



1

Calibration Services

- 2** Complete Calibration Services
State and International Reciprocity
- 3** Rice Lake Weighing Systems' Metrology Labs
Customer Relations
Order and Customer Service
Metrology Lab Teams
- 4** What is Traceability?
- 6** Packaging Weights
- 7** Weight Handling Procedure
Contact Us
- 8** Documentation
What Type of Documentation Do I Need for My Weights?
Legal for Trade Weight Applications
New Weights
- 9** Certificate Quick Look
- 10** Certificate of Weight Calibration (Accredited)
- 12** Certificate of Weight Calibration (Non-accredited)
- 14** Statement of Accuracy
- 15** Rice Lake Certificate Selection Guide



Complete Calibration Services

Rice Lake Weighing Systems offers comprehensive calibration services through its two ISO/IEC 17025 accredited metrology labs in Rice Lake, WI and Concord, CA. Together, these laboratories provide state-of-the-art services that promise advanced metrology expertise and a commitment to customer service through continuous improvement. Our two accredited labs offer a full selection of calibration weights, accessories and services. Our metrologists can certify weights to ASTM E617 accuracy classes 00-7; OIML R111-1 accuracy classes E1-M3. To satisfy calibration needs, Rice Lake offers certificates that fulfill various tiers of industry requirements.

Rice Lake's combined, 100+ years of metrology expertise is continually built on by staff who participate in NIST/OWM training seminars, regional metrology groups and round-robin measurement forums, for related upgrades in technology and calibration tools. Additionally, Rice Lake's Concord lab, formerly known as Heusser Newweigh, is active in the NIST Western Regional Measurement Assurance Program (WRAP), the National Conference of Standards Laboratories International (NCSL International) and the American Society for Quality (ASQ). Today, Rice Lake Weighing Systems is accredited by NVLAP to conduct calibrations that are equal to the services provided by state labs.

State and International Reciprocity

With state-granted reciprocity, Rice Lake can calibrate and ship NVLAP-accredited calibration weights to any state lab with a reciprocity agreement. NVLAP is the nation's premier calibration accreditation program, however, individual states have the ability to adopt or reject NVLAP based on state regulatory culture. When state reciprocity is a possible obstacle to your calibration needs, Rice Lake will work directly with those states' labs to get your Legal for Trade test weights and mass standards back into service.

For international customers, NVLAP-accredited calibration validates the traceable link to the international standard (SI) that is frequently required by ISO 9001 registered companies. NVLAP standards comply with and are tailored to the international documentary standards of ISO/IEC 17025 and ILAC requirements. This degree of equivalency between metrology labs in the United States and Europe simplifies calibration efforts for organizations that need the strictest scope of conformity for an international geographical region.



A2LA Cert. No. 4363.01
A2LA Cert. No. 1823.01



NVLAP Lab Code 105001-0
NVLAP Lab Code 600169-0

Rice Lake Weighing Systems' Metrology Labs



**Rice Lake, WI
Concord, CA**

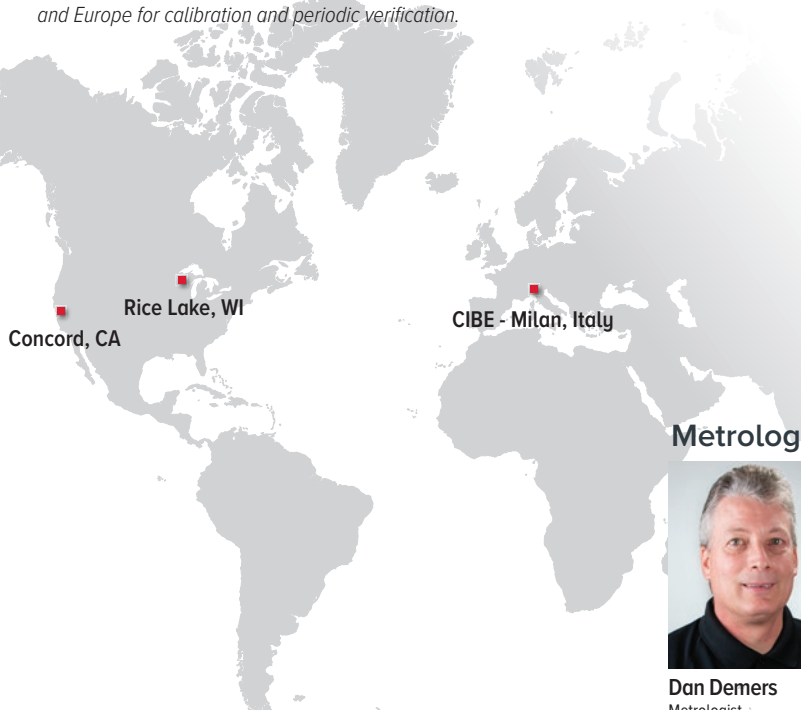
Our metrology labs in Rice Lake, WI and Concord, CA both calibrate any brand of precision or industrial weight with a four-day turnaround.

Both labs are ISO/IEC 17025 accredited for their measurement capabilities. Accreditation brings an unbiased, third party evaluation of our measurement and technical capabilities ensuring you receive the most accurate and reliable calibration results.



Milan, Italy

CIBE S.R.L. Weights and Measures Laboratory For over 30 years, the CIBE metrology laboratory has specialized in offering testing, calibration and certification services for mass reference standards, weights and weighing instruments. Accredited by ACCREDIA in Italy and Europe for calibration and periodic verification.



