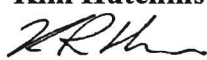


<b>CERTIFICATE OF CALIBRATION</b>		
Issue:- 93335_21	Certificate Number: Date of Issue:	93335 21-May-19
Page 1 of 2	Approved Signatory: Signed:	Kim Hutchins 



**Submitter:-**

Mecmesin Limited  
Newton House  
Spring Copse Business Park  
Slinfold  
West Sussex  
RH13 0SZ

**Issued by:-**

Kent Scientific Services  
8 Abbey Wood Road  
Kings Hill  
West Malling  
Kent  
ME19 4YT  
Tel: 03000 415 100  
Fax: 01732 220006

---

**EQUIPMENT:** Weights  
**SERIAL NUMBER:** S301 to S327  
**MAKE/TYPE:** N/A  
**STANDARDS USED:** Local Standard Set 16521  
**DATE RECEIVED:** 15 May 2019  
**DATE CALIBRATED:** 20 May 2019  
**DETAILS:** 27 x Stainless Steel, 500N Stack Parts

---

**MEASUREMENTS:**

Kent Scientific Services method used: CAL-M2, 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 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.

---

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

**TABLE OF MEASUREMENT RESULTS**

Identity Mark	Nominal Force	Measured Value	Error from Nominal	Estimated Uncertainty
S301	5 N	509.608 9 g	+ 0.8 mg	± 1.6 mg
S302	5 N	509.609 4 g	+ 1.3 mg	± 1.6 mg
S303	10 N	1,019.228 3 g	+ 12.0 mg	± 3.1 mg
S304	10 N	1,019.221 4 g	+ 5.1 mg	± 3.1 mg
S305	10 N	1,019.222 7 g	+ 6.4 mg	± 3.1 mg
S306	10 N	1,019.221 7 g	+ 5.4 mg	± 3.1 mg
S307	10 N	1,019.204 5 g	- 11.8 mg	± 3.1 mg
S308	10 N	1,019.214 2 g	- 2.1 mg	± 3.1 mg
S309	10 N	1,019.206 9 g	- 9.4 mg	± 3.1 mg
S310	10 N	1,019.219 0 g	+ 2.7 mg	± 3.1 mg
S311	10 N	1,019.224 9 g	+ 8.6 mg	± 3.1 mg
S312	10 N	1,019.224 1 g	+ 7.8 mg	± 3.1 mg
S313	10 N	1,019.217 9 g	+ 1.6 mg	± 3.1 mg
S314	10 N	1,019.217 9 g	+ 1.6 mg	± 3.1 mg
S315	10 N	1,019.208 8 g	- 7.5 mg	± 3.1 mg
S316	10 N	1,019.213 9 g	- 2.4 mg	± 3.1 mg
S317	10 N	1,019.210 9 g	- 5.4 mg	± 3.1 mg
S318	10 N	1,019.207 3 g	- 9.0 mg	± 3.1 mg
S319	10 N	1,019.214 6 g	- 1.7 mg	± 3.1 mg
S320	10 N	1,019.213 6 g	- 2.7 mg	± 3.1 mg
S321	10 N	1,019.221 8 g	+ 5.5 mg	± 3.1 mg
S322	50 N	5,096.039 g	- 43 mg	± 16 mg
S323	50 N	5,096.073 g	- 9 mg	± 16 mg
S324	50 N	5,096.108 g	+ 26 mg	± 16 mg
S325	50 N	5,096.064 g	- 17 mg	± 16 mg
S326	50 N	5,096.097 g	+ 16 mg	± 16 mg
S327	50 N	5,096.073 g	- 9 mg	± 16 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-----