



ACCREDITATION CERTIFICATE

LB-CAL-001

Emirates International Accreditation Centre

has accredited

METROLOGY LABORATORIES SECTION

DUBAI CENTRAL LABORATORY DEPARTMENT-DUBAI MUNICIPALITY

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: 30-05-2025 to 29-11-2025

Initial Accreditation Date: 30-05-2007

Amina Ahmed Mohammed
For/CHIEF EXECUTIVE OFFICER



Accreditation Scope

LB-CAL-001

Metrology Laboratories Section

Dubai Central Laboratory Department-Dubai Municipality

Dubai | United Arab Emirates

Date: 30-05-2025

Accreditation History			
Scope	Issue No.	Details	Date
Temperature, Humidity and Autoclave, Electrical, Pressure	15	Certificate validity was extended for 6 months from 30-05-2025 up to 29-11-2025	30-05-2025
Dimensional, Mass and Balance, Volume, Force, Time and Speed	14		
Temperature, Humidity and Autoclave	14	Reissued due to modification in Calibration method, Range and Specification and Expanded Measurement Uncertainty	11-09-2024
Dimensional	13	No change in scope	
Electrical	14	Reissued due to modification in Calibration method, Range and Specification and Expanded Measurement Uncertainty	
Mass and Balance, Volume, Force, Time and Speed	13	Reissued due to change in Calibration Method	
Pressure	14	Reissued due to extension in scope	
Electrical	13	Modification in Range and Specification & CMC Values	15-02-2024
Dimensional	13	Modification in Calibration methods	
Temperature, Humidity and Autoclave	13	Renewal of the accreditation and Extension in scope	13-02-2023
Pressure	13	Renewal of the accreditation, Modification in Range and specification and CMC Values	
Electrical, Dimensional	12	Renewal of the accreditation, and Extension in scope	
Mass and Balance	12	Renewal of the accreditation	
Volume		Renewal of the accreditation, and Modification in CMC Values	
Force		Renewal of the accreditation	
Time and Speed		Renewal of the accreditation	

Accreditation Scope

LB-CAL-001

Metrology Laboratories Section

Dubai Central Laboratory Department-Dubai Municipality

Dubai | United Arab Emirates

Date: 30-05-2025

Accreditation History			
Scope	Issue No.	Details	Date
Temperature, Humidity and Autoclave	12	Certificate validity was extended for 6 months from 30-11-2022 up to 29-05-2023	30-11-2022
Pressure			
Electrical, Dimensional, Mass and Balance, Volume, Force, Time and Speed	11		
Temperature, Humidity and Autoclave	11	Certificate validity was extended for 4 months from 30-07-2022 up to 29-11-2022	30-07-2022
Pressure			
Electrical, Dimensional, Mass and Balance, Volume, Force, Time and Speed	10		
Temperature, Humidity and Autoclave	10	Certificate validity was extended for 2 months from 30-05-2022 up to 29-07-2022	30-05-2022
Pressure			
Electrical, Dimensional, Mass and Balance, Volume, Force, Time and Speed	9		
Temperature, Humidity and Autoclave	9	Re-issued to comply with the new accreditation number format	27-09-2021
Pressure			
Electrical	8	Extension of scope and to comply with the new accreditation number format	
Dimensional			
Mass and Balance			
Volume			
Force, Time and Speed			

Accreditation Scope

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Metrology Laboratories Section

Dubai Central Laboratory Department-Dubai Municipality

Dubai | United Arab Emirates

Date: 30-05-2025

Accreditation History			
Scope	Issue No.	Details	Date
Temperature, Humidity and Autoclave	8	Extension of scope	31-05-2020
Pressure		Modification in CMC Values	
Electrical	7	Renewal accreditation	29-05-2019
Dimensional			
Force			
Mass and Balance			
Time and Speed			
Volume			

Accreditation Scope

Temperature, Humidity and Autoclave Calibration

LB-CAL-001

Metrology Laboratories Section

Dubai Central Laboratory Department-Dubai Municipality

Dubai | United Arab Emirates

Issue no.: 15

Date: 30-05-2025

Valid to: 29-11-2025

Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Resistance thermometers and direct reading thermometers with RTD	DMS 2003 (comparison method using calibrated PRTs, Thermocouples, Data Loggers , liquid fluidized baths, reference ovens and fixed ice point	-80 °C up to -40 °C	0,020 °C	DCL laboratory/ Customers Premises
		-40 °C up to 250 °C	0,030 °C	
		250 °C up to 400 °C	0,070 °C	
		400 °C up to 550 °C	0,10 °C	
		550 °C up to 650 °C	0,15 °C	
liquid in glass thermometers	DMS 2004 (comparison method) Using calibrated PRTs, Thermocouples, Data loggers, liquid fluidized baths, and Fixed Ice point.	-40 °C up to 200 °C	0,10 °C	DCL laboratory
		200 °C up to 300 °C	0,30 °C	
Nobel metal thermocouples and direct reading thermometers with nobel metal Thermocouple sensors	DMS 2007 (comparison method using calibrated PRTs, Thermocouples, Data Loggers , liquid fluidized bathes, reference ovens and fixed ice point)	0 °C up to 600 °C	0,50 °C	DCL laboratory
		600 °C up to 900 °C	0,70 °C	
		900 °C up to 1100 °C	1,5 °C	

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Temperature, Humidity and Autoclave Calibration

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Dubai Central Laboratory Department-Dubai Municipality

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Date: 30-05-2025

Valid to: 29-11-2025

Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Enviromental Chambers and Ovens	DMS 2008 (comparison method using single or multiple calibrated probes)	-40 °C up to 200 °C	0,30 °C	Customers Premises
		50 °C up to 250 °C	0,30 °C	
Base metal thermocouples and direct reading thermometers with TC sensors	DMS 2007 (comparison method using calibrated PRTs, Thermocouples, Data Loggers , liquid fluidized baths, reference ovens and fixed ice point)	-40 °C up to 250 °C	0,20 °C	DCL laboratory and Customers Premises (direct reading thermometers only)
		250 °C up to 400 °C	0,50 °C	
		400 °C up to 550 °C	0,90 °C	
		550 °C up to 650 °C	1,5 °C	
		650 °C up to 900 °C	2,5 °C	
		900 °C up to 1100 °C	4,0 °C	
Infrared thermometers	DM-DCLD-SOP-MEL-IM T07 (Comparison method using Blackbody Simulator)	-20 °C up to -15 °C	0,80 °C	DCL laboratory
		-15 °C up to 40 °C	0,30 °C	
		>40 °C up to 80 °C	0,80 °C	
		>80 °C up to 120 °C	1,0 °C	

