

CERTIFICATE OF CALIBRATION

Issue:- Certificate Number: **99054**
99054_10 Date of Issue: **10-Sep-26**
Approved Signatory: **Thomas Herrington**
Page 1 of 2 Signed: 

**Submitter:-**

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Issued by:-

Kent Scientific Services
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EQUIPMENT: Weights
SERIAL NUMBER: CL1 - CL5 (Set MB3)
MAKE/TYPE: N/A
STANDARDS USED: Set 12412
DATE RECEIVED: 9 September 2026
DATE CALIBRATED: 9 September 2026
DETAILS: 5 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>
CL1	0.5N	50.945 17 g	- 15.65 mg	± 0.61 mg
CL2	0.5N	50.948 25 g	- 12.56 mg	± 0.61 mg
CL3	0.5N	50.948 56 g	- 12.25 mg	± 0.61 mg
CL4	0.5N	50.947 58 g	- 13.24 mg	± 0.61 mg
CL5	0.5N	50.944 43 g	- 16.38 mg	± 0.61 mg

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

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.