

Notes

**Note 1:** A Calibration and Measurement Capability (CMC) is a description of the best result of a calibration or measurement (result with the smallest uncertainty of measurement) that is available to the laboratory's customers under normal conditions, when performing more or less routine calibrations of nearly ideal measurement standards or instruments. The CMC is described in the laboratory's scope of accreditation by: the measurement parameter/device being calibrated, the measurement range, the uncertainty associated with that range (see note 3), and remarks on additional parameters, if applicable.

**Note 2:** Calibration and Measurement Capabilities are traceable to the national measurement standards of the U.S. or to the national measurement standards of other countries and are thus traceable to the internationally accepted representation of the appropriate SI (Système International) unit.

**Note 3:** The uncertainty associated with a measurement in a CMC is an expanded uncertainty with a level of confidence of approximately 95 %, typically using a coverage factor of  $k = 2$ . However, laboratories may report a coverage factor different than  $k = 2$  to achieve the 95 % level of confidence. Units for the measurand and its uncertainty are to match. Exceptions to this occur when marketplace practice employs mixed units, such as when the artifact to be measured is labeled in non-SI units and the uncertainty is given in SI units (Example: 5 lb weight with uncertainty given in mg).

**Note 3a:** The uncertainty of a specific calibration by the laboratory may be greater than the uncertainty in the CMC due to the condition and behavior of the customer's device and specific circumstances of the calibration. The uncertainties quoted do not include possible effects on the calibrated device of transportation, long term stability, or intended use.

**Note 3b:** As the CMC represents the best measurement results achievable under normal conditions, the accredited calibration laboratory shall not report smaller uncertainty of measurement than that given in a CMC for calibrations or measurements covered by that CMC.

**Note 3c:** As described in Note 1, CMCs cover calibrations and measurements that are available to the laboratory's customers under *normal conditions*. However, the laboratory may have the capability to offer special tests, employing special conditions, which yield calibration or measurement results with lower uncertainties. Such special tests are not covered by the CMCs and are outside the laboratory's scope of accreditation. In this case, NVLAP requirements for the labeling, on calibration reports, of results outside the laboratory's scope of accreditation apply. These requirements are set out in Annex A.5 of NIST Handbook 150, Procedures and General Requirements.

**Note 4:** Uncertainties associated with field service calibration may be greater as they incorporate on-site environmental contributions, transportation effects, or other factors that affect the measurements. (This note applies only if marked in the body of the scope.)

**Note 5:** Values listed with percent (%) are percent of reading or generated value unless otherwise noted.

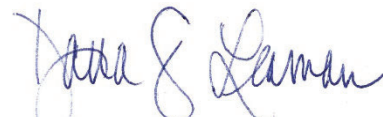
**Note 6:** NVLAP accreditation is the formal recognition of specific calibration capabilities. Neither NVLAP nor NIST guarantee the accuracy of individual calibrations made by accredited laboratories.

**Note 7:** This laboratory has field service technicians located across the U.S., Mexico, Brazil and South America. Field calibrations may be provided by these technicians at the customer facility.

**Note 8:** Uncertainties listed are for steel blocks. Add 1.5  $\mu\text{m}$  / 38.1 nm for chrome carbide, 2.3  $\mu\text{m}$  / 58.4 nm for tungsten carbide to the uncertainty listed.

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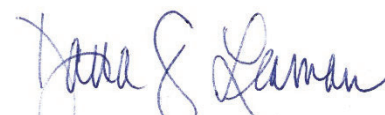


