

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

Korea Testing Laboratory

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CALIBRATION

Valid To : Dec. 08, 2025.

Accreditation No. : KC01-028(1/118)

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
101.	Frequency of radiation		10311	Plate/square/electric levels	N	10519	Roughness standard	N
10101	Laser frequency	N	10312	Auto levels	N		/comparison specimens	
			10315	Polygons	N	10525	Thread plug gauges	N
102.	Linear dimension		10316	Rotary tables	N	10526	Taper thread plug gauges	N
10201	Balls	N	10317	Sine bars, plates, tables, centers	N	10527	Thread ring gauges	N
10203	Electrical/mechanical comparators	Y				10528	Taper thread ring gauges	N
10204	Gauge block comparators	Y	10318	Squareness testers, right angle testers	N	10529	V-blocks, box blocks	N
10206	Dial/cylinder gauge testers	Y	10319	Cylindrical squares	N	10531	SEM/TEM/SPM/AFM microscopes	Y
10207	Doctor blades	N	10320	Precision squares	N			
10208	Distance meters; electrooptic/laser/ultrasonic	N	10321	Theodolites, transits	N	106.	Various dimensional	
10209	End bars	N	10322	Angular displacement transducers	Y	10601	Inside/outside/gear tooth calipers, caliper gauges	Y
10210	Extensometers, linear displacement transducers	Y	10323	Alignment telescopes, line of sight collimators	N	10603	Cylinder/bore gauges	Y
10211	Filler gauges	Y				10604	Depth gauges, depth micrometers	Y
10212	Film applicators	N	104.	Form		10605	Dial/digital gauges	Y
10213	Gap gauges	N	10401	Form testers	Y	10608	Grind gauges	N
10214	Gauge blocks, by comparison	N	10404	Optical flats	N	10609	Micro indicators, test indicators	Y
10216	Height gauges/measuring machines	Y	10405	Optical parallels	N	10610	Micrometer heads	Y
			10406	Parallel blocks	N	10611	3-Point micrometers	Y
10219	Linear scales	Y	10407	Precision surface plates	Y	10612	Inside micrometers	Y
10220	Standard measuring machines	Y	10408	Profile gauges	N	10613	Outside micrometers	Y
10221	Micro scales/standard scales	N	10409	Roundness measurement instruments	Y	10614	Offset of retroreflectors	N
10223	Electronic micrometers	Y				10615	Particle counters	N
10224	Height micrometers, riser blocks	N	10410	Form standard specimens	N	10617	Standard sieves	N
10225	Laser scan micrometers	Y	10411	Roundness standard /roundness magnification standard specimens	N	10619	Water level meters	N
10227	Standard tape rules, peripheral gauges	N				10620	Welding gauges	N
10228	Cylindrical plug/pin gauges, thread measuring wire gauges	N	10412	Straight edges	Y	201.	Mass	
			10413	Straight rules	N	20102	Auto-hopper scale balances	Y
10229	Radius gauges	N	10415	Test bars	N	20103	Auto-packer scale balances	Y
10230	Cylindrical ring gauges	N				20104	Axle weigher balances	N
10231	Step blocks	N	105.	Complex geometry		20105	Counter beam balances	Y
10232	Step gauges	N	10502	Bench centers	N	20106	Dial platform scale balances	Y
10233	Taper thickness gauges	N	10503	Contact coordinate measuring machines	Y	20109	Electric balances	Y
10234	Ultrasonic thickness gauges	N				20112	Platform scale balances	Y
10235	Ultrasonic/coating thickness specimens	N	10504	Non-contact coordinate measuring machines	Y	20113	Spring scale balances	Y
						20116	Weights	Y
10236	Coating thickness testers	N	10505	Gauge block accessories	N	202.	Force	
10237	Torque arms	Y	10508	Hardness indenters	N	20202	Force measuring devices	N
			10510	Laser trackers	N	20203	Tension/compression testing machines	Y
103.	Angle		10511	Measuring microscopes, profile projectors	Y	20204	Push-pull gauges	N
10302	Angle gauge blocks	N	10512	Micro measuring microscopes	Y			
10303	Autocollimators	N	10514	Taper plug gauges	N	203.	Torque	
10304	Bevel protractors	N				20302	Torque measuring devices	Y
10308	Fine angle generators, level comparators	N	10515	Taper ring gauges	N			
			10517	Stylus type roughness testers	Y			

