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LABORATORY LOCATION/ CENTRAL OFFICE: 	National Metrology Institute of Malaysia Lot PT 4803 Bandar Baru Salak Tinggi 43900 Sepang, Selangor , 43900, SELANGOR MALAYSIA
ACCREDITED SINCE :	11 JUNE 2025
FIELD(S) OF TESTING:	CHEMICAL
FIELD(S) OF CALIBRATION:	ACOUSTIC MEASUREMENTS DENSITY MEASUREMENTS DIMENSIONAL MEASUREMENTS ELECTRICAL MEASUREMENTS FORCE MEASUREMENTS MASS MEASUREMENTS PRESSURE MEASUREMENTS TEMPERATURE MEASUREMENTS VISCOSITY MEASUREMENTS VOLUME MEASUREMENTS FLOW HUMIDITY OPTICAL & PHOTOMETRIC ELECTRICAL (TIME & FREQUENCY)
SITE:	
1 . SITE LABORATORY(HQ) :	National Metrology Institute of Malaysia, LOT PT 4803, BANDAR BARU SALAK TINGGI, MALAYSIA
FIELD(S) OF TESTING :	CHEMICAL
FIELD(S) OF CALIBRATION:	ACOUSTIC MEASUREMENTS,DENSITY MEASUREMENTS,DIMENSIONAL MEASUREMENTS,ELECTRICAL MEASUREMENTS,FORCE MEASUREMENTS,MASS MEASUREMENTS,PRESSURE MEASUREMENTS,TEMPERATURE MEASUREMENTS,VISCOSITY MEASUREMENTS,VOLUME MEASUREMENTS
2 . SITE LABORATORY(HQ) :	National Metrology Institute of Malaysia, Lot PT 4803 Bandar Baru Salak Tinggi , MALAYSIA
FIELD(S) OF CALIBRATION:	DIMENSIONAL,MASS

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

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*** The uncertainty covered by the CMC is expressed as the expanded uncertainty corresponding to a coverage probability of approximately 95 % and have a coverage factor of $k=2$ unless stated otherwise.**

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FIELD(S) OF TESTING :	CHEMICAL,

SCOPE OF TESTING : CHEMICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
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SITE LOCATION (HQ)	1. National Metrology Institute of Malaysia, LOT PT 4803, BANDAR BARU SALAK TINGGI, MALAYSIA
FIELD(S) OF TESTING :	CHEMICAL

SCOPE OF TESTING : CHEMICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques
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CENTRAL LOCATION	National Metrology Institute of Malaysia Lot PT 4803 Bandar Baru Salak Tinggi 43900 Sepang, Selangor , 43900, Selangor
FIELD(S) OF CALIBRATION :	ACOUSTIC & VIBRATION, DENSITY, DIMENSIONAL, ELECTRICAL, FORCE, MASS, PRESSURE, HEAT & TEMPERATURE, VISCOSITY, VOLUME, FLOW, HUMIDITY, OPTICAL & PHOTOMETRIC, ELECTRICAL

SCOPE OF CALIBRATION : ACOUSTIC MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
(iprt)	-50 °C to 0 °C	0.04 °C	Resistance Thermometers in:
	0 °C to 90 °C	0.03 °C	alcohol bath
	0 °C to 90 °C	None	water bath
	90 °C to 250 °C	0.04 °C	oil bath
	90 °C to 250 °C	None	calibration furnace
	250 °C to 400 °C	0.08 °C	
	400 °C to 660 °C	0.1 °C	
2) Ac Rms Voltage	10 kV to 200 kV @ 50 Hz	0.21 %	
Ac Current	None		
	At 1 kHz	None	
	0Ato1A	0.9 mA/A	
	1Ato3A	None	
	None	see Matrix F	Measurement

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	30A to 109.999A 45Hz to 1kHz 110A to 205A 45Hz to 1kHz	1.9mA/A+47mA	Measurement using Fluke 5522A and Fluke 5500A/Coil 50 Turn Coil
	205A to 549.995A	None	
	45Hz to 65Hz	4.7mA/A+0.78A	
	550A to 1025A	None	
	45Hz to 65Hz	4.8mA/A+0.69A	
	0.1Ato 100A	None	
	3 Hz to 5 Hz	1 mA/A + + 0.07 LA	
	5 Hz to 10 Hz	1.5 mA/A + + 0.07 HA	
	10 Hz to 5 kHz	None	
	1Ato3A	None	
	3 Hz to 5 Hz	1 mA/A + + 0.72 LA	
	5 Hz to 10 Hz	1.5 MAJA + + 1.17 PA	
	10 Hz to 5 kHz	None	
	to 10 mA 3 Hz to 5 kHz 5 kHz to 10 kHz	1mA/A++7.2 1.5 + + 11.7 PA	Direct measurement with 6 % digit multimeter
	10 mA to 100 mA	None	
	3 Hz to 5 kHz	1 mA/A + 0.07 mA	
	5 kHz to 10 kHz	1.5 + 0.12 mA	
	100 mA	None	
	3 Hz to 5 kHz	1 mA/A + 0.8 mA	
	5 kHz to 10 kHz	1.5 mA/A + 0.1 mA	
	1Ato3A	None	
	3 Hz to 5 kHz	1.5 + 2.3 mA	
	5 kHz to 10 kHz	1.5 + 2.4 mA	
	1Ato50A 10 Hz to 10 kHz	17 mA/A	Direct measurement with
	10 30 kHz to 300 kHz	21 mA/A	current probe and 6 % digit multimeter
	220 to 2.2A (see Matrix B)	(See Matrix B)	
	150 A to 1000 A	None	
	1000 Hz:	None	
	00to10A 10Ato 100A	1.3 mA/A	Calibration using Valhalla 2575A
	5000 Hz:	None	
	00to10A	1.3 mA/A	
	10Ato 100A	None	
	10000 Hz:	None	
	00to10A	1.3 mA/A	
	10Ato 100A	None	
	See Matrix F	None	
	0 to 33 mA 0 to 330 mA 0to22A 0to11A	None	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	0.03 to 0.33 mA	None	
	10 Hz to 20 Hz	0.3 pA	
	20 Hz to 45 Hz	0.3 pA	
	45 Hz to 1 kHz	0.3 pA	
	1 kHz to 5 kHz 5 kHz to 10 kHz	0.3 pA 0.3 pA	
	0.33 to 3.3 mA	None	
	10 Hz to 45 Hz	3 yA	
	45 Hz to 1 kHz	3 yA	
	1 kHz to 5 kHz	3 yA	
	5 kHz to 10 kHz	3 yA	
	3.3 to 33 mA	None	
	10 Hz to 45 Hz	28	
	45 Hz to 1 kHz	28	Generation using
	1 kHz to 5 kHz	28	calibrator model
	5 kHz to 10 kHz	28	Fluke 5500A
	33 to 330 mA	None	
	10 Hz to 45 Hz	0.4mA	
	45 Hz to 1 kHz	0.4mA	
	1 kHz to 5 kHz	0.4mA	
	5 kHz to 10 kHz	0.4mA	
	0.33 to 2.2A	None	
	10 Hz to 45 Hz	4mA	
	45 Hz to 1 kHz	4mA	
	1 kHz to 5 kHz	7mA	
	2.2 to 11A	None	
	45 Hz to 65 Hz	None	
	65 Hz to 500 Hz	13 mA	
	500 Hz to 1 KHz	14mA	
	10 Hz to 20 Hz 20 Hz to 45 Hz	None	
	45 Hz to 1 kHz	None	
	1 kHz to 5 kHz	None	
	5 kHz to 10 kHz	5 yA	
	0.33 to 3.3 mA	None	
	10 Hz to 45 Hz	5 yA	
	45 Hz to 1 kHz	5 yA	
	1 kHz to 5 kHz	None	
	5 kHz to 10 kHz	23	
	3.3 to 33 mA	None	
	10 Hz to 45 Hz	49 pA	
	45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	46 pA 83 0.2mA	Generation using calibrator model Fluke 5500A
	33 to 330 mA	None	
	10 Hz to 45 Hz	0.6 mA	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	45 Hz to 1 kHz	0.5mA	
	1 kHz to 5 kHz	0.9mA	
	5 kHz to 10 kHz	2.3mA	
	0.33 to 2.2A	None	
	10 Hz to 45 Hz	6mA	
	45 Hz to 1 kHz	5mA	
	1 kHz to 5 kHz	20 mA	
	2.2to11A	None	
	45 Hz to 65 Hz	None	
	65 Hz to 500 Hz	20 mA	
	500 Hz to 1	45 mA	
	33 UA to 10A	See Matrix B	reference to EURAMET cg-15, Version 3 (02/2015)
	290 to See Matrix B	See Matrix B	Calibrator Fluke 5520A
	0.1 20A See Matrix D	See Matrix D	Multimeter Fluke 8508A
	0.1 UA to 20A See Matrix H	See Matrix H	Multimeter Fluke 8508A
	See Matrix B	See Matrix B	Direct measurement using
	See Matrix D	See Matrix D	Direct Measurement using Fluke
	100 yA	None	
	10 Hz to 1 kHz 1 kHz to 5 kHz	0.0097 pA 0.016 pA	Direct measurement using Digital Multimeter Datron 1281
	2.2Ato11A 45 Hz to 65 Hz	1.00mA/A	Rev 01 using Direct Method
	65 Hz to 500 Hz	None	
	500 Hz to 1 kHz	None	
	11 A to 550 A (current coil) 45 Hz to 65 Hz 65 Hz to 440 Hz	3.4mA/A	Calibrated according to procedure LCP01705, Rev 01 using Direct Method
	100A	None	Calibrated according to
	1mAto3A	See Matrix D	procedure LCP01703, Rev 01 using Direct
	1mAto3A	None	Method
	3Ato 100A	None	Calibrated according to
	45 Hz to 65 Hz	2.4mA/A	procedure LCP01706, Rev 02 using Method
	45 Hz to 65 Hz	None	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	50 to 3A	None	Method
	3A to 100A	None	Calibrated according to
	45 Hz to 65 Hz	2.5mA/A	procedure LCP01706,
	45 Hz to 65 Hz	None	Rev 04 using Direct
	45 Hz to 65 Hz	None	Method
Ac Current Indicating Meter	(See Matrix E)	(See Matrix E)	generation using Fluke 5720A with Fluke 5725A
	(See Matrix E)		Amplifier (where applicable)
Ac Current Source	(See Matrix D)	(See Matrix D)	AC/DC comparison method using current shunts.
	(See Matrix D)		AC current
	(See Matrix B)	See Matrix C	Measurement
	(See Matrix C)	None	using Agilent
	(See Matrix C)	None	3458A
	(See Matrix C)	See Matrix D	Measurement
	(See Matrix D)	None	using Fluke
	(See Matrix D)	None	8508A
Ac Energy Single Phase	120 V, 240 V 1A to 50A	120	Comparison method with
	pf =0.5 to 1 50 Hz	None	power converter
Ac Energy Three Phase	120 V, 240 V 1A to 50A	220	Comparison method with
	pf =0.5 to 1 50 Hz	None	three phase comparator
Ac High Current Ratio: Real Component	Primary: 5 A to 2000 A Secondary: 5A	0.05 %	Comparison method with standard current transformer at
	Primary: 5 A to 2000 A Secondary: 5A	None	
	Primary: 5 A to 2000 A Secondary: 5A	None	50 Hz.
Ac High Voltage Divider/meter Scale Factor 1) Ac	10 kV to 200 kV @ 50 Hz	0.11 %	Comparison method with standard high voltage capacitor divider
Ac High Voltage Ratio: Real Component	Primary: 3300 V to 11000 V Secondary: 110 V	0.05 %	Comparison method with standard voltage transformer at
	Primary: 3300 V to 11000 V Secondary: 110 V	None	50 Hz.
Ac Power & Energy	None	None	

