APPLICATION FOR REGISTRATION AS A REGISTERED SERVICE COMPANY

Public Service Commission
SFN 51277 (2/2014)

RECEIVED
MAY 27 2014
ND Public Service Commission

TYPE OR PRINT - AN INCOMPLETE OR ILLEGIBLE APPLICATION WILL BE REJECTED

Name of Company	Email Address	Application Date	
Rocky Mtn Scale Works	Dylan@scales911.com	5-27-14	
Mailing Address	**City**	**State**	**Zip Code**
60360 US Hwy 12 W PO Box 1056	Lolo	MT	59847-1056
Telephone Number	**Cell Phone Number**	**Fax Number**	
406-543-5181	406-239-0228	406-543-5182	

Select below all device types your company will certify:

Scales (include maximum capacity, if applicable)	**Liquid** (include maximum flow rate, if applicable)
☐ 1. Rail	☐ 1. Retail Fuel (less than 20 gal. per minute)
☒ 2. Truck	☐ 2. High Flow Retail Fuel (20 gal. per minute or greater)
☐ 3. Livestock	☐ 3. Vehicle Tank: Max. Flow Rate: _____
☐ 4. Hopper: Max. Capacity: _____	☐ 4. Stationary Bulk (fuel or oil): Max. Flow Rate: _____
☐ 5. Belt	☐ 5. LPG
☐ 6. Over 30 lbs.: Max. Capacity: _____	☐ 6. Stationary LPG
☐ 7. 30 lbs. or less	☐ 7. Fertilizer: Max. Flow Rate: _____
☐ 8. Class II **(indicate on your calibration report which weight kit is Class II certified)**	☐ 8. Chemical
☐ 9. Other: Please List:	☐ 9. Anhydrous
	☐ 10. Loading Rack
	☐ 11. Other: Please List:

List below all persons employed by your company as a North Dakota Registered Service Person and the device types they are registered to certify (attach a separate sheet to list additional employees):

Permit No.	Employee	Device Types Registered to Certify (list using device type numbers from above)
e.g. 1001	*e.g. John Doe*	*e.g. Scales – 2, 3, 6, 8; e.g. Liquid – 1, 2, 6*
1724	Dylan Moses	Scales - 2

Continued on Page 2

List below all field standards (attach current calibration reports):

See attached	

Additional Application Items (initial where appropriate):

Standardized Test Report	____ Copy enclosed __X__ No change in report filed previously
Tested and Approved Sticker	____ Copy enclosed __X__ No change in sticker filed previously
Photocopy of Crimped Lead Wire Seal	____ Copy enclosed __X__ No change in crimped lead wire seal filed previously

Public Company Listing:

Include my company information on your registered service company list for public contact.
☒ Yes ☐ No

I am Dylan Moses, and have authority to represent this company. By signing this application, I declare that I have examined this form and accompanying documentation, and to the best of my knowledge and belief, the facts stated and documentation provided is true, correct, and complete.

Signature

Send Completed Application and Related Documents To:

Public Service Commission
600 E Boulevard Ave Dept 408
Bismarck ND 58505-0480
Telephone: (701) 328-2400
Fax: (701) 328-2410

North Dakota nd.gov Official Portal for North Dakota State Government

SECRETARY OF STATE
NORTH DAKOTA

ROCKY MOUNTAIN SCALE WORKS

Trade Name

System ID: 33561000
Status: Active
Original File Date: 02/05/2013
Phone: (406) 543-5181
Last Renewal Date:

Nature of Business

SCALE SALES AND SERVICE

Owners

RATHER ENTERPRISES, INC.
6360 HWY 12 W
PO BOX 1056
LOLO, MT 59847-1056

Return to Search Results

North Dakota nd.gov Official Portal for North Dakota State Government

SECRETARY OF STATE
NORTH DAKOTA

Home | Business Records Search

RATHER ENTERPRISES, INC.

Corporation Details

System ID: 33560900
Type: FOREIGN BUSINESS CORPORATION
Status: Active & Good Standing
Original File Date: 02/05/2013
State of Origin: Montana

Phone: (800) 700-5048

Effective Date: 02/05/2013

Nature of Business

SCALE SALES AND SERVICE

Principal Office

6360 HWY 12 W PO BOX 1056 LOLO, MT 59847-1056

Registered Agent

ENVIRONMENTAL MATERIALS INC.
4506 18TH AVE W
WILLISTON, ND 58801-
Established Date: Feb 05, 2013

Generate an Annual Report To File

To Generate a Annual Report form to be filed with the Secretary of State, select the appropriate year of the report you intend to file. This report does not contain details of a report previously filed with the Secretary of State. The annual report years reflected are an indication of the various report forms available in this site and is not an indication that an entity needs to file reports for all years. Missing years indicate that the forms for the missing year have not yet been deployed to the website, or have already been removed, and can be obtained by contacting the Secretary of State.