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| CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) <sup>Notes 1,2</sup>                          |                                      |  |  |
|--|--------------------------------------|--|--|
| Measured Parameter or Device Calibrated  | Range                                | Expanded Uncertainty <sup>Note 3</sup> | Remarks  |
| Perpendicularity<br>Diameter: ≤ 14.5 in and<br>Height: ≤ 13.75 in                            | ≤ 0.004 in<br>> 0.004 in to 0.040 in | 4.0 μin (0.10 μm)<br>25 μin (0.64 μm)  | MFU100 / MMQ400-2<br>Form and Geometry Measuring<br>Machines |
| Runout<br>Diameter: ≤ 14.5 in and<br>Height: ≤ 13.75 in                                      | ≤ 0.004 in<br>> 0.004 in to 0.040 in | 5.0 μin (0.13 μm)<br>25 μin (0.64 μm)  | MFU100 / MMQ400-2<br>Form and Geometry Measuring<br>Machines |
| Total Runout<br>Diameter: ≤ 14.5 in and<br>Height: ≤ 13.75 in                                | ≤ 0.004 in<br>> 0.004 in to 0.040 in | 6.0 μin (0.15 μm)<br>25 μin (0.64 μm)  | MFU100 / MMQ400-2<br>Form and Geometry Measuring<br>Machines |
| Geometry / Form Measuring<br>Machines<br>Field calibrations<br>available <sup>Note 4,7</sup> |                                      |  |  |
| Radial Departure   | < 50 μin                             | 1.2 μin (0.030 μm)                     | Precision Sphere   |
| Axial Deviation  | < 50 μin                             | 1.0 μin (0.025 μm)                     | Optical Flat   |
| Probe Calibration  | < 0.040 in                           | 40 μin (1.0 μm)                        | Gage Blocks  |
| Straightness   | < 2 μm / 100 mm                      | 3.0 μin (0.08 μm)                      | Optical Straight Edge  |
| Z Axis Parallelism   | < 10 μm / m                          | 16 μin (0.41 μm)                       | Cylindrical Square   |
| X Axis Perpendicular   | < 10 μm / m                          | 12 μin (0.30 μm)                       | Straight Edge  |
| <b>END</b>   |                                      |  |  |

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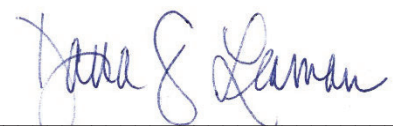


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| CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) <sup>Notes 1,2</sup>          |   |  |  |
|--|---|--|--|
| Measured Parameter or Device Calibrated                                      | Range                                       | Expanded Uncertainty <sup>Note 3</sup>   | Remarks  |
| Sphere Radius  | > 4 mm to 25 mm                             | 20 $\mu\text{in}$ (0.51 $\mu\text{m}$ )  | Precision Sphere<br>(2 ball master)                          |
| <b>TWO DIMENSIONAL GAGES (20/D15)</b>  |   |  |  |
| Concentricity<br><br>Diameter: $\leq 14.5$ in and<br>Height: $\leq 13.75$ in | $\leq 0.004$ in<br>$> 0.004$ in to 0.040 in | 5.0 $\mu\text{in}$ (0.12 $\mu\text{m}$ )<br>25 $\mu\text{in}$ (0.64 $\mu\text{m}$ )  | MFU100 / MMQ400-2<br>Form and Geometry<br>Measuring Machines |
| Cylindricity<br><br>Height: $\leq 1.5$ in and<br>Diameter: $\leq 14.5$ in    | $\leq 0.0001$ in                            | 2.0 $\mu\text{in}$ (0.05 $\mu\text{m}$ )   | MFU100 / MMQ400-2<br>Form and Geometry<br>Measuring Machines |
| Height: $\leq 4.0$ in and<br>Diameter: $\leq 14.5$ in                        | $\leq 0.004$ in                             | 6.0 $\mu\text{in}$ (0.15 $\mu\text{m}$ )   |  |
| Height: $> 4.0$ in to 13.75<br>in and Diameter: $\leq 14.5$ in               | $\leq 0.004$ in                             | 16 $\mu\text{in}$ (0.41 $\mu\text{m}$ )  |  |
| Height: $\leq 4.0$ in and<br>Diameter: $\leq 14.5$ in                        | $> 0.004$ in to 0.040 in                    | 26 $\mu\text{in}$ (0.66 $\mu\text{m}$ )  |  |
| Height: $> 4.0$ in to 13.75<br>in and Diameter: $\leq 14.5$ in               | $> 0.004$ in to 0.040 in                    | 30 $\mu\text{in}$ (0.76 $\mu\text{m}$ )  |  |
| Flatness<br><br>Diameter: $\leq 14.5$ in and<br>Height: $\leq 13.75$ in      | $\leq 0.004$ in<br>$> 0.004$ in to 0.040 in | 3.5 $\mu\text{in}$ (0.089 $\mu\text{m}$ )<br>25 $\mu\text{in}$ (0.64 $\mu\text{m}$ ) | MFU100 / MMQ400-2<br>Form and Geometry<br>Measuring Machines |
| Parallelism<br><br>Diameter: $\leq 14.5$ in and<br>Height: $\leq 13.75$ in   | $\leq 0.004$ in<br>$> 0.004$ in to 0.040 in | 4.5 $\mu\text{in}$ (0.11 $\mu\text{m}$ )<br>34 $\mu\text{in}$ (0.87 $\mu\text{m}$ )  | MFU100 / MMQ400-2<br>Form and Geometry<br>Measuring Machines |

