SCOPE OF ACCREDITATION TO ISO/IEC 17025-2005 & KS Q ISO/IEC 17025-2006

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CALIBRATION

Valid To :26-Oct-23 Accreditation No : KC07-220(1/41)

In recognition of the successful completion of the KOLAS evaluation process, accreditation is granted this laboratory to perform the following calibrations

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
102. Linear dimension			10503	Contact coordinate measuring machines	Y	20411	Gauge pressure gauges	Y
10201	Balls	N				20412	Pressure transducers/ transmitters	Y
10206	Dial/Cylinder gauge testers	N	10504	Non-Contact coordinate measuring machines	Y			
10209	End bars	N				20413	Dial type vacuum gauges	Y
10210	Extensometers, linear displacement transducers	Y	10511	Measuring microscopes, Profile projectors	Y	210. Hardness		
						21001	Brinell hardness testers	Y
10211	Filler gauges	N	10517	Stylus type Roughness testers	Y	21002	Rockwell hardness testers	Y
10213	Gap gauges	N				21003	Shore hardness testers	Y
10214	Gauge blocks, by comparison	N	10519	Roughness standard/ comparison specimens	N	21004	Vickers hardness testers	Y
10216	Height gauges / measuring machines	Y				21005	Durometer hardness testers	N
			10525	Thread plug gauges	N	21006	Leeb (D Type) hardness testers	N
10220	Standard measuring machines	Y	10526	Taper thread plug gauges	N	401.DC voltage & current		
10223	Electronic micrometers	N	10527	Thread ring gauges	N	40101	DC ammeters	Y
10224	Hight micrometers, Riser blocks	N	10529	V-blocks, box blocks	N	40103	DC voltage/current calibrators	Y
			106. Various dimensional					
10228	Cylinderical plug/pin gauge,Thread measuring wire gauges	N	10601	Inside/Outside/Gear tooth calipers, Caliper gauges	Y	40104	Electrical temperature calibrators	Y
			10603	Cylinder/Bore gauges	Y	40108	DC power supplies	Y
10229	Radius gauges	N	10604	Depth gauges, Depth micrometers	Y	40112	DC voltmeters	Y
10230	Cylindrical ring gauges	N				402. Resistance, Capacitance and inductance		
10232	Step gauges	N	16005	Dial/Digital gauges	Y			
10233	Taper thickness gauges	N	10609	Micro indicators, Test indicators	Y	40205	Earth testers	Y
10234	Ultrasonic Thickness	Y				40210	Insulation testers	Y
10235	Ultrasonic/coating thickness specimens	N	10610	Micrometer heads	N	40214	Resistance meters	Y
			10611	3-Point micrometers	Y	40215	Resistors	Y
10236	Coating thickness testers	Y	10612	Inside micrometers	Y	40217	Impedance bridges/LCR meters	Y
103. Angle			10613	Outside micrometers	Y	403.AC voltage, current & power		
10304	Blvel protractors	N	10617	Standard sieves	N	40301	AC ammeters	Y
10311	Plate/Square/Electric levels	N	10620	Welding gauges	N	40302	Clamp ammeters/voltmeters	Y
10318	Squareness testers, Right angle testers	N	201. Mass			40311	AC power meters	Y
			20109	Electric balances	Y	40312	AC power supplies	Y
10319	Cylindrical Squares	N	20112	Plarform scale balances	Y	40313	Puncture/safety testers	Y
10320	Precision surface	N	20113	Spring scale balances	Y	40318	AC voltmeters	Y
104. Form			20116	Weights	N	404.Other DC & LF Measurements		
10401	Form testers	Y	202. Force			40411	Function generators	Y
10405	Optical parallels	N	20203	Tension/compression testing machines	Y	40414	LF impulse generators	Y
10407	Precision surface plates	Y				40416	Leakage current testers	Y
10409	Roundness measurement instruments	Y	20204	Push-pull gauges	N	40417	Electronic AC/DC loads	Y
			203. Torque			40419	Analog/DAigital multimeter	Y
10412	Straight edges	N	20303	Torque wrenches/drivers	Y	40421	Oscilloscopes	Y
10415	Test bars	N	204. Pressure			40424	Volt/Current recorders	Y
105. Complex geometry			20408	Compound pressure gauges	Y	40435	AC/DC high voltage probes	Y
10502	Bench centers	N	20409	Differential pressure gauges	Y			

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
501. Contact thermometry								
50101	Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	Y						
50102	Temperature indicators /recorders/controllers, temperature calibrators	Y						
50103	Glass thermometers; liquid-in-glass, Beckmann	N						
50104	Resistance thermometers; SPRT, IPRT, thermistors, etc.	Y						
50105	Thermal expansion thermometers ; bimetal, gas or liquid type	N						
50106	Thermomecoules:noble metal , base metal, pure metal, special type, etc.	Y						
50107	Temperature transducers	N						
503.Humidity								
50302	Relative humidity hygrometers; polimer thinfilm, hair, etc.	N						
50303	Psychrometers; assmann ventilated, PRT type, etc.	N						
50304	Temperature humidity recorders ; Hygrothermograph, etc	N						
50305	Transducers; dew-point /relative humidity	N						
50306	Humidity generators; two-pressure, two-temperature,flow mixing humidity gererator, constant temperature and humidity chamber, etc.	Y						

Note

1. This laboratory provides calibration services in permanent standard laboratory and at on-site.
2. Laboratory conducts on-site calibration should meet requirements of KOLAS-SR-008.
3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.
4. Calibration and Measurement Capability (CMC) means capabilities provided by accredited calibration laboratories. It expresses the lowest uncertainty of measurement that can be achieved during a calibration. CMC normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k=2.
5.Due to the calibration environment such as reference standards or customers' facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than CMC on scope of accreditation in general.

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Balls	10201	(0 ~ 50) mm	$\sqrt{0.40^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Standard measuring machines, Gauge block / KIC-102-01
Dial/Cylinder gauge testers	10206	(0 ~ 5) mm (5 ~ 50) mm (50 ~ 100) mm	$\sqrt{0.26^2 + (0.003\ 3 \times l)^2}$ μm (l of the unit mm) $\sqrt{0.30^2 + (0.003\ 3 \times l)^2}$ μm (l of the unit mm) $\sqrt{0.36^2 + (0.003\ 3 \times l)^2}$ μm (l of the unit mm)	Electronic micrometers, Gauge block / KIC-102-06
End bars	10209	(25 ~ 1 000) mm	$\sqrt{1.1^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Electronic micrometers, Gauge block / KIC-102-09
Extensometers, linear displacement transducers	10210	(0 ~ 100) mm (100 ~ 300) mm (300 ~ 500) mm	$\sqrt{0.96^2 + (0.016 \times l)^2}$ μm (l of the unit mm) $\sqrt{1.4^2 + (0.016 \times l)^2}$ μm (l of the unit mm) $\sqrt{1.9^2 + (0.016 \times l)^2}$ μm (l of the unit mm)	Gauge block / KIC-102-10
Filler gauges	10211	(0 ~ 5) mm	0.46 μm	Standard measuring machines / KIC-102-11
Gap gauges	10213	(0 ~ 200) mm	$\sqrt{2.4^2 + (0.002\ 8 \times l)^2}$ μm (l of the unit mm)	Electronic micrometers, Hight micrometers / KIC-102-13
Gauge blocks, by comparison	10214	(0 ~ 100) mm	$\sqrt{82^2 + (1.3 \times l)^2}$ nm (l of the unit mm)	Gauge block comparators, Standard gauge block / KIC-102-14
Height gauges/measuring machines	10216	(0 ~ 1 000) mm	$\sqrt{1.3^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Step gauge, Gauge block / KIC-102-16
Standard measuring machines	10220	(0 ~ 500) mm	$\sqrt{0.23^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block / KIC-102-20
Electronic micrometers	10223	(0 ~ 10) mm	0.18 μm	Gauge block / KIC-102-23
Height micrometers, Riser blocks Height micrometers Head Block Riser blocks Height Parallelism	10224	 (0 ~ 30) mm (0 ~ 600) mm (0 ~ 600) mm (0 ~ 600) mm	 1.1 μm $\sqrt{1.1^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm) $\sqrt{1.5^2 + (0.003\ 1 \times l)^2}$ μm (l의 단위는 mm) 1.5 μm	Electronic micrometers, Gauge block, Precision surface plates / KIC-102-24 Electronic micrometers, Long gauge block, Precision surface plates / KIC-102-24-1
Cylindricas plug/pin gauges, Thread measuring wire gauges Cylindricas plug/pin gauges Thread measuring wire gauges	10228	 (0 ~ 200) mm (0 ~ 3.2) mm	 $\sqrt{0.84^2 + (0.002\ 8 \times l)^2}$ μm (l of the unit mm) 0.41 μm	 Standard measuring machines / KIC-102-28 Standard measuring machines / KIC-102-28-1
Radius gauges	10229	(0.1 ~ 60.0) mm	4.4 μm	Profile projector / KIC-102-29
Cylindrical ring gauges	10230	(2 ~ 300) mm	$\sqrt{0.54^2 + (0.003\ 2 \times l)^2}$ μm (l의 단위는 mm)	Gauge block, Standard measuring machines / KIC-102-30
Step gauges	10232	(0 ~ 1 010) mm	$\sqrt{1.1^2 + (0.003\ 0 \times l)^2}$ μm (l of the unit mm)	Electronic micrometers Gauge block / KIC-102-32
Taper thickness gauges	10233	(0 ~ 60) mm	13 μm	Profile projector / KIC-102-33

