



ACCREDITATION CERTIFICATE

LB-CAL-054

Emirates International Accreditation Centre

has accredited

DEWA METROLOGY LABORATORY -

DUBAI ELECTRICITY & WATER AUTHORITY PJSC

Al Ruwayyah | Workshops & Asset Rehabilitation Center

Dubai | 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: 26-10-2023 to 09-08-2026

Initial Accreditation Date: 10/08/2017




Amina Ahmed Mohammed
CHIEF EXECUTIVE OFFICER
APPROVAL



Accreditation Scope

LB-CAL-054

DEWA Metrology Laboratory -Dubai Electricity & Water Authority PJSC

Al Ruwayyah| Workshops & Asset Rehabilitation Center| Dubai | United Arab Emirates

Date: 26-10-2023

Valid to: 09-08-2026

| Accreditation History | | | |
|------------------------------|------------------|--|-------------|
| Scope | Issue No. | Details | Date |
| Electrical | 7 | Renewal Accreditation from EIAC and Modification in Laboratory Name and address. | 26-10-2023 |
| Electrical | 6 | Reissued due to Laboratory's change in location | 30-08-2023 |
| Electrical | 5 | Certificate validity was extended for 6 months from 10-08-2023 to 09-02-2024 | 10-08-2023 |
| Electrical | 4 | Reissued due to change the laboratory's name (was formerly known as Dewa Metrology Laboratory) | 28-06-2022 |
| Electrical | 3 | Renewal accreditation from EIAC | 08-09-2020 |
| Electrical | 2 | Extension in scope and first issuance under the name of EIAC (which was formerly known as DAC) | 21/10/2019 |

Accreditation Scope

Electrical Calibration

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Issue no.: 07

Date: 26-10-2023

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| Calibration Field/ Measuring Quality | Calibration Method | Range and Specification | Calibration Measurement Capability (CMC)* | Location |
|---|---|-----------------------------|--|---------------------------------|
| DC Voltage | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>U: Measured Voltage value</i> | Up to 329.9999 mV | $16 \times 10^{-6} U + 0.79 \text{ uV}$ | DEWA Metrology Laboratory |
| | | < 330 mV to 3.3 V | $8.4 \times 10^{-6} U + 1.9 \text{ uV}$ | |
| | | < 3.3 V to 33 V | $9.2 \times 10^{-6} U + 19 \text{ uV}$ | |
| | | < 33 V to 330 V | $14 \times 10^{-6} U + 0.13 \text{ mV}$ | |
| | | < 330 V to 1000 V | $14 \times 10^{-6} U + 1.4 \text{ mV}$ | |
| AC Voltage | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>U: Measured Voltage value</i> | Up to 33 mV | | |
| | | 45 Hz to 10 kHz | $0.11 \times 10^{-3} U + 4.8 \text{ uV}$ | |
| | | < 10 kHz to 20 kHz | $0.15 \times 10^{-3} U + 4.8 \text{ uV}$ | |
| | | < 20 kHz to 50 kHz | $0.77 \times 10^{-3} U + 4.8 \text{ uV}$ | |
| | | < 33 mV to 330 mV | | |
| | | 45 Hz to 10 kHz | $0.11 \times 10^{-3} U + 6.3 \text{ uV}$ | |
| | | < 10 kHz to 20 kHz | $0.12 \times 10^{-3} U + 6.3 \text{ uV}$ | |
| | | < 20 kHz to 50 kHz | $0.27 \times 10^{-3} U + 6.3 \text{ uV}$ | |
| | | <0.33 V to 3.3 V | | |
| | | 45 Hz to 10 kHz | $0.12 \times 10^{-3} U + 47 \text{ uV}$ | |
| | | < 10 kHz to 20 kHz | $0.15 \times 10^{-3} U + 47 \text{ uV}$ | |
| | | < 20 kHz to 50 kHz | $0.23 \times 10^{-3} U + 39 \text{ uV}$ | |