Customer Relations



Brian Gourley
Product Manager



Deanna Stanley
Inside Sales Manager



Mark Ruefenacht
Technical Director



Dylan Callahan
Operations Manager

Order and Customer Service



Eric Butzler



Becky Clausen



Sonya Hegle



Beck Morgan



Jason Mathews



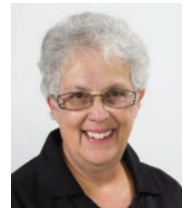
K C Peterson



Ray Pumala



Ali Richter



Lynnette Thompson



Kally Wagner



Stacie Lashmett-Stoeberl

Metrology Lab Teams



Dan Demers
Metrologist



David Wingo
Metrologist



Mike Arrigoni
Lab Supervisor



Heather Fenske
Lab Assistant

What is Traceability?

Traceability is documentation proving a direct link to the official U.S. one kilogram weight standard housed at the National Institute of Standards and Technology (NIST). NIST standards are calibrated to the international one kilogram weight standard maintained at the International Bureau of Weights and Measures (BIPM).

Traceability not only means that a weight or mass standard has links to the one kilogram standard, but also that the measurements are appropriate for the accuracy class required for the application. Traceability also requires proof that all environmental factors affecting accuracy were considered at the lab performing the measurement.



MEASURAND

CHAIN OF TRACEABILITY



- Realization of BIPM
- Unbroken Chain of Comparisons
- Measurement Uncertainty
- Measurement Assurance
- Competence
- Documentation
- Periodic Recalibration



**WEIGHING
INSTRUMENT**



**CUSTOMER
WEIGHTS**



Rice Lake Calibration
Laboratory - Rice Lake, WI

Rice Lake Calibration
Laboratory - Concord, CA

National Metrology Institute (NIST)
Gaithersburg, MD

Bureau International des Poids
et Mesures - Paris, France

Rice Lake Calibration
Laboratory CIBE - Milan, Italy



**RICE LAKE'S
CALIBRATION
LABORATORIES**

**NATIONAL
METROLOGY
INSTITUTE (NIST)**

**INTERNATIONAL
SYSTEM
OF UNITS (SI)**

Packaging Weights

Virtually all Rice Lake calibration weight services in our Concord, CA and Rice Lake, WI metrology labs offer an industry-leading four-day turnaround. It is important that your calibration weights arrive at our labs undamaged. To pack your weights safely, please follow the steps below:

1. Secure Your Weights

Single weights should be individually wrapped. Weight sets need to be secure within their case. Even accessories such as milligram covers need to be protected so they cannot move. All weights need to be secure in a container designed to withstand the shipping process. Please remember, clean room cases do not provide suitable protection for shipping and should not be used.

2. Use Proper Packing Material

Single weights should be packaged individually in a vial, pouch, or wrapped in acid-free, no-lint paper and then bubble wrap or foam. Weight set cases can be wrapped in bubble wrap or foam. Stay clear of packing peanuts—they create static electricity.

3. Pack Your P.O.

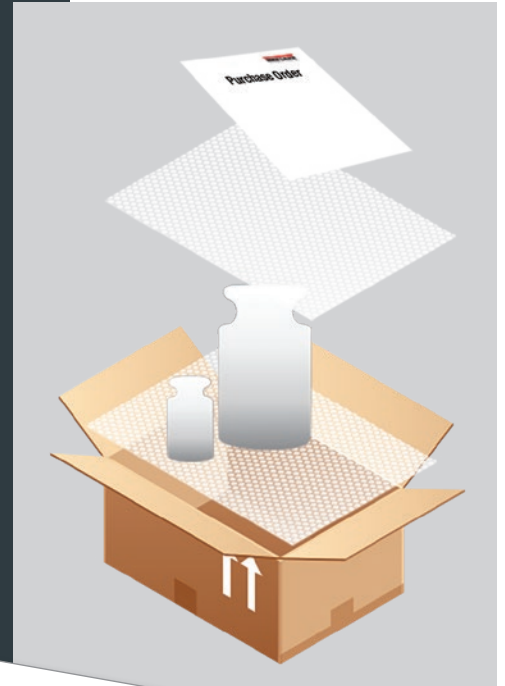
Include a copy of your quote, purchase order or a copy of the recalibration form with the preferred metrology lab, either California or Wisconsin, clearly indicated. This information will help us service your weights with the quickest turnaround time.

4. Separate Heavy Weights

Large weights, 20 pounds and 10 kilograms or heavier, should be packaged in individual boxes.

5. Don't Mix Your Weights

Please do not package stainless steel weights with cast iron weights.



Weight Request

To help us serve you better, please complete the required fields denoted with an asterisk.

RLWS Account #: _____ **Shipping Method:** _____

***Bill to:** _____ **Shipping Account #:** _____

Address: _____ ***Billing address is different from billing address**

City: _____ **State:** _____ **Zip:** _____

Contact: _____ **Phone:** _____ **Country:** _____

Email: _____ **Fax:** _____ **City:** _____

***Payment Information** **Expiration Date:** _____

Purchase Order #: _____ **Cardholder's Name:** _____ **Security Code:** _____

Credit Card #: _____ **Client:** _____

Contractor: _____

***Recall Date:** No Yes, number of years: _____ *if releasing weights or cases*

Select type of documentation (only one per quote request):

Certificate of Weight Calibration—ISO/IEC 17025 accreditation, traceable to NIST Classes ASTM 1-3, OIML F1, F2

Certificate of Weight Calibration—Non-accredited, traceable to NIST Classes ASTM 1-3, OIML F1, F2

Range	Density	Serial Number(s)	Class (weight(s) described in)
Number of Weights	Number of Reports	ASTM	OIML
<input type="checkbox"/> Individual report for each weight	<input type="checkbox"/> All weights on one report	D1	D2
Range	Density	NIST	OIML F
Number of Weights	Number of Reports	OIML	D1
<input type="checkbox"/> All weights on one report	<input type="checkbox"/> Individual report for each weight	D2	D3
Range	Density	NIST	OIML F

For shipment originating outside the USA, weights are being returned for maintenance under:

