مـركـز الإمـارات الـعـالـمـي لـلاعـتـمـاد
Emirates International Accreditation Centre

# ACCREDITATION CERTIFICATE

## LB-CAL-007

**E**mirates **I**nternational **A**ccreditation **C**entre

has accredited

**ARABIAN CALIBRATION AND DEV. REP. CO. LLC**

Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

Sharjah | United Arab Emirates

In accordance with the requirements of

**ISO/IEC 17025:2017**

General requirements for the competence of testing and calibration laboratories

to undertake the calibration in the attached accreditation scope

This Accreditation is invalid without the attached accreditation scope and shall remain in force within the validity period printed below, subject to continuing compliance with the requirements of the accreditation criteria.

Validity: 11-11-2025 to 06-10-2028

Initial Accreditation Date: 07/10/2010

ilac-MRA

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Emirates International Accreditation Centre

Amina Ahmed Mohammed
CHIEF EXECUTIVE OFFICER

مـركـز الإمـارات الـعـالـمـي لـلاعـتـمـاد
Emirates International Accreditation Centre

# Accreditation Scope

## LB-CAL-007

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

**Date: 11-11-2025**

| Accreditation History | | | |
|---|---|---|---|
| **Scope** | **Issue No.** | **Details** | **Date** |
| Electrical | 17 | Renewal of the accreditation and modification in scope for temperature and Dimentsional | 11/11/2025 |
| Force, Mass & Balance, Pressure | 16 | | |
| Volume,Temperature | 15 | | |
| Dimensional | 11 | | |
| Time & Frequency | 06 | | |
| Electrical | 16 | Certificate validity was extended for 6 months from 07-10-2025 up to 06-04-2026 | 07/10/2025 |
| Force,Mass & Balance, Pressure | 15 | | |
| Temperature,Volume | 14 | | |
| Dimensional | 10 | | |
| Time & Frequency | 5 | | |
| Electrical | 15 | Reissued due to modification in Range and Specification and Expanded Measurement Uncertainty for RCD Current scope | 14-10-2024 |
| Force | 14 | Reissued due to extension in scope and modification in Calibration Method | |
| Pressure | 14 | Reissued due to extension in scope | |
| Temperature, Pressure, Force, Volume | 13 | Modification in Scopes's Presentation | 29-04-2024 |
| Electrical, Mass & Balance | 14 | | |
| Dimensional | 09 | | |
| Time & Frequency | 04 | | |
| Electrical, Mass & Balance | 13 | Re-issued due to extension in scope | 13-02-2024 |

## Accreditation Scope

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# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

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**Date: 11-11-2025**

| Accreditation History | | | |
|---|---|---|---|
| **Scope** | **Issue No.** | **Details** | **Date** |
| Pressure, Temperature | 12 | Re-issued due to extension in scope | 13-02-2024 |
| Electrical, Force, Mass & Balance, Volume | 12 | Renewal of the accreditation | 13-02-2023 |
| Temperature, Pressure | 11 | | |
| Time & Frequency | 03 | | |
| Dimensional | 08 | Renewal of the accreditation and modification in CMC Values | |
| Electrical, Force, Mass & Balance, Volume | 11 | Certificate validity was extended for 6 months from 07-10-2022 up to 06-04-2023 | 07-10-2022 |
| Temperature, Pressure | 10 | | |
| Dimensional | 07 | | |
| Time & Frequency | 02 | | |
| Electrical | 10 | Extension in scope | 24-06-2022 |
| Force | 10 | Extension in scope and modification in Range and Specification and CMC Values | |
| Dimensional | 06 | | |
| Mass & Balance | 10 | Extension in scope and modification in CMC Values for Mass | |
| Volume | 10 | Modification in Range and Specification and CMC Values | 24-06-2022 |
| Time & Frequency | 01 | Granted accreditation from EIAC | |

# Accreditation Scope

## LB-CAL-007

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## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

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**Date: 11-11-2025**

| Accreditation History | | | |
|---|---|---|---|
| **Scope** | **Issue No.** | **Details** | **Date** |
| Temperature | 09 | Re-issued to comply with the new accreditation number format<br>Transision to ISO/IEC 17025:2017<br>The scope of Volume and Mass has been rephrased by merging some cells and made some alignments | 01-03-2021 |
| Electrical | | | |
| Pressure | | | |
| Force | | | |
| Mass & Balance | | | |
| Volume | | | |
| Dimensional | 05 | | |
| Temperature | 08 | Renewal accreditation and first issuance under the name of EIAC (which was formerly known as DAC) | 07-10-2019 |
| Electrical | | | |
| Pressure | | | |
| Force | | | |
| Mass & Balance | | | |
| Volume | | | |
| Dimensional | 04 | | |

## Accreditation Scope

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**Date: 11-11-2025**

| Accreditation History | | | |
|---|---|---|---|
| **Scope** | **Issue No.** | **Details** | **Date** |
| Temperature | 07 | Extension in scope and the first issuance under the name of EIAC (which was formerly known as DAC) | 07-02-2019 |
| Electrical | | First issuance under the name of EIAC (which was formerly known as DAC) | |
| Pressure | | Range and CMC has been changed and the first issuance under the name of EIAC (which was formerly known as | |
| Force | | First issuance under the name of EIAC (which was formerly known as DAC) | |
| Mass & Balance | | The range for Conventional Mass (OIML Class F2) was split and the first issuance under the name of EIAC (which was | |
| Volume | | Range and CMC for some Measuring Quality has been changed and the first issuance under the name of EIAC | |
| Dimensional | 03 | The CMC was changed and the first issuance under the name of EIAC (which was formerly known as DAC) | |

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## Accreditation Scope

## Temperature Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

**Issue no.: 15** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Direct Reading Thermometer with Sensor/Temperature Transmitter/Temperature Controller /Temperature Chart Recorder | In-house method no. CI/10/T3 | -20 °C to 120 °C | 0.27 °C | Laboratory Premises |
| | | > 120 °C to 300 °C | 0.5 °C | |
| | | > 300 °C to 600 °C | 1.0 °C | |
| | | > 600 °C to 1000 °C | 1.7 °C | |
| Direct Reading Thermometer with Sensor/Temperature Transmitter/Temperature Controller /Temperature Chart Recorder | In-house method no. CI/10/T3 | -80 °C to -40 °C | 0.1 °C | Customer Premises |
| | | -40 °C to 150 °C | 0.07 °C | |
| | | > 150 °C to 300 °C | 0.3 °C | |
| | | > 300 °C to 600 °C | 0.8 °C | |
| | | > 600 °C to 1000 °C | 1.5 °C | |
| | | > 1000 °C to 1200 °C | 3.0 °C | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Temperature Chamber; Freezer, Refrigerator, Incubator, Autoclave, Oven, Muffle Furnace (using 1 or 5 or 9 sensors) | n-house method no. CI/05/CC1 based on Euramet cg-20 | -40 °C to 100 °C | 0.6 °C | Laboratory Premises / Customer Premise |
| | | 100 °C to 140 °C | 0.8 °C | |
| | | 140 °C to 500 °C | 1.5 °C | |
| | | 500 °C – 800°C | 2.5 °C | |
| | | 800 °C– 1200 °C | 5.0 °C | |
| Dry block calibrators | n-house method no. CI/03/DBC1 based on Euramet cg-13 | -30 °C to 300 °C | 0.25 °C | Laboratory Premises |
| | | 300 °C to 500 °C | 0.7 °C | |
| | | 500 °C to 6500 °C | 1.5 °C | |
| | | > '650 °C to 800°C | 3.0 °C | |
| | | > 800 °C to 1200°C | 4.5 °C | |

