Korea Laboratory Accreditation Scheme

CERTIFICATE OF ACCREDITATION

Q&Q Corporation

Accreditation No. : KC01-079

Corporation Registration No. : 180111-0356419

Address of Laboratory : 58, Hwajeonsandan 3-ro, Gangseo-gu, Busan, Republic of Korea

Date of Initial Accreditation : December 5, 2001.

Validity of Accreditation : December 03, 2022. ~ December 02, 2026.

Scope of Accreditation : Attached Annex

Date of issue : November 30, 2022.

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).

Sanghoon Lee

Head
Korea Laboratory Accreditation Scheme

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

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CALIBRATION

Valid To : 2026. 12. 02. Accreditation No. : KC01-079

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
102. Linear dimension		
10201	Balls	N
10206	Dial/cylinder gauge testers	N
10207	Doctor blades	N
10208	Laser distance meters	N
10209	End bars	N
10210	Extensometers	Y
10211	Feeler gauges	Y
10212	Film applicators	N
10213	Gap gauges	N
10214	Gauge blocks, by comparison	N
10216	Height gauges/measuring machines	Y
10220	Standard measuring machines	Y
10223	Electronic micrometers	N
10224	Height micrometers, riser blocks	N
10225	Laser scan micrometers	N
10227	Standard tape rules	N
10228	Cylindrical plug/pin gauges, thread measuring wire gauges	N
10229	Radius gauges	N
10230	Cylindrical ring gauges	N
10232	Step gauges	N
10233	Taper thickness gauges	N
10234	Ultrasonic thickness gauges	Y
10235	Ultrasonic/coating thickness specimens	N
10236	Coating thickness testers	Y
103. Angle		
10303	Autocollimators	N
10304	Bevel protractors	N
10306	Clinometers	N
10308	Fine angle generators, level comparators	N
10310	Indexing tables	N
10311	Plate/square/electric levels	N
10312	Auto levels	N
10316	Rotary tables	N
10317	Sine bars, plates, tables, centers	N
10318	Squareness testers, right angle testers	N
10319	Cylindrical squares	N
10320	Precision squares	N
10323	Alignment telescopes	N
10326	Laser level	N
10327	Optical wedges	N
104. Form		
10401	Form testers	Y
10404	Optical flats	N
10405	Optical parallels	N
10406	Parallel blocks	N
10407	Precision surface plates	Y
10409	Roundness measurement instruments	Y
10412	Straight edges	N
10413	Straight rules	N
10415	Test bars	N
105. Complex geometry		
10501	Base gauges for electric bulb	N
10502	Bench centers	N
10503	Contact coordinate measuring machines	Y
10504	Non-contact coordinate measuring machines	Y
10511	Measuring microscopes, profile projectors	Y
10512	Micro measuring microscopes	N
10514	Taper plug gauges	N
10515	Taper ring gauges	N
10517	Stylus type roughness testers	Y
10518	Socket gauges for electric blub	N
10519	Roughness standard/ comparison specimens	N
10525	Thread plug gauges	N
10526	Taper thread plug gauges	N
10527	Thread ring gauges	N
10528	Taper thread ring gauges	N
10529	V-blocks, box blocks	N
106. Various dimensional		
10601	Inside/outside/gear tooth calipers, caliper gauges	Y
10603	Cylinder/bore gauges	Y
10604	Depth gauges, depth micrometers	Y
10605	Dial/digital gauges	Y
10608	Grind gauges	N
10609	Micro indicators, test indicators	Y
10610	Micrometer heads	Y
10611	3-points, micrometers	Y
10612	Inside micrometers	Y
10613	Outside micrometers	Y
10617	Standard sieves	N
10620	Welding gauges	Y
10621	Optical micrometers	N
201. Mass		
20109	Electric balances	Y
20112	Platform scale balances	Y
20113	Spring scale balances	Y
20116	Weights	N
202. Force		
20203	Tension/compresion testing machines	Y
20204	Push-pull gauges	N

Field Code	Item of Calibration	on -site
203. Torque		
20303	Torque wrenches/drivers	Y
204. Pressure		
20402	Manometers	N
20404	Hydraulic pressure ballances	N
20406	Absolute pressure gauges	Y
20407	Blood pressure gauges	Y
20408	Compound pressure gauges	Y
20409	Differential pressure gauges	Y
20411	Gauge pressure gauges	Y
20412	Pressure transducers/ transmitters	Y
20413	Dial type vacuum gauges	Y
20414	Water depth meters	Y
209. Fluid flow		
20908	Gas flowmeters; differential pressure	N
20909	Liquid flowmeters; differential pressure	N
20910	Liquid flowmeters; electromagnetic	N
20911	Gas flowmeters; thermal mass, etc.	N
20912	Liquid flowmeters; Coriolis, etc.	N
20914	Gas flowmeters; positive displacement	N
20915	Liquid flowmeters; positive displacement	N
20916	Gas flowmeters; turbine	N
20917	Liquid flowmeters; turbine	N
20918	Gas flowmeters; ultrasonic	N
20919	Liquid flowmeters; ultrasonic	N
20920	Gas flowmeters; variable area	N
20921	Liquid flowmeters; variable area	N
20922	Gas flowmeters; vortex	N
20923	Liquid flowmeters; vortex	N

Field Code	Item of Calibration	on -site
210. Hardness		
21001	Brinell hardness testers	Y
21002	Rockwell hardness testers	Y
21003	Shore hardness testers	Y
21004	Vickers hardness testers	Y
21005	Durometer hardness testers	N
21006	Leeb hardness testers	N
301. Time/frequency		
30103	General frequency sources	N
30104	Frequency meters/counters	N
30106	Time interval meters/ stop watches/timers	Y
302. Velocity & revolution		
30201	Standard RPM generators	Y
30202	Contact type tachometers	N
30203	Photo tachometers /stroboscopes	N
401. DC voltage & current		
40101	DC ammeters	Y
40103	DC voltage/current calibrators	Y
40104	Electrical temperature calibrators	Y
40108	DC power supplies	Y
40112	DC voltmeters	Y
402. Resistance, Capacitance and Inductance		
40205	Earth testers	Y
40210	Insulation testers	Y
40213	Resistance bridges & Similar instruments	N
40214	Resistance meters	Y
40215	Resistors	N
403. AC voltage, current & power		
40301	AC ammeters	Y
40302	Clamp ammeters/voltmeters	Y
40303	AC voltage/current calibrators	Y
40310	Power factor meters	Y
40311	AC power meters	Y
40312	AC power supplies	Y
40313	Puncture/safety testers	Y
40318	AC voltmeters	Y
404. Other DC & LF Measurements		
40410	Line frequency meters	Y
40411	Function generators	Y

Field Code	Item of Calibration	on -site
40414	LF impulse generators	Y
40416	Leakage current testers	Y
40417	Electronic AC/DC loads	Y
40419	Analogue/Digital multimeters	Y
40421	Oscilloscopes	Y
40424	Volt/current recorders	Y
40425	Relay test sets	Y
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	Y
50106	Thermomecoules; noble metal, base metal	Y
50107	Temperature transducers	Y
502. Non contact thermometry		
50204	Standard radiation thermometers	N
503. Humidity		
50302	Relative humidity hygrometers; polimer thin film, hair, etc.	N
50304	Temperature humidity recorders; hygrothermograph, etc.	N
50305	Transducers; relative humidity	N
50306	Humidity generators; two-pressure, two-temperature, flow mixing humidity gererator, constant temperature and humidity chamber, etc.	Y
701. Photometry		
70101	Iluminance meters	N
901. Chemical analysis		
90101	Breath alcohol analyzers	N
90103	Gas analyzers	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 calbration 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			Standard measuring machine /QECI - LE201
		(ø0 ~ ø40) mm	$\sqrt{0.3^2 + 0.002\,9^2 \times l^2}$ μm	
		(ø40 ~ ø100) mm	$\sqrt{0.4^2 + 0.002\,9^2 \times l^2}$ μm	
			(Unit of l : mm)	
Roundness		(ø10 ~ ø100) mm	0.2 μm	
Dial/cylinder gauge testers	10206			Gauge block /QECI - LE206
		(0 ~ 5) mm	$\sqrt{0.11^2 + 0.002\,7^2 \times l^2}$ μm	
		(5 ~ 25) mm	$\sqrt{0.11^2 + 0.002\,9^2 \times l^2}$ μm	
		(25 ~ 100) mm	$\sqrt{0.21^2 + 0.002\,9^2 \times l^2}$ μm	
			(Unit of l : mm)	
Doctor blades	10207	(0 ~ 10) mm	1.0 μm	Height micrometer /QECI-LE207
Laser distance meters	10208	(0 ~ 25) m	$\sqrt{0.8^2 + 0.001\,5^2 \times l^2}$ mm	Laser Calibration System /QECI-LE208
			(Unit of l : m)	
End bars	10209			Gauge block, Electronic micrometer /QECI - LE209
		(25 ~ 1 000) mm	$\sqrt{0.3^2 + 0.002\,9^2 \times l^2}$ μm	
		(1 000 ~ 2 000) mm	$\sqrt{1.2^2 + 0.003\,0^2 \times l^2}$ μm	
			(Unit of l : mm)	
Extensometers	10210			Gauge block /QECI - LE210
		(0 ~ 500) mm	$\sqrt{1.2^2 + 0.002\,8^2 \times l^2}$ μm	
			(Unit of l : mm)	
Feeler gauges	10211	(0 ~ 5) mm	0.3 μm	Standard measuring machine /QECI-LE211
Film applicators	10212	(0 ~ 10) mm	1 μm	Height micrometer /QECI-LE212
Gap gauges	10213			Height micrometer, Electronic micrometer /QECI - LE213
		(1 ~ 200) mm	$\sqrt{1.3^2 + 0.002\,6^2 \times l^2}$ μm	
		(200 ~ 500) mm	$\sqrt{2.0^2 + 0.004\,7^2 \times l^2}$ μm	
			(Unit of l : mm)	
Gauge blocks, by comparison	10214			Gauge block /QECI - LE214
		(0.5 ~ 100) mm	$\sqrt{81^2 + 1.21^2 \times l^2}$ nm	
		(125 ~ 500) mm	$\sqrt{95^2 + 1.30^2 \times l^2}$ nm	
			(Unit of l : mm)	
Height gauges/measuring machines	10216			Gauge block /QECI - LE216
Height gauges		(0 ~ 1 500) mm	$\sqrt{7^2 + 0.002\,9^2 \times l^2}$ μm	
Height measuring machines		(0 ~ 1 000) mm	$\sqrt{0.6^2 + 0.002\,9^2 \times l^2}$ μm	
			(Unit of l : mm)	

