



# LithiumWerks™

## 18650 Lithium Ion Energy Cell

### Lithium Iron Phosphate Technology

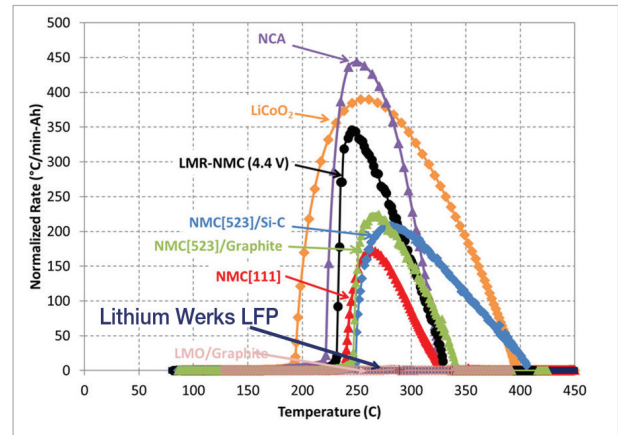
Lithium Werks' 18650 energy cells are best for Power.Safety.Life.™ applications. They deliver high power and energy due to their use of lithium iron phosphate battery technology (LiFePO<sub>4</sub> or LFP). The cells are inherently safe over a wide range of temperatures and conditions. Whether the application requires outstanding cycle life or stable float reliability, the Lithium Werks' 18650 cells are suitable for a wide variety of industrial, medical, military, portable devices, energy storage, and consumer electronics applications.

Lithium Werks' Lithium Iron Phosphate battery technology offers thermal-stable chemistry, faster charging, consistent output, low capacity loss over time, and superior total cost of ownership (TCO). It provides the foundation for safe systems while meeting the most demanding customer requirements. Multiple layers of protection are employed at the chemistry, cell, and system level to achieve an energy storage solution with superior safety and abuse tolerance compared to metal oxide lithium-ion chemistries.

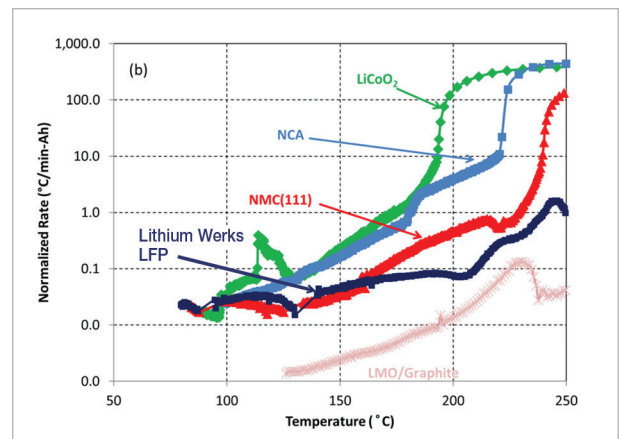
#### Applications

- Industrial
- Medical
- Portable devices
- Emergency lighting
- Energy storage
- Military equipment
- Consumer electronics

#### Inherent Safety of LFP



Electro-chemistry	Lithium Werks LFP	NMC (111)	NCA	LiCoO <sub>2</sub>
Thermal Runaway Characteristic	Low-Energy, Non-Propagating	High-Energy, Propagating		
Probability of Propagation	Very Low	Very High (pack-level mitigation required)		
Runaway Onset Temp (°C)	≥210	≥160	≥120	
Peak Thermal Runaway Temp	≈250	≥750		
Peak Rate of Temp Increase (°C/min-Ah)	<2.0	>150	>400	



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### Specs at 23°C (unless stated)

#### Nominal Ratings

Voltage	3.2 V
Capacity @ C/5 Typical (Min)	1.8 Ah (1.7)
Energy	5.76 Wh
Specific Energy	133 Wh/kg
Energy Density	330 Wh/L
Impedance (1kHz ACIR)	< 20 mΩ
Cycle Life at 0.5C/0.5C, 100% DOD	> 2000 cycles