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
20303	Torque wrenches/drivers	Y	20910	Liquid flowmeters; electromagnetic	Y	40105	DC current shunts	Y
20399	Nut runners	Y				40106	Galvanometers/null detectors	Y
204. Pressure			20911	Gas flowmeters; thermal mass, etc.	N	40107	Potentiometers	Y
20401	Altimeters	Y	20912	Liquid flowmeters; Coriolis, etc.	N	40108	DC power supplies	Y
20402	Manometers	N				40109	Standard cells	Y
20403	Pneumatic pressure ballances	N	20913	Liquid flowmeters; open channel, etc.	N	40110	DC voltage dividers	Y
20404	Hydraulic pressure ballances	N				40111	DC voltage standards	Y
20405	Air data test systems	N	20914	Gas flowmeters; positive displacement	N	40112	DC voltmeters	Y
20406	Absolute pressure gauges	Y				40113	Static/Ionic voltmeter	Y
20407	Blood pressure gauges	N	20915	Liquid flowmeters; positive displacement	Y	402. Resistance, Capacitance, and Inductance		
20408	Compound pressure gauges	Y	20916	Gas flowmeters; turbine	N	40201	Capacitance bridges/indicators	Y
20409	Differential pressure gauges	Y	20917	Liquid flowmeters; turbine	N	40202	Decade capacitors	Y
20411	Gauge pressure gauges	Y	20918	Gas flowmeters; ultrasonic	N	40204	Standard capacitors	Y
20412	Pressure transducers/transmitters	Y	20919	Liquid flowmeters; ultrasonic	N	40205	Earth testers	Y
20413	Dial type vacuum gauges	Y	20920	Gas flowmeters; variable area	N	40206	Inductance bridges/indicators	Y
20414	Water depth meters	Y				40208	Inductors	Y
205. Vacuum			20921	Liquid flowmeters; variable area	N	40209	Mutual inductors	Y
20501	Capacitance diaphragm gauges	N	20923	Liquid flowmeters; vortex	N	40210	Insulation testers	Y
20502	Spinning rotor gauges	N	20925	Anemometers; vane, etc.	N	40211	Q-meters	Y
20503	Ionization gauges	N	210. Hardness			40212	Direct reading ratio sets	Y
20504	Thermal conductivity gauges; pirani, thermocouple, convection etc.	N	21001	Brinell hardness testers	Y	40213	Resistance bridges & Similar instruments	Y
20505	Standard leaks, Helium leak detectors	N	21002	Rockwell hardness testers	Y	40214	Resistance meters	Y
206. Volume			21003	Shore hardness testers	Y	40215	Resistors	Y
20601	Volumetric glasswares	N	21004	Vickers hardness testers	Y	40216	Conductivity Meter	N
20602	Pycnometers	N	21005	Durometer hardness testers	N	40217	Impedance bridges/LCR meters	Y
20603	Rain gauges	N	21006	Leeb hardness testers	N	403. AC voltage, current & power		
20604	Standard volume vessels	Y	211. Impact			40301	AC ammeters	Y
20605	Concrete air content meters	N	21102	Charpy impact testers	Y	40302	Clamp ammeters/voltmeters	Y
20606	Piston type volume meters	N	21103	Izod impact testers	Y	40303	AC voltage/current Calibrators	Y
207. Density			301. Time/frequency			40304	Wattmeter calibrators	Y
20702	Liquid density meters	N	30102	Frequency standards	Y	40305	AC current shunts	Y
20704	Salinity meters	N	30103	General frequency sources	Y	40306	Phase angle generators, synchro resolve generators	Y
20705	Sucrose meters	N	30104	Frequency meters/counters	Y	40307	Voltage/Current Phase meters / synchro resolve	Y
20706	Hydrometers ; density, specific gravity, API, baume, sugar, milk, soil, salinity, LPG,	N	30105	Time interval sources	Y	40308	Potential transformer test sets	Y
20707	Chloride meters	N	30106	Time interval meters/Stop watches/Timers	Y	40309	Potential transformers	Y
208. Viscosity			302. Velocity & revolution			40310	Power factor meters	Y
20801	Kinetic viscometers; capillary, etc	N	30201	Standard RPM generators	Y	40311	AC power meters	Y
20802	Dynamic viscometers; rotational, etc	N	30202	Contact type tachometers	Y	40312	AC power supplies	Y
209. Fluid flow			30203	Photo tachometers/stroboscopes	Y	40313	Puncture/ safety testers	Y
20901	Anemometers; hot-wire	N	30204	Speed meters	Y	40314	Power recorders	Y
20902	Anemometers; pitot tube, etc.	N	30205	wow-flutter generators	Y	40315	Current transformer test sets	Y
20908	Gas flowmeters; differential pressure	N	30206	Wow-flutter meters	Y	40316	Current / turn current coil transformers	Y
20909	Liquid flowmeters; differential pressure	N	401. DC volatage & current			40317	LF thermal voltage converters	Y
			40101	DC ammeters	Y	40318	AC voltmeters	Y
			40102	Transconductance amplifiers	Y	40319	Watt Hour Meters	Y
			40103	DC voltage/current calibrators	Y	40320	Pulsed high voltage & current meters/Welding current meters	Y
			40104	Electrical temperature	Y	40321	Ratio transformers	Y