# Accreditation Scope

## Temperature Calibration

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Infrared Thermometer | In-house method no. CI/03/LTM1 based on ASTM E2847-21 | -30 °C to 150 °C | 2 °C | Laboratory Premises |
| | | > '150 °C to 300 °C | 3 °C | |
| | | > '300 °C to 600 °C | 4 °C | |
| | | > '600 °C to 1000 °C | 7 °C | |
| Climatic Chamber (using 9 sensors) | In-house method no. CI/05/CC1 | 5 °C to 50 °C | 1.8 °C | Laboratory Premises / Customer Premises |
| | | 10 % to 90 %RH | 2.6 % RH | |
| Thermo hygrometer | In-house method no. CI/03/TH1 | 5 °C to 50 °C | 0.3 °C | Laboratory Premises |
| | | 10 % to 50 % rH | 1.6% RH | |
| | | > 50 % rH to 90 % rH | 2.3% RH | |
| Liquid Bath (using 5 sensors) | In-house method no. CI/03/B9 based on ASTM E715 | -80°C to -30°C | 0.25°C | Laboratory Premises / Customer Premises |
| | | > -30°C to 200°C | 0.18°C | |
| Liquid in Glass Thermometer | In-house method no. CI/03/G3 based on OIML R-133 | -80°C to -20°C | 0.2°C | Laboratory Premises |
| | | > '-20°C to 200°C | 0.15 °C | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Resistance Thermometer (RTD) | In-house method no. CI/03/PRT1 based on DKD-R 5-1 | -80 °C to 150 °C | 0.1 °C | Laboratory Premises |
| | | 150 °C to 300 °C | 0.3 °C | |
| | | 300 °C to 660 °C | 0.8 °C | |
| Climatic Chamber | Internal Procedure: CI/05/CC1 Based on Euramet cg-20 | 5 °C to 50 °C | 1.8 °C | Laboratory Premises / Customer Premises |
| | | 10 % to 90 %RH | 2.6 % RH | |
| Thermo hygrometer | Internal Procedure: CI/03/TH1 | 5 °C to 50 °C | 0.3°C | Laboratory Premises |
| | | 10 % to 50 % rH | 1.6% RH | |
| | | > 50 % rH to 90 % rH | 2.3% RH | |
| Liquid Bath | Internal Procedure: CI/03/B9 Based on Euramet cg-20 | -80°C to -20°C | 0.25°C | Laboratory Premises / Customer Premises |
| | | -20°C to 200°C | 0.2°C | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Direct reading thermometers/ Temperature transmitters/ Controllers/ Temperature chart recorders | Internal Procedure: CI/10/T3 Based on DKD-R 5-1 | -80 °C to -40 °C | 0.1 °C | Laboratory Premises |
| | | > -40 °C to 150 °C | 0.07 °C | |
| | | 150 °C to 300 °C | 0.3 °C | |
| | | 300 °C to 600 °C | 0.8 °C | |
| | | 600 °C to 1000 °C | 1.5 °C | |
| **Thermocouple Indicator by Simulation (Sourcing/Measuring)** | | | | |
| TC type B | In-house method no. 'CI/03/ECT1 based on Euramet cg-11 | 600 °C to 1800 °C | 0.4 °C | Laboratory Permises |
| TC type C | | 0 °C to 2316 °C | 0.6 °C | |
| TC type E | | -250 °C to 1000 °C | 0.2 °C | |
| TC type J | | -210 °C to 1200 °C | 0.3 °C | |
| TC type K | | -200 °C to 1372 °C | 0.2 °C | |
| TC type L | | -200 °C to 900 °C | 0.3 °C | |
| TC type N | | -200 °C to 1300 °C | 0.2 °C | |

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**Issue no.: 15** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| TC type R | In-house method no. 'CI/03/ECT1 based on Euramet cg-11 | 0 °C to 1767 °C | 0.5 °C | Laboratory Permises |
| TC type S | | 0 °C to 1767 °C | 0.4 °C | |
| TC type T | | -250 °C to 400 °C | 0.2 °C | |
| TC type U | | -200 °C to 600 °C | 0.4 °C | |
| Resistance Thermometer Indicator by Simulation (Sourcing/Measuring) | In-house method no. CI/03/ECT1 based on Euramet cg-11 | -200 °C to 850 °C | 0.07 °C | Laboratory Permises |

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## Accreditation Scope

## Electrical Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

**Issue no.: 17** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Voltage<br>Calibration of Meters | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15<br>U=Measured value | Up to 0.2 V | $35 X10^{-6} U + 4.3 \mu V$ | Laboratory Premises |
| | | >0.2 V to 2 V | $34X10^{-6} U + 7.7 \mu V$ | |
| | | >2 V to 20 V | $28X10^{-6} U + 67 \mu V$ | |
| | | >20 V to 200 V | $34X10^{-6} U + 0.65 mV$ | |
| | | >200 V to 1025 V | $35X10^{-6} U + 5.1 mV$ | |
| AC Voltage<br>Calibration of Meters | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15<br>U=Measured value | **Up to 0.2 V** | | Laboratory Premises |
| | | 10 Hz to 45 Hz | $2.3X10^{-3} U + 59 \mu V$ | |
| | | >45 Hz to 1 kHz | $0.38X10^{-3} U + 49 \mu V$ | |
| | | >1 kHz to 20 kHz | $0.92X10^{-3} U + 75 \mu V$ | |
| | | **>0.2 V to 2 V** | | |
| | | 10 Hz to 45 Hz | $2.3X10^{-3} U + 0.44 mV$ | |
| | | >45 Hz to 999 kHz | $0.42X10^{-3} U + 0.23 mV$ | |
| | | >1 kHz to 20 kHz | $0.96X10^{-3} U + 0.35 mV$ | |
| | | >20 kHz to 50 kHz | $2.9X 10^{-3} U + 2.3 mV$ | |

## Accreditation Scope

## Electrical Calibration

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Voltage<br>Calibration of Meters | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15<br>U=Measured value | **>2 V to 20 V** | | Laboratory Premises |
| | | 10 Hz to 45 Hz | $2.3X\ 10^{-3}U + 3.9$ mV | |
| | | >45 Hz to 2 kHz | $0.36X\ 10^{-3}U + 2.3$ mV | |
| | | >1 kHz to 20 kHz | $0.72X10^{-3}U + 3.7$ mV | |
| | | **>20 V to 200 V** | | |
| | | 30 Hz to 45 Hz | $0.66X\ 10^{-3}U + 31$ mV | |
| | | >45 Hz to 1 kHz | $0.41X\ 10^{-3}U + 22$ mV | |
| | | >1 kHz to 19.999 kHz | $1.0X\ 10^{-3}U + 58$ mV | |
| | | **>200 V to 1025 V** | | |
| | | 30 Hz to 45 Hz | $0.67X\ 10^{-3}U + 0.26$ V | |
| | | >45 Hz to 1 kHz | $0.39X\ 10^{-3}U + 0.20$ V | |
| | | >1 kHz to 10 kHz | $1.7X10^{-3}U + 0.49$ V | |

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**Issue no.: 17** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Current Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | Up to 200 µA | $0.12 X10^{-3} U + 35$ nA | Laboratory Premises |
| | | >0.2 mA to 2 mA | $89X10^{-6} U + 55$ nA | |
| | | >2 mA to 20 mA | $53X 10^{-6} U + 0.49$ µA | |
| DC Current Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | >20 mA to 200 mA | $92 X 10^{-6} U + 3.5$ µA | Laboratory Premises |
| | | >0.2 A to 2 A | $0.15X 10^{-3} U + 91$ µA | |
| | | >2 A to 20 A | $0.45X 10^{-3} U + 0.50$ mA | |
| DC Current, Calibration of Meters (Current coil method 10-turn & 50-turn) | Internal Procedure: CI/01/C6 Based on Euramet cg-15 U=Measured value | 20 A to 100 A | $6.8 X 10^{-3} U + 0.20$ A | Laboratory Premises |
| | | >100 A to 500 A | $6.8 X 10^{-3} U + 0.70$ A | |
| | | >500 A to 1000 A | $6.8 X 10^{-3} U + 0.70$ A | |
| AC Current Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **Up to 200 µA** | | Laboratory Premises |
| | | 10 Hz to 45 Hz | $2.3 X 10^{-3} U + 0.29$ µA | |
| | | >45 Hz to 1 kHz | $0.80 X 10^{-3} U + 0.29$ µA | |
| | | >1 kHz tp 10 kHz | $0.78 X 10^{-3} U + 0.38$ µA | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Current Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **>0.2 mA to 2 mA** | | Laboratory Premises |
| | | 10 Hz to 45 Hz | $2.3 \times 10^{-3} U + 0.66$ µA | |
| | | >45 Hz to 1 kHz | $0.65 \times 10^{-3} U + 0.59$ µA | |
| | | >1 kHz tp 10 kHz | $0.54 \times 10^{-3} U + 2.0$ µA | |
| | | **>2 mA to 20 mA** | | |
| | | 10 Hz to 45 Hz | $2.3 \times 10^{-3} U + 6.6$ µA | |
| | | >45 Hz to 1 kHz | $0.65 \times 10^{-3} U + 6.6$ µA | |
| | | >1 kHz to 10 kHz | $5.5 \times 10^{-3} U + 5.9$ µA | |
| | | **>20 mA to 200 mA** | | |
| | | 10 Hz to 45 Hz | $2.3 \times 10^{-3} U + 66$ µA | |
| | | >45 Hz to 1 kHz | $0.65 \times 10^{-3} U + 59$ µA | |
| | | >1 kHz to 10 kHz | $6.6 \times 10^{-3} U + 0.15$ mA | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Current Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **>0.2 A to 2 A** | | Laboratory Premises |
| | | 10 Hz to 45 Hz | $2.3 \times 10^{-3} U + 0.70$ mA | |
| | | >45 Hz to 1 kHz | $0.98 \times 10^{-3} U + 0.64$ mA | |
| | | >1 kHz to 5 kHz | $6.6 \times 10^{-3} U + 1.5$ mA | |
| | | **>2 A to 20 A** | | |
| | | 30 Hz to 45 Hz | $2.3 \times 10^{-3} U + 7$ mA | |
| | | >45 Hz to 100 Hz | $0.88 \times 10^{-3} U + 4.9$ mA | |
| | | >100 Hz to 1 kHz | $3.4 \times 10^{-3} U + 5.8$ mA | |
| AC Current Calibration of Meters (Current coil method 10-turn & 50-turn) | Internal Procedure: CI/01/C6 Based on Euramet cg-15 U=Measured value | **>20 A to 100 A** | | Laboratory Premises |
| | | 30 Hz to 60 Hz | $6.8 \times 10^{-3} U + 0.20$ A | |
| | | **>100 A to 1000 A** | | |
| | | 30 Hz to 60 Hz | $6.8 \times 10^{-3} U + 0.70$ A | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Resistance<br>Calibration of Meters<br>2-wire | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15 | 0.2 Ω | 5.0 mΩ | Laboratory Premises |
| | | 1 Ω | 5.0 mΩ | |
| | | 10 Ω | 7.0 mΩ | |
| | | 100 Ω | 11 mΩ | |
| | | 1 kΩ | 0.10 Ω | |
| | | 10 kΩ | 0.90 Ω | |
| | | 100 kΩ | 9.0 Ω | |
| | | 1 MΩ | 0.10 kΩ | |
| | | 10 MΩ | 4.5 kΩ | |
| | | 100 MΩ | 0.60 MΩ | |
| Resistance<br>Calibration of Meters<br>4-wire | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15 | 0.1 Ω | 0.10 mΩ | Laboratory Premises |
| | | 10 Ω | 6.0 mΩ | |
| | | 100 Ω | 12 mΩ | |
| | | 1 kΩ | 0.10 Ω | |

