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

Certificate of Accreditation

(Certificate No: L0382-230823)

This is to certify that

Taiwan Testing and Certification Center

Calibration Laboratory of Hsinchu

2F-5, No.47, Park Avenue II, Science-Based Industrial Park, Hsinchu 300, Taiwan (R.O.C.)

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025: 2017; CNS 17025: 2018
Accreditation Number	:	0382
Originally Accredited	:	June 15, 1999
Effective Period	:	August 09, 2023 to August 08, 2026
Accredited Scope	:	Calibration Field, see described in the Appendix

Scan to verify

Ching-Chang Lien
President, Taiwan Accreditation Foundation
August 23, 2023

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

Accreditation Number : 0382
Laboratory Head : YEH, Ming-Hai

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
KC4002 Torque Screwdriver	Torquce Screwdriver Tester Nobar /NORBAR TST2 Nobar /NORBAR TST10	ISO 6789	0.02	N·m	<0.04	N·m	C.W.	15	%
			0.04	N·m	<0.2	N·m	C.W.	7.5	%
			0.2	N·m	<0.4	N·m	C.W.	2.0	%
			0.4	N·m	4	N·m	C.W.	1.5	%
			0.02	N·m	<0.04	N·m	C.C.W.	14	%
			0.04	N·m	<0.2	N·m	C.C.W.	7.3	%
			0.2	N·m	<0.4	N·m	C.C.W.	1.8	%
			0.4	N·m	4	N·m	C.C.W.	1.4	%
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