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
404. Other DC & AC Measurements			40616	RF impedance meters	Y	502. Non Contact thermometry		
40401	LF amplifiers	Y	40618	Line impedance stabilization networks; LISN, CDN, ISN, etc.	Y	50203	Optical pyrometers	N
40402	DC/LF attenuators	Y				50204	Radiation thermometers	N
40403	Multimeter calibrators	Y	40619	Coaxial standard mismatches	Y	50205	Thermal image apparatus	N
40404	Oscilloscope calibrators	Y	40621	Mobile communication test sets	Y	50206	Blackbody furnaces	N
40406	Video signal generators	Y				50207	ear thermometers	N
40407	Audio distortion analyzers/meters	Y	40622	Modulation meters	Y	503. Humidity		
			40623	Network analyzers	Y			
40408	LF filters	Y	40624	Noise figure meters	Y	50301	Dew-point hygrometer;chilled mirror, alumina thinfilm, etc.	N
40409	LF/Audio signal analyzers	Y	40626	Noise impulse simulators	Y			
40410	Line frequency meters	Y	40628	Coaxial noise sources	Y	50302	Relative humidity hygrometers;polymer thinfilm, hair, etc.	Y
40411	Function generators	Y	40631	RF phase meters	Y			
40412	Genescopes	Y	40635	RF power meters	Y	50303	Pscygrometers;assmann ventilated, PRT type, etc.	N
40413	AC/DC high voltages voltmeters	Y	40636	Diode power sensors	Y			
40414	LF Impulse generators	Y	40637	Thermocouple Power sensors	Y	50304	Temperature humidity recorders;Hygrothermograph, etc.	Y
40416	Leakage current testers	Y	40638	Pulse generators	Y			
40417	Electronic AC/DC loads	Y	40639	Radar test sets	Y	50305	Transducers; dew-point/relative humidity	Y
40418	Modulation meters	Y	40640	RF signal generators	Y			
40419	Analogue/digital Multimeters	Y	40641	RF Spectrum analyzers	Y	50306	Humidity generators;two-pressure, two-temperature, flow mixing humidity generator, constant temperature and humidity chamber, etc.	Y
40420	Noise meters	Y	40642	RF speed guns	Y			
40421	Oscilloscopes	Y	40643	Surge generators	Y	504. Moisture		
40422	LF phase meters	Y	40644	SWR meters	Y			
40423	Random wave generators	Y	40645	RF terminations	Y	50401	Cereal moisture meters	Y
40424	Volt/Current recorders	Y	40646	Coaxial thermistor mounts	Y	50402	Wood moisture meters	N
40425	Relay test sets	Y	40648	Transmission trouble testers	Y	601. Sound in air		
40426	LF signal generators	Y	40650	RF voltmeters	Y			
40427	LF spectrum analyzers	Y	40651	Vector voltmeters	Y	603. Vibration		
40429	Sweep generators	Y	40652	Field strength meters	Y			
40430	Signal transducers	Y	40653	AM/FM test sources	Y	60301	Vibration calibrators	N
40431	AC-DC transfer standards	Y	40654	DIP simulator	Y	60302	Vibration transducers	N
40432	Transistor curve tracers	Y	407. Field strength & antennas			60303		
40433	Waveform analyzers	Y						
40434	AC/DC high voltage generators	Y	40702	Probes	N	60102	Sound Calibrators	N
40435	AC/DC High voltage probes	Y	40703	Dipole Antennas	N	60104	Microphones	N
40436	Logic analyzers	Y	40704	Loop antennas	N	60106	Sound level meters	Y
40437	Telephone testers	Y	40705	Monopole Antennas	N	603. Vibration		
40438	Video signal analyzers	Y	40707	Horn antennas	N			
405. Low frequency electric & magnetic fields			501. Contact thermometry			60301	Vibration calibrators	N
						60302	Vibration transducers	N
40503	Flux meters	N	50101	Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	Y	60303	Vibration measuring instruments	N
40504	Flux sources	N				701. Photometry		
40508	Magnetometers	N	50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y			
40510	Reference/standard magnets	N				70102	Luminance meters	N
406. Radio frequency measurements			50103	Glass thermometers; liquid-in-glass, Beckmann	N	70103	Total luminous flux meters	Y
						70104	Luminous intensity meters	Y
40601	RF amplifiers	Y	50104	Resistance thermometers; SPRT, IPRT, thermistors,etc	Y	702. Properties of detector & sources		
40602	coaxial attenuators	Y						
40604	BER(Bit Error Rate) testers	Y	50105	Thermal expansion thermometers; bimetal, gas or liquid type	Y	70202	Color temperature meters	Y
40605	Burst pulse generators	Y				70203	Color temperature standard lamps	N
40607	RF power meter calibrators	Y	50106	Thermocouples; noble metal, base metal, pure metal, special type, etc	Y	70204	Colorimeters; source color	Y
40608	EMC transducers ; current probes, absorbing clamps, etc.	Y				70207	Laser power meters	N
40609	Delay lines	Y	50107	Temperature transducers	Y	70209	Total luminous flux standard lamps	N
40610	Coaxial directional couplers/splitters	Y				70211	Pyranometers and pyrheliometers	N
40612	DS1/DS3 Communications systems	Y	50108	Primary fixe-point cells and apparatus	N	70213	Display color analyzers; luminance, chromaticity, white balance, etc.	Y
40613	Electrostatic discharge generators	Y				70214		
40614	EMC receivers	Y	70214					
40615								

