

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>0103</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>Broomfield Carbide Gauges Limited</h3> <p>Issue No: 019 Issue date: 15 July 2022</p>	
	<p>Brigg Mills 3 The Cobbles Meltham Holmfirth HD9 5QQ</p>	<p>Contact: Mr G R Pearson Tel: +44 (0)1484 665599 Fax: +44 (0)844 504 6692 E-Mail: info@broomfieldgauges.com Website: www.broomfieldgauges.com</p>
<p>Calibration performed at the above address only</p>		

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ($k = 2$)	Remarks																														
<p>RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED</p>																																	
<p>LENGTH</p> <p>Gauge blocks Inch (Steel, tungsten carbide, ceramic)</p>	<p>As BS 4311:2007 & ASME B89.1.9 0.01 to 0.4 in 0.4 in to 1in 1 to 2 in 2 to 3 in 3 to 4 in Variation</p>	<p>Class (See notes)</p> <table border="0"> <tr> <td>A</td> <td>B</td> <td>C</td> <td>D</td> <td rowspan="6" style="vertical-align: middle;">} μ in.</td> </tr> <tr> <td>1.0</td> <td>2.0</td> <td>3.0</td> <td>4.0</td> </tr> <tr> <td>1.5</td> <td>2.5</td> <td>4.0</td> <td>5.0</td> </tr> <tr> <td>2.5</td> <td>3.5</td> <td>5.0</td> <td>7.0</td> </tr> <tr> <td>3.0</td> <td>4.5</td> <td>6.0</td> <td>8.0</td> </tr> <tr> <td>3.5</td> <td>5.0</td> <td>7.0</td> <td>10</td> </tr> <tr> <td colspan="4">1.0</td> <td></td> </tr> </table>	A	B	C	D	} μ in.	1.0	2.0	3.0	4.0	1.5	2.5	4.0	5.0	2.5	3.5	5.0	7.0	3.0	4.5	6.0	8.0	3.5	5.0	7.0	10	1.0					<p>NOTES</p> <p>Rectangular section gauge blocks only to ASME B89.1.9</p>
A	B	C	D	} μ in.																													
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<p>Millimetre (Steel, tungsten carbide, ceramic)</p>	<p>BS EN ISO 3650:1999 & ASME B89.1.9 0.1 to 10 10 to 25 25 to 50 50 to 75 75 to 100 Variation</p>	<table border="0"> <tr> <td>A</td> <td>B</td> <td>C</td> <td>D</td> </tr> <tr> <td>0.030</td> <td>0.050</td> <td>0.080</td> <td>0.10</td> </tr> <tr> <td>0.040</td> <td>0.060</td> <td>0.10</td> <td>0.13</td> </tr> <tr> <td>0.060</td> <td>0.090</td> <td>0.12</td> <td>0.17</td> </tr> <tr> <td>0.070</td> <td>0.11</td> <td>0.15</td> <td>0.21</td> </tr> <tr> <td>0.090</td> <td>0.13</td> <td>0.18</td> <td>0.25</td> </tr> <tr> <td colspan="4">0.03</td> </tr> </table>	A	B	C	D	0.030	0.050	0.080	0.10	0.040	0.060	0.10	0.13	0.060	0.090	0.12	0.17	0.070	0.11	0.15	0.21	0.090	0.13	0.18	0.25	0.03						
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<p>Interferometry</p> <p>Class A uncertainties apply to the measurement of length by interferometry of grade K standards of length to BS 4311:2007, BS EN ISO 3650:1999 and ASME B89.1.9 when they are measured twice, wrung to a platen by each of the two measuring faces in turn, and the mean of these two measurements stated.</p> <p>Class B uncertainties apply to the measurement of length by interferometry of grade K standards of length to BS 4311:2007, BS EN ISO 3650:1999 and ASME B89.1.9 when they are measured once, wrung to a platen by, if not otherwise specified, the left hand (unmarked) measuring face.</p> <p>Comparison</p> <p>Class C uncertainties apply to the measurement of length of gauges by comparison with grade K standards of length of a similar material. Class C uncertainties apply to new and used grade 0, 1 and 2 gauges to BS 4311:2007 and BS EN ISO 3650:1999 and new and used grade 00,0,AS1,AS2 gauges to ASME B89.1.9</p> <p>Class D uncertainties represent the best capability for the measurement of length of gauges by comparison with K grade standards of length of a dissimilar material.</p>																																	
<p>END</p>																																	



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Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand. Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation $Q[a, b]$ stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$