2014 (generates a forms-fillable pdf in a new pop-up window)

Return to Search Results

SOUTH DAKOTA DEPARTMENT OF PUBLIC SAFETY

Office of Weights and Measures
Metrology Lab

Lab: 1500 N Garfield – E. Truck Bypass Phone: 605-773-3170
Office: 118 West Capitol Avenue Phone: 605-773-3697

REPORT OF CALIBRATION

LAB TEST NUMBER: MP3324
DATE OF REPORT: 05/06/2014
DATE RECEIVED: 05/05/2014
DATE OF TEST: 05/06/2014

Submitted By: ROCKY MOUNTAIN SCALE WORKS
Contact: Todd Rather
Mailing Address: 5535 Interstate Ave
City, State, Zip: Billings MT, 59101
Phone: 800-700-5048
S/A Number:

Standards Submitted:

1 -WEIGHTS CARTS
16 -1000 LB TEST WEIGHTS
-500 LB TEST WEIGHTS
-50 LB TEST WEIGHTS
-25 LB TEST WEIGHTS
-AVOIRDUPOIS WEIGHT KITS
-METRIC WEIGHT KITS
-5 GALLON TEST MEASURES

Uncertainty Statement: The combined standard uncertainty includes the standard uncertainty reported for the standard, the standard uncertainty for the measurement process, and a component of uncertainty to account for any observed deviations from values that are less than surveillance limits. The combined standard uncertainty is multiplied by a coverage factor of k = 2 to provide an expanded uncertainty, which defines an interval having a level of confidence of approximately 95 percent. The expanded uncertainty presented in this report is consistent with the ISO/IEC Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty is not to be confused with a tolerance limit for the user during application. All established Uncertainties are less than 1/3 applicable Class "F" tolerances.

Traceability statement:
The Standards of the SD Metrology Laboratory are traceable to the International System of Units (SI) through the National Institute of Standards and Technology recognized/traceable lab in the State of Minnesota, (Test Reports: 327678, 327681, 327682, 327683, 327684, 327685, 327686, 327687, 327813) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

The artifacts submitted for calibration have been examined by the State of South Dakota and found to be appropriate for the intended use and to be accurate within Class "F" Tolerances as established by the National Institute of Standards and Technology-Weights and Measures Division. Test methods are in accordance with NIST Handbook 145 and NIST IR 6969.

This document does not represent or imply endorsement by NIST Office of Weights and Measures, NMI, or any agency of the State and/or national governments. The reported test values relate only to the observations made at the time and conditions of the test. This report may not be reproduced, except in full without the written approval of this laboratory. The client must not use this document to claim product endorsement by this laboratory.

Ron Peterson, Metrologist

05/06/14
Date

SOUTH DAKOTA WEIGHTS AND MEASURES / METROLOGY LAB

Lab: 1500 N. Garfield-E. Truck Bypass Phone: 605-773-3170
Office: 118 West Capitol Avenue Phone: 605-773-3697
Pierre, SD 57501

Submitted by:	ROCKY MOUNTAIN SCALE WORKS	**Report Number:**	MP3324
Mailing Address:	5535 Interstate Ave	**Date Received:**	05/05/14
City, State, Zip:	Billings MT, 59101	**Date tested:**	05/06/14
Manufacturer:	B-TEK Scales	**Condition of Cart:**	GOOD
Serial Number:	16278B	**Temperature (c):**	21.4
Test Method Used	SOP 33/ Double Sub.	**Humidity:**	43.1%
Nominal (lb):	4500	**Pressure (mm/Hg):**	706.7
Tolerance (lb):	1.25		

The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory.

As Found (lb)	As Left (lb)	Uncertainty-lb. (K=2)
0.27	0.27	0.15

The weight cart was cleaned and painted (if needed) and allowed to come to environmental equilibrium in the laboratory prior to calibration. The weight cart was adjusted, as needed and noted above, as close as possible to zero error. All fluid levels were adjusted as close as possible to the full/reference marks. Liquid levels must be maintained as close to reference levels as possible during use. Any maintenance, repairs or damage to weight cart or its components will likely result in an out-of-tolerance condition; therefore, maintenance or replacement of components such as batteries, tires, filters, etc. will require calibration of the weight cart prior to subsequent use.