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Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
70219	UV irradiance meters	N						
70220	Spectral irradiance meters	Y						
70221	Total spectral radiant flux meters	Y						
70222	Spectral radiance meters	Y						
703. Properties of materials								
70301	Colorimeters; material color	Y						
70302	Color standard filters	N						
70304	Color standard tiles	N						
70305	Dioptometers	N						
70306	Gloss meters	Y						
70307	Gloss standard plates	N						
70308	Haze meters	Y						
70309	Haze standard plates	N						
70312	Lens meters	N						
70315	Optical densitometers	N						
70316	Optical filters	N						
70317	Polarimeters	Y						
70319	Reflectance meters	N						
70320	Diffuse-reflectance meters	Y						
70321	Refractometers	N						
70323	Transmittance meters	N						
70325	Spectrophotometers including FT-IR spectrophotometers	Y						
70326	Wavelength reference materials; absorption cell, bandpass filter, etc	N						
704. Fiber optics								
70402	Broadband Optical Light Sources	Y						
70408	Multichannel laser sources	Y						
70410	Optical attenuators	Y						
70411	Optical couplers	Y						
70412	Fiber-optic power meters	Y						
70413	Optical loss Testers	Y						
70415	Optical multimeters	Y						
70417	Optical spectrum analyzers	Y						
70418	Optical time domain reflectors, OTDR	Y						
70419	PDH/SDH Analyzers	Y						
70423	Return loss test sets	Y						
70424	SDH/SONET Analyzers	Y						
70426	Multi-laser wavelength meters	Y						
70429	Frequency stabilized laser and LDs	Y						
70430	ASE light sources	Y						
70431	CW-laser Wavelength meters	Y						
901. Chemical Analysis								
90101	Breath alcohol analyzers	N						
90102	Environmental air quality monitoring instruments	Y						
90103	Gas analyzers	Y						
90104	Exhaust Gas test Instruments	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.

