

**Traceable Certificate Number:** 3596085A  
**Contractor:** ADVANCED SCALE INC  
 13 DELTA DR UNIT 6  
 LONDONDERRY, NH 03053

**Purchase Order Number:** 10217  
**Client:** ADVANCED SCALE INC  
 13 DELTA DR UNIT 6  
 LONDONDERRY, NH 03053

**Date Received:** 22 Aug 2023  
**Date Calibrated:** 26 Aug 2023 to 30 Aug 2023  
**Recalibration Date:** 26 Aug 2024  
**NIST Certificate Number:** 684Q/O-0000036452-22

If there are two NIST numbers, one or both may apply

**Calibrated By:** 20, 17  
**Procedure:** WI05-0095 Rev. D  
**Condition of Weights:** Acceptable for Calibration  
**Description of Weights:** 2 mg to 100 g Polished Weight Kit, ASTM Class 1, S/N N473  
**Comments:**



**Key Notes**

- Finish Indicates the weight does not meet the finish requirements
- Material Indicates the weight does not meet the material requirements
- New Wt Indicates new weight
- Missing Wt Indicates replaced missing weight with new weight
- Damaged Wt Indicates replaced damaged weight
- Replaced OOT Indicates replaced out of tolerance weight
- OOT Indicates correction plus or minus Uncertainty greater than or equal to MPE
- Magnetic Wt Indicates replaced magnetic weight
- Design Indicates the weight does not meet the design or shape requirements
- Repainted Indicates the weight was repainted after As Found obtained
- Other See comments above

**Cleaning Levels**

- A Dusted with brush or cloth
- B Spot cleaned with ethyl alcohol
- C Full surface cleaned with ethyl alcohol
- D Spot cleaned with non-alcohol solvent followed by ethyl alcohol
- E Full surface cleaned with non-alcohol solvent followed by ethyl alcohol
- F No cleaning performed

**Material Abbreviations**

AL	Aluminum	TA	Tantalum
SS	Stainless Steel	BR	Brass
CI	Cast Iron	PL	Platinum
IR	Iron	NS	Nickel Silver
MS	Mild Steel	OR	Other/Unknown

Check with your local state agency for certification of compliance on Legal-for-Trade items. The weight accuracy class is referenced in the Description of Weights. Unless otherwise noted, the weights calibrated meet the requirements of the accuracy class. Results relate only to weights calibrated. The Surface Finishes of weights are evaluated visually. Weights are screened for magnetism using work instruction WI05-0035 when they are new, when requested by the customer or when weights are suspected of not meeting specifications. Density if measured is measured using OIML R111-1 (2004) method A2. Conventional Mass is reported based on a reference density of 8.0 g/cm<sup>3</sup>. The Uncertainty of Measurement is included in the determination of Maximum Permissible Error (MPE) Pass/Fail Criteria. The specifications for Maximum Permissible Error (MPE) can be found in NIST Handbook 105-1 (2019), NIST Handbook 105-1 (1990), ASTM E617-18 or OIML R111-1 (2004), manufacturer specifications or customer specifications.

The Uncertainty assigned to the Conventional Mass values are the result of the root-sum-square of the type A and type B components, calculated in accordance with NIST SOP 29 and the Guide to the expression of uncertainty in measurement, with coverage factor (k=2), to express the expanded uncertainty with an approximate 95.45% confidence level. This report is not to be used to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any government agency. **This document and all data within, shall not be reproduced, except in full, without the written approval of Rice Lake Weighing Systems.**

Dan Demers, Metrologist

**30 Aug 2023**  
 Issued Date:



Prepared By:  
**Rice Lake Weighing Systems**® • PN 64784 • 12/21  
 230 West Coleman Street • Rice Lake, WI 54868 • USA  
 TEL: 715-234-9171 • FAX: 715-234-6967  
 Definitions: <http://certs.ricelake.com/certs/DefinitionsV2.docx>  
 Page 1 of 2



# Certificate of Weight Calibration

ISO/IEC 17025 & ANSI/NCSL-Z540-1-1994 ACCREDITED

Traceable Certificate Number: 3596085A  
 Client: ADVANCED SCALE INC  
 Date Calibrated: 26 Aug 2023 to 30 Aug 2023

Temperature Range: 21.54 °C to 21.70 °C  
 Pressure Range: 729.88 mmHg to 736.56 mmHg  
 Relative Humidity Range: 47 % to 53 %

