



International Laboratory  
Assessment and Accreditation

## ACCREDITED LABORATORY

ILAA has accredited

**EDT Instrumentation Co., Inc.**  
**Mundelein, IL**

For technical competence in the field of

### Calibration

The accreditation covers the specific calibration listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 – 2005 “General Requirements for the Competence of Testing and Calibration Laboratories.” This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements. Based on a Quality and Technical assessment, a rating of 985 out of a possible 1000 points has been issued to the laboratory. For the calibrations to which this accreditation applies, please refer to the laboratory’s Scope of Accreditation.

Presented this 7<sup>th</sup> day of April, 2008.



*Darrell Klein*

**Darrell Klein**  
Vice-President

*Debbie Klein*

**Debbie Klein**  
Vice-President

**Certificate Number: 1722.01**  
**Valid to April 7, 2010**

SCOPE OF ACCREDITATION TO ISO/IEC 17025-2005  
 AND ANSI/NCSL Z540-1-1994  
 EDT Instrumentation Co., Inc.  
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 Mundelein, IL 60060  
 Edward Jonko Phone: 847-566-8025  
 Fax: 847-566-7959  
 Calibration

Valid to: April 7, 2010

Certificate Number: 1722.01

In recognition of the successful completion of the ILAA evaluation process, accreditation is granted to this laboratory to perform the following measurements.<sup>1</sup>

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
<b>DC Voltage - Source</b>	(0 to 11) V (11 to 22) V (22 to 275) V (275 to 1100) V	4.5 ppm + 20 µV 4.5 ppm + 28 µV 7.3 ppm + 429 µV 7.5 ppm + 1.5 mV	Fluke 5440A
<b>DC Voltage - Measure</b>	(0 to 100) mV (0.1 to 10) V (1 to 10) V (10 to 100) V (100 to 1000) V	11 µV/V + 0.1 µV 10 µV/V + 0.2 µV 10 µV/V + 1.0 µV 12 µV/V + 21 µV 12 µV/V + 106 µV	HP 3458A
<b>DC Current – Source</b>	(0 to 3.3) mA (0 to 33) mA (0 to 320) mA (0 to 2.2) A (0 to 11) A	0.01% + 0.05 µA 0.008% + 0.25 µA 0.008% + 3.35 µA 0.023% + 44 µA 0.038% + 330 µA	Fluke 5220A
<b>DC Current – Measure</b>	(10 to 100) µA (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A	22 µA/A + 0.8 nA 22 µA/A + 0.005 µA 22 µA/A + 0.05 µA 37 µA/A + 0.5 µA 110 µA/A + 10 µA	HP 3458A

*D.K. 4/7/08*

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
<b>AC Voltage – Measure</b>			
10 mV	1 Hz to 1 kHz (1 to 50) kHz (50 to 300) kHz	0.04 % + 6.0 μV 0.04 % + 2.2 μV 0.60 % + 2.0 μV	HP 3458A (Note: EDT can achieve greater accuracies as required with the Fluke 540B)
100 mV	1 Hz to 1 kHz (1 to 50) kHz (50 to 300) kHz 300 kHz to 2 MHz	0.008 % + 8.0 μV 0.02 % + 4.0 μV 0.10 % + 4.0 μV 1.19 % + 20 μV	
1 V	1 Hz to 1 kHz (1 to 50) kHz (50 to 300) kHz 300 kHz to 2 MHz	0.008 % + 80.0 μV 0.02 % + 40.0 μV 0.10 % + 40.0 μV 1.19 % + 0.2 mV	
10 V	1 Hz to 1 kHz (1 to 50) kHz (50 to 300) kHz 300 kHz to 2 MHz	0.008 % + 0.8 mV 0.02 % + 0.4 mV 0.10 % + 0.4 mV 1.19 % + 2.0 mV	
100 V	1 Hz to 1 kHz (1 to 50) kHz (50 to 300) kHz 300 kHz to 2 MHz	0.02 % + 8.0 mV 0.02 % + 4.0 mV 0.14 % + 4.0 mV 1.79 % + 20.0 mV	
1000 V	1 Hz to 1 kHz (1 to 50) kHz (50 to 300) kHz	0.05 % + 80.0 mV 0.07 % + 40.0 mV 0.36 % + 40.0 mV	

*D.K. 4/7/08*

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
<b>AC Current – Source</b>			Fluke 5500A/SC300
(0.03 to 0.33) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.25% + 0.15 µA 0.13% + 0.15 µA 0.13% + 0.25 µA 0.40% + 0.15 µA 1.25% + 0.15 µA	
(0.33 to 3.3) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.2% + 0.3 µA 0.1% + 0.3 µA 0.1% + 0.3 µA 0.2% + 0.3 µA 0.6% + 0.3 µA	
(3.3 to 33) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.2% + 3.0 µA 0.1% + 3.0 µA 0.1% + 3.0 µA 0.2% + 3.0 µA 0.6% + 3.0 µA	
<b>AC Current – Source</b>			
(33 to 330) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.2% + 30 µA 0.1% + 30 µA 0.1% + 30 µA 0.2% + 30 µA 0.6% + 30 µA	
(0.33 to 2.2) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz	0.2% + 300 µA 0.1% + 300 µA 0.8% + 300 µA	
(2.2 to 11) A	(45 to 65) Hz 65 Hz to 500 Hz 500 Hz to 1 kHz	0.06% + 2.0 mA 0.10% + 2.0 mA 0.33% + 2.0 mA	