Made in USA (ITS 9811.00, 1919) Not made in the USA (ITS 9811.00, 285)

Have these weights been exposed to hazardous materials? Yes No

Signature: _____ **Title:** _____ **Date:** _____

**If you utilize outside Statement of Decontamination form and include a copy of this form send your order along with you to respective metrology lab. Service will not be performed without a completed decontamination form.*

Metrology Lab Locations:

RICE LAKE: 230 W. Coleman St. • Rice Lake, WI 54988 • USA
TEL: 920-472-6703 • FAX: 715-234-6967

CONCORD: 1400 Willow Pass Court • Concord, CA 94620 • USA
TEL: 920-672-1440 • FAX: 925-798-8905

EMAIL: ordersew@ricelake.com

Statement of Decontamination

All weights exposed to hazardous materials that are returned to Rice Lake Weighing Systems are required to have a completed decontamination form. By accepting authorization to return this product, the customer assumes all responsibility and liability for biological, chemical and radioactive decontamination and cleaning. Rice Lake Weighing Systems will not accept any delivery which does not include a completed decontamination form.

Customer Information

Company: _____

Customer No.: _____ **Address:** _____

Name: _____ **City:** _____

Phone: _____ **State/Zip:** _____

Email: _____ **Country:** _____

Product

Manufacturer: _____ **Type:** _____ **Serial #:** _____ **Qty:** _____

Manufacturer: _____ **Type:** _____ **Serial #:** _____ **Qty:** _____

Manufacturer: _____ **Type:** _____ **Serial #:** _____ **Qty:** _____

Manufacturer: _____ **Type:** _____ **Serial #:** _____ **Qty:** _____

List any exposure to hazardous fluids, gases or substances and attach copies of appropriate MSDS sheets

Please describe decontamination procedure or process used:

ETO None Required Other _____

Soap/Degrease Irradiation Manual Disassembly and Cleaning

I certify that the aforementioned items are free of any radioactive, biohazardous, or otherwise dangerous substances (gases and are safe for human handling). By signing this form, I indicate that I have read and understand Rice Lake Weighing Systems' decontamination policy above and have taken any and all necessary steps to assure the product will not pose a chemical, biological or radioactive threat.

Signature: _____ **Title:** _____

Print Name: _____ **Date:** _____

To minimize delays, please include a copy of this form and your order along with your weight(s) to be calibrated. Service will not be performed without a completed Decontamination Form.

Metrology Lab Locations:

RICE LAKE: 230 W. Coleman St. • Rice Lake, WI 54988 • USA
TEL: 920-472-6703 • FAX: 715-234-6967

CONCORD: 1400 Willow Pass Court • Concord, CA 94620 • USA
TEL: 920-672-1440 • FAX: 925-798-8905

RICE LAKE
WEIGHING SYSTEMS
www.ricelake.com/usa/usa
An ISO 9001 Registered Company • 2012 Rice Lake Weighing Systems
Manufacturing subject to change without notice. ©2012 Rice Lake Weighing Systems

The "Weight Recalibration Request Form" on page 279 and the "Statement of Decontamination Form" on page 281 can also be found online at ricelake.com/recalibration

Weight Handling Procedure

- All weights and cases are inspected for damage and scheduled for calibration upon arrival to the lab.
- All stickers and markers are removed from the weights.
- Precision weights receiving accredited calibration are checked for magnetism.
- A maximum permissible error test is conducted.
- Any follow up with the client is completed.

Mass Standards Expectations

- Weights should be clean and in good repair.
- Weights shall be identified with a permanent serial number or mark into the surface of the weight.
- Stickers and markers are not allowed and will be removed. The added mass of the sticker may change the mass of the weight, possibly causing the weight to be out of tolerance which will invalidate the reported value on the certificate.
- Individual weight kits shall also be identified with unique serial numbers.
- Cast iron weights should have no evidence of rust, loose paint or adhering debris.
- Analytical weights should be handled carefully. Tolerances are small, so dirt or abuse can throw them out of tolerance.
- Any cleaning, repair or painting of standards in the metrology lab will incur an extra charge.

Case Conditions

- Interior of cases for weight kits should also be wiped out or vacuumed.
- Cases should be sound with secure latches.

Contact Us

Your existing calibration weights and weight sets should be recertified on a managed periodic basis determined by a number of factors, including but not limited to the environment, frequency of use, demands of the process, quality of the weighing device in question, age of the weights in question and handling during use.

Coast to coast, Rice Lake Weighing Systems will calibrate any of your current calibration weights or weight sets. To accurately estimate the cost of our calibration services, we offer the following four-hour response options:

Online

Complete and email the Weight Recalibration Request form found at www.ricelake.com/recalibration to orderdesk@ricelake.com

Mail

Return the "Weight Recalibration Request Form" on page 279 found in the reference section of the catalog or download the form online at www.ricelake.com/metrologyservices. Once we receive your request, we will call you with a quote.

Phone

Call 800-472-6703 to discuss your needs and receive a quote.

Weight Recalibration Request forms must be received between the hours of 6:30 a.m. and 6:30 p.m., Monday through Friday and 8:00 a.m. to noon (Central Time) on Saturday.

Replacement documentation is provided free of charge if reported lost within 60 days of the date of the original document. After 60 days, a fee of \$50.00 plus shipping will be charged.



Documentation

Rice Lake's labs in California and Wisconsin offer two types of weight documentation: accredited and non-accredited. An accredited document is ISO/IEC 17025 accredited through NVLAP and A2LA. Measurements are traceable to the SI through NIST.

Rice Lake offers one accredited document:

- **Certificate of Weight Calibration**

Rice Lake offers two non-accredited documents:

- **Certificate of Weight Calibration**
(non-accredited but measurements are traceable to the SI through NIST)
- **Statement of Accuracy**
(non-accredited and not traceable to NIST)

What Type of Documentation Do I Need for My Weights?

