



CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Energy Assurance, LLC
5202 Belle Wood Court, Suite 106
Buford, GA 30518

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field of

TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of tests to which this accreditation applies.

AT-1601
Certificate Number


ANAB Approval

Certificate Valid: 01/04/2018-01/08/2020
Version No. 004 Issued: 01/04/2018



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Energy Assurance, LLC

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TESTING

Valid to: **January 8, 2020**

Certificate Number: **AT-1601**

Electrical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Preconditioning (Battery cycling)	UN Manual of Tests-UN 38.3, IEC 62281, UL 1642	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries	Battery Cycling Equipment
(T1) Altitude Simulation (Low Pressure)	UN Manual of Tests-UN 38.3, IEC 62281, IEC 62133, UL62133, IEC 62133-1, IEC 62133-2	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries and Secondary Nickel cells and Batteries	Vacuum Chamber
(T2) Thermal Test	UN Manual of Tests-UN 38.3, IEC 62281	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries	Temperature Chamber
(T3) Vibration	UN Manual of Tests-UN 38.3, IEC 62281, UL 62133, IEC 62133, UL 2054, UL 1642, IEC 62133-1, IEC 62133-2, RTCA DO-293	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries and Secondary Nickel cells and Batteries	Vibration / Slip Table Vibration Controller Accelerometer
(T4) Shock (Mechanical Shock)	UN Manual of Tests-UN 38.3, IEC 62281, UL 62133, IEC 62133, UL 2054, UL 1642, IEC 62133-1 and IEC 62133-2, RTCA DO-293	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries and Secondary Nickel cells and batteries	Mechanical Shock System Accelerometer
(T5) Short Circuit	UN Manual of Tests-UN 38.3, IEC 62281, UL 1642, IEC 62133-1, IEC 62133-2, RTCA DO-293	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries and Secondary Nickel cells and batteries	Temperature Chamber Shorting Apparatus Datalogger
(T6) Impact/Crush	UN Manual of Tests-UN 38.3, IEC 62281, UL 62133, IEC 62133, UL 2054, UL 1642, IEC 62133-1, IEC 62133-2	Solid Cathode Primary Lithium and Secondary Li Ion Cells and Batteries and Secondary Nickel cells and batteries	Test Chamber (Impact) Hydraulic Press (Crush)
Insulation and Wiring	IEC 62133, UL 62133, IEC 62133-1, IEC 62133-2, RTCA DO-347, RTCA DO-293	Secondary Li Ion and Secondary Nickel Cells and Batteries	Insulation Resistance Tester Stopwatch
Discharge Performance at 20 °C, and -20 °C	IEC 61960	Secondary Li Ion Cells and Batteries	Battery Cycling Equipment Temperature Chamber



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High Rate Discharge Performance at 20 °C	IEC 61960	Secondary Li Ion Cells and Batteries	Battery Cycling Equipment Temperature Chamber
Charge (Capacity) Retention and Recovery	IEC 61960, RTCA DO-347, RTCA DO-293	Secondary Li Ion Cells and Batteries and Nickel Batteries	Battery Cycling Equipment Oven Thermal Chamber
Charge (Capacity) Recovery After Long Term Storage	IEC 61960, RTCA DO-293	Secondary Li Ion Cells and Batteries and Nickel batteries	Battery Cycling Equipment
Endurance in Cycles	IEC 61960, RTCA DO-293	Secondary Li Ion Cells and Batteries and Nickel batteries	Battery Cycling Equipment
Battery Internal Resistance	IEC 61960, RTCA DO-347	Secondary Li Ion Cells and Batteries	Impedance Meter
Physical Examination	RTCA DO-347, RTCA DO-293	Secondary Li Ion Batteries and Nickel batteries	Misc. Dimensional Measurement Equipment
Rated Capacity (including at temperature testing)	RTCA DO-347, RTCA DO-293	Secondary Li Ion Batteries and Nickel batteries	Battery Cycling Equipment
Rapid Discharge (including at temperature testing)	RTCA DO-293	Nickel batteries	Battery Cycling Equipment
Constant Current Discharge (including at temperature testing)	RTCA DO-347	Secondary Li Ion Batteries	Battery Cycling Equipment Oven Temperature Chamber
Charge Stability	RTCA DO-293	Nickel batteries	Battery Cycling Equipment Temperature Chamber
Temperature Shock	RTCA DO-293	Nickel batteries	Temperature shock chamber
Humidity	RTCA DO-293	Nickel batteries	Battery Cycling Equipment Temperature Chamber
Handle Strength	RTCA DO-293	Nickel batteries	
Strength of connector receptacle	RTCA DO-293	Nickel batteries	
Constant Voltage Discharge (including at temperature testing)	RTCA DO-347, RTCA DO-293	Secondary Li Ion Batteries and Nickel batteries	Battery Cycling Equipment Oven Temperature Chamber
Charge Acceptance	RTCA DO-347, RTCA DO-293	Secondary Li Ion Batteries	Battery Cycling Equipment Oven Temperature Chamber
Duty Cycle Performance	RTCA DO-347, RTCA DO-293	Secondary Li Ion Batteries	Power Supply Electronic Load Datalogger Containment Chamber
Deep Discharge	RTCA DO-347, RTCA DO-293	Secondary Li Ion Batteries, and Nickel batteries	Electronic Load Precision Resistor Battery Cycling Equipment
Acceptance Test Procedure	RTCA DO-347	Secondary Li Ion Batteries	N/A

Electrical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Short Circuit with Protection Disabled	RTCA DO-347, UL 2054	Secondary Li Ion Batteries	Temperature Chamber Shorting Apparatus Electronic Load Datalogger
Overcharge with Protection Disabled	RTCA DO-347	Secondary Li Ion Batteries	Power Supply Containment Chamber Datalogger
Thermal Runaway Containment	RTCA DO-347	Secondary Li Ion Batteries	Containment Chamber Power Supply Ignition Source Point Heat Apparatus Datalogger
Shelf Life	RTCA DO-347	Secondary Li Ion Batteries	Battery Cycling Equipment Oven Temperature Chamber
Float Life	RTCA DO-347	Secondary Li Ion Batteries	Battery Cycling Equipment Oven Temperature Chamber
Abnormal Charging Test	UL 2054, UL 1642	Secondary Li Ion Cells and Batteries	Power Supply Containment Chamber Datalogger
Abusive Overcharge Test	UL 1642, UL 2054	Secondary Li Ion Cells and Batteries	Power Supply Containment Chamber Datalogger
Forced Discharge Test	UL 2054, UL 1642	Secondary Li Ion Cells and Batteries	Temperature Chamber Shorting Apparatus Datalogger
Limited Power Source	UL 2054	Secondary Li Ion Cells and Batteries	Electronic Load Stopwatch
Battery pack component and surface temperature tests	UL 2054	Secondary Li Ion Batteries	Power Supply Electronic Load Containment Chamber Datalogger
250N steady force test	UL 2054	Secondary Li Ion Batteries	Force Indicator Mechanical Press
Induced Destructive Overcharge	RTCA DO-293	Nickel batteries	Power Supply Containment Chamber Datalogger
Cell and Battery Application Testing	ANSI C18.1M, Part 1:2015 and IEC 60086-2:2011	Portable Primary Cells and Batteries with Aqueous Electrolyte	Battery Cycling Equipment Misc. Mechanical Measurement Equipment

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AT-1601.



Vice President

