

# **CERTIFICATE OF ACCREDITATION**

*In terms of section 22(2) (b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-*

**HJR MICROPTIC CC**  
**Co. Reg. No.: 1989/032363/23**  
**DIMENSIONAL CALIBRATION LABORATORY**

Accreditation Number: **CAL 022-00-00**

is a South African National Accreditation System Accredited Calibration Laboratory  
provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying scope of accreditation  
Annexure "A", bearing the above accreditation number for

**DIMENSIONAL METROLOGY**

The facility is accredited in accordance with the recognised International Standard

**ISO/IEC 17025:2017**

The accreditation demonstrates technical competency for a defined scope and the operation of a  
laboratory quality management system

While this certificate remains valid, the Accredited Facility named above is authorised to use the  
relevant SANAS accreditation symbol to issue facility reports and/or certificates

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**Mr F Osman**  
**Acting Chief Executive Officer**

**Effective Date: 20 June 2025**  
**Certificate Expires: 31 August 2029**

## ANNEXURE A

# SCOPE OF ACCREDITATION

## DIMENSIONAL METROLOGY

Accreditation Number: CAL 022-00-00

| <b>Permanent Address of Laboratory:</b><br>HJR Microptic CC<br>Dimensional Calibration Laboratory<br>593 Smook Street<br>Roseville<br>Pretoria<br>0031<br><br><b>Postal Address:</b><br>PO Box 31230<br>Wonderboompoort<br>0033<br><br>Tel: (012) 335-6663/4<br>Fax: (012) 335-6665<br>E-mail: <a href="mailto:microptic@mweb.co.za">microptic@mweb.co.za</a><br><a href="mailto:jacques@microptic.net">jacques@microptic.net</a> |                                                  | <b>Technical Signatories:</b><br>Mr H van Deventer<br>Mr JC van Aswegen<br>Mr PJ Mynhardt<br><br><b>Nominated Representative:</b> Mr H van Deventer<br><br>Issue No.: 15<br>Date of Issue: 20 June 2025<br>Expiry Date: 31 August 2029 |                                                                                                       |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| ITEM                                                                                                                                                                                                                                                                                                                                                                                                                              | MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT | RANGE OF MEASURED QUANTITY                                                                                                                                                                                                             | CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )                          | METHOD / PROCEDURE                                                                      |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>LINEAR DIMENSIONS</b>                         |                                                                                                                                                                                                                                        |                                                                                                       |                                                                                         |
| 2.1                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Length Instruments</b>                        |                                                                                                                                                                                                                                        |                                                                                                       |                                                                                         |
| 2.1.4                                                                                                                                                                                                                                                                                                                                                                                                                             | Height measuring instruments                     | Up to 600 mm                                                                                                                                                                                                                           | 20,0 $\mu\text{m}$                                                                                    | Calibration by comparison measurements of gauge blocks/length bars on a surface plate.  |
| 2.1.7                                                                                                                                                                                                                                                                                                                                                                                                                             | Dial-indicator tester                            | Up to 50 mm                                                                                                                                                                                                                            | 2,0 $\mu\text{m}$                                                                                     | Direct measurement using gauge blocks.                                                  |
| 2.2                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>End Standards</b>                             |                                                                                                                                                                                                                                        |                                                                                                       |                                                                                         |
| 2.2.1                                                                                                                                                                                                                                                                                                                                                                                                                             | Gauge Block                                      | Up to 75 mm<br>75 mm to 100 mm                                                                                                                                                                                                         | 0,24 $\mu\text{m}$<br>0,25 $\mu\text{m}$                                                              | Comparison with a reference standard and gauge block comparator.                        |
| 2.2.3                                                                                                                                                                                                                                                                                                                                                                                                                             | Micrometer Setting Rod                           | 25 mm to 100 mm<br>100 mm to 200 mm<br>200 mm to 300 mm<br>300 mm to 400 mm<br>400 mm to 500 mm                                                                                                                                        | 2,4 $\mu\text{m}$<br>2,6 $\mu\text{m}$<br>2,8 $\mu\text{m}$<br>3,2 $\mu\text{m}$<br>3,5 $\mu\text{m}$ | Calibration by comparison with gauge blocks or length bars on a surface plate.          |
| 2.4                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Diameter Standards</b>                        |                                                                                                                                                                                                                                        |                                                                                                       |                                                                                         |
| 2.4.1                                                                                                                                                                                                                                                                                                                                                                                                                             | External cylinder (plug, piston, pin, wire)      | 3 mm to 70 mm                                                                                                                                                                                                                          | 1,8 $\mu\text{m}$                                                                                     | Comparison with a reference standard using 1-D stylus comparator or gauge substitution. |
| 2.4.2                                                                                                                                                                                                                                                                                                                                                                                                                             | Internal cylinder (ring)                         | 4 mm to 200 mm                                                                                                                                                                                                                         | 1,8 $\mu\text{m}$                                                                                     |                                                                                         |

