# CERTIFICATE OF ACCREDITATION

*This is to attest*

## ELDOR TK CALIBRATION LABORATORY DBA ELDOR ELEKTRONIK VE PLASTIK MLZ. ÜRT. VE TIC. LTD. ŞTI.

AYHAN STREET EGE FREE ZONE GAZIEMIR
IZMIR, 35410, TURKEY

**Calibration Laboratory CL-304**

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories.* This organization is accredited to provide the services specified in the scope of accreditation.

Expiration Date March 1, 2026
Effective Date February 7, 2025

IAS ACCREDITED

International Accreditation Service
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# SCOPE OF ACCREDITATION

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## ELDOR TK CALIBRATION LABORATORY DBA ELDOR ELEKTRONIK VE PLASTIK MLZ. ÜRT. VE TIC. LTD. ŞTI.

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*Accredited to ISO/IEC 17025:2017* *Effective Date February 7, 2025*

**CALIBRATION AND MEASUREMENT CAPABILITY (CMC)***

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| ***Dimensional*** | | | |
| Caliper | 0 ≤ L≤ 400 mm | $2.9 \times 10^{-5} \times L + 0.0085$ mm | VDI/VDE/DGQ 2618 Section 9.1 Direct measurement by using Reference Block and ring set<br><br>L: Measured value (mm) |
| External Micrometer | 0 ≤ L ≤ 25 mm | $2.0 \times 10^{-5} \times L + 0.0011$ mm | VDI/VDE/DGQ 2618 Section 10.1 Direct measurement by using Reference Block and Optical Parallel set<br><br>L: Measured value (mm) |
| | 25 ≤ L ≤ 75 mm | $3.5 \times 10^{-5} \times L + 0.0011$ mm | |
| | 75 ≤ L ≤ 100 mm | $4.0 \times 10^{-5} \times L + 0.001$ mm | |
| ***Mechanical*** | | | |
| Scale | 1 mg ≤ m ≤ 600 g | $(1.0 \times 10^{-6} \times m)$ g | *EURAMET/CG-18 Direct measurement by using Reference mass set (E2-F1-M1)*<br><br>m: Measured value |
| | 1 g ≤ m ≤ 30000 g | $(1.2 \times 10^{-5} \times m)$ g | |
| | 0,5 kg ≤ m ≤ 50 kg | $(2.7 \times 10^{-4} \times m)$ kg | |
| ***Thermal*** | | | |
| Temperature Indicator with Sensor | -15 °C ≤ T ≤ 40 °C | $2.0 \times 10^{-1}$ °C | Comparison method by using Reference Thermometer And Reference SPRT<br><br>T: Measured value |
| | 0 °C | $8.0 \times 10^{-2}$ °C | |
| | 40 °C ≤ T ≤ 150 °C | $1,5 \times 10^{-1}$ °C | |
| | 150 °C ≤T ≤ 300 °C | $1.5 \times 10^{-1}$ °C | |

** If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.*

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| Oven, Refrigerator, Freezer | -40 °C ≤ T ≤ 150 °C | 1.7 °C | EURAMET/CG-20<br>Direct measurement by using Temperature Datalogger and Probe<br><br>T: Measured value |
| ***Electrical – DC/LF*** | | | |
| Power Supply - DC V | 10 mV ≤ V < 100 mV | $1.5 \times 10^{-5} \times V + 0.7$ mV | EURAMET CG-15<br>Direct measurement by using Reference Multimeter<br><br>V: Measured value |
| | 0.1 V ≤ V < 1 V | $(1.5 \times 10^{-5} \times V + 0.7$ mV) V | |
| | 1 V ≤ V < 10 V | $(1.5 \times 10^{-5} \times V + 1.0$ mV) V | |
| | 10 V ≤ V < 100 V | $(1.0 \times 10^{-4} \times V + 10$ mV) V | |
| Power Supply – DC A | 1 mA ≤ A < 100 mA | $(5.0 \times 10^{-4} \times A + 60$ µA) mA | EURAMET CG-15<br>Direct measurement by using Reference Multimeter<br><br>A: Measured value |
| | 0.1 A ≤ A < 1 A | $(3.0 \times 10^{-3} \times A + 0.6$ mA) A | |
| | 1 A ≤ A < 3 A | $(3.0 \times 10^{-3} \times A + 1.6$ mA) A | |
| | 3 A ≤ A < 10 A | $(3.0 \times 10^{-3} \times A + 6.0$ mA) A | |
| | 1 A ≤ I ≤ 50 A | $(5.0 \times 10^{-4} \times A + 60$ mA) A | Direct measurement by using Reference Multimeter and Shunt<br><br>A: Measured value |
| DC Voltage – Meter | 1 mV ≤ V < 200 mV | $(3.0 \times 10^{-5} \times V + 5$ µV) mV | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator<br><br>V: Measured value |
| | 0.2 V ≤ V < 2 V | $(4.0. \times 10^{-6} \times V + 5$ µV) V | |
| | 2 V ≤ V < 20 V | $(2.0 \times 10^{-5} \times V + 0.1$ mV) V | |
| | 20 V ≤ V < 200 V | $(2.5 \times 10^{-5} \times V + 1.5$ mV) V | |
| | 200 V ≤ V < 1000 V | $(3.0 \times 10^{-5} \times V + 10$ mV) V | |
| DC Current – Meter | 20 µA ≤ A < 200 µA | $(1.5 \times 10^{-4} \times A + 50$ nA) µA | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator<br><br>A: Measured value |
| | 0.2 mA ≤ A < 2 mA | $(1.0 \times 10\text{-}^{4} \times A + 0.1$ µA) mA | |
| | 2 mA ≤ A < 20 mA | $(1.0 \times 10^{-4} \times A + 0.5$ µA) mA | |
| | 20 mA ≤ A < 200 mA | $(1.0 \times 10^{-4} \times A + 25$ µA) mA | |
| | 0.2 A ≤ A < 2 A | $(1.5 \times 10\text{-}^{4} \times A + 0.5$ mA) A | |
| | 2 A ≤ A < 30 A | $(2.5 \times 10^{-4} \times A + 25$ mA) A | |
| DC Clamp meter | 30 A ≤ A < 60 A | $9.5 \times 10^{-3} \times A + 0.1$ A | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator and Clamp Coil Adapter (2-10-50 Turn)<br><br>A: Measured value |
| | 60 A ≤ A < 300 A | $9.5 \times 10^{-3} \times A + 0.3$ A | |
| | 300 A ≤ A < 1500 A | $9.5 \times 10^{-3} \times A + 0.5$ A | |
| AC Voltage – Meter | 20 mV ≤ V < 200 mV | $(3.0 \times 10^{-4} \times V + 50$ µV) mV | EURAMET CG-15<br>Direct measurement by using |
| | 0.2 V ≤ V < 2 V | $(2.5 \times 10^{-4} \times V + 0.5$ mV) V | |