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| CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) <sup>Notes 1,2</sup>   |   |   |   |
|---|---|---|---|
| Measured Parameter or Device Calibrated   | Range   | Expanded Uncertainty <sup>Note 3</sup>                  | Remarks   |
| <b>SURFACE TEXTURE (20/D12)</b>   |   |   |   |
| Surface Roughness<br>Ra (Roughness Average)<br>Rz   | 1 μin to 250 μin<br>1 μin to 500 μin          | 1 μin<br>2.5 μin  | Mahr Surface and Contour Measuring Machines                               |
| Flatness  | Up to 14.5 in                                 | 4.5 μin   | Optical Flat  |
| Optical Flats   | < 14.5 in (round) or<br>< 13 in (rectangular) | 4.5 μin (0.11 μm)                                       | Optical Flat  |
| General Surface Variance Measurements<br>Flatness<br>Parallelism<br>Runout (Total Runout)                                 | < 0.08 in<br>< 0.08 in<br>< 0.08 in           | 17 μin<br>17 μin<br>17 μin                              | 832 Amplifier, Sine Plate & Gage blocks                                   |
| Surface Contour<br>Angle<br>Distance X<br>Distance Z<br>Radius  | ≤ 90°<br>≤ 83 mm<br>≤ 6.3 mm<br>< 22.5 mm     | 36"<br>(D/100) + 1.5 μm<br>(D/100) + 1.5 μm<br>0.12R μm | LD-120, Contour 1 Master<br>(D = Distance in mm)<br><br>(R= Radius in mm) |
| Surface Finish / Contour Measuring Machines<br>Field calibrations available <sup>Note 4,7</sup><br>Ra (Roughness Average) | 1 μin to 250 μin                              | 1.2 μin (0.030 μm)                                      | Contour-2 ball master, Displacement standard, Surface Finish Standard     |
| Wt  | < 60 μin/in                                   | 6.0 μin (0.15 μm)                                       | Optical Flat  |
| Displacement  | 180 μin to 240 μin                            | 3.0 μin (0.076 μm)                                      | Step Height Standard  |
| Length  | 1 mm to 70 mm                                 | 16 μin (0.41 μm)  | Gage Blocks   |
| Gage Pin Radius   | 2 mm to 4 mm                                  | 7.0 μin (0.18 μm)                                       | Gage Pin  |