101. Frequency of radiation

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Laser frequency	10101	(473 612 ± 1.5) GHz (632.992 ± 0.002) nm (Vacuum wavelength)	0.8 MHz 1.1 fm	Laser interferometers /CP801-10101-1

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	(Ø0 ~ Ø50) mm	$\sqrt{0.11^2 + (2.0 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm)	Standard measuring machines /CP801-10201-1
Electrical/mechanical comparators	10203	(0 ~ 2) mm	0.08 µm	Gauge blocks /CP801-10203-1
Gauge block comparators	10204	(0 ~ 500) mm	0.04 µm	Gauge blocks /CP801-10204-1
Dial/cylinder gauge testers	10206	(0 ~ 100) mm	$\sqrt{0.16^2 + (2 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm)	Gauge blocks /CP801-10206-1
Doctor blades	10207	(0 ~ 10) mm	1.0 µm	Electronic micrometers /CP801-10207-1
Distance meters; electrooptic/laser/ultrasonic	10208	(0 ~ 45) m	$\sqrt{1^2 + (0.1 \times 10^{-6} \times l)^2}$ mm (<i>l</i> unit : mm)	Laser interferometers /CP801-10208-1
End bars	10209	(25 ~ 1 000) mm (1 000 ~ 2 000) mm	$\sqrt{0.5^2 + (1.9 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm) $\sqrt{0.6^2 + (2.0 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm)	Gauge blocks, Contact coordinate measuring machines /CP801-10209-1
Extensometers, linear displacement transducers	10210	(0 ~ 5 000) mm	$\sqrt{0.11^2 + (0.7 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm)	Laser interferometers /CP801-10210-1
Filler gauges	10211	(0 ~ 10) mm	0.2 µm	Standard measuring machines /CP801-10211-1
Film applicators	10212	(0 ~ 10) mm	1 µm	Electronic micrometers /CP801-10212-1
Gap gauges	10213	(1 ~ 300) mm (300 ~ 1 000) mm	$\sqrt{0.7^2 + (2.0 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm) $\sqrt{1.0^2 + (2.0 \times 10^{-3} \times l)^2}$ µm (<i>l</i> unit : mm)	Standard measuring machines, Contact coordinate measuring machines /CP801-10213-1
Gauge blocks, by comparison	10214	(0.5 ~ 100) mm (100 ~ 500) mm	$\sqrt{68^2 + 1.3^2 \times l^2}$ nm (<i>l</i> unit : mm) $\sqrt{76^2 + 1.4^2 \times l^2}$ nm (<i>l</i> unit : mm)	Gauge block comparators /CP801-10214-1

