ACCREDITATION CERTIFICATE

LB-025-CAL

Dubai Accreditation Department

has accredited

Metromac Calibration Lab
Dubai- United Arab Emirates

In accordance with the requirements of ISO/ IEC 17025: 2005 to undertake the tests in the field of:

Calibration

For the tasks listed in the attached Scope of Accreditation

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

Validity of Certificate: from 31- 12- 2013 to 30- 12- 2016

Initial Accreditation Date: 31-12-2007

Director, Dubai Accreditation Department

DAC is recognized for assessing and accrediting the competence of organizations in the field of testing, calibration, inspection and certification of systems, products and persons.

SCOPE OF ACCREDITATION (LB-CAL)

Metromac Calibration Lab, Dubai- United Arab Emirates

Scope Issue No: 05 | **Accreditation Certificate No: LB-025-CAL**

Scope Validity Period: 31-12-2013 to 30-12-2016 | **Issued by (Head of Section):**

DETAILS OF THE APPLICABLE RANGE OF CALIBRATION AND MEASUREMENT CAPABILITY FOR THE SCOPE OF ACCREDITATION

Calibration Field/ Measured Quantity	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Electrical				
DC Voltage	Metro Mac Calibration Procedure/WI: C60	0 mV	1.9 µV	Metro-mac Premises
		20 mV	1.9 µV	
		30 mV	2 µV	
		100 mV	3.5 µV	
		300 mV	7.6 µV	
		1 V	12 µV	
		2 V	26 µV	
		10 V	15 µV	
		20 V	0.26 mV	
		30 V	0.35 mV	
		100 V	2.2 mV	
		300 V	5.2 mV	
		500 V	9.5 mV	
		1000 v	18 mv	

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Electrical				
AC Voltage	Metro Mac Calibration Procedure/ WI: C60	10mV @ 45 Hz	7.7 µV	Metro-mac Premises
		10mV@1 kHz	7.1 µV	
		10 mv @100kHz	0.04 mV	
		100mV @ 45 Hz	18 µV	
		100Mv @1 kHz	18 µV	
		100mV @100kHz	93 µV	
		1V @ 45 Hz	0.13 mV	
		1V @1 kHz	0.13 mV	
		1v @100kHz	0.96 mV	
		10V @ 45 Hz	2.2 mV	
		10V @1 kHz	1.5 mV	
		10V @100kHz	9.2 mV	
		100V @ 45 Hz	0.03 V	
		100V @1 kHz	0.02 V	
		100V @100kHz	0.03 V	
		1000V @ 45 Hz	0.26 V	
		1000V@1 kHz	0.22 V	
		1000V@10kHz	0.26 V	

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Electrical				
DC Current	MetroMac Calibration Procedure/WI: C 60	0 µA	17 nA	Metro-mac Premises
		100 µA	28 nA	
		300 µA	52 nA	
		1 mA	0.11 µA	
		3 mA	0.27 µA	
		10 mA	0.97 µA	
		30 mA	2.6 µA	
		100 mA	9.7 µA	
		200 mA	18 µA	
		300 mA	26 µA	
		1 A	0.2 mA	
		2 A	0.36 mA	
		3 A	1.5 mA	
		10 A	4.2 mA	
		20 A	16 mA	

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Electrical				
AC Current	MetroMac Calibration Procedure/ WI: C 60	100 µA @45 Hz	0.2 µA	Metro-mac Premises
		100 µA @1 kHz	0.2 µA	
		100 µA @10kHz	0.8 µA	
		1mA @45 Hz	1.2 µA	
		1mA @1 kHz	1.1 µA	
		1mA @10k Hz	4.1 µA	
		10 mA @45 Hz	5.8 µA	
		10 mA @1 kHz	5.4 µA	
		10 mA @10kHz	36 µA	
		100 mA @45 Hz	55 µA	
		100 mA @1 kHz	56 µA	
		100 mA@10kHz	0.26 mA	
		1A @45 Hz	0.64 mA	
		1A @1 kHz	0.63 mA	
		1A@10kHz	24 mA	
		2A @45 Hz	1.2 mA	
		2A @1 kHz	1.3 mA	
		2A@10kHz	44 mA	
		10A @45 Hz	8 mA	
		10A @100 Hz	8 mA	