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Ultrasonic thickness gauges	10234	(0 ~ 50) mm	2.0 μm	Ultrasonic thickness specimens / KIC-102-34
		(50 ~ 200) mm	7.9 μm	
Ultrasonic/coating thickness specimens	10235			
Coating thickness specimens		(0 ~ 10) mm	3.5 μm	Standard measuring machines Electronic micrometers / KIC-102-35-1
Floor plan of 0 point metal plate		(0 ~ 1) mm	0.9 μm	
Ultrasonic thickness specimens		(0 ~ 300) mm	$\sqrt{0.88^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block, Long gauge blocks, Electronic micrometers / KIC-102-35-2
Coating thickness testers	10236	(0 ~ 1.5) mm	1.5 μm	Coating thickness specimens / KIC-102-36
		(1.5 ~ 5) mm	1.7 μm	
		(5 ~ 15) mm	6.0 μm	

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Blvel protractors	10304			Angle gauge block, Profile projector / KIC-103-04
Accuracy of scale		(0 ~ 90)°	0.8′	
Angle of angle fitting and reference plane		(0 ~ 90)°	1.5′	
Plate/Square/Electric levels	10311			Level Tester, Precision surface plates, Electronic micrometers, Gauge block, Squareness testers / KIC-103-11-1 KIC-103-11-2 KIC-103-11-3
Accuracy		± 1.5 °	3.2 μm/m	
flatness		(0 ~ 300) mm	1.5 μm	
Square levels		(0 ~ 300) mm	8.8 μm/m	
Squareness testers	10318			Precision surface plates, Electronic micrometers, Cylindrical squares / KIC-103-18
Squareness		(0 ~ 500) mm	2.6 μm	
Cylindrical squares	10319			Precision surface plates, Electronic micrometers, Squareness testers / KIC-103-19
Squareness		(0 ~ 500) mm	2.4 μm	
Precision squares	10320			Precision surface plates, Electronic micrometers, Squareness testers / KIC-103-20
Squareness		(0 ~ 500) mm	2.7 μm	

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Form testers	10401			Form standard specimen, Gauge block / KIC-104-01
Z-axis		(0 ~ 100) mm	$\sqrt{0.59^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
X-axis		(0 ~ 50) mm	1.1 μm	

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Optical parallels	10405			Monochromatic light Optical flat Gauge block comparators / KIC-104-05
Flatness		(0 ~ 30) mm	0.05 μm	
Parallelism		(0 ~ 30) mm	0.07 μm	
Precision surface plates	10407	(0 ~ 2 500) ㎠	1.2 μm	Eelectronic level / KIC-104-07
		(2 500 ~ 10 000) ㎠	2.1 μm	
		(10 000 ~ 40 000) ㎠	3.1 μm	
		(40 000 ~ 90 000) ㎠	4.0 μm	
Roundness measurement instruments	10409			Roundness standard specimens, Gauge block / KIC-104-09
Detect accuracy		(0 ~ 100) μm	0.52 μm	
Circumferential rotation accuracy		(0 ~ 100) μm	0.07 μm	
Axial rotation accuracy		(0 ~ 100) μm	0.02 μm	
Straight edges	10412			Eelectronic level, Precision surface plates, Electronic micrometers / KIC-104-12
Straightness		(0 ~ 500) mm	2.0 μm	
		(500 ~ 1 000) mm	3.1 μm	
		(1 000 ~ 1 500) mm	5.1 μm	
Parallrlism		(0 ~ 500) mm	2.0 μm	
		(500 ~ 1 000) mm	3.1 μm	
		(1 000 ~ 1 500) mm	5.1 μm	
Test bars	10409			Roundness measurement instument, Precision surface plates, Electronic micrometers / KIC-104-09
Roundness		(0 ~ 500) mm	0.54 μm	
Cylinder degree		(0 ~ 500) mm	0.79 μm	
Yaw		(0 ~ 500) mm	1.4 μm	
Angle		(0 ~ 30)°	0.000 8°	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Bench centers	10502			Electronic micrometer, Tester bar, Precision surface / KIC-105-02
Center parallelism		(0 ~ 400) mm	2.0 μm	
Height difference between both center			2.0 μm	
Plan view of the bed sureface parallelism			1.5 μm	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Contact coordinate measuring machines	10503			Gauge block, Step gauge, Squares
Directed accuracy		(0 ~ 1 000) mm	$\sqrt{0.56^2 + (0.003\ 4 \times l)^2}$ μm (l의 단위는 mm)	/ KIC-105-03
Squareness			1.9″	
Non-Contact coordinate measuring machines	10504			Standard scale, Precision squares / KIC-105-04
The accuracy of the scale		(0 ~ 500) mm	$\sqrt{0.51^2 + (0.002\ 9 \times l)^2}$ μm (l of the unit mm)	
Squareness			6.7″	
Measuring microscopes, Profile projectors	10511			
Measuring microscopes				
The accuracy of the scale		(0 ~ 300) mm	$\sqrt{0.52^2 + (0.003\ 0 \times l)^2}$ μm (l of the unit mm)	Standard scale, Precision squares
Squareness			4.5″	/ KIC-105-11-1
Profile projectors				
The accuracy of the scale		(0 ~ 300) mm	$\sqrt{1.5^2 + (0.003\ 0 \times l)^2}$ μm (l of the unit mm)	Standard scale, Precision squares
Scaling error			0.024 %	/ KIC-105-11-2
Squareness			2.4 μm	
Angle split			1.3′	
Stylus type Roughness testers	10517			Standard specimen / KIC-105-17
Ra		(0 ~ 15) μm	0.040 μm	
Rz		(0 ~ 40) μm	0.10 μm	
H		(0 ~ 100) μm	0.15 μm	
Roughness standard/ comparison specimens	10519			
Roughness standard specimens				Roughness standard specimens, Stylus type roughness tester / KIC-105-19-1
Arithmetical mean(Ra)		(0 ~ 5) μm	0.05 μm	
Maximum height(Rz)		(0 ~ 15) μm	0.17 μm	
Roughness comparison specimens				Roughness standard specimens, Stylus type roughness tester / KIC-105-19-2
Arithmetical mean(Ra)		(0 ~ 50) μm	0.06 μm	
Maximum height(Rz)		(0 ~ 100) μm	0.18 μm	
Thread plug gauges	10525			Profile projector, Standard measuring machines, Thread measuring wire gauges / KIC-105-25
Major Dia'		(0 ~ 200) mm	1.0 μm	
Effective Dia'		(0 ~ 200) mm	2.0 μm	
Pitch		(0 ~ 5) mm	1.7 μm	
Half Angle		(0 ~ 90)°	1.5′	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Thread plug gauges	10526			Profile projector, Standard measuring machines, Gauge block, Thread measuring wire gauges / KIC-105-26
Small end major Dia'		(0.4 ~ 50) mm	1.7 μm	
Big end major Dia'		(0.4 ~ 50) mm	2.9 μm	
Small end effective Dia'		(0.4 ~ 50) mm	2.6 μm	
Big end effective Dia'		(0.4 ~ 50) mm	3.5 μm	
Pitch		(0 ~ 5) mm	1.7 μm	
Half Angle		(0 ~ 45)°	1.4 ′	
Length of gauge		(0.1 ~ 30) mm	1.4 μm	
Length of the notch		(0.1 ~ 30) mm	2.0 μm	
Thread ring gauges	10527			Standard measuring machines, ring gauges, 3-Points micrometers / KIC-105-27
Effective Dia'		(4 ~ 100) mm	$\sqrt{2.8^2 + (0.002\ 8 \times l)^2}$ μm (l의 단위는 mm)	
Major Dia'		(4 ~ 100) mm	$\sqrt{1.4^2 + (0.002\ 8 \times l)^2}$ μm (l의 단위는 mm)	
Pitch		(0 ~ 5) mm	1.3 μm	
V-blocks, box blocks	10529			Electronic micrometer, Tester bar, Precision surface, Squareness testers / KIC-105-29
V-blocks				
On the bottom of the floor plan		(0 ~ 100) mm	1.5 μm	
V, floor plan			1.5 μm	
Parallelism of the circle on the underside			2.2 μm	
Tilt to the bottom of the V-groove			1.0 μm	
parallelism of the upper cylinder walls v			2.2 μm	
A pair of v-block for v, the height of the mutual			2.2 μm	
Box blocks				
For the bottom of the side of the perpendicularity		(0 ~ 300) mm	2.7 μm	
On the underside of the top of the for parallelism			1.5 μm	
The underside of the v, above, won Saturday and			2.1 μm	

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Inside/Outside/Gear tooth calipers, Caliper gauges	10601			Gauge block, Step gauges, Gauge block accessory / KIC-106-01-1
Inside/Outside calipers		(0 ~ 2 000) mm	$\sqrt{10^2 + (0.002\ 8 \times l)^2}$ μm (l of the unit mm)	