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Height gauges/measuring machines	10216	(0 ~ 1 000) mm	$\sqrt{0.4^2 + (1.9 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	Gauge blocks, End bars /CP801-10216-1
Linear scales	10219	(0 ~ 2 000) mm	$\sqrt{0.2^2 + (1.5 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	Laser interferometers /CP801-10219-1
Standard measuring machines	10220	(0 ~ 600) mm	$\sqrt{70^2 + 0.74^2 \times l^2}$ nm (<i>l</i> unit : mm)	Laser interferometers /CP801-10220-1
Micro scales/standard scales	10221	(0 ~ 600) mm	$\sqrt{0.3^2 + (0.8 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	Laser interferometers /CP801-10221-1
Electronic micrometers	10223	± 2 mm	0.10 μm	Gauge blocks /CP801-10223-1
Height micrometers, riser blocks	10224	(0 ~ 25) mm	0.6 μm	Gauge blocks /CP801-10224-1
Head calibration		(0 ~ 1 000) mm	$\sqrt{0.5^2 + (1.9 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	
Block calibration		(0 ~ 600) mm	0.6 μm	
Parallelism of riser blocks				
Laser scan micrometers	10225	($\varnothing 0 \sim \varnothing 5$) mm ($\varnothing 5 \sim \varnothing 100$) mm	0.22 μm 0.34 μm	Cylindrical plug/ pin gauges /CP801-10225-1
Standard tape rules, peripheral gauges	10227	(0 ~ 50) m	$\sqrt{74^2 + (10 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	Laser interferometers /CP801-10227-1
Cylindrical plug/pin gauges, thread measuring wire gauges	10228			Standard measuring machines
Cylindrical plug/pin gauges		($\varnothing 0.1 \sim \varnothing 310$) mm	$\sqrt{0.13^2 + (2.0 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	/CP801-10228-1
Thread measuring wire gauges		($\varnothing 0.1 \sim \varnothing 10$) mm	$\sqrt{0.13^2 + (1.4 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	/CP801-10228-2
Radius gauges	10229	(0 ~ 100) mm	1.5 μm	Contact coordinate measuring machines /CP801-10229-1
Cylindrical ring gauges	10230	($\varnothing 0.4 \sim \varnothing 310$) mm	$\sqrt{0.29^2 + (2.0 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	Standard measuring machines /CP801-10230-1
Step blocks	10231	(0 ~ 400) μm	0.19 μm	Gauge block comparators /CP801-10231-1
Step gauges	10232	(0 ~ 1 000) mm	$\sqrt{0.5^2 + (1.9 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : mm)	Gauge blocks /CP801-10232-1
		(1 000 ~ 1 500) mm	$\sqrt{2.0^2 + (1.4 \times 10^{-3} \times l)^2}$ μm (<i>l</i> unit : 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.
Taper thickness gauges	10233	(1 ~ 100) mm	0.03 mm	Measuring microscopes /CP801-10233-1
Ultrasonic thickness gauges	10234	(0 ~ 100) mm (100 ~ 500) mm	3 μ m 0.020 mm	Ultrasonic specimens /CP801-10234-1
Ultrasonic/coating thickness specimens	10235	(0 ~ 4) mm (4 ~ 500) mm	0.2 μ m 1.0 μ m	Electronic micrometers /CP801-10235-1
Coating thickness testers	10236	(0 ~ 25) mm	2.0 μ m	Gauge blocks /CP801-10236-1
Torque arms	10237	(0 ~ 2 000) mm	5 μ m	Contact coordinate measuring machines /CP801-10237-1

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Angle gauge blocks	10302	0° ~ 360°	0.45"	Indexing tables /CP801-10302-1
Autocollimators	10303	$\pm 1^\circ$	0.3"	Fine angle generators /CP801-10303-1
Bevel protractors	10304	0° ~ 360°	1'	Measuring microscopes /CP801-10304-1
Angle of accuracy		0° ~ 360°	2'	
Angle of accessories		(0 ~ 300) mm	1 μ m	
Straightness		(0 ~ 300) mm	1 μ m	
Parallelism		(0 ~ 300) mm	10 μ m	
Scale accuracy				
Fine angle generators, level comparators	10308	$\pm(0^\circ \sim 2.0^\circ)$	0.4"	Laser interferometers /CP801-10308-1
Plate/square/electric levels	10311	$\pm 1^\circ$	0.5"	Fine angle generators /CP801-10311-1 /CP801-10311-2
Precision flat		$\pm 2^\circ$	0.3"	
Electrical		300 mm	2 μ m	
Squareness				
Auto levels	10312	0 m ~ ∞	0.2 mm	Standard scales, theodolite calibrators /CP801-10312-1
Accuracy of level		0 m ~ ∞	2"	
Straightness of line of sight		(0 ~ 60) m	0.2 mm	
Repeatability				
Polygons	10315	0° ~ 360°	0.4"	Indexing tables /CP801-10315-1
Rotary tables	10316	0° ~ 360°	0.5"	Indexing tables /CP801-10316-1