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Ac Power Single Phase	120 V, 240 V 1Ato50A	70	Comparison method with
	pf =0.5 to 1 50 Hz	None	power converter
Ac Power Three Phase	120 V, 240 V 1Ato20A	240	Comparison method with
	pf =0.5 to 1 50 Hz	None	standard watt converter
Ac Voltage	None		
	0 mV to 10 V (Refer The Matrix A)	(Refer The Matrix A)	
	10 V to 750 V	None	
	(Refer The Matrix B)	(Refer The Matrix B)	
	At 50 Hz 1 kV to 10 kV	13 mV/V	
	At 50 Hz 1 kV to 10 kV	16 mV/V	
	2.2 mV to 220 V	See Matrix E	Measurement
	330V to 1020V	None	using Fluke
	45Hz to 1kHz	0.24mV/V + 11mV	5522A
	1kHz to 5kHz	0.21mV/V + 8.6mV	
	5kHz to 10kHz	0.24mV/V +	
	0 mV to 750 V	Refer Matrix A	measurement with 6 % digit multimeter
	2.2 mV to 220 V (See Matrix A)	(See Matrix A)	
	220 V to 1100 V	None	
	15 Hz to 50 Hz	0.30 mV/V + 16 mV	
	220 V to 1100 V	None	
	50 Hz to 1 kHz	77 + 3.2 mV	
	See Matrix E	None	
	0.5 kV to 10 kV	12 mV/V + 13 mV	
	1.0 to 33 mV	None	
	10 Hz to 45 Hz	3.6	
	45 Hz to 10 kHz	43	
	10 kHz to 20	3.6 UV	
	20 kHz to 50 kHz	5.7	
	50 kHz to 100 kHz	11	
	100 kHz to 500 kHz	26	
	33 to 330 mV	None	
	10 Hz to 45 Hz	13	
	45 Hz to 10 kHz	77 uv	
	10 kHz to 20	13	
	20 kHz to 50 kHz	18	
	50 kHz to 100 kHz	45 110	
	100 kHz to 500 kHz		
	0.33 to 3.3 V	None	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	10 Hz to 45 Hz	0.1 mV	
	45 Hz to 10 kHz	0.1 mV	Generation using
	10 kHz to 20 kHz	0.1 mV	calibrator model
	20 kHz to 50 kHz	0.2 mV	Fluke 5500A
	50 kHz to 100 kHz	0.2 mV	
	100 kHz to 500 kHz	1.1 mV	
	3.3 to 33. V	None	
	10 Hz to 45 Hz	1.2mV	
	45 Hz to 10 kHz	None	
	10 kHz to 20 kHz	1.2mV	
	20 kHz to 50 kHz	2.1mV	
	50 kHz to 100 kHz	2.8 mV	
	33 to 330 V	None	
	10 Hz to 45 Hz	None	
	45 Hz to 10 kHz	14 mV	
	10 kHz to 20 kHz	14 mV	
	330 to 1020 V	None	
	45 Hz to 1 kHz	39 mV	
	1 kHz to 5 kHz	52 mV	
	-1 Ato -100 mA	None	HP 3458A
	10 mV rang	None	
	0 mV to 10 mV	None	
	100 mV rang	None	
	10 mV to 100 mV	None	
	1V rang	None	
	100 mV to 1 V	None	
	10 V range	(See Matrix A)	
	1Vto10V	None	
	100 V rang	None	
	10 V to 100 V	None	
	1000 V rang	None	
	100 V to 700 V	None	
	(See Matrix A)	None	
	10 Hz to 45 Hz	0.14 mV	
	45 Hz to 10 kHz	85	
	10 kHz to 20 kHz 20 kHz to 50 kHz	91 0.11 mV	
	50 kHz to 100 kHz	0.16 mV	
	100 kHz to 500 kHz	0.41 mV	
	33 to 330 mV	None	
	10 Hz to 45 Hz	0.9 mV	
	45 Hz to 10 kHz	0.2 mV	
	10 kHz to 20 kHz	None	
	20 kHz to 50 kHz	0.6 mV	
	50 kHz to 100 kHz	1.0 mV	
	100 kHz to 500 kHz	2.8 mV	

