

UL 9540 & IEC 62619 Technical Compliance Register: Battery Cell CB Test Certificate

UL 9540 & IEC 62619 TECHNICAL COMPLIANCE REGISTER: BATTERY CELL CB TEST CERTIFICATE

EXECUTIVE SUMMARY

This document serves as the official Technical Compliance Register and Product Overview for the Battery Cell CB Test Certificate, a cornerstone of our global energy storage system (ESS) portfolio. As a Tier-1 global energy storage vendor, we present this certificate as irrefutable evidence of our commitment to the highest standards of safety, performance, and quality assurance. The CB (Certification Body) Test Certificate is an internationally recognized document that validates our battery cells have undergone rigorous testing to meet the requirements of the IEC 62619 standard, specifically for industrial and commercial energy storage applications. This register provides a comprehensive overview of the certified cell's specifications, the scope of the test, and its integration into our broader BESS solutions, ensuring absolute confidence for utility-scale projects, C&I deployments, and micro-grid infrastructures worldwide.



SYSTEM ARCHITECTURE & SAFETY PHILOSOPHY

The foundation of our safety architecture is the certified LFP (Lithium Iron Phosphate) battery cell. The CB Test Certificate confirms the cell's compliance with IEC 62619, which addresses critical safety aspects including thermal runaway propagation, overcharge protection, and external short circuit resilience. This certification is not an isolated achievement but a critical component of a multi-layered safety strategy integrated into our BESS. The battery management system (BMS) actively monitors cell voltage, current, and temperature, leveraging the data from certified tests to ensure operations stay within safe envelopes. The passivation layer of the cell chemistry inherently offers superior thermal and chemical stability, while the UL 9540 listing for our complete storage system demonstrates that the cell's safety is preserved and enhanced at the system level, including fire suppression and containment.

KEY FEATURES OF THE CB TEST CERTIFICATE

- Feature 1: International Recognition & Market Access: The CB Test Certificate provides a globally accepted proof of compliance, facilitating faster and more cost-effective market entry across 50+ participating countries without the need for redundant national testing, significantly streamlining project approval processes.
- Feature 2: Uncompromised Safety Validation: The certificate validates that cells have passed rigorous tests including Thermal Runaway, Overcharge, and Forced Discharge, ensuring robust protection against potentially hazardous operating conditions and enhancing the overall safety of the energy storage installation.
- Feature 3: Performance & Reliability Assurance: Beyond safety, the certification scope includes performance verification under extreme temperature and charge/discharge cycles, providing documented evidence of long-term operational reliability and capacity retention critical for asset performance over a 15+ year lifespan.
- Feature 4: Independent Third-Party Verification: Issued by an accredited independent testing laboratory, the certificate offers unbiased confirmation of product quality, building trust with utilities, EPCs, and financial institutions, and often serving as a prerequisite for insurability and asset financing.

COMPLIANCE & STANDARDS

The Battery Cell CB Test Certificate confirms strict adherence to the following pivotal standards:

- ****IEC 62619:2017****: The primary standard for safety requirements for secondary lithium cells and batteries, covering industrial and commercial applications. This includes robust testing for electrical, mechanical, and environmental hazards.
- ****IEC 62133-2:2017****: The secondary safety standard for portable and industrial applications, ensuring the cell meets requirements for internal short circuits, thermal abuse, and manufacturing quality, complementing the broader 62619 scope.
- ****UL 9540****: While issued at the system level, the cell's performance and safety data directly supports the successful listing of our complete ESS platform against this stringent Standard for Energy Storage Systems and Equipment, ensuring seamless system certification.



TECHNICAL SPECIFICATIONS (Certified Cell)

Parameter	Specification
Cell Chemistry	Lithium Iron Phosphate (LFP)
Nominal Capacity (Individual Cell)	e.g., 280 Ah
Nominal Voltage (Individual Cell)	e.g., 3.2 V
Cycle Life (at 80% DoD, 25°C)	≥ 8,000 cycles
Operating Temperature Range (Charge)	0°C to 55°C
Operating Temperature Range (Discharge)	-30°C to 60°C
Key Certified Safety Tests (IEC 62619)	Thermal Runaway, Overcharge, External Short Circuit, Forced

	Discharge
Certificate Scope	Industrial & Commercial Battery Systems
Issuing Body	TÜV SÜD / DEKRA (or equivalent accredited NB)

The CB Test Certificate is embedded into our complete range of energy storage products, from 215 kWh commercial cabinets to 5 MWh+ containerized solutions. This certified cell platform enables high energy density, exceptional cycle life (over 8,000 cycles at 80% DoD), and the highest level of safety, making it the ideal choice for energy arbitrage, peak shaving, and renewable firming applications globally.