

Agricultural Laboratory
6531 SE Forbes Ave, Suite B
Topeka, Kansas 66619
(785) 296-7020



Office of the Secretary
900 SW Jackson, Room 456
Topeka, Kansas 66612
(785) 296-3556

Jackie McClaskey, Secretary

Governor Sam Brownback

Expires on: 3/16/2017

Kansas Metrology Laboratory Calibration Report

Report Number: K15265

Submitted by:

Nebraska Department Of Agriculture
Food Safety & Consumer Protection
301 Centennial Mall South
Lincoln, NE 68509

Submitted on: 3/14/2016

Item(s)

Tested	Adjusted	Rejected
96	13	0

Quantity	Nominal Mass	Type
21	1 000 lb	Weight(s)
10	50 lb	Weight(s)
20	25 lb	Weight(s)
28	5 lb to 0.001 lb 8 oz to 1/4 oz	Weight Kit
17	1 kg to 100 mg	Weight Kit

The calibration of items is performed according to NISTIR 6969, SOP 8. Tolerances are applied from NISTHB 105-1.

Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm (NIST Class F)	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
1000 lb	2189	453483.4 g	45 g	6.1 g	453593.2 g	Adjusted
1000 lb	2190	453572.9 g	45 g	6.1 g	453572.9 g	In Tolerance
1000 lb	2191	453598.5 g	45 g	6.1 g	453598.5 g	In Tolerance
1000 lb	2192	453584.2 g	45 g	6.1 g	453584.2 g	In Tolerance
1000 lb	2194	453570.1 g	45 g	6.1 g	453570.1 g	In Tolerance
1000 lb	2195	453556.1 g	45 g	6.1 g	453556.1 g	In Tolerance
1000 lb	2196	453557.3 g	45 g	6.1 g	453557.3 g	In Tolerance
1000 lb	2197	453577.0 g	45 g	6.1 g	453577.0 g	In Tolerance
1000 lb	2198	453544.6 g	45 g	6.1 g	453592.7 g	Adjusted
1000 lb	A-1	453585.0 g	45 g	6.1 g	453585.0 g	In Tolerance
1000 lb	A-10	453547.8 g	45 g	6.1 g	453594.4 g	Adjusted
1000 lb	A-14	453585.6 g	45 g	6.1 g	453585.6 g	In Tolerance
1000 lb	A-17	453573.4 g	45 g	6.1 g	453573.4 g	In Tolerance
1000 lb	A-18	453578.9 g	45 g	6.1 g	453578.9 g	In Tolerance

The data in the above table of this report only applies to those items specifically listed on this report.

453.59237 g = 1 lb
28.349523125 g = 1 oz

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Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm (NIST Class F)	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
1000 lb	A-20	453562.1 g	45 g	6.1 g	453562.1 g	In Tolerance
1000 lb	A-4	453561.2 g	45 g	6.1 g	453561.2 g	In Tolerance
1000 lb	A-5	453555.3 g	45 g	6.1 g	453555.3 g	In Tolerance
1000 lb	A-7	453555.0 g	45 g	6.1 g	453555.0 g	In Tolerance
1000 lb	A-8	453525.9 g	45 g	6.1 g	453592.3 g	<i>Adjusted</i>
1000 lb	A-9	453526.4 g	45 g	6.1 g	453595.3 g	<i>Adjusted</i>
1000 lb	WME8	453692.9 g	45 g	6.1 g	453594.4 g	<i>Adjusted</i>

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Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm (NIST Class F)	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
50 lb	A50-13	22679.81 g	2.3 g	0.32 g	22679.81 g	In Tolerance
50 lb	A50-20	22680.94 g	2.3 g	0.32 g	22680.94 g	In Tolerance
50 lb	WM-C-A1	22681.20 g	2.3 g	0.32 g	22681.20 g	In Tolerance
50 lb	WM-C-A10	22682.56 g	2.3 g	0.32 g	22679.94 g	<i>Adjusted</i>
50 lb	WM-C-A2	22680.99 g	2.3 g	0.32 g	22680.99 g	In Tolerance
50 lb	WM-C-A3	22682.04 g	2.3 g	0.32 g	22679.68 g	<i>Adjusted</i>
50 lb	WM-C-A5	22681.79 g	2.3 g	0.32 g	22679.64 g	<i>Adjusted</i>
50 lb	WM-C-A9	22682.25 g	2.3 g	0.32 g	22679.71 g	<i>Adjusted</i>
50 lb	WM-OPI-C81	22679.35 g	2.3 g	0.32 g	22679.35 g	In Tolerance
50 lb	WM-OPI-C85	22677.22 g	2.3 g	0.32 g	22679.91 g	<i>Adjusted</i>

