



# LithiumWerks<sup>TM</sup>

## 32140 Lithium Ion Energy Cell

Lithium Iron Phosphate Technology

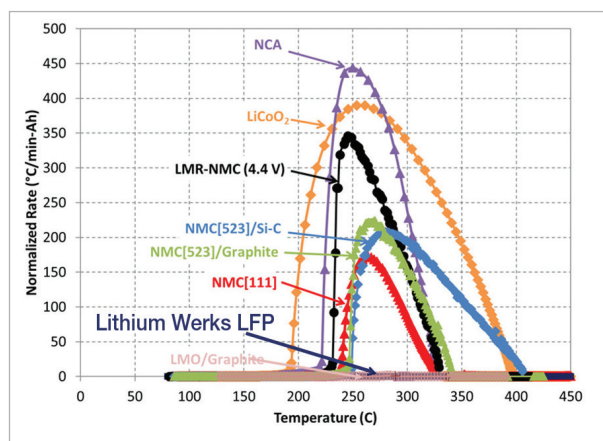
Lithium Werks' 32140 energy cells are best for Power.Safety.Life.<sup>®</sup> applications. They deliver high energy and long life due to their use of lithium iron phosphate ( $\text{LiFePO}_4$ ) battery technology. The cells are inherently safe over a wide range of temperatures and conditions. Whether the application requires superior **high-temperature cycle life** or stable float reliability, the Lithium Werks' 32140 cells are suitable for a wide variety of e-mobility, energy storage, and industrial 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.

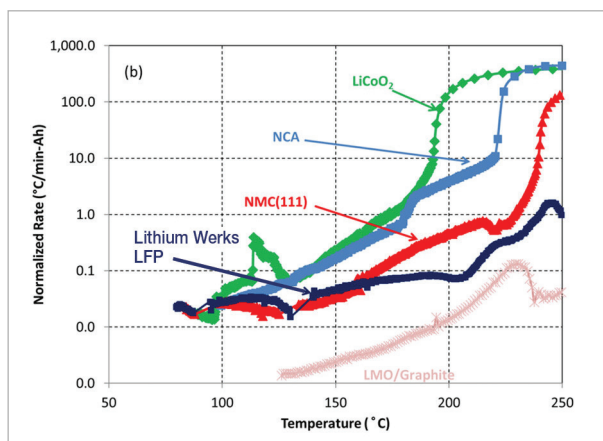
### Applications

- Electric 2 & 3 Wheelers
- Light Commercial Vehicles (eLCV)
- Electric Utility Vehicles
- Hybrid-Electric Marine
- UPS and Telecom Backup
- Residential Energy Storage
- Material Handling and AGVs
- Industrial Equipment

### 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 |                    |



# 32140 Lithium Ion Energy Cell

## Lithium Iron Phosphate Technology

### Specifications (at 23°C, unless stated)

#### Nominal Ratings

|                                       |                |
|---------------------------------------|----------------|
| Voltage                               | 3.2 V          |
| Capacity @ C/5 Typical                | 15.0 Ah        |
| Energy                                | 48 Wh          |
| Specific Energy                       | >172 Wh/kg     |
| Energy Density                        | 396 Wh/L       |
| Impedance (1kHz ACIR) Typ             | < 3 mΩ         |
| Cycle Life at 0.5C/0.5C, 80% DOD      | > 3,500 cycles |
| Cycle Life at 0.5C/0.5C, 80% DOD 45°C | > 2,000 cycles |

#### Discharging

|                                     |                 |
|-------------------------------------|-----------------|
| Recommended Cont. Discharge Current | ≤ 15 A (1C)     |
| Max Continuous Discharge Current    | 45 A (3C)       |
| Max Pulse Discharge Current, 30s    | 75 A (5C)       |
| Minimum Voltage                     | 2.0 V           |
| Temperature                         | -10 °C to 60 °C |

