



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

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Dubai Electricity & Water Authority PJSC

DEWA Metrology Laboratory

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

Date: 13-01-2025

Accreditation History			
Scope	Issue No.	Details	Date
Electrical	09	Reissued due to: extension in scope, and modification in Calibration Method, Range and Specification and Expanded Measurement Uncertainty values	13-01-2025
Electrical	08	Modification in Scope's presentation	02-05-2024
Electrical	07	Renewal Accreditation from EIAC and Modification in Laboratory Name and address	26-10-2023
Electrical	06	Reissued due to Laboratory's change in location	30-08-2023
Electrical	05	Certificate validity was extended for 6 months from 10-08- 2023 to 09-02-2024	10-08-2023
Electrical	04	Reissued due to change the laboratory's name (was formerly known as Dewa Metrology Laboratory)	28-06-2022
Electrical	03	Renewal accreditation from EIAC	08-09-2020
Electrical	02	Extension in scope and first issuance under the name of EIAC (which was formerly known as DAC)	21-10-2019

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Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement	Location
DC Voltage	Multi Product Calibrator (Fluke 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>U: Measured Voltage value</i>	Up to 329.9999 mV	$16 \times 10^{-6} \ U + 0.79 \ \mu\text{V}$	DEWA Metrology Laboratory
		< 330 mV to 3.3 V	$8.4 \times 10^{-6} \ U + 1.9 \ \mu\text{V}$	
		< 3.3 V to 33 V	$9.2 \times 10^{-6} \ U + 19 \ \mu\text{V}$	
		< 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 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>U: Measured Voltage value</i>	Up to 33 mV		
		45 Hz to 10 kHz	$0.11 \times 10^{-3} \ U + 4.8 \ \mu\text{V}$	
		< 10 kHz to 20 kHz	$0.15 \times 10^{-3} \ U + 4.8 \ \mu\text{V}$	
		< 20 kHz to 50 kHz	$0.77 \times 10^{-3} \ U + 4.8 \ \mu\text{V}$	
		< 33 mV to 330 mV		
		45 Hz to 10 kHz	$0.11 \times 10^{-3} \ U + 6.3 \ \mu\text{V}$	
		< 10 kHz to 20 kHz	$0.12 \times 10^{-3} \ U + 6.3 \ \mu\text{V}$	
		< 20 kHz to 50 kHz	$0.27 \times 10^{-3} \ U + 6.3 \ \mu\text{V}$	
		<0.33 V to 3.3 V		
		45 Hz to 10 kHz	$0.12 \times 10^{-3} \ U + 47 \ \mu\text{V}$	
		< 10 kHz to 20 kHz	$0.15 \times 10^{-3} \ U + 47 \ \mu\text{V}$	
		< 20 kHz to 50 kHz	$0.23 \times 10^{-3} \ U + 39 \ \mu\text{V}$	

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AC Voltage	Multi Product Calibrator (Fluke 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>U: Measured Voltage value</i>	< 3.3 V to 33 V		DEWA Metrology Laboratory
		45 Hz to 10 kHz	0.12x10 ⁻³ U + 0.47 mV	
		< 10 kHz to 20 kHz	0.19x10 ⁻³ U + 0.47 mV	
		< 20 kHz to 50 kHz	0.27x10 ⁻³ U + 0.47 mV	
		< 33 V to 330 V		
		45 Hz to 10 kHz	0.16x10 ⁻³ U + 4.7 mV	
		< 10 kHz to 20 kHz	0.19x10 ⁻³ U + 4.7 mV	
		< 20 kHz to 50 kHz	0.23x10 ⁻³ U + 4.7 mV	
		< 330 V to 1020 V		
		45 Hz to 1 kHz	0.23x10 ⁻³ U + 8.8 mV	
		< 1 kHz to 5 kHz	0.19x10 ⁻³ U + 9.0 mV	
		< 5 kHz to 10 kHz	0.23x10 ⁻³ U + 8.8 mV	
DC Current	Multi Product Calibrator (Fluke 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>I: Measured Current value</i>	Up to 330 µA	0.12x10 ⁻³ / + 0.02 µA	DEWA Metrology Laboratory
		< 0.33 mA to 3.3 mA	1.2x10 ⁻⁶ / + 12 µA	
		< 3.3 mA to 33 mA	1.1x10 ⁻⁶ / + 0.12 mA	
		< 33 mA to 330 mA	1.1x10 ⁻⁶ / + 1.2 mA	

