



# CERTIFICATE OF ACCREDITATION

**ANSI National Accreditation Board**  
11617 Coldwater Road, Fort Wayne, IN 46845 USA

This is to certify that

**C.S.C. Force Measurement, Inc.**  
**84 Ramah Circle North, P.O. Box 887**  
**Agawam, MA 01001**

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

**ISO/IEC 17025:2017**

and national standard

**ANSI/NCSL Z540-1-1994 (R2002)**

while demonstrating technical competence in the field of

**CALIBRATION**

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

L1142-1  
Certificate Number

  
ANAB Approval

Certificate Valid Through: 03/05/2022  
Version No. 003 Issued: 03/04/2020



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



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017  
AND ANSI/NCSL Z540-1-1994 (R2002)

**C.S.C. Force Measurement, Inc.**

84 Ramah Circle North, P. O. Box 887  
Agawam, MA 01001  
Matthew Bard  
413-789-3086

**CALIBRATION**

Valid to: **March 5, 2022**

Certificate Number: **L1142-1**

**Electrical – DC/Low Frequency**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Measure	(0.000 1 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V	0.009 1 mV 0.000 347 V 0.000 62 V 0.005 2 V	DMM

**Length – Dimensional Metrology**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Crosshead Displacement (0.000 1 in resolution) (0.001 in resolution)	(0 to 30) in	0.001 58 in 0.001 5 in	ASTM 2309

**Mass and Mass Related**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force Verification of Testing Machines	(0.02 lbf to 0.1) lbf (0.1 lbf to 0.5) lbf (0.5 lbf to 2) lbf (2 lbf to 10) lbf (10 lbf to 50) lbf (50 lbf to 100) lbf (100 lbf to 500) lbf (500 lbf to 2 000) lbf	0.000 1 lbf 0.000 22 lbf 0.002 8 lbf 0.004 2 lbf 0.024 lbf 0.021 lbf 0.38 lbf 1.57 lbf	ASTM E4 Method A using Class 6 Masses
	(2 000 to 10 000) lbf (10 000 to 50 000) lbf (50 000 to 100 000) lbf	5.4 lbf 38.5 lbf 53 lbf	ASTM E4 Method C Using Load Cells
Force Measuring Devices	(0.02 lbf to 0.1) lbf (0.1 lbf to 0.5) lbf (0.5 lbf to 2) lbf (2 lbf to 10) lbf (10 lbf to 50) lbf (50 lbf to 100) lbf (100 lbf to 500) lbf (500 lbf to 2 000) lbf	0.000 1 lbf 0.000 22 lbf 0.002 8 lbf 0.004 2 lbf 0.024 lbf 0.021 lbf 0.38 lbf 1.57 lbf	ASTM E74 or using Masses
	(2 000 to 10 000) lbf (10 000 to 50 000) lbf (50 000 to 100 000) lbf	5.4 lbf 38.5 lbf 53 lbf	ASTM E74 using Load Cells
Scales (0.001 lb resolution) (0.01 lb resolution) (0.1 lb resolution) (1 lb resolution)	(0 to 10) lb (0 to 100) lb (0 to 1000) lb (0 to 10 000) lb	0.002 4 lb 0.067 lb 0.16 lb 2.2 lb	NIST Class F Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
Laboratory Balance (0.0001 g resolution) (0.001 g resolution)	(0 to 400) g	0.000 43 g 0.0017 g	ASTM Class 1 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
Torque-Source	(1 to 50) ozf·in (50 to 100) ozf·in (6 to 50) lbf·in (50 to 250) lbf·in (250 to 1 200) lbf·in (100 to 250) lbf·ft (250 to 600) lbf·ft (600 to 2 000) lbf·ft	0.043 ozf·in 0.19 ozf·in 0.087 lbf·in 0.28 lbf·in 1.29 lbf·in 0.29 lbf·ft 0.62 lbf·ft 1.65 lbf·ft	Direct Comparison made with Torque arms and ASTM Class F Weights



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Torque-Measure	(1 to 48) ozf·in (3 to 50) lbf·in (50 to 250) lbf·in (250 to 1 000) lbf·in (80 to 250) lbf·ft (250 to 600) lbf·ft (600 to 2 000) lbf·ft	0.8 ozf·in 0.34 lbf·in 7.38 lbf·in 13.27 lbf·in 2.79 lbf·ft 4.9 lbf·ft 19.4 lbf·ft	Digital Torque Analyzer

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Crosshead Speed	(0 to 80) in/min	0.22 in/min	ASTM 2658

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. L1142-1.

  
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Vice President