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## Electrical Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Resistance<br>Calibration of Meters<br>4-wire | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15 | 10 kΩ | 0.90 Ω | Laboratory Premises |
| | | 100 kΩ | 9.0 Ω | |
| Capacitance<br>Calibration of Meters | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15 | 1 nF | 6.0 pF | Laboratory Premises |
| | | 10 nF | 40 pF | |
| | | 20 nF | 0.10 nF | |
| | | 50 nF | 0.20 nF | |
| | | 100 nF | 0.30 nF | |
| | | 1 uF | 10 nF | |
| | | 10 uF | 0.10 µF | |
| | | 100 uF | 0.72 µF | |
| | | 1 mF | 0.01 mF | |
| Frequency<br>Calibration of Meters | Internal Procedure:<br>CI/01/M1<br>Based on Euramet cg-15<br>f= Measured Value | Up to 100 Hz | $2.0 \times 10^{-6} f + 18$ µHz | Laboratory Premises |
| | | >100 Hz to 1 k Hz | $2.0 \times 10^{-6} f + 90$ µHz | |
| | | >1 kHz to 10 kHz | $2.0 \times 10^{-6} f + 0.90$ mHz | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Frequency Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 f= Measured Value | >10 kHz to 20 kHz | $2.0 \times 10^{-6} f + 0.60$ mHz | Laboratory Premises |
| | | >20 kHz to 50 kHz | $2.0 \times 10^{-6} f + 1.7$ mHz | |
| | | >50 kHz to 100 kHz | $2.0 \times 10^{-6} f + 30$ mHz | |
| | | >100 kHz to 1 MHz | $2.0 \times 10^{-6} f + 91$ mHz | |
| | | >1 MHz to 10 MHz | $2.0 \times 10^{-6} f + 0.90$ Hz | |
| Insulation Resistance Calibration of Meters | Internal Procedure: CI/01/I2 Based on SANAS guideline: TG-02-01 | 10 kΩ | 10 Ω | Laboratory Premises |
| | | 100 kΩ | 0.10 kΩ | |
| | | 1 MΩ | 1.0 kΩ | |
| | | 5 MΩ | 10 kΩ | |
| | | 10 MΩ | 0.13 MΩ | |
| | | 50 MΩ | 0.59 MΩ | |
| | | 100 MΩ | 1.2 MΩ | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Insulation Resistance Calibration of Meters | Internal Procedure: CI/01/I2 Based on SANAS guideline: TG-02-01 | 400 MΩ | 5.6 MΩ | Laboratory Premises |
| | | 1 GΩ | 10 MΩ | |
| | | 2 GΩ | 50 MΩ | |
| | | 4 GΩ | 0.24 GΩ | |
| | | 10 GΩ | 0.58 GΩ | |
| | | 100 GΩ | 5.7 GΩ | |
| RCD Current | Internal Procedure: CI/01/RCDT1 Direct Method | 10 mA @ 50 Hz to 30 mA @ 50 Hz | 2.2% | Laboratory Premises |
| | | >30 mA @ 50 Hz to 2000 mA @ 50 Hz | 1.8% | |
| Residual Current Detector (RCD) Trip Time | Internal Procedure: CI/01/RCDT1 Direct Method | 20 ms | 0.69 ms | Laboratory Premises |
| | | 40 ms | 0.69 ms | |
| | | 200 ms | 0.69 ms | |
| | | 390 ms | 8.0 ms | |
| | | 900 ms | 8.0 ms | |

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Voltage-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | Up V to 0.2 V | $21 \times 10^{-6} U + 2.6\ \mu V$ | Laboratory Premises |
| | | >0.2 V to 2 V | $10 \times 10^{-6} U + 6.5\ \mu V$ | |
| | | >2 V to 20 V | $10 \times 10^{-6} U + 38\ \mu V$ | |
| | | >20 V to 200 V | $25 \times 10^{-6} U + 0.74\ \mu V$ | |
| | | >200 V to 1000 V | $25 \times 10^{-6} U + 2.6\ mV$ | |
| DC Voltage-Measuring Calibration of Calibrators | Internal Procedure: CI/01/I2 Based on SANAS guideline: TG-02-01 $U$=measured value | >1000 V to 10000 V | $0.24 \times 10^{-3} U$ | Laboratory Premises |
| AC Voltage-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | **Up V to 0.2 V** | | Laboratory Premises |
| | | 20 Hz to 50 Hz | $2.9 \times 10^{-3} U + 4.8\ \mu V$ | |
| | | >50 Hz to 100 Hz | $0.76 \times 10^{-3} U + 11\ \mu V$ | |
| | | >100 Hz to 2 kHz | $0.16 \times 10^{-3} U + 18\ \mu V$ | |
| | | >2 kHz to 10 kHz | $0.16 \times 10^{-3} U + 18\ \mu V$ | |
| | | >10 kHz to 30 kHz | $0.16 \times 10^{-3} U + 38\ \mu V$ | |
| | | >30 kHz to 100 kHz | $3.2 \times 10^{-3} U + 55\ \mu V$ | |

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Voltage-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | **>0.2 V to 2 V** | | Laboratory Premises |
| | | 20 Hz to 50 Hz | $2.9 \times 10^{-3} U + 27\ \mu V$ | |
| | | >50 Hz to 100 Hz | $0.79 \times 10^{-3} U + 23\ \mu V$ | |
| | | >100 Hz to 2 kHz | $0.21 \times 10^{-3} U + 54\ \mu V$ | |
| | | >2 kHz to 10 kHz | $0.21 \times 10^{-3} U + 54\ \mu V$ | |
| | | >10 kHz to 30 kHz | $0.25 \times 10^{-3} U + 0.10\ mV$ | |
| | | >30 kHz to 100 kHz | $3.5 \times 10^{-3} U + 41\ \mu V$ | |
| AC Voltage-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | **>2 V to 20 V** | | Laboratory Premises |
| | | 20 Hz to 50 Hz | $2.9 \times 10^{-3} U + 0.27\ mV$ | |
| | | >50 Hz to 100 Hz | $0.80 \times 10^{-3} U + 0.21\ mV$ | |
| | | >100 Hz to 2 kHz | $0.33 \times 10^{-3} U + 0.41\ mV$ | |
| | | >2 kHz to 10 kHz | $0.45 \times 10^{-3} U + 0.33\ mV$ | |
| | | >10 kHz to 30 kHz | $0.55 \times 10^{-3} U + 0.72\ mV$ | |
| | | >30 kHz to 100 kHz | $3.5 \times 10^{-3} U + 0.31\ mV$ | |

