



Receipt Date: November 26, 2018
 Cal. Date: December 14, 2018
 Report Date: December 14, 2018

Report No.: 340219
 Set Serial No.: #HSS 2G/5500
 Barcode: 202652

Calibration Certificate

HAWKEYE STATE SCALE
 5040 BLAIRS FOREST WAY NE
 CEDAR RAPIDS, IA 52402
 Contact: DUANE SYTSMA
 Phone: 319-364-4173
 PO Number: NONE
 SOP: NIST SOP 4
 Technician ID: 19

Item(s) Submitted: Metric Weight Set - ASTM 2
 Manufacturer: Rice Lake
 Weight Type: I & II
 Equipment ID: None
 Condition: Good
 Temperature: 20.0 °C
 Pressure: 741.4 mmHg
 Relative Humidity: 47.4 %

Nominal Value	Serial No.	CM Correction (mg)		ASTM E617 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
2000 g		2.4	2.4	2	2	2.03	3.1
1000 g		1.00	1.00	2	2	2.03	0.37
1000 . g		1.05	1.05	2	2	2.03	0.37
500 g		0.46	0.46	2	2	2.02	0.33
100 g		0.242	0.242	2	2	2.02	0.043
100 . g		0.232	0.232	2	2	2.02	0.043
100 .. g		0.272	0.272	2	2	2.02	0.043
100 ... g		0.297	0.297	2	2	2.02	0.043
50 g		0.132	0.132	2	2	2.02	0.040
50 . g		0.087	0.087	2	2	2.02	0.040
20 g		0.041	0.041	2	2	2.07	0.033
10 g		0.021	0.021	2	2	2.07	0.019
5 g		0.0205	0.0205	2	2	2.03	0.0059
2 g		0.0082	0.0082	2	2	2.03	0.0036
2 . g		0.0107	0.0107	2	2	2.03	0.0036
1 g		0.0203	0.0203	2	2	2.03	0.0034



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Continued,

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Manufacturer: Rice Lake
Weight Type: I & II
Equipment ID: None
Condition: Good
Temperature: 20.0 °C
Pressure: 741.4 mmHg
Relative Humidity: 47.4 %

Nominal Value	Serial No.	CM Correction (mg)		ASTM E617 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
0.5 g		0.0005	0.0005	2	2	2.03	0.0037
0.2 g		0.0031	0.0031	2	2	2.03	0.0028
0.2 g		0.0031	0.0031	2	2	2.03	0.0028
0.1 g		0.0041	0.0041	2	2	2.04	0.0027
0.05 g		-0.0009	-0.0009	2	2	2.04	0.0027
0.02 g		0.0042	0.0042	2	2	2.03	0.0025
0.02 g		0.0057	0.0057	2	2	2.03	0.0025
0.01 g		0.0031	0.0031	2	2	2.03	0.0025
0.005 g		0.0046	0.0046	2	2	2.03	0.0018
0.002 g		0.0028	0.0028	2	2	2.04	0.0021
0.002 g		0.0048	0.0048	2	2	2.04	0.0021
0.001 g		0.0039	0.0039	2	2	2.04	0.0023

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm³ density and an air density of 1.2 mg/cm³. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to ASTM E617 (2013) and SAP 20. Uncertainty calculations contain the components in NIST SOP 4 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin


Metrologist

Reviewed by:

Pete Whebbe



Metrologist