The above weight cart was compared with standards of the State of South Dakota, which are traceable the National Institute of Standards and Technology(NIST) Weights and Measures Division and have known values. The assigned test number provides documented evidence for measurement traceability

Ron Peterson, Metrologist

05/06/2014
Date of Report

Office of Weights and Measures
118 W. Capitol Ave.
Pierre, SD 57501

Phone: 605-773-3697
Fax: 605-773-6631
www.dps.sd.gov

SOUTH DAKOTA WEIGHTS AND MEASURES / METROLOGY LAB

Lab: 1500 N. Garfield-E. Truck Bypass Phone: 605-773-3170
Office: 118 West Capitol Avenue Phone: 605-773-3697
Pierre, SD 57501

Submitted by:	ROCKY MOUNTAIN SCALE WORKS	**Report Number:**	MP3324
Mailing Address:	5535 Interstate Ave	**Date Received:**	05/05/14
City, State, Zip:	Billings MT, 59101	**Date tested:**	05/06/14
Artifacts Submitted	1000 lb Bulk weights	**Condition of Weights:**	GOOD
Manufacturer:	NA	**Temperature (c):**	21.9
Test Method Used:	SOP 8/ MODIFIED SUB	**Humidity:**	42.8%
Equipment Used:	Russell Balance/ Vaisala PTU301	**Pressure (mm/Hg):**	706.8

Treatment of artifacts prior to testing: Thermal equalibrium time/conditions were obtained by placing the artifacts in the lab overnight.

Compliance Statement: These weights and associated uncertainties were evaluated against NIST Handbook 105-1 NIST Class F tolerances and the weights were within tolerance at the time of calibration.

Standards Used: SD Lab 1000 Lb Working Standard.

The values reported below relate only to those observations made at the time and conditions of the test. This test report, so numbered, may not be reproduced, except in full, without approval of the laboratory

Tolerance=0.10 lb **Uncertainty (lb)=** 0.025 (K=2.09)

Nominal Value	Serial Number	As Received lb	As Left lb
1000 lb	07	0.010	0.010
1000 lb	08	0.019	0.019
1000 lb	4N87	0.042	0.042
1000 lb	4N8W	0.048	0.048
1000 lb	4N8X	0.022	0.022
1000 lb	4N8Y	0.094	-0.008
1000 lb	4N90	0.084	-0.002
1000 lb	4N91	0.053	0.053
1000 lb	54EK	0.055	0.055
1000 lb	54EL	0.057	0.057
1000 lb	54EM	0.048	0.048
1000 lb	54EN	0.025	0.025
1000 lb	54EP	0.030	0.030
1000 lb	54EQ	0.040	0.040
1000 lb	54ER	0.027	0.027
1000 lb	54ES	0.042	0.042

END OF REPORT

Ron Peterson, Metrologist

05/06/2014
Date of Report

United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

South Dakota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

2014

Scope

Mass Echelon III

30 kg to 1 mg
1000 lb to 0.001 lb
8 oz to 0.03125 oz

Weight Carts
5000 lb to 2000 lb

Volume Transfer, II
5 gal

Carol T. Hockert, Chief
NIST Office of Weights and Measures

Effective Dates: 2014-01-01 to 2014-12-31

(Rev.: March 2013)

ALDINGER
888-822-1299

RECEIVED
MAY 21 2014
Public Service Commission

ACCREDITED
Calibration CERT# 1509.01

ALDINGER CO
1440 PRUDENTIAL
DALLAS, TX 75235

ROCKY MOUNTAIN SCALE WORKS
5535 INTERSTATE AVE, UNIT 1
BILLINGS, MT 59101

I.D.:	11141301	Serial Number:	11141301
Description:	WEIGHT SET	Model Number:	50LB TO 50LB CLASS F
Manufacturer:	UNKNOWN	Performed By:	671
Gage Type:	WEIGHT SET	As Found Condition:	In Tolerance
Temp./RH:	20.6 C / 22 %	As Left Condition:	In Tolerance
Cal Date:	11/14/2013	Cal. Due Date:	11/14/2014

Weights painted prior to As Left data.