Pressure/Vacuum

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
KD1003 Mercury manometer /Atmospheric pressure gauge (On-site calibration included)	Pressure Indicator GE Druck /PACE1000	Document No.: B00-CD-461	3.5 (35)	kPa (mbar)	140 (1400)	kPa (mbar)		0.023 (0.23)	kPa (mbar)
			>140 (1400)	kPa (mbar)	210 (2100)	kPa (mbar)		0.025 (0.25)	kPa (mbar)
			>210 (2100)	kPa (mbar)	280 (2800)	kPa (mbar)		0.025 (0.25)	kPa (mbar)
			>280 (2800)	kPa (mbar)	350 (3500)	kPa (mbar)		0.026 (0.26)	kPa (mbar)
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KD1004 Pressure gauge (OIL PRESSURE GAUGE) (on-site calibration included)	Pressure gauge PDK /PDR1000 PDK /PDR500	Document No.: B00-CD-550	0	MPa	150	MPa	OIL PRESSURE GAUGE	0.37	MPa
			>150	MPa	250	MPa	OIL PRESSURE GAUGE	0.5	MPa
			>250	MPa	500	MPa	OIL PRESSURE GAUGE	3.1	MPa
			0	MPa	50	MPa	OIL PRESSURE GAUGE (On-site calibration)	0.37	MPa
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KD1004 Pressure gauge (for Gas) (On-site calibration included)	Pressure gauge Additel/ADT681 Additel/ADT672 Fluke/PM-200-G4M Fluke/PM-200-G20M GE Druck/CM0-10G	Document No.: B00-CD-463	-97 (-0.98)	kPa (kgf/cm^2)	-95 (-0.97)	kPa (kgf/cm^2)	AIR PRESSURE GAUGE	0.064 (0.00065)	kPa (kgf/cm^2)
			>-95 (-0.97)	kPa (kgf/cm^2)	0 (0)	kPa (kgf/cm^2)	AIR PRESSURE GAUGE	0.023 (0.00023)	kPa (kgf/cm^2)
			>0 (0)	kPa (kgf/cm^2)	700 (7.14)	kPa (kgf/cm^2)	AIR PRESSURE GAUGE	0.12 (0.0012)	kPa (kgf/cm^2)
			>700 (7.14)	kPa (kgf/cm^2)	2068.0 (21.09)	kPa (kgf/cm^2)	AIR PRESSURE GAUGE	1.0 (0.010)	kPa (kgf/cm^2)
			>2068.0 (21.09)	kPa (kgf/cm^2)	19995.5 (203.9)	kPa (kgf/cm^2)	AIR PRESSURE GAUGE	9.4 (0.096)	kPa (kgf/cm^2)
			>19995.5 (203.9)	kPa (kgf/cm^2)	20685 (210.9)	kPa (kgf/cm^2)	AIR PRESSURE GAUGE	32 (0.33)	kPa (kgf/cm^2)
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KD1007 Differential Pressure Gauge (On-site calibration included)	Pressure Indicator Pressure Calibrator FLUKE /RPM4 BG15Ks	Document No.: B00-CD-482	-15	kPa	15	kPa		1.7	Pa
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KE1002 Platinum Resistance Thermometer	Platinum Resistance Thermometer Fluke/5628 Fluke/1529 Fluke/5609 Isotech/Venus 2140 /935-14-82 (on-site calibration)	Document No.: B00-CD-474 Document No.: B00-CD-570 (on-site calibration)	-196	℃	-196	℃		0.058	℃
			-193	℃	-80	℃		0.083	℃
			>-80	℃	0	℃		0.063	℃
			>0	℃	130	℃		0.058	℃
			>130	℃	600	℃		0.065	℃
			-25	℃	<0	℃	on-site calibration	0.3	℃
			0	℃	100	℃	on-site calibration	0.23	℃
			>100	℃	135	℃	on-site calibration	0.3	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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 (on-site calibration included)	Platinum Resistance Thermometer Fluke/5628 Fluke/1529 Fluke/5609 Isotech/Venus 2140/935-14-82 (on-site calibration)	Document No.: B00-CD-475 Document No.: B00-CD-571 (on-site calibration)	-193	℃	-80	℃	Type J, K, T	0.59	℃
			-80	℃	400	℃	Type T	0.58	℃
			-80	℃	600	℃	Type J, K	0.58	℃
			-25	℃	0	℃	on-site calibration: TypeK, J, T	0.7	℃
			0	℃	100	℃	on-site calibration: TypeK, J, T	0.63	℃
			100	℃	135	℃	on-site calibration: TypeK, J, T	0.7	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KE1006 Temperature Meter (on-site calibration included) Temperature Recorder (on-site calibration included)	RESISTANCE DECADE BOX /IET HARS-X-8-0.01 Multifunction Process Calibrator /Additel 222A	Document No.: B00-CD-568	-200	℃	850	℃	PT100	0.064	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KE1006 Temperature Meter (on-site calibration included) Temperature Recorder (on-site calibration included)	Thermocouple Simulator Eurotron /MicroCal 2000+	Document No.: B00-CD-403	-200	℃	800	℃	J type	0.52	℃
			-200	℃	1000	℃	K type	0.48	℃
			-200	℃	400	℃	T type	0.54	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KE1008 Thermocouple Simulator (on-site calibration included) Temperature Calibrator (on-site calibration included)	Thermocouple Simulator Eurotron/MicroCal 2000+	Document No.: B00-CD-403	-200	℃	-100	℃	J type	0.5	℃
			-100	℃	800	℃	J type	0.52	℃
			-200	℃	-100	℃	K type	0.7	℃
			-100	℃	1000	℃	K type	0.67	℃
			-200	℃	-100	℃	T type	0.8	℃
			-100	℃	400	℃	T type	0.66	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KE1009 Temperature Calibrator (on-site calibration included)	RESISTANCE DECADE BOX /IET HARS-X-8-0.01 Multifunction Meter /PicoTest M3522A	Document No.: B00-CD-568	-200	℃	850	℃	PT100	0.013	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KE1010 Temperature Test Chamber (on-site calibration included)	Recorder YOKOGAWA /MV2020+T-TYPE	Document No.: B00-CD-448	-75	℃	250	℃	temperature	0.96	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KE2001 Hygrometer (on-site calibration included)	Hygrometer ROTRONIC/HP22A Recoder YOKOGAWA/DX230-1-1 +PT100	Document No.: B00-CD-295	10	℃	70	℃	temperature	0.5	℃
			30	%	95	%	relative humidity (@ 10℃ to 70℃)	2.2	%
			-60	℃	150	℃	temperature	0.66	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KE2004 Temperature & Humidity Recorder (on-site calibration included)	Hygrometer ROTRONIC/HP22A Recoder YOKOGAWA/DX230-1-1 +PT100	Document No.: B00-CD-295	10	℃	70	℃	temperature	0.5	℃
			30	%	95	%	relative humidity (@ 10℃ to 70℃)	2.2	%
			-60	℃	150	℃	temperature	0.66	℃
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KE2005 Temperature & Humidity Test Chamber (on-site calibration included)	Recorder YOKOGAWA/MV2020+T-TYPE	Document No.: B00-CD-449	20	℃	95	℃	temperature	0.96	℃
			30	%	98	%	relative humidity (@ 20℃ to 95℃)	3.1	%
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KE2099 Water Activity Meter (relative humidity type)	Hygrometer ROTRONIC /HP22A	Document No.: B00-CD-295	30 (0.3)	% (Aw)	95 (0.95)	% (Aw)	Relative humidity [Water Activity (Aw)]: 100 %RH=1.000 Aw	2.2 (0.022)	% (Aw)
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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 DC Voltage Meter DC Voltage Source Electrometer (Includes the negative voltage Calibration, On Site Calibration)	Electrometer /Keithley /6517B Multimeter /Fluke/8508A Multifunction Calibrator /Fluke/5700A	Document No.: B00-CD-496	1	V	1	V	DC Voltage Meter, Electrometer (@2 V)	0.15	mV/V
			1.9	V	1.9	V	DC Voltage Meter, Electrometer (@2 V)	0.15	mV/V
			10	V	10	V	DC Voltage Meter, Electrometer (@20 V)	0.068	mV/V
			19	V	19	V	DC Voltage Meter, Electrometer (@20 V)	0.068	mV/V
			100	V	100	V	DC Voltage Meter, Electrometer (@200 V)	0.064	mV/V
			190	V	190	V	DC Voltage Meter, Electrometer (@200 V)	0.064	mV/V
			1000	V	1000	V	DC Voltage Meter (@1000 V)	0.06	mV/V
			0	V	0	V	DC Voltage Meter, Electrometer (@100 V)	0.28	mV
			0	V	0	V	DC Voltage Meter (@1000 V)	1.3	mV
			1	V	1	V	DC Voltage Source, Electrometer (@2 V)	0.15	mV/V
			1.9	V	1.9	V	DC Voltage Source, Electrometer (@2 V)	0.15	mV/V