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Standard measuring machines	10220	(0 ~ 500) mm	$\sqrt{0.2^2 + 0.002\,7^2 \times l^2}$ μm (Unit of l : mm)	Gauge block /QECI - LE220
Electronic micrometers	10223	±50 μm ±50 μm ~ ±2 mm	0.1 μm 1 μm	Gauge block /QECI-LE223
Height micrometers	10224			Gauge block,
Block calibration		(0 ~ 310) mm	$\sqrt{0.6^2 + 0.002\,8^2 \times l^2}$ μm	Electronic micrometer
		(310 ~ 1 010) mm	$\sqrt{0.7^2 + 0.002\,9^2 \times l^2}$ μm (Unit of l : mm)	/QECI - LE224, QECI-LE224-1
Head calibration		(0 ~ 20) mm	0.6 μm	
Riser blocks		150 mm	0.8 μm	
		300 mm	1.0 μm	
		600 mm	1.8 μm	
Parallelism			0.6 μm	
Laser scan micrometers	10225	(ø0 ~ ø60) mm	$\sqrt{0.31^2 + 0.003\,8^2 \times l^2}$ μm (Unit of l : mm)	Cylindrical plug/pin gauge /QECI-LE225
Standard tape rules	10227	(0 ~ 25) m	$\sqrt{0.03^2 + 0.002^2 \times l^2}$ mm	Laser tape measurement system
		(25 ~ 50) m	$\sqrt{0.05^2 + 0.002^2 \times l^2}$ mm	/QECI - LE227
		(50 ~ 75) m	$\sqrt{0.10^2 + 0.002^2 \times l^2}$ mm	
		(75 ~ 100) m	$\sqrt{0.12^2 + 0.002^2 \times l^2}$ mm (Unit of l : m)	
Cylindrical plug/pin gauges, thread measuring wire gauges	10228			Standard measuring machine, Roundness measurement
Cylindrical plug/pin gauges		(ø0.2 ~ ø200) mm	$\sqrt{0.27^2 + 0.003\,7^2 \times l^2}$ μm	instrument
		(ø200 ~ ø500) mm	$\sqrt{1.9^2 + 0.004\,8^2 \times l^2}$ μm	/QECI - LE228
Thread measuring wire gauges		(ø0.17 ~ ø4.39) mm	$\sqrt{0.39^2 + 0.003\,6^2 \times l^2}$ μm (Unit of l : mm)	
Roundness		(ø1 ~ ø200) mm	0.3 μm	
Radius gauges	10229	(0 ~ 100) mm	$\sqrt{0.6^2 + 0.002\,8^2 \times l^2}$ μm	Non-contact coordinate
		(100 ~ 500) mm	$\sqrt{2.0^2 + 0.004\,1^2 \times l^2}$ μm (Unit of l : mm)	measuring machine /QECI-LE229
Cylindrical ring gauges	10230	(ø2 ~ ø200) mm	$\sqrt{0.1^2 + 0.002\,8^2 \times l^2}$ μm	Gauge block,
		(ø200 ~ ø500) mm	$\sqrt{1.9^2 + 0.004\,7^2 \times l^2}$ μm (Unit of l : mm)	Standard measuring machine
Roundness		(ø2 ~ ø500) mm	0.2 μm	/QECI - LE230
		(ø2 ~ ø200) mm	$\sqrt{0.3^2 + 0.003\,8^2 \times l^2}$ μm	
		(ø200 ~ ø500) mm	$\sqrt{2.7^2 + 0.005\,8^2 \times l^2}$ μm (Unit of l : mm)	

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Step gauges	10232	(0 ~ 300) mm (300 ~ 1 000) mm (1 000 ~ 1 500) mm	$\sqrt{1.2^2 + 0.002\,7^2 \times l^2}$ μm $\sqrt{1.2^2 + 0.002\,8^2 \times l^2}$ μm $\sqrt{1.6^2 + 0.002\,8^2 \times l^2}$ μm (Unit of l : mm)	Gauge block /QECI - LE232
Taper thickness gauges	10233	(0 ~ 90) mm	$\sqrt{1.4^2 + 0.003\,7^2 \times l^2}$ μm (Unit of l : mm)	Non-contact coordinate measuring machine /QECI - LE233
Ultrasonic thickness gauges	10234	(0 ~ 500) mm	$\sqrt{8^2 + 0.003\,9^2 \times l^2}$ μm (Unit of l : mm)	Ultrasonic specimen /QECI-LE234
Ultrasonic/coating thickness specimens ; Coating Ultrasonic Flatness	10235	(0 ~ 30) mm (2 ~ 800) mm	$\sqrt{0.3^2 + 0.002\,7^2 \times l^2}$ μm $\sqrt{0.7^2 + 0.002\,9^2 \times l^2}$ μm (Unit of l : mm) 0.5 μm	Standard measuring machine /QECI-LE235, QECI-LE235-1
Coating thickness testers	10236	(0 ~ 20) mm	$\sqrt{1.2^2 + 0.002\,7^2 \times l^2}$ μm (Unit of l : mm)	Thickness specimen /QECI-LE236

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Autocollimators	10303	±15′	$\sqrt{0.4^2 + 0.000\,3^2 \times R^2}$ ″ (Unit of R : ″)	Level comparator /QECI - AN301
Bevel protractors Angle accuracy Straightness	10304	(0 ~ 360)°	 1′ 1.2 μm	Rotary table, Electronic micrometer /QECI - AN304
Clinometers	10306	(0 ~ 360)°	4″	Rotary table /QECI - AN306
Fine angle generators, Level comparators Angle accuracy Flatness	10308	 ±15′ 530 mm × 60 mm	 $\sqrt{0.6^2 + 0.000\,3^2 \times R^2}$ ″ 1.3 μm	Autocollimator /QECI - AN308
Indexing tables	10310	(0 ~ 360)°	1.0″	Autocollimator, Polygon /QECI - AN310

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Plate/square/electric levels	10311			Level comparator
Angle(Bubble Tube Type)		±0.1 mm/m	$\sqrt{0.52^2 + 0.000\,3^2 \times R^2}$ ″	Rotary Table
		(±10 ~ ±20) mm/m	0.6 mm/m	/QECI - AN311
Angle(Electric Type)		±5 mm/m	$\sqrt{0.3^2 + 0.000\,3^2 \times R^2}$ ″	/QECI - AN311 - 1
		(±5 ~ ±10) mm/m	$\sqrt{1.5^2 + 0.000\,3^2 \times R^2}$ ″ (Unit of R : ″)	
Flatness of Base		(0 ~ 300) mm	0.9 μm	
Squareness		(0 ~ 300) mm	6.3 μm/m	
Auto levels	10312			Collimating calibration system /QECI - AN312
Azimuth angle		(0 ~ 360)°	3″	
Line of sight straightness		0 m ~ ∞	0.15 mm	
Optical Micrometer		±2.5 mm	3 μm	
Rotary tables	10316	(0 ~ 360)˚	1.0″	Autocollimator, Polygon /QECI - AN316
Sine bars, plates, tables, Centers	10317			Angle gauge block, Electronic micrometer /QECI-AN317
Distance between center of roller		(50 ~ 200) mm	1.8 μm	
Flatness of measuring surface			0.5 μm	
Parallelism between the measuring surface and the roller			0.5 μm	
Squareness testers	10318	(0 ~ 480) mm	$\sqrt{1.4^2 + 0.003^2 \times l^2}$ μm (Unit of l : mm)	Standard cylindrical square /QECI-AN318
Cylindrical squares	10319	(0 ~ 500) mm	1.5 μm	Standard cylindrical square QECI-AN319
Precision squares	10320			Cylindrical square, Contact coordinate measuring machine /QECI - AN320
Squareness		(0 ~ 500) mm	$\sqrt{1.3^2 + 0.003^2 \times l^2}$ μm (Unit of l : mm)	
		(500 ~ 1 000) mm	4.0 μm	
Parallelism		(0 ~ 1 000) mm	1.5 μm	
Straightness		(0 ~ 1 000) mm	1.9 μm	
Alignment telescopes	10323			Collimator /QECI-AN323
Angle accuracy		±5′	1.3″	
Line of sight Straightness		0 m ~ ∞	0.15 mm	
Optical Micrometer		±2.5 mm	3 μm	

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Laser levels	10326			CCD CAMERA
Horizontality		(0 ~ 2) m	0.11 mm	/QECI-AN326
Squareness		90˚	0.07˚	
Optical wedges	10327			Autocollimator
		±15″	0.9″	/QECI-AN327

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	10401			Step block,
Height (Z axis)		(0 ~ 10) μm	0.04 μm	Gauge block,
		(0.01 ~ 20) mm	0.07 μm	Pitch master
Traversing length (X axis)		(0 ~ 50) mm	1.00 μm	/QECI - LE401
Angle		1″ ~ 45°	3″	
Optical flats	10404	(ø10 ~ ø100) mm	$\sqrt{23^2 + 0.428^2 \times d^2}$ nm (Unit of d : mm)	Optical flat /QECI - LE404
Optical parallels	10405	(ø10 ~ ø50) mm		Optical flat,
Flatness			0.04 μm	Gauge block comparator
Parallelism			0.08 μm	/QECI - LE405
Parallel blocks	10406	(0 ~ 500) mm		Electronic micrometer
Parallelism			0.8 μm	/QECI - LE406
Flatness			0.8 μm	
Difference of height between parallel block 1 and 2			0.8 μm	
Precision surface plates	10407	(0.09 ~ 1) m^2	0.7 μm	Electronic Level
		(1 ~ 1.44) m^2	0.9 μm	/QECI - LE407
		(1.44 ~ 2.7) m^2	1.1 μm	
		(2.7 ~ 4.84) m^2	1.4 μm	
		(4.84 ~ 9) m^2	1.8 μm	
		(9 ~ 17.5) m^2	2.2 μm	

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Roundness measurement instruments	10409			Roundness Standard Specimen,
Detector accuracy		(0 ~ 0.1) mm	0.30 μm	Optical flat,
Magnification accuracy			2.6×10^{-3}	Cylindrical square /QECI - LE409
Circumferential direction rotating error of spindle		360°	0.03 μm	
Axial direction rotating error of spindle		360°	0.03 μm	
Straightness of column		(0 ~ 450) mm	1.30 μm	
Straight edges	10412	(0 ~ 2 000) mm		Electronic micrometer,
Straightness			0.6 μm	Precision surface plate
Parallelism			1.5 μm	/QECI - LE412
Straight rules	10413	(0 ~ 5) m	$\sqrt{0.3^2 + 0.001\,5^2 \times l^2}$ mm (Unit of l : m)	Laser tape measurement system /QECI-LE413
Test bars	10415	(0 ~ 500) mm		Gauge block,
Outside diameter		(ø10 ~ ø100) mm	$\sqrt{0.4^2 + 0.003\,6^2 \times l^2}$ μm (Unit of l : mm)	Electronic micrometer /QECI-LE415
Straightness			0.9 μm	
Run-out			0.9 μm	
Flank angle			2″	