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Temperature, Humidity and Autoclave Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Refrigerators , Freezers	DMS 2009 (comparison method using single and multiple calibrated probes)	-40 °C up to 20 °C	0,20 °C	Customers Premises
Incubators	DMS 2009 (comparison method using single and multiple calibrated probes)	20 °C up to 70 °C	0,20 °C	Customers Premises
Liquid bathes	DMS 2009 (comparison method using single and multiple calibrated probes)	5 °C up to 90 °C	0,40 °C	Customers Premises
		90 °C up to 250 °C	0,60 °C	
Furnaces	DMS 2010 (comparison method using single and multiple calibrated probes)	300 °C up to 450 °C	0,80 °C	Customers Premises
		450 °C up to 800 °C	2,0 °C	
		800 °C up to 1100 °C	5,0 °C	
Climatic chambers	DM-DCLD-SOP-MEL-IM T09 (comparison method using wireless temperature & humidity loggers)	10 °C up to 70 °C (for temperature) 10% up to 95% (for relative Humidity)	0,20 °C 1,6% rH	Customers Premises

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Temperature, Humidity and Autoclave Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Autoclave	DM-DCLD-SOP-MEL-IM T10 (comparison method using wireless temperture & pressure loggers with timer)	100 °C up to 135 °C (1 - 30 Mins) (0 - 150 kPa)	0,20 °C (35,4 ms) (1,8 kPa)	Customers Premises
Hygrometers	DM-DCLD-SOP-MEL-IM T08 (comparison using humidity generator)	0 °C up to 70 °C (for temperature) 10% up to 96% (for relative Humidity)	0,10 °C 0,80% RH	DCL laboratory
Dry Block Calibrator / Dry Well Bath	DM-DCLD-SOP-MEL-IM T11 Comparison method using calibrated PRTs, SPRTs and Thermocouples	-45 °C up to 150 °C	0,05 °C	DCL laboratory
		150 °C up to < 650 °C	0,1 °C	
		650 °C up to 1000 °C	0,5 °C	
		>1000 °C up to 1200 °C	1,0 °C	

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Pressure Calibration

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Date: 30-05-2025

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Negative Gauge Pressure Gas Analogue and digital pressure gauges	Comparison method using standard transducer modules BS EN 837-1, EURAMET /cg-17 and DKD-R 6-1	$-95 \text{ kPa} \leq p \leq 0 \text{ kPa}$	0.050 kPa	DCL Laboratory
Gauge Pressure Gas Analogue and digital pressure gauges		$0 \text{ kPa} \leq p \leq 7000 \text{ kPa}$	1.0 kPa	
Gauge Pressure Hydraulic Analogue and digital pressure gauges	Comparison method using dead weight tester, standard transducer BS EN 837-1 EURAMET /cg-17 and DKD-R 6-1	$100 \text{ kPa} \leq p \leq 600 \text{ kPa}$	0.50 kPa	DCL Laboratory
		$600 \text{ kPa} < p \leq 6 \text{ Mpa}$	1.2 kPa	
		$6 \text{ MPa} < p \leq 70 \text{ Mpa}$	5 kPa	
	Comparison method using Digital indicator / Calibrator BS EN 837-1, EURAMET /cg-17 and DKD-R 6-1	$0 \text{ MPa} \leq p \leq 70 \text{ Mpa}$	$1.2 \text{ kPa} + 1.83 \cdot 10^{-3} \cdot p$	DCL Laboratory/ Customer Premises

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Pressure Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Negative Gauge Pressure Gas Analogue and digital pressure gauges	Comparison method using Digital indicator / Calibrator BS EN 837-1, EURAMET /cg-17 and DKD-R 6-1	-100 kPa ≤ p ≤ 0 kPa	1000 Pa	Customers Premises
Barometer	DM-DCLD-SOP-MEL-IM P06 Comparison method using Automated Pressure Calibrator	90 kPa to 110 kPa	0.025 kPa	DCL Laboratory

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Electrical Calibration
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Issue no.: 15

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
DC Voltage Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) U = measured voltage value	0 mV to 330 mV	$11 \cdot 10^{-6} \cdot U + 2,9 \mu V$	DCL Laboratory
		>330 mV to 3,3 V	$6,5 \cdot 10^{-6} \cdot U + 9,6 \mu V$	
		>3,3 V to 33 V	$7,7 \cdot 10^{-6} \cdot U + 85 \mu V$	
		>33 V to 330 V	$12 \cdot 10^{-6} \cdot U + 0,74 mV$	
		>330 V to 1020 V	$13 \cdot 10^{-6} \cdot U + 2,1 mV$	
DC Current Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) I = measured current value	0 to 329,999 μA	$0,18 \cdot 10^{-3} \cdot I + 16 nA$	DCL Laboratory
		>330 μA to 3,29999 mA	$76 \cdot 10^{-6} \cdot I + 46 nA$	
		>3,30 mA to 32,9999 mA	$75 \cdot 10^{-6} \cdot I + 0,30 \mu A$	
		>33 mA to 329,999 mA	$68 \cdot 10^{-6} \cdot I + 5,7 \mu A$	
		>330 mA to 1,09999 A	$0,15 \cdot 10^{-3} \cdot I + 35 \mu A$	
		>1.1 A to 2,99999 A	$0,28 \cdot 10^{-3} \cdot I + 95 \mu A$	
		>3 A to 10,9999 A	$0,38 \cdot 10^{-3} \cdot I + 0,55 mA$	
		>11 A to 20,5 A	$0,77 \cdot 10^{-3} \cdot I + 0,88 mA$	
Resistance Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) R = measured resistance value	0 Ω to 10,9999 Ω	$31 \cdot 10^{-6} \cdot R + 0,78 m\Omega$	DCL Laboratory
		>11 Ω to 32,999 Ω	$23 \cdot 10^{-6} \cdot R + 1,2 m\Omega$	
		>33 Ω to 109,9999 Ω	$21 \cdot 10^{-6} \cdot R + 1,2 m\Omega$	
		>110 Ω to 329,9999 Ω	$20 \cdot 10^{-6} \cdot R + 2,6 m\Omega$	
		>330 Ω to 1,099999 k Ω	$21 \cdot 10^{-6} \cdot R + 2,3 m\Omega$	
		>1,1 k Ω to 3,299999 k Ω	$20 \cdot 10^{-6} \cdot R + 27 m\Omega$	

