


CERTIFICATE OF CALIBRATION

Issue:- 97738-21	Certificate Number: Date of Issue:	97738 12-Dec-24
Page 1 of 2	Approved Signatory: Signed:	Mark Norfolk 



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Issued by:-

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EQUIPMENT:	Weights
SERIAL NUMBER:	AH3
MAKE/TYPE:	N/A
STANDARDS USED:	Set 12412
DATE RECEIVED:	4 November 2024
DATE CALIBRATED:	15 November 2024
DETAILS:	14 Cast Iron, 1 Brass

MEASUREMENTS:

Kent Scientific Services method used: CAL SMALL, Calibration of Small Masses.

The calibrations took place in a controlled environment with the temperature held between 18°C and 22°C, and with the relative humidity held between 40% and 60%.

The measurement results obtained in the table, where each measured value given represents not the true mass, but the mass of a hypothetical weight of density 8,000 kg.m⁻³, which in air of density 1.2 kg.m⁻³ would balance the corresponding weight identified in the first column at 20°C.

The method of weighing was by substitution (Borda's method). In each instance the standard weight used had been calibrated by UKAS Calibration Laboratory number 0474, 0260 or 0352 within the previous three years. The uncertainty of measurements for each of the different denominations is listed in the last column of the table. Duplicate weights, where present, are indicated by a dot or dots.

Customer supplied information is notated with a ~, and results relate only to the item(s) calibrated.

Unless otherwise notated, samples are tested in as received condition at Kent Scientific Services.

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TABLE OF MEASUREMENT RESULTS

<u>Identity Mark</u>	<u>Nominal Mass</u>	<u>Measured Value</u>	<u>Error from Nominal</u>	<u>Estimated Uncertainty</u>
S2K	100N	10192.18 g	+ 20 mg	± 103 mg
S2L	100N	10192.07 g	- 100 mg	± 103 mg
S2M	100N	10192.12 g	- 40 mg	± 103 mg
S2N	100N	10191.99 g	- 170 mg	± 103 mg
S2J	50N	5095.893 g	- 189 mg	± 52 mg
S2H	20N	2038.399 g	- 33 mg	± 20 mg
S2I	20N	2038.379 g	- 54 mg	± 20 mg
S2G	10N	1019.190 g	- 27 mg	± 10 mg
S2F	5N	509.612 3 g	+ 4.2 mg	± 5.1 mg
PO15	5N	509.511 2 g	- 96.9 mg	± 5.1 mg
S2A #	1N	101.922 0 g	+ 0.4 mg	± 1.0 mg
S2B #	1N	101.920 7 g	- 0.9 mg	± 1.0 mg
S2C #	1N	101.921 3 g	- 0.3 mg	± 1.0 mg
S2D #	1N	101.921 2 g	- 0.5 mg	± 1.0 mg
MB2	0.5N	50.930 05 g	- 30.77 mg	± 1.61 mg
PO15 *	5N	509.612 7 g	+ 4.6 mg	± 5.1 mg

* Denotes post adjustment calibration

Adjusted back to within tolerance versus 97738_10

The basis for conversion between force units and mass units is that a 1kg mass will experience a force of g newtons where g is the strength of the local gravitational field. At Kent Scientific Services the estimated local $g = 9.81146 \text{ ms}^{-2}$.

END OF RESULTS