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 DC Voltage Meter DC Voltage Source Electrometer (Includes the negative voltage Calibration, On Site Calibration)	Electrometer /Keithley /6517B Multimeter /Fluke/8508A Multifunction Calibrator /Fluke/5700A	Document No.: B00-CD-496	10	V	10	V	DC Voltage Source, Electrometer (@20 V)	0.068	mV/V
			19	V	19	V	DC Voltage Source, Electrometer (@20 V)	0.068	mV/V
			100	V	100	V	DC Voltage Source, Electrometer (@200 V)	0.064	mV/V
			190	V	190	V	DC Voltage Source, Electrometer (@200 V)	0.064	mV/V
			100	V	100	V	DC Voltage Source, Electrometer (@100 V)	0.036	mV/V
			1000	V	1000	V	DC Voltage Source, Electrometer (@1000 V)	0.06	mV/V
			0	V	0	V	DC Voltage Source, Electrometer (@100 V)	0.28	mV
			0	V	0	V	DC Voltage Source, Electrometer (@1000 V)	1.3	mV
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1001 DCV Source DC Volt Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A	Document No.: B00-CD-213	1	mV	10	mV	(@200 mV)	0.96	mV/V
			10	mV	199	mV	(@200 mV)	0.13	mV/V
			0.1	V	1.99	V	(@2 V)	16	µV/V
			1	V	19.9	V	(@20 V)	11	µV/V
			10	V	199	V	(@200 V)	30	µV/V
			200	V	1000	V	(@1000 V)	13	µV/V
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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 Ampere Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A	Document No.: B00-CD-211	1	μA	190	μA	(@200 μA)	0.59	mA/A
			0.1	mA	19	mA	(@2 mA)	0.048	mA/A
			1	mA	19	mA	(@20 mA)	0.064	mA/A
			10	mA	190	mA	(@200 mA)	0.18	mA/A
			0.1	A	2	A	(@2 A)	0.23	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1002 DC Current Source DC Current Meter Electrometer (Includes the negative Current Calibration, On-Site Calibration Included)	Electrometer Keithley/6517B Current Source Keithley/220 Calibrator Keithley/263	Document No.: B00-CD-496	10	pA	10	pA	(@20 pA)	2.6	mA/A
			19	pA	19	pA	(@20 pA)	2.6	mA/A
			100	pA	100	pA	(@200 pA)	1.3	mA/A
			190	pA	190	pA	(@200 pA)	1.3	mA/A
			1	nA	1	nA	(@2 nA)	0.42	mA/A
			1.9	nA	1.9	nA	(@2 nA)	0.42	mA/A
			10	nA	10	nA	(@20 nA)	0.45	mA/A
			19	nA	19	nA	(@20 nA)	0.45	mA/A
			100	nA	100	nA	(@200 nA)	0.43	mA/A
			190	nA	190	nA	(@200 nA)	0.43	mA/A
			1	μA	1	μA	(@2 μA)	0.74	mA/A
			1.9	μA	1.9	μA	(@2 μA)	0.74	mA/A
			10	μA	10	μA	(@20 μA)	0.90	mA/A
			19	μA	19	μA	(@20 μA)	0.90	mA/A
			100	μA	100	μA	(@200 μA)	0.15	mA/A
			190	μA	190	μA	(@200 μA)	0.15	mA/A
			1	mA	1	mA	(@2 mA)	0.11	mA/A
			1.9	mA	1.9	mA	(@2 mA)	0.11	mA/A
			10	mA	10	mA	(@20 mA)	0.10	mA/A

