



Colorado Department of Agriculture
Inspection and Consumer Services Division
Metrology Laboratory
3125 Wyandot Street
Denver, CO 80211-3824
(303) 867-4270 FAX (303) 477-4248
www.colorado.gov/ag/ics



CALIBRATION CERTIFICATE # 14-232A

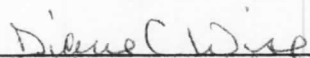
Customer Name Tensitron, Inc.
Customer Address 733 South Bowen Street, Longmont CO 80501-6302
Submitted By Stan Saxl
Certificate Date June 27, 2014
Calibration Date June 20, 2014
Calibration Due N/A
Serial Number(s) A through S
Manufacturer unknown
Description 10 lb Steel hanging weights with hanger
Condition Received Good
Procedure Used National Institute of Standards and Technology (NIST) NISTIR 6969:2012 SOP 7, Weighing by Single Substitution

Traceability This certificate has been issued under the authority of the Commissioner of the Colorado Department of Agriculture, Inspection and Consumer Services Division, pursuant to the State of Colorado Revised Statute Title 35 Article 14. Standards used for comparison are traceable to the International System of Units (SI) through standards at NIST, by way of the certificate number above.

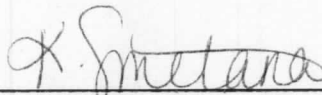
Uncertainty The combined standard uncertainty of the measurements is multiplied by the coverage factor k listed in the table on page 2 (based on available degrees of freedom) to give an expanded uncertainty which defines an interval having a level of confidence of 95.45 %. The expanded uncertainty presented in this report was calculated according to the BIPM JCGM 100:2008 *Evaluation of measurement data – Guide to the expression of uncertainty in measurement* (GUM 1995 with 2010 minor corrections). Uncertainty components evaluated may include, but are not limited to, standard deviation of the process, mass standard uncertainties, the uncertainty for magnitude of the air buoyancy correction and/or for any uncorrected errors associated with air buoyancy corrections, uncertainties associated with densities of the standards and test items, and a component to account for any observed deviations from mass standard values that are less than surveillance limits.

Magnetism None of the weights used for this calibration have been tested for magnetic properties, and no magnetism components are included in the uncertainty budget.

Metrologist(s) performing calibration



Diane Wise, Metrologist
Authorized Signatory



Kate Smetana, Metrologist

Environmental Conditions at Time of Calibration

	minimum	units	maximum	units
Temperature:	20.8	°C	21.0	°C
Barometric Pressure:	628.0	mm Hg	628.2	mm Hg
Relative Humidity:	46.7	%	50.6	%

Conversion Factors from NIST Special Publication 811:2008, *Guide for the Use of the International System of Units (SI)*
1 pound (avoirdupois) (lb) = 0.45359237 kilogram (kg)
1 ounce (avoirdupois) (oz) = 0.02834952 kilogram (kg)

MS Invoice # 1236

This document shall not be reproduced except in full, without written laboratory approval.
The reported values relate only to the item(s) calibrated.

CO Dept. of Agriculture, Metrology Laboratory**Calibration Certificate # 14-232A**

Tensitron, Inc.

Certificate Date: June 27, 2014



Nominal Value (lb)	ID	Conventional Mass Correction	Tolerance	Uncertainty	<i>k</i>
		g	± g	± g	
10	A	0.011	0.45	0.021	2.02
10	B	0.117	0.45	0.021	2.02
10	C	- 0.024	0.45	0.021	2.02
10	D	- 0.064	0.45	0.021	2.02
10	E	0.064	0.45	0.021	2.02
10	F	0.150	0.45	0.021	2.02
10	G	0.018	0.45	0.021	2.02
10	H	0.063	0.45	0.021	2.02
10	I	0.195	0.45	0.021	2.02
10	J	0.107	0.45	0.021	2.02
10	K	0.104	0.45	0.021	2.02
10	L	0.249	0.45	0.021	2.02
10	M	- 0.145	0.45	0.021	2.02
10	N	0.034	0.45	0.021	2.02
10	O	- 0.003	0.45	0.021	2.02
10	P	0.173	0.45	0.021	2.02
10	Q	0.231	0.45	0.021	2.02
10	R	0.052	0.45	0.021	2.02
10	S	0.172	0.45	0.021	2.02
10	Hanger	- 0.620	0.45	0.021	2.02