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DC Current	Multi Product Calibrator (Fluke 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <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 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>I: Measured Current value</i>	29 µA to 330 µA		DEWA Metrology Laboratory
		45 Hz to 1 kHz	0.97×10 ⁻³ / + 0.08 µA	
		<1 kHz to 5 kHz	2.3×10 ⁻³ / + 0.12 µA	
		< 5 kHz to 10 kHz	6.2×10 ⁻³ / + 0.16 µA	
		< 0.33 mA to 3.3 mA		
		45 Hz to 1 kHz	0.78×10 ⁻³ / + 0.12 µA	
		< 1 kHz to 5 kHz	1.6×10 ⁻³ / + 0.16 µA	
		< 5 kHz to 10 kHz	3.9×10 ⁻³ / + 0.23 µA	
		< 3.3 mA to 33 mA		
		45 Hz to 1 kHz	0.31×10 ⁻³ / + 1.6 µA	
		< 1 kHz to 5 kHz	0.62×10 ⁻³ / + 1.6 µA	
		< 5 kHz to 10 kHz	1.6×10 ⁻³ / + 2.3 µA	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement	Location
AC Current	Multi Product Calibrator (Fluke 5522A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>I: Measured Current value</i>	< 33 mA to 330 mA		DEWA Metrology Laboratory
		45 Hz to 1 kHz	0.31×10 ⁻³ / + 16 μA	
		< 1 kHz to 5 kHz	0.78×10 ⁻³ / + 39 μA	
		< 5 kHz to 10 kHz	1.6×10 ⁻³ / + 78 μA	
		< 0.33 A to 1.1 A		
		45 Hz to 1kHz	0.39×10 ⁻³ / + 78 μA	
		< 1 kHz to 5 kHz	4.7×10 ⁻³ / + 0.78 mA	
		< 5 kHz to 10 kHz	19×10 ⁻³ / + 3.9 mA	
		< 1.1 A to 3 A		
		45 Hz to 1 kHz	0.47×10 ⁻³ / + 78 μA	
		< 1 kHz to 5 kHz	4.7×10 ⁻³ / + 0.78 mA	
		< 5 kHz to 10 kHz	19×10 ⁻³ / + 3.9 mA	
		< 3 A to 11 A		
		45 Hz to 100 Hz	0.47×10 ⁻³ / + 1.6 mA	
		< 100 Hz to 1 kHz	0.78×10 ⁻³ / + 1.6 mA	
		< 1 kHz to 5 kHz	23×10 ⁻³ / + 1.6 mA	
		< 11 A to 20.5 A		
		45 Hz to 100 Hz	0.93×10 ⁻³ / + 3.9 mA	
		< 100 Hz to 1 kHz	1.2×10 ⁻³ / + 3.9 mA	
		< 1 kHz to 5 kHz	23×10 ⁻³ / + 3.9 mA	

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Temperature Simulation	1- Multi Product Calibrator (Fluke 5522A, TC-K type) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C	-200 °C to -100 °C	0.26 °C	DEWA Metrology Laboratory
		< -100 °C to -25 °C	0.14 °C	
		< -25 °C to 120 °C	0.12 °C	
		< 120 °C to 1000 °C	0.20 °C	
		< 1000 °C to 1372 °C	0.31 °C	
	2- Multi Product Calibrator (Fluke 5522A, TC-J type) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C	-200 °C to -100 °C	0.21 °C	
		< -100 °C to -25 °C	0.12 °C	
		< -25 °C to 120 °C	0.21 °C	
		< 120 °C to 1000 °C	0.13 °C	
		< 1000 °C to 1372 °C	0.18 °C	
Capacitance	Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <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	$1.9 \times 10^{-3} C + 0.23 \text{ nF}$	
		< 0.33 μF to 1.1 μF	$1.9 \times 10^{-3} C + 0.78 \text{ nF}$	

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Capacitance	Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>C: Measured Capacitance value</i>	< 1.1 μ F to 3.3 μ F	$1.9 \times 10^{-3} C + 2.3 \text{ nF}$	DEWA Metrology Laboratory
		< 3.3 μ F to 11 μ F	$1.9 \times 10^{-3} C + 7.8 \text{ nF}$	
		< 11 μ F to 110 μ F	$3.5 \times 10^{-3} C + 78 \text{ nF}$	
		< 110 μ F to 330 μ F	$3.5 \times 10^{-3} C + 0.23 \text{ } \mu$ F	
		< 0.33 mF to 1.1 mF	$3.5 \times 10^{-3} C + 0.78 \text{ } \mu$ F	
		< 1.1 mF to 3.3 mF	$3.5 \times 10^{-3} C + 2.3 \text{ } \mu$ F	
		< 3.3 mF to 11 mF	$3.5 \times 10^{-3} C + 7.8 \text{ } \mu$ F	
		< 11 mF to 33 mF	$5.8 \times 10^{-3} C + 23 \text{ } \mu$ F	
		< 33 mF to 110 mF	$8.5 \times 10^{-3} C + 78 \text{ } \mu$ F	
Resistance	Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <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	$22 \times 10^{-6} R + 16 \text{ m}\Omega$	
		< 1.1 k Ω to 3.3 k Ω	$22 \times 10^{-6} R + 0.16 \text{ } \Omega$	
		< 3.3 k Ω to 11 k Ω	$22 \times 10^{-6} R + 78 \text{ m}\Omega$	

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Resistance	Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>R</i> : Measured Resistance value	< 11 kΩ to 33 kΩ	$22 \times 10^{-6} R + 0.78 \Omega$	DEWA Metrology Laboratory
		< 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	$9.5 \times 10^{-3} R + 63 \text{ k}\Omega$	
Frequency	Multi Product Calibrator (Fluke-5520A) Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12C <i>f</i> : Measured Frequency value	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	$5.2 \times 10^{-9} f + 1.2 \text{ kHz}$	

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DC Current	Multi Product Calibrator Fluke-5522A & Current Coil Fluke-5500A /Coil Calibration Procedure # DP-DAM-DAM-W&AR- Manual-001.A12D <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-DAM-W&AR- Manual-001.A12D <i>I = Measured Current value</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		
Insulation Resistance (50V to 5000V)	Insulation Calibration Box- CB 101. DP-DAM-DAM-W&AR- Manual-001.A12E	10 MΩ	0.12 MΩ	DEWA Metrology Laboratory
		100 MΩ	1.2 MΩ	
		1 GΩ	12 MΩ	
		10 GΩ	0.12 GΩ	



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Insulation Tester/ Output Voltage Measurement	Output Voltage Measurement Using DMM. DP-DAM-DAM-W&AR- Manual-001.A12E	50 V	23 mV	DEWA Metrology Laboratory
		100 V	38 mV	
		250 V	88 mV	
		500 V	0.22 V	
		1000 V	0.38 V	
		2500 V	58 V	
		5000 V	0.12 kV	