

CERTIFICATE OF ACCREDITATION

Korea Machinery & Metrology Systems Co., Ltd

Accreditation No. : KC08-229

Corporation Registration No. : 121111-0195222

Address of Laboratory : 102, 17-22, Cheomdangwagi-ro 208beon-gil, Buk-gu,
Gwangju, Republic of Korea

Date of Initial Accreditation : November 12, 2008.

Validity of Accreditation : October 19, 2020. ~ October 18, 2024.

Scope of Accreditation : Attached Annex

Date of issue : April 05, 2023.

This calibration laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to Joint ISO-ILAC-IAF Communiqué).



CHIN CHONGWOOK

Head

Korea Laboratory Accreditation Scheme

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017 & KS Q ISO/IEC 17025:2017

Korea Machinery & Metrology Systems Co.,Ltd.
 17-22, Cheomdangwagi-ro 208beon-gil, Buk-gu, Gwangju-si, Republic of Korea
 Phone No : 062-972-2220, FAX : 062-972-2219, e-mail : peter-jo@hanmail.net

CALIBRATION

Valid To : Aug. 18, 2024.

Accreditation No : KC08-229

In recognition of the successful completion of the KOLAS evaluation process,
 accreditation is granted to 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			103. Angle			106. Various dimensional		
10201	Balls	N	10311	Plate/square/electric levels	N	10601	Caliper gauges	Y
10206	Dial/cylinder gauge testers	Y	10317	Sine bars/plates/tables/centers	N		inside/Outside/ Gear tooth calipers	
10207	Doctor blades	N	10318	Squareness testers,	Y			
10209	End bars	N	10319	Cylindrical squares	Y	10603	Cylinder/bore gauges	Y
10210	Extensometers, linear displacement transducers	Y	10320	Precision squares,Squsres	N	10604	Depth gauges, Depth micrometers	Y
			104. Form					
			10401	Form testers	Y	10605	Dial/digital gauges	Y
10211	Filler gauges	N	10404	Optical flats	N	10608	Grind gauges	Y
10212	Film applicators	N	10405	Optical parallels	N	10609	Micro indicators, Test indicators	Y
10213	Gap gauges	N	10406	Parallel blocks	N			
10214	Gauge blocks, by comparison	N	10407	Precision surface plates	Y	10610	Micrometer heads	Y
10216	Height gauges/ measuring machines	Y	10409	Roundness measurement	N	10611	3-points micrometers	Y
			10410	Form standard specimens	N	10612	Inside Micrometers	Y
10220	Standard measuring machines	Y	10412	Straight edges	N	10613	Outside Micrometers	Y
			10413	Straight rules	Y	10617	Standard sieves	N
10223	Electronic micrometers	Y	10415	Test bars	N	10620	Welding gauges	N
10224	Height micrometers, Riser blocks	N	105. Complex geometry			201. Mass		
			10501	Base gauges for electric bulb	N	20102	Auto-hopper scale balances	Y
10225	Laser scan micrometers	Y	10502	Bench centers	N	20103	Auto-packer scale balances	Y
10227	Standard tape rules, Peripheral gauges	N	10503	Contact coordinate measuring machines	Y	20105	Counter beam balances	Y
						20107	Dial swing scale balances	Y
10228	Cylindrical plug/pin gauges, Thread measuring wire gauges	Y	10504	Non-contact coordinate measuring machines	Y	20108	Direct reading balances	Y
						20109	Electric balances	Y
10229	Radius gauges	N	10505	Gauge block accessories	N	20112	Platform scale balances	Y
10230	Cylindrical ring gauges	N	10511	Measuring microscopes, Profile projectors	Y	20113	Spring scale balances	Y
10232	Step gauges	N				20114	Trip balances	Y
10233	Taper type feeler gauges	N	10512	Micro measuring microscopes	Y	20116	Weights	Y
10234	Ultrasonic thickness gauges	Y	10514	Taper plug gauges	Y	202. Force		
10235	Ultrasonic/ coating thickness specimens	N	10515	Taper ring gauges	N	20203	Tension/compression testing machines	Y
			10517	Stylus type roughness	Y			
10236	Coating thickness testers	Y	10525	Thread plug gauges	N	20204	Push-pull gauges	Y
10237	Torque arms	N	10526	Taper thread plug gauges	N	203. Torque		
10238	Width measuring specimens	N	10527	Thread ring gauges	N	20302	Torque measuring devices	N
103. Angle			10529	V-blocks and box blocks	N	20303	Torque wrenchs/drivers	Y
10304	Bevel protractors	Y						

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site			
204. Pressure			402. Resistance, capacitance and inductance			501. Contact thermometry					
20402	Manometers	N	40205	Earth testers	Y	50101	Temperature generators; ovens, furnaces, isothermal liquid baths ice-point baths, ,dry-block calibrators	Y			
20403	Pneumatic pressure ballances	N	40210	Insulation testers	Y						
20404	Hydraulic pressure ballances	N	40213	Resistance bridges/ similar instruments	Y						
20406	Absolut pressure gauges	N									
20407	Blood pressure gauges	N	40214	Resistance meters	Y						
20408	Compound pressure gauges	Y	40215	Resistors	Y	50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y			
20409	Differential pressure gauges	Y	40217	Impedance bridges/LCR meters	Y						
20411	Gauges pressure gauges	Y	403. AC voltage, current & power								
20412	Pressure transducers/ transmitters	Y	40301	AC ammeters	Y	50103	Glass thermometers; liquid-in-glass, Beckmann	N			
			40302	Clamp ammeters/voltmeters	Y						
20413	Dial type vacuum gauges	Y	40303	AC voltage/current calibrators	Y	50104	Resistance thermometers; SPRT, IPRT, thermistors, etc.	N			
206. Volume			40305	AC current shunts	Y	50105	Thermal expansion thermometers; bimetal, gas or liquid type	Y			
20601	Volumetric glasswares	N	40310	Power factor meters	Y						
20602	Pycnometers	N	40311	AC power meters	Y						
20605	Concrete air contant meters	N	40312	AC power supplies	Y						
20606	Piston type volume meters	N	40313	Puncture/safety testers	Y						
207. Density			40314	Power recorders	Y	50106	Thermomecoules; noble metal, base metal, pure metal, special type, etc.	N			
20704	Salinity meters	N	40318	AC voltmeters	Y						
20707	Chloride meters	N	404. Other DC & LF measurements			50107	Temperature transducers	Y			
210. Hardness			40401	LF amplifiers	Y						
21001	Brinell hardness testers	Y	40402	DC/LF attenuators	Y				502. Non contact thermometry		
21002	Rockwell hardness testers	Y	40403	Multimeter calibrators	Y				50204	Standard radiation thermometers	N
21003	Shore hardness testers	Y	40404	Oscilloscope calibrators	Y						
21004	Vickers hardness testers	Y	40407	Audio distortion analyzers/ meters	Y	50205	Thermal image apparatus	N			
21005	Durometer hardness testers	Y				50206	Blackbody furnaces	N			
21006	Leeb hardness testers	Y	40408	LF filters	Y	503. Humidity					
301. Time/frequency			40409	LF/Audio signal analyzers	Y	50302	Relative humidity hygrometers; polimer thinfilm, hair, etc.	N			
30102	Frequency standards	N	40410	Line frequency meters	Y						
30103	General frequency sources	Y	40411	Function generators	Y						
30104	Frequency meters/counters	Y	40412	Genescopes	Y	50303	Psychrometers; Assmann ventilated, PRT type, etc.	N			
30105	Time interval sources	Y	40413	AC/DC high voltage voltmeters	Y						
30106	Time interval meters/ Stop watches/Timers	Y	40414	LF impulse generators	Y	50304	Temperature humidity Recorders; Hygrothermograph, etc.	N			
			40416	Leakage current testers	Y						
302. Velocity & revolution			40417	Electronic AC/DC loads	Y	50305	Transducers; relative humidity	N			
30201	Standard RPM generators	Y	40418	Modulation meters	Y						
30202	Contact type tachometers	Y	40419	Analogue/Digital multimeters	Y	50306	Humidity generators; two-pressure, two-temperature, flow mixing humidity generator, constant temperature and humidity chamber, etc.	Y			
30203	Photo tachometers/ stroboscopes	Y	40420	Noise meters	Y						
			40421	Oscilloscopes	Y						
401. DC voltage & current			40422	LF phase meters	Y	601. Sound in air					
40101	DC ammeters	Y	40423	Random wave generators	Y	60106	Sound level meters	Y			
40103	DC voltage/current calibrators	Y	40424	Voltage/Current recorders	Y						
40104	Electrical temperature calibrators(Sensor	Y	40425	Relay test sets	Y	901. Chemical analysis					
40105	DC current shunts	Y	40426	LF signal generators	Y	90103	Gas analyzers	Y			
40106	Galvanometers/null detectors	Y	40429	Sweep generators	Y						
40108	DC power supplies	Y	40430	Signal transducers	Y						
40110	DC voltage dividers	Y	40432	Transistor curve tracers	Y						
40112	DC voltmeters	Y	40433	Waveform analyzers	Y						
			40434	AC/DC high voltage generators	Y						
			40435	AC/DC high voltage probes	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-007.
3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.
4. Measurement uncertainty normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k=2$. It expresses the lowest uncertainty of measurement that can be provided by accredited calibration laboratories in normal conditions.
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 measurement uncertainty on scope of accreditation in general.

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Balls	10201	(0.3 ~ 50) mm	0.48 μm	Gauge blocks/KIQI-00
Dial/cylinder gauge testers	10206	(0 ~ 100) mm	0.33 μm	Gauge blocks/KIQI-01
Doctor blades	10207	(0 ~ 10) mm	1.2 μm	Electronic micrometers /KIQI-161
End bars	10209	(25 ~ 1 000) mm	$\sqrt{0.7^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks/KIQI-162
Extensometers, linear displacement transducers	10210	(0 ~ 500) mm	$\sqrt{0.14^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks /KIQI-02
Filler gauges	10211	(0.03 ~ 10) mm	1.1 μm	Micro indicators /KIQI-07
Film applicators	10212	(0 ~ 10) mm	1.2 μm	Electronic micrometers /KIQI-163
Gap gauges	10213	(5 ~ 200) mm	$\sqrt{0.4^2+(0.004 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks/KIQI-03
Gauge blocks, by comparison	10214	(0.5 ~ 100) mm	$\sqrt{79^2 + (1.3 \times l_0)^2}$ nm, (l_0 :mm)	Gauge blocks/KIQI-04
Height gauges/measuring machines	10216	(0 ~ 1 500) mm	$\sqrt{0.9^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks/KIQI-05
Standard measuring machines	10220	(0 ~ 500) mm	$\sqrt{0.4^2+(0.004 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks/KIQI-06
Electronic micrometers	10223	(0 ~ 10) mm	0.08 μm	Gauge blocks/KIQI-02-
Height micrometers, Riser blocks	10224			Gauge blocks /KIQI-08
Block		(0 ~ 610) mm	$\sqrt{0.7^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	
Head		(0 ~ 25) mm	0.73 μm	
Riser blocks		(0 ~ 600) mm	$\sqrt{0.7^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	
Laser scan micrometers	10225	(0 ~ 100) mm	0.8 μm	Standard pin gauges /KIQI-173
Standard tape rules, Peripheral gauges	10227	(0 ~ 50) m	$\sqrt{0.38^2+(0.008 \times l)^2}$ mm, (l :m)	Standard rules /KIQI-38
Cylindrical plug/pin gauges Thread measuring wire gauges	10228	(0.1 ~ 200) mm	0.8 μm	Gauge blocks /KIQI-09
Radius gauges	10229	(0.4 ~ 100) mm	1.6 μm	Gauge blocks/KIQI-07-
Cylindrical ring gauges	10230	(3 ~ 200) mm	$\sqrt{0.4^2+(0.005 \times D_0)^2}$ μm, (D_0 :mm)	Gauge blocks/KIQI-10
Step gauges	10232	(0 ~ 1 010) mm	$\sqrt{0.7^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks/KIQI-11
Taper type feeler gauges	10233	(0 ~ 50) mm	1.5 μm	Non-contact coordinate measuring machines
Ultrasonic thickness gauges	10234	(0 ~ 100) mm	6.4 μm	Gauge blocks/KIQI-12
Thickness specimens	10235			Gauge blocks /KIQI-13
Coating		(0 ~ 8) mm	0.5 μm	
Ultrasonic		(0 ~ 100) mm	2.3 μm	
Coating thickness testers	10236	(0 ~ 8) mm	4.1 μm	Standard specimen /KIQI-14
Torque arms	10237			Contact coordinate measuring machines Standard measuring machines/KIQI-14
Torque arms		(0 ~ 1 000) mm	$\sqrt{0.7^2+(0.004 \times l_0)^2}$ μm, (l_0 :mm)	
Wire		(0 ~ 5) mm	0.5 μm	
Width measuring specimens	10238	(0 ~ 300) mm	$\sqrt{1.2^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	Standard measuring machines /KIQI-181