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Resistance Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) R = measured resistance value	>3,3 k Ω to 10,99999 k Ω	$21 \cdot 10^{-6} \cdot R + 22 \text{ m}\Omega$	DCL Laboratory
		>11 k Ω to 32,99999 k Ω	$19 \cdot 10^{-6} \cdot R + 0,28 \Omega$	
		>33 k Ω to 109,9999 k Ω	$21 \cdot 10^{-6} \cdot R + 0,19 \Omega$	
		>110 k Ω to 329,9999 k Ω	$23 \cdot 10^{-6} \cdot R + 2,6 \Omega$	
		>330 k Ω to 1,099999 M Ω	$24 \cdot 10^{-6} \cdot R + 2,9 \Omega$	
		>1,1 M Ω to 3,299999 M Ω	$42 \cdot 10^{-6} \cdot R + 47 \Omega$	
		>3,3 M Ω to 10,99999 M Ω	$90 \cdot 10^{-6} \cdot R + 0,21 \text{ k}\Omega$	
		>11 M Ω to 32,99999 M Ω	$0,19 \cdot 10^{-3} \cdot R + 2,3 \text{ k}\Omega$	
		>33 M Ω to 109,9999 M Ω	$0,38 \cdot 10^{-3} \cdot R + 3,9 \text{ k}\Omega$	
		>110 M Ω to 329,9999 M Ω	$2,3 \cdot 10^{-3} \cdot R + 0,082 \text{ M}\Omega$	
AC VOLTAGE Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) U = measured voltage value	1,0 mV to 32,999 mV	$0,62 \cdot 10^{-3} \cdot U + 4,9 \mu\text{V}$	DCL Laboratory
		1,0 mV to 32,999 mV	$0,11 \cdot 10^{-3} \cdot U + 5,5 \mu\text{V}$	
		1,0 mV to 32,999 mV	$0,14 \cdot 10^{-3} \cdot U + 5,5 \mu\text{V}$	
		1,0 mV to 32,999 mV	$0,71 \cdot 10^{-3} \cdot U + 7,5 \mu\text{V}$	
		1,0 mV to 32,999 mV	$2,7 \cdot 10^{-3} \cdot U + 12 \mu\text{V}$	
		1,0 mV to 32,999 mV	$6,1 \cdot 10^{-3} \cdot U + 44 \mu\text{V}$	
		>33 mV to 329,999 mV	$0,23 \cdot 10^{-3} \cdot U + 9,2 \mu\text{V}$	
		>33 mV to 329,999 mV	$0,10 \cdot 10^{-3} \cdot U + 10 \mu\text{V}$	
		>33 mV to 329,999 mV >10 kHz to 20 kHz	$0,12 \cdot 10^{-3} \cdot U + 10 \mu\text{V}$	

Accreditation Scope

Electrical Calibration

LB-CAL-001

Metrology Laboratories Section

Dubai Central Laboratory Department-Dubai Municipality

Dubai | United Arab Emirates

Issue no.: 15

Date: 30-05-2025

Valid to: 29-11-2025

Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
AC VOLTAGE Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) U = measured voltage value	>33 mV to 329,999 mV >20 kHz to 50 kHz	$0,25 \cdot 10^{-3} \cdot U + 13 \mu V$	DCL Laboratory
		>33 mV to 329,999 mV >50 kHz to 100 kHz	$0,60 \cdot 10^{-3} \cdot U + 32 \mu V$	
		>33 mV to 329,999 mV >100 kHz to 500 kHz	$1,5 \cdot 10^{-3} \cdot U + 81 \mu V$	
		>0,33 V to 3,29999 V 10 Hz to 45 Hz	$0,22 \cdot 10^{-3} \cdot U + 76 \mu V$	
		>0,33 V to 3,29999 V >45 Hz to 10 kHz	$0,11 \cdot 10^{-3} \cdot U + 90 \mu V$	
		>0,33 V to 3,29999 V >10 kHz to 20 kHz	$0,14 \cdot 10^{-3} \cdot U + 86 \mu V$	
		>0,33 V to 3,29999 V >20 kHz to 50 kHz	$0,22 \cdot 10^{-3} \cdot U + 87 \mu V$	
		>0,33 V to 3,29999 V >50 kHz to 100 kHz	$0,53 \cdot 10^{-3} \cdot U + 0,16 mV$	
		>0,33 V to 3,29999 V >100 kHz to 500 kHz	$1,8 \cdot 10^{-3} \cdot U + 0,84 mV$	
		>3,3 V to 32,9999 V 10 Hz to 45 Hz	$0,22 \cdot 10^{-3} \cdot U + 0,83 mV$	
		>3,3 V to 32,9999 V >45 Hz to 10 kHz	$0,11 \cdot 10^{-3} \cdot U + 0,89 mV$	
		>3,3 V to 32,9999 V >10 kHz to 20 kHz	$0,18 \cdot 10^{-3} \cdot U + 0,83 mV$	
		>3,3 V to 32,9999 V >20 kHz to 50 kHz	$0,26 \cdot 10^{-3} \cdot U + 1,0 mV$	
		>3,3 V to 32,9999 V >50 kHz to 100 kHz	$0,68 \cdot 10^{-3} \cdot U + 1,9 mV$	
		>33 V to 329,999 V 10 Hz to 45 Hz	$0,13 \cdot 10^{-3} \cdot U + 9,4 mV$	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
AC VOLTAGE Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) U = measured voltage value	>33 V to 329,999 V >45 Hz to 10 kHz	$0,14 \cdot 10^{-3} \cdot U + 11 \text{ mV}$	DCL Laboratory
		>33 V to 329,999 V >10 kHz to 20 kHz	$0,18 \cdot 10^{-3} \cdot U + 10 \text{ mV}$	
		>33 V to 329,999 V >20 kHz to 50 kHz	$0,18 \cdot 10^{-3} \cdot U + 26 \text{ mV}$	
		>33 V to 329,999 V >50 kHz to 100 kHz	$1,5 \cdot 10^{-3} \cdot U + 44 \text{ mV}$	
		>330 V to 1020 V 45 Hz to 1 kHz	$0,23 \cdot 10^{-3} \cdot U + 15 \text{ mV}$	
		>330 V to 1020 V >1 kHz to 5 kHz	$0,19 \cdot 10^{-3} \cdot U + 16 \text{ mV}$	
		>330 V to 1020 V >5 kHz to 10 kHz	$0,23 \cdot 10^{-3} \cdot U + 15 \text{ mV}$	
AC Current Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) I = measured current value	29 μ A to 329,99 μ A 10 Hz to 20 Hz	$1,5 \cdot 10^{-3} \cdot I + 0,11 \text{ } \mu\text{A}$	DCL Laboratory
		29 μ A to 329,99 μ A >20 Hz to 45 Hz	$1,1 \cdot 10^{-3} \cdot I + 0,10 \text{ } \mu\text{A}$	
		29 μ A to 329,99 μ A >45 Hz to 1 kHz	$0,95 \cdot 10^{-3} \cdot I + 0,10 \text{ } \mu\text{A}$	
		29 μ A to 329,99 μ A >1 kHz to 5 kHz	$2,3 \cdot 10^{-3} \cdot I + 0,14 \text{ } \mu\text{A}$	
		29 μ A to 329,99 μ A >5 kHz to 10 kHz	$6,1 \cdot 10^{-3} \cdot I + 0,19 \text{ } \mu\text{A}$	
		29 μ A to 329,99 μ A >10 kHz to 30 kHz	$12 \cdot 10^{-3} \cdot I + 0,39 \text{ } \mu\text{A}$	
		>0,33 mA to 3,2999 mA 10 Hz to 20 Hz	$1,4 \cdot 10^{-3} \cdot I + 0,59 \text{ } \mu\text{A}$	
		>0,33 mA to 3,2999 mA >20 Hz to 45 Hz	$0,90 \cdot 10^{-3} \cdot I + 0,39 \text{ } \mu\text{A}$	

