

Vermont Weights and Measures Metrology Laboratory
Test Report

Issued To:

Advanced Scale
13 Delta Drive Unit 6
Londonderry, NH 03053-2372
603-626-0242

Date of Receipt: January 22, 2021

Vermont Test Number: VT21-26

Date of Test: January 25, 2021

Report of Test for Item (Make/Model/Serial Number(s)/#Pieces):

Various/Cast Field Standards/See Chart/40 - 50 lb, 6 - 25 lb, 2 - 20 kg, 3 - 10 kg

The mass standards described above have been compared to the standards of the State of Vermont, by NISTIR 6969, SOP 8 (2019), and have been found at time of test, or been adjusted, to meet the maximum permissible errors stated in ASTM E617-18 Standard Specification for Laboratory Weights and Precision Mass Standards. Standards of the state of Vermont are traceable to the SI and National Institute of Standards and Technology (NIST). The Vermont Laboratory is recognized by NIST, under the Laboratory Metrology Program at Mass Echelon III. The mass standards described above were found to have a mass value at the time of test as indicated in the following tabulation. Weights are considered within the MPE when the absolute value of the conventional mass correction plus the uncertainty is less than or equal to the specified MPE. Weights received with a conventional mass outside the MPE show a value in the "before adjustment" column.

The uncertainties shown are expressed as the sum of the following sources of inaccuracy; (1) Type B, systematic uncertainties relative to the reference standard and procedure used, and (2) Type A, random uncertainties determined by the standard deviation of the measurement process. Type A and Type B uncertainties are combined by the root sum squared method and multiplied by a coverage factor of k (in chart) for an approximate 95 % confidence interval.

Environmental conditions at time of test:

Temperature: 22.3 °C to 22.5 °C

Relative Humidity: 44.1 % to 44.3 %

Barometric Pressure: 726.00 mmHg to 726.20 mmHg

Mass Comparator: MT XP64003L

Technician: Scott Dolan, Michael Larose



Nominal & Marking	Conventional Mass Correction Before Adjustment	Conventional Mass Correction As Left	Uncertainty	ASTM Class 6 MPE	Units	<i>k</i> Factor
50 lb 100		-407	80	2300	mg	2.02
50 lb 101		-382	80	2300	mg	2.02
50 lb 102	-2057	553	80	2300	mg	2.02
50 lb 103	-2477	-197	80	2300	mg	2.02
50 lb 104		653	80	2300	mg	2.02
50 lb 105		-1562	80	2300	mg	2.02
50 lb 106		8	80	2300	mg	2.02
50 lb 107		-1522	80	2300	mg	2.02
50 lb 108	-3107	58	80	2300	mg	2.02
50 lb 109	-2547	208	80	2300	mg	2.02
50 lb 110		-292	80	2300	mg	2.02
50 lb 111	-2717	118	80	2300	mg	2.02
50 lb 112		-1597	80	2300	mg	2.02
50 lb 113	-2082	-42	80	2300	mg	2.02
50 lb 114		-1182	80	2300	mg	2.02
50 lb 115	-2142	3	80	2300	mg	2.02
50 lb 116	-2947	-62	80	2300	mg	2.02
50 lb 117		-1612	80	2300	mg	2.02
50 lb 118		-812	80	2300	mg	2.02
50 lb 119		-512	80	2300	mg	2.02
50 lb 300		-897	80	2300	mg	2.02
50 lb 301		-412	80	2300	mg	2.02
50 lb 302		-1927	80	2300	mg	2.02
50 lb 303		-572	80	2300	mg	2.02
50 lb 304		88	80	2300	mg	2.02
50 lb 305	-2347	428	80	2300	mg	2.02
50 lb 306		-892	80	2300	mg	2.02
50 lb 307		-967	80	2300	mg	2.02
50 lb 308		-1422	80	2300	mg	2.02
50 lb 309		-1432	80	2300	mg	2.02
50 lb 310		-1207	80	2300	mg	2.02
50 lb 311		-912	80	2300	mg	2.02
50 lb 312	-2417	-72	80	2300	mg	2.02
50 lb 313	-3262	-207	80	2300	mg	2.02
50 lb 314		-757	80	2300	mg	2.02
50 lb 315		-1212	80	2300	mg	2.02
50 lb 316		-902	80	2300	mg	2.02
50 lb 317		113	80	2300	mg	2.02
50 lb 318		-1487	80	2300	mg	2.02
50 lb 319		-1117	80	2300	mg	2.02
25 lb 160		-888	33	1100	mg	2.02
25 lb 161		-603	33	1100	mg	2.02
25 lb 260		-438	33	1100	mg	2.02
25 lb 261		-183	33	1100	mg	2.02
25 lb 360		-928	33	1100	mg	2.02

25 lb 361	-1923	112	33	1100	mg	2.02
20 kg 431		425	75	2000	mg	2.02
20 kg 432		-1110	75	2000	mg	2.02
10 kg 430		483	29	1000	mg	2.02
10 kg 433		-2	29	1000	mg	2.02
10 kg 434		-627	29	1000	mg	2.02

MPE: Maximum Permissible Error

In addition to meeting ASTM E617-18 Class 6 MPE, all standard also meet NIST Class F Tolerance requirements.

The following weights were adjusted: 102, 103, 108, 109, 111, 113, 115, 116, 305, 312, 313, 361

Calibration Performed at:
163 Admin Drive
Randolph Center, VT 05061

Additional documentation material available on request.

Scott Dolan

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Scott Dolan/Vermont Agency of Agriculture
Consumer Protection Section/Metrologist
Consumer Protection Specialist

End of Report