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	0.33 to 3.3 V	None	
	10 Hz to 45 Hz	5.9 mV	Generation
	45 Hz to 10 kHz	1.2mV	using
	10 kHz to 20 kHz	3.1 mV	calibrator
	20 kHz to 50 kHz	5.6 mV	model
	50 kHz to 100 kHz	11 mV	Fluke 5500A
	100 kHz to 500 kHz	22 mV	
	3.3 to 33 V	None	
	10 Hz to 45 Hz	59 mV	
	45 Hz to 10 kHz	16 mV	
	10 kHz to 20 kHz	33 mV	
	20 kHz to 50 kHz	76 mV	
	50 kHz to 100 kHz	110 mV	
	33 to 330 V	None	
	10 Hz to 45 Hz	0.2	
	45 Hz to 10 kHz	0.3	
	10 kHz to 20 kHz	0.3	
	330 to 1020 V	None	
	45 Hz to 1 kHz	0.7	
	1 kHz to 5 kHz	2.3	
	- 1000 V to -100 V	None	HP 3458A
	10 mV rang	None	
	0 mV to 10 mV	None	
	100 mV range	None	
	10 mV to 100 mV	None	
	1V rang	None	
	100 mV to1V	None	
	10 V rang	(See Matrix B)	
	1Vto10V	None	
	100 V rang	None	
	10 V to 100 V	None	
	1000 V rang	None	
	100 V to 700 V	None	
	(See Matrix B)	None	
	33 mV to 750 V	See Matrix A	reference to EURAMET cg-15, Version 3 (02/2015)
	33 mV to 750 V	None	Calibrator Fluke 5520A
	33 mV to 1020 V See Matrix A	See Matrix A	Multimeter Fluke 8508A
	100 to 1050 V See Matrix C	See Matrix C	Calibrator Fluke 5520A
	33 mV to 1020 V See Matrix E	See Matrix E	Multimeter Fluke 8508A
	100 to 1050 V See Matrix G	See Matrix G	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	See Matrix A	See Matrix A	Direct measurement using
	See Matrix C	See Matrix C	Direct Measurement using Fluke
	10 kHz to 20 kHz	1.0mV/V	Method
	330 V to 1020 V	None	
	45 Hz to 1 kHz	0.67	
	1 kHz to 5 kHz	2.3mV/V	
	5 kHz to 10 kHz	2.3mV/V	
	1 mV to 750 V	See Matrix C	Calibrated according to procedure LCP01703, Rev 01 using Direct Method
	750 V to 1000 V 45 Hz to 1 kHz 1 kHz to 10 kHz	9.2mV/V 9.2mV/V	Calibrated according to procedure LCP01703, Rev 01 using Direct Method
	45 Hz to 65 Hz	35	procedure LCP01707,
	45 Hz to 65 Hz	None	Rev 01 using Direct
	45 Hz to 65 Hz	None	Method
	1 mA to 10 mA	0.90 mA/A	Calibrated according to
	10 mA to 100 mA	0.77	procedure LCP01703 &
	0.045 kHz to 1 kHz	9.2mV/V	using Direct Method
	1 kHz to 10 kHz	9.2mV/V	
Ac Voltage Ac Voltage Source	to 40 kV 45 Hz to 65 Hz	62 mV/V	Calibrated according to procedure LCP01707, Rev 01
	to 40 kV 45 Hz to 65 Hz	None	using Direct Method
Ac Voltage Ac/dc Voltage Transfer Difference	(See Matrix B)	(See Matrix B)	AC/DC comparison method using AC/DC transfer
	(See Matrix B)	(See Matrix B)	standard.
Ac Voltage Indicating Meter	(See Matrix A)	(See Matrix A)	AC/DC direct comparison with thermal voltage converters.
Ac Voltage Indicating Meter	2 mV to 1000 V (See Matrix C)	2 mV to 1000 V (See Matrix C)	AD/DC transfer method using AC/DC Transfer
	2 mV to 1000 V (See Matrix C)		Standard
Ac/dc High Voltage	None	None	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Angle Gauge Blocks	0° to 90°	0.70 arcsec	Using indexing table as reference and autocollimator
Apc7, 50 Power Meter	12 GHz to 18 GHz	2.40%	comparative technique
Calibration Of Autoclave	100 °C to 200 °C	0.6 °C	Measurement with calibrated
	100 °C to 200 °C	None	thermocouple or PT100 probe in the autoclave at
	100 °C to 200 °C	None	specified points of calibration
	100 °C to 200 °C	None	Measurement with
Calibration Of Controlled Capacitance	-80 °C to 0 °C	0.5 °C	Measurement with
	None	None	
	10 MQ to 100 MQ 100 pF to 900 pF 1 nF to 9nF	1.5 8.3 mF/F 7.2 mF/F	Using decade resistance, decade capacitance and decade inductance
	10 nF to 90 nF	6.1 mF/F	
	100 nF to 900 nF	6.1 mF/F	
	1 UF to 9 UF	8.9 mF/F	
	to	+ 9.0nF	
	to	2.9MF/F + 53nF	
	to 109.999UF	3.5mF/F + 98nF	
	to	3.3mF/F +	
	0.33mF to 1.09999mF	3.5mF/F +	Measurement
	1.1mF to 3.29999mF	3.4mE/F +	using Fluke
	3.3mF to 10.9999mF	3.5mF/F +	5522A
	11mF to 32.9999mF	6.1mF/F +	
	33mF to 110mF	+	
	0Q to	+	
	110 to 32.99990,	+ 1.2mQ	
	33Q to	+	
	110Q to 329.99990	+ 1.7mQ	
	3300 to 1.09999kQ	+ 2.0mQ	
	1.1kQ to	+ 17mQ	
	3.3kQ to 10.99999kO	+ 12mQ	
	11kQ to	+ 0.170	
	100 Hz & 120 Hz	None	
	200 pF to 2000 pF	2.7 pF	
	2 nF to 20 nF	20 pF	
	20 nF to 200 nF	0.13 nF	
	200 nF to 2000 nF	1.3 nF	
	1 kHz	None	
	20 pF to 200 pF	0.25 pF	
	200 pF to 2000 pF	2.2 pF	

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	2 nF to 20 nF	13 pF	
	20 nF to 200 nF	0.13 nF	
	200 nF to 2000 nF	1.3 nF	
	0.4 nF (0.19 nF to 0.4 nF) 10 Hz to 10 kHz	5.7 mF/F + 0.01 nF	Calibrator Fluke 5520A
	1.1 nF (0.4 nF to 1.1 nF) 10 Hz to 10 kHz	5.7 mF/F + 0.01 nF	Calibrator Fluke 5520A
	3.3 nF (1.1 nF to 3.3 nF) 10 Hz to 3 kHz	5.8 mF/F + 0.01 nF	Calibrator Fluke 5520A
	11 nF (3.3 nF to 11 nF) 10 Hz to 1 kHz	2.9 mF/F + 0.01 nF	Calibrator Fluke 5520A
	33 nF (11 nF to 33 nF) 10 Hz to 1 kHz	2.8 mF/F + 0.01 nF	Calibrator Fluke 5520A
	110 nF (33 nF to 110 nF) 10 Hz to 1 kHz	2.9 mF/F + 0.1 nF	Calibrator Fluke 5520A
	330 nF (110 nF to 330 nF) 10 Hz to 1 kHz	2.9 mF/F + 0.3 nF	Calibrator Fluke 5520A
	1.1 uF 0.4 to 1.1 uF 10 Hz to 600 Hz	2.9 MF/F + 1 nF	Calibrator Fluke 5520A
	3.3 UF (1.1 uF to 3.3 uF) 10 Hz to 300 Hz	2.9 MF/F + 3 nF	Calibrator Fluke 5520A
	11 F (3.3 UF to 11 uF) 10 Hz to 150 Hz	2.9 + 12nF	Calibrator Fluke 5520A
	OnF to 1 nF	2.3%of rdg+0.029nF	Direct measurement using
	0.1nF to 1 nF	rdg+0.014nF	Direct Measurement using Fluke
	110 nF to 0.330 uF 0.330 UF to 1.1 uF	4.0 4.0	
	1.1 uF to 3.3 UF	5.1	
	3.3 UF to 11	None	
	11 UF to 33 UF 33 UF to 110	5.7 mF /F 6.8 mF /F	
	110 UF to 330 UF	9.1	
	330 UF to 1.1 mF	12 mF/ F	
	0.01 Hz to 12 kHz	0.062 mHz / Hz	
Capacitance : Dielectric Capacitor (e.g. Mica Or Polystyrene)	1 to 10 wF: 1 kHz 10 to 100 pF: 1	0.5 mF/F 1 mF/F	Calibration using capacitance meter, substitution
	1 to 10 wF: 1 kHz 10 to 100 pF: 1	None	method.
Capacitance : Dissipation Factor	5x 10% to 1 x 104: 1 kHz	None	Calibration using capacitance bridge and Dissipation Factor standard, direct method.

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Capacitance : Low Loss Capacitor, Fixed Values	1 pF: 1 kHz, 1.592 kHz 10 pF: 1 kHz, 1.592 kHz 100 pF: 1 kHz, 1.592 kHz 1000 pF: 1 kHz, 1.592 kHz	5	Calibration using capacitance bridge, substitution method.
Capacitance : Variable/decade Capacitor	100 pF to 1 1 kHz	0.5 mF/F	Calibration using capacitance meter, substitution method.
Capacitance Meters	1 pF to 1 uF: 1 kHz, 1.592 kHz	2	Calibration by comparison method.
Coefficient And Attenuation	50 MHz	None	
Dc Current	None	None	
	19 1kQ 10 kQ 100 kQ 1MQ 10 MQ 100 MQ	None	
	to	0.5mAVA + 1.1nA	2010 and Keysight
	to	0.5mAVA + 8.9nA	34470A Multimeter
	to 1mA	+	
	1mA to 10mA	+	
	10mA to 100mA	+	
	100mA to 1A	+ 0.22mA	
	1A to 3A	1.2mA/A +	
	10 mA to 100 mA 100 mA to 1A	0.33 0.66 mA/A	
	1A to 3A	0.87 mA/A	
	0 UA to 220 pA	40 + 6 nA	Measurement
	3.3A to 10.999A 11A to 29.999A 30A to 109.999A 110A to 205A	0.34mA/A + 6OMA 0.75mA/A + 55mA + 41mA 2.5mA/A +	Measurement using Fluke 5522A and Fluke
	205A to 549.995A 550A to 1025A	4.0mA/A + 0.44A 4.4mA/A + 0.20A	5500A/Coil 50 Turn Coil
	3.3A to 10.999A	None	
	45Hz to 1kHz	None	
	11A to 29.999A	None	
	45Hz to 1kHz	None	
	32.9999mA to 329.999mA to 1.0999A	78uA/A+2.0UA 0.16mA/A+31UA	
	1.1A to 2.99999A	None	
	2.99999A to 10.9999A	None	
	11A to 20.5A	None	
	0 mA to 10 mA 10 mA to 100 mA 100 mA to 1A 1A to 3A	0.45 + 5.8 nA 0.45 mA/A + 0.07 pA 0.2 mA/A + 0.66 0.2 + 8.52 0.4 + 0.08 mA	Direct measurement with 6 % digit multimeter