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AC Current Calibration of meters	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) / = measured current value	>0,33 mA to 3,2999 mA >45 Hz to 1 kHz	$0,73 \cdot 10^{-3} \cdot / + 0,30 \mu A$	DCL Laboratory
		>0,33 mA to 3,2999 mA >1 kHz to 5 kHz	$1,5 \cdot 10^{-3} \cdot / + 0,33 \mu A$	
		>0,33 mA to 3,2999 mA >5 kHz to 10 kHz	$3,4 \cdot 10^{-3} \cdot / + 2,3 \mu A$	
		>0,33 mA to 3,2999 mA >10 kHz to 30 kHz	$7,4 \cdot 10^{-3} \cdot / + 2,0 \mu A$	
		>3,3 mA to 32,999 mA 10 Hz to 20 Hz	$1,4 \cdot 10^{-3} \cdot / + 3,2 \mu A$	
		>3,3 mA to 32,999 mA 20 Hz to 45 Hz	$0,65 \cdot 10^{-3} \cdot / + 3,6 \mu A$	
		>3,3 mA to 32,999 mA >45 Hz to 1 kHz	$0,25 \cdot 10^{-3} \cdot / + 4,4 \mu A$	
		>3,3 mA to 32,999 mA >1 kHz to 5 kHz	$0,56 \cdot 10^{-3} \cdot / + 4,1 \mu A$	
		>3,3 mA to 32,999 mA >5 kHz to 10 kHz	$1,4 \cdot 10^{-3} \cdot / + 6,7 \mu A$	
		>3,3 mA to 32,999 mA >10 kHz to 30 kHz	$2,6 \cdot 10^{-3} \cdot / + 20 \mu A$	
		>33 mA to 329,99 mA 10 Hz to 20 Hz	$1,4 \cdot 10^{-3} \cdot / + 31 \mu A$	
		>33 mA to 329,99 mA >20 Hz to 45 Hz	$0,65 \cdot 10^{-3} \cdot / + 36 \mu A$	
		>33 mA to 329,99 mA >45 Hz to 1 kHz	$0,26 \cdot 10^{-3} \cdot / + 38 \mu A$	
		>33 mA to 329,99 mA >1 kHz to 5 kHz	$0,74 \cdot 10^{-3} \cdot / + 56 \mu A$	
		>33 mA to 329,99 mA >5 kHz to 10 kHz	$1,5 \cdot 10^{-3} \cdot / + 0,11 \mu A$	

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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	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) / = measured current value	>33 mA to 329,99 mA	$2,8 \cdot 10^{-3} \cdot / + 0,29 \text{ mA}$	DCL Laboratory
		>10 kHz to 30 kHz		
		>0,33 A to 1,09999 A	$1,4 \cdot 10^{-3} \cdot / + 0,10 \text{ mA}$	
		10 Hz to 45 Hz		
		>0,33 A to 1,09999 A	$0,36 \cdot 10^{-3} \cdot / + 0,12 \text{ mA}$	
		>45 Hz to 1 kHz		
		>0,33 A to 1,09999 A	$4,7 \cdot 10^{-3} \cdot / + 0,78 \text{ mA}$	
		>1 kHz to 5 kHz		
		>0,33 A to 1,09999 A	$19 \cdot 10^{-3} \cdot / + 3,9 \text{ mA}$	
		>5 kHz to 10 kHz		
		>1,1 A to 2,99999 A	$1,3 \cdot 10^{-3} \cdot / + 0,38 \text{ mA}$	
		10 Hz to 45 Hz		
		>1,1 A to 2,99999 A	$0,35 \cdot 10^{-3} \cdot / + 0,65 \text{ mA}$	
		>45 Hz to 1 kHz		
		>1,1 A to 2,99999 A	$4,6 \cdot 10^{-3} \cdot / + 0,91 \text{ mA}$	
		>1 kHz to 5 kHz		
		>1,1 A to 2,99999 A	$19 \cdot 10^{-3} \cdot / + 4,0 \text{ mA}$	
		>5 kHz to 10 kHz		
		>3 A to 10,9999 A	$0,33 \cdot 10^{-3} \cdot / + 2,8 \text{ mA}$	
		45 Hz to 100 Hz		
		>3 A to 10,9999 A	$0,56 \cdot 10^{-3} \cdot / + 2,6 \text{ mA}$	
		>100 Hz to 1 kHz		
		>3 A to 10,9999 A	$19 \cdot 10^{-3} \cdot / + 1,7 \text{ mA}$	
		>1 kHz to 5 kHz		
		>11 A to 20,5 A	$0,90 \cdot 10^{-3} \cdot / + 4,9 \text{ mA}$	
		45 Hz to 100 Hz		
		>11 A to 20,5 A	$1,1 \cdot 10^{-3} \cdot / + 4,8 \text{ mA}$	
		100 Hz to 1 kHz		
		>11 A to 20,5 A	$23 \cdot 10^{-3} \cdot / + 4,0 \text{ mA}$	
		1 kHz to 5 kHz		