Depending on the class of weight being evaluated, different documentation may be needed. Refer to any programs or guidelines within your company or the Accuracy Classes for Mass Standards and Test Weights chart below can be used as a guide to define whether an accredited or non-accredited Certificate of Weight Calibration is required.

A Statement of Accuracy is adequate if the actual values and stated uncertainties of the weights are not necessary, and only the tolerances of the specific class are needed. These documents are normally adequate for weights used to calibrate industrial balances and scales more than 6 kilograms in capacity. The mass standards used by both labs are used to verify that those weights are within the necessary tolerances. Weights with this document do not meet the requirements needed in Legal for Trade applications.

Legal for Trade Weight Applications

ASTM and OIML weights are required for Legal for Trade applications which include any product that is sold by weight.

New Weights

To order documentation with your purchase of a new weight or weight set, please note on your purchase order to add documentation and then call or fax the order to have the additional price quoted immediately.

Accuracy Classes

Current Standard and Test Weight Accuracy Classes			Historical Classes	
Typical Use	OIML ¹	ASTM E617 ²	NIST 105-1 ³	NBS CIR. 547 ³
Certificate of Weight Calibration (Accredited) Is Recommended for...				
Primary Laboratory Reference Standard High precision standards for calibration of weights and special precision analytical balances accuracy Classes I and II (class number depending on precision).	E1	00		
	E2			
		0 and 1		M and S
Certificate of Weight Calibration (Non-accredited) Is Recommended for...				
High Accuracy Balances Working standard for precision analytical work, built-in weights and external weights used to calibrate moderate precision balances.	F1	2		
		3		S1
	F2			
Statement of Accuracy Is Acceptable for...				
Industrial Scales and Balances Accuracy Class III industrial scales, dial scales, trip balances, platform scales. Also used for accuracy Class III L and III L, and weights used to calibrate scales in Legal for Trade applications.		4		P
	M1	5		Q
	M2	6	F	T
	M3	7		

¹For more information on OIML Weight Classifications see page 236

²For more information on ASTM Weight Classification see page 238 (ASTM E617)

³Listed for reference only. NBS Cir. 547 has been superseded by ASTM E 617 classifications

NOTE: All NIST Class F 2020 are acceptable as NIST Class F providing they meet the criteria defined in NIST Handbook 105-1 2019

Certificate Quick Look



Certificate of Weight Calibration (accredited)

- Meets requirements for ISO/IEC 17025 and ANSI/NCSL Z540-1
- Measurements are traceable to the SI through NIST
- Contains the assumed density of the weight being tested so that atmospheric buoyancy corrections can be applied
- Lists the uncertainty of the measurement process as it relates to the item being calibrated
- Lists the actual mass values or the corrections to the nominal mass of the weight being calibrated vs. 8 grams/cm³
- Lists the environmental conditions present at time of calibration
- Cites that the test was done by Rice Lake's accredited laboratories
- States that Rice Lake is ISO 9001 registered

Certificate of Weight Calibration (non-accredited)

- Measurements are traceable to the SI through NIST
- Not an accredited certificate
- Contains the assumed density of the weight being tested so that atmospheric buoyancy corrections can be applied
- Lists the uncertainty of the measurement process as it relates to the item being calibrated
- Lists the actual mass values or the corrections to the nominal mass of the weight being calibrated vs. 8 grams/cm³
- Lists the environmental conditions present at time of calibration
- Cites that the test was done by Rice Lake's laboratories

Statement of Accuracy

- Does not provide traceability to NIST
- All weight classes - except E1, E2, 0, 00
- This is not a Legal for Trade or traceable document
- Tolerance statement of the weight
- Nominal value of the weight is listed
- Tolerance for the specific weight class is noted
- Before, after or uncertainty values are not listed



Certificate of Weight Calibration (Accredited)

A customer requesting an accredited Certificate of Weight Calibration needing traceability to NIST is looking for a nominal mass value plus or minus corrections and uncertainty values. To produce this document, a calibration laboratory must maintain a statistical measurement process acceptable by the accrediting body. Also, depending on the weight class and the accuracy required, different standards and procedures need to be incorporated to make sure the level of uncertainty is appropriate for the item being calibrated. The accredited Certificate of Weight Calibration is in compliance with ISO International Standard 17025 and ANSI/NCSL Z540-1 requirements.

