



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

ARTEL LABORATORY  
 25 Bradley Drive  
 Westbrook, ME 04092  
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CALIBRATION

Valid To: October 31, 2013

Certificate Number: 2093.03

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. Optical Radiation

Parameter/Equipment	Range	CMC <sup>2</sup>	Comments
Absorbance Ratio / PCS™ Calibrator Kit	(0 to 1.5) A (0.98 to 1.02) A/A Cal B Cal C Cal D	0.0037 A/A 0.0021 A/A 0.0017 A/A	Reference spectrophotometer
Absorbance / MVS™ Calibrator Plate ND Glass Solution in Cuvettes	<u>520.2 nm</u> Near 1.1 A (ND) Near 0.025 A (Cal 1) Near 2 A (Cal 2) Near 0.4 A (Cal 3) Near 1.2 A (Cal 4) Near 2.4 A (Cal 5)  <u>730.5 nm</u> Near 0.85 A (ND) Near 0.04 A (Cal 1) Near 0.002 A (Cal 2) Near 0.002 A (Cal 3) Near 0.002 A (Cal 4) Near 0.002 A (Cal 5)	<u>520.2 nm</u> 0.0025 A 0.0012 A 0.0038 A 0.0018 A 0.0028 A 0.0041 A  <u>730.5 nm</u> 0.0019 A 0.0012 A 0.0020 A 0.0020 A 0.0020 A 0.0020 A	Reference spectrophotometer

II. Mechanical

Parameter/Equipment	Range	CMC <sup>2</sup>	Comments
Volume / Artel Pipette Calibration System (PCS™) Instrument	Near 130 µL	0.039 µL (0.03 %)	Photometric comparison to gravimetry
	Near 250 µL	0.051 µL (0.02 %)	
Volume / Syringe	8 µL (10 µL Barrel)	0.013 µL	Gravimetric tare addition
	10 µL (10 µL Barrel)	0.013 µL	
	10 µL (50 µL Barrel)	0.014 µL	
	40 µL (50 µL Barrel)	0.019 µL	
	50 µL (50 µL Barrel)	0.017 µL	
	100 µL (250 µL Barrel)	0.031 µL	
	200 µL (250 µL Barrel)	0.055 µL	
	200 µL (500 µL Barrel)	0.097 µL	
Volume / Pipette	0.10 µL	0.013 µL	Gravimetric tare addition
	0.20 µL	0.013 µL	
	0.50 µL	0.013 µL	
	1.0 µL	0.013 µL	
	2.0 µL	0.013 µL	
	5.0 µL	0.013 µL	
	10.0 µL	0.013 µL	
	20.0 µL	0.014 µL	
	25.0 µL	0.015 µL	
	50.0 µL	0.025 µL	
	100.0 µL	0.037 µL	
	200.0 µL	0.087 µL	
	250.0 µL	0.11 µL	
	300.0 µL	0.13 µL	
	500.0 µL	0.27 µL	
	1000.0 µL	0.39 µL	
	1250.0 µL	0.54 µL	
2000.0 µL	0.90 µL		
2500.0 µL	1.2 µL		
5000.0 µL	2.6 µL		



Parameter/Equipment	Range	CMC <sup>2</sup>	Comments
Volume / Pipette	0.10 µL	0.0033 µL	Photometric using Artel PCS™
	0.20 µL	0.0033 µL	
	0.50 µL	0.0039 µL	
	1.0 µL	0.0052 µL	
	2.0 µL	0.0096 µL	
	5.0 µL	0.021 µL	
	10.0 µL	0.043 µL	
	20.0 µL	0.079 µL	
	25.0 µL	0.097 µL	
	50.0 µL	0.25 µL	
	100.0 µL	0.48 µL	
	200.0 µL	0.73 µL	
	250.0 µL	0.89 µL	
	300.0 µL	1.1 µL	
	500.0 µL	1.8 µL	
	1000.0 µL	3.5 µL	
	1250.0 µL	4.4 µL	
2000.0 µL	7.5 µL		
2500.0 µL	9.7 µL		
5000.0 µL	23 µL		

<sup>1</sup> This laboratory offers commercial calibration service for Artel PCS Instruments and Artel PCS Calibration Kits and syringes as well as commercial calibration service for pipettes.

<sup>2</sup> Calibration and Measurement Capability (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. Calibration and Measurement Capabilities 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.



World Class Accreditation

The American Association for Laboratory Accreditation

# Accredited Laboratory

A2LA has accredited

## ARTEL LABORATORY

Westbrook, ME

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 8 January 2009).

Presented this 22<sup>nd</sup> day of November 2011.



A handwritten signature in black ink, reading "Peter M. Meyer".

President & CEO  
For the Accreditation Council  
Certificate Number 2093.03  
Valid to October 31, 2013

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