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Inside/Outside/Gear tooth calipers, Caliper gauges	10601			
Caliper gauges		(0 ~ 5) mm	$\sqrt{0.93^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block, Gauge block accessory / KIC-106-01-2
		(5 ~ 50) mm	$\sqrt{4.7^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
		(50 ~ 200) mm	$\sqrt{9.5^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
Cylinder/Bore gauges	10603	(0 ~ 800) mm	0.88 μm	Dial gauge testers / KIC-106-03
Depth gauges, Depth micrometers	10604			
Depth gauges		(0 ~ 200) mm	$\sqrt{1.2^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block / KIC-106-04-1
		(200 ~ 1 000) mm	$\sqrt{9.6^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
Depth micrometers		(0 ~ 300) mm	$\sqrt{1.3^2 + (0.003\ 0 \times l)^2}$ μm (l of the unit mm)	Precision surface plates, Gauge block / KIC-106-04-2
Dial/Digital gauges	10605			Dial gauge testers, Gauge block / KIC-106-05
		(0 ~ 50) mm	$\sqrt{0.27^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
		(50 ~ 100) mm	$\sqrt{0.81^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
Micro indicators, Test indicators	10609			
Micro indicators		(0 ~ 100) μm	0.36 μm	Dial gauge testers / KIC-106-09-1
Test indicators		(0 ~ 0.6) mm	0.87 μm	Dial gauge testers / KIC-106-09-2
		(0.6 ~ 2) mm	1.0 μm	
Micrometer heads	10610			Electronic micrometer, Gauge block / KIC-106-10
		(0 ~ 25) mm	$\sqrt{0.36^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
		(25 ~ 50) mm	$\sqrt{0.80^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	
3-Points micrometers	10611	(2 ~ 200) mm	$\sqrt{1.3^2 + (0.004\ 1 \times l)^2}$ μm (l of the unit mm)	Ring gauges, / KIC-106-11
Inside micrometers	10612			
Inside micrometers		(5 ~ 300) mm	$\sqrt{1.0^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block, Gauge block accessory / KIC-106-12-1
Bar type micrometers		(50 ~ 2 100) mm	$\sqrt{1.1^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block, Gauge block accessory / KIC-106-12-2

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Outside micrometers	10613			
Outside micrometers		(0 ~ 2 000) mm	$\sqrt{1.0^2 + (0.003\ 1 \times l)^2}$ μm (l of the unit mm)	Gauge block / KIC-106-13-1
V-anvil micrometers		(1 ~ 70) mm	$\sqrt{1.2^2 + (0.004\ 5 \times l)^2}$ μm (l of the unit mm)	Plug gauge / KIC-106-13-2
Standard sieves	10617			Profile projector
Diameter		(0 ~ 10) mm	2.5 μm	/ KIC-106-17
Mesh Size		(0 ~ 100) mm	3.5 μm	
Welding gauges	10620			Profile projector,
Distance and depth		(0 ~ 40) mm	0.32 mm	Gauge block
Height & leg length scale ruler		(0 ~ 90) mm	0.24 mm	/ KIC-106-20

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Electric balances	20109	(0 ~ 5) g	36 μg	Weights / KIC-201-09
		(5 ~ 50) g	73 μg	
		(50 ~ 200) g	0.19 mg	
		(200 ~ 2 000) g	1.9 mg	
		(2 ~ 5) kg	3.9 mg	
		(5 ~ 20) kg	16 mg	
		(20 ~ 100) kg	1.0 g	
		(100 ~ 300) kg	4.9 g	
		(300 ~ 1 000) kg	50 g	
		(1 000 ~ 2 000) kg	0.10 kg	
Plarform scale balances	20112	(0 ~ 50) kg	16 g	Weights / KIC-201-12
		(50 ~ 100) kg	38 g	
		(100 ~ 300) kg	0.16 kg	
Spring scale balances	20113	(0 ~ 1) kg	1.5 g	Weights / KIC-201-13
		(1 ~ 50) kg	76 g	
		(50 ~ 100) kg	0.15 kg	

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Weights	20116	(1 mg ~ 20 kg)	Class M1 or less	Weights, Electric balances / KIC-201-16
		1 mg	11 µg	
		2 mg	11 µg	
		5 mg	11 µg	
		10 mg	12 µg	
		20 mg	12 µg	
		50 mg	13 µg	
		100 mg	13 µg	
		200 mg	13 µg	
		500 mg	14 µg	
		1 g	14 µg	
		2 g	17 µg	
		5 g	19 µg	
		10 g	22 µg	
		20 g	27 µg	
		50 g	33 µg	
		100 g	0.11 mg	
		200 g	0.13 mg	
		500 g	1.0 mg	
		1 kg	1.1 mg	
		2 kg	10 mg	
		5 kg	11 mg	
		10 kg	0.10 g	
		20 kg	0.10 g	

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Tension/compression testing machines	20203			Electrical force measuring devices / KIC-202-03
Tension		(10 ~ 100) N	1.2×10^{-3}	
		(100 ~ 200) N	7.7×10^{-4}	
		(200 ~ 500) N	1.5×10^{-3}	
		(500 ~ 1 000) N	7.7×10^{-4}	
		(1 ~ 2) kN	9.3×10^{-4}	
		(2 ~ 5) kN	1.1×10^{-3}	
		(5 ~ 10) kN	8.4×10^{-4}	
		(10 ~ 30) kN	1.9×10^{-3}	

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Tension/compression testing machines	20203			Electrical force measuring devices / KIC-202-03
Tension		(30 ~ 50) kN	1.8×10^{-3}	
		(50 ~ 100) kN	1.8×10^{-3}	
Compression		(10 ~ 100) N	1.4×10^{-3}	
		(100 ~ 200) N	1.1×10^{-3}	
		(200 ~ 500) N	1.0×10^{-3}	
		(500 ~ 1 000) N	1.1×10^{-3}	
		(1 ~ 2) kN	1.0×10^{-3}	
		(2 ~ 5) kN	9.3×10^{-4}	
		(5 ~ 10) kN	7.8×10^{-4}	
		(10 ~ 30) kN	1.2×10^{-3}	
		(30 ~ 50) kN	1.2×10^{-3}	
		(50 ~ 100) kN	1.8×10^{-3}	
		(100 ~ 300) kN	1.6×10^{-3}	
		(300 ~ 500) kN	1.3×10^{-3}	
		(500 ~ 1 000) kN	1.6×10^{-3}	
Push-pull gauges	20204			Weights / KIC-202-03
Tension/compression		(1 ~ 1 000) N	1.6×10^{-3}	

203. Torque

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Torque wrenches/drivers	20303	(0.1 ~ 1) N·m	9.9×10^{-3}	Torque measuring devices / KIC-203-03
		(1 ~ 2) N·m	9.9×10^{-3}	
		(2 ~ 5) N·m	9.8×10^{-3}	
		(5 ~ 10) N·m	8.0×10^{-3}	
		(10 ~ 20) N·m	8.2×10^{-3}	
		(20 ~ 50) N·m	5.8×10^{-3}	
		(50 ~ 100) N·m	1.0×10^{-2}	
		(100 ~ 200) N·m	1.0×10^{-2}	
		(200 ~ 500) N·m	4.4×10^{-3}	
		(500 ~ 1 000) N·m	7.8×10^{-3}	
		(1 000 ~ 2 000) N·m	9.9×10^{-3}	

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Compound pressure gauges	20408	(-95 ~ 200) kPa (0.2 ~ 5) MPa	1.9×10^{-4} 7.3×10^{-5}	Modular pressure controller / KIC-204-08
Differential pressure gauges	20409	(0 ~ 200) kPa (0.2 ~ 5) MPa	7.1×10^{-4} 7.2×10^{-5}	Modular pressure controller / KIC-204-09
Gauge pressure gauges	20411	(0 ~ 200) kPa (0.2 ~ 5) MPa (5 ~ 200) MPa	7.1×10^{-4} 7.2×10^{-5} 8.5×10^{-5}	Piston gauges, air deadweight Piston gauges, hvdraulic deadweight /KIC-204-11
Pressure transducers/ transmitters	20412	(0 ~ 200) kPa (0.2 ~ 5) MPa (5 ~ 200) MPa	7.9×10^{-4} 2.3×10^{-4} 2.6×10^{-4}	Piston gauges, air deadweight Piston gauges, hvdraulic deadweight /KIC-204-12
Dial type vacuum gauges	20413	(-95 ~ 0) kPa	1.0×10^{-3}	Automatic handheld pressure calibrator / KIC-204-13

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Brinell hardness testers	21001	(96 ~ 250) HBW 10/3 000 (250 ~ 450) HBW 10/3 000 (450 ~ 653) HBW 10/3 000	2.6 HBW 10/3 000 4.7 HBW 10/3 000 6.2 HBW 10/3 000	Hardness standard blocks, Electrical force measuring devices, Non-contact cooldinate measuring machines / KIC-210-01
Hardness standard blocks		(96 ~ 250) HBW 10/3 000 (250 ~ 450) HBW 10/3 000 (450 ~ 653) HBW 10/3 000	2.7 HBW 10/3 000 4.4 HBW 10/3 000 6.4 HBW 10/3 000	Brinell hardness testers / KIC-210-01-01

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Rockwell hardness testers	21002	(10 ~ 70) HRC	0.39 HRC	Hardness standard blocks, Electrical force measuring devices, Non-contact cooldinate measuring machines / KIC-210-02
		(10 ~ 100) HRBW	0.63 HRBW	
		(70 ~ 94) HR15N	0.62 HR15N	
		(42 ~ 86) HR30N	0.62 HR30N	
		(20 ~ 77) HR45N	0.62 HR45N	
		(67 ~ 93) HR15TW	1.1 HR15TW	
		(29 ~ 82) HR30TW	1.1 HR30TW	
		(10 ~ 72) HR45TW	1.1 HR45TW	
Hardness standard blocks		(20 ~ 95) HRA	0.38 HRA	Rockwell hardness testers / KIC-210-02-01
		(10 ~ 100) HRBW	0.63 HRBW	
		(10 ~ 70) HRC	0.33 HRC	
		(70 ~ 94) HR15N	0.65 HR15N	
		(42 ~ 86) HR30N	0.65 HR30N	
		(20 ~ 77) HR45N	0.65 HR45N	
		(67 ~ 93) HR15TW	1.1 HR15TW	
		(29 ~ 82) HR30TW	1.1 HR30TW	
		(10 ~ 72) HR45TW	1.1 HR45TW	
Shore hardness testers	21003	(25 ~ 35) HS	0.60 HS	Hardness standard blocks / KIC-210-03
		(45 ~ 55) HS	0.60 HS	
		(55 ~ 65) HS	0.39 HS	
		(75 ~ 85) HS	0.83 HS	
		(85 ~ 100) HS	1.3 HS	