RICE LAKE		Certificate of Weight Calibration		ISO/IEC 17025 & ANSI/NCSL-Z540-1-1994 ACCREDITED		
Traceable Certificate Number:	1234567	1				
Contractor:	RICE LAKE WEIGHING SYSTEMS 230 W. COLEMAN STREET RICE LAKE, WI 54868	2				
Purchase Order Number:	PURCHASE ORDER	3				
Client:	RICE LAKE WEIGHING SYSTEMS 230 W. COLEMAN STREET RICE LAKE, WI 54868					
Date Received:	01 Jul 2020	4				
Date Calibrated:	01 Jul 2020 to 02 Jul 2020					
Recalibration Date:	01 Jul 2021	5				
NIST Certificate Number:	684/291344-18 & 684/292805-19	6				
If there are two NIST numbers, one or both may apply						
Calibrated By:	01, 02					
Procedure:	WI05-0095 Rev. D	7				
Condition of Weights:	Acceptable for Calibration					
Description of Weights:	5 mg to 200 g Polished Weight Kit, ASTM Class 1, S/N ABCD	8				
Comments:						
		Key Notes		Cleaning Levels		
Finish	✱ Indicates the weight does not meet the finish requirements			A	Dusted with brush or cloth	
Material	⊕ Indicates the weight does not meet the material requirements			B	Spot cleaned with ethyl alcohol	
New Wt	◇ Indicates new weight			C	Full surface cleaned with ethyl alcohol	
Missing Wt	△ Indicates replaced missing weight with new weight			D	Spot cleaned with non-alcohol solvent followed by ethyl alcohol	
Damaged Wt	✂ Indicates replaced damaged weight			E	Full surface cleaned with non-alcohol solvent followed by ethyl alcohol	
Replaced OOT	★ Indicates replaced out of tolerance weight			F	No cleaning performed	
OOT	⊗ Indicates correction plus or minus Uncertainty greater than or equal to MPE			Material Abbreviations		
Magnetic Wt	★★ Indicates replaced magnetic weight			AL	Aluminum	
Design	⊗ Indicates the weight does not meet the design or shape requirements			SS	Stainless Steel	
Repainted	⬇ Indicates the weight was repainted after As Found obtained			TA	Tantalum	
Other	⊕ See comments above			BR	Brass	
				CI	Cast Iron	
				IR	Iron	
				MS	Mid Steel	
				NS	Nickel Silver	
				OR	Other/Unknown	
Check with your local state agency for certification of compliance on Legal-for-Trade items. The weight accuracy class is referenced in the Description of Weights. Unless otherwise noted, the weights calibrated meet the requirements of the accuracy class. Results relate only to weights calibrated. The Surface Finishes of weights are evaluated visually. Weights are screened for magnetism using work instruction WI05-0035 when they are new, when requested by the customer or when weights are suspected of not meeting specifications. Density if measured is measured using OIML R111-1 (2004) method A2. Conventional Mass is reported based on a reference density of 8.0 g/cm ³ . The Uncertainty of Measurement is included in the determination of Maximum Permissible Error (MPE) Pass/Fail Criteria. The specifications for Maximum Permissible Error (MPE) can be found in NIST Handbook 105-1 (2019), NIST Handbook 105-1 (1990), ASTM E617-18 or OIML R111-1 (2004), manufacturer specifications or customer specifications.						
The Uncertainty assigned to the Conventional Mass values are the result of the root-sum-square of the type A and type B components, calculated in accordance with NIST SOP 29 and the Guide to the expression of uncertainty in measurement, with coverage factor (k=2), to express the expanded uncertainty with an approximate 95.45% confidence level. This report is not to be used to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any government agency. This document shall not be reproduced, except in full, without the written approval of Rice Lake Weighing Systems.						
 Dan Demers, Metrologist		10 Jul 2020 Date:				
9	 CALIBRATION NVLAP LAB CODE 10501-0		10	Prepared By: Rice Lake Weighing Systems® • PN 64764•06/20 230 West Coleman Street • Rice Lake, WI 54868 • USA TEL: 715-234-9171 • FAX: 715-234-6967 Definitions: http://certs.ricelake.com/certs/DefinitionsV2.docx Page 1 of 2		 Certificate #4393.01

Procedure Used:
Internationally published procedures defined by NIST, ASTM and OIML

The Certificate of Weight Calibration (accredited) includes the following information:

- 1** Traceable report number
- 2** Contractor (sold to) name and address
- 3** Client (shipped to) name and address
- 4** Date calibrated
- 5** Recall date (if requested)
- 6** NIST certificate of calibration
- 7** Procedure used Intercomparison Method
- 8** Identification of the calibrated item and serial number, if applicable
- 9** The NVLAP and A2LA official logo will be displayed when the documentation meets the scope of accreditation
- 10** Name and address of the calibration laboratory
- 11** Nominal conventional mass
- 12** Conventional Mass As Found - mass that weighs at 20 °C in air of density of 1.2 milligram/cm³ against a standard density of 8.0 gram/cm³
- 13** Conventional mass correction of the weight before adjustment¹
- 14** Conventional Mass As Left - mass that weighs at 20 °C in air of density of 1.2 milligram/cm³ against a standard density of 8.0 gram/cm³
- 15** As left conventional mass correction of the weight¹
- 16** A statement of the estimated value of uncertainty²
- 17** Maximum permissible error for the specific accuracy class
- 18** Assumed density of the weight being calibrated
- 19** Environmental condition at time of calibration
- 20** Record of the weighing equipment
- 21** Reference standard set used to calibrate items listed on report

1 The Conventional Mass Correction is the deviation from the Nominal Value, reported in milligrams. A minus sign indicates that the weight is less than the nominal value.

2 All measurements have a degree of uncertainty regardless of precision and accuracy. This is caused by two factors, the limitation of the measuring instrument (systematic error) and the skill of the experimenter making the measurements (random error).