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Bevel protractors Angle accuracy Angle of accessory	10304	(0 ~ 90)° (0 ~ 90)°	1.5' 2.2'	Angle gauge blocks /KIQI-166
Plate/square/electric levels Scale accuracy Floor plan Side perpendicularity	10311	±1 000" (0 ~ 500) mm (0 ~ 500) mm	1.6" 1.8 μm 2.2 μm	Level comparator /KIQI-167
Sine bars/plates/tables/centers Center distance Floor plan Parallelism	10317	(100 ~ 300) mm (100 ~ 300) mm (100 ~ 300) mm	1.4 μm 0.8 μm 0.8 μm	Standard measuring machines /KIQI-168
Squareness testers, right angle testers	10318	(0 ~ 500) mm	1.8 μm	Precision squares /KIQI-169
Cylindrical squares	10319	(0 ~ 500) mm	2.0 μm	Precision squares /KIQI-170
Precision squares Perpendicularity Parallelism	10320	(0 ~ 500) mm (0 ~ 500) mm	2.2 μm 0.8 μm	Squareness testers, right angle testers /KIQI-171

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Form testers Height Length Angle	10401	(0 ~ 100) mm (0 ~ 200) mm (0 ~ 60)°	0.6 μm 0.6 μm 1'	Gauge blocks /KIQI-15
Optical flats	10404	(0 ~ 60) mm	0.10 μm	Optical flat /KIQI-16
Optical parallels Floor plan Parallelism	10405	(0 ~ 30) mm (0 ~ 30) mm	0.10 μm 0.10 μm	Optical flat /KIQI-17
Parallel blocks Floor plan Parallelism The height difference between	10406	(0 ~ 1 500) mm (0 ~ 1 500) mm (0 ~ 1 500) mm	1.5 μm 1.5 μm 2.1 μm	Electronic micrometers /KIQI-172
Precision surface plates Cross length	10407	(0 ~ 3 000) mm	2.8 μm	Electric level /KIQI-18
Roundness measurement instruments Detector accuracy Rotational accuracy of spindle	10409	(0 ~ 50) μm (0 ~ 300) mm	0.50 μm 0.04 μm	Roundness standard specimen/KIQI-19
Form standard specimens Height Length Radius Angle	10410	(0 ~ 50) mm (0 ~ 100) mm (0 ~ 10) mm (0 ~ 45)°	0.8 μm 0.8 μm 0.8 μm 7"	Contact coordinate measuring machines /KIQI-39

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Straight edges Straightness Parallelism	10412	(0 ~ 1 500) mm (0 ~ 1 500) mm	1.6 μm 1.6 μm	Electronic micrometers /KIQI-174
Straight rules	10413	(0 ~ 3 000) mm	$\sqrt{0.06^2+(0.008 \times l)^2}$ mm, (l:m)	Standard rules /KIQI-39
Test bars Roundness Cylindrical diagram Runout Angle	10415	(0 ~ 500) mm (0 ~ 500) mm (0 ~ 500) mm (0 ~ 30)°	0.6 μm 0.8 μm 1.4 μm 2.2"	Standard measuring machines /KIQI-175

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Base gauges for electric bulb Pass, stop inner diameter Thread inner diameter Pitch	10501	(5 ~ 40) mm (5 ~ 40) mm (0.5 ~ 5) mm	1.6 μm 2.0 μm 1.6 μm	Standard measuring machines /KIQI-164
Bench centers Parallelism between centers Floor plan of bed Height difference between both centers	10502	(0 ~ 400) mm (0 ~ 400) mm (0 ~ 400) mm	2.2 μm 1.6 μm 2.2 μm	Test bars /KIQI-176
Contact coordinate measuring machines Axis accuracy Volumetric accuracy	10503	(0 ~ 1 500 mm) (0 ~ 1 500 mm)	$\sqrt{0.7^2+(0.003 \times l_0)^2}$ μm, (l ₀ :mm) $\sqrt{0.7^2+(0.003 \times l_0)^2}$ μm, (l ₀ :mm)	Gauge blocks /KIQI-20
Non-contact coordinate measuring machines Axis accuracy Squareness Perpendicularity	10504	(0 ~ 500) mm (0 ~ 500) mm (0 ~ 300) mm	$\sqrt{0.6^2+(0.003 \times l_0)^2}$ μm, (l ₀ :mm) $\sqrt{0.6^2+(0.003 \times l_0)^2}$ μm, (l ₀ :mm) 1.9 μm	Standard scale /KIQI-21
Gauge block accessories Round type jaw Parallel jaw (A type) Parallel jaw (B type) Scriber point Base block	10505	(0 ~ 20) mm (0 ~ 20) mm (0 ~ 20) mm (0 ~ 20) mm (0 ~ 50) mm	0.25 μm 0.25 μm 0.07 μm 0.07 μm 0.75 μm	Gauge blocks Gauge block comparators /KIQI-04-1
Measuring microscopes, Profile projectors Axis accuracy Squareness Magnification error Angle division accuracy	10511	(0 ~ 300) mm (0 ~ 150) mm x2 ~ X100 (0 ~ 360)°	1.1 μm 2.1 μm 5.4 × 10 ⁻² 1.2'	Standard scale /KIQI-22
Micro measuring microscopes	10512	(0 ~ 20) mm	1.1 μm	Standard scale /KIQI-23

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Taper plug gauges Small end diameter Large end diameter Height Angle	10514	(1 ~ 200) mm (1 ~ 200) mm (1 ~ 200) mm (0 ~ 90)°	1.2 μm 1.4 μm 1.2 μm 1.2"	Standard measuring machines /KIQI-177
Taper ring gauges Small end diameter Large end diameter Angle	10515	(3 ~ 200) mm (3 ~ 200) mm (0 ~ 90)°	0.6 μm 0.8 μm 2.2"	Standard measuring machines /KIQI-178
Stylus type roughness tester Ra Rz Step height	10517	(0 ~ 20) μm (0 ~ 50) μm (0.1 ~ 200) μm	0.08 μm 0.15 μm 0.06 μm	Roughness standard specimen/KIQI-24
Thread plug gauges Outside diameter Pitch circle diameter Pitch Angle/2	10525	(1 ~ 200) mm (1 ~ 200) mm (0.2 ~ 5) mm (0 ~ 45) °	0.8 μm 2.5 μm 1.3 μm 1´	Standard measuring machines /KIQI-25
Taper thread plug gauges Outside diameter Pitch circle diameter Pitch Gauge length Angle/2	10526	(1 ~ 200) mm (1 ~ 200) mm (0.2 ~ 5) mm (1 ~ 100) mm (0 ~ 45)°	2.0 μm 2.6 μm 1.3 μm 2.6 μm 1.2´	Standard measuring machines /KIQI-179
Thread ring gauges Inside diameter Pitch circle diameter Pitch	10527	(5 ~ 100) mm (5 ~ 100) mm (0.5 ~ 5) mm	1.7 μm 1.6 μm 0.8 μm	Standard measuring machines /KIQI-25-1
V-blocks, box blocks Flatness Parallelism The height difference between two blocks	10529	(0 ~ 300) mm (0 ~ 300) mm (0 ~ 300) mm	2.0 μm 2.0 μm 2.0 μm	Electronic micrometers /KIQI-180

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Caliper gauges Inside/Out side/Gear tooth calipers	10601	(0 ~ 200) mm (0 ~ 2 000) mm	7.2 μm $\sqrt{8.7^2+(0.005 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks /KIQI-26
Cylinder/Bore gauges	10603	(0 ~ 800) mm	0.7 μm	Dial gauge tester /KIQI-27
Depth gauges, Depth micrometers	10604	(0 ~ 1 000) mm	$\sqrt{0.8^2+(0.003 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks /KIQI-28

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Dial/digital gauges	10605	(0 ~ 100) mm	0.7 μm	Dial gauge tester /KIQI-29
Grind gauges The depth of the slope Straightness	10608	(0 ~ 1) mm	1.5 μm 1.3 μm	Electronic micrometers /KIQI-182
Micro indicators, Test indicators	10609	(0 ~ 5) mm	0.7 μm	Dial gauge tester /KIQI-35
Micrometer heads	10610	(0 ~ 50) mm	0.8 μm	Gauge blocks /KIQI-183
3-points micrometers	10611	(0 ~ 200) mm	1.2 μm	Cylindrical ring gauges
Inside Micrometers	10612	(5 ~ 2 000) mm	$\sqrt{0.8^2+(0.005 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks /KIQI-33
Outside Micrometers	10613	(0 ~ 2 000) mm	$\sqrt{0.9^2+(0.005 \times l_0)^2}$ μm, (l_0 :mm)	Gauge blocks /KIQI-34
Standard sieves Wire diameter Wire cloth size	10617	(0 ~ 10) mm (0 ~ 150) mm	2.8 μm 5.4 μm	Non-contact coordinate measuring machines /KIQI-37
Welding gauges Height and depth Ruler Neck thickness Angle Tapered Gap Gauge Scale	10620	(0 ~ 100) mm (0 ~ 100) mm (0 ~ 20) mm (0 ~ 90)° (0 ~ 100) mm	0.2 mm 0.2 mm 0.2 mm 0.3° 0.2 mm	Gauge blocks, Non-contact coordinate measuring machines /KIQI-184

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Auto-hopper scale balances	20102	(0 ~ 20) kg (20 ~ 200) kg (200 ~ 500) kg (500 ~ 1 000) kg (1 000 ~ 2 000) kg (2 000 ~ 5 000) kg	10 g 21 g 52 g 0.11 kg 0.23 kg 0.52 kg	Weights /KIQI-40
Auto-packer scale balances	20103	(0 ~ 1) kg (1 ~ 20) kg (20 ~ 100) kg	0.1 g 2.0 g 10 g	Weights /KIQI-46
Counter beam balances	20105	(0 ~ 311) g (311 ~ 2 610) g (2.61 ~ 20) kg	10 mg 91 mg 0.91 g	Weights /KIQI-41

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Dial swing scale balances	20107	(1 ~ 10) kg (10 ~ 50) kg (50 ~ 100) kg (100 ~ 500) kg (500 ~ 1 000) kg	1.0 g 10 g 20 g 0.19 kg 0.48 kg	Weights /KIQI-47
Direct reading balances	20108	(0 ~ 30) g (30 ~ 210) g (210 ~ 1 000) g	46 μg 0.12 mg 0.54 mg	Weights /KIQI-49
Electric balances	20109	(0 ~ 52) g (52 ~ 210) g (210 ~ 1 000) g (1 ~ 5) kg (5 ~ 20) kg (20 ~ 50) kg (50 ~ 100) kg (100 ~ 200) kg (200 ~ 500) kg (500 ~ 1 000) kg (1 000 ~ 2 000) kg (2 000 ~ 5 000) kg (5 000 ~ 30 000) kg (30 000 ~ 50 000) kg	93 μg 0.23 mg 1.3 mg 6.4 mg 32 mg 98 mg 2.9 g 6.6 g 14 g 30 g 0.15 kg 0.28 kg 7.1 kg 9.1 kg	Weights /KIQI-42
Platform scale balances	20112	(0 ~ 5) kg (5 ~ 20) kg (20 ~ 200) kg (200 ~ 1 000) kg (1 000 ~ 2 000) kg (2 000 ~ 5 000) kg	0.93 g 2.7 g 46 g 0.42 kg 0.91 kg 1.9 kg	Weights /KIQI-43
Spring scale balances	20113	(0 ~ 5) kg (5 ~ 20) kg (20 ~ 100) kg	9.1 g 18 g 46 g	Weights /KIQI-44
Trip balances	20114	(1 ~ 200) g (200 ~ 500) g (500 ~ 1 000) g (1 000 ~ 2 000) g (2 000 ~ 5 000) g	10 mg 30 mg 91 mg 0.17 g 0.41 g	Weights /KIQI-48

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Weights	20116	(1 mg ~ 20 kg)	F ₁ Grade	Weights /KIQI-45
		1 mg	5 μg	
		2 mg	5 μg	
		5 mg	5 μg	
		10 mg	5 μg	
		20 mg	5 μg	
		50 mg	7 μg	
		100 mg	7 μg	
		200 mg	7 μg	
		500 mg	9 μg	
		1 g	11 μg	
		2 g	14 μg	
		5 g	17 μg	
		10 g	20 μg	
		20 g	26 μg	
		50 g	0.04 mg	
		100 g	0.06 mg	
		200 g	0.18 mg	
		500 g	0.3 mg	
		1 kg	1.2 mg	
2 kg	1.5 mg			
5 kg	2.8 mg			
10 kg	12 mg			
20 kg	15 mg			
(1 000 kg)	M ₃ Grade			
1 000 kg	53 g			

