財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

(Certificate No: L1735-260526)

This is to certify that

Measurement Technology Co., Ltd

Calibration Laboratory of Southern Region Service Department

No.92, Dashe road, Dashe District, Kaohsiung city, Taiwan, (R.O.C.)

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025: 2017; CNS 17025: 2018
Accreditation Number	:	1735
Originally Accredited	:	February 16, 2007
Effective Period	:	February 16, 2025 to February 15, 2028
Accredited Scope	:	Calibration Field, see described in the Appendix

Scan to verify

Yi-Ling Chen
President, Taiwan Accreditation Foundation
May 26, 2026

The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix

Accreditation Number : 1735
Laboratory Head : HUANG, Chien-Ming

Length

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KA1001 Gauge Block (Steel) Long Gauge Block (Steel)	Gauge Block PTW B1 GRADE: K Long Gauge Block Mitutoyo /BM1-8R-K/YJ	In-house method: Gauge Block Calibration Procedure (Document No.: MT-C-95-014) In-house method: Long Gauge Block Calibration Procedure (Document No.: MT-C-95-132)	125	mm	125	mm	Steel	0.36	μm
			150	mm	150	mm	Steel	0.39	μm
			175	mm	175	mm	Steel	0.43	μm
			200	mm	200	mm	Steel	0.46	μm
			250	mm	250	mm	Steel	0.54	μm
			300	mm	300	mm	Steel	0.62	μm
			400	mm	400	mm	Steel	0.79	μm
			500	mm	500	mm	Steel	0.97	μm
			0.5	mm	10	mm	Steel	0.10	μm
			> 10	mm	15	mm	Steel	0.11	μm
			> 15	mm	25	mm	Steel	0.13	μm
			> 25	mm	75	mm	Steel	0.23	μm
			> 75	mm	100	mm	Steel	0.28	μm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									
KA1006 Thickness gauge	Outside Micrometer /Mitutoyo /MDC-1"SB	In-house method: Calibration procedure for Thickness gauge (Document No.: MT-C-99-007)	0	mm	3	mm	Steel, copper, PVC	0.002	mm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KA1017 3-wire gauge /pin gauge	Pin Gauge/MTC/---	In-house method: Calibration Procedure for Three Wire Units/Pin Gauge (Document No.: MT-C-95-134)	0.1	mm	15	mm	3-wire gauge: (Steel and ceramic)	1.1	μm
			0.1	mm	15	mm	pin gauge: (Steel and ceramic)	0.9	μm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan									
KA2001 Rule	Standard Tape /B-Y/5 m	In-house method: Calibration Procedure for Rule (Document No.: MT-C-97-002)	0	cm	200	cm		0.04	cm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									
KA2002 Tape	Standard Tape /B-Y/5 m	In-house method: Calibration Procedure for Tape (Document No.: MT-C-95-095)	0	cm	500	cm		0.04	cm
			0	cm	1000	cm		0.06	cm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									
KA2010 Dial & Digital Indicator (& Linear Gauge)	Linear Gauge (Dial Calibrator) (Sylvac /D50S-PRO)	In-house method: Calibration Procedure of Dial & Digital Indicator (Document No.: MT-C-113-001)	0	mm	25	mm	resolution: 0.01 mm	0.01	mm
			0	mm	25	mm	resolution: 0.001 mm	0.004	mm
Approval Signatory: CHU, Wei-Hsin; WENG, Kuo-Chou; KAO, Wei-Chuan									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KA2015 Thickness Gauge	Gauge Blocks/PTW/B1	In-house method: The Evaluation Report for Dial or Digital Thickness Gauge /Document No.: MT-C-96-013	0	mm	10	mm	digital (resolution: 0.01 mm)	0.03	mm
			0	mm	10	mm	digital (resolution: 0.001 mm)	0.004	mm
			0	mm	20	mm	dial (resolution: 0.01 mm/readable to 0.002 mm)	0.006	mm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan									
KA2016 Displacement (Extensometer) (on-site calibration included)	Laser Interferometer (RENISHAW /XL-80)	In-house method: Calibration Procedure for Displacement (Extensometer) (Document No.: MT-C-112-006)	0	mm	1000	mm		(4.1+3.4*L) *2 (L in meter (m))	μm
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									
KA2017 Testing Machine speed (on-site calibration included)	Laser Interferometer (RENISHAW /XL-80)	In-house method: Calibration Procedure for speed of Testing Machine (Document No.: MT-C-112-007)	0	mm/min	1000	mm/min		0.022	mm/min
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KA2099 Measuring Wheel	Standard Tape	In-house method: Measuring Wheel Calibration Procedure (Document No.: MT-C-109-012)	0	m	1	m		0.02	m
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan									