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	10501			Height micrometer,
Inside diameter of GO/NO-GO side		(ø1 ~ ø50) mm	$\sqrt{0.2^2 + 0.003\,7^2 \times l^2}$ μm (Unit of l : mm)	Form tester /QECI - LE501
Screw		(ø1 ~ ø50) mm	$\sqrt{0.9^2 + 0.004\,0^2 \times l^2}$ μm (Unit of l : mm)	
Bench centers	10502			Test bar,
Height difference of both the center		(0 ~ 500) mm	2.4 μm	Electronic micrometer /QECI - LE502
Flatness of the bed side			1.1 μm	
Contact coordinate measuring machines	10503			Gauge block, Precision square,
Indicating accuracy		(0 ~ 1 000) mm	$\sqrt{1.9^2 + 0.004\,0^2 \times l^2}$ μm	Straight edge
		(1 000 ~ 1 500) mm	$\sqrt{2.0^2 + 0.004\,0^2 \times l^2}$ μm (Unit of l : mm)	/QECI - LE503
Squareness			4.0 μm	
Straightness			0.9 μm	
Non-contact coordinate measuring machines	10504			Standard scale, Angle gauge block
Indicating accuracy		(0 ~ 600) mm	$\sqrt{0.4^2 + 0.002\,8^2 \times l^2}$ μm (Unit of l : mm)	/QECI - LE504
Angle		(0 ~ 180)°	5″	
Squareness		(0 ~ 450) mm	0.2″	
Measuring microscopes, Profile projectors	10511			Standard scale, Square
Feed accuracy of workstage		(0 ~ 300) mm	$\sqrt{0.4^2 + 0.002\,8^2 \times l^2}$ μm (Unit of l : mm)	/QECI - LE511 /QECI - LE511 - 1
Squareness			1.7 μm	
Magnification Error			2.4×10^{-4}	
Angle division accuracy		(0 ~ 360)°	1.1′	
Micro measuring microscopes	10512	(0 ~ 20) mm	0.7 μm	Standard scale /QECI - LE512

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	10514			Standard measuring
Taper half anlge		(0 ~ 65)°	1″	machine,
Small-end diameter		(ø2 ~ ø200) mm	$\sqrt{0.6^2 + 0.002\,7^2 \times l^2}$ μm	Electronic micrometer
Step diameter		(ø2 ~ ø200) mm	$\sqrt{0.6^2 + 0.002\,7^2 \times l^2}$ μm	/QECI - LE514
Big-end diameter		(ø2 ~ ø200) mm	$\sqrt{0.7^2 + 0.003\,0^2 \times l^2}$ μm	
Gauge length		(0 ~ 250) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm	
Step length		(0 ~ 150) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm (Unit of l : mm)	
Taper ring gauges	10515			Standard measuring
Taper half anlge		(0 ~ 65)°	1″	machine,
Small-end diameter		(ø2 ~ ø80) mm	$\sqrt{0.5^2 + 0.000\,6^2 \times l^2}$ μm	Electronic micrometer,
		(ø80 ~ ø200) mm	$\sqrt{1.9^2 + 0.004\,1^2 \times l^2}$ μm	Contact coordinate
Step diameter		(ø2 ~ ø80) mm	$\sqrt{0.5^2 + 0.000\,6^2 \times l^2}$ μm	measuring machine
		(ø80 ~ ø200) mm	$\sqrt{2.0^2 + 0.004\,1^2 \times l^2}$ μm	/QECI - LE515
Big-end diameter		(ø2 ~ ø80) mm	$\sqrt{0.5^2 + 0.000\,6^2 \times l^2}$ μm	
		(ø80 ~ ø200) mm	$\sqrt{2.3^2 + 0.004\,1^2 \times l^2}$ μm	
Gauge length		(0 ~ 250) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm	
Notch & Step length		(0 ~ 150) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm (Unit of l : mm)	
Stylus type roughness testers	10517			Roughness standard
Arithmetic mean(Ra)		(0 ~ 3) μm	$\sqrt{0.096^2 + 0.025^2 \times R^2}$ μm	specimen, Step block
		(3 ~ 10) μm	$\sqrt{0.18^2 + 0.025^2 \times R^2}$ μm	/QECI - SR517
Max. height(Rz)		(0 ~ 10) μm	$\sqrt{0.26^2 + 0.030^2 \times R^2}$ μm	
		(10 ~ 50) μm	$\sqrt{0.27^2 + 0.003^2 \times R^2}$ μm (Unit of R : μm)	
Mean width(RSm)		(0 ~ 140) μm	$\sqrt{0.87^2 + 0.003\,6^2 \times L^2}$ μm	
		(140 ~ 230) μm	$\sqrt{1.490^2 + 0.003\,6^2 \times L^2}$ μm (Unit of L : μm)	
Depth(H)		(0 ~ 1) μm	$\sqrt{0.02^2 + 0.019^2 \times H^2}$ μm	
		(1 ~ 1 000) μm	$\sqrt{0.08^2 + 0.019^2 \times H^2}$ μm (Unit of H : μm)	
Socket gauges for electric bulb	10518			Form tester
Outside diameter of GO/NOT GO /Thread GO side		(ø1 ~ ø50) mm	$\sqrt{0.3^2 + 0.003\,7^2 \times l^2}$ μm (Unit of l : mm)	/QECI - LE518

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Roughness standard/ comparison specimens	10519			Stylus type roughness tester
Arithmetic mean(Ra)		(0 ~ 3) μm	$\sqrt{0.12^2 + 0.025^2 \times R^2}$ μm	/QECI-SR519
		(3 ~ 10) μm	$\sqrt{0.19^2 + 0.025^2 \times R^2}$ μm	
Max. height(Rz)		(0 ~ 10) μm	$\sqrt{0.37^2 + 0.030^2 \times R^2}$ μm	
		(10 ~ 50) μm	$\sqrt{0.29^2 + 0.003^2 \times R^2}$ μm	
			(Unit of R : μm)	
Transversal Magnification (RSm)		(0 ~ 140) μm	$\sqrt{0.99^2 + 0.003\,6^2 \times L^2}$ μm	
		(140 ~ 230) μm	$\sqrt{1.5^2 + 0.003\,6^2 \times L^2}$ μm	
Depth(H)		(0 ~ 1) μm	$\sqrt{0.022^2 + 0.019^2 \times H^2}$ μm	
		(1 ~ 1 000) μm	$\sqrt{0.089^2 + 0.019^2 \times H^2}$ μm	
			(Unit of H : μm)	
Thread plug gauges	10525			Standard measuring
Pitch diameter		(ø1 ~ ø200) mm	$\sqrt{1.3^2 + 0.003\,7^2 \times l^2}$ μm	machine,
Major diameter		(ø1 ~ ø200) mm	$\sqrt{0.4^2 + 0.003\,7^2 \times l^2}$ μm	Form tester
			(Unit of l : mm)	/QECI - LE525
Pitch		(0.25 ~ 6.35) mm	0.4 μm	
Flank angle		(0 ~ 45)°	4″	
Taper thread plug gauges	10526			Standard measuring
Small-end pitch diameter		(ø2 ~ ø200) mm	$\sqrt{1.6^2 + 0.004\,3^2 \times M_0^2}$ μm	machine,
			(Unit of M_0 : mm)	Gauge block
Large-end pitch diameter		(ø2 ~ ø200) mm	$\sqrt{1.6^2 + 0.003\,4^2 \times M_H^2}$ μm	/QECI - LE526
			(Unit of M_H : mm)	
Small-end major diameter		(ø2 ~ ø200) mm	$\sqrt{0.7^2 + 0.004\,3^2 \times L_0^2}$ μm	
			(Unit of L_0 : mm)	
Large-end major diameter		(ø2 ~ ø200) mm	$\sqrt{0.7^2 + 0.003\,4^2 \times L_H^2}$ μm	
			(Unit of L_H : mm)	
Pitch		(0.25 ~ 6.35) mm	0.9 μm	
Flank angles		(0 ~ 30)°	5″	
Taper half-angle		(0 ~ 2)°	7″	
Gauge length		(0 ~ 250) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm	
Notch & Step length		(0 ~ 150) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm	
			(Unit of l : mm)	
Thread ring gauges	10527			Standard measuring
Pitch diameter		(ø2.5 ~ ø200) mm	$\sqrt{1.2^2 + 0.003\,7^2 \times l^2}$ μm	machine,
Minor diameter		(ø2.5 ~ ø200) mm	$\sqrt{1.7^2 + 0.005\,6^2 \times l^2}$ μm	Form tester
			(Unit of l : mm)	/QECI - LE527
Pitch		(0.25 ~ 6.35) mm	1.0 μm	
Flank angle		(0 ~ 45)°	5″	

#REF!

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 thread ring gauges	10528			Height micrometer,
Gauge length		(1 ~ 150) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm	Electronic micrometer,
Notch & Step length		(0 ~ 150) mm	$\sqrt{0.6^2 + 0.003\,0^2 \times l^2}$ μm	Taper thread plug gauge
			(Unit of l : mm)	/QECI - LE528
Alternateness of minor diameter		(0 ~ 2) mm	1.2 μm	
Alternateness of pitch diameter		(0 ~ 2) mm	2.1 μm	
V-blocks, Box blocks	10529	300 mm × 300 mm × 300 mm		Electronic micrometer,
V-blocks				Test bar,
Flatness of base side			0.5 μm	Squareness tester
Flatness of V surface			0.6 μm	/QECI - LE529
The gradient on the base side of V-groove			0.4 μm	/QECI - LE529 - 1
The parallelism between the undersurface and the cylinder on the V surface.			2.4 μm	
The parallelism between the side and the cylinder on the V surface.			2.4 μm	
The mutual height difference of V surface for a pair of V blocks			2.3 μm	
Box blocks				
Squareness			1.6 μm	
The parallelism of upper surface for the undersurface			1.0 μm	
The parallelism between the undersurface and the cylinder on the V surface.			2.6 μm	

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Inside/outside/gear tooth calipers, caliper gauges	10601			Gauge block, Surface plate
Inside/Outside calipers		(0 ~ 600) mm	$\sqrt{8^2 + 0.002\,9^2 \times l^2}$ μm	/QECI - LE601
		(600 ~ 1 000) mm	$\sqrt{10^2 + 0.002\,9^2 \times l^2}$ μm	/QECI - LE601 - 1
		(1 000 ~ 3 000) mm	$\sqrt{15^2 + 0.002\,9^2 \times l^2}$ μm	/QECI - LE601 - 2
			(Unit of l : mm)	
Gear tooth calipers				
Tooth height scale		(0 ~ 50) mm	$\sqrt{7^2 + 0.002\,7^2 \times l^2}$ μm	
Tooth thickness scale		(0 ~ 100) mm	$\sqrt{7^2 + 0.002\,9^2 \times l^2}$ μm	
Combine accuracy		(0 ~ 100) mm	$\sqrt{7^2 + 0.002\,6^2 \times l^2}$ μm	
Caliper gauges		(0 ~ 300) mm	$\sqrt{7^2 + 0.002\,9^2 \times l^2}$ μm	
			(Unit of l : mm)	
Cylinder/Bore gauges	10603			Standard measuring machine,
		(0 ~ 5) mm	0.3 μm	Dial gauge tester /QECI - LE10603
Depth gauges, Depth micrometers	10604			Gauge block, Surface plate
Depth gauges,		(0 ~ 1 000) mm	$\sqrt{7^2 + 0.002\,7^2 \times l^2}$ μm	/QECI - LE604
Depth micrometers		(0 ~ 300) mm	$\sqrt{1.0^2 + 0.002\,7^2 \times l^2}$ μm	/QECI - LE604 - 1
Dial depth gauges		(0 ~ 100) mm	$\sqrt{1.0^2 + 0.002\,7^2 \times l^2}$ μm	/QECI - LE604 - 2
			(Unit of l : mm)	
Dial/digital gauges	10605			Standard measuring machine,
		(0 ~ 5) mm	$\sqrt{0.2^2 + 0.002\,7^2 \times l^2}$ μm	Dial gauge tester
		(5 ~ 100) mm	$\sqrt{0.8^2 + 0.002\,7^2 \times l^2}$ μm	/QECI - LE605
			(Unit of l : mm)	
Grind gauges	10608			Height micrometer,
Depth of inclined plane		(0 ~ 1) mm	0.9 μm	Electronic micrometer
Straightness of scraper			1.1 μm	/QECI - LE605
Micro indicators, Test indicators	10609			Dial gauge tester /QECI - LE10609
Micro indicators		±1 mm	0.3 μm	
Test indicators		(0 ~ 2) mm	0.3 μm	
Micrometer heads	10610			Gauge blocks
		(0 ~ 100) mm	$\sqrt{0.2^2 + 0.002\,9^2 \times l^2}$ μm	/QECI - LE610
			(Unit of l : mm)	

