



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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MECHANICAL

Valid To: June 30, 2027

Certificate Number: 1786.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above, *as well as the two satellite laboratory locations listed below*, for the following mechanical tests:

**Test Technology**

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

Immersion <sup>2</sup>  
(0 to 14) ft Depth  
(0 to 90) °C

MIL-STD-810 (E/F/G/H), Method 512;  
MIL-STD-202 (F/G/H), Method 104;  
SAE J1455, Section 4.3; SAE J575, Section 4.3;  
US CAR-2, Section 5.6.5;  
IEC 529; IEC 60529; ISO 16750-4;  
GMW 3172, Section 5.8;  
ISO 20653;  
FAA AC 150/5345-26, -39, -44, -46, -47

Rain, Drip, and  
Water Spray <sup>2</sup>  
(0 to 120) Degree Nozzle  
(5 to 3,000) PSI

MIL-STD-810 (E/F/G/H), Method 506;  
SAE J1455, Section 4.5; SAE J575, Section 4.3;  
RTCA/DO-160 (D/E/F/G), Section 10;  
IEC 60529; IEC 60068-2-17; ISO 16750-4; ISO 20653;  
DIN 40 050; NEMA 250;  
GMW 3172, Section 9.5;  
FAA AC 150/5345-12, -28, -43, -44, -46, -50, -51, -54

Dust Blowing and Settling <sup>2</sup>  
(25 to 85) °C  
2 C/min

MIL-STD-810 (E/F/G/H), Method 510, Procedure I;  
MIL-STD-202 (F/G/H), Method 110;  
IEC 60529; ISO 20653; ISO 16750-4;  
SAE J1455, Section 4.7, Alternate Method;  
RTCA/DO-160(D/E/F/G), Section 12, Procedure D;  
DIN 40 050; NEMA 250;  
GMW 3172, Section 9.5

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

Salt Spray (Corrosion)	ASTM B117; ASTM G85; MIL-STD-810 (E/F/G/H), Method 509; MIL-STD-202 (F/G/H), Method 101; SAE J1455, Section 4.3; SAE J575, Sections 4.6, 4.7; RTCA/DO-160 (D/E/F/G), Section 14; US CAR-2, Section 6.6.4; GMW 3172, Section 9.4.7; IACS-E10, Test 12; IEC 60068-2-11; IEC 60068-2-52; ISO 16750-4; FAA AC 150/5345-28, -39, -43, -45, -46, 50, 51, 52
Gravel Bombardment	SAE J400; SAE J1455, Section 4.8; ISO 16750-3; ISO 20567-1
Transformer Tests	FAA AC 150/5345-47 (Section 4.2.4); IEC 61823
Dielectric Withstand Voltage	MIL-STD-202, Method 301; EIA-364-20
Insulation Resistance	MIL-STD-202, Method 302; SAE/USCAR-2, Section 5.5.1; EIA-364-21
Contact Resistance	MIL-STD-202, Method 307; SAE/USCAR-2, Section 5.3.1; EIA-364-23; USCAR21 Section 4.5.3
DC Resistance	MIL-STD-202, Method 303
Contact Chatter	MIL-STD-202, Method 310; SAE/USCAR-2, Section 5.1.9
Voltage Drop	SAE/USCAR-2, Section 5.3.2; USCAR21 Section 4.5.6

Environmental Lab  
1430 Centre Circle  
Downers Grove, IL 60515

**Test Technology**

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

Vibration <sup>2</sup>  
Random and Sine  
78k force pound  
4" stroke  
1 Hz to 3 kHz  
Remote Temperature  
Hood (-75 to 180) °C

MIL-STD-810 (E/F/G/H), Method 520;  
MIL-STD-202 (F/G/H), Methods 201, 204, and 214;  
IEC 60068-2-6; IEC 60068-2-64; IEC 61373; ISO 16750-3;  
CEI IEC 255-21-1;  
SAE J1455, Sections 4.10 and 4.12; SAE J575, Section 4.2;  
RTCA/DO-160 (D/E/F/G), Section 8;  
US CAR-2, Sections 5.4.6 and 5.8;  
EIA-364-28;  
GMW 3172, Section 9.3;  
IACS-E10, Test 7;  
FAA AC 150/5345-46

