



# RB20-X

Voltage: 12.8V | Capacity: 20 Ah | Energy: 256 Wh

LITHIUM IRON PHOSPHATE BATTERY **LiFePO<sub>4</sub>**

## ELECTRICAL SPECIFICATIONS

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

## DISCHARGE SPECIFICATIONS

Maximum Continuous Discharge Current	50 A
Peak Discharge Current	90 A (4 s ±1 s)
Discharge Over-Current Protection	140 A ±20 A (12 ±5 ms)
Recommended Low Voltage Disconnect	11.0 V
Discharge Under-Voltage Protection	8.0 V (2.0 ±0.08 vpc) (20 ±5 ms)
Reconnect Voltage	9.0 V ±1.32 V (2.25 ±0.33 vpc)
Short Circuit Protection Response Time	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)
Recommended 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)

## MECHANICAL SPECIFICATIONS

Dimensions (L x W x H)	7.1 x 3.0 x 6.7" 181 x 76 x 169 mm
Weight	6.1 lbs (2.75 kg)
Terminal Type	M6
Terminal Torque	35 - 44 in-lbs (4 - 5 N-m)
Case Material	ABS
Enclosure Protection	IP66
Cell Type - Chemistry	Cylindrical - LiFePO <sub>4</sub>

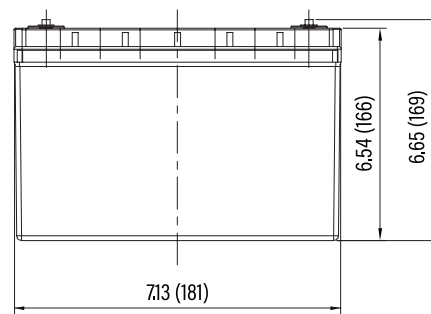
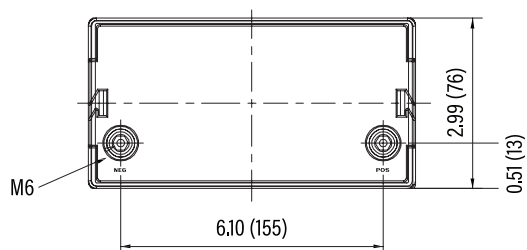
## CHARGE SPECIFICATIONS

Recommended Charge Current	1 A - 10 A
Maximum Continuous Charge Current	50 A
Charge Current 14 to 32 °F (-10 to 0 °C)	≤0.1 C (10 A)
Charge Current -4 to 14 °F (-20 to -10 °C)	≤0.05 C (5 A)
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	UN38.3, CE, UKCA (battery) UL1642 (cells) (File# MH62098) IEC62133 (cells)
Shipping Classification	UN 3480, CLASS 9

## DIMENSIONAL SPECIFICATIONS





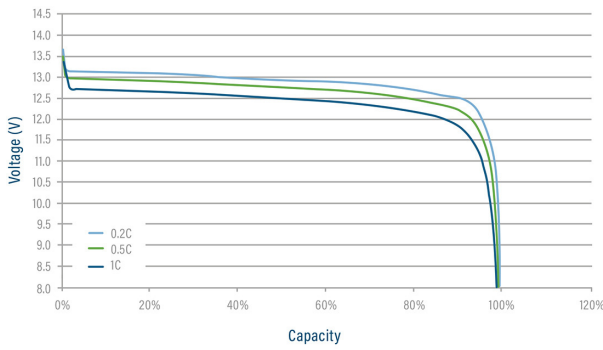
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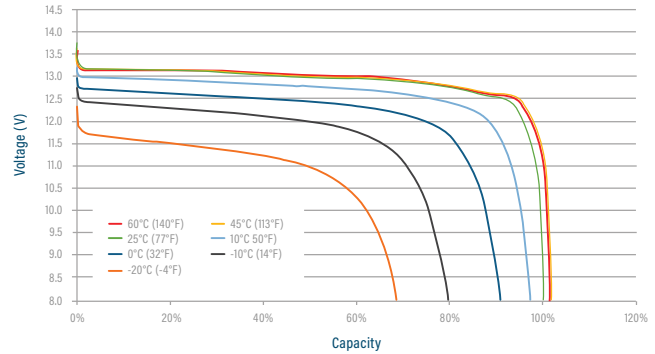
LITHIUM IRON PHOSPHATE BATTERY **LiFePO4**