Mass/Force

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KC1001 STANDARD WEIGHT	METTLER (F_1) 1 mg-200 g /23EA METTLER (F_1) 100 g-20 kg /10EA	In-house method: Calibration Procedure for 1 mg to 20 kg Weight Set /Document No.: MT-C-112-002	1	mg	1	mg	Stainless Steel (Class F1 and lower)	0.002	mg
			2	mg	2	mg	Stainless Steel (Class F1 and lower)	0.002	mg
			5	mg	5	mg	Stainless Steel (Class F1 and lower)	0.002	mg
			10	mg	10	mg	Stainless Steel (Class F1 and lower)	0.002	mg
			20	mg	20	mg	Stainless Steel (Class F1 and lower)	0.002	mg
			50	mg	50	mg	Stainless Steel (Class F1 and lower)	0.003	mg
			100	mg	100	mg	Stainless Steel (Class F1 and lower)	0.003	mg
			200	mg	200	mg	Stainless Steel (Class F1 and lower)	0.003	mg
			500	mg	500	mg	Stainless Steel (Class F1 and lower)	0.007	mg
			1	g	1	g	Stainless Steel (Class F1 and lower)	0.04	mg
			2	g	2	g	Stainless Steel (Class F1 and lower)	0.04	mg
			5	g	5	g	Stainless Steel (Class F1 and lower)	0.05	mg
			10	g	10	g	Stainless Steel (Class F1 and lower)	0.05	mg
			20	g	20	g	Stainless Steel (Class F1 and lower)	0.05	mg
			50	g	50	g	Stainless Steel (Class F1 and lower)	0.05	mg
			100	g	100	g	Stainless Steel (Class F1 and lower)	0.06	mg
			200	g	200	g	Stainless Steel (Class F1 and lower)	0.11	mg

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KC1001 STANDARD WEIGHT	METTLER (F_1) 1 mg-200 g /23EA METTLER (F_1) 100 g-20 kg /10EA	In-house method: Calibration Procedure for 1 mg to 20 kg Weight Set /Document No.: MT-C-112-002	500	g	500	g	Stainless Steel (Class F1 and lower)	0.4	mg
			1	kg	1	kg	Stainless Steel (Class F1 and lower)	0.003	g
			2	kg	2	kg	Stainless Steel (Class F1 and lower)	0.003	g
			5	kg	5	kg	Stainless Steel (Class F1 and lower)	0.004	g
			10	kg	10	kg	Stainless Steel (Class F1 and lower)	0.009	g
			20	kg	20	kg	Stainless Steel (Class F1 and lower)	0.017	g
			1	mg	1	mg	Copper	0.002	mg
			2	mg	2	mg	Copper	0.002	mg
			5	mg	5	mg	Copper	0.002	mg
			10	mg	10	mg	Copper	0.002	mg
			20	mg	20	mg	Copper	0.002	mg
			50	mg	50	mg	Copper	0.003	mg
			100	mg	100	mg	Copper	0.003	mg
			200	mg	200	mg	Copper	0.003	mg
			500	mg	500	mg	Copper	0.007	mg
			1	g	1	g	Copper	0.04	mg
			2	g	2	g	Copper	0.04	mg
			5	g	5	g	Copper	0.05	mg
			10	g	10	g	Copper	0.05	mg
			20	g	20	g	Copper	0.05	mg
			50	g	50	g	Copper	0.05	mg
			100	g	100	g	Copper	0.06	mg
			200	g	200	g	Copper	0.12	mg
			500	g	500	g	Copper	0.4	mg
			1	kg	1	kg	Copper	0.003	g
			2	kg	2	kg	Copper	0.003	g
			5	kg	5	kg	Copper	0.005	g
			10	kg	10	kg	Copper	0.009	g
			20	kg	20	kg	Copper	0.018	g
			500	g	500	g	Cast Iron	0.6	mg
			1	kg	1	kg	Cast Iron	0.003	g

