



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL

Valid To: July 31, 2024

Certificate Number: 1136.04

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electrical tests:

**Tests:**

**Test Method(s)<sup>1</sup>:**

Dielectric Breakdown Voltage and  
Dielectric Strength Test

UL 746A (Section 21);  
CAN/CSA C22.2 No.0.17 (Section 6.2);  
ASTM D149,  
ASTM D3755;  
IEC 60243-1, -2;  
JIS K6911,  
JIS C 2110-1, -2, -3;  
IPC-TM-650 (2.5.6)

Comparative Tracking Index Test

UL 746A (Section 24);  
CAN/CSA C22.2 No.0.17 (Section 6.5);  
ASTM D3638;  
IEC 60112;  
JIS C2134, C61730-1

High Voltage, Low Current,  
Dry Arc Resistance Test

UL 746A (Section 23);  
ASTM D495;  
JIS K6911;  
CAN/CSA C22.2 No.0.17 (Section 6.4);  
IPC-TM-650 (2.5.1)

Hot Wire Ignition Test

UL 746A (Section 32);  
ASTM D3874;  
CAN/CSA C22.2 No.0.17 (Section 4.3.1)

**Test****Test Method(s)<sup>1</sup>:**

Glow Wire Ignition Test

IEC 60695-2-13,  
IEC 60695-2-10;  
JIS C60695-2-13,  
JIS C60695-2-10;  
UL 746A (Section 35);  
CAN/CSA C22.2 No. 17 (Section 4.3.5);  
GB/T 5169.10

Glow Wire Flame Test

IEC 60695-2-12,  
IEC 60695-2-10;  
JIS C60695-2-12,  
JIS C60695-2-10;  
GB 5169.10

Glow Wire Flammability Test for End-Product Test

UL 746C (Sections 12.3 and 73);  
IEC 60695-2-10,  
IEC 60695-2-11;  
JIS C60695-2-11,  
JIS C60695-2-10;  
GB 5169.10,  
GB 5169.11;  
CAN/CSA C22.2 No. 17 (Section 9.3);  
BS EN 60695-2-11

Volume/Surface Resistivity

UL 746A (Section 22);  
ASTM D257;  
JIS C5016,  
JIS K6911,  
JIS C6481,  
JIS C6471,  
JIS C2139-3-1,  
JIS C2139-3-2;  
IEC 62631-3-1,  
IEC 62631-3-2;  
CAN/CSA C22.2 No. 17 (Section 6.3)

Insulation Test

EN50155 (Section 13.4.9);  
IEC 60571 (Section 12.2.10)**Testing performed on Photovoltaic Modules<sup>1, 2</sup>**

Maximum Power Determination

IEC 61215-2 (Section 4.2, MQT 02) ;  
JIS C61215-2 (Section 4.2, MQT 02)

Measurement of Temperature Coefficient

IEC 61215-2 (Section 4.4, MQT 04);  
JIS C61215-2 (Section 4.4, MQT 04)

Performance at STC and NMOT

IEC 61215-2 (Section 4.6, MQT 06);  
JIS C 61215-2(Section 4.6, MQT 06)

Performance at Low Irradiance

IEC 61215-2 (Section 4.7, MQT 07);  
JIS C61215-2 (Section 4.7, MQT 07)

**Test****Test Method(s)<sup>1</sup>:****Testing performed on Photovoltaic Modules<sup>1,2</sup>  
(cont'd)**

Photovoltaic (PV) Module Performance Testing and Energy Rating	IEC61853-1, IEC61853-2 (Section 7.2)
Ground Continuity	IEC 61730-2 (MST 13); JIS C61730-2(MST 13)
Dielectric Withstand Test	IEC 61730-2 (MST 16); JIS C61730-2 (MST 16)
Insulation Test	IEC 61215-2 (Section 4.3, MQT 03); JIS C61215-2(Section 4.3, MQT 03)
Wet Leakage Current Test	IEC 61730-2 (MST 17), IEC 61215-2 (Section 4.15, MQT 15); JIS C61730-2(MST 17), JIS C61215-2 (Section 4.15, MQT 15);
Reverse Current Overload	IEC 61730-2 (MST 26); JIS C61730-2 (MST 26)
Inclined Plane Tracking Test	IEC 60587; ASTM D2303; UL 746A (Section 26)
Detection of Potential-induced Degradation	IEC TS 62804-1; TPV-27
Electro-luminescence	IEC TS-60904-13

**Testing Performed on Battery**

Charge / discharge Low temperature discharge performance	IEC 62620; JIS C8715-1
High rate discharge performance	IEC 62620; JIS C8715-1
Capacity retention rate and capacity recovery rate	IEC 62620; JIS C8715-1
AC internal resistance	IEC 62620; JIS C8715-1
DC internal resistance	IEC 62620; JIS C8715-1
Charge / discharge cycle durability	IEC 62620; JIS C8715-1
Standby state retention durability	IEC 62620; JIS C8715-1
Continuous charging test	IEC 62133-2; JIS 62133-2

**Test****Test Method(s)<sup>1</sup>:****Testing Performed on Battery (cont'd)**

External short circuit test	IEC 62133-2, IEC 62619; JIS 62133-2, JIS C8715-2
Overcharge test	IEC 62133-2, IEC 62619; JIS 62133-2, JIS C8715-2
Over-discharge test	IEC 62133-2, IEC 62619; JIS 62133-2, JIS C8715-2
Heating test	IEC 62133-2, IEC 62619; JIS 62133-2, JIS C8715-2
Crush test	IEC 62133-2; JIS 62133-2
Thermal cycle test	IEC 62133-2; JIS 62133-2
Nail stab test	TP-81

<sup>1</sup> UL 60950-1, IEC 60950-1, CSA C22 No. 60950-1, EN60950-1 base requirements are nearly identical, section numbers relate to all four editions, unless otherwise indicated. For example, North American Annex NAE is specifically included for Battery Circuits on this scope. Included in the product safety activities are visual observations and similar activities for markings and other characteristics.

On the following materials and products: Adhesives and Sealants; Ceramics; Films and Packaging; Leather; Packaging and Containers; Paper, Paperboard and Pulp; Plastics and Polymers; Rubber and Rubber Products; Textiles; Information Technology Equipment (ITE); Photovoltaic Modules; Printed Wiring Board; Magnet Wire; Varnish; Industrial Laminate; and Wire Positioning Devices.



## Accredited Laboratory

A2LA has accredited

**CHEMITOX, INC., YAMANASHI TESTING CENTER KAI**

*Yamanashi-ken, JAPAN*

for technical competence in the field of

**Electrical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. 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).



Presented this 7<sup>th</sup> day of October 2022.

A blue ink signature of Mr. Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1136.04  
Valid to July 31, 2024

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*