



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

M PRECISION LABORATORIES, LLC  
2 Shaker Road, Suite D201A  
Shirley, MA 01464  
Jeffrey Mullen Phone: 978 425 5163

CALIBRATION

Valid To: October 31, 2019

Certificate Number: 3508.01

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 – RF/Microwave

Parameter/Equipment	Range	CMC <sup>2,4</sup> (±)	Comments
EFT/Burst Generator <sup>3</sup> –			
Voltage (±)	250 V to 8 kV	2.5 %	Tektronix TDS5104B
Rise Time	5 ns ± 30 %	0.94 %	IEC 61000-4-2, IEC 61000-4-4,
Impulse Duration	50 ns ± 30 %	0.71 %	IEC 61000-4-5, IEC 61000-4-8,
Burst Duration @ 5 kHz	15 ms ± 20 %	0.71 %	IEC 61000-4-9, IEC 61000-4-11,
@ 100 kHz	0.75 ms ± 20 %	0.6 %	IEC 61000-4-18
Repetition Rate	5 kHz ± 20 %	1.1 %	GR-1089
	100 kHz ± 20 %	0.53 %	
Burst Period	300 ms ± 20 %	0.78 %	

Parameter/Equipment	Range	CMC <sup>2,4</sup> (±)	Comments
Transient Surge Generator <sup>3</sup> –			
Open Circuit Voltage	250 V to 20 kV	2.5 %	Tektronix TDS5104B
Rise/Front Time	(0.5 to 10) µs	0.8 %	
Time to Half-Value	(10 to 1000) µs	1.4 %	
Short Circuit Current	(5 to 10 000) A	2.7 %	
Rise/Time	(1 to 10) µs	0.6 %	
Time to Half-Value	(20 to 1000) µs	0.22 %	
Ring Wave Frequency <sup>3</sup>	100 kHz 100 kHz to 30 MHz	0.4 % 5.2 %	
Phase Angle <sup>3</sup>	(0 to 360) degrees	1.6 %	
PQF Generator <sup>3</sup>			
Output Voltage <sup>3</sup>	Up to 480 V AC	1.2 %	
Voltage Pulse Rise/ Fall Time <sup>3</sup>	(1 to 5) µs	1.2 %	
ESD Generator			
Peak Current	(1 to 60) A	3.8 %	Tektronix TDS794D Teseq MD103
Rise Time	(0.01 to 20) nS	9.9 %	
Current @ 30 nS	(1 to 60) A	6.5 %	
Current @ 60 nS	(1 to 60) A	9.1 %	
DC Voltage	250 V to 35 kV	1.6 %	Agilent 34401A Keytek DCA-2

<sup>1</sup> This laboratory offers commercial calibration service and field calibration service.

<sup>2</sup> Calibration and Measurement Capability Uncertainty (CMC) 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 or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of  $k = 2$ . The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

<sup>3</sup> Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found 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 actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

<sup>4</sup> In the statement of CMC, the value is defined as the percentage of reading unless otherwise noted.

A handwritten signature in black ink, appearing to be 'L. Se', located at the bottom right of the page.



## *Accredited Laboratory*

A2LA has accredited

**M PRECISION LABORATORIES, LLC**

*Shirley, MA*

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 R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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 8 January 2009).



Presented this 16<sup>th</sup> day of October 2017.

A handwritten signature in black ink, written over a horizontal line.

President and CEO  
For the Accreditation Council  
Certificate Number 3508.01  
Valid to October 31, 2019

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