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
3-points, Micrometers	10611			Cylindrical ring gauge
		(ø2 ~ ø6) mm	$\sqrt{1.4^2 + 0.004\,6^2 \times l^2}$ μm	/QECI - LE611
		(ø6 ~ ø200) mm	$\sqrt{1.9^2 + 0.004\,6^2 \times l^2}$ μm	
		(ø200 ~ ø300) mm	$\sqrt{2.5^2 + 0.005\,4^2 \times l^2}$ μm	
			(Unit of l : mm)	
Inside micrometers	10612			Gauge block,
Inside micrometers		(5 ~ 300) mm	$\sqrt{1.0^2 + 0.002\,9^2 \times l^2}$ μm	Gauge block accessory
Tubular inside micrometers		(50 ~ 1 000) mm	$\sqrt{1.0^2 + 0.002\,9^2 \times l^2}$ μm	/QECI - LE612
		(1 000 ~ 5 000) mm	$\sqrt{2.0^2 + 0.002\,9^2 \times l^2}$ μm	
			(Unit of l : mm)	
Outside micrometers	10613			Gauge block,
Outside micrometers		(0 ~ 1 000) mm	$\sqrt{1.0^2 + 0.002\,9^2 \times l^2}$ μm	Optical flat,
		(1 000 ~ 2 000) mm	$\sqrt{2.0^2 + 0.002\,9^2 \times l^2}$ μm	Cylindrical plug gauge
V-Anvil micrometers		(1 ~ 100) mm	$\sqrt{1.0^2 + 0.004\,9^2 \times l^2}$ μm	/QECI - LE613
			(Unit of l : mm)	/QECI - LE613 -1
Standard sieves	10617			Non-contact coordinate
Standard net sieve				measuring machine
Wire diameter		(0 ~ 10) mm	3 μm	/QECI - LE617
Sieve size		(0 ~ 130) mm	4 μm	
Standard plate sieve				
Hole diameter		(0 ~ 130) mm	3 μm	
Length of the hole center		(0 ~ 160) mm	3 μm	
Welding gauges	10620			Non-contact coordinate
Height, Depth		(0 ~ 50) mm	0.3 mm	measuring machine
Scale		(0 ~ 90) mm	0.3 mm	/QECI - LE620
Fillet Welding Height		(0 ~ 20) mm	0.3 mm	
Taper thickness		(1 ~ 10) mm	0.2 mm	
Angle		(0 ~ 90)°	0.3°	
Optical micrometers	10621			Standard measuring machine
		(0 ~ 10) mm	2 μm	/QECI - LE621

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Electric balances	20109	(0 ~ 20) g	64 µg	Weights /QECI-EB109
		(20 ~ 80) g	0.11 mg	
		(80 ~ 160) g	0.16 mg	
		(160 ~ 200) g	0.19 mg	
		(200 ~ 300) g	0.23 mg	
		(300 ~ 400) g	0.25 mg	
		(400 ~ 500) g	0.50 mg	
		(500 ~ 600) g	0.56 mg	
		(0.6 ~ 1) kg	0.9 mg	
		(1 ~ 2) kg	1.8 mg	
		(2 ~ 3) kg	1.9 mg	
		(3 ~ 4) kg	2.5 mg	
		(4 ~ 5) kg	4.7 mg	
		(5 ~ 8) kg	5.2 mg	
		(8 ~ 10) kg	9 mg	
		(10 ~ 16) kg	11 mg	
		(16 ~ 25) kg	18 mg	
		(25 ~ 30) kg	19 mg	
		(30 ~ 40) kg	0.02 g	
		(40 ~ 60) kg	0.7 g	
		(60 ~ 150) kg	2 g	
		(150 ~ 300) kg	3 g	
		(300 ~ 1 000) kg	0.1 kg	
		(1 000 ~ 2 000) kg	0.2 kg	
		(2 000 ~ 5 000) kg	0.5 kg	
Platform scale balances	20112	(0 ~ 10) kg	0.002 kg	Weights /QECI-EB112
		(10 ~ 20) kg	0.005 kg	
		(20 ~ 100) kg	0.01 kg	
		(100 ~ 200) kg	0.02 kg	
		(200 ~ 300) kg	0.05 kg	
		(300 ~ 500) kg	0.1 kg	
		(500 ~ 1 000) kg	0.23 kg	
Spring scale balances	20113	(0 ~ 500) g	1 g	Weights /QECI-EB113
		(0.5 ~ 1) kg	2 g	
		(1 ~ 2) kg	5 g	
		(2 ~ 5) kg	0.01 kg	
		(5 ~ 10) kg	0.02 kg	
		(10 ~ 30) kg	0.05 kg	
		(30 ~ 50) kg	0.1 kg	
		(50 ~ 100) kg	0.2 kg	

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Weights, Class F1	20116	1 mg	2.2 μg	Weights
		2 mg	2.2 μg	/QECI-EB116
		5 mg	2.2 μg	
		10 mg	3.0 μg	
		20 mg	3.8 μg	
		50 mg	4.2 μg	
		100 mg	5.4 μg	
		200 mg	6.8 μg	
		500 mg	8.4 μg	
		1 g	11 μg	
		2 g	13 μg	
		5 g	17 μg	
		10 g	20 μg	
		20 g	27 μg	
		50 g	0.04 mg	
		100 g	0.06 mg	
		200 g	0.14 mg	
		500 g	0.31 mg	
		1 kg	0.55 mg	
		2 kg	1.9 mg	
		5 kg	2.7 mg	
		10 kg	5.7 mg	
		20 kg	10 mg	

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Tension/compresion testing	20203			Load Cells
machines Tension		(2 ~ 20) kN	7.0×10^{-4}	/QECI-FC203
		(20 ~ 50) kN	8.0×10^{-4}	
Compression		(2 ~ 10) kN	5.0×10^{-4}	
		(10 ~ 20) kN	6.0×10^{-4}	
		(20 ~ 50) kN	1.3×10^{-3}	
		(50 ~ 100) kN	9.0×10^{-4}	
		(100 ~ 500) kN	1.4×10^{-3}	
		(0.5 ~ 1) MN	1.0×10^{-3}	
		(1 ~ 2) MN	1.2×10^{-3}	

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Push-pull gauges	20204			Weights
Tension, Compression		(0.2 ~ 2) N	1.5×10^{-3}	/QECI-FC204
		(2 ~ 5) N	8.0×10^{-4}	
		(5 ~ 10) N	6.0×10^{-4}	
		(10 ~ 50) N	5.0×10^{-4}	
		(50 ~ 100) N	6.0×10^{-4}	
		(100 ~ 300) N	5.0×10^{-4}	
		(300 ~ 1 000) N	6.0×10^{-4}	

203. Torque

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Torque wrenches/drivers	20303	(0.1 ~ 1) N·m	6.9×10^{-3}	Torque wrench tester
		(1 ~ 2.5) N·m	9.8×10^{-3}	/QECI-FC303
		(2.5 ~ 5) N·m	5.9×10^{-3}	
		(5 ~ 10) N·m	7.3×10^{-3}	
		(10 ~ 25) N·m	7.2×10^{-3}	
		(25 ~ 50) N·m	3.6×10^{-3}	
		(50 ~ 100) N·m	8.3×10^{-3}	
		(100 ~ 250) N·m	1.8×10^{-3}	
		(250 ~ 500) N·m	7.2×10^{-3}	
		(500 ~ 1 000) N·m	6.2×10^{-3}	
		(1 000 ~ 2 000) N·m	4.4×10^{-3}	

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Manometers	20402	(0 ~ 1.25) kPa	$\sqrt{2.8^2 + 0.68^2 \times p_s^2}$ Pa (Unit of p_s : kPa)	Pressure Controller/Calibrator /QECI-PS402
		(1.25 ~ 15) kPa	$\sqrt{2.8^2 + 0.63^2 \times p_s^2}$ Pa (Unit of p_s : kPa)	
		(15 ~ 130) kPa	$\sqrt{77^2 + 0.11^2 \times p_s^2}$ Pa (Unit of p_s : kPa)	
Hydraulic pressure ballances	20404	(0.1 ~ 10) MPa	6.4×10^{-5}	Hydraulic pressure balance
		(10 ~ 100) MPa	6.6×10^{-5}	/QECI-PS404
		(100 ~ 200) MPa	6.8×10^{-5}	/QECI-PS404-1
		(200 ~ 500) MPa	1.7×10^{-4}	