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	0 mA to 10 mA 10 mA to 100 mA 100 mA to 1A 1A to 3A	0.5 mAVA + 0.23 mA	
	0 mA to 10 mA 10 mA to 100 mA 100 mA to 1A 1A to 3A	None	Direct
	0 mA to 10 mA 10 mA to 100 mA 100 mA to 1A 1A to 3A	None	measurement with
	0.1A to 100A	0.07 mA/A + 4.2 mA	DC current shunt
	0.1A to 100A	None	and 6 % digit
	0.1A to 100A	None	multimeter
	0 UA to 220 pA	0.94 nA/A + 7.8 nA	
	220 UA to 2.2 mA	8.6 nA/A + 24 nA	
	2.2 mA to 22 mA	87 + 0.21	
	22 mA to 220 mA	1.5 + 3.4	
	220 mA to 2.2A	18 + 48 LA	
	10 pA	0.2	
	10 to 100 pA	37 +	
	100 pA to 1mA	30 + 6 nA	
	1 mA to 10 mA	30 + 52 nA	
	10 mA to 100 mA	47 + 0.6	
	100 mA to 1A	0.1 + 5 pA	
	0 to 3.3 mA	0.1 pA	
	0 to 33 mA 0 to 330 mA 0 to 22A 0 to 11A	2.1 0.1mA 1.2mA 7.8mA	Generation using calibrator model Fluke 5500A
	100 pA	None	
	+10 to +100 pA	16 nA	
	-100 pA 10 pA	16 nA	
	+100 to +1 mA	69 nA	
	-1 mA to -100 pA	69 nA	
	10 mA	None	
	+1 +10 mA	0.7	
	-10 mA to -1 mA	0.7 UA	
	100 mA	None	
	+10 mA to +100 mA	None	
	-100 mA to -10 mA	None	
	1A	None	
	+100 mA to +1A	0.1 mA	
	-1 A to -100 mA	0.1 mA	
	110 to 330 MQ	(of reading)	
	0 to 3.3 mA mA 0 to 330 mA 0 to 22A	0.5 pA 0.1mA 1.4mA	Generation using calibrator model Fluke 5500A

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Instrument Calibrated/Masurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	0 to 3.3 mA mA 0 to 330 mA 0to22A	11mA	
	+10 to +100 pA -100 pA 10 pA	16 nA 16 nA	
	1mA	None	
	+100 A to +1 mA	74nA	
	mA to -100 pA	74nA	
	10 mA	None	
	+1 mA to +10 mA	0.7 pA	
	-10 mA to -1 mA	0.7 pA	
	100 mA	None	
	+10mA to +100 mA	8 yA	
	-100 mA to -10 mA	8 yA	
	1A	None	
	+100 mMAto+1A	0.2mA	
	-1 Ato -100 mA	0.2mA	
	0 to 330 pA	170 + 23 nA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	330 UA to 3.3 mA	113 + 57 pA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	3.3 mA to 33 mA	113 + 0.29 PA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	33 mA to 330 mA	113 PA/A + 2.8 LA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	330 mA	227 + 45 pA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	1.1Ato3A	429 + 48 LA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	3Ato10A	567 + 562 PA	Fluke 5522A with reference to EURAMET cg-15, Version 3 (02/2015)
	3Ato10A	None	Fluke 5522A with

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	330 A + (0 pA to 330 A)	+ 0.02	Calibrator Fluke 5520A
	3.3 mA mA to 3.3 mA)	0.12 + 0.05	Calibrator Fluke 5520A
	33 mA + (0 mA to 33 mA)	0.12 mA/A PA	Calibrator Fluke 5520A
	330 mA + (0 mA to 330 mA)	0.12	Calibrator Fluke 5520A
	1.1A +(0Ato	0.23 mA/A + 47 PA	Calibrator Fluke 5520A
	3A +(1.1Ato3A)	0.46 mAVA + 0.11 mA	Calibrator Fluke 5520A
	11A	0.58 mA/A + 0.58 mA	Calibrator Fluke 5520A
	20.5A +(11A to 20.5 A)	1.2 mA/A + 0.87 mA	Calibrator Fluke 5520A
	200 (0.1 A to 199.99	13 + 0.6 nA	Multimeter Fluke 8508A
	2mA (0.2 mA to 199.99 mA)	13 + 0.006 pA	Multimeter Fluke 8508A
	20 mA (2 mA to 19.999 mA)	16 + 0.06	Multimeter Fluke 8508A
	200 mA (20 mA to 199.99 mA)	55 + 0.98	Multimeter Fluke 8508A
	2A (0.2 A to 1.9999 A)	0.21 mA/A + 18	Multimeter Fluke 8508A
	20A (2 A to 19.999 pA)	0.46 mAVA + 0.46 mA	Multimeter Fluke 8508A
	330 pA + (0 pA to 330 pA)	0.17 mMA/A + 0.02 pA	Calibrator Fluke 5520A
	3.3 mA mA to 3.3 mA)	0.12 + 0.05 pA	Calibrator Fluke 5520A
	33 mA + (0 mA to 33 mA)	0.12 0.3 pA	Calibrator Fluke 5520A
	330 mA + (0 mA to 330 mA)	0.12	Calibrator Fluke 5520A
	1.1A +(0Ato	0.23 mA/A + 47 pA	Calibrator Fluke 5520A
	3A	0.46 + 0.11 mA	Calibrator Fluke 5520A
	11A	0.58 mA/A + 0.58 mA	Calibrator Fluke 5520A
	20.5A +(11A to 20.5A)	+ 0.87 mA	Calibrator Fluke 5520A
	200 pA (0.1 pA to 199.99 yA)	13 nA	Multimeter Fluke 8508A

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	2mA (0.2 mA to 199.99 mA)	13 + 0.006	Multimeter Fluke 8508A
	(2 mA to 19.999 mA)	16 + 0.06 pA	Multimeter Fluke 8508A
	200 mA (20 mA to 199.99 mA)	55 + 0.98	Multimeter Fluke 8508A
	2A (0.2 A to 1.9999 A)	0.21 18 pA	Multimeter Fluke 8508A
	20A (2 A to 19.999 pA)	0.46 mA/A + 0.46 mA	Multimeter Fluke 8508A
	0 to 100 pA 0.1 mA to 1mA	0.058% of 0.035% of rdg + 0.0004 mA	Direct measurement using fluke 8846A
	50 to 500 pA	0.06% of rdg + 0.21	Direct Measurement using Fluke
	0 to 100 pV 0 to 0 to 10 mV 0 to 100 mV 0 to 1V 0 to 10 V 0 to 100 V 0 to 1000 V	None	Direct Measurement Method using Digital Multimeter Datron 1281 > Inoperative
	0 to 100 pA 0 to 1mA 0 to 10 mA 0 to 100 mA 0 to 1A	0.013 pA 0.00013 mA 0.0016 mA 0.028 mA 0.000028 A	\ Generation using calibrator model: > Inoperative Fluke 5700A
	0 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 0.330 A 0.330 A 2.2A to 11A	0.17 0.13 0.15 mA/A 0.37 mA/A 0.71 mA/A	Calibrated according to procedure LCP01701, Rev 01 using Direct Method
	0 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 0.330 A 0.330 A 2.2A to 11A	None	Calibrated according to
	11 A to 550 A (current coil)	None	procedure LCP01705, Rev 01 using Direct
	11 A to 550 A (current coil)	None	Method
	0.029 mA to 330 mA	See Matrix B	
	0.33 A to 2.2A	None	
	10 Hz to 45 Hz	2.5mA/A	
	45 Hz to 1 kHz 1 kHz to 5 kHz	None	Calibrated according to procedure LCP01701,
	100 mA to 1A 1A to 3A	1.3mA/A	LCP01715, Rev 01 using Direct Method
	100 mA to 1A 1A to 3A	None	Calibrated according to
	100A	None	procedure LCP01706,

