



CALIBRATION CERTIFICATE

Rice Lake (13) pc Metric Weight Kit, Stainless Steel, NIST Class F, S/N 4M
Contents: 2 kg to 2 g

Customer:

Koenig Scale Co, Inc.
4779 E. Margaret Dr
Terre Haute, IN 47803
Kevin Koenig
Quality Manager

Certificate Number: 2024-0891

Date Received: 7/19/2024

Date Calibrated: 7/22/2024

Condition of Artifacts: Acceptable

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Methods and Traceability:

The weights described above have been compared with the standards of the State of Ohio, which are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST). The weights are compliant with NIST Class F specifications and tolerances from NIST Handbook 105-1 (1990). The uncertainty of the measurement is considered when making this statement of compliance. Surface finish, density and magnetism were not evaluated. It is the end user's responsibility to verify that the weights meet the accuracy requirements outlined in NIST Handbook 44 (2020), Appendix A Fundamental Considerations, when using the weights for calibration of commercial (Legal for Trade) scales. ** The laboratory calculates measurement uncertainties in accordance with NIST Standard Operating Procedure 29 (2019); ISO Guide to the Expression of Uncertainty in Measurement (GUM) (JCGM 100:2008, GUM 1995 with minor corrections, 2008); and ISO/IEC GUIDE 98-3:2008, Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995). The combined standard uncertainty is the result of the root-sum-square of the Type A and Type B components specified in the SOP listed below. The combined standard uncertainty is multiplied by an appropriate coverage factor (k) to provide an expanded uncertainty which defines an interval having a level of confidence of approximately 95 percent. The effects of magnetism have not been considered in the measurement uncertainty. ** Conventional mass correction values are reported. These are based on the mass in air with reference conditions of air density 0.0012 g/cm³, mass density of 8 g/cm³, and a reference temperature of 20 °C. The correction is the weight's error from its nominal value. As Received values indicate the error of the items as submitted, before adjustment.

The following Standard Operating Procedure (S.O.P.) was used:

- 8 NIST Recommended Standard Operating Procedure for Medium Accuracy Calibration of Mass Standards by Modified Substitution. (May 2019)

Notes:

[Handwritten signature of Keith Crider]

Weights & Measures Technologist Keith Crider

7/23/2024

Issue Date



NVLAP CODE: 200420

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[Handwritten signature of Chris O'Connell]

07/30/24

**OHIO DEPARTMENT OF AGRICULTURE
DIVISION OF WEIGHTS AND MEASURES METROLOGY LABORATORY**

SUBMITTED BY:	Koenig Scale Co, Inc.	CLASS:	NIST F	Page	2
OHIO TEST NO.:	2024-0891	TEMP:	20.34	°C	
DATE:	7/22/2024	PRESS:	735.15	mm Hg	
DESCRIPTION:	Weight Kit S/N 4M	HUMD:	50.83	% RH	

Weight Identification	Nominal Value	Units	Tolerance ± (mg)	As Received (mg)	As Left (mg)	Uncertainty ± (mg)	k value
	2000	g	200	44	44	17	2.03
	1000	g	100	33.5	33.5	6.0	2.05
	500	g	70	27.7	27.7	3.6	2.05
1	200	g	40	5.1	5.1	1.8	2.05
2	200	g	40	7.1	7.1	1.8	2.05
	100	g	20	4.8	4.8	1.1	2.05
	50	g	10	5.58	5.58	0.70	2.05
	20	g	4	2.19	2.19	0.37	2.05
•	20	g	4	2.93	2.93	0.37	2.05
	10	g	2	0.72	0.72	0.25	2.05
	5	g	1.5	0.68	0.68	0.16	2.05
	2	g	1.1	0.574	0.574	0.090	2.05
•	2	g	1.1	0.524	0.524	0.090	2.05

Chris O. Crawford

07/30/24