Mechanical Shock <sup>2</sup>  
(10 to 30,000) Gs

MIL-STD-810 (E/F/G/H), Methods 516 and 519;  
MIL-STD-202 (F/G/H), Methods 203 and 213;  
RTCA/DO-160 (D/E/F/G), Section 7;  
EIA-364-27;  
GMW 3172, Section 9.3;  
IEC 60068-2-27; IEC-60068-2-29; IEC 60068-2-3; ISO 16750-3;  
CEI IEC 255-21-2;  
SAE J1455, Section 4.11;  
US CAR-2, Sections 5.4.6 and 5.8;  
FAA AC 150/5345-46F, -47C;  
IEC 61373

Connector and Cable  
Testing <sup>2</sup>  
(1 to 20,000) lbs  
20"/min

GMW 3172, Sections 9.3.6 through 9.3.10;  
EIA-364-38;  
US CAR-2, Sections 5.2 through 5.4; US CAR21 Section 4.4;  
FAA AC 150/5345-26, Sections 4.2.2.2, 4.2.3, and 4.2.4, -47

Transportation Vibration <sup>2</sup>  
(0 to 500) RPM  
1" stroke

ISTA 1A, 1B, 1D (*except for sequence #3*), 2A;  
MIL-STD-810 (E, F, G/H), Method 514, Procedure II

Packaging Tests <sup>2</sup>  
(including Fixed  
Displacement Vibration,  
Random Vibration, Drop  
Shock, Compression,  
Temperature, Humidity)  
Up to 83" Drop

ASTM 4169;  
ISTA 1A, 1C, 1G, 2A, 2C, 3A, 3B, 3F, 3L-Small, 3L-A, 3L-B, 3L-D,  
3L-G, 3L-H, 6-AMAZON.com-Over Boxing,  
6-AMAZON.com-SIOC Type A, 6-AMAZON.com-SIOC Type B,  
6-AMAZON.com-SIOC Type D, 6-AMAZON.com-SIOC Type G,  
6-AMAZON.com-SIOC Type H, 6-FedEx-A, 6-SAMSCLUB, 7D

UN Manual of Tests and  
Criteria

UN38.3 Tests T1 (Altitude Simulation), T2 (Thermal Test),  
T3 (Vibration), T4 (Shock), T5 (External Short Circuit), &  
T7 (Overcharge)