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	100A	None	Rev 02 using V/I Method
	0 mA to 24 mA	0.95 mA/A	LCP01701, Rev 01
	0 mA to 24 mA	None	using Direct Method
	0 mA to 24 mA	12mQ/Q	
	10 Q to 100 Q	8.8mQ/Q	
	100 mA to 1A 1A to 3A	1.3mA/A 1.6mA/A	using Direct Method
	100 mA to 1A 1A to 3A	None	Calibrated according to
	100A	2.5mA/A	procedure LCP01706, Rev 04 using Direct
	100A	None	Method
	100A	None	Calibrated according to
	100A	None	procedure LCP01703, Rev 01 using Direct
	50 to 3A	See Matrix F	
Dc Current Indicating Meters	100 pA 1mA 10 mA 100 mA 1A 10A	110 50 40 60 100 410	Using 5720A Calibrator
Dc Current Sources	10 pA to 100 pA 100 pA to 1 mA 10 mA 10 mA to 100 mA 100 mA to 1A 1A to 10A 20 A to 50A 50 A to 100 A	11 11 11 11 20 21 100 100 100	Voltage drop across a resistor
Dc High Voltage Divider/meter Scale Factor	10 kV to 150 kV	0.10 %	Comparison method with standard high voltage resistive divider
Dc Magnetic Flux Density Magnetometers	0.1 mT to 20 mT	Refer to Matrix A	Generation of DC magnetic field using Helmholtz coil.
	100 mT to 1.6 T	Refer to Matrix B	Generation of DC magnetic field using electromagnet.
Dc Resistance	100 MQ 1GQ 10 GQ 100 GQ 1TQ	None	
	10 mV 100 mV 1V 10V 100 V 1000 V	None	
	330 to 1000 V	(of reading)	
	0 to 11Q	None	
	11 to 33.0	None	
	33 to 110 O	None	
	110 to 330 O	None	
	0.33 to 1.1kQ	0.20	
	3.3 to 11kQ 11 to 33 kQ 33 to 110 kQ	10 0.70 0.8 Q 110	Generation using calibrator model Fluke 5500A

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	110 to 330 kQ	10Q	
	0.33 to	0.1kQ	
	1.1to3.3MQ	0.2kQ	
	3.3 to11MQ	0.7kQ	
	11 to33 MQ	12kQ	
	33 to 110 MQ	17kQ	
	110 to 330 MQ	67kQ	
	- 1000 V to -100 V	None	
	10 Q	None	HP3458A
	100 QO	None	
	1 kQ	15mQ	
	10 kQ	0.1 Q	
	100 kQ	1.6	
	1 MQ	23 Q	
	10 MQ	0.5	
	100 MQ	13	
	330 to 1000 V	(of reading)	
	0	13 mQ	
	11 to 33.0	22 mQ	
	33 to 110 O	29 mQ	
	110 to 330	370	
	0.33 to 1.1kQ	None	
	1.1to3.3kQ 3.3 to11kQ 11 to 33 kQ 33 to 110k Q	1.10 1.90 3.8 O 230	Generation using calibrator model Fluke 5500A
	110 to 330 kQ	490	
	0.33 to 1.4MQ	0.2 kQ	
	1.1 to3.3MQ	0.6	
	3.3 to11MQ	7.4kO	
	11 to33 MQ	36 kQ	
	33 to 110 MQ	0.6 MQ	
	110 to 330 MQ	1.9MQ	
	-1 Ato -100 mA	None	HP3458A
	10 Q	0.4 mQ	
	100 Q	3mQ	
	1 kQ	19 mQ	
	10 kQ	0.20	
	100	20	
	1 MQ	30	
	10 MQ	0.8	
	100 MQ	59 kQ	
	None	None	
Dc Resistance Dc Resistance Sources : Single Values	1mQ 10 mQ 100 mQ	5 pa/Q 5 pa/Q 4	DCC Bridge with Current Extender

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	19 10Q 100 Q 1kQ 10 kQ 100 kQ 10 MQ	0.3 pala 0.3 pala 0.3 pala 3 pa/Q 0.3 pala 3 4 5 pa/Q	DCC Bridge DCC Bridge and Hamon Devices
	100 MQ 1GQ 10 GQ 100 GQ 1TQ	10 na/a 17 25 pala 37 pala 580	Modified Wheatstone Bridge
Dc Resistance Indicating Meters	10 MQ 100 MQ 1GQ 10 GQ 100 GQ 1TQ	60 60 70 pala 100 pa/a 100	Calibrated using High Value Standard Resistors
Dc Resistance Sources : Decade Value	1mQto1Q to 100 Q 100 Q to 1 kQ 1 kQ to 10 kQ 10 kQ to 100 kQ 100 kQ to 1 MQ 1 MQ to 10 MQ 10 MQ to 100 MQ 100 MQ to 1 GQ 1 GQ to 10 GQ	39 33 21 pala 15 15 15 20 pala 70 600 200 200	Direct measurement using high resolution DMM
Dc Resistance Sources Multiple Ranges	19 1kQ 10 kQ 100 kQ 1MQ 10 MQ 100 MQ	8 5 2 4 4 pa/a 4 5 pa/Q 20 pala 180	Using characterized Reference Multimeter
Dc Voltage	None	None	
	100mV to 1V	+ 6.2UV	2010 and Keysight
	1V to 10V	+	34470A Multimeter
	10V to 100V	+ 1.2mV	
	100V to 300V	+ 24mV	
	0 mV to 220 mV	7.5 + 0.4	Measurement
	Omv to 329.9999mV	16uV/V+0.78uV	
	329.9999mV to 3.299999V	8.6uV/V+1.6uV	
	3.299999V to 32.99999V	9.3uV/V+16uV	
	32.99999V to 329.9999V	None	
	329.9999V to 1020.00V	14uV/V+1.2mV	
	329.9999V to 1020.00V	None	Measurment using Fluke
	QUA to 329.9999UA	0.12mA/A+16nA	5522A
	to 3.299999mA	None	
	3.299999mA to	78uA/A+0.20UA	
	0 mV to 100 mV 100 mV to1V 1 V to 10V 10 V to 100 V 100 V to 1000 V	0.03 mV/V + 3.5 pV 0.025 mV/V + 8.65 pV 0.025 mV/V + 0.08 mV 0.04 mV/V + 0.95 mV 0.04 mV/V + 10.6 mV	Direct measurement with 6 % digit multimeter
	1 V to 250 V	0.1V	Generating using Calibrator (Fluke: 5522A)

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	0 V to 220 mV	4.2	
	220 mV to 2.2 V	6.1 + 1.1	
	2.2Vto11V	5.1 + 2.0	
	11V 22 V to 220 V 220 V to 1100 V	5.0 μ V/V + 3.2 7.4 + 28 8.9 + 0.31 mV	Generating Using Fluke 5720A Series 2 Multifunction Calibrator
	100 mV	None	HP3458A
	+ 100 to + 100 mV	1.8	
	-100 mV to - 100	1.8	
	iV	None	
	+100 mV to1V	None	
	-1 V to -100 mV	None	
	10 V	None	
	+1Vto+10V	0.1 mV	
	-10Vto-1V	0.1 mV	
	100 V	None	
	+10V to +100 V	None	
	-100 V to -10 V	1mV	
	1000 V	None	
	+ 100 V to + 1000 V	12 mV	
	- 1000 V to -100 V	12 mV	
	0 to 330 mV 0to3.3V	30 0.2 mV	Generation using calibrator model
	0 to	2.2mV	Fluke 5500A
	33 to 330 V	24 mV	
	330 to 1000 V	110 mV	
	100 mV	None	
	+ 100 to + 100 mV	None	
	-100	None	
	1V	None	
	+100 mV to1V	0.12 mV	
	-1 V to -100 mV	0.12 mV	
	10V	None	
	+1Vto+10V	None	
	-10V to-1V	None	
	100 V	None	
	+10V to +100 V	None	
	-100 V to -10 V	None	
	1000 V	None	
	+ 100 V to + 1000 V	17 mV	
	- 1000 V to -100 V	17 mV	
	0 to 100 mV	0.004%of rdg+0.004mV	Direct measurement using
	0 to 50 mV	0.05%of rdg+0.005mV	Direct Measurement using Fluke

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	30 V to 329 V	0.066 mV /V	
	329 V to 1020 V	0.066	Calibrated
	1 mV to 33 V	See Matrix A	Calibrated
	1 mV to 33 V	None	according to
	33 V to 330 V	None	procedure
	45 Hz to 1 kHz	0.6 mV/V	LCP01701, Rev 01
	1 kHz to 10 kHz	0.92 mV/V	using Direct
	1 mV to 100 mV 100 mV to 1V 1Vto10V 10 V to 100 V 100 V to 1000 V	0.098 mV /V 0.054 0.046 0.059 0.064 mV /V	Calibrated according to procedure LCP01703 & LCP01715, Rev 01 using Direct Method
	1 kV to 30 kV	23 mV/V	Calibrated according to
	1 kV to 30 kV	None	procedure LCP01707,
	1 kV to 30 kV	None	Rev 01 using Direct
	1 kV to 30 kV	None	Method
	0V to	0.58	Calibrated according to procedure
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	0.17 mV/V 0.10 mV/V 0.096 mV /V 0.10 mV/V 0.11 mV/V 23 mV/V	Calibrated according to procedure LCP01703 & LCP01715, Rev 01 using Direct Method
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	0.17 mV/V 0.10 mV/V 0.096 mV /V 0.10 mV/V 0.11 mV/V 23 mV/V	Calibrated according
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	None	to procedure
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	None	LCP01707, Rev 01
	1 mV to 100 mV 100 mV to 1 V 1Vto10V 10 V to 100 V 100 V to 1000 V 1 kV to 40 kV	None	using Direct Method
	10 mV to 750 V	See Matrix E	Calibrated according
	10 mV to 750 V	None	to procedure
	750 V to 1000 V	None	LCP01703, Rev 01
Dc Voltage Dc Voltage Sources : Single Values	1V 1.018 V 10V	0.2 0.2 0.6 pV	Calibrated using Zener Voltage standard Fluke 732B.