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Vickers hardness testers	21004	(50 ~ 250) HV 0.2	2.6 HV 0.2	Hardness standard blocks, Electrical force measuring devices, Non-contact cooldinate measuring machines / KIC-210-04
		(400 ~ 600) HV 0.2	12 HV 0.2	
		(700 ~ 1 000) HV 0.2	20 HV 0.2	
		(50 ~ 250) HV 0.5	2.6 HV 0.5	
		(400 ~ 600) HV 0.5	11 HV 0.5	
		(700 ~ 1 000) HV 0.5	19 HV 0.5	
		(50 ~ 250) HV 1	2.4 HV 1	
		(400 ~ 600) HV 1	11 HV 1	
		(700 ~ 1 000) HV 1	19 HV 1	
		(50 ~ 250) HV 10	2.1 HV 10	
		(400 ~ 600) HV 10	5.1 HV 10	
		(700 ~ 1 000) HV 10	9.3 HV 10	
		(50 ~ 250) HV 30	2.0 HV 30	
		(400 ~ 600) HV 30	5.2 HV 30	
		(700 ~ 1 000) HV 30	9.4 HV 30	
Hardness standard blocks		(50 ~275) HV 0.1	4.3 HV 0.1	Vickers hardness testers / KIC-210-04-01
		(275 ~ 650) HV 0.1	15 HV 0.1	
		(650 ~ 1 000) HV 0.1	21 HV 0.1	
		(50 ~275) HV 0.2	3.0 HV 0.2	
		(275 ~ 650) HV 0.2	15 HV 0.2	
		(650 ~ 1 000) HV 0.2	20 HV 0.2	

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Hardness standard blocks	21004	(50 ~275) HV 0.3	2.6 HV 0.3	Vickers hardness testers / KIC-210-04-01
		(275 ~ 650) HV 0.3	12 HV 0.3	
		(650 ~ 1 000) HV 0.3	19 HV 0.3	
		(50 ~275) HV 0.5	4.8 HV 0.5	
		(275 ~ 650) HV 0.5	11 HV 0.5	
		(650 ~ 1 000) HV 0.5	20 HV 0.5	
		(50 ~275) HV 1	2.5 HV 1	
		(275 ~ 650) HV 1	14 HV 1	
		(650 ~ 1 000) HV 1	19 HV 1	
		(50 ~275) HV 10	2.2 HV 10	
		(275 ~ 650) HV 10	5.5 HV 10	
		(650 ~ 1 000) HV 10	9.5 HV 10	
		(50 ~275) HV 30	2.1 HV 30	
		(275 ~ 650) HV 30	5.4 HV 30	
		(650 ~ 1 000) HV 30	9.3 HV 30	
Durometer hardness testers	21005	(0 ~ 100) HDA	0.40 HDA	Non-contact cooldinate measuring machines / KIC-210-05
		(0 ~ 100) HDD	0.40 HDD	
Leeb(D Type) hardness testers	21006	(0 ~ 800) HLD	4.6 HLD	Hardness standard blocks / KIC-210-06

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC ammeters DC A	40101	(±) 0 μA (0 ~ 1)μA (1 ~ 10)μA (10 ~ 100)μA (0.1 ~ 1) mA (1 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A (1 ~ 10) A (10 ~ 100) A	 6.1 nA 7.1×10^{-3} 7.5×10^{-1} 1.3×10^{-4} 9.0×10^{-5} 9.0×10^{-5} 9.0×10^{-5} 1.2×10^{-4} 5.0×10^{-4} 4.8×10^{-4}	FLUKE/5730A / KIC-401-01
DC voltage /current calibrators DC V	40103	(±) 0 V (0 ~ 10) mV (10 ~ 100) mV (0.1 ~ 1) V (1 ~ 10) V (10 ~ 100) V (100 ~ 1 000) V	 0.81 μV 8.1×10^{-5} 8.1×10^{-6} 3.8×10^{-6} 3.8×10^{-6} 6.0×10^{-6} 6.1×10^{-6}	FLUKE/8508 / KIC-401-03

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC voltage /current calibrators	40103			FLUKE/8508 / KIC-401-03
DC A		(±)		
		0 μA	2.2 nA	
		(0 ~ 10) μA	2.2×10^{-4}	
		(10 ~ 100) μA	2.4×10^{-5}	
		(0.1 ~ 1) mA	2.4×10^{-5}	
		(1 ~ 10) mA	2.5×10^{-5}	
		(10 ~ 100) mA	4.7×10^{-5}	
		(0.1 ~ 1) A	1.9×10^{-4}	
		(1 ~ 10) A	4.2×10^{-4}	
		(10 ~ 100) A	2.4×10^{-4}	
R		1 Ω	1.3×10^{-4}	
		(1 ~ 10) Ω	1.4×10^{-5}	
		(10 ~ 100) Ω	1.3×10^{-5}	
		(0.1 ~ 1) kΩ	1.2×10^{-5}	
		(1 ~ 10) kΩ	1.2×10^{-5}	
		(10 ~ 100) kΩ	1.2×10^{-5}	
		(0.1 ~ 1) MΩ	1.0×10^{-4}	
		(1 ~ 10) MΩ	1.0×10^{-4}	
Electrical temperature calibrators	40104			FLUKE/8508 / KIC-401-04
RTD Output Calibration				
PT 100 Ω		(18.49 ~ 375.52) Ω (-200 ~ 800) ℃	0.01 Ω	
JPT 100 Ω		(17.14 ~ 317.11) Ω (-200 ~ 600) ℃	0.01 Ω	

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Electrical temperature calibrators	40104			FLUKE/8508 / KIC-401-04
Output TC Voltage Calibration				
E		(-8.825 ~ 76.371) mV (-200 ~ 1 000) ℃	0.002 mV	
J		(-7.890 ~ 69.553) mV (-200 ~ 1 200) ℃	0.002 mV	
K		(-5.891 ~ 54.817) mV (-200 ~ 1 370) ℃	0.002 mV	
N		(-3.990 ~ 47.514) mV (-200 ~ 1 300) ℃	0.002 mV	
R		(0 ~ 20.877) mV (0 ~ 1 750) ℃	0.002 mV	
S		(0 ~ 18.503) mV (0 ~ 1 750) ℃	0.002 mV	
B		(1.792 ~ 13.820) mV (600 ~ 1 820) ℃	0.002 mV	
T		(-5.602 ~ 20.871) mV (200 ~ 400) ℃	0.002 mV	
RTD Input Calibration				
PT 100 Ω		(18.49 ~ 375.52) Ω (-200 ~ 800) ℃	0.02 Ω	
JPT 100 Ω		(17.14 ~ 317.11) Ω (-200 ~ 600) ℃	0.02 Ω	
Input TC Voltage Calibration				
E		(-8.825 ~ 76.371) mV (-200 ~ 1 000) ℃	0.002 mV	
J		(-7.890 ~ 69.553) mV (-200 ~ 1 200) ℃	0.002 mV	
K		(-5.891 ~ 54.817) mV (-200 ~ 1 370) ℃	0.001 mV	
N		(-3.990 ~ 47.514) mV (-200 ~ 1 300) ℃	0.001 mV	

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Electrical temperature	40104			FLUKE/8508
calibrators				/ KIC-401-04
Input TC Voltage Calibration				
R		(0 ~ 20.877) mV	0.001 mV	
		(0 ~ 1 750) ℃		
S		(0 ~ 18.503) mV	0.001 mV	
		(0 ~ 1 750) ℃		
B		(1.792 ~ 13.820) mV	0.001 mV	
		(600 ~ 1 820) ℃		
T		(-5.602 ~ 20.871) mV	0.001 mV	
		(200 ~ 400) ℃		
DC Power supplies	40108			FLUKE/8508
DC V		100 mV	6.0×10^{-5}	C/T, Shunt
		(0.1 ~ 1) V	5.8×10^{-5}	/ KIC-401-08
		(1 ~ 10) V	5.8×10^{-5}	
		(10 ~ 100) V	6.0×10^{-5}	
		(100 ~ 1 000) V	6.0×10^{-5}	
DC A		(+)		
		(10 ~ 100) mA	8.0×10^{-5}	
		(0.1 ~ 1) A	2.0×10^{-4}	
		(1 ~ 10) A	4.3×10^{-4}	
		(10 ~ 100) A	6.2×10^{-4}	
		(100 ~ 300) A	3.3×10^{-4}	
		(300 ~ 600) A	2.6×10^{-4}	
		(600 ~ 1 000) A	2.4×10^{-4}	
DC A		(-)		
		1 A	2.0×10^{-4}	
		(1 ~ 10) A	4.3×10^{-4}	
		(10 ~ 100) A	6.2×10^{-4}	
		(100 ~ 300) A	3.3×10^{-4}	
		(300 ~ 600) A	2.6×10^{-4}	
		(600 ~ 1 000) A	2.4×10^{-4}	

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC voltmeters	40112			FLUKE/5730A
DC V		(±)		/ KIC-401-12
		0 mV	0.5 μV	
		(0 ~ 100) mV	1.2×10^{-5}	
		(0.1 ~ 1) V	5.9×10^{-6}	
		(1 ~ 10) V	4.1×10^{-6}	
		(10 ~ 100) V	5.4×10^{-6}	
		(100 ~ 1 000) V	7.3×10^{-6}	