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Sine bars, plates, tables, centers Center length of both rollers Parallelism of the measuring face and 2 rollers	10317	(100 ~ 500) mm (100 ~ 500) mm	$\sqrt{0.5^2 + (2.2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) 0.9 μm	Standard measuring machines /CP801-10317-1
Squareness testers, right angle testers	10318	(0 ~ 1 000) mm	1.0 μm	Precision squares /CP801-10318-1
Cylindrical squares	10319	(0 ~ 1 000) mm	1.0 μm	Precision squares /CP801-10319-1
Precision squares Squareness Straightness Parallelism	10320	(0 ~ 1 000) mm (0 ~ 1 000) mm (0 ~ 1 000) mm	1.0 μm 0.5 μm 0.8 μm	Precision squares, Electronic micrometers /CP801-10320-1
Theodolites, transits Straightness of line of sight Horizontal angle Vertical angle	10321	0 m ~ ∞ (0 ~ 360) $^\circ$ (0 ~ 360) $^\circ$	2" 2" 6"	Theodolite calibrators /CP801-10321-1
Angular displacement transducers	10322	0 $^\circ$ ~ 360 $^\circ$	3.6"	Rotary tables /CP801-10322-1
Alignment telescopes, line of sight collimators Straightness of line of sight Scale accuracy of optical micrometer	10323	0 m ~ ∞ ± 2.5 mm	0.05 mm 0.01 mm	Line of sight collimators, Height micrometers /CP801-10323-1

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 Vertical accuracy Horizontal accuracy Angle Radius	10401	(0 ~ 200) mm (0 ~ 200) mm 0 $^\circ$ ~ 180 $^\circ$ (0 ~ 50) mm	$\sqrt{0.09^2 + (1.2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) 0.7 μm 2" 0.7 μm	Form standard specimens /CP801-10401-1
Optical flats Flatness	10404	(\varnothing 0 ~ \varnothing 100) mm (\varnothing 100 ~ \varnothing 150) mm	0.05 μm 0.10 μm	Optical flats /CP801-10404-1

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Optical parallels Flatness Parallelism	10405	(\varnothing 0 ~ \varnothing 50) mm (\varnothing 0 ~ \varnothing 50) mm	0.06 μ m 0.09 μ m	Optical flats /CP801-10405-1
Parallel blocks Parallelism Difference of both blocks	10406	(0 ~ 1 000) mm (0 ~ 1 000) mm	0.8 μ m 0.8 μ m	Electronic micrometers /CP801-10406-1
Precision surface plates	10407	(0 ~ 18) m ²	1.5 μ m	Electrical levels /CP801-10407-1
Profile gauges	10408	(0 ~ 5) mm	0.3 μ m	Dial gauge testers /CP801-10408-1
Roundness measurement instruments Rotation accuracy of circumference direction Rotation accuracy of shaft direction Accuracy of detector	10409	360° 360° (0 ~ 1 000) μ m	13 nm 19 nm $\sqrt{0.12^2 + (1.1 \times 10^{-3} \times l)^2}$ μ m (l unit : mm)	Roundness standard specimens /CP801-10409-1
Form standard specimens Height Pitch Radius Angle	10410	(0 ~ 100) mm (0 ~ 100) mm (0 ~ 100) mm 0° ~ 180°	0.3 μ m 0.4 μ m 0.3 μ m 7.2"	Standard measuring machines /CP801-10410-1
Roundness standard/ roundness magnification standard specimens Roundness standard specimens Roundness magnification standard specimens	10411	360° (0 ~ 300) μ m	13 nm $\sqrt{0.23^2 + (4.8 \times 10^{-3} \times l)^2}$ μ m (l unit : μ m)	Roundness measurement instruments /CP801-10411-1
Straight edges Straightness Parallelism	10412	(0 ~ 1 000) mm (1 000 ~ 2 000) mm (2 000 ~ 3 000) mm (0 ~ 1 000) mm (1 000 ~ 2 000) mm (2 000 ~ 3 000) mm	0.5 μ m 1.0 μ m 2.0 μ m 0.5 μ m 1.0 μ m 2.0 μ m	Electronic micrometers /CP801-10412-1