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	1.018 V 10V	70 nV 90 nV	Calibrating Zener Voltage Standard using Josephson Junction array voltage Standard
Dc Voltage Indicating Meters	10 mV 100 mV 1V 10V 100 V 1000 V	408 48 6 5 7	Using 5720A Calibrator
Dc Voltage Sources	0.1V to 1V 1 V to 1000 V	0.9 0.8	Using Volt Ratio Box
Deadweight Pressure Balances (hydraulic)	345 kPa to 138 MPa 138 MPa to 500 MPa	6 x 10 [°] Pa/Pa 1.8 x 104 Pa/Pa	Using cross- floating method
Deadweight Pressure Balances (pneumatic)	5 kPa to 170 kPa 170 kPa to 700 kPa 700 kPa to 7 MPa 7 MPa to 40 MPa	2.5 x 105 Pa/Pa 3.5 x Pa/Pa 4.5 x 105 Pa/Pa 5 x 10 [°] Pa/Pa	Using cross- floating method
Detector	None	None	
	None	None	Calibration using reference gas
	None	None	Calibration using reference gas
	None	None	reference gas
Diameter Standards (internal Diameter)	L	Q[0-4, 0.02L] μ m, Linmm	Using non-contact method
Elastic Force Measuring Instruments (compression Mode)	0.5 kN to 60 kN	0.004 % of reading	Dead Weight Force Standard Machine, 60 KN
	0.5 kN to 100 kN	0.05 KN	Force Transducer, 50 & 100 KN
	100 kN to 270 KN	0.4 kN	Proving Ring, 300 kN
	270 KN to 2000 KN	2.0 kN	Proving Rings, 600 kN & 2000 kN
Electromechanical Manometers (hydraulic)	345 kPa to 50 MPa 50 MPa to 138 MPa 138 MPa to 500 MPa	6 x 10-5 Pa/Pa 6 x 10-5 Pa/Pa 2x 10+ Pa/Pa	Direct comparison using DWPB
Electromechanical Manometers (pneumatic)	7 kPa to 40 MPa	6 x 10-5 Pa/Pa	Direct comparison using DWPB
Electronic Balances	Up to 5g Up to 20g	0.005 mg 0.010 mg	Calibrated using standard weights
	Up to 200 g	0.05 mg	
	Up to 1 kg	0.25 mg	
	Up to 2 kg	0.51 mg	
	Up to 5 kg	None	
	Up to 10 kg	10 mg	
	Up to 30 kg	12 mg	
	Up to 60 kg	100 mg	
Flux Indicator	0.1 mWb to 10 Wb	1 mWb/Wb	Calibrated using Fluxmeter

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	0.1 mWb to 10 Wb	None	Calibrator MTC-
	0.1 mWb to 10 Wb	None	1. Search coil is
	0.1 mWb to 10 Wb	None	not tested.
For Type-n, 50 Q	50 MHz	0.84%	Direct comparative technique
Frequency-stabilised He-ne Lasers	633 nm	0.6 MHz	Based on Optical Beat Frequency Technique
Gas Analyzer Carbon Monoxide, Co Propane,	4.5% 2000 ppm	0.9% 40 ppm	Calibration using reference gas
Gas Meter	50 -" 6000 L/h	0.25%	Calibrated By Comparison Method with Master Gas
	50 -" 6000 L/h	None	Meter
Gauge Blocks (central Length)	mm 0.02 inch 4 inch	Q [0.07 um, 2.0E-6L] Q [2.8 pin, 2.0E-6L]	comparative method (Steel and reference with same material)
	mm 0.02 inch 4 inch	None	Mechanical
	100 mm 0.02 inch L\$ 4 inch	Q [0.07 Q [2.8 pin, 1.2E-6L]	comparative method (Tungsten Carbide and reference with same material)
	100 mm 0.02 inch L\$ 4 inch	None	same material)
	None	None	Mechanical
	100 mm 0.02 inch 4 inch	Q [0.07 um, 1.8E-6L] Q [2.8 pin, 1.8E-6L]	comparative method (Ceramic and reference with same material)
Gauge Blocks, Grades 00 (or Equivalent) And Above	mm	Q [80, 0.30L] nm, in mm	Using interferometry technique
Glass Capillary Viscometer	(0.3 to 1.5) mm ² /s (1.5 to 10) mm ² /s (10 to 160) mm ² /s m ² /s (160 to 1000) (1000 to 70000) mm ² /s	0.15 % 0.19 % 0.20 % 0.21 % 0.22 %	ASTM D446-04 DIN 51562-1 to 4 The viscometer constant covering the listed
	(0.3 to 1.5) mm ² /s (1.5 to 10) mm ² /s (10 to 160) mm ² /s m ² /s (160 to 1000) (1000 to 70000) mm ² /s	None	kinematic viscosity
	(0.3 to 1.5) mm ² /s (1.5 to 10) mm ² /s (10 to 160) mm ² /s m ² /s (160 to 1000) (1000 to 70000) mm ² /s	None	range was determined using the viscosity standard liquid
High Voltage/current And Instrument	None	None	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Inductance	None	None	
	100 to 1000 pH 1 mH to 10 mH	7 mH/H 7 mH/H	
	10 mH to 100 mH	7 mH/H	
	100 mH to 1000 mH	0.6 mH/H	
	100 Hz & 120 Hz 200 pH to 2000 pH 2 MH to 20 mH	2.9 19	Direct measurement with LCR meter
	20 mH to 200 mH	0.18 mH	
	200 mH to 2000 mH	None	
	2Hto 20H	41 mH	
	1 kHz	None	
	20 to 200 pH	0.29	
	200 UH to 2000 pH	None	
	2 mH to 20 mH	15	
	20 mH to 200 mH	0.13 mH	
	200 mH to 2000 mH	1.3mH	
	2Hto 20H	44 mH	
	1000 Hz	None	
	100 uH to 1 mH 1 mH to 10 mH 10 mH to 100 mH 100 mH to 1H	23 mH/H + 22 nH 12 mH/H + 25 uH 6 mH/H + 0.1 mH 3 + 0.4 mH	Calibration using Decade Inductor 1491-G
	1Hto10H	3 mH/H + 0.3 mH	
	None	None	
Inductance Meters	100 pH: 1 KHz 1 mH to 10 H: 1 kHz	310 pH/H 210 pH/H	Calibration by comparison method.
Inductance Standards	100 pH: 1 KHz 1 kHz 10 mH: 1 kHz 100 mH: 1 kHz 1 kHz	300 pH/H 200 pH/H	Calibration by comparison using ratio bridge.
Inductance Standards : Decade Values	100 to 10 H: 1 kHz	0.6 mH/H	Calibration using Inductance meter, substitution method.
Industrial Platinum Resistance Thermometer	-80 °C to -50 °C	0.04 °C	Comparison with Standard Platinum
L2 -" Stabilised He-ne Lasers	633 nm	24 kHz	Based on Optical Beat Frequency Technique
Laboratory Standard Microphones Type	31.5 Hz 63 Hz 125 Hz to 4 kHz 5 kHz	0.07 dB 0.05 dB 0.04 dB 0.05 dB	Primary method for pressure calibration of laboratory standard
	6.3 kHz 8 kHz 10 kHz	0.06 dB 0.07 dB 0.10 dB	microphones by the reciprocity technique
Laboratory Standard Microphones Type Ls2p	31.5 Hz 63 Hz	0.07 dB 0.05 dB	Primary method for pressure calibration of laboratory standard
	125 Hz to 8 kHz 10 kHz	0.04 dB 0.05 dB	

