



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Educated Design & Development, Inc. (ED&D)
901 Sheldon Dr.
Cary, NC 27513

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 20 December 2027

Certificate Number: AC-1425



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
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).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Educated Design & Development, Inc. (ED&D)

901 Sheldon Dr.
Cary, NC 27513

Bryan Ogden 919 469 9434

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **19 December 2025**

Certificate Number: **AC-1425** Certificate Expiry Date: **20 December 2027**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage Measure	(1 to 200) mV (50 to 100) Hz (100 to 400) Hz	0.81 mV/V + 35 μ V 10 μ V	Comparison to Keithley 2001 Multimeter
	(2 to 750) V (50 to 100) Hz (100 to 400) Hz	0.14 mV/V + 2.4 mV 0.29 mV/V + 46 μ V	
AC High Voltage Measure	(0.1 to 30) kV (50 to 400) Hz	0.35 mV/V + 5.7 V	Comparison to Vitrek 4620B High Voltage Meter with HVP-35 High Voltage Probe
DC Voltage Measure	(2 to 200) mV (0.2 to 1 000) V	49 μ V/V + 3.5 μ V 8.6 μ V/V + 12 μ V	Comparison to Keithley 2001 Multimeter
DC High Voltage Measure	(1 to 30) kV	67 nV/V – 64 μ V	Comparison to Vitrek 4620B High Voltage Meter with HVP-35 High Voltage Probe
AC Current Measure	(1 to 200) μ A (50 to 200) Hz 200 μ A to 2 A (50 to 200) Hz	2.1 nA/ μ A + 44 nA 0.26 μ A/mA + 3.3 μ A	Comparison to Keithley 2001 Multimeter
	(2 to 50) A (50 to 200) Hz	0.23 A	Comparison to Keithley 2001 Multimeter, Current Shunt

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current Measure	(2 to 200) μ A 200 μ A to 2 A	1.6 μ A/mA + 5.8 nA 0.15 μ A/mA + 16 μ A	Comparison to Keithley 2001 Multimeter
	(2 to 50) A	0.16 A	Comparison to Keithley 2001 Multimeter, Current Shunt
Resistance Measure	(20 to 200) Ω (2 to 200) k Ω (20 to 200) M Ω 200 M Ω to 1 G Ω	0.1 m Ω / Ω + 2.4 m Ω 98 $\mu\Omega$ / Ω + 14 m Ω 39 Ω /M Ω – 0.71 Ω 0.13 M Ω /M Ω + 6.9 M Ω	Comparison to Keithley 2001 Multimeter
Capacitance Measure	Up to 40 nF (40 to 400) nF 400 nF to 4 μ F (4 to 40) μ F (40 to 400) μ F	0.31 nF 2.7 nF 25 nF 0.29 μ F 3.3 μ F	Direct Measure using Zoro Select Uni-T 5URG9 Digital Multimeter
AC Hipot Testers	60 Hz Voltage (0.1 to 9) kV (5 to 30) kV Current (0.025 to 20) mA	0.99 V/kV + 0.77 V 2.2 V/kV – 6.7 V 0.15 μ A/mA + 16 μ A	Comparison to Vitrek 4620B High Voltage Meter, HVP-35 High Voltage Probe, Keithley 2001 7.5 Digit Multimeter
DC Hipot Testers	60 Hz Voltage (0.1 to 9) kV (9 to 30) kV Current (0.025 to 20) mA 60 Hz	0.56 V/kV – 0.14 V 2.1 V/kV – 13 V 0.15 μ A/mA + 16 μ A	
Ground Continuity Testers	Resistance (0.01 to 0.2) Ω Current 60 Hz Up to 50 A	0.69 $\mu\Omega$ /m Ω + 45 $\mu\Omega$ 0.23 A	Comparison to Resistor Array, Keithley 2001 7.5 Digit Multimeter, Current Shunt

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Leakage Current Testers			
AC Current	60 Hz 2 µA to 20 mA	0.26 µA/mA + 3.3 µA	Comparison to Keithley 2001 7.5 Digit Multimeter
AC Voltage	(50 to 100) Hz (1 to 400) mV	2.6 mV	
Resistance	(20 to 200) Ω (0.2 to 1) kΩ	0.1 mΩ/Ω + 2.4 mΩ 98 µΩ/Ω + 14 mΩ	
Frequency	1 Hz to 1 MHz	0.62 mHz/Hz + 0.37 mHz	
Electrical Simulation of Thermocouple Indicating Devices – Source/Measure	Type J (0 to 1 200) °C Type K (0 to 1 372) °C Type T (0 to 400) °C Type E (0 to 1 000) °C	0.33 °C 0.33 °C 0.33 °C 0.33 °C	Comparison to Omega CL3515R Calibrator

