CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Geller MicroAnalytical Laboratory
426 Boston Street
Topsfield MA 01903

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

and national standard

ANSI/NCSL Z540-1-1994

while demonstrating technical competence in the field of

CALIBRATION

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations to which this accreditation applies.

AC-1236
Certificate Number

ANAB Approval

Certificate Valid: 07/27/2018-08/14/2020
Version No. 011 Issued: 07/27/2018

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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).

ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005 AND ANSI/NCSL Z540-1-1994 (R2002)

Geller MicroAnalytical Laboratory

426 Boston Street
Topsfield, MA 01903
Joseph Geller
978-887-7000

CALIBRATION

Valid to: **August 14, 2020** Certificate Number: **AC-1236**

Length – Dimensional Metrology

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Magnification Standard Pitch	0.1 µm 0.5 µm 1 µm 2 µm 50 µm 500 µm	3 nm 38 nm 30 nm 31 nm 0.1 µm 0.25 µm	Scanning Electron Microscope Primary Standard
Stage Micrometer Pitch	10 µm 100 µm 10 mm 150 mm	1.1 µm 1.1 µm 2.9 µm 2.9 µm	Optical Microscope Primary Standard
Step Height	0.1 µm	5 nm	Profilometry Primary Standard

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. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1236.

Vice President