402. Resistance, Capacitance and inductance

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Earth testers	40205			I.E.T/HARSX-B-6-0.01
R		0.1 Ω	6.0×10^{-3}	/ KIC-402-05
		(0.1 ~ 1) Ω	1.1×10^{-3}	
		(1 ~ 10) Ω	1.3×10^{-4}	
		(10 ~ 100) Ω	1.3×10^{-4}	
		(0.1 ~ 1) kΩ	1.3×10^{-4}	
		(1 ~ 10) kΩ	1.3×10^{-4}	
AC V		40 Hz		
		1 V	1.4×10^{-4}	
		(1 ~ 10) V	1.4×10^{-4}	
		(10 ~ 100) V	1.4×10^{-4}	
		40 Hz ~ 1 kHz		
		1 V	1.0×10^{-4}	
		(1 ~ 10) V	1.0×10^{-4}	
		(10 ~ 100) V	1.0×10^{-4}	
Insulation testers	40210			I.E.T / HRRS-B-7-10K
R		1 kΩ	1.0×10^{-3}	/ KIC-402-10
		(1 ~ 10) kΩ	1.0×10^{-4}	
		(10 ~ 100) kΩ	8.0×10^{-5}	
		(0.1 ~ 1) MΩ	1.3×10^{-4}	
		(1 ~ 10) MΩ	1.3×10^{-4}	
		(10 ~ 100) MΩ	7.0×10^{-4}	
		(0.1 ~ 1) GΩ	2.9×10^{-4}	
		(1 ~ 10) GΩ	9.2×10^{-4}	
		(10 ~ 100) GΩ	1.2×10^{-3}	
		(0.1 ~ 1) TΩ	3.2×10^{-3}	

402. Resistance, Capacitance and inductance

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Insulation testers	40210			I.E.T / HRRS-B-7-10K
AC V		50 Hz		/ KIC-402-10
		1 V	1.0×10^{-4}	
		(1 ~ 100) V	1.0×10^{-4}	
		(0.1 ~ 1) kV	1.1×10^{-4}	
		50 Hz ~ 1 kHz		
		1 V	1.0×10^{-4}	
		(1 ~ 100) V	1.0×10^{-4}	
		(0.1 ~ 1) kV	1.1×10^{-4}	
DC V		10 V	7.1×10^{-5}	
		(10 ~ 100) V	7.1×10^{-5}	
		(0.1 ~ 0.5) kV	1.4×10^{-4}	
		(0.5 ~ 1) kV	7.1×10^{-4}	
		(1 ~ 3) kV	8.0×10^{-3}	
		(3 ~ 5) kV	7.6×10^{-3}	
Resistance meters	40214			Guildline/9330/0.1
R		1 mΩ	6.1×10^{-5}	/ KIC-402-14
		(1 ~ 10) mΩ	2.2×10^{-5}	
		(10 ~ 100) mΩ	1.2×10^{-5}	
		(0.1 ~ 1) Ω	1.1×10^{-5}	
		(1 ~ 10) Ω	1.1×10^{-5}	
		(10 ~ 100) Ω	1.1×10^{-5}	
		(0.1 ~ 1) kΩ	1.1×10^{-5}	
		(1 ~ 10) kΩ	1.1×10^{-5}	
		(10 ~ 100) kΩ	1.4×10^{-5}	
		(0.1 ~ 1) MΩ	2.1×10^{-5}	
		(1 ~ 10) MΩ	2.6×10^{-5}	
Decade resistors	40215			FLUKE/8508
R		10 mΩ	1.1×10^{-3}	/ KIC-402-15
		(10 ~ 100) mΩ	1.2×10^{-4}	
		(0.1 ~ 1) Ω	1.8×10^{-5}	
		(1 ~ 10) Ω	1.1×10^{-5}	
		(10 ~ 100) Ω	8.6×10^{-6}	
		(0.1 ~ 1) kΩ	8.2×10^{-6}	

