SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY BURTON
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ELECTRICAL

Valid to: May 31, 2028 Certificate Number: 1123.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following automotive electromagnetic compatibility tests and electronics testing using the parameters and methods listed below:

On the following products or types of products:
Automotive, Aerospace, Military and Electrical/Electronic/Mechanical components and assemblies.

Test Technology: [1, 2]	**Test Specification/Method(s):**
EMC Tests	
Radiated RF Emissions	CISPR 25 *Section 6.5 ALSE Method only;* CISPR 25:2008 *Section 6.4 ALSE Method only* ECE Regulation 10 Annex 7 & 8
Conducted RF Emissions	CISPR 25 *Section 6.3 and 6.4;* CISPR 25:2008 *Section 6.2 and 6.3*
Bulk Current Injection (BCI)	ISO 11452-4 *Excluding TWC test method;* ECE Regulation 10 Annex 9
Absorber-Lined Shielded Enclosure (ALSE) RI	ISO 11452-2 *Frequency range 200 MHz – 6 GHz;* ECE Regulation 10 Annex 9 Frequency Range: 20-6000MHz Level: up to 30V/m Vertical Only: 20-400MHz Vertical & Horizontal: 400-6000MHz
Radiated Immunity – Portable Transmitters	ISO 11452-9 *Using Annex B, Section B.2 Antenna only;*
Reverberation Radiated Immunity Mode Tuned	ISO/IEC 61000-4-21 *Annex D only, Modified OEM method;* ISO 11452-11 ECE Regulation 10 Annex 9 (Amendment 4) Frequency Range: 200-3200MHz

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Test Technology: [1, 2]	**Test Specification/Method(s):**
	Level: up to 30V/m
Conducted Transient Emissions	ISO 7637-2 *Conducted Transient Emissions;* ECE Regulation 10 Annex 10
Conducted Transient Immunity – Power/Supply Lines	ISO 7637-2 *Conducted Transient Immunity;* ISO 16750-2 *Conducted Immunity* (*Pulses 4, 5a, 5b*) ECE Regulation 10 Annex 10
Conducted Transient Immunity – Other than Power/Supply Lines	ISO 7637-3;
Radiated Immunity – Magnetic Fields (Loop)	ISO 11452-8 *Section 8.3.1 Radiating loop;* ISO 11452-8 (2007) *Section 7.3.1 Radiating loop*
Electrostatic Discharge (ESD)	ISO 10605 *Excluding Section 6, Vehicle Tests;* ISO 10605 (2008) *Excluding Section 10, Vehicle Tests*
Electrical Tests Based on GMW 3172: - Jump Start - Reverse Polarity - Over Voltage - State Change Waveform Characterization - Ground Path Inductance Sensitivity - Power Supply Interruptions - Battery Voltage Dropout - Intermittent Short Circuit to Battery/Ground - Continuous Short Circuit to Battery/Ground - Parasitic Current - Sinusoidal Superimposed Voltage - Pulsed Superimposed Voltage - Power Offset - Ground Offset - Open Circuit Single Line - Open Circuit Multiple Lines - Overload – Fuse Protected Circuits Overload – All Circuits - Crank Pulse Capability and Durability - Switched Battery Line - Multiple Power and Multiple Ground Short - Circuit Including Pass Through - Fretting Corrosion Degradation	GMW 3172[2] ;
Electrical Tests Based on MIL-STD 202: - Dielectric Withstanding Voltage - Insulation Resistance - DC Resistance - Resistance Temperature Characteristic	MIL-STD-202G, Method 301; MIL-STD-202G, Method 302; MIL-STD-202G, Method 303; MIL-STD-202G, Method 304

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Test Technology: [1, 2]	Test Specification/Method(s):
Electrical Tests Based on USCAR-2: - Dry Circuit Resistance - Voltage Drop - Insulation Resistance	USCAR-2; USCAR-2; USCAR-2
Battery Abuse Testing **Short Circuit**	SAE J2464 §4.5.1 UL 2580 §26 UL 2580 Annex D3.1 UL2271 §25 UN 38.3 IEC 62619 §7.2.1 ISO 6469-1 §6.5.1
External Short Circuit Protection	UN ECE R100 rev3 Annex 9F FMVSS 305a §12.5 UL 2580 Annex B2.7 JIS C8715-2 §7.2.1
Over-current protection	UN ECE R100 rev3 Annex 9J FMVSS 305a §12.3
Overcharge protection	UN ECE R100 rev3 Annex 9G§ 3.2.4 FMVSS 305a §12.1 UL 2580 §25 UL 2580 Annex B2.8 UL 2580 Annex D3.2 IEC 62660-2 §6.4.2 UL 2271 §23 ISO 6469-1 §6.6.2 IEC 62619 §7.2.5 JIS C8715-2§7.2.5
Over-discharge protection	UN ECE R100 rev3 Annex 9H§ 3.2.4 FMVSS 305a §12.2 UL 2580 §27 UL 2271 §27 ISO 6469-1 §6.6.3
Standard Cycle	FMVSS 305a §12.6

Test Type	Test Parameters
Voltage	
AC – Measure[1]	1 µV to 400 V @ 1 Hz to 250 MHz
AC – Generate[1]	1 mV to 10 V @ 1 Hz to 80 MHz
DC – Measure[1]	1 mV to 1,000 V
DC – Generate[1]	1 mV to 1,000 V
Current	
AC/DC Current – Measure[1]	10 µA to 400 A
DC Current – Generate[1]	10 µA to 600 A
Resistance	
Measure[1]	100 µΩ to 2.0 x 10^{10} Ω
Generate[1]	100 µΩ to 1.6 x 10^{10} Ω

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Dielectric Testing	
AC[1]	(100 to 4,000) V
DC[1]	(100 to 1,100) V
Frequency	
Measure[1]	1 Hz to 250 MHz
Generate[1]	1 Hz to 80 MHz
Capacitance[1]	0.1 pF to 10 mF
Resistivity[1]	1 x 10^6 Ωm to 1 x 10^{10} Ωm

[1] This scope meets A2LA's P112 Flexible Scope Policy.

[2] When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories.

In addition to the requirements of Section 1 of A2LA R101. The laboratory may perform testing to historical versions of the standards listed above if those standard versions were previously accredited by A2LA. These tests are covered under the scope of accredited testing listed above.

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Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY BURTON

Burton, 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 29th day of June 2026.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1123.02
Valid to May 31, 2028

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

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