



Receipt Date: February 3, 2017
Cal. Date: February 10, 2017
Report Date: February 10, 2017

Report No.: 337192
Set Serial No.: 21108/WS 1
Barcode: 202331

Calibration Certificate

TOSHIBA GLOBAL COMM SOLUTIONS
15440 GRANTLEY DRIVE
CHESTERFIELD, MO 63017
Contact: ANGELA ORIGLIASSO
Phone: 636-778-0618
PO Number: None
SOP: 8
Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - F
Manufacturer: Rice Lake
Weight Type: I & II
Equipment ID: None
Condition: Good
Temperature: 19.0 °C
Pressure: 726.2 mmHg
Relative Humidity: 46.3 %

Nominal Value	Serial No.	<u>CM Correction (mg)</u>		<u>NIST HB105-1 Class</u>		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb	1	57.4	57.4	F	F	2.01	6.0
5 lb	2	76.4	76.4	F	F	2.01	6.0
5 lb	3	77.4	77.4	F	F	2.01	6.0
5 lb	4	70.4	70.4	F	F	2.01	6.0
5 lb	5	81.4	81.4	F	F	2.01	6.0
1 lb	6	7.6	7.6	F	F	2.01	1.6
1 lb	7	31.4	31.4	F	F	2.01	1.6
1 lb	8	15.8	15.8	F	F	2.01	1.6
1 lb	9	32.7	32.7	F	F	2.01	1.6
1 lb	10	12.5	12.5	F	F	2.01	1.6
0.5 lb		8.8	8.8	F	F	2.02	1.3
0.2 lb		1.76	1.76	F	F	2.02	0.22
0.2 lb		1.53	1.53	F	F	2.02	0.22
0.1 lb		5.85	5.85	F	F	2.02	0.14
0.05 lb		2.15	2.15	F	F	2.02	0.11
0.02 lb		0.849	0.849	F	F	2.02	0.066
0.02 lb		1.037	1.037	F	F	2.02	0.066
0.01 lb		0.137	0.137	F	F	2.02	0.052



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Relative Humidity: 46.3 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
0.005 lb		0.798	0.798	F	F	2.02	0.073
0.002 lb		0.131	0.131	F	F	2.02	0.047
0.002 lb		0.066	0.066	F	F	2.02	0.047
0.001 lb		0.018	0.018	F	F	2.02	0.041

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.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist

United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Minnesota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

Scope

Mass Echelon I 10 kg to 1 mg	Mass Echelon III 50 kg to 1 mg 5000 lb to 0.001 lb 4 oz to 0.03125 oz	Volume Gravimetric, I 20 L to 10 mL 100 gal to 0.25 qt
Mass Echelon II 50 kg to 1 mg 1000 lb to 0.001 lb 4 oz to 0.03125 oz	Weight Carts 10 000 lb to 2000 lb Wheel Load Weighers 20 000 lb to 2000 lb Railroad Test Cars 110 000 lb to 80 000 lb	Volume Transfer, II 1500 gal to 5 gal 100 gal to 25 gal LPG



2017

Georgia L. Harris
Georgia L. Harris, Acting Chief
NIST Office of Weights and Measures

Effective Dates: 2017-01-01 to 2017-12-31

Amended: 2016-12-31
Scope modified for 2017.