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Electrical				
AC Current	MetroMac Calibration Procedure/ WI: C 60	10A@1 kHz	12 mA	Metro-mac Premises
		20 A @45 Hz	27 mA	
		20 A @100 Hz	31 mA	
		20 A@1 kHz	34 mA	
Resistance	Metro Mac Calibration Procedure/WI: C60	0 Ω	12 mΩ	Metro-mac Premises
		10 Ω	12 mΩ	
		20 Ω	16 mΩ	
		100 Ω	18 mΩ	
		300 Ω	26 mΩ	
		1 kΩ	53 mΩ	
		3 kΩ	0.24 Ω	
		10 kΩ	0.46 Ω	
		30 kΩ	1.6 Ω	
		100 kΩ	4.6 Ω	
		300 kΩ	16 Ω	
		1 MΩ	50 Ω	Metro-mac Premises
		10 MΩ	1.4 kΩ	
		30 MΩ	8.1 kΩ	
		100 MΩ	46 kΩ	
		300 MΩ	0.8 MΩ	

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Electrical				
Resistance	Metro Mac Calibration Procedure/WI: C60	1000 MΩ	12 MΩ	Metro-mac Premises
Pressure				
Pressure Hydraulic Pressure Gauge /Module	BS EN 837-1 (Using Pressure Module)	0-3.5 bar	0.18 % full scale	Metro-mac Premises
Pressure Hydraulic Pressure Gauge /Module	BS EN 837-1 (Using Pressure Module)	3.5-100 bar	0.05 % full scale	Metro-mac Premises
Pressure Hydraulic Pressure Gauge /Module	(Using Dead Weight Tester)	6-60 bar	0.025% full scale	Metro-mac Premises
Pressure Hydraulic Pressure Gauge /Module	(Using Dead Weight Tester)	60-1200 bar	0.02% full scale	Metro-mac Premises
Dimensional				
Length Analog Vernier Caliper	BS 887	UP TO 1000 mm	14µm	Metro-mac Premises
Length Digital Vernier Caliper	BS 887	UP TO 1000 mm	8 µm	Metro-mac Premises

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Mass				
WEIGHING SCALE	METROMAC CALIBRATION PROCEDURE # C7S	Up to600 g	2.3 X10E-6	Customer Premises
		>600g to > 3000 g	4.7 X 10E-6	
		> 3 kg to >60 kg	2.3 X 10E-6	
		>60 kg to > 100 kg	1.2 X 10E-5	
		>100 kg to >300 kg	4 X 10E-5	
		> 300 kg to >500 kg	2.4 X 10E-4	
Volume				
Volume PIPETTES	METROMAC CALIBRATION PROCEDURE # WI C70	10 µL	0.18µL	Metro-mac Premises
		50µL	0.23µL	
		100µL	0.30µL	
		200µL	0.35µL	
		500µL	0.61µL	
		1000µL	0.91µL	

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Temperature				
Liquid in Glass Thermometers	Metro Mac Calibration Procedure: C55 based on BS 5074	-30°C to 150°C	±0.08°C	Metro-mac Premises
Digital Thermometers	Metro Mac Calibration Procedure: C59 based on BS 5074	-30°C to 150°C	±0.04°C	Metro-mac Premises
		150°C to 400°C	±0.24°C	
Temperature Dry block Calibrator	Metro Mac Calibration Procedure: C24 based on BS 1041 Pt III	-30°C to 133°C	± 0.2°C	Metro-mac Premises
		>133°C to 600°C	1.5 mK * t /°C	
Incubator	Metro Mac Calibration Procedure C65 based on DKD R5-7 5 Points	20°C to 100°C	0.55°C	Customer Premises
Refrigerators	Metro Mac Calibration Procedure C77 based on DKD R5-7 (9 points)	-30°C to 20°C	0.55°C	Customer Premises
Water Bath	Metro Mac Calibration Procedure C76 based on DKD R5-7 (5 points)	25°C to 90°C	0.55°C	Customer Premises

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Calibration Field/ Measured Quantity	Calibration Method	Range and Specification	Calibration Measurement Capability (CMC)*	Location
Temperature				
Ovens	Metro Mac Calibration Procedure C40 based on DKD R5-7 (9 points)	25°C to 100°C 100°C to 200°C 200°C to 250°C	0.75°C 1.0°C 1.5°C	Customer Premises

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