402. Resistance, Capacitance and inductance

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Decade resistors	40215			FLUKE/8508
R		(1 ~ 10) kΩ	8.2×10^{-6}	/ KIC-402-15
		(10 ~ 100) kΩ	8.2×10^{-6}	
		(0.1 ~ 1) MΩ	9.6×10^{-6}	
		(1 ~ 10) MΩ	1.2×10^{-5}	
		(10 ~ 100) MΩ	4.0×10^{-5}	
		(0.1 ~ 1) GΩ	1.5×10^{-5}	
Impedance bridges/LCR meters	40217			General radio L.C.R SET
R		1 kHz		/ KIC-402-17
		1 Ω	1.2×10^{-3}	
		10 Ω	6.5×10^{-4}	
		100 Ω	3.2×10^{-4}	
		1 kΩ	3.8×10^{-4}	
		10 kΩ	2.7×10^{-4}	
		100 kΩ	2.7×10^{-4}	
		1 MΩ	3.0×10^{-4}	
C		1 kHz		
		1 nF	1.3×10^{-4}	
		10 nF	1.3×10^{-4}	
		100 nF	1.5×10^{-4}	
		1 uF	1.5×10^{-4}	
L		1 kHz		
		1 mH	3.3×10^{-4}	
		10 mH	3.2×10^{-4}	
		100 mH	3.2×10^{-4}	
		1 H	3.2×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC ammeters	40301			FLUKE/5730A
AC A		40 Hz		/ KIC-403-01
		(10 ~ 100) μA	1.3×10^{-3}	
		(0.1 ~ 1) mA	3.0×10^{-4}	
		(1 ~ 10) mA	3.0×10^{-4}	
		(10 ~ 100) mA	3.0×10^{-4}	
		(0.1 ~ 1) A	4.0×10^{-4}	
		40 Hz ~ 500 Hz		
		(10 ~ 100) μA	1.3×10^{-3}	
		(0.1 ~ 1) mA	1.8×10^{-4}	
		(1 ~ 10) mA	1.8×10^{-4}	
		(10 ~ 100) mA	1.8×10^{-4}	
		(0.1 ~ 1) A	3.3×10^{-4}	
		500 Hz ~ 1 kHz		
		(10 ~ 100) μA	7.7×10^{-3}	
		(0.1 ~ 1) mA	1.8×10^{-4}	
		(1 ~ 10) mA	1.8×10^{-4}	
		(10 ~ 100) mA	1.8×10^{-4}	
		(0.1 ~ 1) A	3.3×10^{-4}	
		1 kHz ~ 10 kHz		
		(10 ~ 100) μA	2.3×10^{-3}	
		(0.1 ~ 1) mA	1.8×10^{-3}	
		(1 ~ 10) mA	1.7×10^{-3}	
		(10 ~ 100) mA	1.3×10^{-3}	
		(0.1 ~ 1) A	7.2×10^{-3}	
		40 Hz		
		(1 ~ 10) A	1.6×10^{-3}	
		40 Hz ~ 100 Hz		
		(1 ~ 10) A	1.9×10^{-3}	
		100 Hz ~ 1 kHz		
		(1 ~ 10) A	4.3×10^{-3}	
		40 Hz		
		(10 ~ 100) A	3.1×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
AC ammeters	40301			FLUKE/5730A
AC A		40 Hz ~ 100 Hz		/ KIC-403-01
		(10 ~ 100) A	3.1×10^{-3}	
Clamp ammeters/voltmeters	40302			FLUKE/5730A
DC V		0 mV	0.5 uV	/ KIC-403-02
		(0 ~ 100) mV	7.2×10^{-5}	
		(0.1 ~ 1) V	7.1×10^{-5}	
		(1 ~ 10) V	7.1×10^{-5}	
		(10 ~ 100) V	7.1×10^{-5}	
		(100 ~ 1 000) V	7.1×10^{-5}	
AC V		40 Hz		
		(1 ~ 100) mV	1.9×10^{-4}	
		(0.1 ~ 1) V	1.5×10^{-4}	
		(1 ~ 10) V	1.5×10^{-4}	
		(10 ~ 100) V	1.5×10^{-4}	
		40 Hz ~ 500 Hz		
		(1 ~ 100) mV	1.6×10^{-4}	
		(0.1 ~ 1) V	1.1×10^{-4}	
		(1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 100) V	1.2×10^{-4}	
		500 Hz ~ 1 kHz		
		(1 ~ 100) mV	1.6×10^{-4}	
		(0.1 ~ 1) V	1.1×10^{-4}	
		(1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 100) V	1.2×10^{-4}	
		(100 ~ 1 000) V	1.3×10^{-4}	
		50 Hz		
		(100 ~ 1 000) V	3.4×10^{-4}	
		50 Hz ~ 500 Hz		
		(100 ~ 1 000) V	1.3×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Clamp ammeters/voltmeters	40302			FLUKE/5730A
DC A		(0 ~ 100) μA	1.4×10^{-4}	/ KIC-403-02
		(0.1 ~ 1) mA	1.0×10^{-4}	
		(1 ~ 10) mA	1.0×10^{-4}	
		(10 ~ 100) mA	1.1×10^{-4}	
		(0.1 ~ 1) A	1.3×10^{-4}	
		(1 ~ 10) A	8.9×10^{-4}	
		(10 ~ 100) A	3.7×10^{-3}	
		(100 ~ 500) A	3.8×10^{-3}	
		(100 ~ 1 000) A	4.1×10^{-3}	
AC A		40 Hz		
		(0.01 ~ 1) mA	2.3×10^{-4}	
		(1 ~ 10) mA	2.3×10^{-4}	
		(10 ~ 100) mA	2.4×10^{-4}	
		(0.1 ~ 1) A	3.3×10^{-4}	
		40 Hz ~ 500 Hz		
		(0.01 ~ 1) mA	1.8×10^{-4}	
		(1 ~ 10) mA	1.8×10^{-4}	
		(10 ~ 100) mA	1.8×10^{-4}	
		(0.1 ~ 1) A	3.3×10^{-4}	
		500 Hz ~ 1 kHz		
		(0.01 ~ 1) mA	1.8×10^{-4}	
		(1 ~ 10) mA	1.8×10^{-4}	
		(10 ~ 100) mA	1.8×10^{-4}	
		(0.1 ~ 1) A	3.3×10^{-4}	
		60 Hz		
		(1 ~ 10) A	1.5×10^{-3}	
		60 Hz ~ 100 Hz		
		(1 ~ 10) A	1.8×10^{-3}	
		100 Hz ~ 1 kHz		
		(1 ~ 10) A	4.2×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Clamp ammeters/voltmeters	40302			FLUKE/5730A
AC A		45 Hz ~ 65 Hz		/ KIC-403-02
		(10 ~ 100) A	4.8×10^{-3}	
		(100 ~ 500) A	4.4×10^{-3}	
		(500 ~ 1 000) A	9.0×10^{-3}	
R		1 Ω	1.2×10^{-4}	
		1 Ω ~ 1 MΩ	8.0×10^{-5}	
		1 MΩ ~ 10 MΩ	9.0×10^{-5}	
AC power meters	40311			ROTEK/8100
AC V		60 Hz		/ KIC-403-11
		1 V	6.5×10^{-5}	
		(1 ~ 10) V	6.3×10^{-5}	
		(10 ~ 100) V	7.1×10^{-5}	
		(100 ~ 600) V	1.2×10^{-4}	
		(600 ~ 1 000) V	8.4×10^{-5}	
AC V		50 Hz		
		1 V	6.5×10^{-5}	
		(1 ~ 10) V	6.3×10^{-5}	
		(10 ~ 100) V	7.1×10^{-5}	
		(100 ~ 600) V	3.4×10^{-4}	
		(600 ~ 1 000) V	3.2×10^{-4}	
AC A		60 Hz		
		0.1 A	1.3×10^{-4}	
		(0.1 ~ 0.5) A	4.2×10^{-4}	
		(0.5 ~ 1) A	3.2×10^{-4}	
		(1 ~ 5) A	7.0×10^{-4}	
		(5 ~ 10) A	7.5×10^{-4}	
		(10 ~ 20) A	7.5×10^{-4}	
		(20 ~ 30) A	7.3×10^{-4}	
		(30 ~ 40) A	7.3×10^{-4}	
		(40 ~ 50) A	7.6×10^{-4}	
		(50 ~ 60) A	3.7×10^{-3}	
		(60 ~ 80) A	3.6×10^{-3}	
		(80 ~ 100) A	3.6×10^{-3}	
		(100 ~ 500) A	3.6×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
AC power meters	40311			
AC A		50 Hz		ROTEK/8100
		0.1 A	1.3×10^{-4}	/ KIC-403-11
		(0.1 ~ 0.5) A	4.2×10^{-4}	
		(0.5 ~ 1) A	3.2×10^{-4}	
		(1 ~ 5) A	7.0×10^{-4}	
		(5 ~ 10) A	7.5×10^{-4}	
		(10 ~ 20) A	7.5×10^{-4}	
		(20 ~ 30) A	7.3×10^{-4}	
		(30 ~ 40) A	7.3×10^{-4}	
		(40 ~ 50) A	7.6×10^{-4}	
POWER		60 Hz		
		12 W	3.4×10^{-4}	
		(12 ~ 60) W	2.3×10^{-4}	
		(60 ~ 120) W	2.6×10^{-4}	
		(120 ~ 600) W	2.2×10^{-4}	
		(600 ~ 1 200) W	2.8×10^{-4}	
		(1.2 ~ 2.4) kW	2.9×10^{-4}	
		(2.4 ~ 4.8) kW	2.9×10^{-4}	
		(4.8 ~ 7.2) kW	4.4×10^{-4}	
		(7.2 ~ 9.6) kW	4.2×10^{-4}	
		(9.6 ~ 12.0) kW	3.9×10^{-4}	
POWER		50 Hz		
		12 W	3.4×10^{-4}	
		(12 ~ 60) W	2.3×10^{-4}	
		(60 ~ 120) W	2.6×10^{-4}	
		(120 ~ 600) W	2.2×10^{-4}	
		(600 ~ 1 200) W	2.8×10^{-4}	
		(1.2 ~ 2.4) kW	2.9×10^{-4}	
		(2.4 ~ 4.8) kW	2.9×10^{-4}	
		(4.8 ~ 7.2) kW	4.4×10^{-4}	
		(7.2 ~ 9.6) kW	4.2×10^{-4}	
		(9.6 ~ 12.0) kW	3.9×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
AC power supplies	40312			FLUKE/8508
AC V		40 Hz ~ 20 kHz		/ KIC-403-12
		100 mV	1.4×10^{-4}	
		(0.1 ~ 1) V	1.1×10^{-4}	
		(1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 100) V	1.5×10^{-4}	
		(100 ~ 1 000) V	1.4×10^{-4}	
AC A		40 Hz ~ 1 kHz		
		1 mA	5.3×10^{-4}	
		(1 ~ 10) mA	5.3×10^{-4}	
		(10 ~ 100) mA	5.3×10^{-4}	
		(0.1 ~ 1) A	8.7×10^{-4}	
		(1 ~ 10) A	1.2×10^{-3}	
		(10 ~ 100) A	3.3×10^{-3}	
Frequency		40 Hz	1.5×10^{-4}	
		(40 ~ 100) Hz	5.8×10^{-5}	
		(0.1 ~ 1) kHz	6.0×10^{-6}	
Puncture/safety testers	40313			KIKUSUI/149-10A
DC V		0.1 kV	9.0×10^{-2}	/ KIC-403-13
		(0.1 ~ 1) kV	1.2×10^{-2}	
		(1 ~ 2) kV	8.5×10^{-3}	
		(2 ~ 4) kV	7.0×10^{-3}	
		(4 ~ 6) kV	6.5×10^{-3}	
		(6 ~ 8) kV	6.4×10^{-3}	
		(8 ~ 9) kV	6.2×10^{-3}	
		(9 ~ 10) kV	6.2×10^{-3}	
		(10 ~ 20) kV	1.5×10^{-2}	
		(20 ~ 30) kV	1.0×10^{-2}	
		(30 ~ 40) kV	1.0×10^{-2}	
		(40 ~ 50) kV	1.0×10^{-2}	
		(50 ~ 60) kV	1.5×10^{-2}	
		(60 ~ 70) kV	1.6×10^{-2}	
		(70 ~ 80) kV	1.4×10^{-2}	
		(80 ~ 90) kV	1.4×10^{-2}	
		(90 ~ 100) kV	1.3×10^{-2}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Puncture/safety testers	40313			KIKUSUI/149-10A
AC V		60 Hz		/ KIC-403-13
		0.1 kV	1.3×10^{-1}	
		(0.1 ~ 1) kV	2.1×10^{-2}	
		(1 ~ 2) kV	1.6×10^{-2}	
		(2 ~ 4) kV	1.3×10^{-2}	
		(4 ~ 6) kV	1.3×10^{-2}	
		(6 ~ 8) kV	1.2×10^{-2}	
		(8 ~ 9) kV	1.2×10^{-2}	
		(9 ~ 10) kV	1.2×10^{-2}	
		(10 ~ 15) kV	3.3×10^{-2}	
		(15 ~ 20) kV	2.5×10^{-2}	
		(20 ~ 30) kV	2.3×10^{-2}	
		(30 ~ 40) kV	2.0×10^{-2}	
		(40 ~ 50) kV	2.0×10^{-2}	
		(50 ~ 60) kV	1.8×10^{-2}	
		(60 ~ 70) kV	2.0×10^{-2}	
		(70 ~ 80) kV	1.9×10^{-2}	
		(80 ~ 90) kV	1.9×10^{-2}	
		(90 ~ 100) kV	1.8×10^{-2}	
DC A		0.5 mA	1.6×10^{-2}	
		(0.5 ~ 1) mA	2.0×10^{-2}	
		(1 ~ 2) mA	1.5×10^{-2}	
		(2 ~ 5) mA	1.6×10^{-2}	
		(5 ~ 10) mA	1.5×10^{-2}	
AC A		60 Hz		
		0.5 mA	1.6×10^{-2}	
		(0.5 ~ 1) mA	2.0×10^{-2}	
		(1 ~ 2) mA	1.5×10^{-2}	
		(2 ~ 5) mA	1.6×10^{-2}	
		(5 ~ 10) mA	1.5×10^{-2}	
AC voltmeters	40318			FLUKE/5730A
AC V		40 Hz		/ KIC-403-18
		1 mV	8.1×10^{-3}	