**As Left Data (As Found Data is undifferentiated from As Left Data unless listed in As Found Data table)**

Nominal Value	Unique ID	True Mass (Same UOM as Nom.)	True Mass Corr. (mg)	Conv. Mass (Same UOM as Nom.)	Conv. Mass Corr. (mg)	(k=2) Unc. (± mg)	MPE (± mg)	MPE Pass (Y=Pass N=Fail)	Assumed Density (g/cm <sup>3</sup> )	Assumed Material	Const. Type	Balance Used	Reference Standard Set Used	Air Density (mg/cm <sup>3</sup> )	Clean Level
2 mg	N473	2.0035	0.0035	<b>2.0035</b>	<b>0.0035</b>	0.0012	0.010	Y	7.95	SS	I	503Q	L595Q	1.1539	A
2 mg	N473.	2.0047	0.0047	<b>2.0047</b>	<b>0.0047</b>	0.0012	0.010	Y	7.95	SS	I	503Q	L595Q	1.1542	A
5 mg	N473	5.00030	0.00030	<b>5.00030</b>	<b>0.00030</b>	0.00099	0.010	Y	7.95	SS	I	503Q	L595Q	1.1542	A
10 mg	N473	10.0003	0.0003	<b>10.0002</b>	<b>0.0002</b>	0.0012	0.010	Y	7.95	SS	I	503Q	L595Q	1.1539	A
20 mg	N473.	20.0058	0.0058	<b>20.0058</b>	<b>0.0058</b>	0.0012	0.010	Y	7.95	SS	I	503Q	L595Q	1.1545	A
50 mg	N473	49.99989	-0.00011	<b>49.99984</b>	<b>-0.00016</b>	0.00078	0.010	Y	7.95	SS	I	2022Q	L595Q	1.1552	A
100 mg	N473	99.99880	-0.00120	<b>99.99871</b>	<b>-0.00129</b>	0.00090	0.010	Y	7.95	SS	I	2022Q	L595Q	1.1552	A
200 mg	N473	200.00158	0.00158	<b>200.00139</b>	<b>0.00139</b>	0.00078	0.010	Y	7.95	SS	I	2022Q	L595Q	1.1552	A
200 mg	N473.	199.99230	-0.00770	<b>199.99211</b>	<b>-0.00789</b>	0.00078	0.010	Y	7.95	SS	I	2022Q	L595Q	1.1552	A
500 mg	N473	499.99561	-0.00439	<b>499.99514</b>	<b>-0.00486</b>	0.00096	0.010	Y	7.95	SS	I	2022Q	L595Q	1.1552	A
1 g	N473	0.9999880	-0.0120	<b>0.9999870</b>	<b>-0.0130</b>	0.0013	0.034	Y	7.95	SS	I	2022Q	L595Q	1.1552	A
2 g	N473	1.9999946	-0.0054	<b>1.9999927</b>	<b>-0.0073</b>	0.0015	0.034	Y	7.95	SS	II	2022Q	L595Q	1.1552	A
2 g	N473.	1.9999977	-0.0023	<b>1.9999958</b>	<b>-0.0042</b>	0.0015	0.034	Y	7.95	SS	II	2022Q	L595Q	1.1552	A
5 g	N473	5.0000210	0.0210	<b>5.0000163</b>	<b>0.0163</b>	0.0033	0.034	Y	7.95	SS	II	2022Q	L595Q	1.1544	A
10 g	N473	9.9999828	-0.0172	<b>9.9999733</b>	<b>-0.0267</b>	0.0061	0.050	Y	7.95	SS	II	2060Q	L595Q	1.1450	A
20 g	N473	19.9999811	-0.0189	<b>19.9999622</b>	<b>-0.0378</b>	0.0064	0.074	Y	7.95	SS	II	2060Q	L595Q	1.1450	A
20 g	N473.	20.0000288	0.0288	<b>20.0000100</b>	<b>0.0100</b>	0.0064	0.074	Y	7.95	SS	II	2060Q	L595Q	1.1450	A
50 g	N473.	49.999989	-0.011	<b>49.999942</b>	<b>-0.058</b>	0.013	0.12	Y	7.95	SS	II	2060Q	L595Q	1.1450	A
100 g	N473	100.000184	0.184	<b>100.000090</b>	<b>0.090</b>	0.024	0.25	Y	7.95	SS	II	2060Q	L595Q	1.1460	A

**As Found Data**

Nominal Value	Unique ID	True Mass (Same UOM as Nom.)	True Mass Corr. (mg)	Conv. Mass (Same UOM as Nom.)	Conv. Mass Corr. (mg)	(k=2) Unc. (± mg)	MPE (± mg)	MPE Pass (Y=Pass N=Fail)	Assumed Density (g/cm <sup>3</sup> )	Assumed Material	Const. Type	Balance Used	Reference Standard Set Used	Air Density (mg/cm <sup>3</sup> )	Clean Level
5 g	N473	4.9999732	-0.0268	<b>4.9999685</b>	<b>-0.0315</b>	0.0033	0.034	N <input checked="" type="checkbox"/>	7.95	SS	II	2022Q	L595Q	1.1552	A
100 g	N473	99.999590	-0.410	<b>99.999496</b>	<b>-0.504</b>	0.024	0.25	N <input checked="" type="checkbox"/>	7.95	SS	II	2060Q	L595Q	1.1450	A