



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

BIOTECHNICAL SERVICES, INC.
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CALIBRATION

Valid To: January 31, 2024

Certificate Number: 2901.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 5}:

I. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Balances ³	(1 to 100) mg (100 to 1000) mg (1 to 200) g (0.2 to 2) kg (1 to 2) kg	0.0027 % + 0.011 mg 0.0011 % + 0.012 mg 0.000 23 % + 0.000 023 g 0.000 027 % + 0.011 mg 0.0023 % + 0.011 kg	Ultra-Class weight set
Mass ³	1 mg 2 mg 3 mg 5 mg 10 mg 20 mg 30 mg 50 mg 100 mg 200 mg 300 mg 500 mg 1 g 2 g 5 g 10 g	0.03 mg 0.01 mg 0.01 mg 0.02 mg 0.01 mg 0.01 mg 0.01 mg 0.01 mg 0.01 mg 0.01 mg 0.01 mg 0.03 mg 0.02 mg 0.3 mg 0.92 mg 1.5 mg 1.2 mg	Ultra-Class Set and higher (e.g. Class 3)

Parameter/Equipment	Range	CMC ² (±)	Comments
Mass ³ – (cont)	20 g 50 g 100 g 200 g 500 g 1 kg 2 kg	1.3 mg 0.3 mg 1.9 mg 3.0 mg 2.1 mg 4.0 g 4.3 g	Ultra-Class set and higher (e.g. Class 3)

II. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Temperature – Thermometers	(-50 to 300) °C	0.07 °C	Hart 1502A
	(-180 to 100) °C	0.18 °C	Fluke 743B

III. Time & Frequency

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Frequency – Measuring Equipment	(1 to 100 000) Hz	1.7 Hz	Unomat MCX
RPM ³ – Measure	(60 to 18 000) RPM	1.7 RPM	Monarch
Time/Stopwatch ³	5 s to 24 hrs	1 s/day	VWR timer/counter

¹ This laboratory offers commercial and field calibration service.

² 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.

- ³ Field calibration service is available for this calibration. 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.
- ⁴ The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.
- ⁵ This scope meets A2LA's *P112 Flexible Scope Policy*.



Accredited Laboratory

A2LA has accredited

BIOTECHNICAL SERVICES, INC.

San Diego, CA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *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 April 2017).



Presented this 11th day of February 2022.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2901.01
Valid to January 31, 2024

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