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 DC Current Source DC Current Meter Electrometer (Includes the negative Current Calibration, On-Site Calibration Included)	Electrometer Keithley/6517B Current Source Keithley/220 Calibrator Keithley/263	Document No.: B00-CD-496	19	mA	19	mA	(@20 mA)	0.10	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1003 High Digital Voltage Meter (on-site calibration included) High Digital Voltage Source (on-site calibration included)	High Digital Voltage Meter KIKUSUI 149-10A	Document No.: B00-CD-406	1	kV	10	kV		7.0	mV/V
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1004 DC Current Meter DC Current Source DC Current Shunt (Includes the negative Current Calibration, On Site Calibration)	Calibrator/Current Amplifer Fluke/5700A Fluke/52120A	Document No.: B00-CD-396	2	A	100	A	Current Meter	0.10	mA/A
			2	A	100	A	Current Source	0.14	mA/A
			2	A	100	A	Current Shunt	0.28	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KF1004 DC Clamp on Meter DC Current Meter DC Current Source (Includes the negative Current Calibration, On Site Calibration)	Current Amplifier Fluke/52120A Current Coil Fluke/52120A /Coil 3kA	Document No.: B00-CD-465	0	A	0	A		0.77	mA
			0	A	2	A		0.097	mA/A
			2	A	20	A		0.088	mA/A
			20	A	100	A		0.10	mA/A
			100	A	200	A		0.24	mA/A
			200	A	1000	A		0.28	mA/A
			1000	A	2500	A		0.48	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight/33622A	Document No.: B00-CD-214	10	mV	10	mV	ACV Source (@1 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Source (@1 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Source (@1 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Source (@1 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Source (@1 Hz)	0.65	mV/V
			500	mV	500	mV	ACV Source (@1 Hz)	0.51	mV/V
			1	V	1	V	ACV Source (@1 Hz)	1.3	mV/V
			2	V	2	V	ACV Source (@1 Hz)	1.3	mV/V
			5	V	5	V	ACV Source (@1 Hz)	0.52	mV/V
			7	V	7	V	ACV Source (@1 Hz)	0.55	mV/V
			10	mV	10	mV	ACV Source (@2 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Source (@2 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Source (@2 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Source (@2 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Source (@2 Hz)	0.64	mV/V
			500	mV	500	mV	ACV Source (@2 Hz)	0.51	mV/V
			1	V	1	V	ACV Source (@2 Hz)	1.3	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight/33622A	Document No.: B00-CD-214	2	V	2	V	ACV Source (@2 Hz)	1.3	mV/V
			5	V	5	V	ACV Source (@2 Hz)	0.51	mV/V
			7	V	7	V	ACV Source (@2 Hz)	0.55	mV/V
			10	mV	10	mV	ACV Source (@5 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Source (@5 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Source (@5 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Source (@5 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Source (@5 Hz)	0.65	mV/V
			500	mV	500	mV	ACV Source (@5 Hz)	0.51	mV/V
			1	V	1	V	ACV Source (@5 Hz)	1.3	mV/V
			2	V	2	V	ACV Source (@5 Hz)	1.3	mV/V
			5	V	5	V	ACV Source (@5 Hz)	0.51	mV/V
			7	V	7	V	ACV Source (@5 Hz)	0.55	mV/V
			10	mV	10	mV	ACV Source (@10 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Source (@10 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Source (@10 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Source (@10 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Source (@10 Hz)	0.65	mV/V
			500	mV	500	mV	ACV Source (@10 Hz)	0.51	mV/V
			1	V	1	V	ACV Source (@10 Hz)	1.3	mV/V
			2	V	2	V	ACV Source (@10 Hz)	1.3	mV/V
			5	V	5	V	ACV Source (@10 Hz)	0.51	mV/V
			7	V	7	V	ACV Source (@10 Hz)	0.55	mV/V
			10	mV	10	mV	ACV Source (@20 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Source (@20 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Source (@20 Hz)	1.3	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight /33622A	Document No.: B00-CD-214	100	mV	100	mV	ACV Source (@20 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Source (@20 Hz)	0.64	mV/V
			500	mV	500	mV	ACV Source (@20 Hz)	0.51	mV/V
			1	V	1	V	ACV Source (@20 Hz)	1.3	mV/V
			2	V	2	V	ACV Source (@20 Hz)	1.3	mV/V
			5	V	5	V	ACV Source (@20 Hz)	0.51	mV/V
			7	V	7	V	ACV Source (@20 Hz)	0.55	mV/V
			10	mV	199	mV	ACV Source (Rnage: 200 mV@20 Hz)	0.80	mV/V
			0.1	V	1.99	V	ACV Source (Rnage: 2 V@20 Hz)	0.24	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@20 Hz)	0.27	mV/V
			10	mV	199	mV	ACV Source (Rnage: 200 mV@100 Hz)	0.64	mV/V
			0.1	V	1.99	V	ACV Source (Rnage: 2 V@100 Hz)	0.10	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@100 Hz)	0.065	mV/V
			10	mV	199	mV	ACV Source (Rnage: 20 V@3 kHz)	0.14	mV/V
			0.1	V	1.99	V	ACV Source (Rnage: 20 V@3 kHz)	0.10	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@3 kHz)	0.10	mV/V
			10	mV	199	mV	ACV Source (Rnage: 20 V@5 kHz)	0.66	mV/V
			0.1	V	1.99	V	ACV Source (Rnage: 20 V@5 kHz)	0.12	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@5 kHz)	0.11	mV/V
			10	mV	199	mV	ACV Source (Rnage: 20 V@10 kHz)	0.64	mV/V
			0.1	V	1.99	V	ACV Source (Rnage: 20 V@10 kHz)	0.12	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@10 kHz)	0.11	mV/V
			1	mV	10	mV	ACV Source (Rnage: 200 mV@50 Hz)	2.0	mV/V
			10	mV	199	mV	ACV Source (Rnage: 200 mV@50 Hz)	0.42	mV/V
			0.1	V	1.9	V	ACV Source (Rnage: 2 V@50 Hz)	0.13	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@50 Hz)	0.12	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight /33622A	Document No.: B00-CD-214	10	V	199	V	ACV Source (Rnage: 200 V@50 Hz)	0.12	mV/V
			100	V	1000	V	ACV Source (Rnage: 1000 V@50 Hz)	0.16	mV/V
			1	mV	10	mV	ACV Source (Rnage: 200 mV@60 Hz)	2.2	mV/V
			10	mV	199	mV	ACV Source (Rnage: 200 mV@60 Hz)	0.4	mV/V