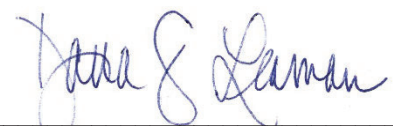


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|---|---|---|---|
| Measured Parameter or Device Calibrated                             | Range   | Expanded Uncertainty <sup>Note 3</sup>      | Remarks   |
| <b>SPHERICAL DIAMETER; PLUG / RING GAGES (20/D11)</b>               |   |   |   |
| Plug Gages, Master Balls, Pins, Wires (OD and Length)               | ≤ 4 in  | 7 μin                                       | Gage Blocks & Mahr 828 CiM , ULM300                                   |
|   | ≥ 4 in<br>< 5 in  | 10 μin + 1 μin/in<br>8.4 μin                | Gage Blocks & Mahr 828 CiM , ULM300                                   |
|   | ≥ 5 in to 36 in   | 6.4 μin + 1 μin/in                          | Gage Blocks & PLM1000-E   |
|   | Up to 2 in<br>> 2 in to 4 in<br>> 4 in to 14 in               | 6 μin<br>7 μin<br>7 μin + 1 μin/in          | Gage Blocks & 136B-3 Comparator                                       |
| Ring Gages (ID and Length)  | 0.030 in to 5.0 in  | 8 μin                                       | Master Rings & Mahr 828 CiM, ULM300                                   |
|   | > 5.0 in to 14 in   | 10 μin + 1 μin/in                           | Master Rings/Gage Blocks & Mahr 828 CiM                               |
| Air Rings   | ≤ 1 in<br>> 1 in to 2 in<br>> 2 in to 4 in<br>> 4 in to 14 in | 6 μin<br>7 μin<br>8 μin<br>8 μin + 1 μin/in | Gage Blocks & 136B-3 Comparator                                       |
|   | < 5 in<br>> 5 in up to 33 in                                  | 8.4 μin<br>6.4 μin + 1 μin/in               | Master Rings/Gage Blocks & PLM1000-e Comparator                       |
|   | ≤ 4 in<br>> 4 in to 14 in                                     | 17 μin<br>17 μin + 3.5 μin/in               | Master Disc/Plug, Mahr Air Amplifier Calibrator, Electronic Amplifier |
|   | Air Plugs   | ≤ 4 in<br>> 5 in to 10 in                   | 17 μin<br>17 μin + 3.5 μin/in   |
| Tapered Plug and Rings - Diameter                                   | ≤ 4 in  | 30 μin                                      | Gage Blocks/ 136B-3 Comparator  |



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|---|---------------------------|--|--|
| Measured Parameter or Device Calibrated                             | Range                     | Expanded Uncertainty <sup>Note 3</sup> | Remarks  |
| Dimentron plug and Bore gages                                       | < 1 in                    | 13 μin (0.33 μm)                       | Master Ring / Gage Blocks  |
|   | ≥ 1 in to 2 in            | 17 μin (0.43 μm)                       |  |
|   | > 2 in to 3 in            | 18 μin (0.46 μm)                       |  |
|   | > 3 in to 4 in            | 18 μin (0.46 μm)                       |  |
|   | > 4 in to < 5 in          | 28 μin (0.71 μm)                       |  |
|   | > 0.125 in to 5 in        | 18 μin (0.46 μm)                       |  |
| Thickness Gages<br>Portable   | ≤ 0.00005 in              | 33 μin (0.84 μm)                       | Gage Blocks  |
|   | > 0.00005 in              |  |  |
|   | to ≤ 0.0001 in            | 65 μin (1.6 μm)                        |  |
|   | > 0.0001 in to ≤ 0.001 in | 720 μin (18 μm)                        |  |
| Bench   | ≤ 1 in (≤ 25.4 mm)        | 31 μin (0.77 μm)                       | Gage Blocks  |
| Digital, Dial & Vernier Calipers                                    | Up to 8 in                | 300 μin (15 μm)                        | Gage Blocks / Master Ring  |
|   | > 8 in to 40 in           | 600 μin (30 μm)                        |  |
| Inside Micrometers<br>0.0001<br>0.001                               | > 0 in to 4 in            | 32 μin                                 | Master rings   |
|   |                           | 300 μin                                |  |
| 36 ID/OD Comparators<br>≤0.0001 Res.<br>≤0.00005 Res.               | ±0.010 in (±.254 mm)      | 250 μin                                | Master Ring / Gage Blocks  |
|   |                           | 66 μin                                 |  |
|   |                           |  |  |
| <b>MEASURING WIRES (20/D07)</b>                                     |                           |  |  |
| Thread Measuring Wires Diameter                                     | ≤ 0.55 in                 | 6.5 μin                                | ASME B89.1.17 using Master Thread Measuring Wires and Universal Length machine |
| <b>ROUNDNESS (20/D09)</b>   |                           |  |  |
| Roundness Artifacts/ Standards<br>Diameters<br>0.124 in to 14.5 in  | < 100 μin                 | 1 μin                                  | MFU 100, or MMQ400 Form/Geometry Measuring Machines                            |
|   | ≤ 0.004 in                | 3.5 μin (0.09 μm)                      |  |
|   | > 0.004 in to 0.04 in     | 25 μin (0.64 μm)                       |  |