*D.K. 4/7/08*

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
<b>AC Current – Measure</b>			HP 3458A
0 to 120 µA	(10 to 45) Hz 45 Hz to 20 kHz	0.48% + 0.06 µA 0.18% + 0.06 µA	
0.12 to 1.2 mA	(10 to 45) Hz 45 Hz to 20 kHz (20 to 100) kHz	0.48% + 0.72 µA 0.18% + 0.72 µA 0.66% + 0.72 µA	
1.2 to 12 mA	(10 to 45) Hz 45 Hz to 20 kHz (20 to 100) kHz	0.48% + 7.2 µA 0.18% + 7.2 µA 0.66% + 7.2 µA	
12 to 120 mA	(10 to 45) Hz 45 Hz to 20 kHz (20 to 100) kHz	0.48% + 72 µA 0.18% + 72 µA 0.66% + 72 µA	
0.12 to 1.2 A	(10 to 45) Hz 45 Hz to 20 kHz (20 to 100) kHz	0.48% + 0.72 mA 0.19% + 0.72 mA 1.19% + 0.72 mA	
<b>Capacitance - Source</b>			Fluke 5500A/SC300
(0.33 to 0.5) nF	50 Hz to 1 kHz	0.5% + 0.01 nF	
(0.5 to 1.1) nF	50 Hz to 1 kHz	0.5% + 0.01 nF	
(1.1 to 3.3) nF	50 Hz to 1 kHz	0.5% + 0.01 nF	
(3.3 to 11) nF	50 Hz to 1 kHz	0.5% + 0.01 nF	
(11 to 33) nF	50 Hz to 1 kHz	0.25% + 0.1 nF	
(33 to 110) nF	50 Hz to 1 kHz	0.25% + 0.1 nF	
(110 to 330) nF	50 Hz to 1 kHz	0.25% + 0.3 nF	
(0.33 to 1.1) µF	50 Hz to 1 kHz	0.25% + 1 nF	
(1.1 to 3.3) µF	50 Hz to 1 kHz	0.35% + 3 nF	
(3.3 to 11) µF	(50 to 400) Hz	0.35% + 10 nF	
(11 to 33) µF	(50 to 400) Hz	0.40% + 30 nF	
(33 to 110) µF	(50 to 200) Hz	0.50% + 100 nF	
(110 to 330) µF	(50 to 100) Hz	0.70% + 300 nF	
(0.330 to 1.1) mF	(50 to 100) Hz	1.00% + 300 nF	
<b>Resistance - Measure</b>	(1 to 19) Ω (19 to 10k) Ω (10k to 1.9M) Ω (1.9 to 100) MΩ	531 ppm 73 ppm 69 ppm 150 ppm	Fluke 5450A

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Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
<b>Thermocouple Indicators And Simulators</b>			Fluke 5500A/SC300
Type E	(-250 to -100) ° C (-100 to -25) ° C (-25 to 350) ° C (350 to 650) ° C (650 to 1000) ° C	0.50 ° C 0.16 ° C 0.14 ° C 0.16 ° C 0.21 ° C	
Type J	(-210 to -100) ° C (-100 to -30) ° C (-30 to 150) ° C (150 to 760) ° C (760 to 1200) ° C	0.27 ° C 0.16 ° C 0.14 ° C 0.17 ° C 0.23 ° C	
Type K	(-200 to -100) ° C (-100 to -25) ° C (-25 to 120) ° C (120 to 1000) ° C (1000 to 1372) ° C	0.33 ° C 0.18 ° C 0.16 ° C 0.26 ° C 0.40 ° C	
Type R	(0 to 250) ° C (250 to 400) ° C (400 to 1000) ° C (1000 to 1372) ° C	0.57 ° C 0.35 ° C 0.33 ° C 0.40 ° C	
Type S	(0 to 250) ° C (250 to 1000) ° C (1000 to 1400) ° C (1400 to 1767) ° C	0.47 ° C 0.36 ° C 0.37 ° C 0.46 ° C	
Type T	(-250 to -150) ° C (-150 to 0) ° C (0 to 120) ° C (120 to 400) ° C	0.63 ° C 0.24 ° C 0.16 ° C 0.14 ° C	
Type B	(600 to 800) ° C (800 to 1000) ° C (1000 to 1550) ° C (1550 to 1820) ° C	0.44 ° C 0.34 ° C 0.30 ° C 0.33 ° C	
Type C	(0 to 150) ° C (150 to 650) ° C (650 to 1000) ° C (1000 to 1800) ° C (1800 to 2316) ° C	0.30 ° C 0.26 ° C 0.31 ° C 0.50 ° C 0.84 ° C	

*D.K. 4/7/08*

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)	Comments
Type N	(-200 to -100) ° C (-100 to -25) ° C (-25 to 120) ° C (120 to 410) ° C (410 to 1300) ° C	0.40 ° C 0.22 ° C 0.19 ° C 0.18 ° C 0.27 ° C	Fluke 5500A/SC300
Type L	(-200 to -100) ° C (-100 to 800) ° C (800 to 900) ° C	0.37 ° C 0.26 ° C 0.17 ° C	
Type U	(-200 to 0) ° C (0 to 600) ° C	0.56 ° C 0.27 ° C	
<b>Frequency Source</b>	10MHz	1 parts in 10 <sup>10</sup>	FS700 Loran-C

- 1) This laboratory offers commercial, on-site calibration services.
- 2) "Best Uncertainty" is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine tests of nearly ideal measurement standards of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95% level of confidence, usually using a coverage factor of  $k = 2$ . The best uncertainty of a specific test performed by the laboratory may be larger than the best uncertainty stated above due to the behavior and limitations of the customer's device, environmental conditions, and to influences due to the specific measurement method.

(ILAA Certificate Number 1722.01)

*D.K. 4/7/08*