50lb	F	208	7.2	49.9949000	50.0051000	50.0005740	50.0005740	0.0005100	lb
50lb	F	39	7.2	49.9949000	50.0051000	49.9990310	49.9990310	0.0005100	lb
50lb	F	2010	7.2	49.9949000	50.0051000	50.0010150	50.0010150	0.0005100	lb
50lb	F	38	7.2	49.9949000	50.0051000	50.0005740	50.0005740	0.0005100	lb
50lb	F	1021	7.2	49.9949000	50.0051000	50.0005740	50.0005740	0.0005100	lb
50lb	F	1022	7.2	49.9949000	50.0051000	50.0001330	50.0001330	0.0005100	lb
50lb	F	36	7.2	49.9949000	50.0051000	50.0010150	50.0010150	0.0005100	lb
50lb	F	43	7.2	49.9949000	50.0051000	50.0005740	50.0005740	0.0005100	lb
50lb	F	40	7.2	49.9949000	50.0051000	50.0007940	50.0007940	0.0005100	lb
50lb	F	1005	7.2	49.9949000	50.0051000	50.0032190	50.0032190	0.0005100	lb
50lb	F	1062	7.2	49.9949000	50.0051000	50.0018970	50.0018970	0.0005100	lb
50lb	F	31	7.2	49.9949000	50.0051000	49.9996920	49.9996920	0.0005100	lb
50lb	F	205	7.2	49.9949000	50.0051000	50.0014560	50.0014560	0.0005100	lb
50lb	F	2055	7.2	49.9949000	50.0051000	50.0010150	50.0010150	0.0005100	lb
50lb	F	270	7.2	49.9949000	50.0051000	50.0005740	50.0005740	0.0005100	lb
50lb	F	20	7.2	49.9949000	50.0051000	50.0010150	50.0010150	0.0005100	lb
50lb	F	1088	7.2	49.9949000	50.0051000	50.0021170	50.0021170	0.0005100	lb
50lb	F	1020	7.2	49.9949000	50.0051000	49.9992510	49.9992510	0.0005100	lb
50lb	F	1008	7.2	49.9949000	50.0051000	50.0005740	50.0005740	0.0005100	lb
50lb	F	218	7.2	49.9949000	50.0051000	50.0007940	50.0007940	0.0005100	lb

"In "As Left" column "A" denotes an adjusted test point and "F" denotes a failed test point. Blank denotes an acceptable value.

TROEMNER	52001	WEIGHT - 50 LB	2/15/2013	2/28/2014	241738
VWR	671T	THERMO/HYGROMETER	11/6/2012	11/30/2014	236991
ALDINGER CO	PPCA501-A	MASS	6		8/22/2013

Technician Signature Eric Rogers

Calibration values are based on conventional mass defined by OIML IR 33 as the mass that the item would have weighed in air under conventional conditions,(Temp 20C;Air 1.2 mg/cm^3) vs a reference density of 8.0 g/cm^3. Magnetism met the requirements of ASTM E 617-97 except where otherwise noted. The calibration interval has been specified by the customer. Aldinger Co. certifies that the instrument listed above has been tested, calibrated (if necessary), and meets the criteria established in the associated test procedure unless otherwise noted. The standards used are traceable to the National Institute of Standards and Technology (NIST). Aldinger Co. calibration and control system meets the general requirements for the competence of calibration and testing laboratories (ISO/IEC 17025-2005 & ANSI/NCSL Z540-1-1994). The uncertainty calculation includes the UUT. In tolerance conditions are based on test results falling with specified limits with no reduction by the uncertainty of the measurement. This uncertainty represents an expanded uncertainty expressed at approximately 95% confidence level using a coverage factor of k=2. This report shall not be reproduced, except in full, without the written approval of Aldinger Co. *The uncertainty value is listed in the same unit as the test point.

User Login | Contact Us

Call Us. (888)822-1299 toll free

Calibration | Repair | Sales | Force & Torque | Resources

View, Email & Print Online Instrument Tracking

Shop Online

Need a Quote? Click Here

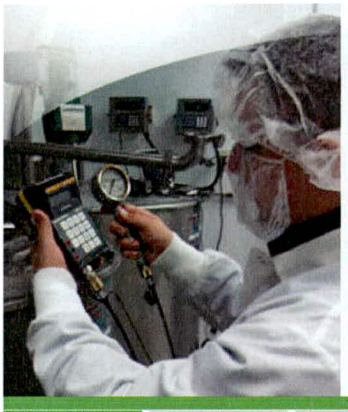
Join Our Newsletter

Sign up now to recieve important industry updates, special offers, and discounts.