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Micrometers	(0.05 to 1) in	6.7 µin/in + 9.8 µin	Comparison to Gage Blocks
Calipers	Up to 6 in (6 to 12) in	200 µin/in + 990 µin 540 µin/in + 660 µin	Comparison to Gage Blocks
Surface Roughness Measurement	(0.03 to 6.35) µm	15 nm/µm + 0.18 µm	Comparison to Profilometer
Angle Meters Digital Protractors	Up to 90°	0.008 4°/° + 0.54°	Comparison to Angle Blocks
Length	Up to 12 in	19 µin/in + 230 µin	Comparison to Vision System

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Diameter	Up to 10 in	19 $\mu\text{in/in}$ + 230 μin	Comparison to Vision System
Radius	Up to 6 in	18 $\mu\text{in/in}$ + 230 μin	Comparison to Vision System
Angle	Up to 360°	0.002 2°/° + 0.13°	Comparison to Vision System
Diameter	Up to 1 in	390 $\mu\text{in/in}$ + 260 μin	Comparison to Digital Micrometer
Length	Up to 24 in	540 $\mu\text{in/in}$ + 660 μin	Comparison to Digital Caliper
Diameter	Up to 24 in	540 $\mu\text{in/in}$ + 660 μin	Comparison to Digital Caliper
Length	Up to 18 in	0.083 $\mu\text{in/in}$ + 0.12 in	Comparison to Steel Rule
Length	Up to 25 ft	0.004 7 in/in + 0.13 in	Comparison to Tape Measure

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Impact Hammers ²	Up to 0.25 J (0.25 to 1.0) J (1.0 to 2.1) J	0.01 J (0.015 + 0.002E) J (0.046 + 0.002E) J	Comparison to Impact Hammer Calibrator
Impact Hammer Calibrators	Up to 0.25 J (0.25 to 1.0) J (1.0 to 2.1) J	0.004 J 0.008 J 0.013 J	Comparison to Steel rule and Digital Scale
Pneumatic Pressure Gauges	(-0.5 to 0) psig (0 to 50) psig	0.004 2 psi 0.031 psi	Comparison to (-7 to 7) inH ₂ O Manometer Additel 681
Force Gauges	(0.5 to 20) lbf (20 to 112) lbf	0.11 % of reading + 0.005 7 lbf 0.12 % of reading + 0.002 3 lbf	Comparison to Class F Weights

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force Effort	(0.5 to 20) lbf (5 to 200) lbf	0.063 % of reading + 0.024 lbf 0.052 % of reading + 0.23 lbf	Comparison to Force Gauges
Mass	(0.1 to 120) g (100 to 10 000) g	2.4 mg 0.23 % of reading	Comparison to Ohaus SPX123 10 kg Digital Scale
Gas Flow	(0.1 to 2) lpm	0.014 lpm	Comparison to Flow Meter Omega FMA 1816
Volumetric Flow, Liquids	(0.1 to 2) L/m (0.3 to 9) L/m (7.5 to 75) L/m (38 to 380) L/m	0.19 % of reading 0.2 % of reading 0.85 % of reading 0.84 % of reading	Comparison to Flow Meters Omega FTB601B Omega FTB602B FlowMec G2S07NQ9GMA Omega FTB694

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature Measure	(-200 to 300) °C	1.5 °C	Comparison to Omega CL3515R Calibrator with Type T Thermocouple probe
Humidity Measure	(10 to 90) %RH	2.2 %RH	Comparison to Digital Hygrometer

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency Measure ²	0.1 Hz to 1 MHz	0.62 mHz/Hz + 0.37 mHz	Comparison to Keithley 2001 7.5 Digit Multimeter

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Time Interval	Up to 3 600 s	0.56 s	Comparison to Digital Stopwatch

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. E = energy in joules, F = frequency in MHz, L = flow in liters per minute, R = roughness in micro-meters, T = temperature in degrees Celsius, W = weight in grams.



Jason Stine, Vice President