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Voltage-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | **>20 V to 200 V** | | Laboratory Premises |
| | | 20 Hz to 50 Hz | $2.9 \times 10^{-3} U + 2.7$ mV | |
| | | >50 Hz to 100 Hz | $0.80 \times 10^{-3} U + 2.9$ mV | |
| | | >100 Hz to 2 kHz | $0.56 \times 10^{-3} U + 3.7$ mV | |
| | | >2 kHz to 10 kHz | $0.45 \times 10^{-3} U + 4.4$ mV | |
| | | >10 kHz to 30 kHz | $0.55 \times 10^{-3} U + 8.1$ mV | |
| | | **>200 V to 750 V** | | |
| | | 20 Hz to 50 Hz | $2.9 \times 10^{-3} U + 4.5$ mV | |
| | | >50 Hz to 100 Hz | $1.1 \times 10^{-3} U + 11$ mV | |
| | | >100 Hz to 2 kHz | $0.53 \times 10^{-3} U + 47$ mV | |
| | | >2 kHz to 10 kHz | $0.51 \times 10^{-3} U + 0.21$ V | |
| AC Voltage-Measuring Calibration of Calibrators | CI/01/I2, Based on SANAS guideline:TG-02-01 $U$= measured value | >1000 V up to 10000 V | 0.55 □10$^{-3}$ $U$ | Laboratory Premises |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Current-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | Up to 200 µA | $0.40 \times 10^{-3} U + 0.04$ µA | Laboratory Premises |
| | | >0.2 mA to 2 mA | $0.40 \times 10^{-3} U + 0.05$ µA | |
| | | >2 mA to 20 mA | $0.40 \times 10^{-3} U + 0.43$ µA | |
| | | >20 mA to 200 mA | $0.43 \times 10^{-3} U + 4.4$ µA | |
| | | >0.2 A to 2 A | $0.86 \times 10^{-3} U + 63$ µA | |
| AC Current-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | **Up to 200 µA** | | Laboratory Premises |
| | | 20 Hz to 50 Hz | $4.0 \times 10^{-3} U + 4.6$ nA | |
| | | >50 Hz to 200 Hz | $2.3 \times 10^{-3} U + 7.8$ nA | |
| | | >200 Hz to 1 kHz | $4.6 \times 10^{-3} U + 4.1$ nA | |
| | | >1 kHz to 10 kHz | $5.2 \times 10^{-3} U + 0.15$ µA | |
| | | **>0.2 mA to 2 mA** | | |
| | | 20 Hz to 50 Hz | $3.5 \times 10^{-3} U + 44$ nA | |
| | | >50 Hz to 200 Hz | $1.7 \times 10^{-3} U + 82$ nA | |
| | | >200 Hz to 1 kHz | $1.3 \times 10^{-3} U + 98$ nA | |
| | | >1 kHz to 10 kHz | $1.4 \times 10^{-3} U + 60$ µA | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Current-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | **>2 mA to 20 mA** | | Laboratory Premises |
| | | 20 Hz to 50 Hz | $3.5 \times 10^{-3} U + 0.44$ µA | |
| | | >50 Hz to 200 Hz | $1.7 \times 10^{-3} U + 0.82$ µA | |
| | | >200 Hz to 1 kHz | $1.3 \times 10^{-3} U + 0.98$ µA | |
| | | >1 kHz to 10 kHz | $1.4 \times 10^{-3} U + 0.53$ µA | |
| | | **>20 mA to 200 mA** | | |
| | | 20 Hz to 50 Hz | $3.5 \times 10^{-3} U + 4.1$ µA | |
| | | >50 Hz to 200 Hz | $1.7 \times 10^{-3} U + 7.6$ µA | |
| | | >200 Hz to 1 kHz | $1.4 \times 10^{-3} U + 9.1$ µA | |
| | | >1 kHz to 10 kHz | $1.4 \times 10^{-3} U + 2.6$ µA | |
| | | **>0.2 A to 2 A** | | |
| | | 20 Hz to 50 Hz | $4.0 \times 10^{-3} U + 0.15$ mA | |
| | | >50 Hz to 200 Hz | $2.2 \times 10^{-3} U + 0.23$ mA | |
| | | >200 Hz to 1 kHz | $3.4 \times 10^{-3} U + 0.17$ mA | |
| | | >1 kHz to 10 kHz | $5.2 \times 10^{-3} U + 8.9$ µA | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Resistance-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 Based on Euramet cg-15 U=Measured value | 0.2 Ω to 20 Ω | 16 X $10^{-6}U$ + 0.25 mΩ | Laboratory Premises |
| | | >20 Ω to 200 Ω | 19 X $10^{-6}U$ + 1.2 mΩ | |
| | | >200 Ω to 2 kΩ | 8.4 X $10^{-6}U$ + 6.4 mΩ | |
| | | >2 kΩ to 20 kΩ | 8.4 X $10^{-6}U$ + 64 mΩ | |
| | | >20 kΩ to 200 kΩ | 39 X $10^{-6}U$ + 0.60 Ω | |
| | | >200 kΩ to 2 MΩ | 72 X $10^{-6}U$ + 30 Ω | |
| | | >2 MΩ to 20 MΩ | 0.29 X $10^{-3}U$ + 98 Ω | |
| | | >20 MΩ to 200 MΩ | 0.63 X $10^{-3}U$ + 4.0 kΩ | |
| | | 1 GΩ | 2.35 X $10^{-3}U$ + 41 kΩ | |
| Frequency-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 f= Measured Value | 1 Hz | 0.35 X $10^{-3}$ $f$ + 10 nHz | Laboratory Premises |
| | | >1 Hz to 10 Hz | 0.35 X $10^{-3}$ $f$ + 0.16 µHz | |
| | | >10 Hz to 100 Hz | 0.35 X $10^{-3}$ $f$ + 1.6 µHz | |
| | | >100 Hz to 1 kHz | 0.35 X $10^{-3}$ $f$ + 19 µHz | |
| | | >1 kHz to 10 kHz | 0.35 X $10^{-3}$ $f$ + 0.16 mHz | |

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Frequency-Measuring Calibration of Calibrators | Internal Procedure: CI/01/EC1 f= Measured Value | >10 kHz to 100 kHz | $0.35 \times 10^{-3} f + 1.6$ mHz | Laboratory Premises |
| | | >100 kHz to 1 MHz | $0.35 \times 10^{-3} f + 20$ mHz | |
| DC Voltage-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | Up to 0.2 V | $57 \times 10^{-6} U + 5.0$ µV | Customer Premises |
| | | >0.2 V to 2 V | $57 \times 10^{-6} U + 41$ µV | |
| | | >2 V to 20 V | $57 \times 10^{-6} U + 0.40$ mV | |
| | | >20 V to 200 V | $57 \times 10^{-6} U + 3.5$ mV | |
| | | >200 V to 1025 V | $57 \times 10^{-6} U + 23$ mV | |
| AC Voltage-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **Up to 0.2 V** | | Customer Premises |
| | | 10 Hz to 45 Hz | $0.80 \times 10^{-3} U + 61$ µV | |
| | | >45 Hz to 2 kHz | $0.30 \times 10^{-3} U + 52$ µV | |
| | | >2 kHz to 19.999 kHz | $1.1 \times 10^{-3} U + 0.20$ mV | |
| AC Voltage-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **>0.2 V to 2 V** | | Customer Premises |
| | | 10 Hz to 45 Hz | $0.70 \times 10^{-3} U + 0.40$ mV | |
| | | >45 Hz to 2 kHz | $0.40 \times 10^{-3} U + 0.30$ mV | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Voltage-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **>0.2 V to 2 V** | | Customer Premises |
| | | >2 kHz to 20 kHz | $0.70 \times 10^{-3} U + 0.60$ mV | |
| | | >20 kHz to 50 kHz | $2.3 \times 10^{-3} U + 3.5$ mV | |
| | | **>2 V to 20 V** | | |
| | | 10 Hz to 45 Hz | $0.70 \times 10^{-3} U + 3.9$ mV | |
| | | >45 Hz to 2 kHz | $0.40 \times 10^{-3} U + 3.4$ mV | |
| | | >2 kHz to 20 kHz | $0.80 \times 10^{-3} U + 5.8$ mV | |
| | | >20 kHz to 100 kHz | $3.5 \times 10^{-3} U + 35$ mV | |
| | | **>20 V to 200 V** | | |
| | | 40 Hz to 2 kHz | $0.50 \times 10^{-3} U + 33$ mV | |
| | | >2 kHz to 20 kHz | $1.0 \times 10^{-3} U + 50$ mV | |
| | | **>200 V to 1025 V** | | |
| | | 40 Hz to 2 kHz | $0.50 \times 10^{-3} U + 0.20$ V | |
| | | >2 kHz to 20 kHz | $1.0 \times 10^{-3} U + 0.40$ V | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Current-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | Up to 200 µA | 0.10 X $10^{-6}$ $U$ + 20 nA | Customer Premises |
| | | >0.2 mA to 2 mA | 0.10 X $10^{-6}$ $U$ + 0.10 µA | |
| | | >2 mA to 20 mA | 0.10 X $10^{-6}$ $U$ + 1.0 µA | |
| | | >20 mA to 200 mA | 0.10 X $10^{-3}$ $U$ + 9.0 µA | |
| | | >0.2 A to 2 A | 0.60 X $10^{-3}$ $U$ + 0.10 mA | |
| | | >2 A to 20 A | 0.60 X $10^{-3}$ $U$ + 1.2 mA | |
| DC Current-Sourcing Calibration of Meters (Current coil method 10-turn & 50-turn) | Internal Procedure: CI/01/C6 Based on Euramet cg-15 U=Measured value | 20 A to 100 A | 6.8 X $10^{-3}$ $U$ + 0.20 A | Customer Premises |
| | | >100 A to 500 A | 6.8 X $10^{-3}$ $U$ + 0.70 A | |
| | | >500 A to 1000 A | 6.8 X $10^{-3}$ $U$ + 0.70 A | |
| AC Current-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **Up to 200 µA** | | Customer Premises |
| | | 10 Hz to 45 Hz | 1.0 X $10^{-3}$ $U$ + 0.50 µA | |
| | | >45 Hz to 2 kHz | 0.80 X $10^{-3}$ $U$ + 0.40 µA | |
| | | >2 kHz tp 10 kHz | 0.10 X $10^{-3}$ $U$ + 0.60 µA | |