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Capacitance	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) C = measured capacitance value	0,19 nF to 0,3999 nF	$2,3 \cdot 10^{-3} \cdot C + 14 \text{ pF}$	DCL Laboratory
		>0,4 nF to 1.0999 nF	$2,6 \cdot 10^{-3} \cdot C + 14 \text{ pF}$	
		>1,1 nF to 3,2999 nF	$3,1 \cdot 10^{-3} \cdot C + 14 \text{ pF}$	
		>3,3 nF to 10,9999 nF	$1,5 \cdot 10^{-3} \cdot C + 17 \text{ pF}$	
		>11 nF to 32,9999 nF	$1,4 \cdot 10^{-3} \cdot C + 0,14 \text{ nF}$	
		>33 nF to 109,999 nF	$1,5 \cdot 10^{-3} \cdot C + 0,17 \text{ nF}$	
		>110 nF to 329,999 nF	$1,6 \cdot 10^{-3} \cdot C + 0,47 \text{ nF}$	
		>0,33 µF to 1,09999 µF	$1,5 \cdot 10^{-3} \cdot C + 1,7 \text{ nF}$	
		>1,1 µF to 3,29999 µF	$1,6 \cdot 10^{-3} \cdot C + 4,7 \text{ nF}$	
		<3,3 µF to 10,9999 µF	$1,5 \cdot 10^{-3} \cdot C + 17 \text{ nF}$	
		>11 µF to 32,9999 µF	$2,7 \cdot 10^{-3} \cdot C + 44 \text{ nF}$	
		>33 µF to 109,999 µF	$3,1 \cdot 10^{-3} \cdot C + 0,15 \text{ µF}$	
		>110 µF to 329,999 µF	$3,1 \cdot 10^{-3} \cdot C + 0,43 \text{ µF}$	
		>0,33 µF to 1,09999 mF	$3,2 \cdot 10^{-3} \cdot C + 1,6 \text{ µF}$	

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Capacitance	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator (Fluke 5520A MPC) C = measured capacitance value	>1,1 mF to 3,2999 mF	$3,2 \cdot 10^{-3} \cdot C + 3,6 \mu F$	DCL Laboratory
		>3,3 mF to 10,9999 mF	$3,2 \cdot 10^{-3} \cdot C + 12 \mu F$	
		>11 mF to 32,9999 mF	$5,6 \cdot 10^{-3} \cdot C + 33 \mu F$	
		>33 mF to 110 mF	$8,4 \cdot 10^{-3} \cdot C + 0,10 mF$	
DC Clamp Meter	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator Fluke 5520A with 50 – turns current coil I = measured current value	20 A to 1000 A	$4,3 \cdot 10^{-3} \cdot I + 0,065 mA$	DCL Laboratory
AC Clamp Meter	DM-DCLD-SOP-MEL-IM E01 Comparison method using multi-product calibrator Fluke 5520A with 50 – turns current coil I = measured current value	20 A to 1000 A 45 Hz to 65 Hz	$4,1 \cdot 10^{-3} \cdot I + 1,6 mA$	DCL Laboratory
		20 A to 1000 A >65 Hz to 200 Hz	$9,5 \cdot 10^{-3} \cdot I + 0,8 mA$	
		20 A to 400 A >65 to 400 Hz	$9,5 \cdot 10^{-3} \cdot I + 0,077 mA$	

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DC power Calibration of meters	DM-DCLD-SOP-MEL-IM E03 Comparison method using multi-product calibrator (Fluke 5520A MPC) P = measured power value	0 W to 10 kW	$0,50 \cdot 10^{-3} \cdot P$	DCL Laboratory
		>10 kW to 20 kW	$0,80 \cdot 10^{-3} \cdot P$	
AC power Calibration of meters	DM-DCLD-SOP-MEL-IM E03 Comparison method using multi-product calibrator (Fluke 5520A MPC) P = measured power value	0 W to 10 kW 45 Hz to 1 kHz	$0,7 \cdot 10^{-3} \cdot P$	DCL Laboratory
		>10 kW to 20 kW 45 Hz to 1 kHz	$1,3 \cdot 10^{-3} \cdot P$	
DC Voltage Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter U = measured voltage value	0,0 mV to 200 mV	$1,6 \cdot 10^{-6} \cdot U + 2,6 \mu V$	DCL Laboratory
		>200 mV to 2 V	$2,9 \cdot 10^{-6} \cdot U + 2,3 \mu V$	
		>2 V to 20 V	$3,5 \cdot 10^{-6} \cdot U + 4,2 \mu V$	
		>20 V to 200 V	$5,5 \cdot 10^{-6} \cdot U + 38 \mu V$	
		>200V to 1000 V	$5,5 \cdot 10^{-6} \cdot U + 0,46 mV$	
DC Current Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter I = measured current value	0,0 μA to 200 μA	$13 \cdot 10^{-6} \cdot I + 0,30 nA$	DCL Laboratory
		>200 μA to 2 mA	$13 \cdot 10^{-6} \cdot I + 3,0 nA$	
		>2 mA to 20 mA	$14 \cdot 10^{-6} \cdot I + 31 nA$	

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DC Current Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter / = measured current value	>20 mA to 200 mA	$48 \cdot 10^{-6} \cdot I + 0,61 \mu A$	DCL Laboratory
		>200 mA to 2 A	$0,18 \cdot 10^{-3} \cdot I + 12 \mu A$	
		>2 A to 20 A	$0,40 \cdot 10^{-3} \cdot I + 0,30 mA$	
Resistance Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter R = measured resistance value	0,0 Ω to 2 Ω	$19 \cdot 10^{-6} \cdot R + 4,0 \mu \Omega$	DCL Laboratory
		>2 Ω to 20 Ω	$10 \cdot 10^{-6} \cdot R + 14 \mu \Omega$	
		>20 Ω to 200 Ω	$8,1 \cdot 10^{-6} \cdot R + 45 \mu \Omega$	
		>200 Ω to 2 k Ω	$7,9 \cdot 10^{-6} \cdot R + 0,46 m\Omega$	
		>2 k Ω to 20 k Ω	$7,9 \cdot 10^{-6} \cdot R + 4,6 m\Omega$	
		>20 k Ω to 200 k Ω	$8,1 \cdot 10^{-6} \cdot R + 45 m\Omega$	
		>200 k Ω to 2 M Ω	$10 \cdot 10^{-6} \cdot R + 0,87 \Omega$	
		>2 M Ω to 20 M Ω	$22 \cdot 10^{-6} \cdot R + 89 \Omega$	
		>20 M Ω to 200 M Ω	$0,12 \cdot 10^{-3} \cdot R + 9,2 k\Omega$	
		>200 M Ω to 2 G Ω	$1,4 \cdot 10^{-3} \cdot R + 0,93 M\Omega$	