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KC1001 STANDARD WEIGHT	METTLER (F_1) 1 mg-200 g /23EA METTLER (F_1) 100 g-20 kg /10EA	In-house method: Calibration Procedure for 1 mg to 20 kg Weight Set /Document No.: MT-C-112-002	2	kg	2	kg	Cast Iron	0.004	g
			5	kg	5	kg	Cast Iron	0.006	g
			10	kg	10	kg	Cast Iron	0.011	g
			20	kg	20	kg	Cast Iron	0.022	g
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; YEN, Chia-Hsun									
KC1002 Electronic Balance (on-site calibration included)	METTLER (F_1) 1 mg-200 g /23 EA METTLER (F_1) 100 g-20 kg /10 EA	In-house method: Calibration Procedure for Electronic Balance (1 mg~200 g) (on-site calibration included) /Document No.: MT-C-112-003 Calibration Procedure for Electronic Balance (1 g~20 kg) (on-site calibration included) /Document No.: MT-C-112-004	1	mg	500	mg	resolution: 0.00001 g	0.07	mg
			>500	mg	100	g	resolution: 0.00001 g	0.21	mg
			>100	g	200	g	resolution: 0.00001 g	0.38	mg
			1	g	2	kg	resolution: 0.001 g	0.011	g
			>2	kg	5	kg	resolution: 0.001 g	0.019	g
			>5	kg	10	kg	resolution: 0.001 g	0.034	g
			>10	kg	20	kg	resolution: 0.001 g	0.066	g
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; YEN, Chia-Hsun									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KC1004 Platform Scale (on-site calibration included)	METTLER /1 mg-200 g /23 EA METTLER /100 g-20 kg /10 EA DONG HENG /10 kg/16 EA	In-house method: Calibration procedure for electronic scale (0.1 kg to 30 kg) (on-site calibration included) /Document NO.: MT-C-113-008	0.1	kg	30	kg	resolution: 0.001 kg	0.002	kg
		In-house method: Calibration procedure for electronic scale (0.1 kg to 150 kg) (on-site calibration included) /Document NO.: MT-C-113-009	0.1	kg	150	kg	resolution: 0.01 kg	0.02	kg
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; YEN, Chia-Hsun									
KC2004 Push Pull Gauge	STANDARD WEIGHTS METTLER /1 g~200 g CHINA SCALES /100 g~2000 g CHINA SCALES /100 g~10 kg	In-house method: Calibration procedure for Push Pull Gauge (Document No.: MT-C-106-015)	0.01 (0.001)	N (kgf)	9.8 (1)	N (kgf)	digital	0.06 (0.006)	N (kgf)
			0.01 (0.001)	N (kgf)	98 (10)	N (kgf)	digital	0.10 (0.010)	N (kgf)
			0.1 (0.01)	N (kgf)	490 (50)	N (kgf)	digital	0.4 (0.04)	N (kgf)
			0.5 (0.005)	N (kgf)	9.8 (1)	N (kgf)	dial	0.10 (0.010)	N (kgf)
			0.5 (0.05	N (kgf)	98 (10)	N (kgf)	dial	0.5 (0.05)	N (kgf)
			2.5 (0.25)	N (kgf)	490 (50)	N (kgf)	dial	1 (0.10)	N (kgf)
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KC4001 Torque Wrench	Torque Calibrator (NORBAR /50592.LOG /43228)	In-house method: Calibration Procedure for Torque Wrench (Document No.: MT-C-110-004)	1	N·m	<25	N·m	CW, CCW	1.3	%
	Torque Calibrator (NORBAR /50593.LOG /43228)		25	N·m	<100	N·m	CW, CCW	1.7	%
	Torque Calibrator (NORBAR /50772.LOG /43228)		100	N·m	1000	N·m	CW, CCW	1.1	%
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									
KC4002 Torque Screwdriver	Torque Calibrator (Norbar/43213) Torque Calibrator (TOHNICHI /TDT60CN3-G)	In-house method: Calibration Procedure for Torque Driver (Document No.: MT-C-110-005)	0.02	N·m	<0.6	N·m	CW, CCW	1.6	%
			0.6	N·m	10	N·m	CW, CCW	1.8	%
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; HUANG, Chien-Ming									

Temperature/Humidity

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KE1001 Liquid-in-glass Thermometer	Platinum Resistance Thermometer FLUKE/5681; Super Thermometer: FLUKE/1595A	In-house method: Liquid-in-Glass Thermometer Measurement System Calibration Procedure (Document No.: MT-C-95-015)	-80	℃	300	℃	Total immersion & partial immersion	0.016	℃
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; LIN, Chin-Liang									
KE1002 (Platinum) Resistance Thermometer	Platinum Resistance Thermometer FLUKE/5681; Super Thermometer: FLUKE/1595A	In-house method: Resistance Thermometer Measurement System Calibration Procedure (Document No.: MT-C-97-001)	-80	℃	300	℃		0.016	℃
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; LIN, Chin-Liang; TSAI, Shun-Chin									
KE1004 THERMOCOUPLE (R, S, K, N, E, T, J TYPE)	Platinum Resistance Thermometer FLUKE 5628 Platinum Resistance Thermometer FLUKE 5624 THERMOCOUPLE THERMOWAY /R TYPE	In-house method: Thermocouple Calibration Procedure (Document No.: MT-C-107-008)	≧ -80	℃	≦ 50	℃	K TYPE	0.22	℃
			>50	℃	≦ 600	℃	K TYPE	0.16	℃
			>600	℃	≦ 1000	℃	K TYPE	0.86	℃
			>1000	℃	≦ 1200	℃	K TYPE	2.3	℃
			≧ 0	℃	≦ 50	℃	R TYPE	0.22	℃
			>50	℃	≦ 600	℃	R TYPE	0.16	℃
			>600	℃	≦ 1000	℃	R TYPE	0.86	℃
			>1000	℃	≦ 1200	℃	R TYPE	2.3	℃
			≧ 0	℃	≦ 50	℃	S TYPE	0.22	℃
			>50	℃	≦ 600	℃	S TYPE	0.16	℃
			>600	℃	≦ 1000	℃	S TYPE	0.86	℃