Supplemental Information:

All items were left "as found", except as listed in the "As Found" column. All items were left "as found", no adjustments were made. With the exception of the 10 lb hanger, the item(s) were found at time of test, or adjusted, to meet the tolerances stated in NIST Handbook 105-1:1990, *Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures (Field Standard Weights (NIST Class F))*.

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CALIBRATION CERTIFICATE # 14-232B

Customer Name Tensitron, Inc.
Customer Address 733 South Bowen Street, Longmont CO 80501-6302
Submitted By Stan Saxl
Certificate Date June 27, 2014
Calibration Date June 20, 2014
Calibration Due N/A
Serial Number(s) See table
Manufacturer unknown
Description 3 lb through 1 lb aluminum hanging weights with hanger
Condition Received Good
Procedure Used National Institute of Standards and Technology (NIST) NISTIR 6969:2012 SOP 7, Weighing by Single Substitution

Traceability This certificate has been issued under the authority of the Commissioner of the Colorado Department of Agriculture, Inspection and Consumer Services Division, pursuant to the State of Colorado Revised Statute Title 35 Article 14. Standards used for comparison are traceable to the International System of Units (SI) through standards at NIST, by way of the certificate number above.

Uncertainty The combined standard uncertainty of the measurements is multiplied by the coverage factor k listed in the table on page 2 (based on available degrees of freedom) to give an expanded uncertainty which defines an interval having a level of confidence of 95.45 %. The expanded uncertainty presented in this report was calculated according to the BIPM JCGM 100:2008 *Evaluation of measurement data – Guide to the expression of uncertainty in measurement* (GUM 1995 with 2010 minor corrections). Uncertainty components evaluated may include, but are not limited to, standard deviation of the process, mass standard uncertainties, the uncertainty for magnitude of the air buoyancy correction and/or for any uncorrected errors associated with air buoyancy corrections, uncertainties associated with densities of the standards and test items, and a component to account for any observed deviations from mass standard values that are less than surveillance limits.

Magnetism None of the weights used for this calibration have been tested for magnetic properties, and no magnetism components are included in the uncertainty budget.

Metrologist(s) performing calibration

Diane Wise, Metrologist
Authorized Signatory

Kate Smetana, Metrologist

Environmental Conditions at Time of Calibration

	minimum	units	maximum	units
Temperature:	20.8	°C	21.0	°C
Barometric Pressure:	628.0	mm Hg	628.2	mm Hg
Relative Humidity:	46.7	%	50.6	%

Conversion Factors from NIST Special Publication 811:2008, *Guide for the Use of the International System of Units (SI)*
1 pound (avoirdupois) (lb) = 0.45359237 kilogram (kg)
1 ounce (avoirdupois) (oz) = 0.02834952 kilogram (kg)

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CO Dept. of Agriculture, Metrology Laboratory

Calibration Certificate # 14-232B

Tensitron, Inc.

Certificate Date: June 27, 2014



Nominal Value (lb)	ID	As Found g	Conventional Mass Correction	Tolerance \pm g	Uncertainty \pm g	<i>k</i>
			As Left g			
3	3 lb		0.023	0.140	0.011	2.02
2	Hanger	- 1.2050	0.0597	0.091	0.0045	2.02
1.5			0.0086	0.070	0.0025	2.02
1.5	•		0.0308	0.070	0.0025	2.02
1			0.0050	0.070	0.0025	2.02
1	•		0.0088	0.070	0.0025	2.02

Supplemental Information:

All items were left "as found", except as listed in the "As Found" column. All items were left "as found", no adjustments were made. The item(s) were found at time of test, or adjusted, to meet the tolerances stated in NIST Handbook 105-1:1990, *Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures (Field Standard Weights (NIST Class F))*.