## TYPICAL LITHIUM IRON PHOSPHATE CHARACTERISTICS\*

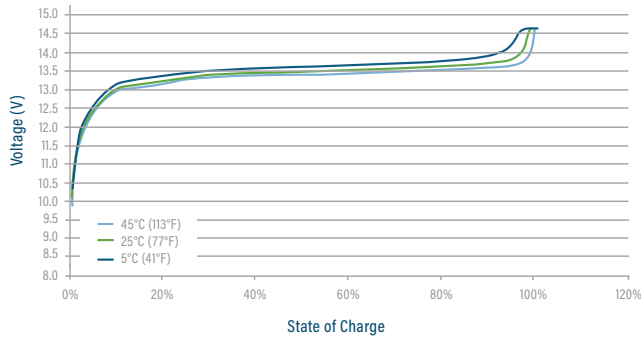
DISCHARGE VOLTAGE CHARACTERISTICS AT VARIOUS RATES  
25°C (77°F)



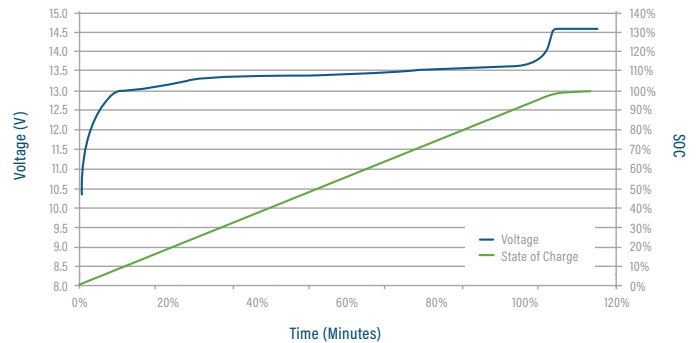
DISCHARGE VOLTAGE CHARACTERISTICS AT VARIOUS TEMPERATURES  
DISCHARGE 1C



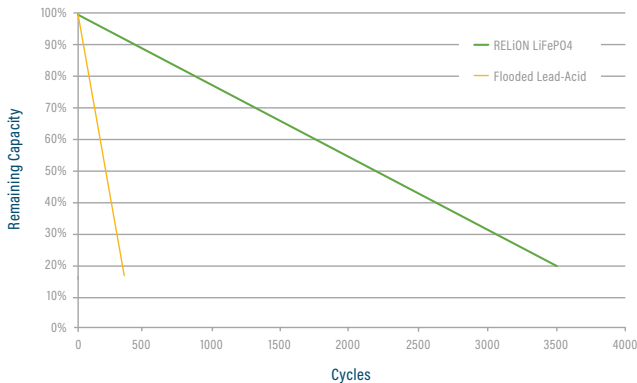
CHARGE VOLTAGE CHARACTERISTICS AT VARIOUS RATES  
CHARGE 0.2C



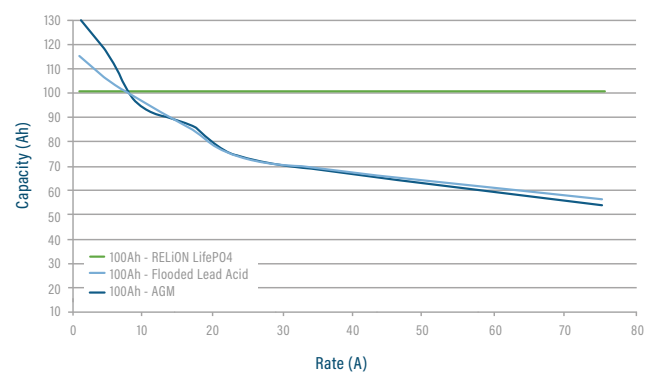
CHARGE VOLTAGE AND STATE OF CHARGE (SOC)  
CHARGE 0.2C @ 25°C (77°F)



CYCLE LIFE VS. DEPTH OF DISCHARGE (DOD) AT 80%  
DISCHARGE 0.5C/CHARGE 0.5C @ 25°C (77°F)



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



\*Performance between applications and batteries may vary. All results should be independently verified by customer.