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.	
Tension/compression testing machines	20203	Tension	(2 ~ 5) kN	Electrical force measuring devices /KIQI-50	
			(5 ~ 10) kN		1.5×10^{-3}
			(10 ~ 20) kN		1.5×10^{-3}
			(20 ~ 50) kN		1.5×10^{-3}
		Compression	(2 ~ 5) kN		1.6×10^{-3}
			(5 ~ 10) kN		1.4×10^{-3}
			(10 ~ 20) kN		1.5×10^{-3}
			(20 ~ 50) kN		1.4×10^{-3}
			(50 ~ 100) kN		1.5×10^{-3}
			(50 ~ 100) kN		1.4×10^{-3}
			(50 ~ 100) kN		1.5×10^{-3}
			(50 ~ 100) kN		1.7×10^{-3}

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Differential pressure gauges	20409	(0 ~ 15) kPa (0.015 ~ 7.0) MPa	1.8×10^{-4} 9.0×10^{-5}	Pressure generators/controllers, Pneumatic pressure ballances /KIQI-66
Gauge pressure gauges	20411	(0 ~ 15) kPa (0.015 ~ 100) MPa	1.8×10^{-4} 9.0×10^{-5}	Pressure generators/controllers, Pneumatic pressure ballances, Hydraulic pressure ballances /KIQI-66
Pressure transducers / transmitters	20412	(0 ~ 15) kPa (0.015 ~ 100) MPa	2.0×10^{-4} 1.4×10^{-4}	Pressure generators/controllers, Pneumatic pressure ballances, Hydraulic pressure ballances /KIQI-66
Dial type vacuum gauges	20413	(-98 ~ 0) kPa	2.9×10^{-3}	Pressure generators/controllers /KIQI-69

206. Valume

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Volumetric glasswares	20601	(0 ~ 1) mL (1 ~ 2) mL (2 ~ 10) mL (10 ~ 20) mL (20 ~ 50) mL (50 ~ 100) mL (100 ~ 250) mL (250 ~ 500) mL (500 ~ 1 000) mL (1 000 ~ 2 000) mL	1.3 μ L 2.3 μ L 7.4 μ L 15 μ L 30 μ L 27 μ L 55 μ L 0.13 mL 0.17 mL 0.28 mL	Weights /KIQI-86
Pycnometers	20602	(0 ~ 100) mL (100 ~ 200) mL (200 ~ 500) mL	20 μ L 39 μ L 71 μ L	Weights /KIQI-87
Concrete air content meters Vessel Scale	20605	(0 ~ 7 500) mL (0 ~ 10) %	- 0.15%	Weights /KIQI-88
Piston type volume meters	20606	(0 ~ 0.01) mL (0.01 ~ 0.02) mL (0.02 ~ 0.1) mL (0.1 ~ 0.2) mL (0.2 ~ 1) mL (1 ~ 2) mL (2 ~ 5) mL (5 ~ 10) mL	0.14 μ L 0.15 μ L 0.26 μ L 0.58 μ L 1.2 μ L 2.4 μ L 9.2 μ L 15 μ L	Weights /KIQI-89

207. Density

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Salinity meters	20704	(0 ~ 1.5) % (1.5 ~ 15) % (15 ~ 30) %	4.6×10^{-3} % 3.9×10^{-2} % 6.2×10^{-2} %	Standard solution /KIQI-91
Chloride meters	20707	(0 ~ 0.1) % (0.1 ~ 1.5) %	1.2×10^{-3} % 5.8×10^{-3} %	Standard solution /KIQI-90

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Brinell hardness testers	21001	(100 ~ 250) HBW 10/3000 (250 ~ 500) HBW 10/3000	2.7 HBW 10/3000 4.5 HBW 10/3000	Hardness test blocks, brinell/KIQI-55
Rockwell hardness testers	21002	(20 ~ 100) HRBW (20 ~ 70) HRC	0.9 HRBW 0.6 HRC	Hardness test blocks, rockwell/KIQI-56
Shore hardness testers	20103	(20 ~ 100) HS	1.6 HS	Hardness test blocks, Shore/KIQI-59
Vickers hardness testers	21004	(5 ~ 300) HV 0.2 (300 ~ 650) HV 0.2 (650 ~ 850) HV 0.2 (5 ~ 300) HV 10 (300 ~ 650) HV 10 (650 ~ 850) HV 30	6 HV 0.2 11 HV 0.2 19 HV 0.2 2.9 HV 10 5.3 HV 10 9.7 HV 30	Hardness test blocks, vickers/KIQI-57
Durometer hardness testers	21005	(0 ~ 100) HDA (0 ~ 100) HDD	0.58 HDA 0.58 HDD	Durometer hardness calibrator/KIQI-58
Leeb hardness testers	20106	(400 ~ 700) HLD (700 ~ 1 000) HLD	4.7 HLD 4.7 HLD	Hardness test blocks, Leeb/KIQI-60

301. Time/frequency

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Frequency standards	30102	(0.1 ~ 10) MHz	5.9×10^{-12}	GPS Receiver Frequency Counter KIQI-30102
General frequency sources Timebase	30103	(0.1 ~ 10) MHz	5.9×10^{-12}	GPS Receiver Frequency Counter KIQI-30103
Frequency meters/counters Time Base Frequency	30104	(0.1 ~ 10) MHz 1 Hz ~ 1 GHz	5.9×10^{-12} 7.0×10^{-7}	GPS Receiver Frequency Counter KIQI-30104
Time interval sources period time interval	30105	(0.1 ~ 10) MHz 10 ns ~ 5 s	5.9×10^{-12} 5.8×10^{-6}	GPS Receiver Frequency Counter KIQI-30105
Time interval meters/ Stop watches/Timers Stop watch Timer	30106	1 ms ~ 24 h (1 ~ 100) s (100 ~ 1 000) s (1 000 ~ 10 000) s	1.4×10^{-7} 6.4 ms 64 ms 0.64 s	GPS Receiver Stop Watch Calibrator KIQI-30106

302. Velocity&revolution

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Standard RPM generators	30201	(6 ~ 60) min ⁻¹ (60 ~ 600) min ⁻¹ (600 ~ 6 000) min ⁻¹ (6 000 ~ 30 000) min ⁻¹ (30 000 ~ 60 000) min ⁻¹ (60 000 ~ 90 000) min ⁻¹	1.2 min ⁻¹ 0.058 min ⁻¹ 0.58 min ⁻¹ 0.61 min ⁻¹ 4.9 min ⁻¹ 7.0 min ⁻¹	GPS Receiver tachometer KIQI-30201
Contact-type tachometers	30202	(6 ~ 900) min ⁻¹ (900 ~ 4 000) min ⁻¹	0.059 min ⁻¹ 0.085 min ⁻¹	R.P.M Calibrator KIQI-30202
Photo tachometers /stroboscopes Photo tachometers Stroboscopes	30203	(6 ~ 9 000) min ⁻¹ (9 000 ~ 90 000) min ⁻¹ (90 000 ~ 120 000) min ⁻¹ (6 ~ 9 000) min ⁻¹ (9 000 ~ 90 000) min ⁻¹ (90 000 ~ 120 000) min ⁻¹	0.058 min ⁻¹ 0.062 min ⁻¹ 0.62 min ⁻¹ 0.058 min ⁻¹ 0.062 min ⁻¹ 0.62 min ⁻¹	R.P.M Calibrator Photo detector KIQI-30203

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC ammeters DC Current	40101	(0 ~ 10) μ A (10 ~ 100) μ A (0.1 ~ 1) mA (1 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A (1 ~ 10) A (10 ~ 100) A	9.3×10^{-3} 9.9×10^{-4} 1.6×10^{-4} 6.9×10^{-5} 8.0×10^{-5} 1.3×10^{-4} 2.6×10^{-4} 4.6×10^{-4}	Meter Calibrator, Amplifier /KIQI-101
DC voltage/current calibrators DC voltage DC current	40103	(0 ~ 10) mV (10 ~ 100) mV (0.1 ~ 10) V (10 ~ 100) V (100 ~ 1 000) V (0 ~ 10) μ A (10 ~ 100) μ A (0.1 ~ 1) mA (1 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A (1 ~ 10) A (10 ~ 100) A	1.2×10^{-4} 5.2×10^{-5} 1.4×10^{-5} 9.4×10^{-6} 1.1×10^{-5} 7.8×10^{-4} 6.6×10^{-4} 7.2×10^{-5} 4.9×10^{-5} 7.5×10^{-5} 2.2×10^{-4} 4.7×10^{-4} 1.3×10^{-3}	DMM, Current Shunt /KIQI-102
Electrical temperature calibrators(Sensor Exclusion) (Measure) R-Type S-Type K-Type N-Type	40104	(0 ~ 10.506) mV (10.506 ~ 17.451) mV (17.451 ~ 21.003) mV (0 ~ 9.587) mV (9.587 ~ 15.582) mV (15.582 ~ 18.609) mV (-6.404 ~ 24.905) mV (24.905 ~ 54.819) mV (-4.313 ~ 16.748) mV (16.748 ~ 36.256) mV (36.256 ~ 47.513) mV	2.5×10^{-4} 1.2×10^{-4} 6.9×10^{-5} 3.1×10^{-4} 1.3×10^{-4} 7.7×10^{-5} 2.7×10^{-4} 5.2×10^{-5} 2.6×10^{-4} 8.4×10^{-5} 4.1×10^{-5}	Meter Calibrator, DMM /KIQI-103

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Electrical temperature calibrators(Sensor Exclusion) (Measure)	40104			Meter Calibrator, DMM /KIQI-103
E-Type		(0 ~ 37.005) mV	5.7×10^{-5}	
		(37.005 ~ 61.017) mV	3.5×10^{-5}	
		(61.017 ~ 76.373) mV	2.5×10^{-5}	
J-Type		(-7.890 ~ 33.102) mV	2.1×10^{-4}	
		(33.102 ~ 69.553) mV	3.9×10^{-5}	
T-Type		(-6.180 ~ 4.279) mV	3.3×10^{-4}	
		(4.279 ~ 20.872) mV	2.6×10^{-4}	
B-Type		(0 ~ 4.834) mV	8.9×10^{-4}	
		(4.834 ~ 10.099) mV	2.5×10^{-4}	
		(10.099 ~ 13.820) mV	1.2×10^{-4}	
DC voltage		(0 ~ 100) mV	7.5×10^{-4}	
		(0.1 ~ 10) V	2.0×10^{-5}	
		(10 ~ 100) V	1.3×10^{-5}	
		(100 ~ 300) V	4.3×10^{-5}	
DC current		(0 ~ 1) mA	6.9×10^{-4}	
		(1 ~ 10) mA	9.5×10^{-5}	
		(10 ~ 100) mA	1.1×10^{-4}	
Resistance		(0 ~ 1) Ω	1.5×10^{-4}	
		(1 ~ 10) Ω	6.7×10^{-5}	
		(10 ~ 100) Ω	6.2×10^{-5}	
Resistance		(0.1 ~ 10) k Ω	6.0×10^{-5}	
		(10 ~ 100) k Ω	6.1×10^{-5}	
(Source)				
R-Type		(0 ~ 10.506) mV	3.4×10^{-4}	
		(10.506 ~ 17.451) mV	1.6×10^{-4}	
		(17.451 ~ 21.003) mV	9.2×10^{-5}	
S-Type		(0 ~ 9.587) mV	4.0×10^{-4}	
		(9.587 ~ 15.582) mV	1.7×10^{-4}	
		(15.582 ~ 18.609) mV	9.6×10^{-5}	
K-Type		(-6.404 ~ 24.905) mV	3.7×10^{-4}	
		(24.905 ~ 54.819) mV	6.4×10^{-5}	
N-Type		(-4.313 ~ 16.748) mV	3.7×10^{-4}	
		(16.748 ~ 36.256) mV	1.0×10^{-4}	
		(36.256 ~ 47.513) mV	4.7×10^{-5}	
E-Type		(0 ~ 37.005) mV	7.6×10^{-5}	
	(37.005 ~ 61.017) mV	4.1×10^{-5}		
	(61.017 ~ 76.373) mV	2.6×10^{-5}		