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> <p>Traceable Certificate Number: 1234567</p> <p>Client: RICE LAKE WEIGHING SYSTEMS</p> <p>Date Calibrated: 01 Jul 2020 to 02 Jul 2020</p> </div> <div style="text-align: right;"> <p>ISO/IEC 17025 & ANSI/NCSL-Z540-1-1994 ACCREDITED</p> <p>Temperature Range: 19 20.93°C to 21.00 °C</p> <p>Pressure Range: 728.79 mmHg to 729.87 mmHg</p> <p>Relative Humidity Range: 49 % to 52 %</p> </div> </div>																	
As Left Data (As Found only shown when different than As Left)																	
11	12	13	14	15	16	17	18	20	21								
Nominal Value	Unique ID	True Mass	True Mass Corr. (mg)	Conv. Mass	Conv. Mass Corr. (mg)	(k=2) Unc. (± mg)	MPE (± mg)	MP Pass	Assumed Density (g/cm ³)	Assumed Material	Const. Type	Balance Used	Reference Standard Set Used	Air Density (mg/cm ³)	Clean Level		
5 mg		4.99940	-0.00060	4.99939	-0.00061	0.00084	0.010	Y	7.95	SS	I	503Q	L595Q	1.1474	A		
20 mg		20.00116	0.00116	20.00114	0.00114	0.00087	0.010	Y	7.95	SS	I	503Q	L595Q	1.1471	A		
20 mg		20.00115	0.00115	20.00113	0.00112	0.00087	0.010	Y	7.95	SS	I	503Q	L595Q	1.1472	A		
50 mg		50.0027	0.0027	50.0026	0.0026	0.0011	0.010	Y	7.95	SS	I	503Q	L595Q	1.1469	A		
100 mg		99.9984	-0.0016	99.9983	-0.0017	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1470	A		
200 mg		199.9974	-0.0026	199.9972	-0.0028	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1470	A		
200 mg		199.9977	-0.0023	199.9975	-0.0025	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1469	A		
500 mg		499.9965	-0.0035	499.9960	-0.0040	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1466	A		
2 g		2.0000016	0.0016	2.0000027	0.0027	0.0023	0.034	Y	8.03	SS	II	650Q	L595Q	1.1470	A		
2 g		2.0000098	0.0098	2.0000109	0.0109	0.0023	0.034	Y	8.03	SS	II	650Q	L595Q	1.1469	A		
5 g		5.0000065	0.0065	5.0000093	0.0093	0.0046	0.034	Y	8.03	SS	II	650Q	L595Q	1.1469	A		
10 g		9.9999517	-0.0483	9.9999573	-0.0427	0.0059	0.050	Y	8.03	SS	II	1958Q	L595Q	1.1480	A		
20 g		19.9999780	-0.0220	19.9999892	-0.0108	0.0056	0.074	Y	8.03	SS	II	1958Q	L595Q	1.1479	A		
20 g		19.9999828	-0.0172	19.9999940	-0.0060	0.0056	0.074	Y	8.03	SS	II	1958Q	L595Q	1.1476	A		
50 g		49.999961	-0.039	49.999969	-0.011	0.011	0.12	Y	8.03	SS	II	1958Q	L595Q	1.1476	A		
100 g		99.999817	-0.183	99.999873	-0.127	0.021	0.25	Y	8.03	SS	II	1958Q	L595Q	1.1478	A		
200 g		199.999942	-0.058	200.000054	0.054	0.045	0.50	Y	8.03	SS	II	699Q	L595Q	1.1431	A		
200 g		199.999862	-0.138	199.999874	-0.026	0.045	0.50	Y	8.03	SS	II	699Q	L595Q	1.1429	A		

Certificate of Weight Calibration (Non-accredited)

A customer requesting a non-accredited Certificate of Weight Calibration, needs proof of traceability to NIST and actual values and uncertainties. Comparisons must be made between the item being calibrated and the standard being used. The mass reference standard used for the tolerance test is essential to the traceable document.

Prior to comparison between the known standard and the item submitted for calibrating, the known standard must be sufficiently calibrated over time to produce predictable measurements.

This certificate should contain all of the data related to the calibration. After calibrating, a non-accredited Certificate of Weight Calibration is issued. Although the Certificate of Weight Calibration (non-accredited) provides traceability to NIST, it is not a NVLAP accredited document. If an accredited document is required, please refer to the Certificate of Weight Calibration (accredited) on the previous page.

RICE LAKE		Certificate of Weight Calibration	
Traceable Certificate Number:	1234567	1	
Contractor:	RICE LAKE WEIGHING SYSTEMS 230 W. COLEMAN STREET RICE LAKE, WI 54868	2	
Purchase Order Number:	PURCHASE ORDER	3	
Client:	RICE LAKE WEIGHING SYSTEMS 230 W. COLEMAN STREET RICE LAKE, WI 54868		
Date Received:	01 Jul 2020	4	
Date Calibrated:	01 Jul 2020 to 02 Jul 2020		
Recalibration Date:	01 Jul 2021	5	
NIST Certificate Number:	684/291344-18 & 684/292805-19	6	
If there are two NIST numbers, one or both may apply			
Calibrated By:	01, 02		
Procedure:	WI05-0095 Rev. D	7	
Condition of Weights:	Acceptable for Calibration		
Description of Weights:	5 mg to 200 g Polished Weight Kit, ASTM Class 1, S/N ABCD	8	
Comments:			
Key Notes		Cleaning Levels	
Finish	✱ Indicates the weight does not meet the finish requirements	A	Dusted with brush or cloth
Material	⊕ Indicates the weight does not meet the material requirements	B	Spot cleaned with ethyl alcohol
New Wt	◇ Indicates new weight	C	Full surface cleaned with ethyl alcohol
Missing Wt	△ Indicates replaced missing weight with new weight	D	Spot cleaned with non-alcohol solvent followed by ethyl alcohol
Damaged Wt	✱ Indicates replaced damaged weight	E	Full surface cleaned with non-alcohol solvent followed by ethyl alcohol
Replaced OOT	✱ Indicates replaced out of tolerance weight	F	No cleaning performed
OOT	⊗ Indicates correction plus or minus Uncertainty greater than or equal to MPE	Material Abbreviations	
Magnetic Wt	★ Indicates replaced magnetic weight	AL	Aluminum
Design	⊗ Indicates the weight does not meet the design or shape requirements	TA	Tantalum
Repainted	■ Indicates the weight was repainted after As Found obtained	SS	Stainless Steel
Other	⊕ See comments above	BR	Brass
		CI	Cast Iron
		IR	Iron
		MS	Mild Steel
		NS	Nickel Silver
		OR	Other/Unknown

Check with your local state agency for certification of compliance on Legal-for-Trade items. The weight accuracy class is referenced in the Description of Weights. Unless otherwise noted, the weights calibrated meet the requirements of the accuracy class. Results relate only to weights calibrated. The Surface Finishes of weights are evaluated visually. Weights are screened for magnetism using instruction WI05-0035 when they are new, when requested by the customer or when weights are suspected of not meeting specifications. Density if measured is measured using OIML R111-1 (2004) method A2. Conventional Mass is reported based on a reference density of 8.0 g/cm³. The Uncertainty of Measurement is included in the determination of Maximum Permissible Error (MPE) Pass/Fail Criteria. The specifications for Maximum Permissible Error (MPE) can be found in NIST Handbook 105-1 (2019), NIST Handbook 105-1 (1990), ASTM E617-18 or OIML R111-1 (2004), manufacturer specifications or customer specifications.

