



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

METTLER TOLEDO, LLC
 1900 Polaris Pkwy
 Columbus, OH 43240
 Charles Francis Phone: 614 438 4590

CALIBRATION

Valid To: July 31, 2018

Certificate Number: 1788.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Fluid

Parameter/Equipment	Range	CMC ² (±)	Comments
Mettler Toledo Auto-Titrator Burettes Only ^{3,6} – Volumetric	(0.1 to 1) mL (1 to 5) mL (5 to 10) mL (10 to 20) mL	0.51 µL 3.4 µL 2.0 µL 12 µL	Gravimetric comparison method

II. Mechanical

Parameter/Equipment	Range ⁵	CMC ^{2,4} (±)	Comments
Balances ^{3,6}	0.1 µg to 80 kg Up to 200 lb	0.80D 0.80D	OIML Class E2 weights, OIML Class F1 weights

III. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Mettler Toledo DSC ^{3,6}	(-57 to 419.5) °C (28.75 to 151.8) J/g	0.05 °C 0.05 J/g	Test point based on reference material used
Mettler Toledo TGA ^{3,6}	(156.6 to 1550) °C	0.05 °C	Test point based on reference material used
Mettler Toledo Gravimetric Moisture Analyzers Only ^{3,6} – Halogen	(50 to 160) °C	2.2 °C	Comparison method

¹ This laboratory offers commercial calibration service 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 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.

⁴ In the calculation of CMC, D is based upon “Readability” of balance and the CMC of reference weights.

⁵ For calibration of balances the “Range” equals the “Readability” of the balance.

⁶ This accreditation includes those field service representatives located in the United States and Canada reporting to METTLER TOLEDO (Lab Division), Columbus, Ohio

⁷ These calibrations are also performed at the Mettler Toledo Satellite Facility located at the location below:

CALIBRATION

I. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Mass – Fixed Points	0.001 g	0.00046 mg	NIST IR6969 ASTM Class 1 to 6, OIML Classes E2-M3, OIML Class E1 (1 mg to 1 kg), NIST Class F
	0.002 g	0.00046 mg	
	0.005 g	0.00046 mg	
	0.01 g	0.00046 mg	
	0.02 g	0.00046 mg	
	0.05 g	0.00046 mg	
	0.1 g	0.00046 mg	
	0.2 g	0.00046 mg	
	0.5 g	0.00058 mg	
	1, 2 g	0.00081 mg	
	5 g	0.0013 mg	
	10 g	0.0021 mg	
	20 g	0.0032 mg	
	50 g	0.0062 mg	
	100 g	0.0077 mg	
	200 g	0.014 mg	
	500 g	0.029 mg	
	1000 g	0.047 mg	
	2000 g	0.096 mg	
	5 kg	0.24 mg	
	10 kg	0.47 mg	
	20 kg	6.0 mg	
	25 kg	7.6 mg	
	0.001 lb	0.0012 µlb (0.00053 mg)	
	0.002 lb	0.0013 µlb (0.00061 mg)	
	0.005 lb	0.0026 µlb (0.0012 mg)	
	0.01 lb	0.0051 µlb (0.0023 mg)	
	0.02 lb	0.0068 µlb (0.0031 mg)	
	0.05 lb	0.016 µlb (0.0071 mg)	
	0.1 lb	0.032 µlb (0.014 mg)	
	0.2 lb	0.044 µlb (0.020 mg)	
	0.5 lb	0.099 µlb (0.045 mg)	
	1 lb	0.17 µlb (0.074 mg)	
	2 lb	0.25 µlb (0.11 mg)	
5 lb	1.2 µlb (0.51 mg)		
10 lb	2.9 µlb (1.3 mg)		
25 lb	17 µlb (7.4 mg)		
50 lb	27 µlb (12 mg)		

Parameter/Equipment	Range	CMC ² (±)	Comments
Mass – Fixed Points (cont)	1/32 oz 1/16 oz 1/8 oz 1/4 oz 1/2 oz 1 oz 2 oz 4 oz 8 oz	0.000 000 026 oz (0.00074 mg) 0.000 000 036 oz (0.0010 mg) 0.000 000 064 oz (0.0018 mg) 0.000 000 12 oz (0.0033 mg) 0.000 000 26 oz (0.0072 mg) 0.000 000 31 oz (0.0086 mg) 0.000 000 50 oz (0.014 mg) 0.000 001 3 oz (0.037 mg) 0.000 001 6 oz (0.045 mg)	NIST Handbook 145 ASTM Class 1 to 6, OIML Classes E2- M3, OIML Class E1 (1 mg to 1 kg), NIST Class F

II. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Rueger Bi-metal Dial Thermometer	(50 to 160) °C	1.0 °C	Mettler Toledo & Ohaus brand halogen test kits convection emersion

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Accredited Laboratory

A2LA has accredited

METTLER TOLEDO, LLC.

Columbus, OH

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/NCSLI 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 27th day of October 2016.



A handwritten signature in blue ink, reading "Jim C. Bunt".

Senior Director of Quality and Communications
For the Accreditation Council
Certificate Number 1788.01
Valid to July 31, 2018

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