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Electrical temperature calibrators(Sensor Exclusion) (Source)	40104			Meter Calibrator, DMM /KIQI-103
J-Type		(-7.890 ~ 33.102) mV	2.8×10^{-4}	
		(33.102 ~ 69.553) mV	4.5×10^{-5}	
T-Type		(-6.180 ~ 4.279) mV	4.4×10^{-4}	
		(4.279 ~ 20.872) mV	3.7×10^{-4}	
B-Type		(0 ~ 4.834) mV	1.3×10^{-3}	
		(4.834 ~ 10.099) mV	3.3×10^{-4}	
		(10.099 ~ 13.820) mV	1.6×10^{-4}	
DC voltage		(0 ~ 10) mV	6.0×10^{-4}	
		(10 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 1) V	1.5×10^{-5}	
		(1 ~ 10) V	6.9×10^{-6}	
DC current		(10 ~ 100) V	8.3×10^{-6}	
		(0 ~ 1) mA	5.9×10^{-4}	
		(1 ~ 10) mA	7.6×10^{-5}	
	(10 ~ 100) mA	7.5×10^{-5}		
Resistance	(0 ~ 1) Ω	5.9×10^{-4}		
	(0.001 ~ 100) k Ω	5.9×10^{-5}		
DC current shunts	40105			Meter Calibrator, Amplifier, DMM /KIQI-104
DC shunt		(0 ~ 100) m Ω	4.7×10^{-4}	
		(0.1 ~ 1) Ω	1.3×10^{-4}	
		(1 ~ 10) Ω	8.1×10^{-5}	
		(10 ~ 100) Ω	7.2×10^{-5}	
	(100 ~ 1 000) Ω	1.6×10^{-4}		
Galvanometers/null detectors	40106			Meter Calibrator, /KIQI-105
DC voltage		(0 ~ 1 000) V	3.4×10^{-3}	
DC power supplies	40108			DMM, Current Shunt /KIQI-106
DC voltage		$\pm(0 \sim 100)$ mV	8.8×10^{-6}	
		$\pm(0.1 \sim 10)$ V	6.9×10^{-6}	
		$\pm(10 \sim 100)$ V	8.3×10^{-6}	
		$\pm(100 \sim 1\ 000)$ V	8.4×10^{-6}	
DC current		$\pm(0 \sim 100)$ μ A	2.0×10^{-4}	
		$\pm(0.1 \sim 10)$ mA	1.2×10^{-4}	
		$\pm(0.01 \sim 1)$ A	1.2×10^{-4}	
		$\pm(1 \sim 10)$ A	3.5×10^{-4}	
		$\pm(10 \sim 100)$ A	6.0×10^{-4}	
		$\pm(100 \sim 400)$ A	1.2×10^{-3}	

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC voltage dividers Ratio (1 ~ 1 000) V (1 ~ 10) kV	40110	(100 : 1)	0.081	Meter Calibrator, DMM,high voltage probe KIQI-40110
		(1 000 : 1)	0.13	
DC voltmeters DC voltage	40112	(0 ~ 10) mV	7.1×10^{-4}	Meter Calibrator, /KIQI-107
		(10 ~ 100) mV	7.9×10^{-5}	
		(0.1 ~ 1) V	1.7×10^{-5}	
		(1 ~ 10) V	9.5×10^{-6}	
		(10 ~ 100) V	1.1×10^{-5}	
		(100 ~ 1 000) V	1.2×10^{-5}	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Earth testers Resistance AC Voltage	40205	(0 ~ 100) mΩ	6.7×10^{-4}	Meter Calibrator, STD Resistor /KIQI-116
		(0.1 ~ 10) Ω	6.8×10^{-4}	
		(10 ~ 100) Ω	6.4×10^{-4}	
		(0.1 ~ 100) kΩ	6.6×10^{-4}	
		(60 Hz)		
		(0.1 ~ 1) V	6.8×10^{-4}	
		(1 ~ 10) V	6.5×10^{-4}	
		(10 ~ 100) V	6.3×10^{-4}	
Insulation testers DC output voltage AC voltage Resistance	40210	(0 ~ 1 000) V	6.8×10^{-5}	High Voltage Meter Decade Resistor, Meter Calibrator, DMM /KIQI-117
		(1 ~ 10) kV	6.6×10^{-3}	
		(60 Hz)		
		(1 ~ 1 000) V	6.7×10^{-4}	
		(0 ~ 10) MΩ	1.4×10^{-3}	
		(0.01 ~ 10) GΩ	1.2×10^{-2}	
		(10 ~ 1 000) GΩ	3.5×10^{-2}	

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Resistance bridges/ Similar instruments Resistance(Rheostat Arm) Resistance(Ratio Arm)	40213	(0 ~ 100) mΩ (0.1 ~ 1) Ω (0.001 ~ 10) kΩ ×0.001 ×0.01 ×0.1 ×1 ×10 ×100 ×1 000	4.2×10^{-4} 8.3×10^{-5} 6.9×10^{-5} 6.8×10^{-5} 5.9×10^{-5} 5.9×10^{-5} 5.9×10^{-5} 5.9×10^{-5} 6.3×10^{-5} 6.3×10^{-5}	DMM, STD Resistor /KIQI-118
Resistance meters Resistance	40214	(0 ~ 1) mΩ (1 ~ 100) mΩ (0.1 ~ 1) Ω (1 ~ 100) Ω (0.1 ~ 10) kΩ (10 ~ 100) kΩ (0.1 ~ 1) MΩ (1 ~ 10) MΩ	8.8×10^{-5} 9.1×10^{-5} 8.8×10^{-5} 6.7×10^{-5} 7.0×10^{-5} 6.8×10^{-5} 7.0×10^{-5} 7.1×10^{-5}	STD Resistor /KIQI-119
Resistors Resistance	40215	(0 ~ 10) mΩ (10 ~ 100) mΩ (0.1 ~ 1) Ω (1 ~ 10) Ω (10 ~ 100) Ω (0.1 ~ 1) kΩ (1 ~ 100) kΩ (0.1 ~ 1) MΩ (1 ~ 10) MΩ (10 ~ 100) MΩ (100 ~ 1 000) MΩ	1.4×10^{-3} 1.4×10^{-3} 1.6×10^{-4} 9.5×10^{-5} 1.4×10^{-5} 1.1×10^{-5} 1.2×10^{-5} 1.4×10^{-5} 1.5×10^{-5} 6.5×10^{-5} 7.1×10^{-4}	Meter Calibrator, DMM /KIQI-120

402. Resistance, Capacitance and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Impedance bridges/LCR meters	40217			STD. Resistors, STD. Capacitors, STD. Inductors /KIQI-121
Inductance		(1 kHz) 1 mH 10 mH 100 mH 1 H	1.2×10^{-3} 1.2×10^{-3} 1.2×10^{-3} 1.2×10^{-3}	
Capacitance		(1 kHz) 1 pF 10 pF 100 pF 1 000 pF	4.0×10^{-4} 2.5×10^{-4} 2.5×10^{-4} 2.5×10^{-4}	
Resistance		(1 kHz) 1 Ω 10 Ω 100 Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω	1.4×10^{-5} 1.4×10^{-5} 1.4×10^{-5} 2.5×10^{-5} 1.4×10^{-5} 1.4×10^{-5} 2.5×10^{-5}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC ammeters	40301			Meter Calibrator, Amplifier /KIQI-131
AC Current		(60 Hz ~ 1 kHz) (1 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A (1 ~ 100) A (5 kHz) (1 ~ 10) mA (0.01 ~ 1) A (10 kHz) (1 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A	5.6×10^{-4} 2.2×10^{-4} 7.6×10^{-4} 4.1×10^{-3} 1.3×10^{-3} 1.2×10^{-3} 2.9×10^{-3} 2.8×10^{-3} 1.1×10^{-2}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Clamp ammeters/voltmeters	40302			Meter Calibrator, Amplifier Current Coil, STD. Resistors, /KIQI-132
DC current		(1 ~ 10) mA	2.5×10^{-3}	
		(0.01 ~ 1) A	2.4×10^{-3}	
		(1 ~ 10) A	2.5×10^{-3}	
		(10 ~ 100) A	2.7×10^{-3}	
		(100 ~ 1 000) A	2.8×10^{-3}	
DC voltage		(1 000 ~ 2 500) A	2.6×10^{-3}	
		(0 ~ 100) mV	6.5×10^{-4}	
		(0.1 ~ 1) V	6.2×10^{-4}	
		(1 ~ 1 000) V	6.4×10^{-4}	
AC current		(60 Hz)		
		(1 ~ 100) mA	2.5×10^{-3}	
		(0.1 ~ 1) A	2.6×10^{-3}	
		(1 ~ 10) A	3.1×10^{-3}	
		(10 ~ 500) A	4.9×10^{-3}	
		(500 ~ 1 000) A	4.8×10^{-3}	
		(1 000 ~ 2 000) A	4.7×10^{-3}	
		(2 000 ~ 2 500) A	4.8×10^{-3}	
AC voltage		(60 Hz)		
		(10 ~ 100) mV	1.0×10^{-3}	
	(0.1 ~ 1) V	6.8×10^{-4}		
	(1 ~ 100) V	6.5×10^{-4}		
	(100 ~ 1 000) V	6.6×10^{-4}		
Resistance	10 Ω	6.2×10^{-4}		
	(0.01 ~ 10) k Ω	6.4×10^{-4}		
	(0.01 ~ 10) M Ω	6.2×10^{-4}		
AC voltage/current calibrators	40303			DMM, Current Shunt /KIQI-133
AC voltage		(40 Hz)		
		(10 ~ 100) mV	5.2×10^{-4}	
		(0.1 ~ 1) V	2.0×10^{-4}	
		(1 ~ 1 000) V	1.6×10^{-4}	
		(1 kHz)		
		(10 ~ 100) mV	3.3×10^{-4}	
		(0.1 ~ 1) V	1.8×10^{-4}	
		(1 ~ 100) V	1.2×10^{-4}	
		(100 ~ 1 000) V	1.5×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC voltage/current calibrators AC current	40303	(40 Hz) (0.1 ~ 1) mA (1 ~ 100) mA (0.1 ~ 1) A (1 kHz) (0.1 ~ 1) mA (1 ~ 100) mA (0.1 ~ 1) A (1 ~ 100) A	5.1×10^{-4} 5.0×10^{-4} 8.6×10^{-4} 5.1×10^{-4} 5.0×10^{-4} 8.6×10^{-4} 1.8×10^{-3}	DMM, Current Shunt /KIQI-133
AC current shunts AC shunt	40305	(1 kHz) 1 mΩ 10 mΩ 100 mΩ 1 Ω 10 Ω 100 Ω 1 000 Ω	2.8×10^{-3} 2.9×10^{-3} 7.8×10^{-4} 2.7×10^{-4} 2.7×10^{-4} 5.9×10^{-4} 6.5×10^{-4}	Meter Calibrator, Amplifier, DMM /KIQI-134
Power factor meters Power factor (lag, lead)	40310	(60 Hz) 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1	2.4×10^{-2} 1.2×10^{-2} 7.7×10^{-3} 5.5×10^{-3} 4.2×10^{-3} 3.3×10^{-3} 2.7×10^{-3} 2.1×10^{-3} 1.7×10^{-3} 1.2×10^{-3}	Power Calibrator /KIQI-135

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC power meters	40311	(60 Hz)		Power Calibrator, Current Coil /KIQI-136
AC Voltage		(1 ~ 100) V	2.9×10^{-4}	
		(100 ~ 1 000) V	3.9×10^{-4}	
AC Current		(60 Hz)		
		(1 ~ 10) mA	1.7×10^{-3}	
		(10 ~ 100) mA	8.8×10^{-4}	
		(0.1 ~ 1) A	1.2×10^{-3}	
		(1 ~ 10) A	1.6×10^{-3}	
		(10 ~ 100) A	2.0×10^{-3}	
AC Wattage		(100 ~ 1 000) A	1.2×10^{-3}	
		(60 Hz)		
		(1 ~ 10) W	1.1×10^{-3}	
		(10 ~ 100) W	1.4×10^{-3}	
		(0.1 ~ 4.8) kW	1.2×10^{-3}	
		(4.8 ~ 120) kW	1.3×10^{-3}	
		(120 ~ 240) kW	2.7×10^{-3}	
		(60 Hz)		
		0.1	2.4×10^{-2}	
		0.2	1.2×10^{-2}	
		0.3	7.7×10^{-3}	
	0.4	5.5×10^{-3}		
	0.5	4.2×10^{-3}		
	0.6	3.3×10^{-3}		
	0.7	2.7×10^{-3}		
	0.8	2.1×10^{-3}		
	0.9	1.7×10^{-3}		
	1	1.2×10^{-3}		
AC power supplies	40312	(1 kHz)		DMM, Current Shunt /KIQI-137
AC voltage		(1 ~ 100) V	5.9×10^{-4}	
		(100 ~ 1 000) V	6.0×10^{-4}	
AC current		(1 kHz)		
		(1 ~ 100) mA	1.4×10^{-3}	
		(0.1 ~ 10) A	1.7×10^{-3}	
	(10 ~ 20) A	1.5×10^{-3}		
Puncture/safety testers	40313			Cutoff current Calibrator, DMM, High Voltage Meter, kV Meter/KIQI-138
DC voltage		10 V	7.1×10^{-4}	
		(10 ~ 100) V	7.2×10^{-4}	
		(100 ~ 500) V	1.4×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Puncture/safety testers DC voltage DC current AC voltage	40313	(0.5 ~ 5) kV (5 ~ 10) kV (10 ~ 100) kV (0.5 ~ 1) mA (1 ~ 2) mA (2 ~ 5) mA (5 ~ 10) mA (60 Hz) (10 ~ 100) V (100 ~ 500) V (0.5 ~ 5) kV (5 ~ 10) kV (10 ~ 100) kV (0.5 ~ 1) mA (1 ~ 2) mA (2 ~ 5) mA (5 ~ 20) mA (20 ~ 50) mA (50 ~ 100) mA	1.1×10^{-2} 8.5×10^{-3} 1.3×10^{-2} 6.6×10^{-3} 6.1×10^{-3} 6.0×10^{-3} 6.1×10^{-3} 7.3×10^{-4} 1.5×10^{-3} 2.9×10^{-2} 1.8×10^{-2} 1.7×10^{-2} 6.4×10^{-3} 7.0×10^{-3} 6.5×10^{-3} 7.0×10^{-3} 3.5×10^{-3} 1.4×10^{-3}	Cutoff current Calibrator, DMM, High Voltage Meter, kV Meter/KIQI-138
Power recorders AC Wattage	40314	(60) Hz (1 ~ 10) W (10 ~ 100) W (0.1 ~ 4.8) kW	1.1×10^{-2} 1.4×10^{-3} 1.2×10^{-3}	Power Calibrator /KIQI-139
AC voltmeters AC voltage	40318	(60 Hz ~ 1 kHz) 10 mV (10 ~ 100) mV (0.1 ~ 10) V (10 ~ 1 000) V	9.3×10^{-4} 2.3×10^{-4} 1.1×10^{-4} 1.2×10^{-4}	Meter Calibrator /KIQI-140

