# CALIBRATION CERTIFICATE

My Metrology Laboratory

Certificate No:
**CAL-001001**

Status: SIGNED
Issued: 2026/04/16

| CERTIFICATE NUMBER | JOB NUMBER | OVERALL RESULT |
|---|---|---|
| CAL-001001 | JOB-01001 | PASS |

| DATE OF RECEIPT | DATE OF CALIBRATION | DATE OF ISSUE |
|---|---|---|
| 2026/04/14 | 2026/04/15 | 2026/04/16 |

## INSTRUMENT DETAILS

**DESCRIPTION**
6.5 Digit Digital Multimeter

| MANUFACTURER | MODEL / TYPE | SERIAL NUMBER |
|---|---|---|
| Keysight | 34465A | MY12345678 |

| ASSET TAG / ID | DISCIPLINE | LOCATION |
|---|---|---|
| DMM-001 | Electrical | Lab 1 - Bench A |

## CUSTOMER

| CUSTOMER NAME | ADDRESS |
|---|---|
| ABC Manufacturing (Pty) Ltd | — |

## METROLOGICAL TRACEABILITY

| REFERENCE STANDARD | NMI SOURCE | STANDARD CERTIFICATE NO. |
|---|---|---|
| STD-NMI-001 | NMISA | NMISA-2025-DCV-0042 |

Traceability Statement: The measurements reported in this certificate are traceable to the International System of Units (SI) through NMISA, via an unbroken chain of calibrations, each contributing to the measurement uncertainty. (ISO/IEC 17025:2017 cl. 6.5)

## ENVIRONMENTAL CONDITIONS

| TEMPERATURE | RELATIVE HUMIDITY | ATMOSPHERIC PRESSURE |
|---|---|---|
| 23.1 °C | 48.2 %RH | 1013.5 hPa |

## CALIBRATION METHOD

| PROCEDURE CODE | PROCEDURE TITLE |
|---|---|
| SOP-EL-001 | DC Voltage Calibration Procedure |

## MEASUREMENT RESULTS

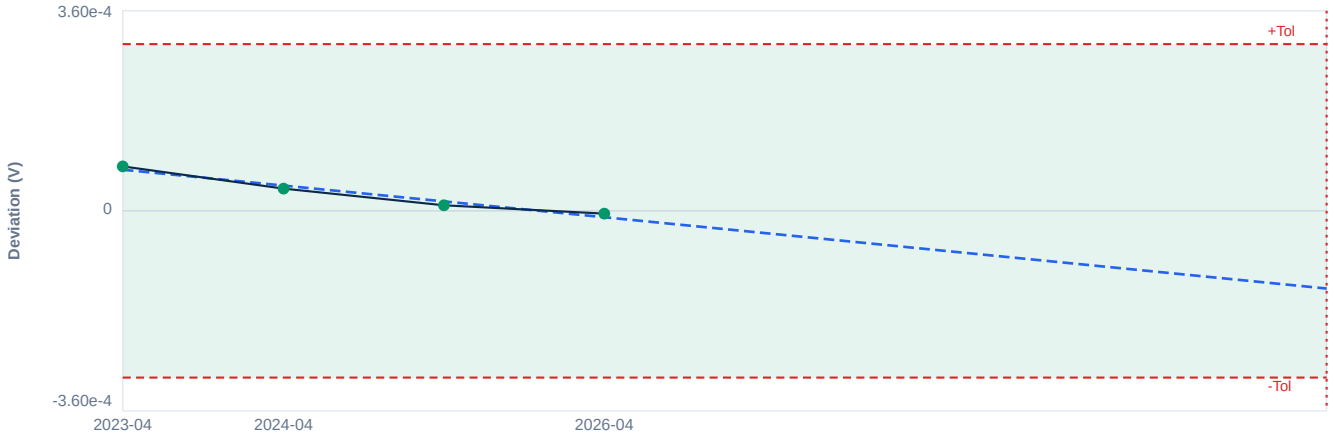
| Phase | Nominal | Unit | Reading | Error | Tolerance | Result |
|---|---|---|---|---|---|---|
| AS_FOUND | 0 | V | 0.000012 | 1.200e-5 | ±0.0001 | PASS |
| AS_FOUND | 1 | V | 0.999998 | -2.000e-6 | ±0.0001 | PASS |
| AS_FOUND | 5 | V | 4.999997 | -3.000e-6 | ±0.0002 | PASS |
| AS_FOUND | 10 | V | 9.999995 | -5.000e-6 | ±0.0003 | PASS |
| AS_LEFT | 0 | V | 0.00001 | 1.000e-5 | ±0.0001 | PASS |
| AS_LEFT | 10 | V | 9.999997 | -3.000e-6 | ±0.0003 | PASS |

## MEASUREMENT UNCERTAINTY

| Component | Type | Distribution | Value | Std. Uncertainty |
|---|---|---|---|---|
| Standard CMC (Voltage Reference) | Type B | Normal | 0.00005 | 2.500e-5 |
| Repeatability | Type A | Normal | 0.000008 | 8.000e-6 |
| Resolution | Type B | Rectangular | 0.00001 | 6.000e-6 |

**Uncertainty Statement:**
The expanded uncertainty of measurement is stated as the standard uncertainty multiplied by the coverage factor k = 2, providing a level of confidence of approximately 95% (JCGM 100:2008 GUM).

## CALIBRATION HISTORY & DRIFT ANALYSIS




| DRIFT RATE | TREND | MEAN DEV. | STD DEV. |
|---|---|---|---|
| -2.85e-5 V/yr (-2.8 ppm/yr) | Decreasing | 3.13e-5 V | 3.75e-5 |

| MAX \|DEV.\| | FIT $R^2$ | EST. TO LIMIT | HISTORY |
|---|---|---|---|
| 8.00e-5 | 0.963 | ~121 mo | 4 cals / 3.0 yr |

*Figure: Instrument drift history relative to tolerance limits at 10.000 V (AS-FOUND). Trend line by least-squares regression.*

**OVERALL CALIBRATION RESULT:** **PASS**

AUTHORISED SIGNATORY

**Dr. John Smith**

Technical Signatory — My Metrology Laboratory

Date: 2026/04/16

' **Advanced Electronic Signature Applied**

Verification: ba66e7f3d1d31f72cadded6c051b03ab059f7a90ee8e4bb4

## TERMS AND CONDITIONS

1. This certificate relates only to the item(s) submitted for calibration.
2. The results relate exclusively to the item(s) calibrated.
3. This certificate shall not be reproduced except in full.
4. Calibration results are valid at the time of calibration under the stated environmental conditions.
5. The laboratory accepts no responsibility for subsequent use or misuse of the calibrated item.
6. Uncertainty of measurement is reported at approximately 95% confidence level (k=2).
7. All work is performed in accordance with ISO/IEC 17025:2017 and ISO/IEC 17025:2017 requirements.