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KE1004 THERMOCOUPLE (R, S, K, N, E, T, J TYPE)	Platinum Resistance Thermometer FLUKE 5628 Platinum Resistance Thermometer FLUKE 5624 THERMOCOUPLE THERMOWAY /R TYPE	In-house method: Thermocouple Calibration Procedure (Document No.: MT-C-107-008)	>1000	℃	≦ 1200	℃	S TYPE	2.30	℃
			≧ -80	℃	≦ 50	℃	N TYPE	0.22	℃
			>50	℃	≦ 600	℃	N TYPE	0.16	℃
			>600	℃	≦ 1000	℃	N TYPE	0.86	℃
			>1000	℃	≦ 1200	℃	N TYPE	2.30	℃
			≧ -80	℃	≦ 50	℃	E TYPE	0.22	℃
			>50	℃	≦ 600	℃	E TYPE	0.16	℃
			>600	℃	≦ 900	℃	E TYPE	0.86	℃
			≧ -80	℃	≦ 50	℃	J TYPE	0.22	℃
			>50	℃	≦ 600	℃	J TYPE	0.16	℃
			>600	℃	≦ 700	℃	J TYPE	0.86	℃
			≧ -80	℃	≦ 50	℃	T TYPE	0.22	℃
			>50	℃	≦ 400	℃	T TYPE	0.16	℃
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; LIN, Chin-Liang; KAO, Wei-Chuan; TSAI, Shun-Chin									
KE1005 Thermocouple Thermometer	Standard Platinum Resistance Thermometer FLUKE/5624; FLUKE/5628; Thermocouple Thermometer THERMOWAY /R TYPE	In-house method: Thermocouple Thermometer Calibration Procedure (Document No.: MT-C-107-007)	≧ 0	℃	≦ 50	℃	R Type	0.22	℃
			>50	℃	≦ 600	℃	R Type	0.16	℃
			>600	℃	≦ 1000	℃	R Type	0.86	℃
			>1000	℃	≦ 1200	℃	R Type	2.3	℃
			≧ 0	℃	≦ 50	℃	S Type	0.22	℃
			>50	℃	≦ 600	℃	S Type	0.16	℃
			>600	℃	≦ 1000	℃	S Type	0.86	℃
			>1000	℃	≦ 1200	℃	S Type	2.30	℃
			≧ -80	℃	≦ 50	℃	K Type	0.22	℃
			>50	℃	≦ 600	℃	K Type	0.16	℃
			>600	℃	≦ 1000	℃	K Type	0.86	℃
			>1000	℃	≦ 1200	℃	K Type	2.3	℃
			≧ -80	℃	≦ 50	℃	N Type	0.22	℃
			>50	℃	≦ 600	℃	N Type	0.16	℃
			>600	℃	≦ 1000	℃	N Type	0.86	℃
			>1000	℃	≦ 1200	℃	N Type	2.30	℃

