



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DETROIT - WARREN 11 MILE
27485 George Merrelli Drive
Warren, MI 48092
Stephen Karrer Phone: 586 754 9000 ext. 32900
Email: stephen.karrer@element.com

ELECTRICAL

Valid To: December 31, 2022

Certificate Number: 0098.12

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

METHOD¹

TEST

ASTM D257

DC Resistance or Conductance of Insulating Materials

PF.90012 (Sections 6.3.6
and 6.3.7)

Performance Specification for Automotive Electrical Connector Systems

GS 95024

Electrical and electronic components in motor vehicles: Electrical requirements and tests

ISO 16750-2

Road Vehicles – Environmental Conditions and Testing for Electrical and Electronic Equipment Part 2: Electrical loads

Battery Testing

ABNT NBR 15940

Lead-acid Batteries for use in Motor Vehicles of Four or More Wheels

ABNT NBR 15941

Lead-acid Batteries for Motorcycles, Tricycles and Quadcycles

DOE/ID-11069

Inel Battery Test Manual for Test: Static Capacity, Hybrid Pulse Power Characterization, Self-Discharge, Cold Cranking, Thermal Performance, Efficiency, Operating Set Point Stability, Cycle Life, Calendar Life, Reference Performance, Impedance Spectrum Testing

DOE/NE-ID-11173

FreedomCAR Ultracapacitor Test Manual

SAE J1798

Rating of Electric Vehicle Battery Modules

SAE J2288

Life Cycle Testing of Electric Vehicle Battery Modules

UL 2580 (Sections 30 to 32,
35 to 36, 39 to 41)

Outline of Investigation for Batteries for use in Electric Vehicles

UN ST/SG/AC.10 (T1 to T4
only)

Transport of Dangerous Goods Lithium Batteries

Wiring, Connectors, and Other Automotive Electrical System

GMW3191 (Section 4.3)	Connector Test and Validation Specification
GMW3431 (Sections 4.1.1 to 4.1.3)	General Procedures for Testing Switches
USCAR 2	Performance Specification for Automotive Electrical Connector Systems
USCAR 21	Performance Specification for Cable-to-Terminal Electrical Crimps

<u>Parameter</u>	<u>Range</u>	<u>Test Method</u>
Voltage –		
AC – Measure ²	100 μ V to 15 kV	SAE J517
AC – Generate ²	100 mV to 10 V @ 1Hz to 30 MHz, 10V to 40V @ 1 Hz to 1.3 MHz 3 V to 40 kV, (50 to 60) Hz (3 to 300) V, (45 to 1,000) Hz	SAE J517
DC – Measure ²	0.01 μ V to 15 kV	GMW 3172, Sections 8.2 and 9.2
DC – Generate ²	100 μ V to 1.5 kV	GMW 3172, Sections 8.2 and 9.2
Resistance ²	100 μ Ohms to 1.6 x 10 ¹⁶ Ohms	GMW 3431
Resistivity ²	1 x 10 ⁶ Ohms to 1.6 x 10 ¹⁶ Ohms	ASTM D257
Dielectric Testing ² –		
DC	100 V to 15 kV	SAE J517
AC	100 V to 15 kV	SAE J517

On the following products and components: motors, alternators, generators, controllers, starters, coils, inductors, transformers, connectors, relays, switches, solenoids, resistors, capacitors, cables, feeders; conductive materials; printed circuits; batteries (hybrid and lithium-ion); exterior/interior lighting components.

¹The laboratory is accredited for the test methods listed above. The accredited test methods are used to determine compliance with any material specifications included on this Scope; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification. Only the methods listed above on this Scope are accredited.

²Also using customer-specific test methods utilizing any combination of test equipment parameters and ranges listed above.



Accredited Laboratory

A2LA has accredited

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Warren, MI

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 4th day of March 2021.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0098.12
Valid to December 31, 2022

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