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Absolute pressure gauges	20406			Pressure Controller/Calibrator
Absolute pressure		(0 ~ 350) kPa	$\sqrt{0.58^2 + 0.047^2 \times p_s^2}$ Pa (p_s : Max Pressure, Unit of p_s : kPa)	/QECI-PS406
		(0.35 ~ 5) MPa	$\sqrt{0.058^2 + 0.047^2 \times p_s^2}$ kPa (p_s : Max Pressure, p_s : MPa)	
Barometers		(90 ~ 110) kPa	$\sqrt{9.0^2 + 0.15^2 \times p_s^2}$ Pa (p_s : Max Pressure, Unit of p_s : hPa)	
Blood pressure gauges	20407	(0 ~ 40) kPa	$\sqrt{7.7^2 + 0.28^2 \times p_s^2}$ Pa (p_s : Max Pressure, Unit of p_s : kPa)	Pressure Controller/Calibrator /QECI-PS407
Compound pressure gauges	20408	-100 kPa ~ 5 MPa	$\sqrt{0.058^2 + 0.066^2 \times p_s^2}$ kPa (p_s : the negative or positive max pressure, unit of p_s : MPa)	Pressure Controller/Calibrator /QECI-PS408
Differential pressure gauges	20409	(0 ~ 1.25) kPa	$\sqrt{0.058^2 + 0.12^2 \times p_s^2}$ Pa (p_s : Max Pressure, Unit of p_s : kPa)	Pressure Controller/Calibrator, Pneumatic pressure balance
		(1.25 ~ 15) kPa	$\sqrt{0.58^2 + 0.047^2 \times p_s^2}$ Pa (p_s : Max Pressure, Unit of p_s : kPa)	#REF!
		(0.015 ~ 7) MPa	$\sqrt{0.058^2 + 0.049^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
Gauge pressure gauges	20411			Pressure Controller/Calibrator,
Pneumatic		(0 ~ 15) kPa	$\sqrt{0.10^2 + 0.047^2 \times p_s^2}$ Pa (Unit of p_s : kPa)	Hydraulic pressure balance /QECI-PS411
		(0.015 ~ 0.7) MPa	$\sqrt{0.005\,8^2 + 0.053^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(0.7 ~ 7) MPa	$\sqrt{0.058^2 + 0.049^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
Hydraulic		(0 ~ 10) MPa	$\sqrt{0.080^2 + 0.060^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(10 ~ 100) MPa	$\sqrt{0.080^2 + 0.062^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(100 ~ 200) MPa	$\sqrt{0.080^2 + 0.063^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(200 ~ 500) MPa	$\sqrt{8.4^2 + 0.17^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Pressure transducers/transmitters	20412			Pressure Controller/Calibrator,
Pressure transducers				Pneumatic pressure balance,
Pneumatic		(-100 ~ 0) kPa	$\sqrt{1.3^2 + 0.056^2 \times p_s^2}$ Pa (p_s : the negative maximum pressure, unit of p_s : kPa)	Hydraulic pressure balance /QECI-PS412
		(0 ~ 15) kPa	$\sqrt{0.20^2 + 0.047^2 \times p_s^2}$ Pa (Unit of p_s : kPa)	
		(0.015 ~ 0.7) MPa	$\sqrt{0.008\,2^2 + 0.053^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(0.7 ~ 7) MPa	$\sqrt{0.090^2 + 0.049^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
Hydraulic		(0 ~ 10) MPa	$\sqrt{0.13^2 + 0.060^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(10 ~ 100) MPa	$\sqrt{1.3^2 + 0.062^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(100 ~ 200) MPa	$\sqrt{2.3^2 + 0.063^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(200 ~ 500) MPa	$\sqrt{6.5^2 + 0.17^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
Pressure transmitters				
Pneumatic		(-100 ~ 0) kPa	$\sqrt{3.8^2 + 0.056^2 \times p_s^2}$ Pa (p_s : the negative maximum pressure, unit of p_s : kPa)	
		(0 ~ 15) kPa	$\sqrt{0.20^2 + 0.047^2 \times p_s^2}$ Pa (Unit of p_s : kPa)	
		(0.015 ~ 0.7) MPa	$\sqrt{0.008\,4^2 + 0.053^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(0 ~ 7) MPa	$\sqrt{0.10^2 + 0.049^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
Hydraulic		(0 ~ 10) MPa	$\sqrt{0.15^2 + 0.060^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(10 ~ 100) MPa	$\sqrt{1.5^2 + 0.062^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(100 ~ 200) MPa	$\sqrt{3.0^2 + 0.063^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
		(200 ~ 500) MPa	$\sqrt{7.4^2 + 0.17^2 \times p_s^2}$ kPa (Unit of p_s : MPa)	
Dial type vaccum gauges	20413	(-100 ~ 0) kPa	$\sqrt{0.10^2 + 0.000\,050^2 \times p_s^2}$ kPa (p_s : the negative maximum pressure, unit of p_s : kPa)	Pressure Controller/Calibrator /QECI-PS413
Water Depth Meters	20414	(0 ~ 350) m	$\sqrt{0.088^2 + 0.25^2 \times p_s^2}$ m (Unit of p_s : MPa)	Pressure Controller/Calibrator /QECI-PS414
		(350 ~ 690) m	$\sqrt{0.41^2 + 0.25^2 \times p_s^2}$ m (Unit of p_s : MPa)	

209. Fluid flow

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Gas flowmeters; differential pressure	20908	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; differential pressure	20909	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Liquid flowmeters; electromagnetic	20910	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Gas flowmeters; thermal mass, etc.	20911	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; Coriolis, etc.	20912	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Gas flowmeters; positive displacement	20914	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; positive displacement	20915	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Gas flowmeters; turbine	20916	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; turbine	20917	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Gas flowmeters; ultrasonic	20918	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; ultrasonic	20919	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Gas flowmeters; variable area	20920	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; variable area	20921	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902
Gas flowmeters; vortex	20922	(0.002 ~ 250) m^3/h	3.2×10^{-3}	Sonic nozzles /QECI-FL901
Liquid flowmeters; vortex	20923	(0.2 ~ 1 500) m^3/h	3.2×10^{-3}	Master Flow Meters /QECI-FL902

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	≦ 250 HBW 10/3 000	2.6 HBW 10/3 000	Brinell Hardness test block /QECI-HN101
		50 ~ 450) HBW 10/3 000	4.1 HBW 10/3 000	
		> 450 HBW 10/3 000	6.0 HBW 10/3 000	
Rockwell hardness testers	21002	(20 ~ 70) HRC	0.4 HRC	Rockwell Hardness test block /QECI-HN102
		(10 ~ 100) HRBW	0.7 HRBW	
Shore hardness testers	21003	(20 ~ 35) HS	1.0 HS	Shore hardness test block /QECI-HN103
		(45 ~ 55) HS	1.0 HS	
		(55 ~ 65) HS	1.0 HS	
		(75 ~ 85) HS	1.1 HS	
		(85 ~ 100) HS	1.1 HS	
Vickers hardness testers	21004	≦ 225 HV 0.2	5.7 HV 0.2	Vickers hardness test block /QECI-HN104
		(400 ~ 600) HV 0.2	14 HV 0.2	
		> 700 HV 0.2	20 HV 0.2	
		≦ 225 HV 0.5	5.2 HV 0.5	
		(400 ~ 600) HV 0.5	15 HV 0.5	
		> 700 HV 0.5	18 HV 0.5	
		≦ 225 HV 10	3.0 HV 10	
		(400 ~ 600) HV 10	6.9 HV 10	
		> 700 HV 10	8.9 HV 10	
		≦ 225 HV 30	3.5 HV 30	
		(400 ~ 600) HV 30	5.7 HV 30	
		> 700 HV 30	11 HV 30	
Durometer hardness testers	21005	(0 ~ 100) HDA	0.4 HDA	Durometer calibrator /QECI-HN105
		(0 ~ 100) HDD	0.4 HDD	
Leeb hardness testers	21006	≤ 500 HLD	5 HLD	Leeb hardness test block /QECI-HN106
		(500 ~ 700) HLD	5 HLD	
		> 700 HLD	5 HLD	

301. Time/frequency

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
General frequency sources	30103			GPS receiver,
Reference oscillator		10 MHz	7.0×10^{-12}	Frequency counter
				/QECI-TF103
Frequency meters/counters	30104			GPS receiver,
Input Frequency		10 MHz	7.0×10^{-12}	Frequency counters
Reference oscillator		10 MHz	7.0×10^{-12}	/QECI-TF104
Time interval meters/	30106			Stopwatch calibrator
stop watches/timers				GPS receiver,
Stop watches		(0.1 ~ 86 400) s	1.5×10^{-7}	Frequency counter
Timers		(0.1 ~ 3.0) s	6.4×10^{-4}	/QECI-TF106
		(3.0 ~ 10 000) s	7.0×10^{-4}	