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|---|---|-----------------------------|---|---------------------------------|
| AC Voltage | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>U: Measured Voltage value</i> | < 3.3 V to 33 V | | DEWA Metrology Laboratory |
| | | 45 Hz to 10 kHz | $0.12 \times 10^{-3} U + 0.47 \text{ mV}$ | |
| | | < 10 kHz to 20 kHz | $0.19 \times 10^{-3} U + 0.47 \text{ mV}$ | |
| | | < 20 kHz to 50 kHz | $0.27 \times 10^{-3} U + 0.47 \text{ mV}$ | |
| | | < 33 V to 330 V | | |
| | | 45 Hz to 10 kHz | $0.16 \times 10^{-3} U + 4.7 \text{ mV}$ | |
| | | < 10 kHz to 20 kHz | $0.19 \times 10^{-3} U + 4.7 \text{ mV}$ | |
| | | < 20 kHz to 50 kHz | $0.23 \times 10^{-3} U + 4.7 \text{ mV}$ | |
| | | < 330 V to 1020 V | | |
| | | 45 Hz to 1 kHz | $0.23 \times 10^{-3} U + 8.8 \text{ mV}$ | |
| | | < 1 kHz to 5 kHz | $0.19 \times 10^{-3} U + 9.0 \text{ mV}$ | |
| | | < 5 kHz to 10 kHz | $0.23 \times 10^{-3} U + 8.8 \text{ mV}$ | |
| | | DC Current | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>I: Measured Current value</i> | |
| < 0.33 mA to 3.3 mA | $1.2 \times 10^{-6} / + 12 \text{ uA}$ | | | |
| < 3.3 mA to 33 mA | $1.1 \times 10^{-6} / + 0.12 \text{ mA}$ | | | |
| < 33 mA to 330 mA | $1.1 \times 10^{-6} / + 1.2 \text{ mA}$ | | | |

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| DC Current | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>I: Measured Current value</i> | < 330 mA to 1.1 A | 1.9×10^{-6} / + 12 mA | DEWA Metrology Laboratory |
| | | < 1.1 A to 3 A | 16×10^{-6} / + 12 mA | |
| | | < 3 A to 11 A | 10×10^{-6} / + 0.12 A | |
| | | < 11 A to 20 A | 85×10^{-6} / + 0.12 A | |
| AC Current | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>I: Measured Current value</i> | 29 uA to 330 uA | | DEWA Metrology Laboratory |
| | | 45 Hz to 1 KHz | 0.97×10^{-3} / + 0.08 uA | |
| | | 1 KHz to 5 KHz | 2.3×10^{-3} / + 0.12 uA | |
| | | 5 KHz to 10 KHz | 6.2×10^{-3} / + 0.16 uA | |
| | | < 0.33 mA to 3.3 mA | | |
| | | 45 Hz to 1 KHz | 0.78×10^{-3} / + 0.12 uA | |
| | | 1 KHz to 5 KHz | 1.6×10^{-3} / + 0.16 uA | |
| | | 5 KHz to 10 KHz | 3.9×10^{-3} / + 0.23 uA | |
| | | < 3.3 mA to 33 mA | | |
| | | 45 Hz to 1 KHz | 0.31×10^{-3} / + 1.6 uA | |
| | | 1 KHz to 5 KHz | 0.62×10^{-3} / + 1.6 uA | |
| | | 5 KHz to 10 KHz | 1.6×10^{-3} / + 2.3 uA | |
| | | 45 Hz to 1 KHz | 0.31×10^{-3} / + 16 uA | |

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|---|---|-----------------------------|--|---------------------------------|
| AC Current | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>I: Measured Current value</i> | < 33 mA to 330 mA | | DEWA Metrology Laboratory |
| | | 1 KHz to 5 KHz | $0.78 \times 10^{-3} / + 39 \text{ uA}$ | |
| | | 5 KHz to 10 KHz | $1.6 \times 10^{-3} / + 78 \text{ uA}$ | |
| | | < 0.33 A to 1.1 A | | |
| | | 45 Hz to 1 KHz | $0.39 \times 10^{-3} / + 78 \text{ uA}$ | |
| | | 1 KHz to 5 KHz | $4.7 \times 10^{-3} / + 0.78 \text{ mA}$ | |
| | | 5 KHz to 10 KHz | $19 \times 10^{-3} / + 3.9 \text{ mA}$ | |
| | | < 1.1 A to 3 A | | |
| | | 45 Hz to 1 KHz | $0.47 \times 10^{-3} / + 78 \text{ uA}$ | |
| | | 1 KHz to 5 KHz | $4.7 \times 10^{-3} / + 0.78 \text{ mA}$ | |
| | | 5 KHz to 10 KHz | $19 \times 10^{-3} / + 3.9 \text{ mA}$ | |
| | | < 3 A to 11 A | | |
| | | 45 Hz to 100 Hz | $0.47 \times 10^{-3} / + 1.6 \text{ mA}$ | |
| | | 100 Hz to 1 KHz | $0.78 \times 10^{-3} / + 1.6 \text{ mA}$ | |
| | | 1 KHz to 5 KHz | $23 \times 10^{-3} / + 1.6 \text{ mA}$ | |
| | | < 11 A to 20.5 A | | |
| | | 45 Hz to 100 Hz | $0.93 \times 10^{-3} / + 3.9 \text{ mA}$ | |
| | | 100 Hz to 1 KHz | $1.2 \times 10^{-3} / + 3.9 \text{ mA}$ | |
| | | 1 KHz to 5 KHz | $23 \times 10^{-3} / + 3.9 \text{ mA}$ | |

