



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

VERTICAL LABORATORIES
1805 Flower Street
Glendale, CA 91201
Kane Liang Phone: 818 858 1974

MECHANICAL

Valid To: September 30, 2026

Certificate Number: 4993.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory and satellite location to perform the following types of tests for the aerospace industry on the following product types: Connectors, Optical interconnects, and accessories:

<u>Test Type/Test Capabilities:</u>	<u>Test Method(s):</u>
Salt Spray	ASTM B117 DO-160 EIA-364-26 MIL-STD-810 MIL-STD-38999 PRO01
Helium Leak Helium Leak Rate: (1 x 10 ⁻⁵ atm.cc/s to 1 x 10 ⁻⁹ atm.cc/s)	EIA-364-02 MIL-STD-38999 PRO03
Altitude (Up to 100,000 Feet) Temp (-65 to 200) °C	EIA 364-03 DO-160 MIL-STD-810 MIL-STD-38999 PRO19
Temperature Test High and Low (-195 to 1100) °C	EIA-364-17 EIA-364-110 DO-160 MIL-STD-810 MIL-STD-38999 PRO05 PRO06
Temperature and Humidity Temperature (-10 to 85) °C RH (5 to 95) %	EIA-364-31 DO-160 MIL-STD-810 MIL-STD-38999 PRO11

<u>Test Type/Test Capabilities:</u>	<u>Test Method(s):</u>
Thermal Shock (-196 to 1100) °C	EIA-364-32 MIL-STD-810 MIL-STD-38999 PRO12
Tensile (1 lbf to 30,000 lbf)	EIA-364-08 DO-160 MIL-STD-810 MIL-STD-38999 PRO04
DWV Up to 120kVAC Up to 80kVDC	EIA 364-20 DO-160 MIL-STD-810 MIL-STD-38999 PRO07
Insulation Resistance (100 to 15,000 VDC. 30 Tera Ohm Max)	EIA-364-21 DO-160 MIL-STD-810 MIL-STD-38999 PRO08
Vibration Random: Frequency Range (5 to 2,000 Hz) Up to 90 Grms Sine: Frequency Range: (5 to 2,000 Hz) Up to 100 G Sine on Random: Frequency Range: (5 to 2,000 Hz) Sine – Up to 100G Random – Up to 90 Grms Combined Environment: Temperature: (-196 to 300) °C Random: Frequency Range (5 to 2,000 Hz) Up to 90 Grms Sine on Random: Frequency Range: (5 to 2,000 Hz) Sine – Up to 100G, Random – Up to 90 Grms	EIA-364-28 DO-160 MIL-STD-810 MIL-STD-38999 PRO10

<u>Test Type/Test Capabilities:</u>	<u>Test Method(s):</u>
Mechanical Shock Up to 1500 G's, 0.5 msec	EIA-364-27 DO-160 MIL-STD-810 MIL-STD-38999 PRO09
Pressure (0 to 40,000 psi) Temp (-65 to 150 °C)	EIA-364-39 PRO13
Electrical Discontinuity 0.1, 1 and 10 msec Electrical Discontinuity	EIA-364-46 MIL-STD-38999 PRO14
Temperature Rise vs Current Up to 1600 amps (DC) Up to 350 amps at 4200 Hz	EIA-364-70 DO-160 MIL-STD-810 MIL-STD-38999 PRO15
Shell to Shell Conductivity Up to 20 amps	EIA-364-83 MIL-STD-38999 PRO16
Low Level Shell Resistance 0-100 mA	EIA-364-23 MIL-STD-38999 PRO28
Optical Insertion Loss and Return Loss SM and MM (0.0 dB to 52 dB IL) SM and MM (14 dB to 72 dB RL)	TIA-455-34A ARINC 801 ARINC 802 PRO17
Optical Discontinuity Dropout Detection Range of 0.8 μ s to 1s Loss Threshold of > 0.5 dB to 3 dB	TIA-455-32 ARINC 801 ARINC 802 PRO18
Optical Transmittance	TIA-455-20 ARINC 801 ARINC 802 PRO18
Contact Engagement/Disengagement Up to 10 kN	EIA-364-37 PRO20
Magnetic Permeability Insert Values: 1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.08, 1.09, 1.1, 1.15, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 2.0, 2.2, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, and 6.0 Mu	EIA-364-54 ASTM A342/A342M MIL-STD-38999 PRO21
Mating/Unmating	EIA-364-09 MIL-STD-38999 PRO22

<u>Test Type/Test Capabilities:</u>	<u>Test Method(s):</u>
Fluid Immersion	EIA-364-10 MIL-STD-38999 PRO23
IP Testing (Water Ingress) 1 Meter	IEC 60529 IPX7 PRO25
Shock Response Spectrum Frequency Range: (10 to 10,000 Hz) Up to 25,000 Gs	MIL-STD-810G, Method 516.7 PRO26
Contact Retention (0.5 lbs to 50 lbs)	EIA-364-29 MIL-STD-38999 PRO29
Insert Retention (0.5 lbs to 200 lbs)	EIA-364-35 MIL-STD-38999 PRO30
Thermal Vacuum (TVAC)	PRO31
Flex Life Test	AS4373 PRO32
Flammability	FAA Aircraft Materials Fire Test Handbook – Ch 4. PRO33
Contact Resistance	EIA-364-06 MIL-DTL-38999 PRO34
Coupling/Uncoupling Torque	EIA-364-114 MIL-DTL-38999 PRO27
Volume Resistivity	ASTM D257 PRO36
Mating/Unmating Forces	EIA-364-13 PRO37
Time/Current to Smoke	SAE AS4373 Method 507 PRO38
Ice Resistance	MIL-DTL-38999 PRO39
Firewall testing	EIA-364-45 MIL-DTL-38999 PRO40
Dry Arc Propagation Resistance	SAE AS4373 Method 508 PRO41
Wet Arc Propagation Resistance	SAE AS4373 Method 509 PRO42
UV Weathering	SAE AS4373 Method 606 PRO43

