



RB20-X

LITHIUM IRON PHOSPHATE BATTERY

ELECTRICAL SPECIFICATIONS

Nominal Voltage	12.8 V
Nominal Capacity	20 Ah
Capacity @ 25A	48 min
Energy	256 Wh
Resistance	≤60 mΩ @ 50% SOC
Efficiency	99%
Self Discharge	<3% per Month
Maximum Modules in Series	3

DISCHARGE SPECIFICATIONS

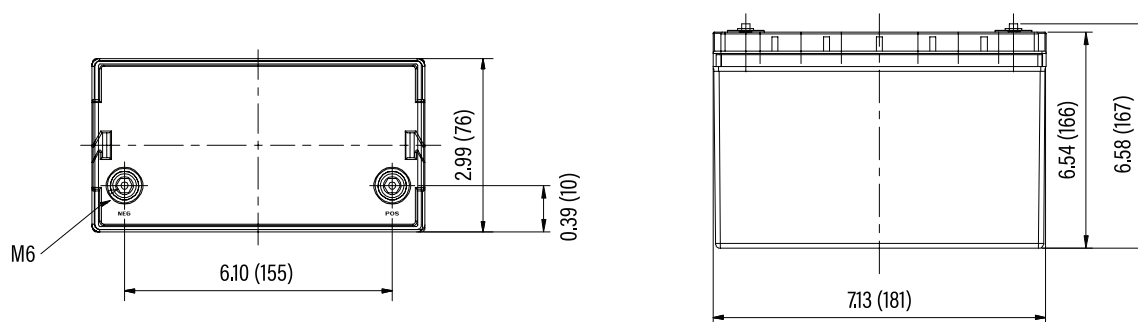
Maximum Continuous Discharge Current	50 A
Peak Discharge Current	90 A (4 s ±1 s)
BMS Discharge Current Cut-Off	140 A ±20 A (12 ±5 ms)
Recommended Low Voltage Disconnect	11 V
BMS Discharge Voltage Cut-Off	8 V (2.0 ±0.08 vpc) (20 ±5 ms)
Reconnect Voltage	9 V ±1.32 V (2.25 ±0.33 vpc)
Short Circuit Protection	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	167 °F (75 °C)
Reconnect Temperature	122 °F (50 °C)

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

DIMENSIONAL SPECIFICATIONS



MECHANICAL SPECIFICATIONS

Dimensions (L x W x H)	7.1 x 3.0 x 6.6"
	181 x 76 x 166.5 mm
Weight	6.1 lbs (2.75 kg)
Terminal Type	Flag Terminal
Terminal Torque	35 - 44 in-lbs (4 - 5 N-m)
Case Material	ABS
Enclosure Protection	IP56
Cell Type - Chemistry	Cylindrical - LiFePO ₄

CHARGE SPECIFICATIONS

Recommended Charge Current	1 A - 10 A
Maximum Charge Current	50 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	15.6 V (3.9 ±0.025 vpc) (1.0 ±0.5 s)
Reconnect Voltage	15.2 V (3.8 ±0.050 vpc)
Balancing Voltage	14.4 V (3.6 ±0.025 vpc)

COMPLIANCE SPECIFICATIONS

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

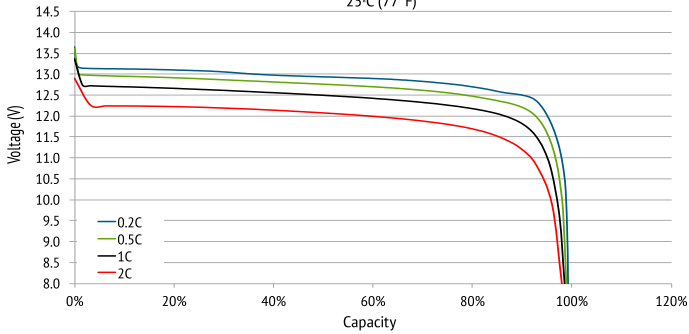




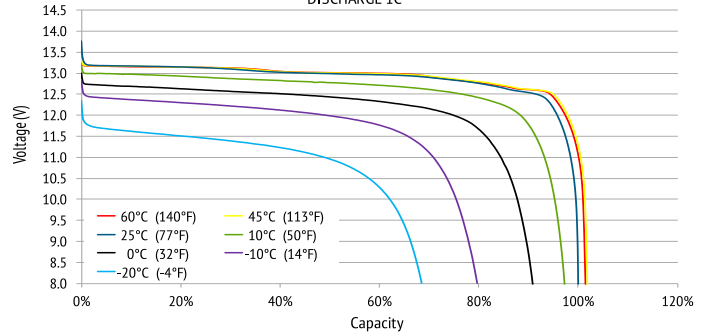
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PERFORMANCE CHARACTERISTICS

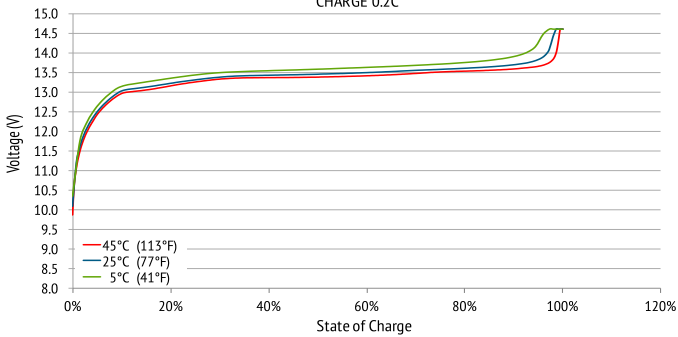
DISCHARGE VOLTAGE CHARACTERISTICS at VARIOUS RATES
25°C (77°F)



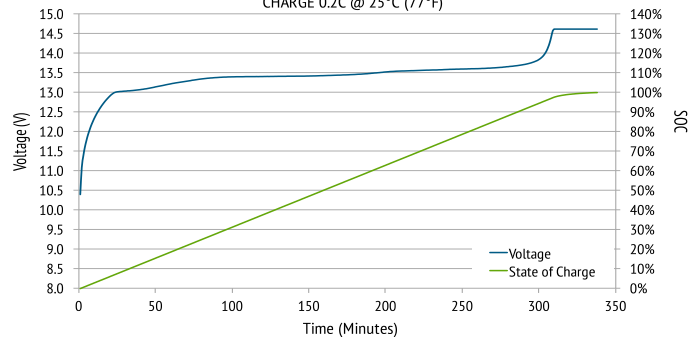
DISCHARGE VOLTAGE CHARACTERISTICS at VARIOUS TEMPERATURES
DISCHARGE 1C



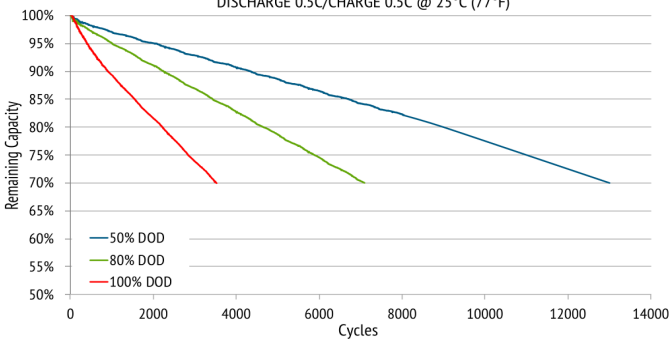
CHARGE VOLTAGE CHARACTERISTICS at VARIOUS TEMPERATURES
CHARGE 0.2C



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