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|---|---|---|---|
| (50 Hz ≤ F ≤ 1 kHz) | 2 V ≤ V < 20 V | $(2.5 \times 10^{-4} \times V + 5.0\ mV)$ V | Multi Product Calibrator<br><br>V: Measured value |
| | 20 V ≤ V < 200 V | $(5.5 \times 10^{-4} \times V + 50\ mV)$ V | |
| | 200 V ≤ V < 1000 V | $(6.5 \times 10^{-4} \times V + 100\ mV)$ V | |
| AC Current – Meter (50 Hz ≤ F ≤ 1 kHz) | 20 µA ≤ A < 200 µA | $2.5 \times 10^{-3} \times A + 0.3\ \mu A$ | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator<br><br>A: Measured value |
| | 0.2 mA ≤ A < 2 mA | $(5.5 \times 10^{-4} \times A + 1\ \mu A)$ mA | |
| | 2 mA ≤ A < 20 mA | $(3.5 \times 10^{-4} \times A + 10\ \mu A)$ mA | |
| | 20 mA ≤ A < 200 mA | $(3.5 \times 10^{-4} \times A + 100\ \mu A)$ mA | |
| | 0.2 A ≤ A < 2 A | $(4.5 \times 10^{-4} \times A + 1\ mA)$ A | |
| | 2 A ≤ A < 30 A | $(5.0 \times 10^{-4} \times A + 50\ mA)$ A | |
| AC Clamp meter (50 Hz ≤ F ≤ 1 kHz) | 30 A ≤ A < 60 A | $9.5 \times 10^{-3} \times A + 0.1$ A | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator and Clamp Coil Adapter (2-10-50 Turn)<br><br>A: Measured value |
| | 60 A ≤ A < 300 A | $9.5 \times 10^{-3} \times A + 0.3$ A | |
| | 30 A ≤ A < 1500 A | $9.5 \times 10^{-3} \times A + 0.5$ A | |
| DC Resistance – Meter | 0 Ω | 0.008 Ω | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator)<br><br>R: Measured value |
| | 0,1 Ω | $(2.0 \times 10^{-7} \times R + 8\ m\Omega)$ Ω | |
| | 1 Ω | $(2.0 \times 10^{-7} \times R + 9\ m\Omega)$ Ω | |
| | 10 Ω | $(2.0 \times 10^{-7} \times R + 10\ m\Omega)$ Ω | |
| | 100 Ω | $(2.0 \times 10^{-7} \times R + 15\ m\Omega)$ Ω | |
| | 1 kΩ | $(1.0 \times 10^{-7} \times R + 0{,}1\ \Omega)$ kΩ | |
| | 10 kΩ | $(1.0 \times 10^{-7} \times R + 1\ \Omega)$ kΩ | |
| | 100 kΩ | $(1.0 \times 10^{-7} \times R + 10\ \Omega)$ kΩ | |
| | 1 MΩ | 0.0005 MΩ | |
| | 10 MΩ | 0.005 MΩ | |
| | 100 MΩ | 1 MΩ | |
| | 1000 MΩ | 15 MΩ | |
| DC Resistance – Meter | 10 mΩ ≤ R ≤ 1000 mΩ | $1.5 \times 10^{-4} \times R + 2.5\ m\Omega$ | EURAMET CG-15<br>Direct measurement by using Resistance Decade Box<br><br>R: Measured value |
| | 1 Ω ≤ R ≤ 1000 Ω | $(1.5 \times 10^{-4} \times R + 3\ m\Omega)$ Ω | |
| | 1 kΩ ≤ R ≤ 10 kΩ | $(1.5 \times 10^{-4} \times R + 5\ m\Omega)$ Ω | |
| | 10 kΩ ≤ R ≤ 100 kΩ | $(1.5 \times 10^{-4} \times R + 15\ m\Omega)$ Ω | |
| | 100 kΩ ≤ R ≤ 1000 kΩ | $(1.5 \times 10^{-4} \times R + 50\ m\Omega)$ kΩ | |
| | 1 MΩ ≤ R ≤ 10 MΩ | $(4.0 \times 10^{-4} \times R + 50\ m\Omega)$ MΩ | |
| | 10 MΩ ≤ R ≤ 100 MΩ | $(5.0 \times 10^{-3} \times R + 50\ k\Omega)$ MΩ | |
| Inductance – LCR Meter | 1 mH / 10 mH / 20 mH / 30 mH / | $(7.0 \times 10^{-3} \times L)$ mH | EURAMET CG-15 |

