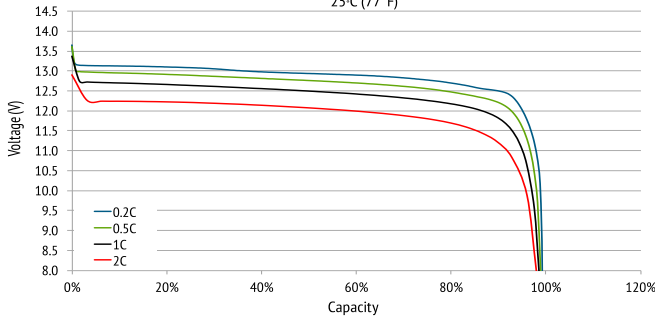
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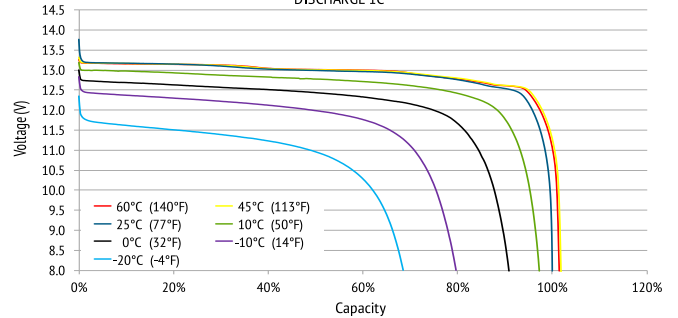
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PERFORMANCE CHARACTERISTICS

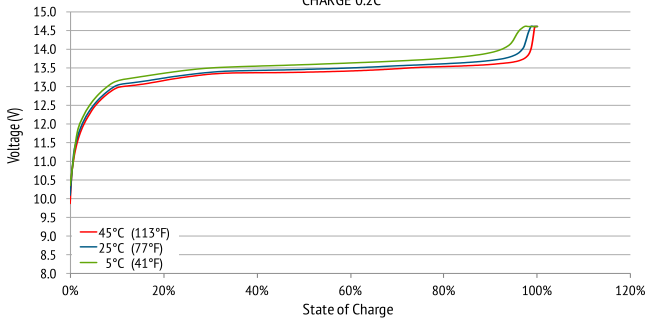
DISCHARGE VOLTAGE CHARACTERISTICS at VARIOUS RATES
25°C (77°F)



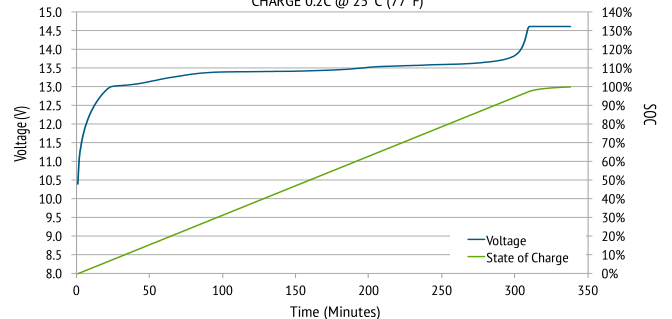
DISCHARGE VOLTAGE CHARACTERISTICS at VARIOUS TEMPERATURES
DISCHARGE 1C



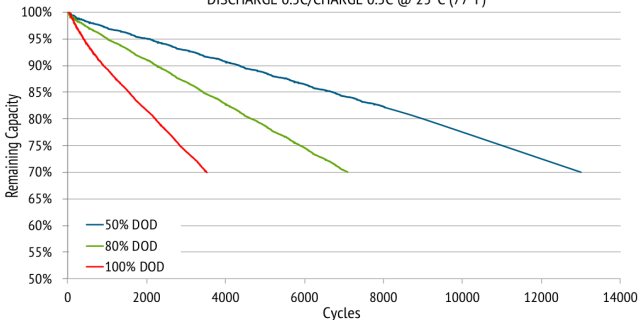
CHARGE VOLTAGE CHARACTERISTICS at VARIOUS TEMPERATURES
CHARGE 0.2C



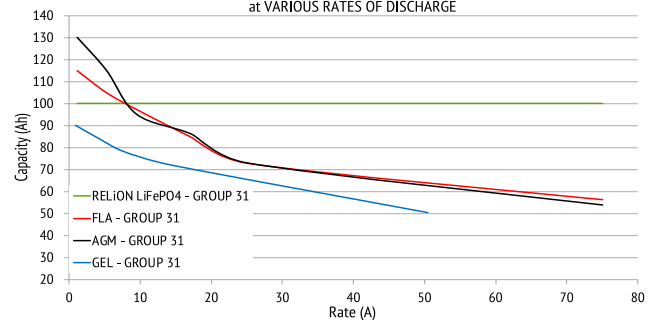
CHARGE VOLTAGE and STATE OF CHARGE (SOC)
CHARGE 0.2C @ 25°C (77°F)



CYCLE LIFE vs. DEPTH OF DISCHARGE (DOD)
DISCHARGE 0.5C/CHARGE 0.5C @ 25°C (77°F)



CAPACITY of RELiON LiFePO4 vs. LEAD ACID
at VARIOUS RATES OF DISCHARGE



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UN38.3