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|---|--|----------------------------|--|---------------------------------|
| Temperature Simulation | 1- Multi Product Calibrator (Fluke-5520A, TC-K type) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 2- Multi Product Calibrator (Fluke-5520A, TC-J type) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 | -200 °C to -100 °C | 0.33 °C | DEWA Metrology Laboratory |
| | | -100 °C to -25 °C | 0.18 °C | |
| | | -25 °C to 120 °C | 0.16 °C | |
| | | 120 °C to 1000 °C | 0.26 °C | |
| | | 1000 °C to 1372 °C | 0.4 °C | |
| | | -200 °C to -100 °C | 0.27 °C | |
| | | -100 °C to -25 °C | 0.16 °C | |
| | | -25 °C to 120 °C | 0.14 °C | |
| | | 120 °C to 1000 °C | 0.17 °C | |
| | | 1000 °C to 1372 °C | 0.23 °C | |
| Capacitance | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>C: Measured Capacitance value</i> | 1.1 nF to 3.3 nF | $3.9 \times 10^{-3} C + 7.8 \text{ pF}$ | DEWA Metrology Laboratory |
| | | < 3.3 nF to 11 nF | $1.9 \times 10^{-3} C + 78 \text{ pF}$ | |
| | | < 11 nF to 33 nF | $1.9 \times 10^{-3} C + 78 \text{ pF}$ | |
| | | < 33 nF to 110 nF | $1.9 \times 10^{-3} C + 78 \text{ pF}$ | |
| | | < 110 nF to 330 nF | $1.9 \times 10^{-3} C + 0.23 \text{ nF}$ | |

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| Capacitance | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>C: Measured Capacitance value</i> | < 0.33 uF to 1.1 uF | $1.9 \times 10^{-3} C + 0.78 \text{ nF}$ | DEWA Metrology Laboratory |
| | | < 1.1 uF to 3.3 uF | $1.9 \times 10^{-3} C + 2.3 \text{ nF}$ | |
| | | < 3.3 uF to 11 uF | $1.9 \times 10^{-3} C + 7.8 \text{ nF}$ | |
| | | < 11 uF to 110 uF | $3.5 \times 10^{-3} C + 78 \text{ nF}$ | |
| | | < 110 uF to 330 uF | $3.5 \times 10^{-3} C + 0.23 \text{ uF}$ | |
| | | < 0.33 mF to 1.1 mF | $3.5 \times 10^{-3} C + 0.78 \text{ uF}$ | |
| | | < 1.1 mF to 3.3 mF | $3.5 \times 10^{-3} C + 2.3 \text{ uF}$ | |
| | | < 3.3 mF to 11 mF | $3.5 \times 10^{-3} C + 7.8 \text{ uF}$ | |
| | | < 11 mF to 33 mF | $5.8 \times 10^{-3} C + 23 \text{ uF}$ | |
| | | < 33 mF to 110 mF | $8.5 \times 10^{-3} C + 78 \text{ uF}$ | |
| Resistance | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>R: Measured Resistance value</i> | 0 to 11 Ω | $31 \times 10^{-6} R + 7.8 \text{ m}\Omega$ | DEWA Metrology Laboratory |
| | | < 11 Ω to 33 Ω | $23 \times 10^{-6} R + 12 \text{ m}\Omega$ | |
| | | < 33 Ω to 110 Ω | $22 \times 10^{-6} R + 12 \text{ m}\Omega$ | |
| | | < 110 Ω to 330 Ω | $22 \times 10^{-6} R + 16 \text{ m}\Omega$ | |
| | | < 330 Ω to 1.1 k Ω | $22 \times 10^{-6} R + 16 \text{ m}\Omega$ | |