The Uncertainty assigned to the Conventional Mass values are the result of the root-sum-square of the type A and type B components, calculated in accordance with NIST SOP 29 and the Guide to the expression of uncertainty in measurement, with coverage factor (k=2), to express the expanded uncertainty with an approximate 95.45% confidence level. This report is not to be used to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any government agency. This document shall not be reproduced, except in full, without the written approval of Rice Lake Weighing Systems.

Prepared By: **9** Rice Lake Weighing Systems® • PN 64784•06/20
230 West Coleman Street • Rice Lake, WI 54868 • USA
TEL: 715-234-9171 • FAX: 715-234-8967
Definitions: <http://certs.ricelake.com/certs/DefinitionsV2.docx>
Page 1 of 2

10 Jul 2020
Date:

Dan Damers, Metrologist

Procedure Used:
Internationally published procedures defined by NIST, ASTM and OIML

The Certificate of Weight Calibration (non-accredited) includes the following information:

- 1** Traceable report number
- 2** Contractor (sold to) name and address
- 3** Client (shipped to) name and address
- 4** Date calibrated
- 5** Recall date if requested
- 6** NIST certificate of calibration
- 7** Procedure used Intercomparison Method
- 8** Identification of the calibrated item and serial number, if applicable
- 9** Name and address of the calibration laboratory
- 10** Nominal conventional mass
- 11** Conventional Mass As Found- mass that weighs at 20 °C in air of density of 1.2 milligram/cm³ against a standard density of 8.0 gram/cm³
- 12** Conventional mass correction of the weight before adjustment 2
- 13** Conventional Mass As Left - mass that weighs at 20 °C in air of density of 1.2 milligram/cm³ against a standard density of 8.0 gram/cm³
- 14** As left conventional mass correction of the weight²
- 15** A statement of the estimated value of uncertainty¹
- 16** Maximum permissible error for the specific accuracy class
- 17** Assumed density of the weight being calibrated
- 18** Environmental condition at time of calibration
- 19** Record of the weighing equipment
- 20** Reference standard set used to calibrate items listed on report

1 The Conventional Mass Correction is the deviation from the Nominal Value, reported in milligrams. A minus sign indicates that the weight is less than the nominal value.

2 All measurements have a degree of uncertainty regardless of precision and accuracy. This is caused by two factors, the limitation of the measuring instrument (systematic error) and the skill of the experimenter making the measurements (random error).

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> <p>Traceable Certificate Number: 1234567</p> <p>Client: RICE LAKE WEIGHING SYSTEMS</p> <p>Date Calibrated: 01 Jul 2020 to 02 Jul 2020</p> </div> <div style="text-align: right;"> <p>Temperature Range: 18 20.93°C to 21.00 °C</p> <p>Pressure Range: 728.79 mmHg to 729.87 mmHg</p> <p>Relative Humidity Range: 49 % to 52 %</p> </div> </div>																
As Left Data (As Found only shown when different than As Left)																
10	11	12	13	14	15	16	17	19	20							
Nominal Value	Unique ID	True Mass	True Mass Corr. (mg)	Conv. Mass	Conv. Mass Corr. (mg)	Unc. (± mg)	MPE (± mg)	MPE Pass	Assumed Density (g/cm ³)	Assumed Material	Const. Type	Balance Used	Reference Standard Set Used	Air Density (mg/cm ³)	Clean Level	
5 mg		4.99940	-0.00060	4.99939	-0.00061	0.00084	0.010	Y	7.95	SS	I	503Q	L595Q	1.1474	A	
20 mg		20.00116	0.00116	20.00114	0.00114	0.00087	0.010	Y	7.95	SS	I	503Q	L595Q	1.1471	A	
20 mg		20.00115	0.00115	20.00113	0.00112	0.00087	0.010	Y	7.95	SS	I	503Q	L595Q	1.1472	A	
50 mg		50.0027	0.0027	50.0026	0.0026	0.0011	0.010	Y	7.95	SS	I	503Q	L595Q	1.1469	A	
100 mg		99.9984	-0.0016	99.9983	-0.0017	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1470	A	
200 mg		199.9974	-0.0026	199.9972	-0.0028	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1470	A	
200 mg		199.9977	-0.0023	199.9975	-0.0025	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1469	A	
500 mg		499.9965	-0.0035	499.9960	-0.0040	0.0014	0.010	Y	7.95	SS	I	503Q	L595Q	1.1468	A	
2 g		2.000016	0.0016	2.000027	0.0027	0.0023	0.034	Y	8.03	SS	II	650Q	L595Q	1.1470	A	
2 g		2.000098	0.0098	2.000109	0.0109	0.0023	0.034	Y	8.03	SS	II	650Q	L595Q	1.1469	A	
5 g		5.0000065	0.0065	5.0000093	0.0093	0.0046	0.034	Y	8.03	SS	II	650Q	L595Q	1.1469	A	
10 g		9.9999517	-0.0483	9.9999573	-0.0427	0.0059	0.050	Y	8.03	SS	II	1958Q	L595Q	1.1480	A	
20 g		19.9999780	-0.0220	19.9999892	-0.0108	0.0056	0.074	Y	8.03	SS	II	1958Q	L595Q	1.1479	A	
20 g		19.9999828	-0.0172	19.9999940	-0.0060	0.0056	0.074	Y	8.03	SS	II	1958Q	L595Q	1.1478	A	
50 g		49.999961	-0.039	49.999989	-0.011	0.011	0.12	Y	8.03	SS	II	1958Q	L595Q	1.1476	A	
100 g		99.999817	-0.183	99.999873	-0.127	0.021	0.25	Y	8.03	SS	II	1958Q	L595Q	1.1478	A	
200 g		199.999942	-0.058	200.000054	0.054	0.045	0.50	Y	8.03	SS	II	699Q	L595Q	1.1431	A	
200 g		199.999862	-0.138	199.999974	-0.026	0.045	0.50	Y	8.03	SS	II	699Q	L595Q	1.1429	A	

Statement of Accuracy

A customer requesting a Statement of Accuracy needs proof that the nominal values represented by the mass in question have been designed and manufactured within exact specifications.