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## Electrical Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Current-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **>0.2 mA to 2 mA** | | Customer Premises |
| | | 10 Hz to 45 Hz | $1.0 \times 10^{-3} U + 1.0$ µA | |
| | | >45 Hz to 2 kHz | $0.80 \times 10^{-3} U + 1.0$ µA | |
| | | >2 kHz tp 10 kHz | $0.90 \times 10^{-3} U + 2.0$ µA | |
| | | **>2 mA to 20 mA** | | |
| | | 10 Hz to 45 Hz | $1.0 \times 10^{-3} U + 6.0$ µA | |
| | | >45 Hz to 2 kHz | $0.80 \times 10^{-3} U + 5.0$ µA | |
| | | >2 kHz to 10 kHz | $0.90 \times 10^{-3} U + 19$ µA | |
| | | **>20 mA to 200 mA** | | |
| | | 10 Hz to 45 Hz | $1.0 \times 10^{-3} U + 58$ µA | |
| | | >45 Hz to 2 kHz | $0.80 \times 10^{-3} U + 50$ µA | |
| | | >2 kHz to 10 kHz | $0.90 \times 10^{-3} U + 0.20$ mA | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Current-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 U=Measured value | **>0.2 A to 2 A** | | Customer Premises |
| | | 10 Hz to 45 Hz | $1.1 \times 10^{-3} U + 0.70$ mA | |
| | | >45 Hz to 2 kHz | $0.70 \times 10^{-3} U + 1.8$ mA | |
| | | **>2 A to 20 A** | | |
| | | 10 Hz to 45 Hz | $2.3 \times 10^{-3} U + 11$ mA | |
| | | >45 Hz to 200 Hz | $1.7 \times 10^{-3} U + 8.2$ mA | |
| | | >200 Hz to 1 kHz | $2.3 \times 10^{-3} U + 10$ mA | |
| AC Current-Sourcing Calibration of Meters (Current coil method 10-turn & 50-turn) | Internal Procedure: CI/01/C6 Based on Euramet cg-15 U=Measured value | **>20 A to 100 A** | | Customer Premises |
| | | 30 Hz to 60 Hz | $6.8 \times 10^{-3} U + 0.20$ A | |
| | | **>100 A to 1000 A** | | |
| | | 30 Hz to 60 Hz | $6.8 \times 10^{-3} U + 0.70$ A | |
| Resistance-Sourcing Calibration of Meters 4-wire | Internal Procedure: CI/01/M1 Based on Euramet cg-15 | 0.2 Ω | 5.0 mΩ | Customer Premises |
| | | 1 Ω | 5.0 mΩ | |
| | | 10 Ω | 7.0 mΩ | |

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| Resistance-Sourcing Calibration of Meters 4-wire | Internal Procedure: CI/01/M1 Based on Euramet cg-15 | 100 Ω | 11 mΩ | Customer Premises |
| | | 1 kΩ | 0.10 Ω | |
| | | 10 kΩ | 0.90 Ω | |
| | | 100 kΩ | 9.0 Ω | |
| | | 1 MΩ | 0.10 kΩ | |
| | | 10 MΩ | 4.5 kΩ | |
| | | 100 MΩ | 0.60 MΩ | |
| | | 0.1 Ω | 0.10 mΩ | |
| | | 10 Ω | 6.0 mΩ | |
| | | 100 Ω | 12 mΩ | |
| | | 1 kΩ | 0.10 Ω | |
| | | 10 kΩ | 0.90 Ω | |
| | | 100 kΩ | 9.0 Ω | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Capacitance-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 | 1 nF | 6 pF | Customer Premises |
| | | 10 nF | 40 pF | |
| | | 20 nF | 0.10 nF | |
| | | 50 nF | 0.20 nF | |
| | | 100 nF | 0.30 nF | |
| | | 1 uF | 10 nF | |
| Frequency-Sourcing Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 f= Measured Value | Up to 100 Hz | $2.0 \times 10^{-6} f + 18$ µHz | Customer Premises |
| | | >100 Hz to 1 k Hz | $2.0 \times 10^{-6} f + 90$ µHz | |
| | | >1 kHz to 10 kHz | $2.0 \times 10^{-6} f + 0.90$ mHz | |
| | | >10 kHz to 20 kHz | $2.0 \times 10^{-6} f + 0.60$ mHz | |
| | | >20 kHz to 50 kHz | $2.0 \times 10^{-6} f + 1.7$ mHz | |
| | | >50 kHz to 100 kHz | $2.0 \times 10^{-6} f + 30$ mHz | |
| | | >100 kHz to 1 MHz | $2.0 \times 10^{-6} f + 91$ mHz | |
| | | >1 MHz to 10 MHz | $2.0 \times 10^{-6} f + 0.90$ Hz | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Insulation Resistance-Sourcing Calibration of Meters | Internal Procedure: CI/01/I2 Based on SANAS guideline:TG-02-01 | 10 MΩ | 0.10 MΩ | Customer Premises |
| | | 100 MΩ | 0.70 MΩ | |
| | | 1 GΩ | 0.10 GΩ | |
| | | 10 GΩ | 0.10 GΩ | |
| DC Voltage-Measurement Calibration of Calibrators | Internal Procedure: CI/01/I2 Based on SANAS guideline: TG-02-01 U=measured value | Up to 1000 V | $0.10 \times 10^{-3} U + 24$ mV | Customer Premises |
| | | >1000 V to 5000 V | $0.24 \times 10^{-3} U$ | |
| AC Voltage @ 60 Hz-Measurement Calibration of Calibrators | Internal Procedure: CI/01/I2 Based on SANAS guideline: TG-02-01 U=measured value | 0 to 1000 V | $1.0 \times 10^{-3} U + 0.20$ V | Customer Premises |
| | | >1000 V to 5000 V | $0.55 \times 10^{-3} U$ | |
| DC Power Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 Using Multiproduct Calibrator | **33 mV to 1025 V** | | Laboratory Premises/ Customer premises |
| | | 0.33 mA to 2.999 A<br>10.9 µW to 2.9 kW | 0.04% | |
| | | 3 A to 19.999 A<br>99 mW to 20 kW | 0.12% | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Power Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 Using Multiproduct Calibrator + coil | 20 A to 59.999 A >20 kW to 60 kW | 0.47% | Laboratory Premises/ Customer premises |
| | | 60 A to 1000 A >60 kW to 1000 kW | 0.36% | |
| AC Power Calibration of Meters @ UPF, 0.5 Lag 0.5 lead 0.8 lead; 45 Hz to 65 Hz | Internal Procedure: CI/01/M1 Based on Euramet cg-15 | **33 mV to 1025 V** | | Laboratory Premises/Customer premises |
| | | 3.3 mA to 8.999 mA 0.11 mW to 2.97 mW | 0.20% | |
| | | 2.97 mW to 8.99 W | 0.23% | |
| | | 9 mA to 32.99 mA 0.29 mW to 11 mW | 0.17% | |
| AC Power Calibration of Meters @ UPF, 0.5 Lag, 0.5 lead, 0.8 lead 45 Hz to 65 Hz | Internal Procedure: CI/01/M1 Based on Euramet cg-15 | 11 mW to 32.99 W | 0.17% | Laboratory Premises/ Customer premises |
| | | 33 mA to 89.99mA 1.1 mW to 29.7 mW | 0.20% | |
| | | 29.7 mW to 89.9 W | 0.24% | |
| | | 90 mA to 329.99 mA 2.97 mW to 109.9 mW | 0.13% | |
| | | 109.9 mW to 329.99 W | 0.17% | |
| | | 0.33 A to 0.8999 A 10.9 mW to 297 mW | 0.18% | |
| | | 297 mW to 899.9 W | 0.21% | |
| | | 0.9 A to 2.1999 A 2.97 mW to 725 mW | 0.18% | |
| | | 725 mW to 2.1 kW | 0.18% | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| AC Power Calibration of Meters @ UPF, 0.5 Lag, 0.5 lead, 0.8 lead 45 Hz to 65 Hz | Internal Procedure: CI/01/M1 Based on Euramet cg-15 | 2.2 A to 4.4999 A 72.6 mW to 1.485 W | 0.20% | Laboratory Premises/ Customer premises |
| | | 1.485 W to 4.4 kW | 0.22% | |
| | | 4.5 A to 20 A 148.5 mW to 6.6 W | 0.17% | |
| | | 6.6 W to 20 kW | 0.19% | |
| AC Power Calibration of Meters @ UPF, 0.5 Lag, 0.5 lead, 0.8 lead 45 Hz to 65 Hz | Internal Procedure: CI/01/M1 Based on Euramet cg-15 Using Multiproduct Calibrator + coil | 20 A to 59.999 A 20 kW to 60 kW | 0.47% | |
| | | 60 A to 1000 A 60 kW to 1000 kW | 0.36% | |
| Phase angle Calibration of Meters (Voltage to Current) | Internal Procedure: CI/01/M1 Based on OEM manual | 0°- 90° 10 Hz to 65 Hz | 0.2° | Laboratory Premises/ Customer premises |
| | | 0°- 90° 65 Hz to 500 Hz | 0.4° | |
| | | 0°- 90° 0.5 kHz to 1kHz | 0.8° | |
| | | >90°- 360° 50 Hz | 0.4° | |
| Active Energy/Reactive Energy Calibration of Meters | Internal Procedure: CI/01/EM1 Based on EN 50470-3 | 40 - 65 Hz 30-500 Volts PF= 1 to 0.5 (Lead and Lag) Current: 1 mA to 12 A | 0.07% | Laboratory Premises/ Customer premises |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Active Energy/Reactive Energy Calibration of Meters | Internal Procedure: CI/01/EM1 Based on EN 50470-3 | 40 - 65 Hz 30-500 Volts PF= 1 to 0.5 (Lead and Lag) | 0.08% | Laboratory Premises/ Customer premises |
| Active Energy/Reactive Energy Calibration of Meters | Internal Procedure: CI/01/EM1 Based on EN 50470-3 (Using Current Clamps) | 40 - 65 Hz 30-500 Volts PF= 1 to 0.5 (Lead and Lag) | 0.24% | Laboratory Premises/ Customer premises |
| Resistance Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 (Using Standard Calibration Resistors/MPC) | 10 µΩ | 1.5% | Laboratory Premises/ Customer premises |
| | | 50 µΩ | 1.2% | |
| | | 200 µΩ | 0.07% | |
| | | 500 µΩ | 0.06% | |
| | | 1 mΩ | 0.06% | |
| | | 2 mΩ | 0.08% | |
| | | 5 mΩ | 0.06% | |
| | | 50 mΩ | 0.06% | |
| | | 100 mΩ | 0.02% | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Resistance Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 (Using Standard Calibration Resistors/MPC) | 200 mΩ | 0.04% | Laboratory Premises/ Customer premises |
| | | 500 mΩ | 0.02% | |
| | | 1 Ω | 0.02% | |
| | | >1 Ω-10 Ω | 0.006% | |
| | | >10 Ω - 100 Ω | 0.005% | |
| | | >100 Ω - 1MΩ | 0.004% | |
| | | >1 MΩ - 3.3 MΩ | 0.007% | |
| | | >3.3 MΩ - 11 MΩ | 0.02% | |
| | | >11 MΩ - 33 MΩ | 0.03% | |
| | | >33 MΩ - 110 MΩ | 0.06% | |
| | | 110 MΩ - 330 MΩ | 0.3% | |
| | | >330 MΩ -1 GΩ | 1.7% | |