			0.1	V	1.9	V	ACV Source (Rnage: 2 V@60 Hz)	0.13	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@60 Hz)	0.12	mV/V
			10	V	199	V	ACV Source (Rnage: 200 V@60 Hz)	0.12	mV/V
			100	V	1000	V	ACV Source (Rnage: 1000 V@60 Hz)	0.15	mV/V
			1	mV	10	mV	ACV Source (Rnage: 200 mV@400 Hz)	2.1	mV/V
			10	mV	199	mV	ACV Source (Rnage: 200 mV@400 Hz)	0.49	mV/V
			0.1	V	1.9	V	ACV Source (Rnage: 2 V@400 Hz)	0.11	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@400 Hz)	0.10	mV/V
			10	V	199	V	ACV Source (Rnage: 200 V@400 Hz)	0.10	mV/V
			100	V	1000	V	ACV Source (Rnage: 1000 V@400 Hz)	0.15	mV/V
			1	mV	10	mV	ACV Source (Rnage: 200 mV@1 kHz)	2.1	mV/V
			10	mV	199	mV	ACV Source (Rnage: 200 mV@1 kHz)	0.47	mV/V
			0.1	V	1.9	V	ACV Source (Rnage: 2 V@1 kHz)	0.11	mV/V
			1	V	19.9	V	ACV Source (Rnage: 20 V@1 kHz)	0.10	mV/V
			10	V	199	V	ACV Source (Rnage: 200 V@1 kHz)	0.10	mV/V
			100	V	1000	V	ACV Source (Rnage: 1000 V@1 kHz)	0.15	mV/V
			10	mV	10	mV	ACV Meter (@1 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Meter (@1 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Meter (@1 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Meter (@1 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Meter (@1 Hz)	0.64	mV/V
			500	mV	500	mV	ACV Meter (@1 Hz)	0.51	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight /33622A	Document No.: B00-CD-214	1	V	1	V	ACV Meter (@1 Hz)	1.3	mV/V
			2	V	2	V	ACV Meter (@1 Hz)	1.3	mV/V
			5	V	5	V	ACV Meter (@1 Hz)	0.51	mV/V
			7	V	7	V	ACV Meter (@1 Hz)	0.55	mV/V
			10	mV	10	mV	ACV Meter (@2 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Meter (@2 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Meter (@2 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Meter (@2 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Meter (@2 Hz)	0.63	mV/V
			500	mV	500	mV	ACV Meter (@2 Hz)	0.51	mV/V
			1	V	1	V	ACV Meter (@2 Hz)	1.3	mV/V
			2	V	2	V	ACV Meter (@2 Hz)	1.3	mV/V
			5	V	5	V	ACV Meter (@2 Hz)	0.51	mV/V
			7	V	7	V	ACV Meter (@2 Hz)	0.54	mV/V
			10	mV	10	mV	ACV Meter (@5 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Meter (@5 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Meter (@5 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Meter (@5 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Meter (@5 Hz)	0.63	mV/V
			500	mV	500	mV	ACV Meter (@5 Hz)	0.51	mV/V
			1	V	1	V	ACV Meter (@5 Hz)	1.3	mV/V
			2	V	2	V	ACV Meter (@5 Hz)	1.3	mV/V
			5	V	5	V	ACV Meter (@5 Hz)	0.51	mV/V
			7	V	7	V	ACV Meter (@5 Hz)	0.54	mV/V
			10	mV	10	mV	ACV Meter (@10 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Meter (@10 Hz)	1.3	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight /33622A	Document No.: B00-CD-214	50	mV	50	mV	ACV Meter (@10 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Meter (@10 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Meter (@10 Hz)	0.63	mV/V
			500	mV	500	mV	ACV Meter (@10 Hz)	0.51	mV/V
			1	V	1	V	ACV Meter (@10 Hz)	1.3	mV/V
			2	V	2	V	ACV Meter (@10 Hz)	1.3	mV/V
			5	V	5	V	ACV Meter (@10 Hz)	0.51	mV/V
			7	V	7	V	ACV Meter (@10 Hz)	0.54	mV/V
			10	mV	10	mV	ACV Meter (@10 Hz)	1.3	mV/V
			20	mV	20	mV	ACV Meter (@20 Hz)	1.3	mV/V
			50	mV	50	mV	ACV Meter (@20 Hz)	1.3	mV/V
			100	mV	100	mV	ACV Meter (@20 Hz)	1.3	mV/V
			200	mV	200	mV	ACV Meter (@20 Hz)	0.63	mV/V
			500	mV	500	mV	ACV Meter (@20 Hz)	0.51	mV/V
			1	V	1	V	ACV Meter (@20 Hz)	1.3	mV/V
			2	V	2	V	ACV Meter (@20 Hz)	1.3	mV/V
			5	V	5	V	ACV Meter (@20 Hz)	0.51	mV/V
			7	V	7	V	ACV Meter (@20 Hz)	0.54	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 200 mV@20 Hz)	0.80	mV/V
			0.1	V	1.99	V	ACV Meter (Rnage: 2 V@20 Hz)	0.24	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@20 Hz)	0.24	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 200 mV@100 Hz)	0.64	mV/V
			0.1	V	1.99	V	ACV Meter (Rnage: 2 V@100 Hz)	0.087	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@100 Hz)	0.035	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 20 V@3 kHz)	0.64	mV/V
			0.1	V	1.99	V	ACV Meter (Rnage: 20 V@3 kHz)	0.086	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight /33622A	Document No.: B00-CD-214	1	V	19.9	V	ACV Meter (Rnage: 20 V@3 kHz)	0.034	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 20 V@5 kHz)	0.64	mV/V
			0.1	V	1.99	V	ACV Meter (Rnage: 20 V@5 kHz)	0.086	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@5 kHz)	0.034	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 20 V@10 kHz)	0.64	mV/V
			0.1	V	1.99	V	ACV Meter (Rnage: 20 V@10 kHz)	0.086	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@10 kHz)	0.034	mV/V
			1	mV	10	mV	ACV Meter (Rnage: 200 mV@50 Hz)	2.0	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 200 mV@50 Hz)	0.42	mV/V
			0.1	V	1.9	V	ACV Meter (Rnage: 2 V@50 Hz)	0.088	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@50 Hz)	0.058	mV/V
			10	V	199	V	ACV Meter (Rnage: 200 V@50 Hz)	0.063	mV/V
			100	V	1000	V	ACV Meter (Rnage: 1000 V@50 Hz)	0.10	mV/V
			1	mV	10	mV	ACV Meter (Rnage: 200 mV@60 Hz)	2.1	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 200 mV@60 Hz)	0.40	mV/V
			0.1	V	1.9	V	ACV Meter (Rnage: 2 V@60 Hz)	0.088	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@60 Hz)	0.058	mV/V
			10	V	199	V	ACV Meter (Rnage: 200 V@60 Hz)	0.063	mV/V
			100	V	1000	V	ACV Meter (Rnage: 1000 V@60 Hz)	0.10	mV/V
			1	mV	10	mV	ACV Meter (Rnage: 200 mV@400 Hz)	2.1	mV/V
			10	mV	199	mV	ACV Meter (Rnage: 200 mV@400 Hz)	0.48	mV/V
			0.1	V	1.9	V	ACV Meter (Rnage: 2 V@400 Hz)	0.087	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@400 Hz)	0.053	mV/V
			10	V	199	V	ACV Meter (Rnage: 200 V@400 Hz)	0.061	mV/V
			100	V	1000	V	ACV Meter (Rnage: 1000 V@400 Hz)	0.10	mV/V
			1	mV	10	mV	ACV Meter (Rnage: 200 mV@1 kHz)	2.1	mV/V

