



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TRIALON CORPORATION  
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ELECTRICAL (EMC)

Valid to: September 30, 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:

<b><u>Test Technology:</u></b>	<b><u>Test Specification/Method(s):</u></b>
<b><u>EMC Tests</u></b>	
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>

<b><u>Test Technology:</u></b>	<b><u>Test Specification/Method(s):</u></b>
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
<b><u>Electrical Tests Based on GMW 3172:</u></b> <ul style="list-style-type: none"> <li>- Jump Start</li> <li>- Reverse Polarity</li> <li>- Over Voltage</li> <li>- State Change Waveform Characterization</li> <li>- Ground Path Inductance Sensitivity</li> <li>- Power Supply Interruptions</li> <li>- Battery Voltage Dropout</li> <li>- Intermittent Short Circuit to Battery/Ground</li> <li>- Continuous Short Circuit to Battery/Ground</li> <li>- Parasitic Current</li> <li>- Sinusoidal Superimposed Voltage</li> <li>- Pulsed Superimposed Voltage</li> <li>- Power Offset</li> <li>- Ground Offset</li> <li>- Open Circuit Single Line</li> <li>- Open Circuit Multiple Lines</li> <li>- Overload – Fuse Protected Circuits</li> <li>- Overload – All Circuits</li> <li>- Crank Pulse Capability and Durability</li> <li>- Switched Battery Line</li> <li>- Multiple Power and Multiple Ground Short Circuit Including Pass Through</li> </ul>	GMW 3172 (2008, 2010, 2012, 2015)  *Also using customer-specified methods related to the types of tests listed, and within the Parameters below.
<b><u>Parameters: *</u></b>	<b><u>Range:</u></b>
Voltage	
AC – Measure	100 $\mu$ 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

<b>Parameters: *</b>	<b>Range:</b>
Current	
AC/DC Current – Measure	10 $\mu$ A to 600 A
DC Current – Generate	10 $\mu$ A to 600 A
Resistance	
Measure	100 $\mu\Omega$ to 1.6 x 10 <sup>10</sup> $\Omega$
Generate	100 $\mu\Omega$ to 1.6 x 10 <sup>10</sup> $\Omega$
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 <sup>6</sup> $\Omega$ to 1 x 10 <sup>10</sup> $\Omega$

\*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 17<sup>th</sup> day of July 2018.

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

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1123.02  
Valid to September 30, 2020  
Revised August 24, 2020

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