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Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm (NIST Class F)	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
5 lb	WM-2D86 1	2267.890 g	0.23 g	0.027 g	2267.890 g	In Tolerance
5 lb	WM-2D86 2	2267.862 g	0.23 g	0.027 g	2267.862 g	In Tolerance
5 lb	WM-2D86 3	2267.869 g	0.23 g	0.027 g	2267.869 g	In Tolerance
5 lb	WM-2D86 4	2267.927 g	0.23 g	0.027 g	2267.927 g	In Tolerance
5 lb	WM-2D86 5	2267.909 g	0.23 g	0.027 g	2267.909 g	In Tolerance
1 lb	WM-2D86 1	453.6049 g	0.070 g	0.0084 g	453.6049 g	In Tolerance
1 lb	WM-2D86 2	453.6289 g	0.070 g	0.0084 g	453.6289 g	In Tolerance
1 lb	WM-2D86 3	453.5699 g	0.070 g	0.0084 g	453.5699 g	In Tolerance
1 lb	WM-2D86 4	453.5979 g	0.070 g	0.0084 g	453.5979 g	In Tolerance
1 lb	WM-2D86 5	453.5669 g	0.070 g	0.0084 g	453.5669 g	In Tolerance
8 oz	WM-2D86 11	226.7965 g	0.045 g	0.0053 g	226.7965 g	In Tolerance
0.2 lb	WM-2D86	90.7272 g	0.018 g	0.0021 g	90.7272 g	In Tolerance
0.2 lb	WM-2D86 •	90.7269 g	0.018 g	0.0021 g	90.7269 g	In Tolerance
0.1 lb	WM-2D86	45.3636 g	0.0091 g	0.0011 g	45.3636 g	In Tolerance
0.05 lb	WM-2D86	22.68079 g	0.0045 g	0.00055 g	22.68079 g	In Tolerance
0.02 lb	WM-2D86	9.07232 g	0.0018 g	0.00022 g	9.07232 g	In Tolerance
0.02 lb	WM-2D86 •	9.07190 g	0.0018 g	0.00022 g	9.07190 g	In Tolerance
0.01 lb	WM-2D86	4.53635 g	0.0015 g	0.00018 g	4.53635 g	In Tolerance
0.005 lb	WM-2D86	2.26870 g	0.0012 g	0.00015 g	2.26870 g	In Tolerance
0.002 lb	WM-2D86	0.90727 g	0.00087 g	0.00011 g	0.90727 g	In Tolerance
0.002 lb	WM-2D86 •	0.90730 g	0.00087 g	0.00011 g	0.90730 g	In Tolerance
0.001 lb	WM-2D86	0.453832 g	0.00070 g	0.000094 g	0.453832 g	In Tolerance
4 oz	WM-2D86 13	113.3989 g	0.023 g	0.0028 g	113.3989 g	In Tolerance
2 oz	WM-2D86	56.6968 g	0.011 g	0.0013 g	56.6968 g	In Tolerance
1 oz	WM-2D86	28.35164 g	0.0054 g	0.00065 g	28.35164 g	In Tolerance
1/2 oz	WM-2D86	14.17508 g	0.0028 g	0.00033 g	14.17508 g	In Tolerance
1/4 oz	WM-2D86	7.08631 g	0.0017 g	0.00020 g	7.08631 g	In Tolerance
1/8 oz	WM-2D86	3.54386 g	0.0013 g	0.00016 g	3.54386 g	In Tolerance