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| Capacitance Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 (Using Standard Capacitance/MPC) | 100 pF - 1nF @ 1 kHz | 4.7% to 1.5% | Laboratory Premises/ Customer premises |
| | | 1 nF - 10 µF @ 1 kHz | 1.2% to 1.5% | |
| | | 0.19 nF to 0.3999 nF (@10 Hz to 10 kHz) | 6.7% | |
| | | 0.4 nF to 1.0999 nF (@10 Hz to 10 kHz) | 3.9% | |
| | | 1.1 to 3.2999 nF (@10 Hz to 3 kHz) | 2.5% | |
| | | 3.3 to 10.9999 nF (@10 Hz to 1 kHz) | 0.5% | |
| | | 11 to 32.9999 nF (@10 Hz to 1 kHz) | 0.9% | |
| | | 33 to 109.999 nF (@10 Hz to 1 kHz) | 0.5% | |
| | | 110 to 329.999 nF (@10 Hz to 1 kHz) | 0.5% | |
| | | 0.33 to 1.09999 µF (@10 Hz to 600 Hz) | 0.5% | |
| | | 1.1 to 3.29999 µF (@ 10 Hz to 300 Hz) | 0.5% | |
| | | 3.3 to 10.9999 µF (@ 10 Hz to 150 Hz) | 0.5% | |
| | | 11 to 32.9999 µF (@ 10 Hz to 120 Hz) | 0.7% | |
| | | 33 to 109.999 µF (@ 10 Hz to 80 Hz) | 0.7% | |

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| Capacitance Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 (Using Standard Capacitance/MPC) | 110 to 329.999 µF (@ 0 Hz to 50 Hz) | 0.7% | Laboratory Premises/ Customer premises |
| | | 0.33 mF to 1.09999 mF (@ 0 Hz to 20 Hz) | 0.9% | |
| | | 1.1 to 3.29999 mF (@ 0 Hz to 6 Hz) | 0.7% | |
| | | 3.3 to 10.9999 mF (@ 0 Hz to 2 Hz) | 0.7% | |
| | | 11 to 32.9999 mF (@ 0 Hz to 0.6 Hz) | 1.0% | |
| | | 33 to 110 mF (@ 0 Hz to 0.2 Hz) | 1.4% | |
| Inductance-Measurement Calibration of Meters | Internal Procedure: CI/01/M1 Based on Euramet cg-15 (Using MPC) | 1 mH to 10 H (@ 1 kHz) | 1% | Laboratory Premises/ Customer premises |
| | | 10 µH to 100 µH (10 kHz) | 0.19% | Laboratory Premises |
| | | 100 µH to 1 H (100 Hz to 1 kHz) | 0.30% | |
| | | 100 µH to 1 H (1 kHz to 10 kHz) | 0.16% | |
| | | 1 H to 10 H (100 Hz to 1 kHz) | 0.30% | |

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| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| DC Current<br>Calibration of Calibrators | Internal Procedure:<br>CI/01/EC1<br>Based on Euramet cg-15<br>(Using Current shunt and | >2 A to 30 A | 0.15 A to 0.18 A | Laboratory Premises |
| | | >30 A to 240 A | 0.6 A | |
| AC Current<br>Calibration of Calibrators | Internal Procedure:<br>CI/01/EC1<br>Based on Euramet cg-15<br>(Using Current shunt) | > 2A to 30 A<br>(@ 50 Hz to 1 kHz) | 0.15 A to 0.18 A | Laboratory Premises |
| Resistance<br>Calibration of Calibrators | Internal Procedure:<br>CI/01/EC1<br>Based on Euramet cg-15 | 1 Ω to 10 MΩ<br>(10 Hz to 1 kHz) | 0.15% | Laboratory Premises |
| Capacitance<br>Calibration of Calibrators | Internal Procedure:<br>CI/01/EC1<br>Based on Euramet cg-15 | 10 pF to 100 pF<br>(1 kHz to 100 kHz) | 0.63% to 0.15% | Laboratory Premises |
| | | 100 pF to 1 nF<br>(100 Hz to 10 kHz) | 0.60% to 0.15% | |
| | | 1 nF to 10 µF<br>(100 Hz to 10 kHz) | 0.15% | |
| | | 10 µF to 100 µF<br>(100 Hz to 1 kHz) | 0.15% | |
| Safety Testers/ PAT Testers<br>Earth bond current @ 0.1Ω load | Internal Procedure:<br>CI/01/SA1<br>Based on Transmille 3200 Manual | 100 mA | 9 mA | Laboratory Premises |
| | | 4 A - 25 A | 0.5 A | |

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| Safety Testers/ PAT Testers<br>Earth Bond Resistance | Internal Procedure: CI/01/SA1<br>Based on Transmille 3200 Manual | 36 mΩ to 1 Ω | 5 mΩ - 11 mΩ | Laboratory Premises |
| | | 5 Ω | 29 mΩ | |
| | | 10 Ω | 58 mΩ | |
| | | 100 Ω | 580 mΩ | |
| | | 1000 Ω | 5.8Ω | |
| Safety Testers/ PAT Testers<br>Leakage current | Internal Procedure: CI/01/SA1<br>Based on Transmille 3200 Manual | 3.3 µA @ 240 V | 0.1 µA | Laboratory Premises |
| | | 33 µA @ 240 V | 0.4 µA | |
| | | 115 µA @ 240 V | 1.3 µA | |
| | | 230 µA @ 240 V | 2.7 µA | |
| | | 0.46 mA @ 240 V | 5 µA | |
| | | 2.2 mA @ 240 V | 40 µA | |
| | | 4.7 mA @ 240 V | 50 µA | |
| | | 7.7 mA @ 240 V | 50 µA | |

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| Safety Testers/ PAT Testers<br>Load for PAT-At nominal UAE mains output | Internal Procedure: CI/01/SA1<br>Based on Transmille 3200 Manual | 0.13 kVA | 6% | Laboratory Premises |
| Continuity Resistance | Internal Procedure: CI/01/SA1<br>Based on Transmille 3200 Manual | 0.2 Ω - 2 Ω | 30 mΩ | Laboratory Premises |
| | | 2Ω - 10Ω | 40 mΩ - 58 mΩ | |
| | | 10Ω - 20Ω | 58 mΩ - 90 mΩ | |
| | | 100Ω | 0.32 Ω | |
| | | 1 kΩ | 3 Ω | |
| | | 100 mA to 300 mA | 3.7 mA | |
| Loop Testers<br>Loop impedence | Internal Procedure: CI/01/SA1<br>Based on Transmille 3200 Manual | 0.51 Ω | 43 mΩ | Laboratory Premises |
| | | 1 Ω | 44 mΩ | |
| | | 5 Ω | 56 mΩ | |
| | | 10 Ω | 80 mΩ | |
| | | 99 Ω | 0.6 Ω | |
| | | 995 Ω | 5.8 Ω | |

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Emirates International Accreditation Centre

## Accreditation Scope

## Electrical Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

**Issue no.: 17** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Generation Frequency | Internal procedure : CI/14/SPA1 Based on OEM manual; Using Signal Generator, Sweeper | 100kHz to 4GHz | 0.001 kHz to 1.5 kHz | Laboratory Premises |
| | | >4 GHz to 20 GHz | 2.6 kHz to 13.2 kHz | |
| Generation Power Level (Absolute Power) | Internal procedure : CI/14/RFS1 Based on OEM manual; Using Sweeper | 50 MHz to 1 GHz -30 dBm to 20 dBm | 1.4 dB | Laboratory Premises |
| | | 10 GHz to 18 GHz -30 dBm to 13 dBm | 1.6 dB | |
| Generation Amplitude Modulation (AM) (Mod Rate 1 kHz) | Internal procedure : CI/14/SPA1 Based on OEM manual; Using Signal Generator | **AM Frequency: 10 MHz to 4 GHz** | | Laboratory Premises |
| | | Depth: 10% | 1.7% | |
| Generation Amplitude Modulation (AM) (Mod Rate 1 kHz) | Internal procedure : CI/14/SPA1 Based on OEM manual; Using Signal Generator | Depth: 30% | 3.0% | Laboratory Premises |
| | | Depth: 50% | 4.3% | |
| | | Depth: 70% | 5.6% | |
| | | Depth: 80% | 6.3% | |