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
KF1011 ACV Source ACV Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A Keysight /33622A	Document No.: B00-CD-214	10	mV	199	mV	ACV Meter (Rnage: 200 mV@1 kHz)	0.47	mV/V
			0.1	V	1.9	V	ACV Meter (Rnage: 2 V@1 kHz)	0.089	mV/V
			1	V	19.9	V	ACV Meter (Rnage: 20 V@1 kHz)	0.053	mV/V
			10	V	199	V	ACV Meter (Rnage: 200 V@1 kHz)	0.056	mV/V
			100	V	1000	V	ACV Meter (Rnage: 1000 V@1 kHz)	0.10	mV/V
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1012 ACA Source AC Ampere Meter (on-site calibration included)	Multimeter Fluke/8508A Calibrator Fluke/5700A	Document No.: B00-CD-212	10	μA	190	μA	(Range: 200 μA@50 Hz, 60 Hz, 400 Hz, 1 kHz)	2.1	mA/A
			0.1	mA	1.9	mA	(Range: 2 mA@50 Hz, 60 Hz, 400 Hz, 1 kHz)	0.53	mA/A
			1	mA	19	mA	(Range: 20 mA@50 Hz, 60 Hz, 400 Hz, 1 kHz)	0.46	mA/A
			10	mA	190	mA	(Range: 200 mA@50 Hz, 60 Hz, 400 Hz, 1 kHz)	0.45	mA/A
			0.1	A	1.9	A	(Range: 2 A@50 Hz, 60 Hz, 400 Hz, 1 kHz)	0.81	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1013 High Digital Voltage Meter (on-site calibration included) High AC Power Source (on-site calibration included)	High Voltage Digital Meter KIKUSUI 149-10A	Document No.: B00-CD-407	1	kV	10	kV	(@60 Hz)	13	mV/V
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KF1014 AC Current Meter (on-site calibration included) AC Current Source (on-site calibration included)	Calibrator/Current Amplifier Fluke/5700A Fluke/52120A	Document No.: B00-CD-397	2	A	120	A	(@50 Hz, 60 Hz)	0.69	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF1014 AC Clamp on Meter AC Current Meter AC Current Source (On-Site Calibration)	Current Amplifier Fluke/52120A Current coil Fluke/52120A /Coil 3KA Fluke/52120A /Coil 6KA	Document No.: B00-CD-465	0.1	A	2	A	(@50 Hz)	0.28	mA/A
			2	A	20	A	(@50 Hz)	0.21	mA/A
			20	A	120	A	(@50 Hz)	0.68	mA/A
			100	A	200	A	(@50 Hz)	0.78	mA/A
			200	A	1000	A	(@50 Hz)	0.87	mA/A
			1000	A	6000	A	(@50 Hz)	2.8	mA/A
			0.1	A	2	A	(@60 Hz)	0.25	mA/A
			2	A	20	A	(@60 Hz)	0.21	mA/A
			20	A	120	A	(@60 Hz)	0.68	mA/A
			100	A	200	A	(@60 Hz)	0.69	mA/A
			200	A	1000	A	(@60 Hz)	0.88	mA/A
			1000	A	6000	A	(@60 Hz)	2.8	mA/A
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KF1099 Current Coil	Current Coil Fluke/52120A /COIL3KA Fluke/52120A /COIL6KA	Document No.: B00-CD-497	10		10		DC	0.60	%
			50		50		DC	0.60	%
			10		10		50 Hz	0.47	%
			50		50		50 Hz	0.47	%
			10		10		60 Hz	0.47	%
			50		50		60 Hz	0.47	%
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF3001 Ground Bond Testers	Standard Resistor BURSTER/1282	Document No.: B00-CD-404	10	mΩ	10	mΩ	(@25 A, 60 Hz)	59	mΩ/Ω
			10	mΩ	10	mΩ	(@40 A, 60 Hz)	59	mΩ/Ω
			10	mΩ	10	mΩ	(@60 A, 60 Hz)	59	mΩ/Ω
			50	mΩ	50	mΩ	(@25 A, 60 Hz)	16	mΩ/Ω
			50	mΩ	50	mΩ	(@40 A, 60 Hz)	16	mΩ/Ω
			50	mΩ	50	mΩ	(@60 A, 60 Hz)	16	mΩ/Ω
			100	mΩ	100	mΩ	(@25 A, 60 Hz)	13	mΩ/Ω
			100	mΩ	100	mΩ	(@40 A, 60 Hz)	13	mΩ/Ω
			100	mΩ	100	mΩ	(@60 A, 60 Hz)	13	mΩ/Ω
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF3001 Resistor Ohmmeter (On-Side Calibration Included)	Multimeter Fluke/8508 Low Resistance Multiple Shunt OHM-LABS/7707 Current Transformer LEM/ITN1000-S	Document No.: B00-CD-567	5	μΩ	5	μΩ	Standard Resistor	6.5	mΩ/Ω
			10	μΩ	10	μΩ	Standard Resistor	6.5	mΩ/Ω
			20	μΩ	20	μΩ	Standard Resistor	6.5	mΩ/Ω
			50	μΩ	50	μΩ	Standard Resistor	6.5	mΩ/Ω
			100	μΩ	100	μΩ	Standard Resistor	6.5	mΩ/Ω
			200	μΩ	200	μΩ	Standard Resistor	6.5	mΩ/Ω
			500	μΩ	500	μΩ	Standard Resistor	6.5	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
KF3001 Resistor Ohmmeter (On-Side Calibration Included)	Multimeter Fluke/8508 Low Resistance Multiple Shunt OHM-LABS/7707 Current Transformer LEM/ITN1000-S	Document No.: B00-CD-567	5	μΩ	5	μΩ	Ohmmeter	1.9	mΩ/Ω
