

Receipt Date: November 28, 2016
Cal. Date: November 29, 2016
Report Date: November 29, 2016

Report No.: 336830
Set Serial No.: 4.55 thru 4.64
Barcode: 203119

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: 8
Technician ID: 11

Item(s) Submitted: Plated Steel Cylinder Weights
Manufacturer: Toledo
Weight Type: II
Equipment ID: None
Condition: Poor
Temperature: 20.6 °C
Pressure: 719.4 mmHg
Relative Humidity: 48.1 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
10 lb	4.55	-223	-223	F	F	2.02	15
10 lb	4.56	-9	-9	F	F	2.02	15
5 lb	4.57	-2	-2	F	F	2.02	12
2 lb	4.58	-26.5	-26.5	F	F	2.02	4.8
2 lb	4.59	-36.3	-36.3	F	F	2.02	4.8
1 lb	4.60	-36.7	-36.7	F	F	2.02	2.8
1 lb	4.61	-42.8	-42.8	F	F	2.02	2.8
1 lb	4.62	-46.2	-46.2	F	F	2.02	2.8
8 oz	4.63	-22.9	-22.9	F	F	2.02	2.3
4 oz	4.64	-87.58	-87.58	*	**	2.00	0.60

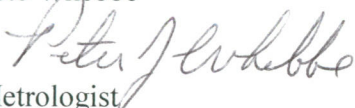
Plated weights do not meet NIST Handbook 105-1 specifications for surface coating and will not be adjusted if out of tolerance.

* Weight(s) as found exceed NIST Class F Tolerance.

** Weight(s) as left exceed NIST Class F Tolerance.

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 at 20 °C. 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 NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 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.

Pete Whebbe



Metrologist

Reviewed by:

Erik Alfvin



Metrologist