## Accreditation Scope

## Electrical Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Generation Frequency Modulation (FM) (Mod Rate 1 kHz) | Internal procedure : CI/14/SPA1 Based on OEM manual; Using Signal Generator | **FM Frequency: 10 MHz to 1 GHz** | | Laboratory Premises |
| | | Deviation: 1 kHz | 0.04 kHz | |
| | | Deviation: 50 kHz | 2 kHz | |
| | | Deviation: 100 kHz | 4 kHz | |
| Generation Reflection Coefficient (from 0.3 MHz to 10 GHz, N connector) | Internal procedure : CI/14/RFS1 Based on OEM manual; Using 6 dB and 20 dB Return Loss standards | 0.501 & 0.1 (from 0.3 MHz to 10 GHz) | 0.04 & 0.07 | Laboratory Premises |
| Measure Frequency | Internal procedure : CI/14/SG1 Based on OEM manual; Using Counter | 10 kHz- 20 GHz | 0.0015 kHz to 8.5 kHz | Laboratory Premises |
| Measure Power Level (Absolute Power) | Internal procedure :CI/14/SG1 Based on OEM manual; Using power meter with sensor and spectrum analyser | **10 MHz to 18 GHz** | | Laboratory Premises |
| | | -30 dBm | 0.8 dB | |
| | | -25 dBm to 13 dBm | 0.5 dB | |
| | | **10 MHz to 6 GHz** | | |
| | | -60 dBm to -30 dBm | 1.8 dB | |
| | | >6 GHz to 18 GHz | | |
| | | -60 dBm to -30 dBm | 2.4 dB | |

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## Electrical Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Measure AM Modulation (Mod Rate- 1kHz) | Internal procedure : CI/14/SG1 Based on OEM manual; Using Measuring Receiver | **10 MHz to 1GHz** | | Laboratory Premises |
| | | Depth: 1% | 0.08% | |
| | | Depth: 10% | 0.4% | |
| | | Depth: 50% | 1.0% | |
| | | Depth: 90% | 1.5% | |
| | | **1 MHz to 10 MHz** | | |
| | | Deviation:1 kHz to 40 kHz | 0.03 kHz to 0.94 kHz | |
| | | Deviation: >40 kHz to 100 kHz | 0.52 kHz to 1.3 kHz | |
| | | **>0.01 GHz to 1 GHz** | | |
| | | Deviation:1 kHz to 100 kHz | 0.15 kHz to 1.4 kHz | |
| Measure Reflection Coefficient 0.2 to 0.501 (2 MHz to 4 GHz) | Internal procedure : CI/14/RFM1 Based on OEM manual; Using RF Analyzer | 2 MHz to 3.5 GHz | 0.16 | Laboratory Premises |
| | | > 3.5 GHz to 4 GHz | 0.36 | |
| Insulation Resistance | CI/01/I2 Based on SANAS TG-01-02 | >100 GΩ to 10 TΩ | 5% | Laboratory Premises |
| Frequency (Meassure) | CI/01/EC1 Based on EURAMET cg-15 | > 1 MHz to 15 MHz | 0.04% | Laboratory Premises |

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## Accreditation Scope

## Pressure Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

**Issue no.: 16** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Gas Pressure (Gauge Pressure) | Digital Indicator CI/02/PI2 BS 837-1 EURAMET /cg-17/v.02 DKD-R 6-1 | -100 kPa to 100 kPa | 30 Pa | Laboratory Premises |
| | | 0 MPa up to 2 MPa | 0.3 kPa | |
| | | > 2 MPa up to 21 MPa | 2.5 kPa | |
| Hydraulic Pressure (gauge pressure) | Digital Indicator CI/02/PI2 BS 837-1 EURAMET/ cg-17/v.02 DKD-R 6-1 | 0 MPa to 70 MPa | 30 kPa | Customer premises |
| Hydraulic Pressure (gauge pressure) | Digital Indicator CI/02/PI2 BS 837-1 EURAMET/ cg-17/v.02 DKD-R 6-1 | 0 MPa to 140 MPa | 50 kPa | Laboratory Premises |
| Hydraulic Pressure (Gauge Pressure) | Digital Indicator CI/02/PI2 BS 837-1 EURAMET/ cg-17/v.02 DKD-R 6-1 | 140 MPa to 280 MPa | ± 0.06 MPa | Laboratory Premises |

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## Accreditation Scope

## Pressure Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Gas Pressure (gauge pressure) | Digital Indicator CI/02/PI2 BS 837-1 EURAMET/ cg-17/v.02 DKD-R 6-1 | -100 kPa to 250 kPa | 100 Pa | Customer premises |
| Gas Pressure (gauge pressure) | Digital Indicator CI/02/PI2 BS 837-1 EURAMET/ cg-17/v.02 DKD-R 6-1 | >250 kPa to 20 MPa | 3 kPa | Customer premises |
| Absolute Pressure | CI/02/PI2 Based on DKD R6-1 | 0 mbar to 3600 mbar abs | 0.04% | Laboratory Premises |

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# Accreditation Scope

## Force Calibration

## LB-CAL-007

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

**Issue no.: 16** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| UTM, CBD machines | ISO 7500-1:2018 - Verification and calibration of ForceMeasuring System, and SOP CI/09/TTM1 | 0.56 N to 245 kN compression | 0.50% | Customer Premises |
| | | 0.56 N to 245 kN tension | 0.30% | Customer Premises |
| Push pull Gauge | VDI/VDE 2624 part 2.1 - Measurement of mechanical quantities - Instructions for calibration of mobile force measurement systems, and SOP CI/04/FG1 | 0.56 N to 4.5 kN compression | 0.20% | Laboratory Premises |
| | | 0.56 N to 4.5 kN Tension | 0.20% | Laboratory Premises |

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## Accreditation Scope

## Force Calibration

## LB-CAL-007

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Hand Torque Tools (CW&CCW) | ISO 6789-1:2017 - Assembly tools for screws and nuts — Hand torque tools Part 1: Requirements and methods for design conformance testing and quality conformance testing: minimum requirements for declaration of conformance, and ISO 6789-2 Assembly tools for screws and nuts — Hand torque tools Part 2: Requirements for calibration and determination of measurement uncertainty, and SOP CI/06/T1 | 0.565 N·m to 2711 N·m | 1.00% | Laboratory Premises |
| | | 0.04 N·m to 0.8 N·m | 1.00% | |

# Accreditation Scope

## Mass and Balance Calibration

## LB-CAL-007

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

**Issue no.: 16** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Non-automatic Weighing Instruments | EURAMET cg 18 full scale of the unit under calibration. | 0 to 80 g | $4 \times 10^{-6}$ FS of UUC | Customer Premises |
| | | > 80 g to 20 kg | $2 \times 10^{-5}$ FS of UUC | |
| | | > 20 kg to 100 kg | $3.7 \times 10^{-4}$ FS of UUC | |
| | | > 100 kg to 1000 kg | $4 \times 10^{-4}$ FS of UUC | |
| Conventional Mass | Substitution method with Air Buoyancy Correction | 1mg | 0.009 mg | Laboratory Premises |
| | | 2 mg | 0.012 mg | |
| | | 5 mg | 0.009 mg | |
| | | 10 mg | 0.013 mg | |
| | | 20 mg | 0.009 mg | |
| | | 50 mg | 0.010 mg | |
| | | 100 mg | 0.02 mg | |
| | | 200 mg | 0.011 mg | |
| | | 500 mg | 0.013 mg | |

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# Accreditation Scope

## Mass and Balance Calibration

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Conventional Mass | Substitution method with Air Buoyancy Correction | l g | 0.014 mg | Laboratory Premises |
| | | 2 g | 0.020 mg | |
| | | S g | 0.052mg | |
| | | 10 g | 0.023 mg | |
| | | 20 g | 0.031 mg | |
| | | 50 g | 0.044mg | |
| | | 100 g | 0.13 mg | |
| | | 200 g | 0.18 mg | |
| | | 500 g | 1.2 mg | |
| | | 1kg | 1.1 mg | |
| | | 2 kg | 2.1 mg | |
| | | 5 kg | 100 mg | |
| | | 10 kg | 100 mg | |

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## Accreditation Scope

## Mass and Balance Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Conventional Mass | Substitution method with Air Buoyancy Correction | 20 kg | 100 mg | Laboratory Premises |
| Conventional Mass | CI/04/W2 based on OIML R-111 Subsitution Method (OIML Class E2 Class as reference weight) | 5 kg | 10 mg | Laboratory premises |
| | | 10 kg | 16 mg | |
| | | 20 kg | 30 mg | |

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Emirates International Accreditation Centre

## Accreditation Scope

## Volume Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

**Issue no.: 15** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Micro Pipette | Direct (Radiometric Photometry) ISO 8655-7 | 0.1 µl to 0.5 µl | 1.5 % | Laboratory Premises |
| | | > 0.5 µl to 5000 µl | 1.2 % | |
| Piston operated Volumetric Devices (pipettes, dispensers, syringes, burettes) | Gravimetric method ISO 8655-6 V=measured value | 10 µl to 500 µl | 0.82 µl | Laboratory Premises |
| | | > 500 µl to 10000 µl | 0.2%*V | |
| Volumetric Instrument (Glassware) Volumetric Flask | Gravimetric method ISO 4787 | 5 ml | 0.04 ml | Laboratory Premises |
| | | 10 ml | 0.04 ml | |
| | | 20 ml | 0.04 ml | |
| | | 25 ml | 0.04 ml | |
| | | 50 ml | 0.07 ml | |
| | | 100 ml | 0.09 ml | |

