



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NATIONAL CENTER FOR ANIMAL HEALTH CALIBRATION LABORATORY

1920 Dayton Avenue

Ames, Iowa 50010

Dr. Karl Hochstein 515-337-7739

CALIBRATION

Valid To: June 30, 2019

Certificate Number: 2526.03

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

I. Chemical

Parameter/Equipment	Range	CMC ² (±)	Comments
Gas Detection Monitors – CO ₂ (carbon dioxide)	5 % CO ₂	1.1 % CO ₂	Certified CO ₂

II. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Mass – Weights and Weight Sets	1 mg	12 µg	Balances using ASTM Class 1 weights
	2 mg	13 µg	
	3 mg	13 µg	
	5 mg	12 µg	
	10 mg	12 µg	
	20 mg	17 µg	
	30 mg	17 µg	
	50 mg	13 µg	
	100 mg	12 µg	
	200 mg	20 µg	
	300 mg	20 µg	
	500 mg	13 µg	
	1 g	36 µg	

Parameter/Equipment	Range	CMC ² (±)	Comments
Mass – Weights and Weight Sets	2 g 3 g 5 g 10 g 20 g 30 g 50 g 100g 200 to 500 g 1000 g 2000 g 3000 g 5000 g	36 µg 38 µg 38 µg 86 µg 0.12 mg 0.14 mg 0.16 mg 0.27 mg 0.54 mg 0.60 mg 0.99 mg 0.67 mg 0.87 mg	Balances using ASTM Class 1 weights
Balances	0.001 mg Resolution: (0 to 5) mg 5.1 mg to 1 g (1.1 to 2) g (2.1 to 3) g (3.1 to 5) g 0.01 mg Resolution: (0 to 5) mg 5.1 mg to 10 g (10.1 to 30) g (30.1 to 40) g (40.1 to 70) g (70.1 to 150) g (150.1 to 250) g (250.1 to 350) g (350.1 to 400) g (400.1 to 500) g (500.1 to 600) g 0.1 mg Resolution: (0 to 30) g 30.1 mg to 40 g (40.1 to 70) g (70.1 to 150) g (150.1 to 200) g (200.1 to 350) g (350.1 to 400) g (400.1 to 500) g (501 to 600) g (601 to 700) g (701 to 1000) g	0.0037 mg 0.0056 mg 0.014 mg 0.018 mg 0.039 mg 0.013 mg 0.020 mg 0.021 mg 0.049 mg 0.091 mg 0.11 mg 0.19 mg 0.20 mg 0.21 mg 0.30 mg 0.31 mg 0.12 mg 0.13 mg 0.15 mg 0.16 mg 0.22 mg 0.23 mg 0.24 mg 0.32 mg 0.33 mg 0.36 mg 0.94 mg	ASTM Class 1 weights



Parameter/Equipment	Range	CMC ² (±)	Comments
Balances (continued)	0.1 mg Resolution: (1001 to 1500) g (1501 to 3000) g (3001 to 10 000) g 0.001 g Resolution: (0 to 600) g (600.1 to 700) g (700.1 to 1500) g (1501 to 3000) g (3001 to 8000) g (8001 to 10 000) g 0.01 g Resolution: (0 to 3000) g (3001 to 10 000) g 0.1 g Resolution: (0 to 10) kg	0.95 mg 2.9 mg 3.4 mg 1.2 mg 1.3 mg 1.5 mg 3.1 mg 3.6 mg 3.8 mg 12 mg 13 mg 120 mg	ASTM Class 1 weights
Pipettes	(0.4 to 2.5) µL (2.5 to 20) µL (21 to 100) µL (101 to 200) µL (201 to 1000) µL (1001 to 5000) µL (5001 to 10 000) µL	16 nL 81 nL 66 nL 380 nL 2.3 µL 21 µL 120 µL	Gravimetric calibration using balances with ASTM Class 1 weights
Centrifuge – Rotation	(0 to 1000) rpm (1001 to 6600) rpm (6601 to 20 000) rpm	13 rpm 120 rpm 130 rpm	Tachometer

III. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Liquid-in-Glass Thermometers	(-20 to 0) °C (>0 to 100) °C	0.26 °C 0.46 °C	PRT and temperature baths



Parameter/Equipment	Range	CMC ² (±)	Comments
Digital & Mechanical Thermometry Systems	≥ 0.01 °C Resolution (-40 to 149) °C	0.043 °C	PRT and Reader and Hart Scientific / Fluke 7341 or 7103 Calibration Bath
	0.1 °C Resolution (-40 to 149) °C	0.065 °C	
	1 °C Resolution (-40 to 149) °C	0.61 °C	
	≥ 0.01 °C Resolution (-94 to 139) °C	0.19 °C	PRT and Reader and Hart Scientific / Fluke 9109A, 9100S, or 9102S Heat Dwell
	0.1 °C Resolution (-94 to 139) °C	0.20 °C	
	1 °C Resolution (-94 to 139) °C	0.61 °C	
Temperature – Measure and Measuring Equipment	(-196 to 250) °C	2.4 °C	Thermocouple thermometer and T-type or K-type thermocouples
	≥ 0.1 °C Resolution (-196 to 250) °C	0.28 °C	
	1 °C Resolution (-196 to 250) °C	0.65 °C	PRT and reader
Autoclaves – Temperature Uniformity and Temperature Accuracy	(100 to 140) °C	1.2 °C	Thermocouples and validator
	(100 to 140) °C	0.5 °C	Data loggers

¹ Commercial calibration service is sometimes available for this laboratory. This laboratory typically provides calibration service for the National Veterinary Services Laboratory and the Center for Veterinary Biologics Laboratory.

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.





Accredited Laboratory

A2LA has accredited

NATIONAL VETERINARY SERVICES LABORATORIES

Ames, IA

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 *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 20th day of November 2017.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 2526.03
Valid to June 30, 2019

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