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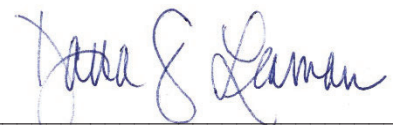
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| <b>CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)</b> <small>Notes 1,2</small>              |  |   |   |
|---|--|---|---|
| <b>Measured Parameter or Device Calibrated</b>  | <b>Range</b>   | <b>Expanded Uncertainty</b> <small>Note 3</small>         | <b>Remarks</b>                                  |
| Length Amplifier Probe Systems  | ≤ 0.020 in<br>0.020 in to 0.160 in<br>≤ 0.10 in                      | 3.5 μin<br>13 μin<br>5.6 μin                              | Gage Blocks<br><br>Laser                        |
| Universal Height Measuring Machines<br>Field calibrations available <small>Note 4,7</small> |  |   |   |
| CX1   | < 1000 mm  | 0.7 μm + (L/350) μm                                       | Step Gage<br><br><br><br><br>(L=mm) in formulas |
| CX2   | < 1000 mm  | 2.3 μm + (L/350) μm                                       |   |
| 817 CLM   | < 1000 mm  | 1 μm + (L/500) μm   |   |
| 816 CL  | < 600 mm   | 2 μm + (L/350) μm   |   |
| 814N & 814G   | < 600 mm   | 6 μm + (L/2000) μm  |   |
| 814SR   | < 600 mm   | 12 μm + (L/2000) μm                                       |   |
| Indicating Height Stands  | ≤ 4 in (≤ 101.6 mm)  | 74 μin (1.8 μm)   | Gage Blocks                                     |
| Indicator (Universal) Calibrators<br>Field calibrations available <small>Note 4,7</small>   | ≤ 0.5 in (≤ 12.7 mm)   | 9.0 μin (0.23 μm)   | Gage Blocks                                     |
| Optimar100<br>Field calibrations available <small>Note 4,7</small>                          | ≤ 4.0 in (≤ 101.6 mm)  | 14 μin (0.36 μm)  | Heidenhain Probe                                |
| Optimar25<br>Field calibrations available <small>Note 4,7</small>                           | ≤ 1.0 in (≤ 25.4 mm)<br>≤ 1.0 in (≤ 25.4 mm)<br>≤ 1.0 in (≤ 25.4 mm) | 5.9 μin (0.15 μm)<br>20 μin (0.50 μm)<br>16 μin (0.40 μm) | Laser<br>Amplifier Probe System<br>Gage Blocks  |
| Gage Block and ID/OD Comparators<br>Field calibrations available <small>Note 4,7</small>    | ≤ 0.002 in<br><br>≤ 10 μin   | 3.2 μin (0.08 μm)<br><br>0.5 μin (0.013 μm)               | Gage Blocks                                     |