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.	
LF amplifiers	40401			Meter Calibrator	
Gain(DC)		(0 ~ 100) mV	1.8×10^{-5}	DMM	
		(0.1 ~ 1) V	1.2×10^{-5}	KIQI-40401	
		(1 ~ 10) V	1.1×10^{-5}		
		(10 ~ 100) V	1.3×10^{-5}		
		(100 ~ 1 000) V	1.4×10^{-5}		
Gain(low frequency)					
40 Hz		100 mV	3.6×10^{-4}		
		(0.1 ~ 10) V	2.3×10^{-4}		
		(10 ~ 100) V	2.2×10^{-4}		
		(10 ~ 1 000) V	4.4×10^{-4}		
40 Hz ~ 1 kHz		100 mV	2.8×10^{-4}		
		(0.1 ~ 10) V	1.4×10^{-4}		
		(10 ~ 100) V	1.5×10^{-4}		
		(10 ~ 1 000) V	1.6×10^{-4}		
1 kHz ~ 10 kHz		100 mV	2.9×10^{-4}		
		(0.1 ~ 10) V	1.6×10^{-4}		
		(10 ~ 100) V	1.5×10^{-4}		
10 kHz ~ 20 kHz		100 mV	4.6×10^{-4}		
		(0.1 ~ 100) V	2.7×10^{-4}		
20 kHz ~ 50 kHz		100 mV	1.0×10^{-3}		
	(0.1 ~ 10) V	7.3×10^{-4}			
	(10 ~ 100) V	7.6×10^{-4}			
50 kHz ~ 100 kHz	100 mV	1.6×10^{-3}			
	(0.1 ~ 1) V	7.9×10^{-4}			
	(1 ~ 10) V	7.7×10^{-4}			
	(10 ~ 100) V	9.3×10^{-4}			
DC/LF attenuators	40402			DMM	
Attenuation(voltage)				True RMS Voltmeter	
40 Hz		(20 ~ -50) dB	0.059 dB	KIQI-40402	
		(-50 ~ 60) dB	0.070 dB		
40 Hz ~ 10 kHz		(20 ~ -50) dB	0.059 dB		
		(-50 ~ -60) dB	0.070 dB		
10 kHz ~ 20 kHz		(20 ~ -40) dB	0.059 dB		
		(-40 ~ -50) dB	0.063 dB		
		(-50 ~ -60) dB	0.094 dB		
20 kHz ~ 50 kHz		(20 ~ -30) dB	0.059 dB		
		(-30 ~ -40) dB	0.063 dB		
		(-40 ~ -50) dB	0.084 dB		
		(-50 ~ -60) dB	0.19 dB		

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC/LF attenuators Attenuation(voltage) 50 kHz ~ 100 kHz	40402	(20 ~ -20) dB (-20 ~ -40) dB (-40 ~ -50) dB (-50 ~ -60) dB	0.059 dB 0.063 dB 0.085 dB 0.20 dB	DMM True RMS Voltmeter KIQI-40402
Multimeter calibrators DC voltage(±) DC current(±) Resistance AC voltage 40 Hz 40 Hz ~ 1 kHz 1 kHz ~ 10 kHz 10 kHz ~ 20 kHz 20 kHz ~ 50 kHz 50 kHz ~ 100 kHz	40403	(0 ~ 100) mV (0.1 ~ 10) V (10 ~ 100) V (100 ~ 1 000) V (0 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A (1 ~ 10) A (10 ~ 100) A (0 ~ 1) Ω (1 ~ 10) Ω (10 ~ 100) Ω (0.1 ~ 100) kΩ (0.1 ~ 1) MΩ (1 ~ 10) MΩ (10 ~ 100) MΩ (0.1 ~ 1) GΩ 1 mV ~ 100 mV 100 mV ~ 1 000 V 1 mV ~ 100 mV 100 mV ~ 1 000 V 1 mV ~ 100 mV 100 mV ~ 1 000 V 1 mV ~ 100 mV 100 mV ~ 1 000 V 1 mV ~ 100 mV 100 mV ~ 100 V 1 mV ~ 100 mV 100 mV ~ 100 V	8.8×10^{-6} 3.8×10^{-6} 6.0×10^{-6} 6.1×10^{-6} 2.3×10^{-5} 4.6×10^{-5} 1.9×10^{-4} 4.2×10^{-4} 6.1×10^{-4} 1.6×10^{-5} 1.1×10^{-5} 8.6×10^{-6} 8.2×10^{-6} 9.5×10^{-6} 2.1×10^{-5} 1.4×10^{-4} 1.3×10^{-3} 2.2×10^{-4} 1.3×10^{-4} 2.0×10^{-4} 1.3×10^{-4} 2.2×10^{-4} 1.3×10^{-4} 4.2×10^{-4} 2.8×10^{-4} 9.4×10^{-4} 7.1×10^{-4} 1.2×10^{-3} 7.2×10^{-4}	DMM Current shunt KIQI-40403

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Multimeter calibrators AC current 40 Hz ~ 1 kHz 1 kHz ~ 10 kHz	40403	(1 ~ 100) μ A (0.1 ~ 100) mA (0.1 ~ 1) A (1 ~ 10) A (10 ~ 100) A (1 ~ 100) μ A (0.1 ~ 1) mA (1 ~ 10) mA (10 ~ 100) mA (0.1 ~ 1) A	1.8×10^{-3} 4.8×10^{-4} 8.6×10^{-4} 1.2×10^{-3} 1.4×10^{-3} 1.6×10^{-2} 1.7×10^{-3} 1.5×10^{-3} 1.2×10^{-3} 6.3×10^{-3}	DMM Current shunt KIQI-40403
Oscilloscope calibrators DC voltage(\pm) AC voltage 40 Hz 40 Hz ~ 1 kHz 1 kHz ~ 10 kHz Signal generator level 600 mV Time	40404	(0 ~ 10) mV (10 ~ 100) mV (0.1 ~ 10) V (10 ~ 100) V (10 ~ 100) mV (0.1 ~ 1) V (1 ~ 100) V (10 ~ 100) mV (0.1 ~ 1) V (1 ~ 100) V 50 kHz ~ 10 MHz 10 MHz ~ 2 GHz 1 ns ~ 1 s 1 s ~ 5 s	8.2×10^{-5} 1.2×10^{-5} 8.0×10^{-6} 9.3×10^{-6} 5.3×10^{-4} 2.2×10^{-4} 1.2×10^{-4} 3.4×10^{-4} 2.0×10^{-4} 1.2×10^{-4} 5.3×10^{-4} 1.2×10^{-4} 1.2×10^{-4} 3.3×10^{-2} 3.7×10^{-2} 7.3×10^{-6} 2.2×10^{-6}	DMM Frequency counter Oscilloscope KIQI-40404
Audio distortion analyzers/ meters Input DC voltage Input AC voltage	40407	(0 ~ 1) mV (0.001 ~ 100) V (100 ~ 1 000) V	9.6×10^{-4} 7.1×10^{-4} 7.1×10^{-5}	Meter Calibrator Audio distortion analyzer KIQI-40407

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Audio distortion analyzers/ meters	40407			Meter Calibrator Audio distortion analyzer KIQI-40407
Input AC voltage		(1 ~ 10) mV	1.4×10^{-3}	
10 Hz		(10 ~ 100) mV	9.8×10^{-4}	
		(0.1 ~ 100) V	9.2×10^{-4}	
10 Hz ~ 40 Hz		(1 ~ 10) mV	1.1×10^{-3}	
		(10 ~ 100) mV	7.7×10^{-4}	
		(0.1 ~ 100) V	7.3×10^{-4}	
40 Hz ~ 1 kHz		(1 ~ 10) mV	1.1×10^{-3}	
		(10 ~ 100) mV	7.3×10^{-4}	
		(0.1 ~ 100) V	7.1×10^{-4}	
		(100 ~ 1 000) V	1.2×10^{-4}	
1 kHz ~ 20 kHz		(1 ~ 10) mV	1.1×10^{-3}	
		(10 ~ 100) mV	7.3×10^{-4}	
		(0.1 ~ 100) V	7.1×10^{-4}	
20 kHz ~ 50 kHz		(1 ~ 10) mV	1.4×10^{-3}	
		(10 ~ 100) mV	8.2×10^{-4}	
		(0.1 ~ 10) V	7.2×10^{-4}	
		(10 ~ 100) V	7.5×10^{-4}	
50 kHz ~ 100 kHz		(1 ~ 10) mV	1.9×10^{-3}	
		(10 ~ 100) mV	1.3×10^{-3}	
		(0.1 ~ 10) V	7.8×10^{-4}	
		(10 ~ 100) V	9.2×10^{-4}	
Input flatness(voltage)		40 Hz	7.3×10^{-4}	
(0.1 ~ 10) V		40 Hz ~ 50 kHz	7.2×10^{-4}	
		50 kHz ~ 100 kHz	7.6×10^{-4}	
Input flatness(level)		40 Hz ~ 100 kHz	0.006 4 dB	
(-10 ~ 10) dB				
Attenuator(level)		(20 ~ -20) dB	0.006 1 dB	
40 Hz		(-20 ~ -30) dB	0.006 5 dB	
		(-30 ~ -40) dB	0.007 3 dB	
		(-40 ~ -50) dB	0.014 dB	
		(-50 ~ -60) dB	0.044 dB	
40 Hz ~ 20 kHz		(20 ~ -30) dB	0.005 9 dB	
		(-30 ~ -40) dB	0.007 3 dB	
		(-40 ~ -50) dB	0.014 dB	
		(-50 ~ -60) dB	0.044 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Audio distortion analyzers/ meters Attenuator(level) 20 kHz ~ 50 kHz Attenuator 50 kHz ~ 100 kHz Distortion 40 Hz ~ 100 kHz	40407	(20 ~ -30) dB (-30 ~ -40) dB (-40 ~ -50) dB (-50 ~ -60) dB (20 ~ -20) dB (-20 ~ -40) dB (-40 ~ -50) dB (-50 ~ -60) dB (0.1 ~ 316.2) %	0.006 0 dB 0.007 3 dB 0.014 dB 0.045 dB 0.006 5 dB 0.008 5 dB 0.019 dB 0.062 dB 5.8×10^{-2}	Meter Calibrator Audio distortion analyzer KIQI-40407
LF filters Filter characteristics Low pass filter Hi pass filter Band pass filter Band Rejection filter	40408	10 Hz 20 Hz ~ 100 Hz 100 Hz ~ 100 kHz 100 kHz ~ 1 MHz	1.4×10^{-3} 1.8×10^{-4} 1.7×10^{-4} 7.4×10^{-5}	Signal analyzer, Signal generator KIQI-40408
LF/Audio signal analyzers Input DC voltage Input AC voltage 10 Hz 10 Hz ~ 40 Hz 40 Hz ~ 1 kHz 1 kHz ~ 10 kHz	40409	(0 ~ 1) mV (1 ~ 100) mV (0.1 ~ 100) V (100 ~ 1 000) V (0 ~ 10) mV (10 ~ 100) mV (0.1 ~ 100) V (1 ~ 10) mV (10 ~ 100) mV (0.1 ~ 100) V (0 ~ 10) mV (10 ~ 100) mV (0.1 ~ 100) V (100 ~ 1 000) V (0 ~ 10) mV (10 ~ 100) mV (0.1 ~ 100) V	9.6×10^{-4} 7.1×10^{-4} 7.1×10^{-4} 7.1×10^{-5} 1.4×10^{-3} 9.8×10^{-4} 9.2×10^{-4} 1.1×10^{-3} 7.7×10^{-4} 7.3×10^{-4} 1.1×10^{-3} 7.3×10^{-4} 7.1×10^{-4} 1.2×10^{-4} 1.1×10^{-3} 7.3×10^{-4} 7.1×10^{-4}	Meter Calibrator, Signal analyzer, Signal generator KIQI-40409

