

BUREAU OF STANDARDS  
PO Box 12345  
City, State 12345-1234

**COMPLIANT CALIBRATION LABORATORY**  
123 Some Ave.  
City, State 12312-1231

**REPORT OF CALIBRATION**  
FOR  
**1 kg to 10 mg weight kit**  
(Twenty-one metric weights)

Maker: DENTROM LAKE  
Serial No.: 27269

Lab Test No. : TI-01-056  
NMI Test No.: 822/1234

SUBMITTED BY

**YOUR CUSTOMER, INC.**

Customer's Address  
City, State

Nominal (g)	Conventional Mass (g)	Conventional Mass Correction (mg)	Expanded Uncertainty (mg)
1 000	1 000.000 82	0.82	0.92
500	500.000 71	0.71	0.53
300	299.999 87	- 0.13	0.27
200	200.000 67	0.67	0.18
100	100.000 411	0.411	0.091
50	50.000 318	0.318	0.051
30	30.000 117	0.117	0.028
20	19.999 987	- 0.013	0.023
10	10.000 011	0.011	0.018
5	5.000 022	0.022	0.015
3	3.000 112	0.112	0.013
2	1.999 965	- 0.035	0.012
1	1.000 117	0.117	0.010
0.500	0.500 013 2	0.013 2	0.005 1
0.300	0.300 022 3	0.022 3	0.004 8
0.200	0.200 001 7	0.001 7	0.004 3
0.100	0.100 001 3	0.001 3	0.004 2
0.050	0.050 001 8	0.001 8	0.004 0
0.030	0.030 001 1	0.001 1	0.003 7
0.020	0.020 000 9	0.000 9	0.003 3
0.010	0.009 999 7	- 0.000 3	0.003 1

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

**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, and a component of uncertainty to account for any observed deviations from NIST 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. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

**Traceability statement:**

The Standards of the Compliant Calibration Laboratory are traceable to the National Metrology Institute, 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.

**Supplemental Information****Description of artifacts submitted for testing:**

Twenty one metric weights from 1 kg to 10 mg, marked ASTM Class 4. Weights from 1 kg to 1 g: two-piece weights, with assumed density of 8.0 g/cm<sup>3</sup>. Weights from 500 mg to 50 mg: sheet weights, with assumed density of 16.6 g/cm<sup>3</sup>. Weights from 30 mg to 10 mg: sheet weights, with assumed density of 2.7 g/cm<sup>3</sup>.

**Conditions of artifacts submitted for testing:**

Artifacts showed evidence of improper handling. Fingerprints and dents were visible on the surface of the weights.

**Treatment of artifacts prior to testing:**

Artifacts were cleaned with cheesecloth and ethyl alcohol. Thermal equilibrium time/conditions: ten days next to balances in mass lab.

**Equipment used for testing:**

Balance	Range	Std's Used	Calibration due
AT1005	1 kg to 200 g	Set H	2/31/2002
AT106	100 g to 10 g	Set H	2/31/2002
UMT5/6	5 g to 10 mg	Set H	2/31/2002

**Assumed Density of Reference Standards:**

1 kg to 1 g: 7.94 g/cm<sup>3</sup>      500 mg to 10 mg: 8.41 g/cm<sup>3</sup>

**Procedure used:**

Double Substitution (NIST HB 145, SOP 4)

**Environmental conditions at time of test:**

Temperature: 20.1 °C to 20.2 °C      Barometric Pressure: 752.7 mmHg      Relative Humidity: 43.35 % to 43.40 %

Date artifacts were received: February 15, 2001

Date of report preparation: March 3, 2002

Date of test: February 25, 2001

Due date per customer's request: February 25, 2002

*Josh Balani II*

Test performed by: Josh Balani II  
Metrology Expert

Member: ARMAP  
NCSLI  
NCWM  
ASQ

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