Email Address:

Join Now

Check it out! Green Initiative



ISO 17025 accredited and backed by over 230 years of combined experience in the weighing and measuring industry, our factory trained and highly knowledgeable technicians can do more than just calibrate nearly all of your equipment - they can help you avoid downtime by leaning on experience to identify and correct potential problems.

Learn More

Calibration | Repair | Products | Systems | Rentals

What type of company are you looking for?

Aldinger is an accredited calibration, certification and repair center for test and measurement instrumentation. Imagine a business partner that you can rely on to not only keep your equipment working and accurate, but to go above and beyond to help your company make consistently better products. Aldinger even offers GPS dispatched 24/7 emergency repair service to our business partners - because you never plan a breakdown.

In addition to being the leader in these services Aldinger is also accredited by A2LA to ISO/IEC 17025 standards. Couple a huge scope of calibration capabilities with 40 years of business and technical experience you will understand why we are a primary top tier supplier of calibration and repair services.

A2LA ACCREDITED
calibration cert # 1509.01

As well as calibration and repair services we also sell scales, balances and custom weighing systems. We provide counting scale rental equipment for inventory, saving you time and money. In addition we can test overhead lifting equipment with proof load testing that will keep you OSHA compliant.

How can we help *your* company? Contact us today and let us know.

Need Help? Call Us. (888)822-1299 toll free

Aldinger Company
1440 Prudential Drive, Dallas, TX 75235

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

ALDINGER COMPANY
1440 Prudential Drive
Dallas, TX 75235
Timothy R. Detten Phone: 214 638 1808

CALIBRATION

Valid To: June 30, 2014 Certificate Number: 1509.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Dimensional

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Calipers[3, 5]	Up to 6 in Up to 12 in Up to 18 in Up to 24 in	0.6*R* 0.6*R* 0.6*R* 0.6*R*	Gage blocks
Dial and Test Indicators[3, 5]	Up to 3 in	0.6*R*	Gage blocks
Gage Blocks	Up to 1 in (2 to 4) in	(2 + 1.5*L*) µin (3 + 1.5*L*) µin	Master gage block set
Height Gages[3, 5]	Up to 48 in	0.6*R*	Gage blocks
Length Standards	Up to 18 in Up to 48 in	(37 + 1.5*L*) µin (65 + 1.5*L*) µin	ULM, gage blocks SuperMic, gage blocks
Micrometers[3, 5]	Up to 36 in	0.6*R*	Gage blocks grade 2

5301 Buckeystown Pike, Suite 350 | Frederick, Maryland 21704-8373 | Phone: 301 644 3248 | Fax: 301 662 2974 | www.A2LA.org

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Plain Ring Gages	(0.125 to 4) in	(22 + 1.5*L*) µin	ULM, gage blocks
Threads –			
Pitch Diameter	(0.040 to 4) in	(69 + 1.5*L*) µin	Three-wire method
Major Diameter	(0.040 to 4) in	(18 + 1.5*L*) µin	Direct measure
Wire Gages –			
TPI 60 Degree	(4 to 80) TPI	(11 + 1.5*L*) µin	VK master thread wire set

II. Electrical – DC/Low Frequency

Range/Equipment	Frequency	CMC[2, 6, 7, 9] (±)	Comments
AC Current – Measure			
1 A	60 Hz to 1 kHz	0.1 % + 0.4 mA	HP 34401
3 A	60 Hz to 1 kHz	0.1 % + 1.8 mA	
AC Current – Generate			
(32 to 320) µA	60 Hz to 3 kHz	0.072 % + 0.9 µA	Wavetek 9100
320 µA to 3.2 mA	60 Hz to 3 kHz	0.07 % + 0.6 µA	
(3.2 to 32) mA	60 Hz to 3 kHz	0.07 % + 3.2 µA	
(32 to 320) mA	60 Hz to 3 kHz	0.083 % + 32 µA	
320 mA to 3.2 A	60 Hz to 3 kHz	0.1 % + 480 µA	
(3.2 to 10) A	60 Hz to 3 kHz	0.21 % + 3 mA	
(3.2 to 32) A	(60 to 100) Hz	0.2 % + 5.5 mA	using 10 turn coil
	(100 to 440) Hz	0.78 % + 27 mA	
(32 to 200) A	(60 to 100) Hz	0.21 % + 90 mA	
	(100 to 440) Hz	0.67 % + 0.25 A	
(16 to 160) A	(60 to 100) Hz	0.21 % + 28 mA	
(160 to 1000) A	(60 to 100) Hz	0.21 % + 0.45 A	using 50 turn coil