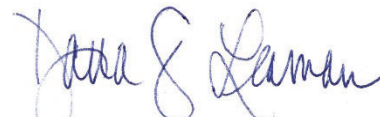
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|---|--|--|---|
| Measured Parameter or Device Calibrated   | Range  | Expanded Uncertainty <sup>Note 3</sup>   | Remarks   |
| MarShaft CNC<br>Field calibrations available <sup>Note 4,7</sup>                            | Length (< 1600 mm)<br>Diameter (< 220 mm)  | 4 μm + 1.1L / 100 μm<br>2 μm + L / 100 μm  | (L=mm) Helios Shaft Standard                        |
| High Resolution Indicators  | ± 0.100 in (± 2.54 mm)<br>± 0.010 in (± 254 μm)<br>± 0.001 in (± 25.4 μm)<br>≤ 1.000 in (≤ 25.4 mm)  | 9 μin (0.22 μm)<br>7 μin (0.17 μm)<br>4 μin (0.10 μm)<br>5.6 μin (0.14 μm)   | Microcalibrator<br><br>Laser Interferometer         |
| Length – Air Amplifiers   | 0.00030 in to 0.0030 in  | 11 μin (0.27 μm)   | AMR – Air Restrictor                                |
| Diameter – Air restrictor kits  | ≤ 0.00030 in<br>> 0.00030 in to 0.003 in<br>> 0.003 in to 0.005 in   | 9 μin<br>18 μin<br>27 μin  | Gage Blocks, Dimensionair                           |
| Length and Diameter –<br>Outside Micrometers<br>0.0001 in Resolution<br>0.001 in Resolution | < 6 in<br>< 6 in   | 31 μin<br>300 μin  | Gage Blocks   |
| Micrometer Standards  | Up to 4 in<br>> 4 in to 14 in<br><br>< 5 in<br>≥ 5 in to 36 in   | 7.0 μin<br>6.0 μin + 1 μin/in<br><br>8.4 μin<br>6.4 μin + 1 μin/in   | ULM & Gage Blocks<br><br>PLM1000-E Comparator       |
| Universal Length Measuring<br>Machines<br>Field calibrations available <sup>Note 4,7</sup>  | ≤ 4.0 in<br>> 4.0 in to 12.0 in<br>≤ 100 mm<br>> 100 mm to 305 mm<br><br>≤ 31 in (≤ 800 mm)<br>≤ 47.24 in (≤ 1200 mm)<br>≤ 78.8 in (≤ 2000 mm) | 3 μin + 0.4 μin/in<br>3.3 μin + 1.3 μin/in<br>0.07 μm + 0.0041 μm/mm<br>0.081 μm + 0.013 μm/mm<br><br>33 μin (0.84 μm)<br>45 μin (1.13 μm)<br>69 μin (1.75 μm) | Gage Blocks<br><br><br><br><br>Laser Interferometer |

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|--|---|---|--------------------------------|
| Measured Parameter or Device Calibrated  | Range   | Expanded Uncertainty <sup>Note 3</sup>  | Remarks                        |
| <b>LENGTH and DIAMETER; STEP GAGES (20/D05)</b>  |   |   |                                |
| Dial and Digital Indicators  | $\leq 0.100$ in<br>$> 0.100$ in to 0.500 in     | 16 $\mu$ m<br>61 $\mu$ m  | Indicator Calibrators          |
|  | $\leq 0.250$ in<br>$> 0.250$ in to 4 in         | 21 $\mu$ m<br>60 $\mu$ m  | Indicator Calibrators          |
| Marshaft Machines<br>(Diameter and Length)<br>MarShaft Scope Manual<br>w/MC<br>Field calibrations<br>available <sup>Note 4,7</sup> | Length ( $< 2400$ mm)<br>Diameter ( $< 120$ mm) | $6 \mu\text{m} + 1.1L / 100 \mu\text{m}$<br>$2.2 \mu\text{m} + L / 100 \mu\text{m}$ | (L = mm) Helios Shaft Standard |
| MarShaft Scope Manual<br>w/UNI<br>Field calibrations<br>available <sup>Note 4,7</sup>  | Length ( $< 2400$ mm)<br>Diameter ( $< 220$ mm) | $9 \mu\text{m} + 1.2L / 100 \mu\text{m}$<br>$2 \mu\text{m} + L / 100 \mu\text{m}$   | (L=mm) Helios Shaft Standard   |
| MarShaft Scope / Helios<br>Scope<br>Field calibrations<br>available <sup>Note 4,7</sup>  | Length (1000 mm)<br>Diameter ( $< 80$ mm)       | $5 \mu\text{m} + 1.2L / 100 \mu\text{m}$<br>$3 \mu\text{m} + L / 100 \mu\text{m}$   | (L=mm) Helios Shaft Standard   |
| MarShaft Scope 250+<br>Field calibrations<br>available <sup>Note 4,7</sup>   | Length ( $< 250$ mm)<br>Diameter ( $< 40$ mm)   | $4.3 \mu\text{m} + L / 100 \mu\text{m}$<br>$2.5 \mu\text{m} + L / 40 \mu\text{m}$   | (L=mm) Helios Shaft Standard   |
| MarShaft Scope plus<br>Field calibrations<br>available <sup>Note 4,7</sup>   | Length ( $< 1000$ mm)<br>Diameter ( $< 120$ mm) | $4 \mu\text{m} + 1.2L / 125 \mu\text{m}$<br>$3 \mu\text{m} + L / 125 \mu\text{m}$   | (L=mm) Helios Shaft Standard   |