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AC VOLTAGE Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter U = measured voltage value	0,0 mV to 200 mV 20 Hz to 40 Hz	$0,13 \cdot 10^{-3} \cdot U + 4,4 \mu V$	DCL Laboratory
		0,0 mV to 200 mV >40 Hz to 100 Hz	$0,11 \cdot 10^{-3} \cdot U + 4,4 \mu V$	
		0,0 mV to 200 mV >100 Hz to 2 kHz	$0,11 \cdot 10^{-3} \cdot U + 2,7 \mu V$	
		0,0 mV to 200 mV >2 kHz to 10 kHz	$0,13 \cdot 10^{-3} \cdot U + 4,4 \mu V$	
		>200 mV to 2 V 20 Hz to 40 Hz	$0,11 \cdot 10^{-3} \cdot U + 18 \mu V$	
		>200 mV to 2 V >40 Hz to 100 Hz	$87 \cdot 10^{-6} \cdot U + 19 \mu V$	
		>200 mV to 2 V >100 Hz to 2 kHz	$73 \cdot 10^{-6} \cdot U + 18 \mu V$	
		>200 mV to 2 V >2 kHz to 10 kHz	$0,11 \cdot 10^{-3} \cdot U + 19 \mu V$	
		>2 V to 20 V 20 Hz to 40 Hz	$0,11 \cdot 10^{-3} \cdot U + 0,18 mV$	
		>2 V to 20 V >40 Hz to 100 Hz	$89 \cdot 10^{-6} \cdot U + 0,18 mV$	
		>2 V to 20 V >100 Hz to 2 kHz	$74 \cdot 10^{-6} \cdot U + 0,18 mV$	
		>2 V to 20 V >2 kHz to 10 kHz	$0,11 \cdot 10^{-3} \cdot U + 0,18 mV$	
		>20 V to 200 V 20 Hz to 40 Hz	$0,11 \cdot 10^{-3} \cdot U + 1,8 mV$	

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AC VOLTAGE Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter U = measured voltage value	>20 V to 200 V >40 Hz to 100 Hz	$90 \cdot 10^{-6} \cdot U + 1,8 \text{ mV}$	DCL Laboratory
		>20 V to 200 V >100 Hz to 2 kHz	$78 \cdot 10^{-6} \cdot U + 1,8 \text{ mV}$	
		>20 V to 200 V >2 kHz to 10 kHz	$0,11 \cdot 10^{-3} \cdot U + 1,8 \text{ mV}$	
		>200 V to 1050 V 55 Hz to 10 kHz	$0,11 \cdot 10^{-3} \cdot U + 19 \text{ mV}$	
AC CURRENT Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter I = measured current value	0,0 µA to 200 µA 55 Hz to 1 kHz	$1,0 \cdot 10^{-3} \cdot I + 82 \text{ nA}$	DCL Laboratory
		0,0 µA to 200 µA >1 kHz to 5 kHz	$2,4 \cdot 10^{-3} \cdot I + 0,12 \text{ µA}$	
		0,0 µA to 200 µA >5 kHz to 10 kHz	$6,4 \cdot 10^{-3} \cdot I + 0,16 \text{ µA}$	
		>200 µA to 2 mA 55 Hz to 1 kHz	$0,84 \cdot 10^{-3} \cdot I + 0,20 \text{ µA}$	
		>200 µA to 2 mA >1 kHz to 5 kHz	$1,6 \cdot 10^{-3} \cdot I + 0,22 \text{ µA}$	
		>200 µA to 2 mA >5 kHz to 10 kHz	$4,0 \cdot 10^{-3} \cdot I + 0,27 \text{ µA}$	
		>2 mA to 20 mA 55 Hz to 1 kHz	$0,43 \cdot 10^{-3} \cdot I + 2,5 \text{ µA}$	
		>2 mA to 20 mA >1 kHz to 5 kHz	$0,70 \cdot 10^{-3} \cdot I + 2,4 \text{ µA}$	
		>2 mA to 20 mA >5 kHz to 10 kHz	$1,6 \cdot 10^{-3} \cdot I + 2,9 \text{ µA}$	
		>20 mA to 200 mA 55 Hz to 1 kHz	$0,43 \cdot 10^{-3} \cdot I + 25 \text{ µA}$	
		>20 mA to 200 mA >1 kHz to 5 kHz	$0,85 \cdot 10^{-3} \cdot I + 44 \text{ µA}$	

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AC CURRENT Calibration of sources	DM-DCLD-SOP-MEL-IM E04 Fluke 8508A Reference Multimeter / = measured current value	>20 mA to 200 mA	$1,6 \cdot 10^{-3} \cdot / + 82 \mu A$	DCL Laboratory
		>5 kHz to 10 kHz		
		>200 mA to 2 A	$0,74 \cdot 10^{-3} \cdot / + 0,20 \text{ mA}$	
		55 Hz to 1 kHz		
		>200 mA to 2 A	$4,8 \cdot 10^{-3} \cdot / + 0,82 \text{ mA}$	
		>1 kHz to 5 kHz		
		>200 mA to 2 A	$20 \cdot 10^{-3} \cdot / + 4,0 \text{ mA}$	
Temperature Indicators & Simulators by Electrical Simulation and Measurements	DM-DCLD-SOP-MEL- IM E05 Comparison method using multi-product calibrator (Fluke 5520A MPC)	>5 kHz to 10 kHz		DCL Laboratory
		>2 A to 20 A	$1,4 \cdot 10^{-3} \cdot / + 4,4 \text{ mA}$	
		55 Hz to 1 kHz		
		>2 A to 20 A	$24 \cdot 10^{-3} \cdot / + 4,2 \text{ mA}$	
		1 kHz to 5 kHz		
		RTD	0.2 °C	
		-200 °C up to 800 °C		
		Thermocouple Type K	0.4 °C	
		-200 °C up to 1372 °C		
		Thermocouple Type J	0.3 °C	
		-210 °C up to 1200 °C		
		Thermocouple Type R	0.5 °C	
		0 °C up to 1767 °C		
		Thermocouple Type S	0.5 °C	
		0 °C up to 1767 °C		
		Thermocouple Type T	0.5 °C	
		-250 °C up to 400 °C		
		Thermocouple Type N	0.4 °C	
		-200 °C up to 1300 °C		