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KE1005 Thermocouple Thermometer	Standard Platinum Resistance Thermometer FLUKE/5624; FLUKE/5628; Thermocouple Thermometer THERMOWAY /R TYPE	In-house method: Thermocouple Thermometer Calibration Procedure (Document No.: MT-C-107-007)	≧ -80	℃	≦ 50	℃	E Type	0.22	℃
			>50	℃	≦ 600	℃	E Type	0.16	℃
			>600	℃	≦ 900	℃	E Type	0.86	℃
			≧ -80	℃	≦ 50	℃	J Type	0.22	℃
			>50	℃	≦ 600	℃	J Type	0.16	℃
			>600	℃	≦ 700	℃	J Type	0.86	℃
			≧ -80	℃	≦ 50	℃	T Type	0.22	℃
			>50	℃	≦ 400	℃	T Type	0.16	℃
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; LIN, Chin-Liang; KAO, Wei-Chuan									
KE1010 temperature Chamber (on-site calibration included)	Hydra Data Bucket FLUKE/1586A	In-house method: Temperature Humidity Chamber Calibration Procedure /Document No.: MT-C-108-005	15	℃	50	℃		0.6	℃
Approval Signatory: CHU, Wei-Hsin; KAO, Wei-Chuan; TSAI, Shun-Chin									
KE1099 Portable Thermometer Data Logger	Hydra Data Bucket FLUKE/1586A	In-house method: Humidity/temperature instrument Measurement System Validation Program /Document No.: MT-C-109-016	15	℃	50	℃		0.8	℃
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; KAO, Wei-Chuan; TSAI, Shun-Chin									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KE1099 Temperature-Calibrator Furnace; Dry-Well Calibrator; High Temperature Furnace.	Platinum Resistance Thermometer FLUKE/5624; FLUKE/5628	In-house method: Temperature Calibration Furnace Measurement Calibration Procedure (Document No.: MT-C-103-022)	≧ -80	℃	≦ 600	℃		0.5	℃
			>600	℃	≦ 1000	℃		1.0	℃
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; LIN, Chin-Liang									
KE2001 Hygrometer Hygrograph	Digital Hygrometer ROTRONIC /HYGROLOG HL-NT3-DP Hydra Data Bucket FLUKE/1586A	In-house method: Humidity/temperature instrument Measurement System Validation Program /Document No.: MT-C-109-016	15	℃	50	℃		0.8	℃
			40	%	90	%	Relative humidity	4.3	%
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; KAO, Wei-Chuan; TSAI, Shun-Chin									
KE2004 Temperature & Humidity recorder	Digital Hygrometer ROTRONIC /HYGROLOG HL-NT3-DP Hydra Data Bucket FLUKE/1586A	In-house method: Humidity/temperature instrument Measurement System Validation Program /Document No.: MT-C-109-016	15	℃	50	℃		1.0	℃
			40	%	90	%	Relative humidity	4.3	%
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; KAO, Wei-Chuan; TSAI, Shun-Chin									

calibration items	working standard		calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model		document name /no.	minimum value	units	maximum value	units	explanation	value	units
KE2005 Temp./Humidity Chamber (on-site calibration included)	Digital Hygrometer ROTRONIC /HYGROLOG HL-NT3-DP Hydra Data Bucket FLUKE/1586A		In-house method: Temperature Humidity Chamber Calibration Procedure /Document No.: MT-C-108-005	15	℃	50	℃		0.6	℃
				40	%	90	%	Relative Humidity	4.0	%
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin; KAO, Wei-Chuan; TSAI, Shun-Chin										

Electricity

calibration items	working standard		calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model		document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF1001 DCV source DC Volt meter	CALIBRATOR DATRON4808 DC VOLTAGE MULTI Meter HP3458		In-house method: DC VOLTAGE MEASURING SYSTEM CALIBRATORATION PROCEDURE (Document No.: MT-C-95-010)	0.1	mV	<1	mV	DC VOLTAGE METER	16	mV/V
				1	mV	<10	mV	DC VOLTAGE METER	1.6	mV/V
				10	mV	<100	mV	DC VOLTAGE METER	0.16	mV/V
				100	mV	1000	V	DC VOLTAGE METER	28	μV/V
				0.1	mV	<1	mV	DC VOLTAGE SOURCE	12	mV/V
				1	mV	<10	mV	DC VOLTAGE SOURCE	9.7	mV/V
				10	mV	<100	mV	DC VOLTAGE SOURCE	0.87	mV/V
				100	mV	1000	V	DC VOLTAGE SOURCE	24	μV/V
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu										