#### Discharging

Max Continuous Discharge Current	5.4 A (3C)
Max Pulse Discharge Current, 10s	18 A (10C)
Minimum Voltage	2.0 V
Temperature	-20 °C to 60 °C

#### Charging

Recommended Charge Voltage	3.6 V
Recommended Charge Current	≤ 0.9 A (C/2)
Max Continuous Current, >10 °C	2.7 A (1.5C)
Terminate Charge @ 3.6 V	< 36 mA
Float Voltage	3.5 V
Temperature	0 °C to 60 °C

#### Storage

Temperature	-30 °C to 70 °C
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#### Mechanical

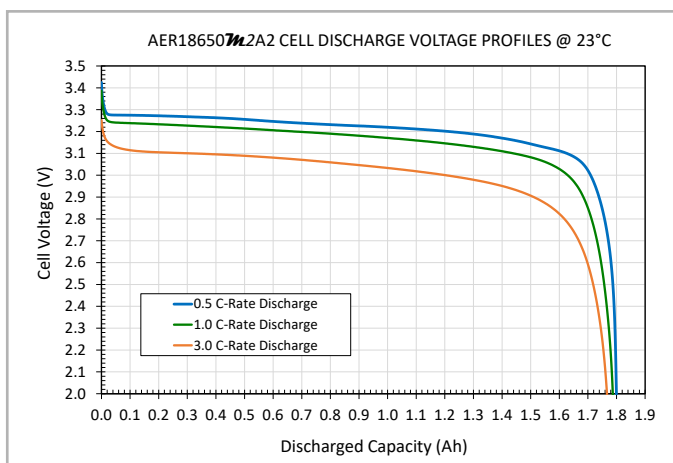
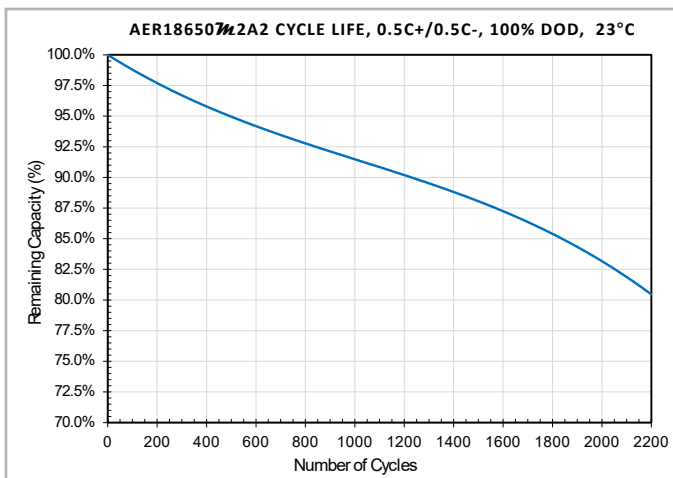
Diameter	Ø18.5 +/- 0.1 mm
Length	64.95 +/- 0.2 mm
Mass	43.4 g +/- 1.0 g

#### Certifications

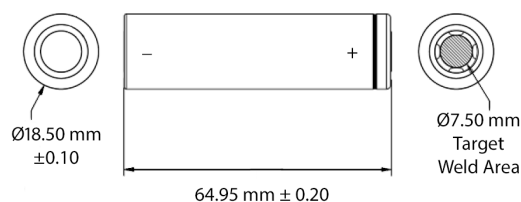
Transportation shipped @ ≤ 30% SOC	UN 3480 UN 38.3
Safety	UL 1973, CCC, IEC 62620, IEC 62133

Part Number 320749-001

### Cell Data



### Dimensions



18650 Energy Cell Data Sheet  
Sept 2024  
SF000010 rev. 2

**LithiumWerks™**  
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Performance may vary depending on, but not limited to cell usage and application. If cell is used outside specifications, performance will diminish.