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Temperature Indicators & Simulators by Electrical Simulation and Measurements	DM-DCLD-SOP-MEL- IM E05 Comparison method using multi-product calibrator (Fluke 5520A MPC)	Thermocouple Type B 600 °C up to 1820 °C	0.5 °C	DCL Laboratory
		Thermocouple Type E -250 °C up to 1000 °C	0.5 °C	
		Thermocouple Type C 0 °C up to 2316 °C	0.7 °C	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Gauge blocks: millimetre (Steel, Tungsten Carbide and Ceramic)	DMS 2015 Measurement of central length by mechanical comparison. ISO 3650	0.5 mm to 10 mm	0.08 μm	DCL Laboratory
		>10 mm to 25 mm	0.10 μm	
		>25 mm to 50 mm	0.12 μm	
		>50 mm to 75 mm	0.15 μm	
		>75 mm to 100 mm	0.18 μm	
Micrometer (External)	DMS 2014 For determining error of indicated size Comparison with reference gauge blocks	0 mm to 50 mm	2.5 μm	DCL Laboratory
		50 mm to 100 mm	3 μm	
Micrometer (Internal) (Calliper Type)	DMS 2014 For determining error of indicated size Comparison with reference gauge blocks using gauge block	5 mm to 50 mm	4 μm	
Vernier Callipers (Including Electronic)	DMS 2012 For determining error of indicated size Comparison with gauge blocks or calliper checker	0 mm to 300 mm	20 μm	DCL Laboratory
		300 mm to 600 mm	25 μm	

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Dial Gauge Calibrators / dial-indicator testers	DMS 2001 For determining error of indicated displacement Mechanical comparison to calibrated gauge blocks using precise digital height gauge	0 mm to 50 mm	2.2 μm	DCL Laboratory
Dial Gauges	DMS 2013 For determining error of indicated displacement, Comparison with dial gauge calibrator	0 mm to 100 mm	4 μm	DCL Laboratory
Precise Height Gauge (Height measurement system)	DM-DCLD-SOP-MEL-IM D10 For determining error of indicated vertical size Comparison with calibrated gauge block	0 mm to 600 mm	6 μm	DCL Laboratory

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Surface Plate (Table) (Granite/steel)	DM-DCLD-SOP-MEL-IM D13 Determining flatness using Inclination Measuring System	Up to 2500 x 1600 mm	9 μ m	Customer Premises
Calliper Checkers	DMS 2002 For determining face spacing Comparison to calibrated gauge blocks using precise digital height gauge	Up to 650 mm	8 μ m	DCL Laboratory
LVDT Transducers	DMS 2011 For determining error of indicated displacement Mechanical comparison to calibrated gauge blocks	0 mm to 100 mm	4 + (0.05 x L) μ m, L: mm	Customer Premises

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Feeler Gauges	DMS 2024 For determining thickness Comparison method using calibrated thickness gauge	Up to 1 mm	3.5 μm	DCL Laboratory
I-checker (Precise dial gauge calibrator / dial- test indicator)	DM-DCLD-SOP-MEL-IM D16 For determining error of indicated displacement Mechanical comparison to calibrated gauge blocks using precise digital height gauge	0 mm to 100 mm	2.2 μm	DCL Laboratory
Depth Micrometer	DM-DCLD-SOP-MEL-IM D17 For determining error of indicated depth Comparison with calibrated gauge blocks	0 mm to 25 mm	2.5 μm	DCL Laboratory

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Digimatic Thickness Gauge	DM-DCLD-SOP-MEL-IM D18 For determining error of indicated size Comparison with calibrated gauge blocks	0 mm to 12.7 mm	2.5 μ m	DCL Laboratory
Gauge Block Comparator	DMS 2023 For determining error of indicated displacement Mechanical comparison to gauge block couples EURAMET cg-2 (Previously EA-10/02)	0 mm to 100 mm	0.040 μ m	DCL Laboratory / Customer Premises
Metal Ruler	DM-DCLD-SOP-MEL-IM D20 Measurement of line spacing using length measuring machine equipped with optical magnification unit.	0 mm to 1000 mm	0.18 mm	DCL Laboratory

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Measuring Tape	DM-DCLD-SOP-MEL-IM D21 Measurement of line spacing using length measuring machine equipped with optical magnification unit. Stitching is carried out after length of 1000 mm.	0 mm to 5000 mm	0.26 mm	DCL Laboratory
Measuring Tape	DM-DCLD-SOP-MEL-IM D21 Measurement of line spacing using length measuring machine equipped with optical magnification unit. Stitching is carried out after length of 1 m	0 m to 50 m	$0.25 + (0.07 \times L) \text{ mm, L:}$ m	DCL Laboratory

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Tape and Scale Calibrator	DM-DCLD-SOP-MEL-IM D27 For determining error of indicated displacement, Comparison with reference measuring tape	0 mm to 1000 mm	0.050 mm	DCL Laboratory/ Customer Premises

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Balance	DM-DCLD-SOP-MEL- IM-M02 In Accordance to Euramet cg 18 & ASTM	Up to 3000 kg	2×10^{-6} of the balance range	Customer Premises
Mass Conventional Mass	DMS 2005 & DMS 2006 Substitution weighing with air buoyancy corr.	50 kg	25 mg	DCL laboratory
		20 kg	10 mg	
		10 kg	5.0 mg	
		5 kg	2.5 mg	
		2 kg	1.0 mg	
		1 kg	0.5 mg	
		500 g	0.25 mg	
		200 g	0.10 mg	
		100 g	0.05 mg	
		50 g	0.03 mg	
		20 g	0.025 mg	

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Mass Conventional Mass	DMS 2005 & DMS 2006 Substitution weighing with air buoyancy corr.	10 g	0.020 mg	DCL laboratory
		5 g	0.016 mg	
		2 g	0.012 mg	
		1 g	0.010 mg	
		500 mg	0.008 mg	
		200 mg	0.006 mg	
		100 mg	0.005 mg	
		50 mg	0.004 mg	
		20 mg	0.003 mg	
		10 mg	0.003 mg	
		5 mg	0.003 mg	
		2 mg	0.003 mg	
		1 mg	0.003 mg	
Mass Conventional Mass	DM-DCLD-SOP-MEL- IM-M01 Mass Scale and Substitution Weighing with air buoyancy corr.	E1: 1 mg to 20 kg	E1 and E2, F1, F2, M1	DCL Laboratory
		E2: 1 mg to 50 kg		