#### Charging

|                            |               |
|----------------------------|---------------|
| Recommended Charge Voltage | 3.65 V        |
| Recommended Charge Current | ≤ 7.5 A (C/2) |
| Fast charge (20-80% SOC)   | 15 A (1C)     |
| Charging Profile           | CC/CV         |
| Float Voltage              | 3.45 V        |
| Temperature                | 0 °C to 60 °C |

#### Storage

|             |                 |
|-------------|-----------------|
| Temperature | -20 °C to 70 °C |
|-------------|-----------------|

#### Mechanical

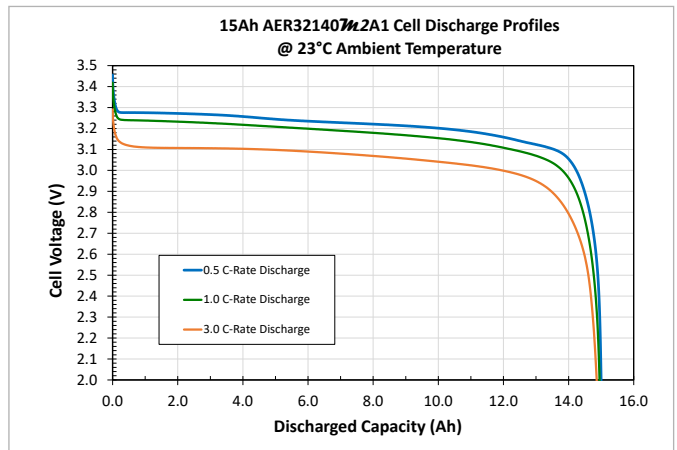
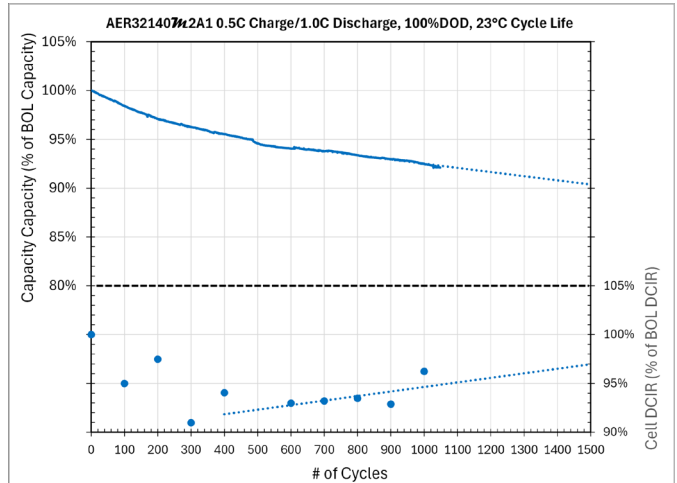
|          |                  |
|----------|------------------|
| Diameter | Ø33.4 +/- 0.2 mm |
| Length   | 140.0 +/- 0.2 mm |
| Mass     | 275 g +/- 5 g    |

#### Target Certifications

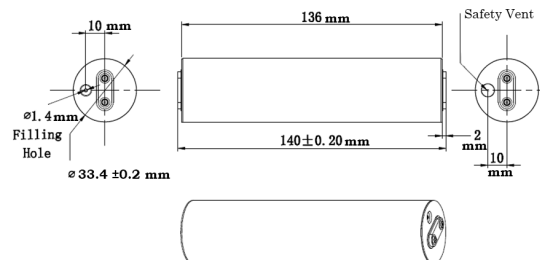
|                                    |                            |
|------------------------------------|----------------------------|
| Transportation shipped @ ≤ 30% SOC | UN 38.3, BIS Certification |
| Safety                             | UL 1642                    |

Part Number: 321400-001

### Cell Data



### Dimensions



AER32140 Energy Cell  
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All specifications are subject to change without notice. The information provided herein is believed, but not guaranteed, to be current and accurate. Performance may vary depending on, but not limited to, cell usage and application. If cell is used outside specifications, performance will diminish.