Range/Equipment	Frequency	CMC[2, 6, 7, 9] (±)	Comments
AC Voltage – Generate			
(32 to 320) mV	60 Hz to 3 kHz	0.041 % + 20 µV	Wavetek 9100
320 mV to 3.2 V	60 Hz to 3 kHz	0.041 % + 200 µV	
(3.2 to 32) V	60 Hz to 3 kHz	0.041 % + 2.0 mV	
(32 to 105) V	60 Hz to 3 kHz	0.043 % + 6.3 mV	
(105 to 320) V	60 Hz to 1 kHz	0.066 % + 20 mV	
	(1 to 3) kHz	0.09 % + 20 mV	
(320 to 800) V	(60 to 100) Hz	0.079 % + 63 mV	
	(1 to 3) kHz	0.1 % + 63 mV	
AC Voltage – Measure			
100 mV	60 Hz to 3 kHz	0.065 % + 40 µV	HP 34401
1 V	60 Hz to 3 kHz	0.064 % + 300 µV	
10 V	60 Hz to 3 kHz	0.064 % + 3 mV	
100 V	60 Hz to 3 kHz	0.064 % + 30 mV	
750 V	60 Hz to 3 kHz	0.064 % + 230 mV	

Parameter/Equipment	Range	CMC[2, 6, 9] (±)	Comments
Capacitance – Generate			
Low	(0.5 to 4) nF	0.61 % + 15 pF	Wavetek 9100
	(4 to 40) nF	0.6 % + 60 pF	
	(40 to 400) nF	0.61 % + 320 pF	
	400 nF to 4 µF	0.8 % + 3.2 nF	
High	(4 to 40) µF	1 % + 32 nF	
	(40 to 400) µF	1 % + 320 nF	
	400 µF to 4 mF	1 % + 3.2 µF	
	(4 to 40) mF	2 % + 120 µF	

Parameter/Equipment	Range	CMC[2, 6, 7, 9] (±)	Comments
DC Current – Generate	(0 to 320) µA 320 µA to 3.2 mA (3.2 to 32) mA (32 to 320) mA 320 mA to 3.2 A (3.2 to 11) A (3.2 to 32) A (32 to 100) A (100 to 160) A (160 to 520) A (520 to 1000) A	0.014 % + 11 nA 0.014 % + 83 nA 0.014 % + 900 nA 0.016 % + 9.6 µA 0.06 % + 120 µA 0.057 % + 940 µA 0.19 % + 1.2 mA 0.072 % + 9.4 mA 0.068 % + 45 mA 0.056 % + 47 mA 0.055 % + 230 mA	Wavetek 9100 using 10 turn coil using 50 turn coil
DC Current – Measure, Fixed Points	10 mA 100 mA 1 A 3 A	0.076 % + 6 µA 0.05 % + 5 µA 0.1 % + 100 µA 0.14 % + 600 µA	HP 34401
DC Voltage – Generate	(0 to 320) mV 320 mV to 3.2 V (3.2 to 32) V (32 to 320) V (320 to 1050) V	0.0063 % + 4.2 µV 0.0062 % + 42 µV 0.0066 % + 420 µV 0.0069 % + 4.5 mV 0.0084 % + 20 mV	Wavetek 9100
DC Voltage – Measure, Fixed Points	100 mV 1 V 10 V 100 V 1000 V	0.0055 % + 3.5 µV 0.0042 % + 7 µV 0.0036 % + 50 µV 0.0047 % + 600 µV 0.0047 % + 10 mV	HP 34401
Electrical Calibration of Temperature Controllers[3, 5]	(-200 to 1371) °C	0.56 °C	Omega CL27
Resistance – Generate	(0 to 40) Ω (40 to 400) Ω (0.4 to 4) kΩ (4 to 40) kΩ (40 to 400) kΩ (0.4 to 4) MΩ (4 to 40) MΩ (40 to 400) MΩ	0.11 % + 50 mΩ 0.051 % + 100 mΩ 0.037 % + 200 mΩ 0.052 % + 2 Ω 0.053 % + 20 Ω 0.049 % + 200 Ω 0.15 % + 2 kΩ 0.14 % + 40 kΩ	Wavetek 9100