			10	μΩ	10	μΩ	Ohmmeter	1.9	mΩ/Ω
			20	μΩ	20	μΩ	Ohmmeter	1.9	mΩ/Ω
			50	μΩ	50	μΩ	Ohmmeter	1.9	mΩ/Ω
			100	μΩ	100	μΩ	Ohmmeter	1.9	mΩ/Ω
			200	μΩ	200	μΩ	Ohmmeter	1.9	mΩ/Ω
			500	μΩ	500	μΩ	Ohmmeter	1.9	mΩ/Ω
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF3001 Resistor Ohmmeter (On-Side Calibration Included)	Standard Resistor IET/HARS-X-8 IET/HRRS-B-6 FLUKE 8508A KEITHLEY 6517B YOKOGAWA 2792	Document No.: B00-CD-442, B00-CD-443	0.001	Ω	0.001	Ω	Resistor	0.16	mΩ/Ω
			0.01	Ω	0.01	Ω	Resistor	0.22	mΩ/Ω
			0.02	Ω	0.02	Ω	Resistor	0.22	mΩ/Ω
			0.05	Ω	0.05	Ω	Resistor	0.20	mΩ/Ω
			0.1	Ω	0.1	Ω	Resistor	0.21	mΩ/Ω
			0.2	Ω	0.2	Ω	Resistor	0.034	mΩ/Ω
			0.5	Ω	0.5	Ω	Resistor	0.031	mΩ/Ω
			1.0	Ω	1.0	Ω	Resistor	0.031	mΩ/Ω
			2.0	Ω	2.0	Ω	Resistor	0.022	mΩ/Ω
			0.001	Ω	2.0	Ω	Resistor	0.22	mΩ/Ω
			2	Ω	20	Ω	Resistor	0.028	mΩ/Ω
			20	Ω	200	Ω	Resistor	0.021	mΩ/Ω
			200	Ω	2	kΩ	Resistor	0.022	mΩ/Ω
			2	kΩ	20	kΩ	Resistor	0.021	mΩ/Ω
			20	kΩ	200	kΩ	Resistor	0.026	mΩ/Ω
			200	kΩ	2.0	MΩ	Resistor	0.10	mΩ/Ω
			2	MΩ	20	MΩ	Resistor	0.10	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
KF3001 Resistor Ohmmeter (On-Side Calibration Included)	Standard Resistor IET/HARS-X-8 IET/HRRS-B-6 FLUKE 8508A KEITHLEY 6517B YOKOGAWA 2792	Document No.: B00-CD-442, B00-CD-443	20	MΩ	200	MΩ	Resistor	0.32	mΩ/Ω
			200	MΩ	2	GΩ	Resistor	0.69	mΩ/Ω
			1	GΩ	10	GΩ	Resistor	3.7	mΩ/Ω
			10	GΩ	100	GΩ	Resistor	6.7	mΩ/Ω
			100	GΩ	10000	GΩ	Resistor	15	mΩ/Ω
			0.001	Ω	0.001	Ω	Ohmmeter	0.14	mΩ/Ω
			0.01	Ω	0.01	Ω	Ohmmeter	0.21	mΩ/Ω
			0.02	Ω	0.02	Ω	Ohmmeter	0.21	mΩ/Ω
			0.05	Ω	0.05	Ω	Ohmmeter	0.20	mΩ/Ω
			0.1	Ω	0.1	Ω	Ohmmeter	0.20	mΩ/Ω
			0.2	Ω	0.2	Ω	Ohmmeter	0.032	mΩ/Ω
			0.5	Ω	0.5	Ω	Ohmmeter	0.031	mΩ/Ω
			1	Ω	1	Ω	Ohmmeter	0.031	mΩ/Ω
			2	Ω	2	Ω	Ohmmeter	0.021	mΩ/Ω
			0.001	Ω	2	Ω	Ohmmeter	0.21	mΩ/Ω
			2	Ω	20	Ω	Ohmmeter	0.024	mΩ/Ω
			20	Ω	200	Ω	Ohmmeter	0.021	mΩ/Ω
			200	Ω	2	kΩ	Ohmmeter	0.021	mΩ/Ω
			2	kΩ	20	kΩ	Ohmmeter	0.021	mΩ/Ω
			20	kΩ	200	kΩ	Ohmmeter	0.026	mΩ/Ω
			200	kΩ	2	MΩ	Ohmmeter	0.10	mΩ/Ω
			2	MΩ	20	MΩ	Ohmmeter	0.10	mΩ/Ω
			20	MΩ	200	MΩ	Ohmmeter	0.31	mΩ/Ω
			200	MΩ	2	GΩ	Ohmmeter	0.51	mΩ/Ω
			1	GΩ	10	GΩ	Ohmmeter	3.6	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
KF3001 Resistor Ohmmeter (On-Side Calibration Included)	Standard Resistor IET/HARS-X-8 IET/HRRS-B-6 FLUKE 8508A KEITHLEY 6517B YOKOGAWA 2792	Document No.: B00-CD-442, B00-CD-443	10	GΩ	100	GΩ	Ohmmeter	5.4	mΩ/Ω
			100	GΩ	1000	GΩ	Ohmmeter	15	mΩ/Ω
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KF3001 Resistor Ohmmeter (on-site calibration included)	Multimeter/Calibrator /Resistance standard Fluke/8508A Fluke/5700A Wavetek/1271 Fluke/742A-1	Document No.: B00-CD-215	1	Ω	1	Ω	4W Ohmmeter	1.2	μΩ/Ω
			10	Ω	10	Ω	4W Ohmmeter	7.3	μΩ/Ω
			100	Ω	100	Ω	4W Ohmmeter	6.6	μΩ/Ω
			1	kΩ	1	kΩ	4W Ohmmeter	3.3	μΩ/Ω
			10	kΩ	10	kΩ	4W Ohmmeter	3.4	μΩ/Ω
			100	kΩ	100	kΩ	4W Ohmmeter	12	μΩ/Ω
			1	MΩ	1	MΩ	4W Ohmmeter	6.7	μΩ/Ω
			10	MΩ	10	MΩ	4W Ohmmeter	18	μΩ/Ω
			100	MΩ	100	MΩ	2W Ohmmeter	60	μΩ/Ω
			1	Ω	1	Ω	4W Resistor	5.8	μΩ/Ω
			10	Ω	10	Ω	4W Resistor	8.3	μΩ/Ω
			100	Ω	100	Ω	4W Resistor	6.5	μΩ/Ω
			1	kΩ	1	kΩ	4W Resistor	3.1	μΩ/Ω
			10	kΩ	10	kΩ	4W Resistor	3.1	μΩ/Ω
			100	kΩ	100	kΩ	4W Resistor	6.4	μΩ/Ω
			1	MΩ	1	MΩ	4W Resistor	4.3	μΩ/Ω
			10	MΩ	10	MΩ	4W Resistor	16	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 Resistor Ohmmeter (on-site calibration included)	Multimeter/Calibrator /Resistance standard Fluke/8508A Fluke/5700A Wavetek/1271 Fluke/742A-1	Document No.: B00-CD-215	100	MΩ	100	MΩ	2W Resistor	56	μΩ/Ω
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

