

## CERTIFICATE OF CALIBRATION

Issue:- 97438_10	Certificate Number: Date of Issue:	97438 10-Jun-24
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<b>EQUIPMENT:</b>	Weights <a href="#">Set AH8</a>
<b>SERIAL NUMBER:</b>	PO1 - P14, S2E
<b>MAKE/TYPE:</b>	N/A
<b>STANDARDS USED:</b>	Set 12412
<b>DATE RECEIVED:</b>	31 May 2024
<b>DATE CALIBRATED:</b>	7 June 2024
<b>DETAILS:</b>	14 Cast Iron, 1 Brass

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### 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<sup>-3</sup>, which in air of density 1.2 kg.m<sup>-3</sup> 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>
P14	100N	10191.95 g	- 210 mg	± 110 mg
P13	100N	10192.10 g	- 60 mg	± 110 mg
P12	100N	10191.90 g	- 260 mg	± 110 mg
P11	100N	10191.95 g	- 210 mg	± 110 mg
P10	50N	5095.931 g	- 151 mg	± 51 mg
P09	20N	2038.392 g	- 41 mg	± 21 mg
P08	20N	2038.385 g	- 48 mg	± 21 mg
P07	10N	1019.226 g	+ 10 mg	± 11 mg
P06	5N	509.610 7 g	+ 2.5 mg	± 5.1 mg
S2E	5N	509.605 8 g	- 2.3 mg	± 5.1 mg
P05	1N	101.915 3 g	- 6.3 mg	± 1.1 mg
P04	1N	101.917 7 g	- 3.9 mg	± 1.1 mg
P03	1N	101.914 8 g	- 6.8 mg	± 1.1 mg
P02	1N	101.912 8 g	- 8.8 mg	± 1.1 mg
P01	0.5N	50.958 03 g	- 2.78 mg	± 0.61 mg
P05*	1N	101.920 4 g	- 1.2 mg	± 1.1 mg
P03*	1N	101.920 4 g	- 1.2 mg	± 1.1 mg
P02*	1N	101.918 2 g	- 3.4 mg	± 1.1 mg

\* Denotes post adjustment calibration

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