Parameter/Equipment	Range	CMC[2, 6, 7, 9] (±)	Comments
Resistance – Measure, Fixed Points	100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ	0.01 % + 4 mΩ 0.01 % + 10 mΩ 0.01 % + 100 mΩ 0.01 % + 1 Ω 0.01 % + 10 Ω 0.04 % + 100 Ω 0.8 % + 10 kΩ	HP 34401
RTD Simulation –			
PT385, 100 Ω	(-200 to -100) °C (-100 to 100) °C (100 to 630) °C (630 to 850) °C	0.26 °C 0.17 °C 0.35 °C 0.53 °C	Wavetek 9100
Thermocouple Simulation –			
Type E	(-250 to -200) °C (-200 to -100) °C (-100 to 100) °C (100 to 1000) °C	0.45 °C 0.23 °C 0.18 °C 0.22 °C	Wavetek 9100
Type J	(-210 to -100) °C (-100 to 800) °C (800 to 1000) °C (1000 to 1200) °C	0.26 °C 0.20 °C 0.22 °C 0.24 °C	
Type K	(-250 to -200) °C (-200 to -100) °C (-100 to 100) °C (100 to 600) °C (600 to 1372) °C	0.57 °C 0.28 °C 0.20 °C 0.24 °C 0.28 °C	
Type T	(-250 to -200) °C (-200 to -100) °C (-100 to 0) °C (0 to 400) °C	0.59 °C 0.28 °C 0.23 °C 0.18 °C	

III. Mechanical

Parameter/Equipment	Range[8]	CMC[2] (±)	Comments
Balances[3, 5]			Handbook 44 with:
	(0 to 20) g	0.11 mg	class 1 weights
	(0 to 200) g	0.69 mg	
	(0 to 200) g	1.3 mg	class 2 weights
	(0 to 1000) g	6.6 mg	
	(0 to 5000) g	34 mg	
	(0 to 20) g	0.81 mg	class 4 weights
	(0 to 200) g	4.8 mg	
	(0 to 1000) g	24 mg	
	(0 to 5000) g	130 mg	
	(0 to 10 000) g	370 mg	
	(0 to 20 000) g	460 mg	
Force – Universal Testing Machines[3, 5]			
Tension/Compression	(0 to 100) lbf	0.0064 lb	Class F weights ASTM E4 w/ load cells
Compression	(100 to 1000) lbf	0.26 % Indication	
	(1000 to 10 000) lbf	0.24 % Indication	
	(10 000 to 50 000) lbf	0.33 % Indication	
	(10 000 to 100 000) lbf	0.21 % Indication	
	(50 000 to 500 000) lbf	0.21 % Indication	
Tension	(100 to 1000) lbf	0.23 % Indication	
	(1000 to 10 000) lbf	0.23 % Indication	
	(10 000 to 50 000) lbf	0.29 % Indication	
Mass	1 mg	1.1 µg	Modified double substitution
	2 mg	1.1 µg	
	5 mg	1.1 µg	
	10 mg	3.7 µg	
	20 mg	1.3 µg	
	30 mg	1.1 µg	
	50 mg	1.8 µg	
	100 mg	1.7 µg	
	200 mg	1.5 µg	
	300 mg	1.4 µg	
	500 mg	1.8 µg	
	1 g	9.4 µg	
	2 g	6.4 µg	
	5 g	11 µg	
	10 g	16 µg	

Parameter/Equipment	Range[8]	CMC[2] (±)	Comments
Mass (cont)	20 g 50 g 100 g 200 g 500 g	16 µg 25 µg 44 µg 120 µg 460 µg	Modified double substitution
	1 kg 2 kg 5 kg 10 kg 20 kg	1.2 mg 1.4 mg 1.9 mg 94 mg 94 mg	Direct comparison
	0.8859 g ($^1/_{32}$ oz) 1.772 g ($^1/_{16}$ oz) 3.544 g ($^1/_8$ oz) 7.087 g ($^1/_4$ oz) 14.17 g ($^1/_2$ oz) 28.35 g (1 oz) 56.7 g (2 oz) 113.4 g (4 oz) 226.8 g (8 oz)	12 µg 94 µg 240 µg 170 µg 170 µg 370 µg 150 µg 740 µg 5.1 mg	
	0.4536 g (0.001 lb) 0.9072 g (0.002 lb) 2.27 g (0.005 lb) 4.54 g (0.01 lb) 9.07 g (0.02 lb) 22.68 g (0.05 lb) 45.36 g (0.1 lb) 90.72 g (0.2 lb)	130 µg 56 µg 26 µg 16 µg 56 µg 79 µg 37 µg 87 µg	
	453.6 g (1 lb) 907.2 g (2 lb) 2267.96 g (5 lb) 4535.9 g (10 lb) 9071.8 g (20 lb) 22679.62 g (50 lb) 45359.237 g (100 lb) 90718.474 g (200 lb) 226796.185g (500 lb) 453592.37g (1000 lb)	3.8 mg 7.9 mg 8.3 mg 7.4 mg 94 mg 95 mg 0.43 g 0.43 g 0.45 g 0.47 g	
Pipettes[3, 5]	(1 to 50) µL (50 to 100) µL (100 to 500) µL (500 to 1000) µL (1000 to 5000) µL	0.31 µL 0.31 µL 0.33 µL 0.39 µL 0.38 µL	Gravimetric method