<b><u>Test Technology</u></b>	<b><u>Test Method(s) <sup>1</sup>:</u></b>
Seal/Leakage	FAA AC 150/5345-10, -42, -46
Yield Device	FAA AC 150/5345-27, -28, -39, -44, -46, -50, -51, -52, -55
Load	FAA AC 150/5345-27, -28, -39, -42, -43, -46, -50, -52, -55
Surface Temperature	FAA AC 150/5345-46
Charpy Impact	ASTM E23; ASTM D6110; FAA AC 150/5345-42
Accelerated Life Test	FAA AC 150/5345-46; FAA EB-67
Humidity <sup>2</sup> (5 to 95) %RH	MIL-STD-810 (C/E/F/G/H), Methods 507 and 520; MIL-STD-202 (F/G/H), Methods 103 and 106; SAE J1455, Sections 4.2 and 4.12; SAE J575, Section 4.4; RTCA/DO-160 (D/E/F/G), Section 6.0; EIA-364-31; GMW 3172, Section 9.4; IACS-E10, Test 6; IEC 60068-3-4; IEC 60068-2-30; IEC 60068-2-38; IEC 60068-2-78; US CAR-2, Section 5.6.2; US CAR21, Section 4.5.4; ISO 16750-4; FAA AC 150/5345-3, -5, -10, -43, -49, -51, -52, -54
Temperature Cycling, Temperature Steady State, Temperature Life <sup>2</sup> (-100 to 343) °C Thermal Shock <sup>2</sup> (-100 to 200) °C (Ramps up to 60°C/min) (<15sec transitions)	MIL-STD-810 (E/F/G/H) Methods 501, 502, 503, 520, and 524; MIL-STD-202 (F/G/H) Methods 107, 108; IEC 60068-2-1; IEC 60068-2-2; IEC 60068-2-28; IEC 60068-2-14; SAE J1455, Sections 4.1 and 4.12; EIA-364-32; RTCA/DO-160 (D/E/F/G), Sections 4 and 5; US CAR-2, Sections 5.6.1 and 5.6.3; US CAR-21, Section 4.5.5; GMW 3172, Section 9.4; IACS-E10, Tests 5 and 11; ISO 16750-4; FAA AC 150/5345-5, -10, -12, -26, -28, -39, -42, -43, -44, -46, -49, -50, -51, -52, -54, -55; FAA EB-67
Liquid to Liquid Thermal Shock <sup>2</sup> (-65 to 200) °C	ISO 60068-2-14; MIL-STD-750E Method 1056.7
Altitude <sup>2</sup> (-1.5 to 90) k ft	MIL-STD-810 (E/F/G/H), Methods 500 and 520; MIL-STD-202 (F/G/H), Method 105C, Test Conditions A, B, and C; SAE J1455, Section 4.9; RTCA/DO-160 (D/E/F/G), Section 4.0; EIA-364-20; US CAR-2 5.6.6; IEC 60068-2-13; FAA AC 150/5345-5, -10, -51

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

Explosive Atmosphere <sup>2</sup> (30 to 71) °C (1k to 40k) ft	MIL-STD-810 (E/F/G/H), Method 511; MIL-STD-202 (F/G/H), Method 109; RTCA/DO-160 (D/E/F/G), Section 9
Acceleration <sup>2</sup> Up to 50 Gs	MIL-STD-810 (E/F/G/H), Method 513; MIL-STD-202 (F/G/H), Method 212, Conditions A and C
Fluids Susceptibility	MIL-STD-810 (E/F/G/H), Methods 504 and 518; MIL-STD-202 (F/G/H), Method 215; SAE J1211, Section 4.4; SAE J1455, Section 4.4; SAE J575, Sections 4.15 and 4.16; RTCA/DO-160 (D/E/F/G), Section 11; US CAR-2 Sec. 6.4; ISO 16750-5; FAA AC 150/5345-42, -46
Flammability	MIL-STD-202 (F/G/H), Method 111; FMVSS 302; RTCA/DO-160 (D/E/F/G), Section 26, Category C
Ice & Freezing Rain	MIL-STD-810 (E/F/G/H), Method 521; RTCA/DO-160 (D/E/F/G), Section 24; NEMA 250; FAA AC 150/5345-12
Transformer Tests	FAA AC 150/5345-47 (Section 4.2.4); IEC 61823
Dielectric Withstand Voltage	MIL-STD-202, Method 301; EIA-364-20
Insulation Resistance	MIL-STD-202, Method 302; SAE/USCAR-2, Section 5.5.1; EIA-364-21
Contact Resistance	MIL-STD-202, Method 307; SAE/USCAR-2, Section 5.3.1; EIA-364-23; USCAR21, Section 4.5.3
DC Resistance	MIL-STD-202, Method 303
Contact Chatter	MIL-STD-202, Method 310; SAE/USCAR-2, Section 5.1.9
Voltage Drop	SAE/USCAR-2, Section 5.3.2; USCAR21, Section 4.5.6

