



# CERTIFICATE OF ACCREDITATION

**ANSI-ASQ National Accreditation Board**

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

This is to certify that

**Kistler Instrument Corporation**

**75 John Glenn Drive**

**Amherst NY 14228**

**(with a satellite location as listed on the scope of accreditation)**

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 calibrations to which this accreditation applies.

AC-1117

Certificate Number

  
ANAB Approval

Certificate Valid: 06/28/2018-07/07/2020

Version No. 008 Issued: 06/28/2018



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).



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

Kistler Instrument Corporation

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Amherst, NY 14228

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CALIBRATION

Valid to: July 7, 2020

Certificate Number: AC-1117

Acoustics and Vibration

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Vibration Magnitude / Frequency Response (0.5 to 20) Hz	5 mV to 4 V / g <sub>n</sub>	2 % of reading	MB Dynamics Win 475, Reference accelerometer
Vibration Magnitude & Charge / Frequency Response (10 to 2 000) Hz (>2 000 to 10 000) Hz (>10 000 to 15 000) Hz (>15 000 to 20 000) Hz	5 mV to 4 V / g <sub>n</sub> 0.1 pC to 100 pC / g <sub>n</sub>	0.83 % of reading 0.91 % of reading 1.7 % of reading 2.2 % of reading	Kistler Vibration System, 8002K Accelerometer, 5020 Charge Amplifier
Vibration, Rotational (Magnitude)	12.5 Hz	0.78 % of reading	Kistler Vibration System 8002K/5020

Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Charge	(10 to 2 000 000) pC	0.51 % of reading	Kistler Charge Calibrator 5395, Function Generator, DMM



**Electrical – DC/Low Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Gain Accuracy <sup>1</sup>	0.5 to 150	0.25 % of reading	National Instruments Data Acquisition Board PXI-4461

**Mass and Mass Related**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Force, Dynamic (Voltage Sensitivity)	(0.04 to 5) lbf	1 % of reading	Class 4 & 6 Mass Pieces, Oscilloscope
Force, Impulse Hammer (Sensitivity at 100 Hz)	(100 to 5 000) lbf	1.3 % of reading	Agilent Signal Analyzer 3562A
Force, Static (Voltage, Charge Sensitivity)	(50 to 50 000) lbf	0.18 % of reading	Morehouse Ring Dynamometers
Pressure, Absolute	(-14.5 to <0) psi (>0 to 500) psi	0.37 % of reading	Mensor Digital Pressure Gage 11900-401
Pressure, Sinusoidal	(50 to 1 000) psi	0.42 % of reading	Pressure Sensor, Amplifier, Oscilloscope
Pressure, Dynamic Low	(10 to 1 500) psi	0.33 % of reading	Mansfield and Green Deadweight Tester
Pressure, Static	(20 to 5 000) psi	0.18 % of reading	Mansfield and Green Deadweight Tester
Pressure, Static	(20 to 15 000) psi	0.18 % of reading	Mansfield and Green Deadweight Tester
Pressure, Static	(5 000 to 100 000) psi	0.56 % of reading	6213BK High Pressure Transducer
Pneumatic Pressure <sup>2</sup> Gage / Absolute (Current: 4 mA to 20 mA)	(-14.5 to <0) psi (>0 to 1 500) psi	0.25 % of reading	Mensor Digital Pressure Gages 600 & CPC6000
Pneumatic Pressure <sup>2</sup> Gage / Absolute (Voltage: Up to 10 V)	(-14.5 to <0) psi (>0 to 1 500) psi	0.2 % of reading	
Hydraulic Pressure <sup>2</sup> , (Current: 4 mA to 20 mA)	(500 to 5 000) psig	0.25 % of reading	Pressurements Dead Weight Tester



**Mass and Mass Related**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Hydraulic Pressure <sup>2</sup> , (Voltage: Up to 10 V)	(500 to 6 000) psig	0.2 % of reading	Pressurements Dead Weight Tester

**Services performed at satellite location**

30280 Hudson Drive  
Novi, MI 48377  
Bruce Noland 248-668-6843

**Acoustics and Vibration**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Vibration (Magnitude / Frequency Response) (3 to 8) Hz (>8 to 16) Hz (>16 to 1 000) Hz (>1 000 to 5 000) Hz (>5 000 to 10 000) Hz	5 mV to 4 V/g <sub>n</sub> at 100 Hz	2 % of reading 1 % of reading 0.75 % of reading 1.5 % of reading 2.5 % of reading	Spektra Vibration System CS18
Vibration Magnitude & Charge / Frequency Response (10 to 2 000) Hz (>2 000 to 10 000) Hz (>10 000 to 15 000) Hz (>15 000 to 20 000) Hz	5 mV to 4 V / g <sub>n</sub> 0.1 pC to 100 pC / g <sub>n</sub>	0.83 % of reading 0.91 % of reading 1.7 % of reading 2.2 % of reading	Kistler Vibration System, 8002K Accelerometer, 5020 Charge Amplifier

**Electrical – DC/Low Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
DC Voltage - Source	(-10 to 10) V	0.1 V	Hewlett Packard Universal Source 3245A
DC Voltage - Measure	(0 to 20) V	0.009 5 V	Keithley Digital Multimeter 2000



**Mass and Mass Related**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Force, Static	(500 to 5 000) N (>5 000 to 50 000) N	0.17 % of reading 0.16 % of reading	Load Frame and Reference Load Cell
Pressure, Static	(1 to 4 350) psi	0.42 % of reading	Reference Pressure Sensor
Velocity	(1 to 330) kph	0.17 % of reading	Speed Measurement System
Force Moment	(0.5 to 25) kN (12.5 to 1 000) Nm	0.26 % of reading	Load Frame and Reference Load Cell

**Time and Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Frequency - Measure	(0 to 20 000) Hz	0.018 9 Hz	Agilent Universal Counter 53131A
Time - Measure	(0 to 150) $\mu$ s	0.93 $\mu$ s	

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. Gain Accuracy is expressed as a ratio of input voltage to output voltage therefore it has no units
2. Calibration and Measurement Capability is expressed as a percent of unit under test range
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1117.



Vice President