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Instrument Calibrated/Masurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	12.5 kHz 16 kHz	0.06 dB 0.07 dB	microphones by the reciprocity technique
Length Measuring Instrument (error Of Indicated Size, Displacement And Position)	1000 mm	Q[0.21 μ m, 1.0E-6L]	Comparison with laser interferometer
Level	None	None	
	94 dB to 124 dB	None	
	94 dB to 124 dB	None	Electrical test
Line Scale And Line Spacing	1000 mm	18 μ m	Using length comparator
Liquid-in-glass Thermometer	400 °C to 660 °C	None	
Long Gauge Blocks (central Length)	125 mm to 500 mm	Q [0.3, 0.001L] μ m, in mm	Using mechanical comparison method (Steel and reference with
	125 mm to 500 mm	None	same material)
	125 mm s Ls 1000 mm 5 inch s 40 inch	Q [0.39 μ m, 1.0E-6L] Q [15.4 pin, 1.0E-6L]	Using mechanical comparison method (Steel and reference with same material)
	125 mm s Ls 1000 mm 5 inch s 40 inch	None	Mechanical
Magnetic Flux	100 mT to 1.6 T	None	
Magnitude Of Reflection Coefficient On Coaxial Lines For	0 to 0.1 10 MHz to 18 GHz	0.015	Direct measurement
Measurement Microphone	250 Hz	0.1 dB	Comparison with Laboratory Standard Microphones
Methane, CH ₄ Hydrogen Sulphide, H ₂ S Carbon Monoxide, CO Oxygen, O ₂	50 % LEL 25 ppm 100 ppm 18 %	1.3% 1.6 ppm 2.4 ppm 0.4%	Calibration using reference gas
Optical Polygon (face Angle)	0° to 360°	0.58 arcsec	Using indexing table as reference and autocollimator
Partial Immersion (graduation: 2 0.1 °C)	-80 °C to 0 °C 0 °C to 90 °C 90 °C to 300 °C	0.2 °C 0.2 °C	Comparison with PT100 reference in: alcohol bath water bath oil bath
Phase Angle Error	Primary: 3300 V to 11000 V Secondary: 110 V	0.8- TM	
	Primary: 5 A to 2000 A Secondary: 5A	0.8- TM	
Pistonphone	114 dB to 124 dB	0.2 dB	Comparison with Reference Pistonphone

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Portable Gas Detector	None	None	
	None	None	
	None	None	
	None	None	
Positive)	10 kV to 200 kV @ 50 Hz	None	
Power Sensor	0.9 to 1	None	
Pressure	60 dB to 120 dB (1 kHz)	None	
	None	None	
	None	None	
Pressure Gauges (hydraulic)	345 kPa to 50 MPa 50 MPa to 138 MPa 138 MPa to 500 MPa	0.1 % of reading 0.5 % of reading 1 % of reading	Direct comparison using DWPB
Pressure Gauges (pneumatic)	7 kPa to 40 MPa	0.1 % of reading	Direct comparison using DWPB
Prover Tank	20 to 454L	0.006	Calibrated By Gravimetric Method
Radiation Thermometer All Types Of Radiation Thermometers	-30 °C to 50 °C	0.1 °C	Comparison with standard Pt100 probe in liquid bath-based blackbody source
	50 °C to 100 °C 100 °C to 300 °C 300 °C to 450 °C	1.7 °C 3.4 °C	Comparison with standard Pt100 probe in blackbody furnace
Resistance	None	None	
	100 to 1 kQ 1 kQ to 10 kQ 10 kQ to 100 kQ	0.07 mA/Q 0.07 mA/Q 0.07 mA/Q	Direct measurement method
	100 kQ to 1 MQ	0.08 mA/Q	
	1 MQ to 10 MQ	0.3	
	10 MQ to 100 MQ	5 mA/Q	
	10	95	Measurement
	33kQ to 109.9999kQ	+ 0.200	
	110kQ to	+ 5.30	
	to	+ 5.80	
	1.1MQ to	+ 400	
	3.3MQ to	+ 720	
	11MQ to 32.99999MQ	+ 2.2kQ	
	33MQ to	+ 1.6kQ	
	110MQ to 329.9999MQ	2.5mQ/Q + 72kQ	
	to 1100MQ	None	
	00	40	
	0 to 100	24 pO/O + 87 pO	
	10 QO to 1000	20 + 0.7 ma	
	100 © to 1000	12 + 1.9 ma	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	1 kQ to 10	12 + 0.2 ma	
	10 kQ to 100 kQ	13	
	100 kQ to 1000 kQ	22 + 10.0	
	1000 kQ to 1 MQ	70 + 192.0	
	1 MQ to 10 MO	0.6 + 3.6	
	10 to 100	rdg+0.00350	Direct measurement using
	0.001 Q to 50 O	None	Direct Measurement using Fluke
	1 kQ to 10 kQ 10 kQ to 100 kQ	0.13 mQ/Q 0.13 mQ/Q	Calibrated according
	100 kQ to 1 MQ	0.13 mQ/Q	to procedure
	1 MQ to 10 MQ	0.51 mQ/Q	LCP01703, Rev 01
	10 MQ to 100 MQ	9.4mQ/Q	using Direct Method
	10 kQ to 100 kQ 100 kQ to 1 MQ	0.13mQ/Q	Calibrated according to
	1 MQ to 10 MQ	0.47 mQ/Q	procedure LCP01703,
	10 MQ to 100 MQ	9.4mQ/Q	Rev 01 using Direct Method
Rf Power	None	None	
	25 W to 200 W	0.16 W	Fluke 190M-2 Medical Scopemeter
	25 W to 200 W	None	and Current Shunt
Rotary Table (error Of Indicated Angle)	0° to 360°	1.0 arcsec	Using optical polygon as reference and autocollimator
Scalar Rf Reflection	50 MHz	None	
Scattering Parameter	60 dB to 70 dB (50 MHz to 2 GHz) (2 GHz to 18 GHz)	None	
Sensitivity	60 dB to 120 dB (1 kHz)	None	
Sound Level Calibrator	94 dB to 114 dB	0.2 dB	Comparison with Reference
	94 dB to 114 dB	None	Sound Calibrator
	94 dB to 124 dB	0.09 dB (31.5 Hz to 8 kHz) 0.12 dB (12.5 kHz) 0.16 dB (16 kHz)	Comparison with Laboratory Standard Microphones
Sound Level Meter (frequency Weighting - Acoustical Calibration)	94 dB to 114 dB (31.5 Hz to 16 kHz)	0.3 dB (31.5 Hz to 4 kHz) 0.4 dB (8 kHz) 0.5 dB (12.5 kHz) 0.6 dB (16 kHz)	Acoustic test signal generated by acoustic calibrator
Sound Level Meter (frequency Weighting - Electrical Calibration)	94 dB to 114 dB (31.5 Hz to 16 kHz)	None	using sine generator (manual calibration)

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Sound Level Meter (level Range Control - Acoustical Calibration)	64 dB to 124 dB (1 kHz)	0.5 dB	Acoustic test signal generated by acoustic comparator
Sound Level Meter (level Range Control - Electrical Calibration)	54 dB to 124 dB (31.5 Hz to 16 kHz)	None	Electrical test using sine generator (manual calibration)
	54 dB to 124 dB (31.5 Hz to 16 kHz)	None	Electrical test
Sound Level Meter (linearity - Acoustical Calibration)	60 dB to 120 dB (1 kHz)	0.5 dB	Acoustic test signal generated by acoustic comparator
Sound Level Meter (linearity - Electrical Calibration)	50 dB to 130 dB (31.5 Hz to 16 kHz)	None	using sine generator (manual calibration)
Sound Pressure	None	None	
	94 dB to 124 dB	None	
Specific Gravity Hydrometer	0.600 to 1.000	0.000047 g/ml	Reference by standard density liquid
	1.000 to 2.000	0.000088 g/ml	Reference by standard density liquid
Standard Weights	1mg 2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg	0.0006 mg 0.0006 mg 0.0008 mg 0.0008 mg 0.0010 mg 0.0012 mg 0.0014 mg 0.0015 mg 0.0015 mg	Direct comparison against standard weights using mass comparator
	1g 29 59 10g 20g 50g 100g 200 g 500 g 1kg 2kg 10 kg 20 kg	0.002 mg 0.004 mg 0.005 mg 0.007 mg 0.008 mg 0.010 mg 0.020 mg 0.035 mg 0.075 mg 0.15 mg 0.33 mg 0.90 mg 1.6 mg 6 mg	Direct comparison against standard weights using mass comparator
	2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 29 5g 10g 20g 50g 100 g 200 g 500 g 1kg 2kg 5kg 10 kg 20 kg	0.02 mg 0.02 mg 0.02 mg 0.02 mg 0.03 mg 0.03 mg 0.04 mg 0.05 mg 0.05 mg 0.07 mg 0.08 mg 0.10 mg 0.13 mg 0.16 mg 0.3 mg 0.5 mg 2mg 10 mg 20 mg 100 mg 100 mg	Calibrated using Standard Weight with Mass Comparator. The Calibration Method is with reference to OIML R 111:2004. Calibrations may be given in other units by conversion from SI units. Intermediate values can be calibrated with uncertainty interpolated from the next

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 29 5g 10g 20g 50g 100 g 200 g 500 g 1kg 2kg 5kg 10 kg 20 kg	None	higher and
	2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 29 5g 10g 20g 50g 100 g 200 g 500 g 1kg 2kg 5kg 10 kg 20 kg	None	lower
	2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 29 5g 10g 20g 50g 100 g 200 g 500 g 1kg 2kg 5kg 10 kg 20 kg	None	nominal
	2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 29 5g 10g 20g 50g 100 g 200 g 500 g 1kg 2kg 5kg 10 kg 20 kg	None	values
	2mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 29 5g 10g 20g 50g 100 g 200 g 500 g 1kg 2kg 5kg 10 kg 20 kg	None	tabulated.
	1mg	0.23 mg	
	5mg	0.23 mg	
	10 mg	0.23 mg	
	20 mg	0.23 mg	
	50 mg	0.23 mg	
	100 mg	0.23 mg	
	200 mg	0.23 mg	
	500 mg	0.23 mg	
	1g	0.23 mg	
	29 59 10g 20g	0.26 mg 0.29 mg 0.30 mg 0.30 mg	Comparison Method with reference standard weight (Class F1)
	50g	0.30 mg	
	100 g	0.30 mg	
	200 g	16 mg	

