

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

|  |   |  |
|--|---|--|
| <br><b>UKAS</b><br>CALIBRATION<br><br>8672<br><br>Accredited to<br>ISO/IEC 17025:2017 | <b>Optimax Imaging, Inspection &amp; Measurement Ltd</b>  |  |
|  | Issue No: 014    Issue date: 22 July 2024   |  |
|  | <b>Michael Francis House</b><br>3 Trimbush Way<br>Market Harborough<br>Leicestershire<br>LE16 7XY<br>United Kingdom | <b>Contact: Mr P Clements</b><br>Tel: +44 (0) 1858 436940<br>Fax: +44 (0) 1858 436941<br>E-Mail: support@optimaxonline.com<br>Website: www.optimaxonline.com |
| Calibration performed by the Organisation at the locations specified   |   |  |

Locations covered by the organisation and their relevant activities

Site activities performed away from the locations listed above:

| Location details                         |                                       | Activity    | Location code |
|--|---------------------------------------|-------------|---------------|
| <b>Address</b><br>At customers' premises | <b>Local contact</b><br>Mr P Clements | Dimensional | B             |



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Calibration and Measurement Capability (CMC)

| Measured Quantity<br>Instrument or Gauge  | Range  | Expanded Measurement<br>Uncertainty ( $k = 2$ )  | Remarks   | Location<br>Code |
|---|--|--|---|------------------|
| MEASURING<br>INSTRUMENTS<br>AND MACHINES  |  |  | All linear calibrations<br>may be given in inch<br>units. |                  |
| Toolmakers microscopes  | 0 to 750 mm x 750 mm x 300<br>mm   | Angular: 3.0 minutes of arc<br>Linear: $1.5 + 7.0 \times \text{length in m}$<br>$\mu\text{m}$  | In house procedure<br>TMP.1702002                         | B                |
| Profile projectors  | 5 to 100 magnifications  | Magnification: 125 $\mu\text{m}$ at the<br>screen<br>Angular: 3.0 minutes of arc<br>Linear: $1.5 + 7.0 \times \text{length in m}$<br>$\mu\text{m}$   | In house procedure<br>TMP.1702001                         | B                |
| Microscopes,<br>(magnification only)  | 5 to 1000 magnifications   | Magnification: 1.0% at the<br>screen / eye piece   | In house procedure<br>TMP.1702003                         | B                |
| Performance verification of<br>co-ordinate measuring<br>machines equipped with<br>imaging probing systems<br>using the component<br>approach. | ISO 10360-7:2011 - CMM's<br><br>Length measurements over the<br>following test lengths:<br>$E_{\text{BXY}}$ 0 to 450 mm<br>$E_{\text{UZ}}$ 0 to 217.5 mm<br>$E_{\text{BV}}$ 2.75 mm to 15.00 mm<br><br>Probing performance:<br>$P_{\text{F2D}}$ using 0.5 mm to 7.0 mm<br>(test circle diameters)<br>$P_{\text{FV2D}}$ using 0.5 mm to 7.0 mm<br>(test circle diameters)<br><br>Squareness:<br>$E_{\text{SQ}}$ 0 to 225 mm | <br><br>$0.64 + (0.57 \times \text{length in m}) \mu\text{m}$<br>$0.41 + (1.26 \times \text{length in m}) \mu\text{m}$<br>$0.50 + (0.57 \times \text{length in m}) \mu\text{m}$<br><br>$0.37 \mu\text{m}$<br>$0.37 \mu\text{m}$<br><br>$3.3 \mu\text{m}$ |   | B                |



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|--|--|---|---|------------------|
| Video and digital microscopes with 2D field of view (FOV) measurement and XY measuring stage when fitted | Magnification<br>5 up to 500<br>Above 500 up to 1000<br><br>Linear - (FOV)<br>0 to 300 mm<br>Linear - (mechanical displacement)<br>0 to 300 mm | 1.0 %<br>2.0 %<br>at the screen / eye piece<br><br>0.50 +0.00050 L um<br>L in mm<br><br>0.50 +0.00050 L um<br>L in mm | In house procedures<br>TMP.1702008<br>TMP.1702009 | B                |
| Height gauges - (Simple) including vernier, dial and digital types                                       | As BS EN ISO 13225:2012<br>0 to 1000   | Length measurement error (E):<br>1.6 + (9 x length in metres)   | By comparison to end standards                    | B                |
| Height gauges (Complex) digital and electronic)  | As BS EN ISO 13225:2012<br>0 to 1000   | 1.6 + (9 x length in m)   | By comparison to end standards                    | B                |
| Height gauges (Complex) digital and electronic)  | As laboratory procedure:<br>Height Gauges<br>0 to 1000   | 1.6 + (9 x length in m)   | By comparison to end standards                    | B                |
| Optical shaft measuring machines   | Length 0 to 880<br>Diameter 0 to 160   | 0.5 + (3.0 x length in m)<br>0.5 + (3.0 x length in m)  | In house method<br>TMP.1702013                    | B                |
| END  |  |   |   |                  |



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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:  $Q[a, b] = [a^2 + b^2]^{1/2}$