<u>Test Type/Test Capabilities:</u>	<u>Test Method(s):</u>
Cold Bend	ANSI/NEMA WC 27500 SAE AS4373 Method 702 PRO44

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<u>Test Type/Test Capabilities:</u>	<u>Test Method(s):</u>
Pressure (0 to 40,000 psi) Temp (-65 to 150 °C)	EIA-364-39 PRO13
Radiated Emissions	MIL-STD-461 (RE101, RE102) PRO45 PRO55
Radiated Susceptibility	MIL-STD-461 (RS101, RS102, RS103) PRO46 PRO56
Conducted Emissions	MIL-STD-461 (CE101, CE102) PRO47
Conducted Susceptibility	MIL-STD-461 (CS101, CS114, CS115, CS116) PRO48 PRO54
Shielding Effectiveness (Mode-stirred, Triaxial cell)	EIA-364-66 PRO49 PRO49-1
Aircraft Power	MIL-STD-704 PRO50
Partial Discharge	IEC 60270 PRO51
Electrostatic Discharge Immunity	IEC-61000-4-2 PRO57
Contact Resistance	EIA-364-06 MIL-DTL-38999 PRO34
Drop testing	MIL-STD-810 PRO52
Transportation shock	MIL-STD-810 PRO53
DWV Up to 120kVAC Up to 80kVDC	EIA 364-20 DO-160 MIL-STD-810 MIL-DTL-38999 PRO07
Insulation Resistance (100 to 15,000 VDC. 30 Tera Ohm Max)	EIA-364-21 DO-160

Test Type/Test Capabilities:	Test Method(s):
	MIL-STD-810 MIL-DTL-38999 PRO08
Altitude (Up to 100,000 Feet) Temp (-65 to 200) °C	EIA 364-03 DO-160 MIL-STD-810 MIL-DTL-38999 PRO19
Helium Leak Rate	EIA-364-02 MIL-STD-38999 PRO03
Electrical Discontinuity 0.1, 1 and 10 msec Electrical Discontinuity	EIA-364-46 MIL-STD-38999 PRO14
Low Level Shell Resistance 0-100 mA	EIA-364-23 MIL-STD-38999 PRO28
Magnetic Permeability Insert Values: 1.01, 1.02, 1.03, 1.04, 1.05, 1.06, 1.08, 1.09, 1.1, 1.15, 1.2, 1.3, 1.4, 1.5, 1.6, 1.8, 1.9, 2.0, 2.2, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, and 6.0 Mu	EIA-364-54 ASTM A342/A342M MIL-STD-38999 PRO21
Time/Current to Smoke	SAE AS4373 Method 507 PRO38
Dry Arc Propagation Resistance	SAE AS4373 Method 508 PRO41
Wet Arc Propagation Resistance	SAE AS4373 Method 509 PRO42
Temperature Test High and Low (-195 to 1100) °C	EIA-364-17 EIA-364-110 DO-160 MIL-STD-810 MIL-DTL-38999 PRO05 PRO06
Temperature and Humidity Temperature (-10 to 85) °C RH (5 to 95) %	EIA-364-31 DO-160 MIL-STD-810 MIL-DTL-38999 PRO11
Thermal Shock (-196 to 1100) °C	EIA-364-32 MIL-STD-810 MIL-DTL-38999 PRO12
Thermal Vacuum (TVAC)	PRO31
Shell to Shell Conductivity Up to 20 amps	EIA-364-83 MIL-DTL-38999 PRO16
Temperature Rise vs Current Up to 1600 amps (DC)	EIA-364-70 DO-160

Test Type/Test Capabilities:	Test Method(s):
Up to 350 amps at 4200 Hz	MIL-STD-810 MIL-DTL-38999 PRO15
Optical Insertion Loss and Return Loss SM and MM (0.0 dB to 52 dB IL) SM and MM (14 dB to 72 dB RL)	TIA-455-34A ARINC 801 ARINC 802 PRO17
Optical Discontinuity Dropout Detection Range of 0.8 μ s to 1s Loss Threshold of > 0.5 dB to 3 dB	TIA-455-32 ARINC 801 ARINC 802 PRO18
Optical Transmittance	TIA-455-20 ARINC 801 ARINC 802 PRO18
IP Testing (Water Ingress) 1 Meter	IEC 60529 IPX7 PRO25
Mating/Unmating	EIA-364-09 MIL-DTL-38999 PRO22
Flex Life Test	AS4373 PRO32



Accredited Laboratory

A2LA has accredited

VERTICAL LABORATORIES

Glendale, CA

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 15th day of October 2024.

A blue ink signature of Mr. Trace McInturff, written in a cursive style.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4993.01
Valid to September 30, 2026

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