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# Accreditation Scope

## Volume Calibration

## LB-CAL-007

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Volumetric Instrument (Glassware) Volumetric Flask | Gravimetric method ISO 4787 | 200 ml | 0.1.3 ml | Laboratory Premises |
| | | 250 ml | 0.13 ml | |
| | | 500 ml | 0.20 ml | |
| | | 1000 ml | 0.29 ml | |
| | | 2000 ml | 0.41 ml | |
| Measuring Cylinder | Gravimetric method ISO 4787 | 1ml to 5 ml | 0.04 ml | Laboratory Premises |
| | | 10 ml | 0.08 ml | |
| | | 25 ml | 0.20 ml | |
| | | 50 ml | 0.41 ml | |
| | | 100 ml | 0.41ml | |
| | | 250 ml | 0.82 ml | |
| | | 500 ml | 2.0 ml | |
| | | 1000 ml | 4.1ml | |
| | | 2000 ml | 8.2 ml | |

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## Accreditation Scope

## Volume Calibration

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# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Measuring Pipette | Gravimetric method ISO 4787 | 1 ml | 0.004 ml | Laboratory Premises |
| | | 2 ml | 0.008 ml | |
| | | 5 ml | 0.02 ml | |
| | | 10 ml | 0.04 ml | |
| | | 20 ml | 0.04 ml | |
| | | 25 ml | 0.04 ml | |
| | | 50 ml | 0.04 ml | |
| | | 100 ml | 0.20 ml | |
| Burette | Gravimetric method ISO 4787 | 1 ml to 10 ml | 0.009 ml | Laboratory Premises |
| | | 25 ml | 0.021 ml | |
| | | 50 ml | 0.033 ml | |
| | | 100 ml | 0.061 ml | |

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## Volume Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Bulb pipette | Gravimetric method ISO 4787 | 0.5 ml | 0.0004 ml | Laboratory Premises |
| | | 1 ml | 0.005 ml | |
| | | 2 ml | 0.005 ml | |
| | | 5 ml | 0.01 ml | |
| | | 10 ml | 0.01 ml | |
| | | 20 ml | 0.01 ml | |
| | | 25 ml | 0.01ml | |
| | | 50 ml | 0.01 ml | |
| | | 100 ml | 0.01 ml | |
| Beaker | Gravimetric method 1S0 4787 | 1ml to 5 ml | 0.02 ml | Laboratory Premises |
| | | 10 ml | 0.04 ml | |
| | | 25 ml | 0.21ml | |
| | | 50 ml | 0.32 ml | |

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## Volume Calibration

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|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Beaker | Gravimetric method 1S0 4787 | 100 ml | 0.45 ml | Laboratory Premises |
| | | 150 ml | 0.65 m l | |
| | | 250 ml | 0.89 ml | |
| | | 400 ml | 1.2 ml | |
| | | 500 ml | 1.5 ml | |
| | | 600 ml | 1.8 ml | |
| | | 800 ml | 2.0 ml | |
| | | 1000 ml | 3.2 ml | |
| | | 2000 ml | 3.2 ml | |

**Accreditation Scope**

**Dimensional Calibration**

**LB-CAL-007**

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

**Issue no.: 11** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| All Types of Calipers<br>Digital<br>Vernier<br>Dial | Procedure (CI/05/V3) based on ISO 13385-1-2019<br>For determining error of indicated size<br>Comparison with gauge block | 0 mm to 300 mm | 25 µm | Laboratory Premises |
| | | >300 mm to 600 mm | 28 µm | |
| | | >600 mm to 1000 mm | 35 µm | |
| External Micrometer | Procedure (CI/05/O2) based on ISO 3611 :2010<br>For determining error of indicated size<br>Comparison with gauge blocks | 0 mm to 25 mm | 2.0 µm | Laboratory Premises |
| | | >25 mm to 50 mm | 3.0 µm | |
| | | >50 mm to 100 mm | 3.5 µm | |
| Dial gauges<br>(Digital & Analogue) | Procedure (CI/05/D6) based on JIS 7503:2017<br>For determining error of indicated displacement<br>Comparison with dial gauge tester/ gauge blocks | 0 mm to 50 mm | 3 µm | Laboratory Premises |

# Accreditation Scope

## Dimensional Calibration

## LB-CAL-007

**Arabian Calibration and Dev. Rep. CO. LLC**

**Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road**

**Sharjah | United Arab Emirates**

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Gauge blocks (metric) (Steel, Tungsten Carbide and Ceramic) | Procedure-CI/05/GB1 based on ISO 3650 Measurement of central length by mechanical comparison. | 0.5 mm to 10 mm | 0.12 µm | Laboratory Premises |
| | | >10 mm to 25 mm | 0.15 µm | |
| | | >25 mm to 50 mm | 0.20 µm | |
| | | >50 mm to 75 mm | 0.25 µm | |
| | | >75 mm to 100 mm | 0.35 µm | |

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# Accreditation Scope

## Time and Frequency Calibration

## LB-CAL-007

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

**Issue no.: 06** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Time Interval | Internal Procedure CI/05/SW1 Based on NIST 960-12 | Up to 86400 s | 0.3 s | Laboratory |
| Tachometer/ Stroboscope | Internal Procedure: CI/01/TCM1 Based on SANAS TR-45-02 | 30 rpm to 60 rpm | 0.015% | Laboratory/ Customer Premises |
| | | >60 rpm to 100 rpm | 0.008% | |
| | | >100 rpm to 200,000 | 0.006% | |
| Rotational Speed Measurement | Internal Procedure:CI/05/CFG1 Based on SANAS TR-45-02 (Using Tachometer) | 30 rpm to 600 rpm | 0.6 rpm | Laboratory/ Customer Premises |
| | | >600 rpm to 6000 rpm | 1.8 rpm | |
| | | >6000 rpm to 30000 | 0.05% | |
| Oscilloscope Amplitude-Square wave in to 50 Ω | Internal Procedure: CI/01/OSE1 Based on Euramet cg-7 | 1.8 mVp-p to 200 mVp-p | 0.25 % of reading + 0.15 mV | Laboratory/ Customer Premises |
| | | >0.2 Vp-p to 2.2 Vp-p | 0.30 % of reading + 0.1 mV | |
| Oscilloscope Amplitude-Square wave) in to 1MΩ | Internal Procedure: CI/01/OSE1 Based on Euramet cg-7 | 1.8 mVp-p to 105 Vp-p | 0.30 % of reading + 0.1 mV | Laboratory/ Customer Premises |

# Accreditation Scope

## Time and Frequency Calibration

## LB-CAL-007

## Arabian Calibration and Dev. Rep. CO. LLC

## Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

## Sharjah | United Arab Emirates

**Issue no.: 06** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Oscilloscope Time Marker | Internal Procedure: CI/01/OSE1 Based on Euramet cg-7 | 2 ns | 0.029% | Laboratory/ Customer Premises |
| | | 5 ns | 0.012% | |
| | | 10 ns | 0.006% | |
| | | 20 ns | 0.004% | |
| | | 50 ns to 500 ns | 0.003% | |
| | | 1 µs | 0.058% | |
| | | 2 µs | 0.029% | |
| | | 5 µs | 0.012% | |
| | | 10 µs | 0.006% | |
| | | 20 µs | 0.004% | |
| | | 50 µs to 500 µs | 0.003% | |
| | | 1 µs | 0.058% | |
| | | 2 µs | 0.029% | |

مـركـز الإمـارات الـعـالـمـي لـلاعـتـمـاد
Emirates International Accreditation Centre

## Accreditation Scope

## Time and Frequency Calibration

## LB-CAL-007

# Arabian Calibration and Dev. Rep. CO. LLC

# Industrial Area 13 | Behind Sheikh Mohammed Bin Zayed Road

# Sharjah | United Arab Emirates

**Issue no.: 06** **Date: 11-11-2025** **Valid to: 06-10-2028**

| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| | | 5 µs | 0.012% | |
| Oscilloscope Time Marker | Internal Procedure: CI/01/OSE1 Based on Euramet cg-7 | 10 µs | 0.006% | Laboratory/ Customer Premises |
| | | 20 µs | 0.004% | |
| | | 50 µs to 500 µs | 0.003% | |
| | | 1 ms | 0.06% | |
| | | 2 ms | 0.029% | |
| | | 5 ms | 0.012% | |
| | | 10 ms | 0.006% | |
| | | 20 ms | 0.004% | |
| | | 50 ms to 500 ms | 0.003% | |
| | | 1 s | 0.06% | |
| | | 2 s | 0.029% | |
| | | 5 s | 0.012% | |
| Oscilloscope Bandwidth | Internal Procedure: CI/01/OSE1 | 50kHz to 100 MHz | 1.7% | Laboratory/ Customer |

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| Calibration and Measurement Capability (CMC) | | | | |
|---|---|---|---|---|
| **Measured Quantity/ Calibration Instrument** | **Calibration Method** | **Range and Specification** | **Expanded Measurement Uncertainty (U @ k=2)** | **Location** |
| Bandwidth | CI/01/OSE1 Based on Euramet cg-7 | >100 MHz to 300 MHz | 2.3% | Customer Premises |
| | | >300 MHz to 4.32GHz | 9 kHz | |