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			GPS receiver,
RPM		(30 ~ 4 000) min^{-1}	0.05 min^{-1}	Frequency counter
RPM(Centrifuge)		(60 ~ 5 000) min^{-1}	0.1 min^{-1}	stroboscope
		(5 000 ~ 30 000) min^{-1}	1 min^{-1}	/ QECI-VR201
Contact type tachometers	30202			GPS receiver,
RPM		(6 ~ 60) min^{-1}	0.01 min^{-1}	RPM calibration system
		(60 ~ 4 000) min^{-1}	0.1 min^{-1}	/ QECI-VR202
Photo tachometers/stroboscopes	30203			GPS receiver
RPM		(30 ~ 1 000) min^{-1}	0.001 min^{-1}	Frequency counter,
(Tachometer)		(1 000 ~ 10 000) min^{-1}	0.01 min^{-1}	Optical generator/detector
		(10 000 ~ 99 000) min^{-1}	0.1 min^{-1}	/ QECI-VR203
RPM		(30 ~ 1 000) min^{-1}	0.001 min^{-1}	
(Stroboscopes)		(1 000 ~ 10 000) min^{-1}	0.01 min^{-1}	
		(10 000 ~ 99 000) min^{-1}	0.1 min^{-1}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC ammeters	40101	(±)		Meter calibrator,
DC ammeters		0 μA	9.3 nA	Current calibrator
		(0 ~ 10) μA	4.8×10^{-3}	/QECI-EL101
		(10 ~ 100) μA	5.5×10^{-4}	
		(0.1 ~ 1) mA	1.5×10^{-4}	
		(1 ~ 10) mA	1.0×10^{-4}	
		(10 ~ 100) mA	1.3×10^{-4}	
		(0.1 ~ 1) A	2.0×10^{-4}	
		(1 ~ 10) A	9.0×10^{-4}	
		(10 ~ 100) A	4.7×10^{-4}	
DC voltage/current calibrators	40103	(±)		Multimeter
DC voltage		0 mV	0.12 μV	/QECI-EL103
		(0 ~ 10) mV	1.3×10^{-4}	
		(10 ~ 100) mV	4.2×10^{-5}	
		(0.1 ~ 1) V	8.7×10^{-6}	
		(1 ~ 10) V	8.7×10^{-6}	
		(10 ~ 100) V	9.3×10^{-6}	
		(100 ~ 1 000) V	9.7×10^{-6}	
DC current		0 μA	0.74 nA	
		(0 ~ 100) μA	1.1×10^{-4}	
		(0.1 ~ 1) mA	1.1×10^{-4}	
		(1 ~ 10) mA	3.1×10^{-5}	
		(10 ~ 100) mA	1.0×10^{-4}	
		(0.1 ~ 1) A	2.7×10^{-4}	
		(1 ~ 20) A	6.3×10^{-4}	
Electrical temperature calibrators	40104	(±)		Multimeter Meter calibrator
Source				/QECI-EL104
S Type		0 mV	1 μV	
		(0.000 ~ 5.239) mV (0 ~ 600) ℃	3.8×10^{-4}	
		(5.239 ~ 18.503) mV (600 ~ 1 750) ℃	1.1×10^{-4}	
R Type		0 mV	1 μV	
		(0.000 ~ 5.584) mV (0 ~ 600) ℃	3.6×10^{-4}	
		(5.584 ~ 20.877) mV (600 ~ 1 750) ℃	9.6×10^{-5}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
B Type	40104	(1.792 ~ 6.786) mV	1.1×10^{-3}	
		(600 ~ 1 200) ℃		
		(6.786 ~ 13.820) mV	1.4×10^{-4}	
		(1 200 ~ 1 820) ℃		
K Type		(-5.891 ~ 12.209) mV	3.4×10^{-4}	
		(-200 ~ 300) ℃		
		0 mV	1 μV	
		(12.209 ~ 54.886) mV	3.6×10^{-5}	
		(300 ~ 1 372) ℃		
J Type		(-7.891 ~ 10.779) mV	2.5×10^{-4}	
		(-200 ~ 200) ℃		
		0 mV	1 μV	
		(10.779 ~ 57.953) mV	3.5×10^{-5}	
		(200 ~ 1 000) ℃		
T Type		(-5.603 ~ 4.279) mV	3.6×10^{-4}	
		(-200 ~ 100) ℃		
		0 mV	1 μV	
		(4.279 ~ 20.872) mV	9.6×10^{-5}	
		(100 ~ 400) ℃		
N Type		(-3.990 ~ 9.341) mV	2.5×10^{-4}	
		(-200 ~ 300) ℃		
		0 mV	1 μV	
		(9.341 ~ 47.513) mV	4.2×10^{-5}	
		(300 ~ 1 300) ℃		
E Type		(-8.825 ~ 37.005) mV	2.3×10^{-4}	
		(-200 ~ 500) ℃		
		0 mV	1 μV	
		(37.005 ~ 76.362) mV	2.6×10^{-5}	
		(500 ~ 1 000) ℃		
pt100(385) Type		(18.52 ~ 332.79) Ω	3.0×10^{-5}	
		(-200 ~ 660) ℃		
pt100(3916) Type		(17.08 ~ 337.03) Ω	3.0×10^{-5}	
		(-200 ~ 660) ℃		
Measurement		(±)		
S Type		0 mV	2 μV	
		(0.000 ~ 5.239) mV	3.8×10^{-4}	
		(5.239 ~ 18.174) mV	1.1×10^{-4}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
R Type	40104	0 mV	2 μV	
		(0.000 ~ 5.584) mV	3.6×10^{-4}	
		(5.584 ~ 20.489) mV	9.8×10^{-5}	
B Type		(1.792 ~ 6.786) mV	1.1×10^{-3}	
		(6.786 ~ 13.820) mV	1.4×10^{-4}	
K Type		(-5.891 ~ 12.209) mV	3.4×10^{-4}	
		0 mV	2 μV	
		(12.209 ~ 54.886) mV	5.5×10^{-5}	
J Type		(-7.891 ~ 10.779) mV	2.5×10^{-4}	
		0 mV	2 μV	
		(10.779 ~ 57.953) mV	5.2×10^{-5}	
T Type		(-5.603 ~ 4.279) mV	3.6×10^{-4}	
		0 mV	2 μV	
		(4.279 ~ 20.872) mV	9.6×10^{-5}	
N Type		(-3.990 ~ 9.341) mV	5.0×10^{-4}	
		0 mV	2 μV	
		(9.341 ~ 47.513) mV	6.3×10^{-5}	
E Type		(-8.825 ~ 37.005) mV	2.3×10^{-4}	
		0 mV	2 μV	
		(37.005 ~ 76.373) mV	4.1×10^{-5}	
pt100(385) Type		(18.52 ~ 332.79) Ω	6.0×10^{-5}	
pt100(3916) Type		(17.08 ~ 337.03) Ω	5.9×10^{-5}	
DC power supplies	40108	(±)		Multimeter,
DC voltage		0 mV	0.60 μV	Shunt
		(0 ~ 100) mV	3.2×10^{-5}	/QECI-EL108
		(0.1 ~ 1) V	2.0×10^{-5}	
		(1 ~ 10) V	2.0×10^{-5}	
		(10 ~ 100) V	2.1×10^{-5}	
		(100 ~ 1 000) V	2.1×10^{-5}	
DC current		0 mA	5.9 nA	
		(0 ~ 1) mA	3.7×10^{-5}	
		(1 ~ 10) mA	3.6×10^{-5}	
		(10 ~ 100) mA	7.7×10^{-5}	
		(0.1 ~ 1) A	2.6×10^{-4}	
		(1 ~ 10) A	6.0×10^{-4}	
		(10 ~ 100) A	2.5×10^{-4}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC voltmeters	40112	(±)		Meter calibrator
DC voltmeter		0 mV	0.61 μV	/QECI-EL112
		(0 ~ 10) mV	6.5×10^{-4}	
		(10 ~ 100) mV	4.0×10^{-5}	
		(0.1 ~ 1) V	1.3×10^{-5}	
		(1 ~ 10) V	1.0×10^{-5}	
		(10 ~ 100) V	1.3×10^{-5}	
		(100 ~ 1 000) V	1.3×10^{-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	40205			Meter calibrator,
AC voltage		60 Hz		Decade resistance box
		(0.2 ~ 1) V	6.5×10^{-4}	/QECI-EL205
		(1 ~ 10) V	3.9×10^{-4}	
		(10 ~ 100) V	4.0×10^{-4}	
Resistors meters		(0.2 ~ 1) Ω	1.0×10^{-3}	
		(1 ~ 10) Ω	5.8×10^{-4}	
		(10 ~ 100) Ω	5.8×10^{-4}	
		(0.1 ~ 1) kΩ	5.8×10^{-4}	
		(1 ~ 10) kΩ	5.8×10^{-4}	

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.
Insulation testers	40210			Multimeter,
DC voltage		(0.01 ~ 0.1) kV	5.8×10^{-2}	Meter calibrator,
		(0.1 ~ 1) kV	7.3×10^{-4}	High Resistor
		(1 ~ 5) kV	6.3×10^{-3}	/QECI-EL210
		(5 ~ 10) kV	6.2×10^{-3}	
AC voltage		60 Hz		
		(4 ~ 10) V	3.8×10^{-4}	
		(10 ~ 100) V	3.0×10^{-4}	
		(100 ~ 1 000) V	4.0×10^{-4}	
Resistance		1 kΩ	0.35 Ω	
		(1 ~ 10) kΩ	3.5×10^{-4}	
		(10 ~ 100) kΩ	3.5×10^{-4}	
		(0.1 ~ 1) MΩ	3.5×10^{-4}	
		(1 ~ 10) MΩ	3.6×10^{-4}	
		(10 ~ 100) MΩ	1.2×10^{-3}	
		(0.1 ~ 1) GΩ	2.3×10^{-3}	
		(1 ~ 10) GΩ	6.0×10^{-3}	
		(10 ~ 100) GΩ	1.2×10^{-2}	
		(100 ~ 1 000) GΩ	1.2×10^{-2}	
Resistance bridges & Similar instruments	40213			Multimeter /QECI-EL213
Measuring Arm		(20 ~ 100) mΩ	2.5×10^{-4}	
		(0.1 ~ 1) Ω	6.1×10^{-5}	
		(1 ~ 10) Ω	3.5×10^{-5}	
		(10 ~ 100) Ω	2.4×10^{-5}	
		(0.1 ~ 1) kΩ	1.9×10^{-5}	
		(1 ~ 10) kΩ	1.9×10^{-5}	
		(10 ~ 100) kΩ	1.9×10^{-5}	
		(0.1 ~ 1) MΩ	2.9×10^{-5}	
		(1 ~ 10) MΩ	8.0×10^{-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.
Resistance meters	40214			Resistor,
Resistor		1 mΩ	0.06 μΩ	Decade resistance box,
		(1 ~ 10) mΩ	6.0×10^{-5}	Resistance meter
		(10 ~ 100) mΩ	6.0×10^{-5}	/QECI-EL214
		(0.1 ~ 1) Ω	3.0×10^{-5}	
		(1 ~ 10) Ω	2.0×10^{-5}	
		(10 ~ 100) Ω	2.0×10^{-5}	
		(0.1 ~ 1) kΩ	2.0×10^{-5}	
		(1 ~ 10) kΩ	2.0×10^{-5}	
		(10 ~ 100) kΩ	2.0×10^{-5}	
		(0.1 ~ 1) MΩ	2.0×10^{-5}	
		(1 ~ 10) MΩ	4.0×10^{-5}	
		(10 ~ 100) MΩ	3.0×10^{-5}	
		(0.1 ~ 1) GΩ	3.0×10^{-3}	
		(1 ~ 10) GΩ	6.0×10^{-3}	
		(10 ~ 100) GΩ	1.2×10^{-2}	
		(100 ~ 1 000) GΩ	1.2×10^{-2}	
Decade resistance box,	40215			Meter calibrator,
				Multimeter
Resistor		1 mΩ	0.66 μΩ	/QECI-EL215
		(1 ~ 10) mΩ	6.5×10^{-4}	
		(10 ~ 100) mΩ	2.9×10^{-4}	
		(0.1 ~ 1) Ω	1.5×10^{-4}	
		(1 ~ 10) Ω	1.7×10^{-5}	
		(10 ~ 100) Ω	2.4×10^{-5}	
		(0.1 ~ 1) kΩ	1.9×10^{-5}	
		(1 ~ 10) kΩ	1.9×10^{-5}	
		(10 ~ 100) kΩ	1.9×10^{-5}	
		(0.1 ~ 1) MΩ	2.9×10^{-5}	
		(1 ~ 10) MΩ	8.0×10^{-5}	
		(10 ~ 100) MΩ	6.5×10^{-4}	
		(0.1 ~ 1) GΩ	6.5×10^{-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.
AC ammeters	40301			Meter calibrator,
AC current		50 Hz ~ 1 kHz		Current calibrator
		(2 ~ 10) μA	3.1×10^{-2}	/QECI-EL301
		(10 ~ 100) μA	3.1×10^{-3}	
		(0.1 ~ 1) mA	4.4×10^{-4}	
		(1 ~ 10) mA	3.8×10^{-4}	
		(10 ~ 100) mA	4.2×10^{-4}	
		(0.1 ~ 1) A	1.0×10^{-3}	
		(1 ~ 10) A	3.8×10^{-3}	
		60 Hz		
		(10 ~ 100) A	2.9×10^{-3}	
Clamp ammeters/voltmeters	40302			Meter calibrator,
DC voltage		(20 ~ 100) mV	8.5×10^{-5}	Coil,
		(0.1 ~ 1) V	3.1×10^{-5}	Decade resistance box
		(1 ~ 10) V	2.0×10^{-5}	/QECI-EL302
		(10 ~ 100) V	2.8×10^{-5}	
		(100 ~ 1 000) V	2.8×10^{-5}	
DC current		(0.3 ~ 1) A	2.4×10^{-3}	
		(1 ~ 10) A	2.4×10^{-3}	
		(10 ~ 100) A	2.4×10^{-3}	
		(100 ~ 1 000) A	2.7×10^{-3}	
AC voltage		60 Hz		
		(30 ~ 100) mV	5.0×10^{-4}	
		(0.1 ~ 1) V	3.8×10^{-4}	
		(1 ~ 10) V	3.8×10^{-4}	
		(10 ~ 100) V	3.0×10^{-4}	
		(100 ~ 1 000) V	4.0×10^{-4}	
AC current		60 Hz		
		(0.3 ~ 1) A	2.9×10^{-3}	
		(1 ~ 10) A	2.9×10^{-3}	
		(10 ~ 100) A	2.9×10^{-3}	
		(100 ~ 1 000) A	2.9×10^{-3}	
Resistance		(2 ~ 10) Ω	8.0×10^{-5}	
		(10 ~ 100) Ω	6.6×10^{-5}	
		(0.1 ~ 1) kΩ	6.6×10^{-5}	
		(1 ~ 10) kΩ	6.6×10^{-5}	
		(10 ~ 100) kΩ	6.6×10^{-5}	
		(0.1 ~ 1) MΩ	1.5×10^{-4}	
		(1 ~ 10) MΩ	2.7×10^{-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	40303			Multimeter Shunt
AC voltage		40 Hz ~ 1 kHz		/QECI-EL303
		(2 ~ 10) mV	8.2×10^{-3}	
		(10 ~ 100) mV	8.4×10^{-4}	
		(0.1 ~ 1) V	2.8×10^{-4}	
		(1 ~ 10) V	2.8×10^{-4}	
		(10 ~ 100) V	2.8×10^{-4}	
		(100 ~ 1 000) V	3.2×10^{-4}	
AC current		40 Hz~ 1 kHz		
		(2 ~ 10) mA	1.7×10^{-3}	
		(10 ~ 100) mA	1.6×10^{-3}	
		(0.1 ~ 1) A	2.5×10^{-3}	
		(1 ~ 10) A	2.6×10^{-3}	
		(50 ~ 400) Hz		
		(10 ~ 100) A	1.3×10^{-3}	
Power factor meters	40310	60 Hz		Power calibrator
Lead, Lag		1.0	1.4×10^{-3}	/QECI-EL310
		0.9	1.6×10^{-3}	
		0.8	2.3×10^{-3}	
		0.7	3.1×10^{-3}	
		0.6	4.7×10^{-3}	
		0.5	7.6×10^{-3}	
		0.4	9.5×10^{-3}	
		0.3	1.9×10^{-2}	
		0.2	2.9×10^{-2}	
		0.1	1.2×10^{-1}	