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

Photometry, Luminous Flux <sup>2</sup> 2-meter Integrating Sphere with spectroradiometer; 4pi and 2pi geometries; (6 to 159,000) lumens	LM-79-19, Section 7.0; LM-79-24, Section 7.0; LM-45-20; 49 CFR 571.108 (FMVSS 108), 49 CFR 564 (Part 564); CMVSS 108; SAE J573, J2560; UNECE Reg 37, Reg 99; CIE 84, CIE S025; ANSI/PLATO FL 1 2019
Photometry, Luminous Intensity <sup>2</sup> 100' (30.5 m) Type A Goniophotometer; (Steady, Flashing); (0.01 to 2,000,000) cd	FAA AC 150/5345-12, -28, -43, -46, -50, -51, -52, -55; FAA EB-67; ICAO Annex 14, Volume 1 (9 <sup>th</sup> Edition); CASA MOS139; TP312 (5 <sup>th</sup> Edition); CAR 621, SAE J222, J575, J581, J582, J583, J585, J586, J588, J591, J592, J593, J595, J845, J852, J914, J1319, J1373, J1383, J1395, J1398, J1424, J1432, J1735, J1889, J1957, J2009, J2039, J2040, J2042, J2087, J2139, J2261, J2595, J2650, AS8037, AS8017; 49 CFR 571.108 (FMVSS 108); CMVSS 108; UNECE R65, R148, R149; NFPA 1901 Chapter 13; GSA/KKK-A-1822F Section 3.8; GMW 14906 Section 4.5.5; CIE 70; ANSI/PLATO FL 1 2019
Colorimetry, Chromaticity <sup>2</sup> Spectrometer (350 to 1050) nm	FAA AC 150/5345-12, -28, -43, -46, -50, -51, -52, -55; FAA EB-67; SAE J576, SAE J578, AS25050; LM-79-19, Section 7.0; LM-79-24, Section 9.0; LM-58-20; TM-30-24; CIE 13.3; CIE15; ANSI C78-09.377; ICAO Annex 14, Volume 1 (9 <sup>th</sup> Edition); CASA MOS139; TP312 (5 <sup>th</sup> Edition); CAR 621

West Annex  
1524 Centre Circle  
Downers Grove, IL 60515

<b><u>Test Technology</u></b>	<b><u>Test Method(s) <sup>1</sup>:</u></b>
Solar Radiation <sup>2</sup> Step or Steady State (0 to 1400) W/m <sup>2</sup> (40 to 60) °C	MIL-STD-810 (E/F/G/H), Method 505; FAA AC 150/5345-12, -39, -43, -44, -45, -46, -50, -51, -52, -54
Dielectric Withstand Voltage	MIL-STD-202, Method 301; EIA-364-20
Insulation Resistance	MIL-STD-202, Method 302; SAE/USCAR-2, Section 5.5.1; EIA-364-21
Contact Resistance	MIL-STD-202, Method 307; SAE/USCAR-2, Section 5.3.1; EIA-364-23; USCAR21, Section 4.5.3
DC Resistance	MIL-STD-202, Method 303
Contact Chatter	MIL-STD-202, Method 310; SAE/USCAR-2, Section 5.1.9
Voltage Drop	SAE/USCAR-2, Section 5.3.2; USCAR21, Section 4.5.6

**On the following products and materials:**

Telecommunications Terminal Equipment (TTE), Radio Equipment, Network Equipment, Information Technology Equipment (ITE), Automotive Electronic Equipment, Automotive Hybrid Electronic Devices, Maritime Navigation and Radio Communication Equipment and Systems, Vehicles, Boats and Internal Combustion Engine Driven Devices, Automotive, Aviation, and General Lighting Products, Medical Electrical Equipment, Motors, Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment, Household Appliances, Electric Tools, Low-voltage Switchgear and Control gear, Programmable Controllers, Electrical Equipment for Measurement, Control and Laboratory Use, Base Materials, Power and Data Transmission Cables and Connectors.

<sup>1</sup> 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 Annex A, Part C of A2LA R101 - *General Requirements: Accreditation of Conformity Assessment Bodies*.

<sup>2</sup> Also using customer specifications directly related to the technologies and parameters listed above.



## Accredited Laboratory

A2LA has accredited

### **ELITE ELECTRONIC ENGINEERING INC.**

*Downers Grove, IL*

for technical competence in the field of

### Mechanical 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 3<sup>rd</sup> day of September 2025.

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 1786.02  
Valid to June 30, 2027

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