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Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm (NIST Class F)	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
25 lb	WM25-1	11339.13 g	1.1 g	0.17 g	11339.13 g	In Tolerance
25 lb	WM25-10	11338.94 g	1.1 g	0.17 g	11338.94 g	In Tolerance
25 lb	WM25-11	11339.18 g	1.1 g	0.17 g	11339.18 g	In Tolerance
25 lb	WM25-12	11339.87 g	1.1 g	0.17 g	11339.87 g	In Tolerance
25 lb	WM25-13	11339.62 g	1.1 g	0.17 g	11339.62 g	In Tolerance
25 lb	WM25-14	11339.88 g	1.1 g	0.17 g	11339.88 g	In Tolerance
25 lb	WM25-15	11339.69 g	1.1 g	0.17 g	11339.69 g	In Tolerance
25 lb	WM25-16	11340.08 g	1.1 g	0.17 g	11340.08 g	In Tolerance
25 lb	WM25-17	11339.59 g	1.1 g	0.17 g	11339.59 g	In Tolerance
25 lb	WM25-18	11339.89 g	1.1 g	0.17 g	11339.89 g	In Tolerance
25 lb	WM25-19	11339.55 g	1.1 g	0.17 g	11339.55 g	In Tolerance
25 lb	WM25-1S	11339.70 g	1.1 g	0.17 g	11339.70 g	In Tolerance
25 lb	WM25-2	11340.09 g	1.1 g	0.17 g	11340.09 g	In Tolerance
25 lb	WM25-20	11339.36 g	1.1 g	0.17 g	11339.36 g	In Tolerance
25 lb	WM25-3	11340.34 g	1.1 g	0.17 g	11340.34 g	In Tolerance
25 lb	WM25-4	11339.53 g	1.1 g	0.17 g	11339.53 g	In Tolerance
25 lb	WM25-5	11338.55 g	1.1 g	0.17 g	11339.81 g	Adjusted
25 lb	WM25-6	11340.31 g	1.1 g	0.17 g	11340.31 g	In Tolerance
25 lb	WM25-7	11340.10 g	1.1 g	0.17 g	11340.10 g	In Tolerance
25 lb	WM25-8	11340.86 g	1.1 g	0.17 g	11339.99 g	Adjusted

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Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standard, the standard uncertainty for the measurement process, the standard uncertainty for any uncorrected errors associated with buoyancy corrections (applies to mass values only), the standard uncertainty for any uncorrected errors associated with temperature correction (applies to length and volume values only), and a component of uncertainty to account for any observed deviations from NIST (The National Institute of Standards and Technology) values that are less than surveillance limits. The combined standard uncertainty is multiplied by a coverage factor of 2 to give 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 1993 ISO Guide to the Expression of Uncertainty in Measurement and follows NISTIR 6969, SOP 29. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Traceability Statement:

The Kansas Metrology Laboratory Standards are traceable to the SI through NIST 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.

Condition of Item(s) Submitted for Testing:

Minor wear.

Treatment of Item(s) before Testing:

Item(s) were tested as found.

Documentary Standards:

NIST Handbook 105 Series
NISTIR 6969: SOP 8, SOP 4, and/or SOP 7
OR
ASTM E 617-13 or OIML R 111-1 2004(E)

Environmental Conditions:

Temperature: 21.0 °C
Barometric Pressure: 732.63 mmHg
Relative Humidity: 45.1 %

Test Date: 3/16/2016

Due Date: 3/16/2017 -Per state statute K.S.A. 83-304(a).

Keith Arkenberg , Metrologist

3/16/2016



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Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm (NIST Class F)	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
1 kg	WM-2-89-4 1	999.998 g	0.10 g	0.012 g	999.998 g	In Tolerance
500 g	WM-2-89-4 2	499.9911 g	0.070 g	0.0084 g	499.9911 g	In Tolerance
200 g	WM-2-89-4 3	199.9934 g	0.040 g	0.0048 g	199.9934 g	In Tolerance
200 g	WM-2-89-4 4	199.9946 g	0.040 g	0.0048 g	199.9946 g	In Tolerance
100 g	WM-2-89-4	100.0019 g	0.020 g	0.0024 g	100.0019 g	In Tolerance
50 g	WM-2-89-4	49.9937 g	0.010 g	0.0012 g	49.9937 g	In Tolerance
20 g	WM-2-89-4	20.00122 g	0.0040 g	0.00047 g	20.00122 g	In Tolerance
20 g	WM-2-89-4 •	20.00138 g	0.0040 g	0.00047 g	20.00138 g	In Tolerance
10 g	WM-2-89-4	9.99902 g	0.0020 g	0.00024 g	9.99902 g	In Tolerance
5 g	WM-2-89-4	5.00002 g	0.0015 g	0.00018 g	5.00002 g	In Tolerance
2 g	WM-2-89-4	2.00048 g	0.0011 g	0.00014 g	2.00048 g	In Tolerance
2 g	WM-2-89-4 •	2.00055 g	0.0011 g	0.00014 g	2.00055 g	In Tolerance
1 g	WM-2-89-4	0.99975 g	0.00090 g	0.00011 g	0.99975 g	In Tolerance
500 mg	WM-2-89-4	0.500292 g	0.00072 g	0.000096 g	0.500292 g	In Tolerance
200 mg	WM-2-89-4	0.200288 g	0.00054 g	0.000078 g	0.200288 g	In Tolerance
200 mg	WM-2-89-4	0.200198 g	0.00054 g	0.000078 g	0.200198 g	In Tolerance
100 mg	WM-2-89-4	0.099936 g	0.00043 g	0.000067 g	0.099936 g	In Tolerance

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