

Component Datasheet: Prismacell 280Ah LiFePO₄ Cell

Specification

Overview

The **Prismacell 280Ah** (Gigavolt Internal P/N: [CEL-LFP-280](#)) is the baseline prismatic lithium iron phosphate cell utilized in the **Megapack X-7000** and **CompactGrid C-1200** battery modules. Manufactured under contract by Tier-1 supplier **Voltaic Core Technologies** (Supplier ID: [SUP-VCT-01](#)), this cell is optimized for deep-cycle stationary storage applications.

Electro-Chemical & Physical Characteristics

- **Nominal Capacity:** 280 Ah (measured at 0.5 C discharge, 25 °C)
- **Nominal Cell Voltage:** 3.20 V
- **Operational Voltage Window:** 2.50 V (lower cutoff) to 3.65 V (upper charge cutoff)
- **Maximum Continuous Discharge Rate:** 1.0 C (280 A)
- **Peak Pulse Discharge (30 sec):** 2.0 C (560 A)
- **Internal AC Impedance (1 kHz):** ≤ 0.25 mΩ
- **Cycle Life to 80% Retained Capacity:** ≥ 6,000 cycles (at 0.5 C / 0.5 C, 80% DoD, 25 °C)
- **Dimensions:** 71.5 mm (W) × 173.6 mm (L) × 204.0 mm (H)
- **Individual Cell Mass:** 5.42 kg ± 0.1 kg
- **Terminal Post Configuration:** M6 laser-welded aluminum busbar studs (Torque limit: 8.0 N·m)

Thermal Management & Operating Thresholds

- **Optimal Operating Temperature:** 15 °C to 35 °C
- **Permissible Charge Range:** 0 °C to 55 °C (below 0 °C requires pre-heating via integrated base heating film)
- **Permissible Discharge Range:** -20 °C to 60 °C
- **Self-Discharge Rate:** ≤ 3% per month at 50% State of Charge (SoC) and 25 °C
- **Thermal Decomposition Temperature (Onset):** 270 °C

Safety and Compliance Ratings

- **Certifications:** UL 1973, UL 9540A (Cell-Level Test), IEC 62619, UN 38.3
- **Integrated Safety Mechanism:** Bursting vent membrane rated for rupture at 0.45 MPa $\pm$ 0.05 MPa to relieve internal pressure prior to cell-can rupture.