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|---|---|---|---|
| (1 V to 1 kHz) | 50 mH / 100 mH | | Direct measurement by using Multi Product Calibrator in Decade Mode<br><br>L: Measured value |
| | 1 H / 10 H | $(7.0 \times 10^{-3} \times L)$ H | |
| Inductance – LCR Meter (1 V to 1 kHz) | 100 µH ≤ L ≤ 1000 µH | $(2.5 \times 10^{-2} \times L + 1$ nH) µH | EURAMET CG-15<br>Direct measurement by using Inductance Decade Box<br><br>L: Measured value |
| | 1 mH ≤ L ≤ 10 mH | $(3.0 \times 10^{-2} \times L + 5$ nH) mH | |
| | 10 mH ≤ L ≤ 100 mH | $(2.0 \times 10^{-2} \times L + 50$ nH) mH | |
| | 100 mH ≤ L ≤ 1000 mH | $(1.0 \times 10^{-2} \times L + 0,5$ µH) mH | |
| | 1 H ≤ L ≤ 10 H | $(1.5 \times 10^{-1} \times L + 1$ mH) H | |
| Capacitance - LCR Meter (1 V to 1 kHz) | 1 nF ≤ C ≤ 100 nF | $(5.0 \times 10^{-3} \times C + 3$ pF) nF | EURAMET CG-15<br>Direct measurement by using Multi Product Calibrator in Decade Mode<br><br>C: Measured value |
| | 1 µF ≤ C ≤ 10 µF | $(1.0 \times 10^{-2} \times C + 3$ nF) µF | |
| Capacitance - LCR Meter (1 V to 1 kHz) | 60 pF ≤ C ≤ 10000 pF | $6.0 \times 10^{-3} \times C + 6$ pF | EURAMET CG-15<br>Direct measurement by using Capacitance Decade Box<br><br>C: Measured value |
| | 10 nF ≤ C ≤ 1000 nF | $(6.0 \times 10^{-3} \times C + 6$ pF) nF | |
| AC Resistance – LCR Meter (1 V to 1 kHz) | 10 Ω ≤ R ≤ 100 Ω | $(6.0 \times 10^{-3} \times R + 0.5$ mΩ) Ω | EURAMET CG-15<br>Direct measurement by using Resistance Decade Box<br><br>R: Measured value |
| | 100 Ω ≤ R ≤ 1000 Ω | $(6.0 \times 10^{-3} \times R + 1.0$ mΩ) Ω | |
| | 1 kΩ ≤ R ≤ 10 kΩ | $(6.0 \times 10^{-3} \times R + 10$ mΩ) kΩ | |
| | 10 kΩ ≤ R ≤ 100 kΩ | $(6.0 \times 10^{-3} \times R + 20$ mΩ) kΩ | |
| Oscilloscope - Vertical Deflection (Amplitude) | 2 mV/Div ≤ V ≤ 100 mV/Div | $(5.0 \times 10^{-3} \times V + 35$ µV) mV | EURAMET CG-07<br>Direct measurement by using Multi Product Calibrator<br><br>V: Measured value |
| | 200 mV/Div ≤ V ≤10 V/Div | $(5.0 \times 10^{-3} \times V + 3.0$ mV) V | |
| | 20 V/Div ≤ V ≤50 V/Div | $5.0 \times 10^{-3} \times V + 0.7$ V | |
| Oscilloscope - Horizontal Deflection (Time) | 20 ns ≤ t ≤ 1s | $5.0 \times 10^{-3} \times t$ | EURAMET CG-07<br>Direct measurement by using Multi Product Calibrator<br><br>t: Measured value |

[1]The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

[2]When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.