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF/Audio signal analyzers	40409			Meter Calibrator, Signal analyzer, Signal generator KIQI-40409
Input AC voltage 10 kHz ~ 20 kHz		(0 ~ 10) mV	1.1×10^{-3}	
		(10 ~ 100) mV	7.3×10^{-4}	
		(0.1 ~ 100) V	7.1×10^{-4}	
20 kHz ~ 50 kHz		(0 ~ 10) mV	1.4×10^{-3}	
		(10 ~ 100) mV	8.2×10^{-4}	
		(0.1 ~ 10) V	7.2×10^{-4}	
		(10 ~ 100) V	7.5×10^{-4}	
50 kHz ~ 100 kHz		(0 ~ 10) mV	1.3×10^{-3}	
		(10 ~ 100) mV	7.8×10^{-4}	
		(0.1 ~ 10) V	7.7×10^{-4}	
		(10 ~ 100) V	9.1×10^{-4}	
Input flatness(voltage) (0.1 ~ 10) V		40 Hz	2.0×10^{-4}	
		40 Hz ~ 20 kHz	1.1×10^{-4}	
		20 kHz ~ 50 kHz	1.6×10^{-4}	
		50 kHz ~ 100 kHz	3.0×10^{-4}	
Input flatness(level)				
10 dB		40 Hz ~ 50 kHz	0.005 9 dB	
		50 kHz ~ 100 kHz	0.006 1 dB	
0 dB		40 Hz ~ 20 kHz	0.005 8 dB	
		20 kHz ~ 100 kHz	0.006 4 dB	
-10 dB		40 Hz ~ 50 kHz	0.005 9 dB	
		50 kHz ~ 100 kHz	0.006 4 dB	
Attenuator				
40 Hz		(20 ~ 0) dB	0.006 0 dB	
		(0 ~ -10) dB	0.005 9 dB	
		(-10 ~ -20) dB	0.005 8 dB	
		(-20 ~ -30) dB	0.006 5 dB	
		(-30 ~ -40) dB	0.007 2 dB	
		(-40 ~ -50) dB	0.014 dB	
		(-50 ~ -60) dB	0.044 dB	
40 Hz ~ 20 kHz		(20 ~ -30) dB	0.005 9 dB	
		(-30 ~ -40) dB	0.007 2 dB	
		(-40 ~ -50) dB	0.014 dB	
		(-50 ~ -60) dB	0.044 dB	
20 kHz ~ 50 kHz		(20 ~ -30) dB	0.005 9 dB	
		(-30 ~ -40) dB	0.007 3 dB	
		(-40 ~ -50) dB	0.014 dB	
		(-50 ~ -60) dB	0.044 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF/Audio signal analyzers	40409			Meter Calibrator, Signal analyzer, Signal generator KIQI-40409
50 kHz ~ 100 kHz		(20 ~ 10) dB	0.006 3 dB	
		(10 ~ -10) dB	0.006 4 dB	
		(-10 ~ -20) dB	0.006 2 dB	
		(-20 ~ -30) dB	0.007 9 dB	
		(-30 ~ -40) dB	0.008 4 dB	
		(-40 ~ -50) dB	0.019 dB	
		(-50 ~ -60) dB	0.061 dB	
Distortion		0 dB	6.7×10^{-4}	
40 Hz ~ 10 kHz		(0 ~ -10) dB	6.0×10^{-4}	
		(-10 ~ -30) dB	5.9×10^{-4}	
		(-30 ~ -40) dB	6.0×10^{-4}	
		(-40 ~ -60) dB	6.1×10^{-4}	
Output DC voltage (offset)		(-100 ~ 100) V	5.8×10^{-5}	
Output AC voltage				
40 Hz		(10 ~ 100) mV	2.3×10^{-4}	
		(0.1 ~ 100) V	1.4×10^{-4}	
40 Hz ~ 1 kHz		(10 ~ 100) mV	2.1×10^{-4}	
		(0.1 ~ 100) V	1.3×10^{-4}	
1 kHz ~ 10 kHz		(10 ~ 100) mV	2.3×10^{-4}	
		(0.1 ~ 100) V	1.4×10^{-4}	
10 kHz ~ 20 kHz		(10 ~ 100) mV	4.2×10^{-4}	
		(0.1 ~ 100) V	2.6×10^{-4}	
20 kHz ~ 50 kHz		(10 ~ 100) mV	9.5×10^{-4}	
		(0.1 ~ 100) V	1.2×10^{-3}	
50 kHz ~ 100 kHz		(10 ~ 100) mV	1.2×10^{-3}	
		(0.1 ~ 10) V	7.2×10^{-4}	
		(10 ~ 100) V	7.3×10^{-4}	
Output attenuator				
Voltage				
40 Hz		(20 ~ -40) dB	0.058 dB	
		(-40 ~ -50) dB	0.059 dB	
		(-50 ~ -60) dB	0.070 dB	
40 Hz ~ 1 kHz		(20 ~ -40) dB	0.058 dB	
		(-40 ~ -50) dB	0.058 dB	
		(-50 ~ -60) dB	0.062 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF/Audio signal analyzers	40409			Meter Calibrator, Signal analyzer, Signal generator KIQI-40409
Output attenuator Voltage				
1 kHz ~ 10 kHz		(20 ~ -40) dB	0.058 dB	
		(-40 ~ -50) dB	0.059 dB	
		(-50 ~ -60) dB	0.070 dB	
10 kHz ~ 20 kHz		(20 ~ -30) dB	0.058 dB	
		(-30 ~ -40) dB	0.059 dB	
		(-40 ~ -50) dB	0.062 dB	
		(-50 ~ -60) dB	0.094 dB	
20 kHz ~ 50 kHz		(20 ~ -20) dB	0.058 dB	
		(-20 ~ -30) dB	0.059 dB	
		(-30 ~ -40) dB	0.062 dB	
		(-40 ~ -50) dB	0.084 dB	
		(-50 ~ -60) dB	0.19 dB	
50 kHz ~ 100 kHz		(20 ~ -10) dB	0.058 dB	
		(-10 ~ -20) dB	0.059 dB	
		(-20 ~ -30) dB	0.061 dB	
		(-30 ~ -40) dB	0.063 dB	
		(-40 ~ -50) dB	0.085 dB	
		(-50 ~ -60) dB	0.20 dB	
Output flatness(voltage)				
(0 ~ 0.1) V		40 Hz	2.3×10^{-4}	
		40 Hz ~ 1 kHz	2.1×10^{-4}	
		1 kHz ~ 10 kHz	2.3×10^{-4}	
		10 kHz ~ 20 kHz	4.2×10^{-4}	
		20 kHz ~ 50 kHz	9.5×10^{-4}	
		50 kHz ~ 100 kHz	1.2×10^{-3}	
(0.1 ~ 100) V		40 Hz	1.4×10^{-4}	
		40 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.4×10^{-4}	
		10 kHz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.1×10^{-4}	
		50 kHz ~ 100 kHz	7.3×10^{-4}	
Output flatness(level)				
(-10 ~ 10) dB		40 Hz ~ 100 kHz	0.058 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.	
LF/Audio signal analyzers Input frequency	40409	10 Hz	1.5×10^{-4}	Meter Calibrator, Signal analyzer, Signal generator KIQI-40409	
		10 Hz ~ 100 Hz	3.2×10^{-5}		
		100 Hz ~ 1 kHz	7.1×10^{-4}		
		1 kHz ~ 10 kHz	7.7×10^{-5}		
		10 kHz ~ 100 kHz	3.2×10^{-5}		
		100 kHz ~ 1 MHz	6.5×10^{-5}		
Output frequency		1 Hz	7.1×10^{-7}		
		1 Hz ~ 1 GHz	5.8×10^{-7}		
Line frequency meters Frequency	40410	(3 V)		Meter Calibrator /KIQI-146	
		10 Hz	1.2×10^{-3}		
		(10 ~ 1 000) Hz	6.8×10^{-4}		
Function generators DC voltage(±)	40411	(-100 ~ 100) V	5.8×10^{-5}	GPS Receiver RMS voltmeter Frequency counter Audio distortion analyzer KIQI-40411	
AC voltage 40 Hz		(10 ~ 100) mV	2.2×10^{-4}		
		(0.1 ~ 100) V	1.4×10^{-4}		
40 Hz ~ 1 kHz		(10 ~ 100) mV	2.1×10^{-4}		
		(0.1 ~ 100) V	1.3×10^{-4}		
1 kHz ~ 10 kHz		(10 ~ 100) mV	2.2×10^{-4}		
		(0.1 ~ 100) V	1.4×10^{-4}		
10 kHz ~ 20 kHz		(10 ~ 100) mV	4.2×10^{-4}		
		(0.1 ~ 100) V	2.6×10^{-4}		
20 kHz ~ 50 kHz		(10 ~ 100) mV	9.4×10^{-4}		
		(0.1 ~ 100) V	7.1×10^{-4}		
50 kHz ~ 100 kHz		(10 ~ 100) mV	1.2×10^{-3}		
		(0.1 ~ 100) V	7.2×10^{-4}		
Frequency		1 Hz	7.0×10^{-7}		
		1 Hz ~ 1 GHz	5.8×10^{-7}		
Attenuator(level) 40 Hz			(20 ~ -50) dB		0.058 dB
			-(50 ~ 60) dB		0.069 dB
40 Hz ~ 10 kHz			(20 ~ -50) dB		0.059 dB
			-(50 ~ 60) dB		0.069 dB
10 kHz ~ 20 kHz			(20 ~ -30) dB		0.058 dB
		-(30 ~ -40) dB	0.059 dB		
		-(40 ~ 50) dB	0.062 dB		
		-(50 ~ 60) dB	0.093 dB		

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Function generators Attenuator(level) 20 kHz ~ 100 kHz Frequency modulation 250 kHz ~ 10 MHz 10 MHz ~ 1 GHz Amplitude modulation 150 kHz ~ 10 MHz 10 MHz ~ 1 GHz	40411	(20 ~ -20) dB -(20 ~ 30) dB -(30 ~ 40) dB -(40 ~ 50) dB -(50 ~ 60) dB 1 kHz ~ 10 kHz 10 kHz ~ 400 kHz 1 kHz ~ 10 kHz 10 kHz ~ 400 kHz (1 ~ 99) % (1 ~ 99) %	0.059 dB 0.061 dB 0.063 dB 0.084 dB 0.20 dB 2.5×10^{-2} 2.4×10^{-2} 1.3×10^{-2} 1.2×10^{-2} 2.5×10^{-2} 1.3×10^{-2}	GPS Receiver RMS voltmeter Frequency counter Audio distortion analyzer KIQI-40411
Genescopes Gain	40412	(0 ~ 10) V (10 ~ 100) V	1.3×10^{-2} 1.3×10^{-2}	Oscilloscope calibrator KIQI-40412
AC/DC high voltage voltmeters DC voltage	40413	1 kV (1 ~ 5) kV (5 ~ 10) kV (10 ~ 30) kV (30 ~ 60) kV	6.1×10^{-2} 6.1×10^{-2} 1.2×10^{-2} 6.1×10^{-3} 2.0×10^{-3}	Higt Voltage Power Supply/KIQI-147
LF impulse generators Voltage	40414	(0 ~ 20) kV -(0 ~ 20) kV	3.6×10^{-2} 3.6×10^{-2}	Oscilloscope High voltage probe KIQI-40414
Leakage current testers DC current AC voltage AC current	40416	(10 ~ 100) μ A (0.1 ~ 100) mA (1 kHz) (1 ~ 1 000) V (1 kHz) 100 μ A (0.1 ~ 10) mA (10 ~ 100) mA	1.3×10^{-3} 9.4×10^{-3} 6.3×10^{-3} 6.2×10^{-3} 5.9×10^{-3} 5.8×10^{-3}	Meter Calibrator /KIQI-148