Original Date of Accreditation: 30 August 1989

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The CMC, expressed as an expanded uncertainty of measurement, is stated as the standard uncertainty of measurement multiplied by a coverage factor  $k = 2$ , corresponding to a confidence level of approximately 95%

**Accreditation Manager**

# ANNEXURE A

Accreditation No.: CAL 022-00-00  
Date of Issue: 20 June 2025  
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| ITEM                                                   | MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT             | RANGE OF MEASURED QUANTITY                                                                                           | CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ ) | METHOD / PROCEDURE                                                                                               |
|--------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>5.</b>                                              | <b>COMPLEX GEOMETRY</b>                                      |                                                                                                                      |                                                                              |                                                                                                                  |
| <b>5.2</b>                                             | <b>Screw Standards</b>                                       |                                                                                                                      |                                                                              |                                                                                                                  |
| 5.2.1                                                  | Screw Thread Plug, Plain                                     | 2 mm to 100 mm                                                                                                       | 5,0 $\mu$ m                                                                  | Calibration using a universal length measuring machine and thread measuring wire by comparison.                  |
| 5.2.3                                                  | Screw Thread Ring, Plain                                     | 4 mm to 200 mm                                                                                                       | 4,0 $\mu$ m                                                                  | Calibration by comparison using Universal Length Machine and reference standard gauge blocks.                    |
| <b>5.5</b>                                             | <b>2-D, 3-D Instruments</b>                                  |                                                                                                                      |                                                                              |                                                                                                                  |
| 5.5.1                                                  | Measuring Projector                                          | Up to 600 mm screen                                                                                                  | 20 $\mu$ m                                                                   | Calibration by comparison method using glass microscopes.                                                        |
| <b>6.</b>                                              | <b>VARIOUS DIMENSIONAL</b>                                   |                                                                                                                      |                                                                              |                                                                                                                  |
| <b>6.1</b>                                             | <b>Hand Instruments</b>                                      |                                                                                                                      |                                                                              |                                                                                                                  |
| 6.1.1                                                  | External Micrometer                                          | 0 mm to 500 mm                                                                                                       | 4,0 $\mu$ m                                                                  | Calibration by comparison to gauge blocks, length bars, flatness & parallelism with optical flats and parallels. |
| 6.1.3                                                  | Depth Micrometer                                             | 0 mm to 300 mm                                                                                                       | 8,0 $\mu$ m                                                                  |                                                                                                                  |
| 6.1.4                                                  | Calipers (Electronic and Vernier)                            | 0 mm to 600 mm                                                                                                       | 20,0 $\mu$ m                                                                 |                                                                                                                  |
| 6.1.5                                                  | Depth vernier                                                | 0 mm to 600 mm                                                                                                       | 20,0 $\mu$ m                                                                 | Calibration using stacked gauge blocks on a surface plate.                                                       |
| 6.1.6                                                  | Internal 2-point (bore) Micrometer                           | Up to 100 mm<br>Above 100 mm to 200 mm<br>Above 200 mm to 300 mm<br>Above 300 mm to 400 mm<br>Above 400 mm to 500 mm | 2,4 $\mu$ m<br>2,6 $\mu$ m<br>2,8 $\mu$ m<br>3,2 $\mu$ m<br>3,5 $\mu$ m      | Calibration with an inside micrometer checker/micrometer.                                                        |
| 6.1.7                                                  | Internal 3-point (bore) Micrometer                           | Up to 100 mm<br>Above 100 mm to 200 mm<br>Above 200 mm to 300 mm<br>Above 300 mm to 400 mm<br>Above 400 mm to 500 mm | 2,4 $\mu$ m<br>2,6 $\mu$ m<br>2,8 $\mu$ m<br>3,2 $\mu$ m<br>3,5 $\mu$ m      | Calibration using ring gauges by comparison.                                                                     |
| 6.1.8                                                  | Dial Test Indicator - plunger<br>Dial Test Indicator - lever | Up to 50 mm<br>0 mm to 0, 25 mm                                                                                      | 2,0 $\mu$ m<br>3,0 $\mu$ m                                                   | Calibration using a dial calibration tester, micrometer head and/or gauge blocks.                                |
| On-site calibration for items 2.1.4, 5.5.1 & 6.1 above |                                                              |                                                                                                                      |                                                                              |                                                                                                                  |

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ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

**Accreditation Manager**