		(1 ~ 10) mV	8.2×10^{-4}	
		(10 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 1) V	1.5×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
AC voltmeters	40318			FLUKE/5730A
AC V		40 Hz		/ KIC-403-18
		(1 ~ 10) V	1.5×10^{-4}	
		(10 ~ 100) V	1.5×10^{-4}	
		40 Hz ~ 10 kHz		
		1 mV	8.1×10^{-3}	
		(1 ~ 10) mV	8.2×10^{-4}	
		(10 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 1) V	1.1×10^{-4}	
		(1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 100) V	1.2×10^{-4}	
		50 Hz		
		(100 ~ 1 000) V	3.4×10^{-4}	
		50 Hz ~ 500 Hz		
		(100 ~ 1 000) V	1.3×10^{-4}	
		500 Hz ~ 1 kHz		
		(100 ~ 1 000) V	1.3×10^{-4}	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Function generators	40411			FLUKE/8508
Frequency		1 Hz ~ 100 MHz	7.6×10^{-6}	/ KIC-404-11
Output Level		40 Hz ~ 1 kHz		
		10 mV	1.8×10^{-3}	
		(10 ~ 100) mV	9.3×10^{-3}	
		(0.1 ~ 10) V	3.9×10^{-4}	
		1 kHz ~ 10 kHz		
		10 mV	1.8×10^{-3}	
		(10 ~ 100) mV	9.3×10^{-3}	
		(0.1 ~ 10) V	3.9×10^{-4}	
OUTPUT LEVEL(Sinewave) Flatness		40 Hz ~ 1 MHz		
		0.0 dB	0.14 dB	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Function generators	40411			FLUKE/8508
OUTPUT LEVEL(Sinewave) Flatness		100 Hz ~ 100 kHz		/ KIC-404-11
		100 mV	2.0×10^{-3}	
		(0.1 ~ 1) V	7.3×10^{-4}	
		100 Hz ~ 1 kHz		
		(1 ~ 10) V	4.0×10^{-4}	
		1 kHz ~ 10 kHz		
		(1 ~ 10) V	5.5×10^{-4}	
		10 kHz ~ 100 kHz		
		(1 ~ 10) V	7.2×10^{-4}	
attenuation volume		1 kHz		
		10 dB ~ -60 dB	0.16 dB	
Off-Set Volt		(-20 ~ 20) V	5.5×10^{-5}	
Rise / Fall Time		100 ns	1.9×10^{-2}	
		1 μs	1.9×10^{-2}	
		10 μs	1.9×10^{-2}	
		100 μs	1.9×10^{-2}	
LF impulse generators	40414			TEKTRONIX/P6015A
OUT PUT DC V		(0.1 ~ 20) kV	2.5×10^{-2}	/ KIC-404-14
Pulse Width		100 ns ~ 100 ms	2.0×10^{-3}	
Rise Time		100 ns ~ 100 ms	2.0×10^{-3}	
Leakage current testers	40416			FLUKE/5730A
DC A		10 μA	8.7×10^{-4}	/ KIC-404-16
		(10 ~ 100) μA	5.9×10^{-4}	
		(0.1 ~ 1) mA	5.8×10^{-4}	
		(1 ~ 10) mA	7.8×10^{-5}	
		(10 ~ 100) mA	8.5×10^{-5}	
AC A		40 Hz ~ 1 kHz		
		10 μA	7.9×10^{-3}	
		(10 ~ 100) μA	1.1×10^{-3}	
		(0.1 ~ 1) mA	6.2×10^{-4}	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Leakage current testers	40416			FLUKE/5730A
AC A		40 Hz ~ 1 kHz		/ KIC-404-16
		(1 ~ 10) mA	2.2×10^{-4}	
		(10 ~ 100) mA	2.3×10^{-4}	
AC V		40 Hz ~ 1 kHz		
		1 V	5.9×10^{-4}	
		(1 ~ 10) V	5.9×10^{-4}	
		(10 ~ 100) V	5.9×10^{-4}	
		50 Hz ~ 1 kHz		
		(100 ~ 1 000) V	6.7×10^{-4}	
Electronic AC/DC loads	40417			FLUKE/5730A
DC V		(0.1 ~ 0.2) V	2.1 μV	/ KIC-404-17
		(0.2 ~ 0.5) V	3.5 μV	
		(0.5 ~ 1) V	10 μV	
		(1 ~ 2) V	16 μV	
		(2 ~ 5) V	24 μV	
		(5 ~ 10) V	0.09 mV	
		(10 ~ 20) V	0.24 mV	
		(20 ~ 50) V	0.33 mV	
		(50 ~ 100) V	1.1 mV	
		(100 ~ 200) V	2.7 mV	
		(200 ~ 500) V	4.3 mV	
		(500 ~ 1 000) V	9.5 mV	
DC A		(1 ~ 2) mA	0.6 μA	
		(2 ~ 5) mA	0.62 μA	
		(5 ~ 10) mA	0.73 μA	
		(10 ~ 20) mA	1.9 μA	
		(20 ~ 50) mA	3.7 μA	
		(50 ~ 100) mA	14 μA	
		(100 ~ 200) mA	0.03 mA	
		(200 ~ 500) mA	0.09 mA	
		(0.5 ~ 1) A	0.14 mA	
		(1 ~ 2) A	0.5 mA	
		(2 ~ 5) A	1.3 mA	
		(5 ~ 10) A	2.3 mA	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Electronic AC/DC loads	40417			FLUKE/5730A
DC A		(10 ~ 20) A	4 mA	/ KIC-404-17
		(20 ~ 50) A	10 mA	
		(50 ~ 100) A	20 mA	
Analogue/Digital multimeters	40419			FLUKE/5730A
DC V		(±)		/ KIC-404-19
		0 mV	0.5 μV	
		(0 ~ 100) mV	1.2×10^{-5}	
		(0.1 ~ 1) V	5.9×10^{-6}	
		(1 ~ 10) V	4.0×10^{-6}	
		(10 ~ 100) V	6.0×10^{-6}	
		(100 ~ 1 000) V	8.0×10^{-6}	
DC A		(±)		
		1 μA	6.1×10^{-3}	
		(1 ~ 100) μA	1.1×10^{-4}	
		(0.1 ~ 1) mA	4.4×10^{-5}	
		(1 ~ 10) mA	4.1×10^{-5}	
		(10 ~ 100) mA	4.1×10^{-5}	
		(0.1 ~ 1) A	9.3×10^{-5}	
		(1 ~ 10) A	8.9×10^{-4}	
AC V		40 Hz		
		10 mV	8.9×10^{-4}	
		(10 ~ 100) mV	1.7×10^{-4}	
		(0.1 ~ 1) V	1.2×10^{-4}	
		(1 ~ 10) V	1.2×10^{-4}	
		(10 ~ 100) V	1.2×10^{-4}	
		40 Hz ~ 1 kHz		
		10 mV	8.6×10^{-4}	
		(10 ~ 100) mV	1.4×10^{-4}	
		(0.1 ~ 1) V	6.5×10^{-5}	
		(1 ~ 10) V	6.3×10^{-5}	
		(10 ~ 100) V	7.1×10^{-5}	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Analogue/Digital multimeters	40419			FLUKE/5730A
AC V		1 kHz ~ 20 kHz		/ KIC-404-19
		10 mV	8.6×10^{-4}	
		(10 ~ 100) mV	1.4×10^{-4}	
		(0.1 ~ 1) V	6.5×10^{-5}	
		(1 ~ 10) V	6.3×10^{-5}	
		(10 ~ 100) V	7.1×10^{-5}	
		20 kHz ~ 50 kHz		
		10 mV	2.1×10^{-4}	
		(10 ~ 100) mV	8.8×10^{-5}	
		(0.1 ~ 1) V	8.8×10^{-5}	
		(1 ~ 10) V	8.8×10^{-5}	
		(10 ~ 100) V	1.1×10^{-4}	
		50 kHz ~ 100 kHz		
		10 mV	2.2×10^{-3}	
		(10 ~ 100) mV	4.9×10^{-4}	
		(0.1 ~ 1) V	1.3×10^{-4}	
		(1 ~ 10) V	1.2×10^{-4}	
		(10 ~ 100) V	1.9×10^{-4}	
		50 Hz		
		(100 ~ 1 000) V	3.2×10^{-4}	
		50 Hz ~ 1 kHz		
		(100 ~ 1 000) V	8.5×10^{-5}	
AC A		40 Hz		
		10 uA	7.9×10^{-4}	
		(10 ~ 100) uA	8.7×10^{-4}	
		(0.1 ~ 1) mA	2.1×10^{-4}	
		(1 ~ 10) mA	2.1×10^{-4}	
		(10 ~ 100) mA	2.2×10^{-4}	
		(0.1 ~ 1) A	3.1×10^{-4}	
		(1 ~ 10) A	1.6×10^{-3}	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Analogue/Digital multimeters	40419			FLUKE/5730A / KIC-404-19
AC A		40 Hz ~ 500 Hz		
		10 uA	7.9×10^{-4}	
		(10 ~ 100) uA	8.4×10^{-4}	
		(0.1 ~ 1) mA	1.6×10^{-4}	
		(1 ~ 10) mA	1.6×10^{-4}	
		(10 ~ 100) mA	1.6×10^{-4}	
		(0.1 ~ 1) A	3.1×10^{-4}	
		(1 ~ 10) A	4.3×10^{-3}	
		500 Hz ~ 1 kHz		
		10 uA	7.9×10^{-4}	
		(10 ~ 100) uA	8.4×10^{-4}	
		(0.1 ~ 1) mA	1.6×10^{-4}	
		(1 ~ 10) mA	1.6×10^{-4}	
		(10 ~ 100) mA	1.6×10^{-4}	
		(0.1 ~ 1) A	3.1×10^{-4}	
		(1 ~ 10) A	4.3×10^{-3}	
R		1 Ω	9.6×10^{-5}	
		(1 ~ 10) Ω	2.5×10^{-5}	
		(10 ~ 100) Ω	1.2×10^{-5}	
		(0.1 ~ 1) kΩ	9.0×10^{-6}	
		(1 ~ 10) kΩ	9.0×10^{-6}	
		(10 ~ 100) kΩ	1.4×10^{-5}	
		(0.1 ~ 1) MΩ	1.7×10^{-5}	
		(1 ~ 10) MΩ	4.5×10^{-5}	
Oscilloscopes	40421			Oscilloscope Calibrator
DC Voltage		(1 ~ 5) mV	0.031 mV	FLUKE/5820A
		(5 ~ 10) mV	0.033 mV	/ KIC-404-21
		(10 ~ 20) mV	0.037 mV	
		(20 ~ 50) mV	0.049 mV	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Oscilloscopes	40421			Oscilloscope Calibrator
DC Voltage		(50 ~ 100) mV	0.091 mV	FLUKE/5820A
		(100 ~ 200) mV	0.14 mV	/ KIC-404-21
		(200 ~ 500) mV	0.34 mV	
		(0.5 ~ 1) V	0.8 mV	
		(1 ~ 2) V	1.2 mV	
		(2 ~ 5) V	2.6 mV	
		(5 ~ 10) V	7.7 mV	
		(10 ~ 20) V	12 mV	
		(20 ~ 50) V	26 mV	
square Wave Voltage		(1 ~ 5) mV	0.010 mV	
		(5 ~ 10) mV	0.014 mV	
		(10 ~ 20) mV	0.021 mV	
		(20 ~ 50) mV	0.041 mV	
		(50 ~ 100) mV	0.095 mV	
		(100 ~ 200) mV	0.16 mV	
		(200 ~ 500) mV	0.47 mV	
		(0.5 ~ 1) V	0.97 mV	
		(1 ~ 2) V	3.4 mV	
		(2 ~ 5) V	4.7 mV	
		(5 ~ 10) V	9.6 mV	
		(10 ~ 20) V	16 mV	
		(20 ~ 50) V	36 mV	
Time Marker		(1 ~ 5) ns	0.000 8 ns	
		(5 ~ 50) ns	0.008 ns	
		(50 ~ 500) ns	0.08 ns	
		(0.5 ~ 5) µs	0.000 8 µs	
		(5 ~ 50) µs	0.008 µs	
		(50 ~ 500) µs	0.08 µs	
		(0.5 ~ 5) ms	0.000 8 ms	
		(5 ~ 50) ms	0.008 ms	
		(50 ~ 500) ms	0.08 ms	
		(0.5 ~ 5) s	0.000 8 s	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Oscilloscopes	40421			Oscilloscope Calibrator FLUKE/5820A
Bandwidth (at 600 mV)		50 kHz	15 mV	/ KIC-404-21
		(0.05 ~ 100) MHz	25 mV	
		(100 ~ 300) MHz	29 mV	
		(300 ~ 500) MHz	39 mV	
		(500 ~ 600) MHz	43 mV	
		(0.6 ~ 1.5) GHz	49 mV	
		(1.5 ~ 2.1) GHz	56 mV	
Calout signal Volt		40 Hz ~ 20 kHz		
		(10 ~ 100) mV	0.2 mV	
		(0.1 ~ 1) V	2 mV	
		(1 ~ 5) V	8 mV	
		(5 ~ 10) V	11 mV	
Calout Signal Frequency		(100 ~ 500) Hz	0.08 Hz	
		(0.5 ~ 2) kHz	0.8 Hz	
Volt/Current recorders	40424			FLUKE/5730A
DC V		(±)		/ KIC-404-24
		0 mV	0.5 μV	
		(0 ~ 100) mV	1.2×10^{-5}	
		(0.1 ~ 1) V	5.9×10^{-6}	
		(1 ~ 10) V	4.0×10^{-6}	
		(10 ~ 100) V	5.9×10^{-6}	
		(0.1 ~ 1) kV	7.3×10^{-6}	
DC A		(±)		
		0 μA	6.1 nA	
		(0 ~ 100) μA	1.1×10^{-4}	
		(0.1 ~ 1) mA	4.4×10^{-5}	