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	500 g	16 mg	
	1kg	17mg	
	2kg	24 mg	
	5kg	25 mg	
	10 kg	0.21 g	
	20 kg	0.24g	
Std. Platinum Resistance	-80 °C to 0 °C	0.02 °C	Comparison with Standard
Std. Platinum Resistance Thermometer (sprt)	TP of Mercury (-38.8344 °C) TP of Water (0.01 °C)	1.3mK 0.8 mK	Reference by fixed Point Cell in alcohol bath, ice bath, oil bath and fixed point furnace
	MP of Gallium (29.7646 °C)	2.0 mK	
	FP of Indium (156.5985 °C)	None	
	FP of Tin (231.928 °C)	3.4 mK	
	FP of Zinc (419.527 °C)	None	
		3.5 mK	
		4.3 mK	
Step Attenuator Type-n, 50 O Apc7, 50	10 dB to 40 dB (50 MHz to 2 GHz) (2 GHz to 18 GHz)	0.05 dB 0.1 dB	Direct measurement technique
	40 dB to 50 dB (50 MHz to 2 GHz) (2 GHz to 18 GHz)	0.1 dB 0.1 dB	
	50 dB to 60 dB (50 MHz to 2 GHz) (2 GHz to 18 GHz)	0.2 dB 0.2 dB	
	60 dB to 70 dB (50 MHz to 2 GHz) (2 GHz to 18 GHz)	0.5 dB 0.5 dB	
Temperature	None	None	
	-200 °C to 0 °C	0.08 °C	Calibration using electrical simulator
	-200 °C to 0 °C	0.16 °C	
Temperature Enclosure	0 °C to 90 °C 90 °C to 250 °C	0.6 °C 1.5°C	calibrated thermocouple or PT100 probe in the enclosure at
	0 °C to 90 °C 90 °C to 250 °C	None	specified points of calibration
	0-150	1.2	Calibrated using
	0-150	None	digital multichannel
	0-150	None	temperature

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	0-150	None	recorder and
	0-150	None	thermocouples with
	0-150	None	reference to AS 2853
	0-150	None	And TLAS G20
Temperature Sensors With Display Unit	-80 °C to -50 °C -50 °C to 0 °C 0 °C to 90 °C 90 °C to 250 °C 250 °C to 400 °C	0.04 °C 0.04 °C 0.03 °C 0.04 °C 0.08 °C	Comparison with Standard Resistance Thermometers in: alcohol bath water bath oil bath calibration furnace
	400 °C to 660 °C	0.1 °C	
Thermistor Mount	10 MHz to 12 GHz	2.00%	Direct
Thermistor Mount Type-n, 50 O Power Sensor	10 MHz to 12 GHz 12 GHz to 18 GHz 0.9 to 1	2.00% 2.40%	Direct comparative technique
Thermocouple	None	None	
	From -25 to 150°C above 150 to 400°C above 400 to 660°C	None	
	From -25 to 150°C above 150 to 400°C above 400 to 660°C	None	
	From -25 to 150°C above 150 to 400°C above 400 to 660°C	None	
	None	None	
	-200°C to -100°C	0.29°C	
	0°C 30 °C to 200 °C 200 °C to 400 °C	0.2°C 0.6 °C 0.7°C	Comparison with Pt100 reference in liquid bath and temperature block calibrator
	0°C 30 °C to 200 °C 200 °C to 400 °C	0.2°C 0.6 °C 0.7°C	Comparison with Pt100 reference in liquid bath and temperature block calibrator
	0°C 30 °C to 200 °C 200 °C to 400 °C	0.2°C 0.6 °C 0.7°C	Comparison with Pt100 reference in liquid bath and temperature block calibrator

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	0 °C to 30 °C to 200 °C 200 °C to 400 °C	0.2 °C 0.6 °C 0.7 °C	Comparison with Pt100 reference in liquid bath and temperature block calibrator
Thermocouple (type K, N, T)	0 °C to 700 °C	1.0 °C	Calibration of thermocouple by comparison in dry block against PT100
Thermocouple (type R & S)	0 °C to 700 °C	0.9 °C	Calibration of thermocouple by comparison in dry block against PT100
Thermometer (sprt)	0 °C to 90 °C	0.01 °C	Resistance Thermometers in:
	90 °C to 250 °C	0.02 °C	alcohol bath
	90 °C to 250 °C	None	water bath
	250 °C to 420 °C	0.04 °C	oil bath
	250 °C to 420 °C	None	calibration furnace
	420 °C to 970 °C	0.1 °C	
Total Immersion (graduation: 2 0.1 °C)	-80 °C to 0 °C 0 °C to 90 °C 90 °C to 300 °C	0.04 °C 0.08 °C	Comparison with PT100 reference in: alcohol bath water bath oil bath
Transformer	None	None	
Type-n, 50 Q And Apc7, 50 2	0 to 0.1 10 MHz to 18 GHz	None	technique
Viscosity Cup / Flow Cup	(5 to 2000) mm ² /s	1.0%	The cup equation was determined using viscosity standard liquid
Viscosity Standard Liquid	Kinematic viscosity range: (0.3 to 1.5) mm ² /s (1.5 to 10) mm ² /s (10 to 160) mm ² /s m ² /s (160 to 1000) (1000 to 100000) mm ² /s	0.18 % 0.22 % 0.23 % 0.24 % 0.25 %	The viscosity of the standard liquid was measured using a standard glass capillary viscometer
	Dynamic viscosity range (0.3 to 1.5) mPa.s (1.5 to 10) mPa.s (10 to 160) mPa.s (160 to 1000) mPa.s (1000 to 100000) mPa.s	0.22 % 0.25 % 0.26 % 0.27 % 0.27 %	ASTM D446-04 Din51562- 1 to 4

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Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Voltages (negative And	10 kV to 200 kV @ 50 Hz	None	
Volumetric Apparatus -~to Contain-™	10 mL to 100 mL 100 mL to 500 mL 500 mL to 2000 mL 2000 mL to 25000 mL	2x 103 mL 6 x 103 mL 4.3 x 10% mL mL	Calibration with general reference to ISO 4787:2010 (E) and Euramet cg-21 Ver 1.0
Volumetric Apparatus -~to Deliver-™	2 mL to 50 mL 50 mL to 500 mL 500 mL to 20000 mL	2x 103 mL 2.1 x 10° mL 2.1 x 1077 mL	Calibration with general reference to ISO 4787:2010 (E) and Euramet cg-21 Ver 1.0

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SCOPE OF CALIBRATION : DENSITY MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : DIMENSIONAL MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SCOPE OF CALIBRATION : ELECTRICAL MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

SCOPE OF CALIBRATION : ELECTRICAL (TIME & FREQUENCY)

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : FORCE MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : MASS MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SCOPE OF CALIBRATION : PRESSURE MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : TEMPERATURE MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SCOPE OF CALIBRATION : VISCOSITY MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : VOLUME MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SCOPE OF CALIBRATION : FLOW

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : HUMIDITY

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SCOPE OF CALIBRATION : OPTICAL & PHOTOMETRIC

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks

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SCOPE OF CALIBRATION : ELECTRICAL MEASUREMENTS

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SCOPE OF CALIBRATION : ELECTRICAL (TIME & FREQUENCY)

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
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SITE LOCATION (HQ)	1. National Metrology Institute of Malaysia LOT PT 4803, BANDAR BARU SALAK TINGGI, MALAYSIA
FIELD(S) OF CALIBRATION :	ACOUSTIC MEASUREMENTS, DENSITY MEASUREMENTS, DIMENSIONAL MEASUREMENTS, ELECTRICAL MEASUREMENTS, FORCE MEASUREMENTS, MASS MEASUREMENTS, PRESSURE MEASUREMENTS, TEMPERATURE MEASUREMENTS, VISCOSITY MEASUREMENTS, VOLUME MEASUREMENTS

SCOPE OF CALIBRATION : ACOUSTIC MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : DENSITY MEASUREMENTS

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : DIMENSIONAL MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : ELECTRICAL MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : FORCE MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : MASS MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : PRESSURE MEASUREMENTS

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : TEMPERATURE MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : VISCOSITY MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : VOLUME MEASUREMENTS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SITE LOCATION (HQ)	2. National Metrology Institute of Malaysia Lot PT 4803 Bandar Baru Salak Tinggi ,MALAYSIA		
FIELD(S) OF CALIBRATION :	DIMENSIONAL,MASS		

SCOPE OF CALIBRATION : MASS

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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SCOPE OF CALIBRATION : DIMENSIONAL

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Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
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