



UL9540a energy storage battery testing service

What is UL 9540a testing?

UL 9540A testing provides manufacturers with a competitive edge by demonstrating compliance with industry and regulatory safety requirements, opening doors to new markets and customers. A test article at SwRI enables UL 9540A testing for energy storage systems. SwRI performs R&D and testing for energy storage systems.

What is UL9540a?

As ESS moves into building/urban environments, there is concern regarding fire containment/mitigation in the event of thermal runaway. UL9540A is intended to provide technical information on ESS behavior under thermal runaway. Testing is conducted at the cell, module, unit, and (if needed) system levels.

When was UL 9540a updated?

As fire codes evolved, and UL gained additional experience with battery ESS fire propagation testing, thermal runaway characteristic, and the data needed by code authorities, UL 9540A was updated in rapid succession with a second edition published in January 2018 and a third edition published in June 2018.

How can UL help with large energy storage systems?

We conduct custom research to help identify and address the unique performance and safety issues associated with large energy storage systems. Research offerings include: UL can test your large energy storage systems (ESS) based on UL 9540 and provide ESS certification to help identify the safety and performance of your system.

Does SwRI provide UL 9540a certification?

While SwRI has performed many UL 9540A development tests in the past, SwRI is slated to provide official UL 9540A certification at module and unit level. Third-party testing and certification from UL, a trusted global safety science organization, instills confidence in end-users and stakeholders, fostering trust in the client's brand.

Does Southwest Research Institute perform UL 9540a testing?

Southwest Research Institute (SwRI) is equipped with state-of-the-art equipment and staffed by experienced experts in energy storage safety. We perform UL 9540A testing in an indoor burn facility which utilizes a pollution abatement system that eliminates the release of harmful substances into the environment.

Testing for UL9540a is done in four steps. Cell level testing - The flammability of cells, the likelihood of thermal runaway, and the composition of gasses released are all tested. ... o Other utility-grid support services. Why You Should Choose an Energy Storage System with UL9540. If you choose an energy storage system (ESS) that meets ...



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Battery Energy Storage Systems Background UL 9540A was developed to address safety requirements contained in U.S. building and fire codes based on concerns from the fire service. One primary concern that NFPA 855 and the International Fire Code (IFC) try to address is the potential fire and explosion hazards associated with ... Unit-Level Test ...

UL 9540A Test Report for Natron Energy, Inc. Cell Energy Storage Description . Cell Energy Storage System Configuration . Table 1 - Product details . Cell . Manufacturer Natron Energy, Inc Model Number V6.0 Chemistry Sodium Ion Electrical Ratings 1.56V 4.6Ah Dimensions 194 mm x 246 mm x 5.1 mm Cell Weight 305g Construction Description Pouch

UL9540A. Popular View of the Evolution of the Electric Grid ... Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems. UL 9540A is NOT a Standard but is currently referenced in NFPA 855 draft. Goal is to . provide quantitative data to. characterize potential ESS fire events

Energy Storage System Testing Capabilities. We provide a range of energy storage testing and certification services. These services benefit end users, such as electrical utility companies and commercial businesses, producers of energy storage systems, and supply chain companies that provide components and systems, such as inverters, solar ...

FIRE SAFETY APPROACH NEC: National Electric Code (NFPA 70) NFPA 855: Standard for the Installation of Stationary Energy Storage Systems ICC: The International Fire Code, International Residential Code UL 1642: Lithium Batteries UL 1973: Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications UL 9540: Energy ...

Test specifications : ANSI/CAN/UL9540A:2019 Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems Fourth Edition, Dated November 12, 2019 Date of receipt: 2022-07-18 Sample No.: Customer ID Test Period: Original test date: 2022-07-18 to 2022-08-15 Issuing Laboratory: SGS-CEC New Energy Technology ...

Samsung UL9540A Lithium-ion Battery Energy Storage System The Samsung SDI 128S and 136S energy storage systems for data center application are the first lithium-ion battery cabinets to fulfill the rack-level safety standards of the UL9540A test for Energy Storage Systems (ESS), which was developed by UL, a global safety certification company.

On the other hand, UL9540A serves as a vital testing approach for reviewing the thermal runaway fire proliferation in battery energy storage space systems. This examination approach is essential for analyzing the potential dangers and reducing the effects of thermal runaway scenarios in an ESS.

UL 9540A testing involves a graduated approach, starting from individual cell units and progressing to



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complete battery energy storage systems (BESS) in their installed configuration. Each level of testing builds upon the results of the previous stage, ensuring comprehensive evaluation and enhancing safety measures. Test Methods and Compliance

battery ESS hazards and fire service tactical considerations. Contributing Factors ... Electrical Safety of Battery Energy Storage Systems". Fire Protection Engineering. 84. 2019. Updated Since Surprise, AZ Incident ... UL9540A Test Method Key Findings. 38

Navigating the challenges of energy storage The importance of energy storage cannot be overstated when considering the challenges of transitioning to a net-zero emissions world. Storage technologies offer an effective means to provide flexibility, economic energy trading, and resilience, which in turn enables much of the progress we need to ...

The results of the test are provided to the AHJ to assist in his/her decision. UL9540A, unlike UL9540, is not a "listing" and does not result in a UL mark placed on the UPS or battery. Officially, UL9540A is the Test Method for Evaluating the Thermal Runaway Fire Propagation in Battery Energy Storage Systems. This test is intended to show

What is the UL 9540A Test Method? UL 9540A is a standard for the safety of energy storage systems and equipment and was developed by UL as a test method for evaluating thermal runaway fire propagation in battery energy storage systems and is widely recognized by the relevant authorities.. Authoritative US industry codes such as the American Electrical Code ...

Importance of Battery Safety Testing. Battery safety testing is not just a good idea; it's a must. The UL 9540A test method informs installation guidelines, ventilation necessities, and fire protection strategies for battery energy storage systems "s an invaluable standard for purchasers, architects, and fire departments, promoting strict adherence to safety procedures ...

This webinar with UL experts will help you understand the requirements and changes in energy storage codes and standards development. ... Industrial Battery and Energy Storage Services. ... for Manufacturers. Service ; Distributed Energy Resource Testing . Service ; Energy Storage System Testing and Certification. Careers. Working at UL ...

TÜV SÜD provides extensive ESS battery testing solutions. Our experienced experts will guide you through the entire project and ensure compliance to international requirements and regulations with international standards and regulations like the EMC Directive (2014/30/EU), IEC 62619, IEC 62620, VDE-AR-E 2510-50, UL 1973, JIS 8715-1 and JIS8715-2.

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