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Pipette and Micropipette (piston operated / digital)	DM-DCLD-SOP-MEL-IM V01 Comparison method using gravimetric method for single channel pipet	0.2 to 2 µl	0.03 µl	DCL Laboratory
		0.5 to 10 µl	0.04 µl	
		2 to 20 µl	0.05 µl	
		10 to 100 µl	0.06 µl	
		20 to 200 µl	0.07 µl	
		10 to 300 µl	0.08 µl	
		50 to 500 µl	0.10 µl	
		0.1 to 1 ml	0.20 µl	
		1.0 to 5 mL	0.3 µl	
		1.0 to 10 mL	0.4 µl	
	DM-DCLD-SOP-MEL-IM V01 Comparison method using gravimetric method for multi- channel pipette	5 to 50 µl	0.05 µl	
		10 to 100 µl	0.06 µl	
		20 to 200 µl	0.07 µl	
		30 to 300 µl	0.15 µl	
		50 to 500 µl	0.20 µl	
		0.1 to 1 ml	0.50 µl	

Accreditation Scope

Volume Calibration

LB-CAL-001

Metrology Laboratories Section

Dubai Central Laboratory Department-Dubai Municipality

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Burette	DM-DCLD-SOP-MEL-IM V02 Comparison method using gravimetric method based on ISO 4787	10 ml	0.012 ml	DCL Laboratory
		25 ml	0.030 ml	
		50 ml	0.058 ml	
		100 ml	0.116 ml	
Beaker	DM-DCLD-SOP-MEL-IM V02 Comparison method using gravimetric method based on ISO 4787	10 ml	0.012 ml	DCL Laboratory
		20 ml	0.030 ml	
		50 ml	0.058 ml	
		100 ml	0.116 ml	
		200 ml	0.116 ml	
		500 ml	0.120 ml	
		1000 ml	0.126 ml	
		2000 ml	0.156 ml	
Measuring Cylinders	DM-DCLD-SOP-MEL-IM V02 Comparison method using gravimetric method based on ISO 4787	10 ml	0.058 ml	DCL Laboratory
		20 ml	0.058 ml	
		50 ml	0.058 ml	
		100 ml	0.058 ml	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Measuring Cylinders	DM-DCLD-SOP-MEL-IM V02 Comparison method using gravimetric method based on ISO 4787	200 ml	0.058 ml	DCL Laboratory
		500 ml	0.068 ml	
		1000 ml	0.078 ml	
		2000 ml	0.120 ml	
One-Mark Flask	DM-DCLD-SOP-MEL-IM V02 Comparison method using gravimetric method based on ISO 4787	10 ml	0.004 ml	DCL Laboratory
		20 ml	0.004 ml	
		50 ml	0.006 ml	
		100 ml	0.01 ml	
		200 ml	0.018 ml	
		500 ml	0.044 ml	
		1000 ml	0.086 ml	
		2000 ml	0.17 ml	

Accreditation Scope

Force Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Universal Testing Machines (Tension)	DMS 2019 Comparison method using force proving instruments based on BS EN ISO 7500-1	100 N up to 1200 kN (Tension)	0.12%	Customer Premises
Universal Testing Machines (Compression)	DMS 2019 Comparison method using force proving instruments based on BS EN ISO 7500-1	100 N up to 3000 kN (Compression)	0.12%	Customer Premises
Force Measuring Systems- Tension, Compression	DMS 2019 Comparison method using calibrated deadweights based on BS EN ISO 7500-1	0.01 N up to 235 N	0.08%	Customer Premises
Calibration of Force Testing Machines (Tension, Compression)	DMS 2019 Comparison method using Load Cells based on BS EN ISO 7500-1, BS EN 12390-4	100 N up to 3000 kN (Compression)	0.12%	Customer Premises

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Force Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Force Verification/ Calibration of Testing Machines	DM-DCLD-SOP-MEL-IM F01 Comparison method using calibrated deadweights /load cell based on ASTM E4	0.01 N up to 3000 kN (Compression)	0.20%	Customer Premises
		0.01 N up to 1200 kN (Tension)	0.20%	Customer Premises
Compression Testing Machines for Concrete - Performance Test (Stability Verification)	DMS 2022 Comparison method using Strain Gauge Load Cells based on BS EN 12390-4	Alignment of Upper Machine Platen Alignment of Machine Components, Restraint on movement of Upper Platten	N/A	Customer Premises
Force measuring devices using soil testing apparatus	DMS 2020 Comparison method using Load Cells based on BS 1377 part 1	25 N up to 50 kN	0.22%	DCL Laboratory
Force measuring devices using soil testing apparatus	DMS 2020 Comparison method using Load Cells based on BS 1377 part 1	25 N up to 200 kN	0.70%	Customer Premises

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Force Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Extensometers	DMS 2021 Comparison method using calibrated extensometer calibration rigs / calibrators based on BS EN ISO 9513	$L \geq 0.02 \text{ mm to } 58.5 \text{ mm}$	$(1+0.3 \cdot L) \mu\text{m}$ L distance in mm	Customer Premises
Extensometers	DM-DCLD-SOP-MEL- IM D25 Comparison method using calibrated extensometer calibration rigs/ calibrators based on ASTM E83	$L \geq 0.02 \text{ mm up to } \leq 5 \text{ mm}$	1 μm	Customer Premises
		$L > 5 \text{ mm up to } \leq 58.5 \text{ mm}$	2.5 μm	

Accreditation Scope
Time and Speed Calibration
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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
TIME (Stopwatch)	DM-DCLD-SOP-MEL-IM S02 Comparison method using calibrate High Resolution Counter / Timer / Analyzer	1 min to 30 min	1.0 ms / min	DCL Laboratory
		30 min to 2 hours	9.7 ms / min	
Rotational Speed (Centrifuge , Motors , etc)	DM-DCLD-SOP-MEL-IM S01 Comparison method using calibrated Digital Tachometer	60 - 10000 rpm	0.9 rpm	Customer Premises
		10000 - 50000 rpm	2.0 rpm	
Timer	DM-DCLD-SOP-MEL-IM S02 Comparison method using calibrated Stopwatch	1 hour	0.86 sec	Customer Premises
Digital Tachometer (Non - contact mode)	DM-DCLD-SOP-MEL-IM S03 Comparison method using calibrated waveform generator	60 - 10000 rpm	0.1 rpm	DCL Laboratory
		10000 - 99000 rpm	0.6 rpm	