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Electronic AC/DC loads	40417			Meter Calibrator, Amplifier, DMM, Current Shunt /KIQI-149
DC voltage		(0.1 ~ 1) V	7.4×10^{-5}	
		(1 ~ 100) V	7.3×10^{-5}	
		(100 ~ 1 000) V	7.2×10^{-5}	
DC current		(10 ~ 100) mA	1.8×10^{-4}	
		(0.1 ~ 1) A	2.0×10^{-4}	
		(1 ~ 10) A	5.6×10^{-4}	
		(10 ~ 100) A	1.4×10^{-3}	
AC voltage		(60 Hz)		
		(0.1 ~ 1) V	2.3×10^{-4}	
		(1 ~ 1 000) V	1.2×10^{-4}	
AC current		(1 kHz)		
		(10 ~ 100) mA	1.3×10^{-3}	
		(0.1 ~ 10) A	1.5×10^{-3}	
		(10 ~ 100) A	2.4×10^{-3}	
Modulation meters	40418			Signal generator Modulation meter KIQI-40418
Amplitude modulation		(0 ~ 100) %	1.9×10^{-2}	
Frequency modulation		(1 ~ 400) kHz	1.3×10^{-2}	
Phase modulation		(0 ~ 400) rad	3.6×10^{-2}	
Analogue/Digital multimeters	40419			Meter Calibrator, STD. Resistors, Amplifier /KIQI-150
DC voltage		10 mV	7.9×10^{-5}	
		(10 ~ 100) mV	1.7×10^{-5}	
		(0.1 ~ 1) V	9.5×10^{-6}	
		(1 ~ 10) V	8.7×10^{-6}	
		(10 ~ 100) V	1.1×10^{-5}	
		(100 ~ 1 000) V	1.2×10^{-5}	
DC current		10 μ A	9.9×10^{-4}	
		(10 ~ 100) μ A	1.6×10^{-4}	
		(0.1 ~ 10) mA	6.9×10^{-5}	
		(10 ~ 100) mA	8.0×10^{-5}	
		(0.1 ~ 1) A	1.3×10^{-4}	
		(1 ~ 20) A	2.6×10^{-4}	
AC voltage		(60 Hz ~ 1 kHz)		
		10 mV	7.1×10^{-4}	
		(10 ~ 100) mV	2.3×10^{-4}	
		(0.1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 1 000) V	1.2×10^{-4}	
		(1 ~ 50) kHz		
		10 mV	8.0×10^{-4}	
		(10 ~ 100) mV	2.3×10^{-4}	
		(0.1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 100) V	1.2×10^{-4}	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Analogue/Digital multimeters	40419	(50 ~ 100) kHz		Meter Calibrator, STD. Resistors, Amplifier /KIQI-150
AC voltage		10 mV	1.8×10^{-3}	
		(10 ~ 100) mV	1.3×10^{-3}	
		(0.1 ~ 1) V	3.9×10^{-4}	
		(1 ~ 10) V	3.5×10^{-4}	
		(10 ~ 100) V	6.8×10^{-4}	
AC current		(60 Hz ~ 1 kHz)		
		(10 ~ 100) μ A	2.1×10^{-3}	
		(0.1 ~ 1) mA	6.3×10^{-4}	
		(1 ~ 100) mA	2.2×10^{-4}	
		(0.1 ~ 1) A	7.6×10^{-4}	
		(1 ~ 10) A	1.9×10^{-3}	
		(10 ~ 20) A	1.8×10^{-3}	
		(1 ~ 5) kHz		
		(10 ~ 100) μ A	5.4×10^{-3}	
		(0.1 ~ 10) mA	1.3×10^{-3}	
		(0.01 ~ 1) A	1.2×10^{-3}	
		(5 ~ 10) kHz		
		(10 ~ 100) μ A	1.2×10^{-2}	
		(0.1 ~ 10) mA	2.9×10^{-3}	
		(10 ~ 100) mA	2.8×10^{-3}	
		(0.1 ~ 1) A	1.1×10^{-2}	
Resistance		10 Ω	1.3×10^{-5}	
		(0.01 ~ 100) k Ω	1.2×10^{-5}	
	(0.1 ~ 1) M Ω	2.4×10^{-5}		
	(1 ~ 10) M Ω	2.5×10^{-5}		
Noise meters	40420	(1 mV ~ 100 V)	3.0×10^{-3}	Meter Calibrator Audio distortion analyzer KIQI-40420
AC input level		(50 ~ 100) kHz	3.1×10^{-3}	
(40 Hz ~ 50) kHz		(1 ~ 10) mV	3.0×10^{-3}	
(50 ~ 100) kHz		(0.01 ~ 100) V	0.17 dB	
Weighting test		(50 Hz ~ 5 kHz)	0.16 dB	
CCITT		(-63.0 ~ 1.0) dB	0.16 dB	
CCIR/ARM		(32 Hz ~ 31.5 kHz)	0.16 dB	
DIN/NOISE		(-48.3 ~ 6.6) dB	0.16 dB	
JIS		(63 Hz ~ 31.5 kHz)	0.18 dB	
		(-31.6 ~ 8.4) dB	0.18 dB	
	(25 Hz ~ 16 kHz)			
	(-44.6 ~ 1.2) dB			

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Oscilloscopes	40421	6 mV	8.5×10^{-3}	Oscilloscope Calibrator /KIQI-151
DC voltage		(6 ~ 12) mV	6.6×10^{-3}	
		(12 ~ 30) mV	3.7×10^{-3}	
		(30 ~ 60) mV	1.8×10^{-3}	
		(60 ~ 120) mV	1.3×10^{-3}	
		(120 ~ 300) mV	2.1×10^{-3}	
		(300 ~ 600) mV	1.2×10^{-3}	
		(0.6 ~ 1.2) V	8.2×10^{-4}	
		(1.2 ~ 3) V	2.3×10^{-3}	
		(3 ~ 6) V	1.3×10^{-3}	
		(6 ~ 12) V	1.0×10^{-3}	
		(12 ~ 30) V	2.3×10^{-3}	
		(30 ~ 60) V	1.2×10^{-3}	
		(60 ~ 120) V	7.8×10^{-4}	
Time Marker		2 ns	2.9×10^{-4}	
		(2 ~ 5) ns	1.2×10^{-3}	
		(5 ~ 10) ns	5.8×10^{-4}	
		(10 ~ 20) ns	2.9×10^{-4}	
		(20 ~ 50) ns	1.2×10^{-3}	
		(50 ~ 100) ns	5.8×10^{-4}	
		(100 ~ 200) ns	2.9×10^{-4}	
		(200 ~ 500) ns	1.2×10^{-3}	
		(0.5 ~ 1) μ s	5.8×10^{-4}	
		(1 ~ 2) μ s	2.9×10^{-4}	
		(2 ~ 5) μ s	1.2×10^{-3}	
		(5 ~ 10) μ s	5.8×10^{-4}	
		(10 ~ 20) μ s	2.9×10^{-4}	
		(20 ~ 50) μ s	1.2×10^{-3}	
		(50 ~ 100) μ s	5.8×10^{-4}	
		(100 ~ 200) μ s	2.9×10^{-4}	
		(200 ~ 500) μ s	1.2×10^{-3}	
		(0.5 ~ 1) ms	5.8×10^{-4}	
		(1 ~ 2) ms	2.9×10^{-4}	
		(2 ~ 5) ms	1.2×10^{-3}	
	(5 ~ 10) ms	5.8×10^{-4}		
	(10 ~ 20) ms	2.9×10^{-4}		
	(20 ~ 50) ms	1.2×10^{-3}		
	(50 ~ 100) ms	5.8×10^{-4}		
	(100 ~ 200) ms	3.0×10^{-4}		
	(200 ~ 500) ms	1.2×10^{-3}		
	(0.5 ~ 1) s	5.8×10^{-4}		
	(1 ~ 2) s	3.0×10^{-4}		
	(2 ~ 5) s	1.2×10^{-3}		

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Oscilloscopes Level Sine	40421	50 kHz (0.05 ~ 100) MHz (100 ~ 200) MHz (200 ~ 600) MHz	3.2×10^{-2} 5.2×10^{-2} 5.7×10^{-2} 7.7×10^{-2}	Oscilloscope Calibrator /KIQI-151
LF phase meters Phase	40422	60 Hz (0 ~ 360) °	0.037 °	Power Calibrator KIQI-4422
Random wave generators Frequency DC voltage AC voltage 40 Hz ~ 10 kHz 10 kHz ~ 20 kHz 20 kHz ~ 50 kHz 50 kHz ~ 100 kHz Attenuator(level) 40 Hz 40 Hz ~ 10 kHz 10 kHz ~ 20 kHz 20 kHz ~ 100 kHz	40423	1 Hz ~ 100 MHz (-100 ~ 100) V (10 ~ 100) mV (0.1 ~ 100) V (10 ~ 100) mV (0.1 ~ 100) V (10 ~ 100) mV (0.1 ~ 100) V (10 ~ 100) mV (0.1 ~ 100) V (20 ~ -40) dB (-40 ~ 50) dB (-50 ~ 60) dB (20 ~ -40) dB (-40 ~ 50) dB (-50 ~ 60) dB (20 ~ -40) dB (-40 ~ 50) dB (20 ~ -20) dB (-20 ~ 40) dB (-40 ~ 50) dB (-50 ~ 60) dB	5.8×10^{-6} 5.8×10^{-5} 2.2×10^{-4} 1.4×10^{-4} 4.2×10^{-4} 2.6×10^{-4} 9.4×10^{-4} 7.1×10^{-4} 1.2×10^{-3} 7.2×10^{-4} 0.058 dB 0.060 dB 0.076 dB 0.058 dB 0.060 dB 0.076 dB 0.058 dB 0.066 dB 0.058 dB 0.065 dB 0.099 dB 0.25 dB	Meter Calibrator Audio distortion analyzer KIQI-4423
Volt/Current recorders DC voltage DC current	40424	(10 ~ 100) mV (0.1 ~ 1) V (1 ~ 10) V (10 ~ 100) V (100 ~ 1 000) V (10 ~ 100) μA (0.1 ~ 1) mA (1 ~ 100) mA (0.1 ~ 10) A	1.1×10^{-4} 6.7×10^{-5} 6.6×10^{-5} 6.5×10^{-5} 6.8×10^{-5} 1.0×10^{-3} 1.7×10^{-4} 1.1×10^{-4} 3.4×10^{-4}	Meter Calibrator, Amplifier /KIQI-152