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CALIBRATION CERTIFICATE # 14-232C

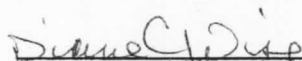
Customer Name Tensitron, Inc.
Customer Address 733 South Bowen Street, Longmont CO 80501-6302
Submitted By Stan Saxl
Certificate Date June 27, 2014
Calibration Date June 20, 2014
Calibration Due N/A
Serial Number(s) See table
Manufacturer unknown
Description 2 kg to 5 g hanging weights
Condition Received Good
Procedure Used National Institute of Standards and Technology (NIST) NISTIR 6969:2012 SOP 7, Weighing by Single Substitution

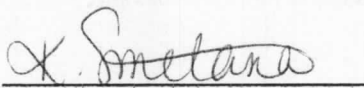
Traceability This certificate has been issued under the authority of the Commissioner of the Colorado Department of Agriculture, Inspection and Consumer Services Division, pursuant to the State of Colorado Revised Statute Title 35 Article 14. Standards used for comparison are traceable to the International System of Units (SI) through standards at NIST, by way of the certificate number above.

Uncertainty The combined standard uncertainty of the measurements is multiplied by the coverage factor k listed in the table on page 2 (based on available degrees of freedom) to give an expanded uncertainty which defines an interval having a level of confidence of 95.45 %. The expanded uncertainty presented in this report was calculated according to the BIPM JCGM 100:2008 *Evaluation of measurement data – Guide to the expression of uncertainty in measurement* (GUM 1995 with 2010 minor corrections). Uncertainty components evaluated may include, but are not limited to, standard deviation of the process, mass standard uncertainties, the uncertainty for magnitude of the air buoyancy correction and/or for any uncorrected errors associated with air buoyancy corrections, uncertainties associated with densities of the standards and test items, and a component to account for any observed deviations from mass standard values that are less than surveillance limits.

Magnetism None of the weights used for this calibration have been tested for magnetic properties, and no magnetism components are included in the uncertainty budget.

Metrologist(s) performing calibration


Diane Wise, Metrologist
Authorized Signatory


Kate Smetana, Metrologist

Environmental Conditions at Time of Calibration

	minimum	units	maximum	units
Temperature:	21.0	°C	21.1	°C
Barometric Pressure:	628.0	mm Hg	628.0	mm Hg
Relative Humidity:	46.6	%	48.2	%

MS Invoice # 1236

CO Dept. of Agriculture, Metrology Laboratory
Calibration Certificate # 14-232C

Tensitron, Inc.

Certificate Date: June 27, 2014



Nominal Value	ID	Conventional Mass Correction	Tolerance	Uncertainty	k
		g	± g	± g	
2000	2 KILO	0.029	0.20	0.010	2.02
2000	2000 M	0.003	0.20	0.010	2.02
1500	1500 N	0.0029	0.15	0.0076	2.03
1000	B	- 0.0661	0.10	0.0049	2.03
1000	F	0.0085	0.10	0.0049	2.03
500	500 U	0.0021	0.07	0.0027	2.02
500	500 V	- 0.0027	0.07	0.0027	2.02
250	250 S	0.0075	0.05	0.0015	2.02
250	250 T	- 0.0035	0.05	0.0015	2.02
200	200 W	0.0001	0.04	0.0015	2.03
		mg	± mg	± mg	k
100	100 P	5.54	20	0.55	2.02
100	100 Q	- 1.92	20	0.55	2.02
100	100 R	6.17	20	0.55	2.02
50	50 X	1.30	10	0.32	2.02
50	50 Y	- 0.34	10	0.32	2.01
50	50 Z	- 1.53	10	0.32	2.01
10		1.054	2	0.069	2.01
10	•	0.685	2	0.069	2.01
10	••	0.785	2	0.069	2.01
10	•••	0.315	2	0.069	2.02
5		0.101	1.5	0.051	2.02
5	•	0.350	1.5	0.051	2.02

Supplemental Information:

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