



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TRIALON CORPORATION
Michigan Testing and Validation Center
1477 Walli Strasse Blvd.
Burton, MI 48509

Gregory Stetkiw Email: gstetkiw@trialon.com Phone: 810-341-7980
Paul Krug (EMC) Email: pkrug@trialon.com Phone: 810-341-7931
Brad Soule (Electrical) Email: bsoule@trialon.com Phone: 810-341-7992
Website: <http://www.trialon.com>

ELECTRICAL (EMC)

Valid to: May 31, 2020

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:

<u>Test Technology:</u>	<u>Test Specification/Method(s):</u>
<u>EMC Tests</u>	
Radiated RF Emissions	CISPR 25 <i>Section 6.4 ALSE Method only</i>
Conducted RF Emissions	CISPR 25
Bulk Current Injection (BCI)	ISO 11452-4 <i>Section 8.3.1.2, Substitution Method (BCI) only</i>
Absorber-Lined Shielded Enclosure (ALSE) RI	ISO 11452-2 <i>Frequency range limited to 200 MHz - 5 GHz</i>
Radiated Immunity – Portable Transmitters	ISO 11452-9 <i>Using Annex B, Section B.2 Antenna only</i>
Reverberation Radiated Immunity Mode Tuned	ISO/IEC 61000-4-21 <i>Annex D only, Modified OEM method</i>
Conducted Transient Emissions	ISO 7637-2 <i>Conducted Transient Emissions</i>
Conducted Transient Immunity – Power/Supply Lines	ISO 7637-2 <i>Conducted Transient Immunity (2004)</i> <i>(Pulses 1, 2a, 2b, 3a, 3b, 4, 5a, 5b);</i> ISO 7637-2 <i>Conducted Transient Immunity (2011)</i> <i>(Pulses 1, 2a, 2b, 3a, 3b);</i> ISO 16750-2 <i>Conducted Immunity (Pulses 4, 5a, 5b)</i>

<u>Test Technology:</u>	<u>Test Specification/Method(s):</u>
Conducted Transient Immunity – Other than Power/Supply Lines	ISO 7637-3 <i>Section 3.4.2, Capacitive Coupling Clamp (CCC)</i> <i>Section 3.4.3, Direct Capacitor Coupling (DCC)</i>
Radiated Immunity – Magnetic Fields (Loop)	ISO 11452-8 <i>Section 3.4.5 Radiating loop</i>
Electrostatic Discharge (ESD)	ISO 10605 (2001), <i>Excluding Section 6, Vehicle Tests;</i> ISO 10605 (2008) <i>Excluding Section 10, Vehicle Tests,</i> <i>Including Annex F – Field Coupled</i>
Electrostatic Discharge (ESD) – Airbag Inflator Assemblies	ISO 12097-3, <i>Sections 7.1 ESD and 7.2 EMC;</i> AK-LV 03 Issue 2005-05
<u>Electrical Tests Based on GMW 3172:</u> <ul style="list-style-type: none"> - 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 	GMW 3172 (2008, 2010, 2012, 2015) *Also using customer-specified methods related to the types of tests listed, and within the Parameters below.
<u>Parameters: *</u>	<u>Range:</u>
Voltage	
AC – Measure	100 μ V to 100 V @ (1 to 500) Hz; 1 mV to 1,000 V @ 1 Hz to 2 MHz
AC – Generate	1 mV to 10 V @ 1 Hz to 80 MHz
DC – Measure	1 mV to 1,000 V
DC – Generate	1 mV to 1,000 V



Parameters: *	Range:
Current	
AC/DC Current – Measure	10 μ A to 600 A
DC Current – Generate	10 μ A to 600 A
Resistance	
Measure	100 $\mu\Omega$ to 1.6 x 10 ¹⁰ Ω
Generate	100 $\mu\Omega$ to 1.6 x 10 ¹⁰ Ω
Dielectric Testing	
AC	(100 to 4,000) V
DC	(100 to 1,100) V
Frequency	
Measure	1 Hz to 500 MHz
Generate	1 Hz to 80 MHz
Capacitance	0.1 pF to 10 mF
Resistivity	1 x 10 ⁶ Ω to 1 x 10 ¹⁰ Ω

*Also using customer-specified methods based on the parameters listed above.





Accredited Laboratory

A2LA has accredited

TRIALON CORPORATION

Burton, MI

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *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 17th day of July 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 1123.02
Valid to May 31, 2020

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