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Relay test sets	40425			DMM, Current Shunt, Oscilloscope, /KIQI-153
DC voltage		(1 ~ 1 000) V	5.9×10^{-4}	
DC current		100 mA	6.0×10^{-4}	
		(0.1 ~ 1) A	6.2×10^{-4}	
		(1 ~ 10) A	7.4×10^{-4}	
AC voltage		(10 ~ 100) A	1.5×10^{-3}	
		(1 kHz)		
		(1 ~ 1 000) V	6.0×10^{-4}	
AC current		(40 Hz ~ 1 kHz)		
		100 mA	7.8×10^{-4}	
		(0.1 ~ 1) A	1.1×10^{-3}	
		(1 ~ 10) A	1.9×10^{-3}	
		(10 ~ 100) A	2.5×10^{-3}	
Timer		(1 ~ 5) s	1.6×10^{-3}	
LF signal generators	40426			Meter Calibrator, Audio distortion analyzer KIQI-40426
Frequency		1 Hz ~ 100 MHz	5.8×10^{-6}	
DC voltage(±)		(-100 ~ 100) V	5.8×10^{-5}	
AC voltage				
40 Hz		(10 ~ 100) mV	2.2×10^{-4}	
		(0.1 ~ 100) V	1.4×10^{-4}	
40 Hz ~ 1 kHz		(10 ~ 100) mV	2.1×10^{-4}	
		(0.1 ~ 100) V	1.3×10^{-4}	
1 kHz ~ 10 kHz		(10 ~ 100) mV	2.2×10^{-4}	
		(0.1 ~ 100) V	1.4×10^{-4}	
10 kHz ~ 20 kHz		(10 ~ 100) mV	4.2×10^{-4}	
		(0.1 ~ 100) V	2.6×10^{-4}	
20 kHz ~ 50 kHz		(10 ~ 100) mV	9.4×10^{-4}	
		(0.1 ~ 100) V	7.1×10^{-4}	
50 kHz ~ 100 kHz		(10 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 100) V	7.2×10^{-4}	
Flatness(level)				
40 Hz ~ 100 kHz		(-10 ~ -10) dB	0.058 dB	
Attenuator(level)				
40 Hz		(20 ~ -40)dB	0.058 dB	
		-(40 ~ 50)dB	0.060 dB	
		-(50 ~ 60)dB	0.076 dB	
40 Hz ~ 1 kHz		(20 ~ -40)dB	0.058 dB	
		-(40 ~ 50)dB	0.059 dB	
		-(50 ~ 60)dB	0.065 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF signal generators	40426			Meter Calibrator, Audio distortion analyzer KIQI-40426
Attenuator(level)				
1 kHz ~ 10 kHz		(20 ~ -40)dB -(40 ~ 50)dB -(50 ~ 60)dB	0.058 dB 0.060 dB 0.076 dB	
10 kHz ~ 20 kHz		(20 ~ -40)dB -(40 ~ 50)dB -(50 ~ 60)dB	0.058 dB 0.066 dB 0.11 dB	
20 kHz ~ 50 kHz		(20 ~ -20)dB -(20 ~ 30)dB -(30 ~ 40)dB -(40 ~ 50)dB -(50 ~ 60)dB	0.058 dB 0.060 dB 0.064 dB 0.097 dB 0.24 dB	
50 kHz ~ 100 kHz		(20 ~ -20)dB -(20 ~ 30)dB -(30 ~ 40)dB -(40 ~ 50)dB -(50 ~ 60)dB	0.058 dB 0.062 dB 0.065 dB 0.099 dB 0.25 dB	
Sweep generators	40429			Meter Calibrator, Audio distortion analyzer KIQI-40429
Frequency		1 Hz ~ 100 MHz	5.8×10^{-6}	
DC voltage		(-100 ~ 100) V	5.8×10^{-5}	
AC voltage				
40 Hz		(10 ~ 100) mV (0.1 ~ 100) V	2.2×10^{-4} 1.4×10^{-4}	
40 Hz ~ 20 kHz		(10 ~ 100) mV (0.1 ~ 100) V	4.2×10^{-4} 2.6×10^{-4}	
20 kHz ~ 50 kHz		(10 ~ 100) mV (0.1 ~ 100) V	9.4×10^{-4} 7.1×10^{-4}	
50 kHz ~ 100 kHz		(10 ~ 100) mV (0.1 ~ 100) V	1.2×10^{-3} 7.2×10^{-4}	
Attenuator(level)				
40 Hz ~ 10 kHz		(20 ~ -40) dB -(40 ~ 50) dB -(50 ~ 60) dB	0.058 dB 0.060 dB 0.076 dB	
10 kHz ~ 20 kHz		(20 ~ -40) dB -(40 ~ 50) dB -(50 ~ 60) dB	0.058 dB 0.066 dB 0.11 dB	
20 kHz ~ 100 kHz		(20 ~ -20) dB -(20 ~ 40) dB -(40 ~ 50) dB -(50 ~ 60) dB	0.058 dB 0.065 dB 0.099 dB 0.25 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Signal transducers DC voltage	40430	(0 ~ 10) mV	7.1×10^{-5}	Meter Calibrator, DMM KIQI-40430
		(10 ~ 100) mV	1.5×10^{-5}	
		(0.1 ~ 1) V	8.1×10^{-6}	
		(1 ~ 10) V	7.8×10^{-6}	
		(10 ~ 100) V	9.1×10^{-6}	
		(1 ~ 1 000) V	9.7×10^{-6}	
DC current		(0 ~ 100) uA	1.3×10^{-4}	
		(0.1 ~ 10) mA	5.9×10^{-5}	
		(0.1 ~ 100) mA	6.8×10^{-5}	
		(0.1 ~ 1) A	1.1×10^{-4}	
	(1 ~ 10) A	4.2×10^{-4}		
트랜지스터 특성 곡선 측정기 Input DC voltage	40432	(0 ~ 100) mV	1.6×10^{-5}	Meter Calibrator, DMM KIQI-40432
		(0.1 ~ 1 000) V	1.2×10^{-5}	
Output DC voltage		(0 ~ 1 000) V	5.9×10^{-5}	
Input current		(0 ~ 10) mA	5.9×10^{-5}	
		(10 ~ 100) mA	6.9×10^{-5}	
		(0.1 ~ 1) A	1.1×10^{-4}	
Output current		(0.1 ~ 10) mA	6.3×10^{-5}	
		(10 ~ 100) mA	7.4×10^{-5}	
		(0.1 ~ 1) A	2.0×10^{-4}	
Waveform analyzers Input DC voltage	40433	(0 ~ 10) mV	1.0×10^{-4}	Meter Calibrator, Signal analyzer KIQI-40433
		(10 ~ 100) mV	7.2×10^{-5}	
		(0.1 ~ 100) V	7.1×10^{-5}	
		(100 ~ 300) V	2.7×10^{-5}	
Input AC voltage 40 Hz		(0 ~ 10) mV	1.1×10^{-5}	
		(10 ~ 100) mV	7.6×10^{-4}	
		(0.1 ~ 100) V	7.3×10^{-4}	
50 Hz ~ 1 kHz		(10 ~ 10) mV	1.0×10^{-3}	
		(10 ~ 100) mV	7.3×10^{-4}	
		(0.1 ~ 100) V	7.1×10^{-4}	
		(100 ~ 300) V	2.8×10^{-4}	
1 kHz ~ 20 kHz		(0 ~ 10) mV	1.0×10^{-3}	
		(10 ~ 100) mV	7.3×10^{-4}	
		(0.1 ~ 100) V	7.1×10^{-4}	
20 kHz ~ 50 kHz		(0 ~ 10) mV	1.4×10^{-3}	
		(10 ~ 100) mV	8.2×10^{-4}	
		(0.1 ~ 1) V	7.2×10^{-4}	
		(1 ~ 10) V	7.2×10^{-4}	
	(10 ~ 100) V	7.5×10^{-4}		

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Waveform analyzers	40433			Meter Calibrator, Signal analyzer KIQI-40433
Input AC voltage 50 kHz ~ 100 kHz		(0 ~ 10) mV	1.9×10^{-3}	
		(10 ~ 100) mV	1.3×10^{-3}	
		(0.1 ~ 1) V	7.8×10^{-4}	
		(1 ~ 10) V	7.6×10^{-4}	
		(10 ~ 100) V	9.2×10^{-4}	
Input frequency		10 Hz	1.5×10^{-4}	
		10 Hz ~ 100 kHz	7.7×10^{-5}	
		100 kHz ~ 1 MHz	9.5×10^{-5}	
Output AC voltage				
40 Hz		(10 ~ 100) mV	6.2×10^{-4}	
		(0.1 ~ 100) V	6.0×10^{-4}	
40 Hz ~ 1 kHz		(10 ~ 100) mV	6.2×10^{-4}	
		(0.1 ~ 100) V	5.9×10^{-4}	
1 kHz ~ 10 kHz		(10 ~ 100) mV	6.2×10^{-4}	
		(0.1 ~ 100) V	6.0×10^{-4}	
10 kHz ~ 20 kHz		(10 ~ 100) mV	7.2×10^{-4}	
		(0.1 ~ 100) V	6.4×10^{-4}	
20 kHz ~ 50 kHz		(10 ~ 100) mV	1.1×10^{-3}	
		(0.1 ~ 100) V	9.2×10^{-4}	
50 kHz ~ 100 kHz		(10 ~ 100) mV	1.3×10^{-3}	
		(0.1 ~ 100) V	9.2×10^{-4}	
Output frequency		10 Hz ~ 1 MHz	5.8×10^{-5}	
AC/DC high voltage generators	40434			DMM, kV Meter, High Voltage Meter /KIQI-154
DC voltage		10 V	7.1×10^{-4}	
		(10 ~ 100) V	7.2×10^{-4}	
		(100 ~ 500) V	1.2×10^{-3}	
		(0.5 ~ 5) kV	1.0×10^{-2}	
		(5 ~ 10) kV	8.5×10^{-3}	
		(10 ~ 100) kV	1.2×10^{-2}	
DC current		(60 Hz)		
		(10 ~ 100) V	8.4×10^{-4}	
		(100 ~ 500) V	1.3×10^{-3}	
		(0.5 ~ 5) kV	2.9×10^{-2}	
		(5 ~ 10) kV	1.8×10^{-2}	
		(10 ~ 100) kV	1.6×10^{-2}	

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
(Temperature generators: ovens, furnaces, isothermal liquid baths, ice- point baths, dry-block calibrators) ice-point baths	50101	(-90 ~ 300) °C (-196 ~ 200) °C (200 ~ 1 100) °C 0 °C	0.68 °C 0.10 °C 0.62 °C 0.07 °C	SPRT /KIQI-71
Temperature indicators/ recorders/ controllers, temperature calibrators Sensor Inclusion Sensor Except Temperature calibrators	50102	(-196 ~ 200) °C (200 ~ 1 100) °C (-196 ~ 600) °C (600 ~ 800) °C (800 ~ 1 000) °C (1 000 ~ 1 100) °C (-196 ~ 100) °C (100 ~ 300) °C (300 ~ 600) °C (600 ~ 1 100) °C	0.05 °C 1.9 °C 0.07 °C 0.27 °C 0.29 °C 0.33 °C 0.008 °C 0.010 °C 0.012 °C 0.10 °C	SPRT /KIQI-72
Glass thermometers; liquid-in-glass, Beckmann	50103	(-50 ~ 200) °C	0.07 °C	SPRT /KIQI-73
Resistance thermometers; SPRT, IPRT, thermistors, etc.	50104	(-196 ~ 200) °C	0.07 °C	SPRT /KIQI-74
Thermal expansion thermometers; bimetal, gas or liquid type	50105	(-40 ~ 200) °C	0.3 °C	SPRT /KIQI-75
Thermocouples; noble metal, base metal, pure metal, special type, etc.	50106	(-196 ~ 200) °C (200 ~ 1 100) °C	0.25 °C 1.7 °C	Standard thermocouple /KIQI-76
Temperature transducers	50107	(-196 ~ 200) °C (200 ~ 1 100) °C	0.15 °C 2.1 °C	SPRT /KIQI-81

502. Non contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Standard radiation thermometers	50204	(0 ~ 100) °C (100 ~ 500) °C (500 ~ 1 000) °C (1 000 ~ 1 400) °C	2.2 °C 2.6 °C 4.6 °C 4.3 °C	Standard pyrometers /KIQI-82
Thermal image apparatus	50205	(0 ~ 100) °C (100 ~ 500) °C (500 ~ 1 000) °C (1 000 ~ 1 400) °C	1.8 °C 2.8 °C 4.5 °C 4.5 °C	Standard pyrometers /KIQI-83
Blackbody furnaces	50206	(0 ~ 100) °C (100 ~ 500) °C (500 ~ 1 000) °C (1 000 ~ 1 400) °C	1.6 °C 1.8 °C 3.3 °C 5.3 °C	Standard pyrometers /KIQI-84

503. Humidity

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Relative humidity hygrometers; polimer thinfilm, hair etc.	50302	(-35 ~ 100) °C (10 ~ 30) % R.H. (30 ~ 50) % R.H. (50 ~ 80) % R.H. (80 ~ 95) % R.H.	1.0 °C 2.0 % R.H. 2.1 % R.H. 3.1 % R.H. 3.4 % R.H.	Dew Point Hygrometer /KIQI-78
Psychrometers; Assmann ventilated, PRT type, etc.	50303	(10 ~ 30) % R.H. (30 ~ 50) % R.H. (50 ~ 80) % R.H. (80 ~ 95) % R.H.	1.4 % R.H. 1.3 % R.H. 2.0 % R.H. 2.7 % R.H.	Dew Point Hygrometer /KIQI-86
Temperature humidity recorders; Hygrothermograph, etc.	50304	(-35 ~ 0) °C (0 ~ 50) °C (10 ~ 30) % R.H. (30 ~ 50) % R.H. (50 ~ 80) % R.H. (80 ~ 95) % R.H.	0.9 °C 0.7 °C 1.9 % R.H. 2.5 % R.H. 3.3 % R.H. 3.6 % R.H.	Dew Point Hygrometer /KIQI-79
Transducers; dew-point /relative humidit relative humidit	50305	(10 ~ 95) % R.H.	3.3 % R.H.	Dew Point Hygrometer /KIQI-85
Humidity generators; two-pressure, two-temperature, flow mixing humidity gererator, constant temperature and humidity chamber, etc. temperature and humidity chamber	50306	(-90 ~ 150) °C (10 ~ 50) % R.H. (50 ~ 70) % R.H. (70 ~ 95) % R.H.	1.1 °C 3.1 % R.H. 4.4 % R.H. 5.9 % R.H.	Dew Point Hygrometer /KIQI-80

601. Sound in air

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Sound level meters	60106	31.5 Hz	0.5 dB	Sound calibrator KIQI-60106
		63 Hz	0.4 dB	
		125 Hz	0.3 dB	
		250 Hz	0.2 dB	
		500 Hz	0.2 dB	
		1 kHz	0.2 dB	
		2 kHz	0.2 dB	
		4 kHz	0.2 dB	
		8 kHz	0.4 dB	
		12.5 kHz	0.7 dB	

901. Chemical analysis

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Gas analyzers	90103			Standard Gas /KIQP-200
Oxygen(O ₂)		(0 ~ 22) cmol/mol	2.1×10^{-2}	
Carbon monoxide (CO)		(0 ~ 105) μmol/mol	3.0×10^{-2}	
Hydrogen sulfide(H ₂ S)		(0 ~ 27) μmol/mol	3.7×10^{-2}	
Methane(CH ₄)		(0 ~ 2) cmol/mol	2.0×10^{-2}	