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF1002 DCA source DC Current-meter	MULTIFUNCTION CALIBRATOR DATRON4808 MULTIFUNCTION CALIBRATOR FLUKE 5522A DIGITAL MULTIMETER HP 3458A DIGITAL MULTIMETER FLUKE 8846A	In-house method: DC CURRENT MEASURING SYSTEM CALIBRATION PROCEDURE (Document No.: MT-C-95-012)	1	μA	1	μA	DC CURRENT METER	2.0	mA/A
			10	μA	10	μA	DC CURRENT METER	0.85	mA/A
			100	μA	100	μA	DC CURRENT METER	0.40	mA/A
			1	μA	100	μA	DC CURRENT METER	2.0	mA/A
			>100	μA	1	A	DC CURRENT METER	0.61	mA/A
			>1	A	10	A	DC CURRENT METER	3.1	mA/A
			1	μA	1	μA	DC CURRENT SOURCE	0.97	mA/A
			10	μA	10	μA	DC CURRENT SOURCE	0.82	mA/A
			100	μA	100	μA	DC CURRENT SOURCE	0.38	mA/A
			1	μA	100	μA	DC CURRENT SOURCE	0.97	mA/A
			>100	μA	1	A	DC CURRENT SOURCE	0.51	mA/A
			>1	A	10	A	DC CURRENT SOURCE	0.32	mA/A
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF1003 DC High Voltage meter DC High Voltage tester	High Voltage DIVIDER/ROSS/VD/60-12.5Y-B-KB-AL DMM/FLUKE/287	In-house method: DC highvoltage measuring system calibration procedure (Document No.: MT-C-100-001)	1	kV	<3	kV	DC High Voltage meter	5.7	%
			3	kV	<7	kV	DC High Voltage meter	2.1	%
			7	kV	20	kV	DC High Voltage meter	1.1	%
			1	kV	20	kV	DC High Voltage tester	0.2	%
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									
KF1011 ACV source AC Volt meter	Multifunction calibrator DATRON 4808 Digital multimeter HP 3458A Digital multimeter FLUKE 8846A	In-house method: AC voltage measuring system calibration procedure (Document No.: MT-C-95-011)	5	mV	<50	mV	AC Voltage Meter	2.0	mV/V
			50	mV	1000	V	AC Voltage Meter	0.40	mV/V
			1	V	1	V	AC Voltage Meter	0.18	mV/V
			10	V	10	V	AC Voltage Meter	0.22	mV/V
			100	V	100	V	AC Voltage Meter	0.19	mV/V
			1000	V	1000	V	AC Voltage Meter	0.22	mV/V
			5	mV	<50	mV	AC Voltage Source	2.1	mV/V
			50	mV	1000	V	AC Voltage Source	0.32	mV/V
			1	V	1	V	AC Voltage Source	0.17	mV/V
			10	V	10	V	AC Voltage Source	0.17	mV/V
			100	V	100	V	AC Voltage Source	0.16	mV/V
			1000	V	1000	V	AC Voltage Source	0.22	mV/V
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF1012 ACA source AC Current-meter	Multifunction calibrator DATRON 4808 Multifunction calibrator FLUKE 5522A Digital multimeter HP 3458A Digital multimeter FLUKE 8846A	In-house method: AC current measuring system calibration procedure (Document No.: MT-C-95-013)	10	μA	<1	A	AC Current Meter	3.7	mA/A
			1	A	10	A	AC Current Meter	21	mA/A
			1	A	1	A	AC Current Meter	1.6	mA/A
			10	A	10	A	AC Current Meter	7.2	mA/A
			10	μA	<1	A	AC Current Meter	3.6	mA/A
			1	A	2	A	AC Current Meter	2.6	mA/A
			10	μA	100	μA	AC Current Source	4.6	mA/A
			>100	μA	1	A	AC Current Source	4.4	mA/A
			>1	A	10	A	AC Current Source	1.9	mA/A
			1	A	1	A	AC Current Source	0.96	mA/A
			10	A	10	A	AC Current Source	0.52	mA/A
			10	μA	100	μA	AC Current Source	5.1	mA/A
			>100	μA	1	A	AC Current Source	4.2	mA/A
			>1	A	2	A	AC Current Source	2.0	mA/A
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									
KF1013 AC High Voltage METER AC High Voltage tester	DIVIDER/ROSS/VD /60-12.5Y-B-KB-AL DMM/FLUKE/287	In-house method: AC highvoltage measuring system calibration procedure (Document No.: MT-C-100-002)	1	kV	20	kV	AC High Voltage meter	2.4	%
			1	kV	20	kV	AC High Voltage tester	0.8	%
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF3001 DC RESISTANCE METER DC RESISTANCE	DC voltage multi meter HP3458A PRECISION DECADE RESISTORS IET HARS-X-3-.001 PRECISION DECADE RESISTORS BIDDLE 72-6346-1 PRECISION DECADE RESISTORS IET 1433-33	In-house method: DC resistance measuring system calibration procedure (Document No.: MT-C-103-021)	0.001	Ω	<0.1	Ω	Resistance source	5	mΩ/Ω
			0.1	Ω	<1	Ω	Resistance source	0.2	mΩ/Ω
			1	Ω	<100	Ω	Resistance source	0.08	mΩ/Ω
			100	Ω	<1	MΩ	Resistance source	38	μΩ/Ω
			1	MΩ	100	MΩ	Resistance source	0.6	mΩ/Ω
			0.001	Ω	0.001	Ω	Resistance source	5	mΩ/Ω
			0.01	Ω	0.01	Ω	Resistance source	5.0	mΩ/Ω
			0.1	Ω	0.1	Ω	Resistance source	0.2	mΩ/Ω
			1	Ω	1	Ω	Resistance source	0.08	mΩ/Ω
			10	Ω	10	Ω	Resistance source	67	μΩ/Ω
			100	Ω	100	Ω	Resistance source	38	μΩ/Ω
			1	kΩ	1	kΩ	Resistance source	38	μΩ/Ω
			10	kΩ	10	kΩ	Resistance source	38	μΩ/Ω
			100	kΩ	100	kΩ	Resistance source	38	μΩ/Ω
			1	MΩ	1	MΩ	Resistance source	0.6	mΩ/Ω
			10	MΩ	10	MΩ	Resistance source	0.6	mΩ/Ω
			100	MΩ	100	MΩ	Resistance source	0.6	mΩ/Ω
			0.001	Ω	<0.01	Ω	Resistance meter	0.02	Ω/Ω
			0.01	Ω	<1	Ω	Resistance meter	2	mΩ/Ω
			1	Ω	<100	Ω	Resistance meter	0.06	mΩ/Ω
			100	Ω	<1	MΩ	Resistance meter	40	μΩ/Ω
			1	MΩ	100	MΩ	Resistance meter	0.33	mΩ/Ω
			0.001	Ω	0.001	Ω	Resistance meter	0.02	Ω/Ω
			0.01	Ω	0.01	Ω	Resistance meter	2	mΩ/Ω
			0.1	Ω	0.1	Ω	Resistance meter	0.3	mΩ/Ω
			1	Ω	1	Ω	Resistance meter	0.06	mΩ/Ω
			10	Ω	10	Ω	Resistance meter	38	μΩ/Ω
			100	Ω	100	Ω	Resistance meter	40	μΩ/Ω
			1	kΩ	1	kΩ	Resistance meter	34	μΩ/Ω
			10	kΩ	10	kΩ	Resistance meter	34	μΩ/Ω
			100	kΩ	100	kΩ	Resistance meter	34	μΩ/Ω