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|---|--------------------|----------------------------|--|----------|

| | | | | |
|------------|---|---------------------|--|---------------------------------|
| Resistance | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>R</i> : Measured Resistance value | < 1.1 kΩ to 3.3 kΩ | $22 \times 10^{-6} R + 0.16 \Omega$ | DEWA Metrology Laboratory |
| | | < 3.3 kΩ to 11 kΩ | $22 \times 10^{-6} R + 78 \text{ m}\Omega$ | |
| | | < 11 kΩ to 33 kΩ | $22 \times 10^{-6} R + 0.78 \Omega$ | |
| | | < 33 kΩ to 110 kΩ | $22 \times 10^{-6} R + 0.78 \Omega$ | |
| | | < 110 kΩ to 330 kΩ | $25 \times 10^{-6} R + 7.8 \Omega$ | |
| | | < 330 kΩ to 1.1 MΩ | $25 \times 10^{-6} R + 7.8 \Omega$ | |
| | | < 1.1 MΩ to 3.3 MΩ | $47 \times 10^{-6} R + 0.12 \text{ k}\Omega$ | |
| | | < 3.3 MΩ to 11 MΩ | $0.10 \times 10^{-3} R + 0.19 \text{ k}\Omega$ | |
| | | < 11 MΩ to 33 MΩ | $0.19 \times 10^{-3} R + 1.9 \text{ k}\Omega$ | |
| | | < 33 MΩ to 110 MΩ | $0.39 \times 10^{-3} R + 2.3 \text{ k}\Omega$ | |
| | | < 110 MΩ to 330 MΩ | $2.3 \times 10^{-3} R + 78 \text{ k}\Omega$ | |
| | | < 330 MΩ to 1100 MΩ | $9.5 \times 10^{-3} R + 63 \text{ k}\Omega$ | |

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|---|--|----------------------------|--|---------------------------------|
| Frequency | Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>f: Measured Frequency value</i> | 0.01 Hz to 120 Hz | $0.02 \times 10^{-6} f + 12 \text{ mHz}$ | DEWA Metrology Laboratory |
| | | < 120.0 Hz to 1.2 kHz | $0.02 \times 10^{-6} f + 0.12 \text{ Hz}$ | |
| | | < 1.2 kHz to 12 kHz | $0.02 \times 10^{-6} f + 1.2 \text{ Hz}$ | |
| | | < 12 kHz to 120 kHz | $0.02 \times 10^{-6} f + 12 \text{ Hz}$ | |
| | | < 120 kHz to 1200 kHz | $0.02 \times 10^{-6} f + 0.12 \text{ kHz}$ | |
| | | < 1.2 MHz to 2 MHz | $5.2 \times 10^{-9} f + 1.2 \text{ kHz}$ | |
| DC Current | Multi Product Calibrator Fluke-5522A & Current Coil Fluke-5500A/Coil Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>I: Measured Current value</i> | 10 A to 16.5 A | $5.0 \times 10^{-3} / + 20 \text{ mA}$ | DEWA Metrology Laboratory |
| | | 16.5 A to 55 A | $5.0 \times 10^{-3} / + 0.14 \text{ A}$ | |
| | | 55 A to 150 A | $5.0 \times 10^{-3} / + 0.14 \text{ A}$ | |
| | | 150 A to 550 A | $5.0 \times 10^{-3} / + 0.50 \text{ A}$ | |
| | | 550 A to 1000 A | $5.0 \times 10^{-3} / + 0.50 \text{ A}$ | |
| AC Current | Multi Product Calibrator Fluke-5522A & Current Coil Fluke-5500A/Coil Calibration Procedure # DP/DAM/W&AR(ML)/S OP 12 <i>(I = Measured Current</i> | 10 A to 16.5 A | $5.6 \times 10^{-3} / + 30 \text{ mA}$ | DEWA Metrology Laboratory |
| | | (45 Hz to 65 Hz) | | |
| | | 16.5 A to 150 A | $5.6 \times 10^{-3} / + 0.25 \text{ A}$ | |
| | | (45 Hz to 65 Hz) | | |
| | | 150 A to 1000 A | $5.6 \times 10^{-3} / + 0.9 \text{ A}$ | |
| | | (45 Hz to 65 Hz) | | |