Time And Frequency

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
KJ0100 Stop Watch non-contact counter (on-site calibration included)	Rubidium Atomic Frequency Standard WAVETEK/909 Signal Generator Keysight/33622A	Document No.: B00-CD-417					time base measurement (@32768 Hz)	1.3×10^{-6}	
			1	s	1	h	direct comparison	0.058	s
			1	h	20	h	direct comparison	0.097	s
			20	h	24	h	direct comparison	0.12	s
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KJ0200 Frequency counter / Frequency generator/ Function generator/ Spectrum analyzer/ Network analyzer (on-site calibration included)	PSG Analog Signal Generator & Frequency Doubler Multiplier AGILENT E8257D & Marki D1550MN	Document No.: B00-CD-471	10 (0.1)	MHz (μs)	60 (16.7)	GHz (ps)		9.4×10^{-10}	
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									
KJ0200 Frequency generator Signal Generator Spectrum Analyzer (on-site calibration included)	Rubidium Atomic Frequency Standard WAVETEK/909 Signal Generator Keysight/33622A	Document No.: B00-CD-424	0.001 (1000)	Hz (s)	0.01 (100)	Hz (s)		2.7×10^{-8}	
			0.01 (100)	Hz (s)	1.0 (1)	Hz (s)		2.8×10^{-9}	
			1.0 (1)	Hz (s)	10 (0.1)	MHz (μs)		8.1×10^{-10}	
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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
KJ0300 Dodging frequency meter Tachometer Centrifuge (on-site calibration included)	Rubidium Atomic Frequency Standard WAVETEK/909 Signal Generator Keysight/33622A	Document No.: B00-CD-425	0.6	rpm	6	rpm	Dodging frequency meter	0.00085	rpm
			6	rpm	150	rpm	Dodging frequency meter	0.0084	rpm
			150	rpm	1500	rpm	Dodging frequency meter	0.061	rpm
			1500	rpm	15000	rpm	Dodging frequency meter	0.61	rpm
			15000	rpm	150000	rpm	Dodging frequency meter	6.1	rpm
			150000	rpm	600000	rpm	Dodging frequency meter	24	rpm
			2	rpm	5	rpm	Tachometer	0.0071	rpm
			5	rpm	100	rpm	Tachometer	0.011	rpm
			100	rpm	1000	rpm	Tachometer	0.088	rpm
			1000	rpm	10000	rpm	Tachometer	0.89	rpm
			10000	rpm	99990	rpm	Tachometer	6.1	rpm
			200	rpm	12000	rpm	Centrifuge	45	rpm
			600000	rpm	1000000	rpm	Dodging frequency meter	40	rpm
Approval Signatory: WANG, Vick; MOU, Wan-Chau; HSU, Chi-Shu; YEH, Ming-Hai; CHUNG, Po-Hsiung									

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