404. Order DC & LF Measurementd

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Volt/Current recorders	40424			FLUKE/5730A
DC V		(±)		/ KIC-404-24
		(1 ~ 10) mA	4.1×10^{-5}	
		(10 ~ 100) mA	5.3×10^{-5}	
		(0.1 ~ 1) A	9.3×10^{-5}	
		(1 ~ 10) A	8.8×10^{-4}	
AC/DC high voltage probes	40435			FLUKE/5730A
Ratio (1 000 : 1) DC		10 V	7.4×10^{-4}	/ KIC-404-35
		(10 ~ 100) V	7.1×10^{-4}	
		(0.1 ~ 1) kV	7.1×10^{-4}	
AC		50 Hz		
		10 V	7.4×10^{-3}	
		(10 ~ 100) V	1.1×10^{-3}	
		(0.1 ~ 1) kV	7.8×10^{-4}	
		50 Hz ~ 1 kHz		
		10 V	7.4×10^{-3}	
		(10 ~ 100) V	1.1×10^{-3}	
		(0.1 ~ 1) kV	7.2×10^{-4}	

501. Contact thermometry

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	50101			SPRT, Noble Metal Thermocouple / KIC-501-01
Temperature controlled chambers/ovens		(-80 ~ 250) ℃	1.3 ℃	
Dry-Block Calibrators		(-80 ~ 250) ℃ (250 ~ 1 100) ℃	0.04 ℃ 1.2 ℃	
furnaces		(100 ~ 1 100) ℃ (1 100 ~ 1 300) ℃	1.6 ℃ 2.4 ℃	
Isothermal liquid baths		(-80 ~ 250) ℃	0.2 ℃	
Temperature indicators /recorders/controllers, temperature calibrators	50102			Noble Metal Thermocouple SPRT, Calibrator / KIC-501-02
Include Sensor(Resistance) (Thermocouple)		(-80 ~ 250) ℃ (-80 ~ 250) ℃ (250 ~ 1 100) ℃ (1 100 ~ 1 300) ℃	0.10 ℃ 0.20 ℃ 2.0 ℃ 2.8 ℃	
Exclude Sensor(Resistance) (Thermocouple)		(-80 ~ 250) ℃ (-80 ~ 1 300) ℃	0.12 ℃ 0.28 ℃	
Glass thermometers; liquid-in-glass, Beckmann	50103			SPRT / KIC-501-03
liquid-in-glass thermometers		(-80 ~ 250) ℃	0.14 ℃	
Resistance thermometers; SPRT, IPRT, thermistors, etc.	50104			SPRT / KIC-501-04
IPRT(Temperature)		(-80 ~ 250) ℃	0.06 ℃	
Thermal expansion thermometers ; bimetal, gas or liquid type	50105			SPRT / KIC-501-05
Bimetal thermometers		(-40 ~ 250) ℃	0.30 ℃	

501. Contact thermometry

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Thermomecoules:noble metal , base metal, pure metal, special type, etc.	50106			SPRT Noble Metal Thermocouple / KIC-501-06
noble metal		(200 ~ 1 100) ℃	1.9 ℃	
		(1 100 ~ 1 300) ℃	2.7 ℃	
Base metal		(-80 ~ 250) ℃	0.24 ℃	
		(250 ~ 1 100) ℃	2.0 ℃	
		(1 100 ~ 1 300) ℃	2.8 ℃	
Temperature transducers	50107			SPRT Noble Metal Thermocouple
Temperature		(-80 ~ 250) ℃	0.40 ℃	/ KIC-501-07
		(250 ~ 1 100) ℃	2.0 ℃	
		(1 100 ~ 1 300) ℃	2.8 ℃	

503. Humidity

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Relative humidity hygrometers; polimer thinfilm, hair, etc.	50302			DewPoint Meter / KIC-503-02
Hygrometers, hair		(25 ~ 30) % R.H.	2.0 % R.H.	
(Relative Humidity)		(30 ~ 40) % R.H.	2.1 % R.H.	
		(40 ~ 60) % R.H.	2.2 % R.H.	
		(60 ~ 80) % R.H.	2.3 % R.H.	
		(80 ~ 90) % R.H.	2.6 % R.H.	
(Temperature)		(0 ~ 50) ℃	0.8 ℃	
Polimer thinfilm		(25 ~ 30) % R.H.	2.0 % R.H.	
(Digital hygro meter)		(30 ~ 40) % R.H.	2.1 % R.H.	
(Relative humidity)		(40 ~ 60) % R.H.	2.2 % R.H.	
		(60 ~ 80) % R.H.	2.3 % R.H.	
		(80 ~ 90) % R.H.	2.6 % R.H.	
(Temperature)		(-20 ~ 50) ℃	0.8 ℃	
Psychrometers; assmann ventilated, PRT type, etc.	50303			DewPoint Meter / KIC-503-03
PRT type(Relative humidity)		(25 ~ 40) % R.H.	2.0 % R.H.	
		(40 ~ 60) % R.H.	2.1 % R.H.	
		(60 ~ 80) % R.H.	2.3 % R.H.	
		(80 ~ 90) % R.H.	2.5 % R.H.	

503. Humidity

Measured Quantity Instrument of Gauge	Field code	Range	CMC (The Confidence Level is about 95%)	Comments
Temperature humidity recorders ; Hygrothermograph, etc	50304			DewPoint Meter / KIC-503-04
Relative humidity		(25 ~ 30) % R.H.	2.0 % R.H.	
		(30 ~ 40) % R.H.	2.1 % R.H.	
		(40 ~ 60) % R.H.	2.2 % R.H.	
		(60 ~ 80) % R.H.	2.3 % R.H.	
		(80 ~ 90) % R.H.	2.6 % R.H.	
Temperature		(0 ~ 50) ℃	1.4 ℃	
Transducers ; dew-point/ relative humidity	50305			DewPoint Meter / KIC-503-05
Relative humidity		(25 ~ 50) % R.H.	2.1 % R.H.	
		(50 ~ 70) % R.H.	2.3 % R.H.	
		(70 ~ 90) % R.H.	2.5 % R.H.	
Humidity generators; two-pressure, two-temperature,flow mixing humidity gererator, constant temperature and humidity chamber, etc.	50306			DewPoint Meter Recorder / KIC-503-06
Constant Temperature and humidity chamber (Relative humidity)		(25 ~ 40) % R.H.	1.7 % R.H.	
		(40 ~ 60) % R.H.	2.0 % R.H.	
		(60 ~ 80) % R.H.	2.5 % R.H.	
		(80 ~ 95) % R.H.	2.9 % R.H.	
Temperature		(-80 ~ 250) ℃	1.3 ℃	