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF3001 DC RESISTANCE METER DC RESISTANCE	DC voltage multi meter HP3458A PRECISION DECADE RESISTORS IET HARS-X-3-.001 PRECISION DECADE RESISTORS BIDDLE 72-6346-1 PRECISION DECADE RESISTORS IET 1433-33	In-house method: DC resistance measuring system calibration procedure (Document No.: MT-C-103-021)	1	MΩ	1	MΩ	Resistance meter	61	μΩ/Ω
			10	MΩ	10	MΩ	Resistance meter	73	μΩ/Ω
			100	MΩ	100	MΩ	Resistance meter	0.33	mΩ/Ω
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									
KF3008 Insulation Resistance Tester	Decade Standard Resistance Box BIDDLE/72-6346-1	In-house method: Digital Insulation Resistance meter/Insulation Resistance Calibration Procedure (Document No.: MT-C-108-007)	1	MΩ	<10	MΩ		13	mΩ/Ω
			10	MΩ	<1	GΩ		13	mΩ/Ω
			1	GΩ	<10	GΩ		18	mΩ/Ω
			10	GΩ	<100	GΩ		18	mΩ/Ω
			1	MΩ	<10	MΩ		13	mΩ/Ω
			10	MΩ	<1	GΩ		13	mΩ/Ω
			1	GΩ	<10	GΩ		16	mΩ/Ω
			10	GΩ	<100	GΩ		18	mΩ/Ω
			1	MΩ	<10	MΩ		13	mΩ/Ω
			10	MΩ	<1	GΩ		13	mΩ/Ω
			1	GΩ	<10	GΩ		16	mΩ/Ω
			10	GΩ	<100	GΩ		18	mΩ/Ω
			1	MΩ	<10	MΩ		13	mΩ/Ω
			10	MΩ	<1	GΩ		13	mΩ/Ω
			1	GΩ	<10	GΩ		16	mΩ/Ω
			10	GΩ	<100	GΩ		18	mΩ/Ω