Parameter/Equipment	Range	CMC[2] (±)	Comments
Optical Tachometer[3, 5]	200 FPM 3000 FPM 29 999 FPM	1.3 FPM 1.7 FPM 3.9 FPM	Calibrated strobe
Pressure Gauges, Transducers and Transmitters[3, 5]	(0 to 5000) psig (0 to 300) psig (0 to 100) psig (0 to 500) psig	3.9 psig 0.18 psig 0.03 psig 0.19 psig	Druck transducer Transmation 195
Scales[3, 5]	 (0 to 10) lb (0 to 20) lb (0 to 50) lb (0 to 100) lb (0 to 200) lb (0 to 500) lb (0 to 1000) lb (0 to 5000) lb (0 to 20 000) lb	 0.000 25 lb 0.000 25 lb 0.006 3 lb 0.006 3 lb 0.006 4 lb 0.006 4 lb 0.019 lb 0.019 lb 0.021 lb	Handbook 44 with: class 4 weights class F weights
Torque Wrenches and Transducers[3, 5]	(5 to 50) in·lb (30 to 400) in·lb (80 to 1000) in·lb (240 to 3000) in·lb	0.17 in·lb 1.8 in·lb 3.9 in·lb 21 in·lb	CDI torque calibrator
Vacuum Gauges[3, 5]	(0 to 15) psig (0 to 15) psig	0.03 psig 0.03 psig	Transmation 195 Druck DPI 610

IV. Thermodynamic

Parameter/Equipment	Range	CMC[2] (±)	Comments
Temperature – Measuring Equipment[3, 5]	(30 to 300) °C (86 to 572) °F (-20 to 200) °C (-4 to 392) °F	0.090 °C 0.16 °F 0.061 °C 0.11 °F	Hart 1502A with 5628 PRT in dry block Hart 1502A/5628 PRT in wet bath
Temperature – Measure[3, 5]	(20 to 260) °C (68 to 500) °F	0.41 °C 0.74 °F	Fluke 51 with K type thermocouple

V. Time & Frequency

Parameter/Equipment	Range	CMC[2, 7, 9] (±)	Comments
Frequency – Measure	40 Hz to 300 kHz	0.014 % Indication	HP 34401
Timers and Stopwatches[3, 5]	≤ 24 hr	0.14 s / 24 hr	Reference stopwatch

[1] This laboratory offers commercial calibration service and field calibration service.

[2] Calibration and Measurement Capability (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. Calibration and Measurement Capabilities 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 statement of CMC, L is the numerical value of the nominal length of the device measured in inches and R is the numerical value of the resolution of the device in microinches unless otherwise noted.

[5] The CMC stated for calibrations performed in the laboratory is applicable for calibrations performed in the field.

[6] CMC for the Wavetek 9100A is based on 1-year specifications within a temperature range of 23 °C ± 5 °C. Field calibrations will be performed within 23 °C ± 5 °C either in the customer-supplied area or in Aldinger's Mobile Lab.

[7] CMC for the HP 34401 is based on 1-year specifications within a temperature range of 18 °C to 28 °C. Field calibrations will be performed within 18 °C to 28 °C, 30 % to 55 % humidity either in the customer-supplied area or in Aldinger's Mobile Lab.

[8] Where ranges are not specified, the CMC stated is for the cardinal points only.

[9] In the statement of CMC, percentage (%) refers to percent of reading, unless otherwise noted.

The American Association for Laborc

World Class Accreditation

Accredited Laboratory

A2LA has accredited

ALDINGER COMPANY

Dallas, TX

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *G the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/N additional program requirements in the field of calibration. This accreditation demonstrates technical competence operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated*

Presented this 16th day of July 2012.

President & CEO
For the Accreditation Council
Certificate Number 1509.01
Valid to June 30, 2014

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