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			Power calibrator,
AC voltage		(50 ~ 60) Hz		Coil
		(0.4 ~ 1) V	3.8×10^{-4}	/QECI-EL311
		(1 ~ 10) V	3.8×10^{-4}	
		(10 ~ 100) V	3.3×10^{-4}	
		(100 ~ 1 000) V	4.0×10^{-4}	
AC current		(50 ~ 60) Hz		
		(2 ~ 10) mA	3.0×10^{-3}	
		(10 ~ 100) mA	1.1×10^{-3}	
		(0.1 ~ 1) A	2.0×10^{-3}	
		(1 ~ 10) A	2.2×10^{-3}	
		(10 ~ 20) A	1.9×10^{-3}	
Electric power		(50 ~ 60) Hz		
		(2 ~ 10) W	1.2×10^{-3}	
		(10 ~ 50) W	1.2×10^{-3}	
		(50 ~ 100) W	1.2×10^{-3}	
		(100 ~ 500) W	1.2×10^{-3}	
		(0.5 ~ 1) kW	1.2×10^{-3}	
		(1 ~ 5) kW	1.2×10^{-3}	
		(5 ~ 10) kW	5.2×10^{-4}	
		(10 ~ 20) kW	4.0×10^{-4}	
AC power supplies	40312			Multimeter,
AC voltage		40 Hz ~ 1 kHz		Shunt
		(20 ~ 100) mV	8.4×10^{-4}	/QECI-EL312
		(0.1 ~ 1) V	2.8×10^{-4}	
		(1 ~ 10) V	2.8×10^{-4}	
		(10 ~ 100) V	2.8×10^{-4}	
		(100 ~ 1 000) V	3.2×10^{-4}	
AC current		40 Hz ~ 1 kHz		
		(2 ~ 10) mA	1.7×10^{-3}	
		(10 ~ 100) mA	1.7×10^{-3}	
		(0.1 ~ 1) A	1.9×10^{-3}	
		(1 ~ 10) A	3.3×10^{-3}	
		(50 ~ 400) Hz		
		(10 ~ 100) A	1.3×10^{-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	40313			High voltage voltmeter,
DC voltage		(0.2 ~ 1) kV	1.0×10^{-2}	Current calibrator ,
		(1 ~ 5) kV	7.0×10^{-3}	Multimeter,
		(5 ~ 10) kV	1.7×10^{-2}	Oscilloscope
		(10 ~ 50) kV	1.3×10^{-2}	/QECI-EL313
		(50 ~ 100) kV	1.3×10^{-2}	
AC voltage		60 Hz		
		(0.2 ~ 1) kV	2.0×10^{-2}	
		(1 ~ 5) kV	1.4×10^{-2}	
		(5 ~ 10) kV	2.5×10^{-2}	
		(10 ~ 50) kV	1.6×10^{-2}	
		(50 ~ 100) kV	1.3×10^{-2}	
Breaking DC current		(0.2 ~ 1) mA	5.0×10^{-3}	
		(1 ~ 10) mA	5.0×10^{-3}	
		(10 ~ 100) mA	5.0×10^{-3}	
Breaking AC current		60 Hz		
		(0.2 ~ 1) mA	1.0×10^{-2}	
		(1 ~ 10) mA	5.5×10^{-3}	
		(10 ~ 100) mA	1.0×10^{-2}	
Operating time		(0 ~ 30) s	1.0×10^{-2}	
AC voltmeters	40318			Meter calibrator
AC voltmeter		50 Hz ~ 1 kHz		/QECI-EL318
		(1 ~ 10) mV	1.0×10^{-2}	
		(10 ~ 100) mV	6.5×10^{-4}	
		(0.1 ~ 1) V	2.7×10^{-4}	
		(1 ~ 10) V	1.8×10^{-4}	
		(10 ~ 100) V	1.8×10^{-4}	
		(100 ~ 1 000) V	1.7×10^{-4}	
		(1 ~ 10) kHz		
		(1 ~ 10) mV	1.0×10^{-2}	
		(10 ~ 100) mV	6.5×10^{-4}	
		(0.1 ~ 1) V	2.7×10^{-4}	
		(1 ~ 10) V	1.8×10^{-4}	
		(10 ~ 100) V	1.8×10^{-4}	
		(10 ~ 100) kHz		
		(1 ~ 10) mV	3.1×10^{-2}	
		(10 ~ 100) mV	2.5×10^{-3}	
		(0.1 ~ 1) V	1.2×10^{-3}	
		(1 ~ 10) V	4.7×10^{-4}	
		(10 ~ 100) V	9.0×10^{-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.
Line frequency meters	40410			Meter calibrator QECI-EL410
		(45 ~ 100) Hz	0.02 Hz	
		(100 ~ 1 000) Hz	0.2 Hz	
		(1 000 ~ 10 000) Hz	2 Hz	
Function generators	40411			GPS Receiver, Universal Counter, Multimeter, Oscilloscope QECI-EL411
Frequency		0.1 Hz ~ 100 MHz	5.8×10^{-7}	
Amplitude		10 Hz ~ 1 kHz		
		1 mV	0.21 μV	
		(1 ~ 10) mV	2.1×10^{-4}	
		(10 ~ 100) mV	2.1×10^{-4}	
		(0.1 ~ 1) V	1.1×10^{-4}	
		(1 ~ 10) V	1.1×10^{-4}	
		(10 ~ 100) V	1.1×10^{-4}	
		(1 ~ 10) kHz		
		1 mV	0.43 μV	
		(1 ~ 10) mV	4.3×10^{-4}	
		(10 ~ 100) mV	4.3×10^{-4}	
		(0.1 ~ 1) V	2.7×10^{-4}	
		(1 ~ 10) V	2.7×10^{-4}	
		(10 ~ 100) V	2.7×10^{-4}	
		(10 ~ 100) kHz		
		1 mV	0.94 μV	
		(1 ~ 10) mV	9.4×10^{-4}	
		(10 ~ 100) mV	9.4×10^{-4}	
		(0.1 ~ 1) V	7.0×10^{-4}	
		(1 ~ 10) V	7.0×10^{-4}	
		(10 ~ 100) V	7.0×10^{-4}	
		100 kHz ~ 1 MHz		
		1 mV	25 μV	
		(1 ~ 10) mV	2.5×10^{-2}	
		(10 ~ 100) mV	2.4×10^{-2}	
		(0.1 ~ 1) V	2.4×10^{-2}	
		(1 ~ 10) V	2.4×10^{-2}	
Amplitude Flatness		1 V		
		40 Hz	1.4×10^{-4}	
		100 Hz	1.3×10^{-4}	
		1 kHz	1.3×10^{-4}	
		10 kHz	2.7×10^{-4}	
		100 kHz	7.0×10^{-4}	
		1 MHz	2.1×10^{-3}	
		10 MHz	2.1×10^{-3}	
DC Offset		10 mV	0.58 μV	
		(10 ~ 100) mV	5.8×10^{-5}	
		(0.1 ~ 1) V	5.9×10^{-5}	
		(1 ~ 10) V	5.8×10^{-5}	
		(10 ~ 20) V	3.0×10^{-5}	
Rise/Fall Time		1 ns ~ 10 ms	6.2×10^{-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.
LF impulse generators	40414			Oscilloscope,
Impulse voltage		0.1 kV	4.3 V	High voltage tester
		(0.1 ~ 1) kV	4.3×10^{-2}	/QECI-EL414
		(1 ~ 5) kV	4.3×10^{-2}	
		(5 ~ 10) kV	4.3×10^{-2}	
		(10 ~ 20) kV	4.3×10^{-2}	
Pulse Width		(20 ns ~ 100 ms)	2.2×10^{-3}	
Pulse Rising Time		(20 ns ~ 100 ms)	2.2×10^{-3}	
Leakage current testers	40416			Meter calibrator,
AC voltage		60 Hz		Current calibrator
		(20 ~ 100) mV	7.5×10^{-4}	/QECI-EL416
		(0.1 ~ 1) V	4.4×10^{-4}	
		(1 ~ 10) V	2.9×10^{-4}	
		(10 ~ 100) V	3.0×10^{-4}	
		(100 ~ 600) V	4.2×10^{-4}	
AC current		60 Hz		
		(2 ~ 10) μA	9.5×10^{-3}	
		(10 ~ 100) μA	1.2×10^{-3}	
		(0.1 ~ 1) mA	5.6×10^{-3}	
		(1 ~ 10) mA	3.0×10^{-3}	
		(10 ~ 100) mA	2.9×10^{-3}	
DC current		(2 ~ 10) μA	4.7×10^{-3}	
		(10 ~ 100) μA	6.5×10^{-4}	
		(0.1 ~ 1) mA	3.7×10^{-4}	
		(1 ~ 10) mA	4.7×10^{-4}	
		(10 ~ 100) mA	4.8×10^{-4}	
Electronic AC/DC loads	40417			Meter calibrator,
DC voltage		(20 ~ 100) mV	9.0×10^{-5}	Current calibrator
		(0.1 ~ 1) V	4.7×10^{-5}	/QECI-EL417
		(1 ~ 10) V	2.7×10^{-5}	
		(10 ~ 100) V	3.3×10^{-5}	
		(100 ~ 1 000) V	3.3×10^{-5}	
DC current		(20 ~ 100) mA	1.2×10^{-4}	
		(0.1 ~ 1) A	1.2×10^{-4}	
		(1 ~ 10) A	1.4×10^{-4}	
		(10 ~ 100) A	2.5×10^{-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.
Analogue/Digital multimeters	40419	(±)		Meter calibrator,
DC voltage		0 mV	0.70 μV	Resistors,
		(0 ~ 100) mV	4.6×10^{-5}	Decade resistance box
		(0.1 ~ 1) V	1.5×10^{-5}	/QECI-EL419
		(1 ~ 10) V	1.2×10^{-5}	
		(10 ~ 100) V	1.4×10^{-5}	
		(100 ~ 1 000) V	1.4×10^{-5}	
DC current		0 μA	9.3 nA	
		(0 ~ 100) μA	5.3×10^{-4}	
		(0.1 ~ 1) mA	1.1×10^{-4}	
		(1 ~ 10) mA	9.3×10^{-5}	
		(10 ~ 100) mA	1.0×10^{-4}	
		(0.1 ~ 1) A	1.9×10^{-4}	
		(1 ~ 20) A	9.5×10^{-4}	
AC voltage		50 Hz ~ 10 kHz		
		(20 ~ 100) mV	6.5×10^{-4}	
		(0.1 ~ 1) V	2.7×10^{-4}	
		(1 ~ 10) V	1.8×10^{-4}	
		(10 ~ 100) V	1.8×10^{-4}	
		(100 ~ 1 000) V	1.7×10^{-4}	
AC voltage		(10 ~ 100) kHz		
		(20 ~ 100) mV	2.5×10^{-3}	
		(0.1 ~ 1) V	1.2×10^{-3}	
		(1 ~ 10) V	4.7×10^{-4}	
		(10 ~ 100) V	9.3×10^{-4}	
AC current		50 Hz ~ 1 kHz		
		(20 ~ 100) μA	2.9×10^{-4}	
		(0.1 ~ 1) mA	4.4×10^{-4}	
		(1 ~ 10) mA	2.7×10^{-4}	
		(10 ~ 100) mA	2.8×10^{-4}	
		(0.1 ~ 1) A	1.0×10^{-3}	
		(1 ~ 20) A	2.3×10^{-3}	
Resistance		1 Ω	24 μΩ	
		(1 ~ 10) Ω	1.2×10^{-5}	
		(10 ~ 100) Ω	1.2×10^{-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	1.8×10^{-5}	
		(1 ~ 10) MΩ	3.0×10^{-5}	
		(10 ~ 100) MΩ	2.5×10^{-5}	