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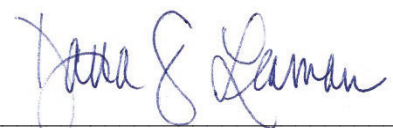
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**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

|   |  |
|---|--|
| <p><b>Mahr Inc.</b><br/>1139 Eddy Street<br/>Providence, RI 02905<br/>Mr. Anthony Clang<br/>Phone: 401-784-3214 Fax: 401-784-3238<br/>E-mail: <a href="mailto:anthony.clang@mahr.com">anthony.clang@mahr.com</a><br/>URL: <a href="http://www.mahr.com">http://www.mahr.com</a></p> | <p><b>Fields of Calibration</b><br/>Dimensional</p> <p>This laboratory is compliant to ANSI/NCSL Z540-1-1994; Part 1. (20/A01)</p> |
|---|--|

| <b>CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) <sup>Notes 1,2</sup></b> |  |  |                                    |
|--|--|--|------------------------------------|
| <b>Measured Parameter or Device Calibrated</b>                             | <b>Range</b>   | <b>Expanded Uncertainty <sup>Note 3</sup></b>  | <b>Remarks</b>                     |
| <b>DIMENSIONAL</b>   |  |  |                                    |
| <b>ANGULAR (20/D01)</b>  |  |  |                                    |
| Electronic Level System<br>Angle Measure                                   | ≤ 1000"  | 0.40"  | Sine Plate with Gage Blocks        |
| Protractors and Digital Angle Gage   | ≤ 90°  | 75"  | Angle Blocks                       |
| <b>GAGE BLOCKS (20/D03)</b>  |  |  |                                    |
| Steel & Ceramic<br>(See Note 8 for other materials)                        | 0.05 in<br>0.100 in to 0.19 in<br>0.200 in to 0.950 in<br>1 in to 2 in<br>3 in<br>4 in<br><br>1 mm<br>2.5 mm to 4.5 mm<br>5 mm to 24.5 mm<br>25 mm to 50 mm<br>75 mm<br>100 mm | 2.5 μin<br>2.5 μin<br>2.5 μin<br>3.0 μin<br>3.5 μin<br>4.5 μin<br><br>62 nm<br>63 nm<br>65 nm<br>73 nm<br>88 nm<br>0.11 μm | Gage Blocks and 130B<br>Comparator |
| Long Gage Blocks   | 5 in to 20 in<br>125 mm to 500 mm  | 5.0 μin + 1.3μin/in<br>0.13 μm + 0.0013 μm/mm  | Gage Blocks and 130B<br>Comparator |

2023-03-01 through 2024-03-31  
Effective dates

  
For the National Voluntary Laboratory Accreditation Program