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF3008 Insulation Resistance Tester	Decade Standard Resistance Box BIDDLE /72-6346-1	In-house method: Digital Insulation Resistance meter/Insulation Resistance Calibration Procedure (Document No.: MT-C-108-007)	1	MΩ	<10	MΩ		13	mΩ/Ω
			10	MΩ	<1	GΩ		13	mΩ/Ω
			1	GΩ	<10	GΩ		16	mΩ/Ω
			10	GΩ	<100	GΩ		18	mΩ/Ω
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; KAO, Wei-Chuan; JHAN, Yuan-Jhu									
KF5001 ELECTRICAL SAFETY ANALYZER	PRECISION DECADE RESISTORS BIDDLE/72-6346-1 DIGITAL METER FLUKE/8846A High voltage divider+DIGITAL METER ROSS /VD60.12.5Y-B-KB-AL+FLUKE/287 Stopwatch Casio /HS-3 (V)	In-house method: ELECTRICAL SAFETY ANALYZER CALIBRATION PROCEDURE (Document No.: MT-C-112-01)	1	kV	6	kV	DC High Voltage Tester	12	mV/V
			1	kV	5	kV	AC High Voltage Tester (@ 60 Hz)	12	mV/V
			0.5	mA	10	mA	DC cut-off current	0.01	A/A
			0.5	mA	10	mA	AC cut-off current (@ 60 Hz)	0.01	A/A
			1	MΩ	1	MΩ	@500 V	0.2	Ω/Ω
			5	MΩ	5	MΩ	@500 V	0.2	Ω/Ω
			10	MΩ	10	MΩ	@500 V	0.06	Ω/Ω
			50	MΩ	50	MΩ	@500 V	0.2	Ω/Ω
			100	MΩ	100	MΩ	@500 V	0.1	Ω/Ω
			0.5	GΩ	0.5	GΩ	@500 V	0.08	Ω/Ω
			1	GΩ	1	GΩ	@500 V	0.08	Ω/Ω
			1	MΩ	1	MΩ	@1000 V	0.2	Ω/Ω
			5	MΩ	5	MΩ	@1000 V	0.2	Ω/Ω
			10	MΩ	10	MΩ	@1000 V	0.07	Ω/Ω
			50	MΩ	50	MΩ	@1000 V	0.2	Ω/Ω
			100	MΩ	100	MΩ	@1000 V	0.1	Ω/Ω
			0.5	GΩ	0.5	GΩ	@1000 V	0.08	Ω/Ω
			1	GΩ	1	GΩ	@1000 V	0.06	Ω/Ω
			5	GΩ	5	GΩ	@1000 V	0.1	Ω/Ω
			10	GΩ	10	GΩ	@1000 V	0.07	Ω/Ω

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KF5001 ELECTRICAL SAFETY ANALYZER	PRECISION DECADE RESISTORS BIDDLE/72-6346-1 DIGITAL METER FLUKE/8846A High voltage divider+DIGITAL METER ROSS /VD60.12.5Y-B-KB-AL+FLUKE/287 Stopwatch Casio /HS-3 (V)	In-house method: ELECTRICAL SAFETY ANALYZER CALIBRATION PROCEDURE (Document No.: MT-C-112-01)	1	s	60	s	Stopwatch	0.4	s
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									
KF5003 Electrostatic field meter	AC/DC High voltage divider/ROSS /VD60-12.5Y-B-KB-AL	In-house method: Calibration procedure for electrostatic field meter (Document No.: MT-C-95-080)	1	kV	20	kV	Spacing: 25 mm	0.06	V/V
Approval Signatory: CHU, Wei-Hsin; LIN, Chin-Liang; JHAN, Yuan-Jhu									

Electromagnetics

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KG3001 Illuminance Meter	Standard Lamp ORIEL 63350 Standard Lamp OL 100U Picoammeter /detector KEITHLEY /LMT 6485 dc powersupply Newport 69935	In-house method: Illuminance Meter Calibration Procedure (Document No.: MT-C-95-151)	50	lx	20000	lx		1.5	%
Approval Signatory: WANG, Jian-Wha; CHU, Wei-Hsin									

Chemical

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KI2000 pH meter	1.Multifunction calibrator: AOIP /SN 8310-2-GU 2.pH Meter: METTLER /S475-Basic 3.pH standard buffer /(4, 7, 10) pH	In-house method: pH meter Calibration Procedure (Document No.: MT-C-95-149	1	pH	1	pH	@ 25 °C	0.01	pH
			4	pH	4	pH	@ 25 °C	0.01	pH
			7	pH	7	pH	@ 25 °C	0.01	pH
			10	pH	10	pH	@ 25 °C	0.01	pH
			13	pH	13	pH	@ 25 °C	0.01	pH
			20	°C	20	°C	Temperature Compensations (slope)	0.20	mV/pH
			60	°C	60	°C	Temperature Compensations (slope)	0.20	mV/pH
							Electrode Slope (@ 25 °C)	1.5	%
			4	pH	10	pH	Calibration Curve (@ 25 °C)	0.10	pH
Approval Signatory: CHU, Wei-Hsin; TSAI, Shun-Chin									

calibration items	working standard	calibration method	measurand level or range				measurement conditions /independent variable	smallest uncertainty	
	brand /model	document name /no.	minimum value	units	maximum value	units	explanation	value	units
KI9900 Conductivity Meter	1.Conductivity Meter: METTLER /S475-Basic, 2.Conductivity Standard Solution /84, 1413, 12880 µS/cm	In-house method: Calibration Process of Electric Conductivity meter (Document No.: MT-C-95-158)	84	µS/cm	84	µS/cm		3.0	%
			1413	µS/cm	1413	µS/cm		2.0	%
			12880	µS/cm	12880	µS/cm		2.0	%
Approval Signatory: CHU, Wei-Hsin; TSAI, Shun-Chin									

Note: Smallest uncertainty represents an expanded uncertainty using a coverage factor approximately 95 % level of confidence.
(Null Below)