



THE AMERICAN ASSOCIATION FOR  
LABORATORY ACCREDITATION

## ACCREDITED LABORATORY

A2LA has accredited

**J&W INSTRUMENTS**  
**New Brighton, MN**

for technical competence in the field of **Calibration**

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 laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. 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 18 June 2005*).

Presented this 26<sup>th</sup> day of October 2007.

A handwritten signature in black ink, appearing to read "Peter Meyer", written over a horizontal line.

President  
For the Accreditation Council  
Certificate Number: 1752.01  
Valid to: July 31, 2009



For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005  
& ANSI/NCSL Z540-1-1994

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New Brighton, MN 55112  
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CALIBRATION

Valid To: July 31, 2009

Certificate Number: 1752.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

I. Electrical – DC & Low Frequency

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)		Comments
		Laboratory	On-Site <sup>3,5</sup>	
DC Voltage – Measure	(0 to 12) V (12 to 120) V	10 µV/V + 1 µV 11 µV/V + 40 µV	On Site calibration service is not available for this range.	3458A
	(0 to 100) mV		0.02 % of rdg + 10 µV	TRX-II process calibrator
DC Current – Measure	(1 to 12) mA (12 to 120) mA	20 µA/A + 0.05 µA 35 µA/A + 0.5 µA	On Site calibration service is not available for this range.	3458A
	(0 to 30) A	0.33 % of rdg	0.35 % of rdg + 6 mA	RAM Shunt
	(0 to 100) A (0 to 1000) A	0.33 % of rdg 0.5 % of rdg	0.35 % of rdg + 0.02 A 0.52 % + 0.2 A	RAM Shunt RAM Shunt, Fluke 33

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)		Comments
		Laboratory	On-Site <sup>3</sup>	
Resistance – Measure	(0 to 1200) Ω	12 μΩ/Ω + 0.05 mΩ	On Site calibration service is not available for this range.	3458A
	(0 to 400) Ω 400 Ω to 2 kΩ		0.005 % of rdg + 0.08 Ω 0.02 % of rdg + 0.3 Ω	TRX-II Process Calibrator
Thermocouple Simulation –			See Footnote 4	TRX II Process Calibrator
Type K	(-270 to 1370) °C	0.3 °C		
Type J	(-210 to 1200) °C	0.3 °C		
Type T	(-270 to 400) °C	0.2 °C		
Type B	(50 to 1820) °C	0.6 °C		
Type R	(-50 to 1769)°C	0.6 °C		
Type S	(-50 to 1769) °C	0.7 °C		
Type N	(-270 to 1300) °C	0.3 °C		
RTD Simulation –			See Footnote 4	TRX II Process Calibrator
Pt 385, 100 Ω	(-200 to 850) °C	0.25 °C		
Pt 392, 100 Ω	(-200 to 510) °C	0.25 °C		

## II. Mechanical

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)		Comments
		Laboratory	On-Site <sup>3</sup>	
Pressure Gauges	(0 to 300) psi	0.3 psi	See Footnote 4	DPI-603
Vacuum Gauges	(0 to -27) inHg	0.08 inHg	See Footnote 4	DPI-601

### III. Time & Frequency

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)		Comments
		Laboratory	On-Site <sup>3</sup>	
Stopwatches and Timing Devices	(0 to 24) hours	1 s per day	See Footnote 4	Stopwatch

### IV. Thermodynamics

Parameter/Equipment	Range	Best Uncertainty <sup>2</sup> (±)		Comments
		Laboratory	On-Site <sup>3</sup>	
Temperature – Measure	-192 °C to 660 °C	0.028 °C	On Site calibration service is not available for this range.	5611 PRT
	-50 °C to 300 °C 300 °C to 1200 °C		0.37 °C 0.7 °C ± 0.4 % of rdg	RTD, TRX-II T/C, TRX-II
Temperature – Generate	0 °C Ambient to 200 °C	0.01 °C 0.55 °C	See Footnote 4 See Footnote 4	ICE Point 6102 Oil Bath

<sup>1</sup> This laboratory offers commercial calibration service and on-site calibration service, where noted.

<sup>2</sup> “Best Uncertainty” is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations 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 calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s device, to the environment (if the calibration is performed in the field) and to influences from the circumstances of the specific calibration.

<sup>3</sup> On-site calibration service is available for this calibration. The uncertainties achievable on a customer's site can normally be expected to be larger than the Best Measurement Capabilities (BMC) that the accredited laboratory has been assigned as Best Uncertainty on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the calibration uncertainty being larger than the BMC.”

<sup>4</sup> The Best Uncertainty stated for calibrations performed in the laboratory is applicable for calibrations performed on-site.