



# Immortal

## Cold-Weather Storage Batteries

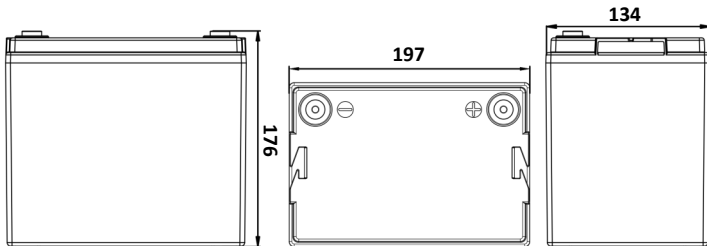


# LTO12-25ES

ELECTRICAL	Nominal <sup>1</sup>	Absolute <sup>2</sup>
Voltage	12.8 V	15.0 V
Capacity	25 Ah	> 25 Ah
Charge Voltage	13.5 V	15.0 V
Continuous Charge Current	30 A	100 A
Continuous Discharge Current	100 A	250 A
Operating Temperature (min / max)	25 °C	-70°C / +85 °C
Storage Temperature (min / max)	25 °C	-35°C / +35 °C
Round-Trip Efficiency (25°C / -40°C)	99 % / 65 %	n/a
Self-Discharge	< 1 % / month	
Cycle Life	20,000 Cycles @100 % DOD	
Calendar Life	25 Years	

<sup>1</sup> Recommended for maximum cell life.  
<sup>2</sup> May reduce cell life (see BMS Protection).

MECHANICAL	
Cell Type	Lithium Titanate Oxide (LTO)
Cell Configuration	5s1P
Dimensions (l x w x h)	197 x 134 x 192mm (7.8 x 5.3 x 7.6in)
Weight	5.5 kg (11.6 lbs)
Terminals / Torque	3/8 UNC / 27 lb-ft (36 Nm)
Enclosure	ABS
IP Grade	IP 65
Comm Port	-Special Order

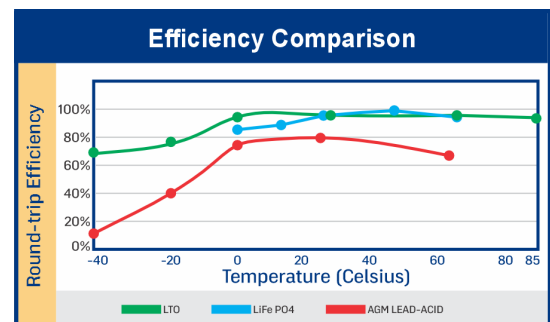


BMS PROTECTION <sup>3</sup>	
High Voltage Cut-Off	14 V (Recovery Voltage, 13.5 V)
Low Voltage Cut-Off	8 V (Recovery Voltage, 9 V)
Max. Charge Current	30 A (Release, 3s)
Max. Discharge Current (Delay, 30s)	250-600 A (Release, 3s)
Pulse-Discharge Current (Delay, 5s)	> 600 A (Release, 3s) <sup>4</sup>
Short-circuit Cut-Off (delay, < 5ms)	> 1000 A (Disconnect to release)
Over-Temperature Protection	80 °C (Release, 65 °C)
Low-Temperature Protection, Discharge	-45 °C (Release, -35 °C)
Low-Temperature Protection, Charge	-30 °C (Release, -20 °C)

<sup>3</sup> Factory settings may be altered by special order.  
<sup>4</sup> Disconnect Load after 3 consecutive events.

CELL BALANCING	
Equalization Voltage	2.7 V / Cell
Passive Balance Current	0 - 75 mA
BMS Quiescent Current Consumption	≤ 30 µA

ADDITIONAL FEATURE	
Bluetooth	YES
Power-Saver Start Protection	NO
Display	Special Order
Illuminated On/Off Button	Special Order
Series Capability	Maximum 4 (48 V)



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