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			Scopes calibrator
Vertical		(2 ~ 5) mV	2.5×10^{-2}	/QECI-EL421
		(5 ~ 10) mV	8.0×10^{-3}	
		(10 ~ 50) mV	4.0×10^{-3}	
		(50 ~ 100) mV	2.0×10^{-3}	
		(100 ~ 500) mV	1.5×10^{-3}	
		(0.5 ~ 1) V	2.0×10^{-3}	
		(1 ~ 5) V	1.5×10^{-3}	
		(5 ~ 10) V	2.0×10^{-3}	
		(10 ~ 50) V	1.5×10^{-3}	
		(50 ~ 100) V	2.0×10^{-3}	
Horizontal		(2 ~ 5) ns	5.0×10^{-4}	
		(5 ~ 50) ns	1.0×10^{-3}	
		(50 ~ 500) ns	1.0×10^{-3}	
		(0.5 ~ 5) μs	1.0×10^{-3}	
		(5 ~ 50) μs	1.0×10^{-3}	
		(50 ~ 500) μs	1.0×10^{-3}	
		(0.5 ~ 5) ms	1.0×10^{-3}	
		(5 ~ 50) ms	1.0×10^{-3}	
		(50 ~ 500) ms	1.0×10^{-3}	
		(0.5 ~ 5) s	1.0×10^{-3}	
Bandwidth		600 mV		
		(0.05 ~ 100) MHz	7.5×10^{-2}	
		(100 ~ 300) MHz	1.2×10^{-2}	
		(300 ~ 600) MHz	1.2×10^{-2}	
Volt/Current recorders	40424	(±)		Meter calibrator
DC voltage		0 mV	1.2 μV	/QECI-EL424
		(0 ~ 10) mV	6.5×10^{-4}	
		(10 ~ 100) mV	8.5×10^{-5}	
		(0.1 ~ 1) V	3.1×10^{-5}	
		(1 ~ 10) V	2.0×10^{-5}	
		(10 ~ 100) V	2.8×10^{-5}	
		(100 ~ 1 000) V	2.8×10^{-5}	
DC current		0 μA	24 nA	
		(0 ~ 10) μA	1.2×10^{-2}	
		(10 ~ 100) μA	1.4×10^{-3}	
		(0.1 ~ 1) mA	4.7×10^{-4}	
		(1 ~ 10) mA	4.0×10^{-4}	
		(10 ~ 100) mA	3.9×10^{-4}	
		(0.1 ~ 1) A	4.3×10^{-4}	
		(1 ~ 20) A	1.3×10^{-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.
Relay test sets	40425			Multimeter,
AC voltage		60 Hz		Shunt
		(20 ~ 100) mV	8.4×10^{-4}	/QECI-EL425
		(0.1 ~ 1) V	2.8×10^{-4}	
		(1 ~ 10) V	2.8×10^{-4}	
		(10 ~ 100) V	2.8×10^{-4}	
		(100 ~ 1 000) V	3.2×10^{-4}	
AC current		60 Hz		
		(2 ~ 10) mA	1.7×10^{-3}	
		(10 ~ 100) mA	1.7×10^{-3}	
		(0.1 ~ 1) A	2.5×10^{-3}	
		(1 ~ 10) A	3.3×10^{-3}	
		(10 ~ 100) A	1.3×10^{-3}	

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	50101			Data logger,
Ovens		(-100 ~ 200) ℃	0.9 ℃	Noble metal thermocouple
		(200 ~ 250) ℃	1.5 ℃	Noble metal thermocouple
Furnaces		(200 ~ 1 100) ℃	1.3 ℃	SPRT
Isothermal liquid baths		(-196 ~ 200) ℃	0.05 ℃	/QECI-TE101
		(200 ~ 400) ℃	0.1 ℃	/QECI-TE101-1
Ice-point baths		0 ℃	0.01 ℃	/QECI-TE101-2
Dry-block calibrators		(-40 ~ 100) ℃	0.06 ℃	/QECI-TE101-3
		(100 ~ 400) ℃	0.09 ℃	/QECI-TE101-4
		(400 ~ 1 100) ℃	0.8 ℃	
Temperature indicators /recorders/controllers, temperature calibrators	50102			SPRT, Noble metal thermocouple Calibrator
(Include sensors)		(-196 ~ 400) ℃	0.04 ℃	/QECI-TE102
		(400 ~ 800) ℃	1.3 ℃	/QECI-TE102-1
		(800 ~ 1 100) ℃	1.6 ℃	/QECI-TE102-2
		(1 100 ~ 1 300) ℃	2.6 ℃	0
Thermoelectric type (Exclude sensors)		(-196 ~ 1 300) ℃	0.47 ℃	
Resistance type (Exclude sensors)		(-196 ~ 650) ℃	0.15 ℃	

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Glass thermometers; liquid-in-glass, Beckmann Glass thermometers	50103	(-40 ~ 360) ℃	0.05 ℃	SPRT /QECI-TE103
Resistance thermometers; IPRT, etc.	50104	(-196 ~ 400) ℃	0.06 ℃	SPRT /QECI-TE104
Thermal expansion thremometers; bimetal, gas or liquid types	50105	(-40 ~ 150) ℃ (150 ~ 400) ℃	0.4 ℃ 0.7 ℃	SPRT /QECI-TE105
Thermomecoules; Base metal thermomecoules Noble metal thermomecoules	50106	(-196 ~ -40) ℃ (-40 ~ 200) ℃ (200 ~ 1 100) ℃ (1 100 ~ 1 300) ℃ (0 ~ 1 100) ℃ (1 100 ~ 1 300) ℃	0.5 ℃ 0.3 ℃ 1.6 ℃ 2.7 ℃ 1.3 ℃ 2.4 ℃	SPRT, Noble metal thermocouple /QECI-TE106-1 /QECI-TE106-2
Temperature transducers	50107	(-196 ~ 400) ℃ (400 ~ 1 100) ℃ (1 100 ~ 1 300) ℃	0.3 ℃ 1.6 ℃ 2.8 ℃	SPRT, Noble metal thermocouple /QECI-TE107

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 ~ 200) ℃ (200 ~ 700) ℃ (700 ~ 1 000) ℃	1.2 ℃ 1.6 ℃ 2.3 ℃	Standard radiation thermometer /QECI-TE204

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	50302			Dew point thermometer
Polimer thin film hygrometers		(10 ~ 95) % R.H.	2.9 % R.H.	/QECI-HU302
		(-20 ~ 80) ℃	0.6 ℃	
Hair hygrometers		(20 ~ 90) % R.H.	4.4 % R.H.	
		(10 ~ 50) ℃	0.7 ℃	
Temperature humidity recorders;	50304			Dew point thermometer
hygrothermograph, etc.		(20 ~ 90) % R.H.	3.2 % R.H.	/QECI-HU304
		(10 ~ 80) ℃	1.1 ℃	
Transducers; dew-point/	50305			Dew point thermometer
relative humidity				/QECI-HU305
Ralative humidity transducers		(10 ~ 50) % R.H.	2.6 % R.H.	
		(50 ~ 95) % R.H.	2.9 % R.H.	
Humidity generators;	50306			Dew point thermometer
two-pressure,				/QECI-HU306
two-temperature,		(10 ~ 30) % R.H.	2.2 % R.H.	
flow mixing humidity gererator,		(30 ~ 60) % R.H.	2.8 % R.H.	
constant temperature and		(60 ~ 80) % R.H.	4.0 % R.H.	
humidity chamber, etc.		(80 ~ 98) % R.H.	4.8 % R.H.	
		(-70 ~ 180) ℃	0.9 ℃	

701. Photometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Iluminance meters	70101	0.5 lx	$2.4 \times 10^{0-2}$	Iluminance meters
		(0.5 ~ 1) lx	$2.0 \times 10^{0-2}$	/QECI-PH701
		(1 ~ 20 000)lx	$1.9 \times 10^{0-2}$	

901. Chemical analysis

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Breath alcohol analyzers	90101	0.030 % BAC	3.3×10^{-2}	Alcohol gas
		(0.080 ~ 0.100) % BAC	2.1×10^{-2}	/QECI-CA101
Gas analyzers	90103			Standard gas
Oxygen (O_2)		(0 ~ 21.0) cmol/mol	2.0×10^{-2}	/QECI-CA103
Carbon monoxide (CO)		(0 ~ 150.2) µmol/mol	2.0×10^{-2}	
Hydrongen sulfide (H_2S)		(0 ~ 13) µmol/mol	3.8×10^{-2}	
		(13 ~ 30) µmol/mol	3.2×10^{-2}	
Methane (CH_4)		(0 ~ 1.26) cmol/mol	2.4×10^{-2}	
		(1.26 ~ 2.51) cmol/mol	2.0×10^{-2}	
Carbon Dioxide (CO_2)		(0 ~ 2.54) cmol/mol	2.0×10^{-2}	
Isobutylene (i-C_4H_8)		100 µmol/mol	1.0 µmol/mol	
Isobutane (i-C_4H_{10})		(0 ~ 1) cmol/mol	1.3×10^{-2}	
Hydrogen (H_2)		(0 ~ 2) cmol/mol	1.1×10^{-2}	
Propane (C_3H_8)		1.06 cmol/mol	0.030 cmol/mol	
Nitric oxide (NO)		(0 ~ 10.2) µmol/mol	4.9×10^{-2}	
		(10.2 ~ 51.0) µmol/mol	2.9×10^{-2}	
Ammonia (NH_3)		50 µmol/mol	2.4 µmol/mol	