The Statement of Accuracy provides just such a document when and where traceability to NIST or an ISO/IEC 17025 accredited certificate of calibration is not a concern. The Statement of Accuracy is the least comprehensive documentation offered by Rice Lake Weighing Systems. Check your internal policies and procedures to determine what type of documentation you require and thoroughly review the Certificate of Weight Calibration, accredited and non-accredited, options prior to selecting laboratory documentation.

The Statement of Accuracy includes the following information:

- 1 Name and address of company that items are shipped to
- 2 Name and address of company that items were sold to
- 3 Part number
- 4 Description/Serial number
- 5 Maximum permissible error for the specific accuracy class
- 6 Name and address of the company that adjusted the weights


**Only applicable to new weights. Not a Legal for Trade or traceable document.*

Qty	Part Nbr	Description	Tolerance
1.0	12844 01	Weight, Heavy Cap 500lb NIST Class F Cast Iron Painted, Density 7.2	23 g

1 Ship To RICE LAKE WEIGHING SYSTEMS
 230 W COLEMAN ST
 RICE LAKE, WI 54868
 UNITED STATES OF AMERICA

2 Sold To RICE LAKE WEIGHING SYSTEMS
 230 W COLEMAN ST
 RICE LAKE, WI 54868
 UNITED STATES OF AMERICA

Dated 10-05-16
 Purchase Order Number RLWS
 Accuracy Report Number 2487012


THIS IS NOT A LEGAL-FOR-TRADE OR TRACEABLE DOCUMENT

Page 1 of 1

Weights listed above were compared to mass standards that are calibrated and traceable to the National Institute of Standards and Technology.
 Prepared By:
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PN 71065 6/15

Rice Lake Certificate Selection Guide

	Item on Certificate	Accredited Certificate of Weight Calibration	Non-Accredited Certificate of Weight Calibration	Statement of Accuracy
	ISO/IEC 17025 & ANSI/NCSL Z-540-1 Accredited Certificate	Yes	-	-
1	Name & Address of Calibration Laboratory	Yes	Yes	Yes
2	Contractor (Sold To) Name & Address*	Yes	Yes	Yes
3	Client (Ship To) Name & Address *	Yes	Yes	Yes
4	The Traceable Report Number of the Certificate for the Item under Calibration	Yes	Yes	-
5	Environmental Conditions at Time of Calibration	Yes	Yes	-
6	NIST Certificate of Calibration	Yes	Yes	-
7	Procedure Used	Yes	Yes	-
8	Identification of the Item(s) & Serial Number (If Applicable)	Yes	Yes	Yes
9	Nominal Conventional Mass	Yes	Yes	-
10	As Found Mass Value of Item under Calibration	Yes	Yes	-
11	As Left Mass Value of Item under Calibration	Yes	Yes	-
12	Estimated Uncertainty of the Measurement ¹	Yes	Yes	-
13	The Maximum Permissible Error for the Specified Accuracy Class	Yes	Yes	Yes
14	Equipment Number for the Mass Comparator/Balance Used to Perform the Calibration	Yes	Yes	-
15	The Reference Standards Used to Calibrate the Item under Test	Yes	Yes	-
16	Assumed Density of the Item(s)	Yes	Yes	Yes
17	Legal For Trade Document	Yes	-	-
18	True Mass Values	Available upon request	-	-
20	Disclaimers	May be required for weights that do not meet surface finish requirements	May be required for weights that do not meet surface finish requirements	-

* Can be specified by customer or client

¹ An expanded calibration uncertainty is required to establish metrological traceability.

Weight Class	Accredited to ISO/IEC 17025 & ANSI/NCSL Z540-1 Certificate of Weight Calibration	Non-Accredited Certificate of Weight Calibration	Non-Accredited & Not Traceable to NIST Statement of Accuracy
ASTM 00	Yes	-	-
ASTM 0	Yes	-	-
ASTM 1	Yes	Yes	Yes ²
ASTM 2	Yes	Yes	Yes ²
ASTM 3	Yes	Yes	Yes ²
ASTM 4	Yes	-	Yes ²
ASTM 5	Yes	-	Yes ²
ASTM 6	Yes	-	Yes ²
ASTM 7	Yes	-	Yes ²
OIML E1	Yes	-	-
OIML E2	Yes	-	-
OIML F1	Yes	Yes	Yes ²
OIML F2	Yes	Yes	Yes ²
OIML M1	Yes	-	Yes ²

Weight Class	Accredited to ISO/IEC 17025 & ANSI/NCSL Z540-1 Certificate of Weight Calibration	Non-Accredited Certificate of Weight Calibration	Non-Accredited & Not Traceable to NIST Statement of Accuracy
OIML M2	Yes	-	Yes ²
OIML M3	Yes	-	Yes ²
NIST F	Yes	-	Yes ²
NIST M	-	Yes	-
NIST S	Yes	Yes	-
NIST S-1	Yes	Yes	-
NIST P	Yes	Yes	-
NIST T	Yes	-	-
NIST C	Yes	-	-

² Only applicable to new weights