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Straight rules	10413	(0 ~ 3 000) mm	0.03 mm	Laser interferometers /CP801-10413-1
Test bars	10415			Standard measuring machines /CP801-10415-1
Angle		0° ~ 30°	0.4"	
Roundness		(0 ~ 800) mm	0.05 μm	
Cylindricity		(0 ~ 800) mm	2.2 μm	
Run-out		(0 ~ 800) mm	0.7 μm	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Bench centers	10502			Electronic micrometers /CP801-10502-1
Difference of both center		(0 ~ 800) mm	1.7 μm	
Flatness of both bed		(0 ~ 800) mm	0.9 μm	
Contact coordinate measuring machines	10503	(0 ~ 10 000) mm	$\sqrt{0.13^2 + (0.74 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Laser interferometers /CP801-10503-1
Non-contact coordinate measuring machines	10504			Laser interferometers /CP801-10504-1
Length		(0 ~ 2 500) mm	$\sqrt{0.13^2 + (0.74 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	
Angle		0° ~ 360°	2"	
Gauge block accessories	10505			Electronic micrometers /CP801-10505-1
Round type jaw		(0 ~ 20) mm	0.4 μm	
Parallel jaw (A type)		(0 ~ 20) mm	0.4 μm	
Parallel jaw (B type)		(0 ~ 20) mm	0.2 μm	
Scriber point		(0 ~ 20) mm	0.2 μm	
Center point		(0 ~ 20) mm	1.0 μm	
Base block		(0 ~ 50) mm	0.5 μm	
Edge of triangle type		(0 ~ 300) mm	0.3 μm	
Hardness indenters	10508			Non-contact coordinate measuring machines /CP801-10508-1
Angle		0° ~ 180°	11"	
Radius		(0 ~ 7) mm	1.0 μm	
Diameter		(0 ~ 15) mm	0.2 μm	
Length		(0 ~ 5) mm	1.0 μm	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Laser trackers Volumetric system tests Two face tests Range tests	10510	2.3 m (1 ~ 6) m (1 ~ 45) m	1.1 μm 1 μm $\sqrt{1.2^2 + (0.27 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Laser interferometers /CP801-10510-1
Measuring microscopes, profile projectors Length Angle	10511	(0 ~ 600) mm 0° ~ 360°	$\sqrt{0.46^2 + (2 \times 10^{-3} \times l)^2}$ μm (l unit : mm) 2"	Standard scale /CP801-10511-1
Micro measuring microscopes	10512	(0 ~ 50) mm	3 μm	Standard scale /CP801-10512-1
Taper plug gauges Outside dia. of small part Outside dia. of large part Taper angle	10514	(Ø0.5 ~ Ø500) mm (Ø0.5 ~ Ø500) mm 0° ~ 180°	1.8 μm 2.2 μm 0.001°	Contact coordinate measuring machines /CP801-10514-1
Taper ring gauges Inside dia. of small part Inside dia. of large part Taper angle	10515	(Ø0.5 ~ Ø250) mm (Ø0.5 ~ Ø250) mm 0° ~ 180°	2.0 μm 1.6 μm 0.001°	Contact coordinate measuring machines /CP801-10515-1
Stylus type roughness testers Arithmetic mean(Ra) Max. height(Rz) Depth(d)	10517	(0 ~ 2) μm (2 ~ 10) μm (0 ~ 10) μm (10 ~ 1 000) μm (0 ~ 10) μm (10 ~ 1 000) μm	0.007 μm 0.040 μm 0.024 μm 0.11 μm 0.021 μm 0.14 μm	Roughness standard specimens /CP801-10517-1
Roughness standard /comparison specimens Roughness standard specimens Arithmetic mean(Ra) Max. height(Rz) Depth(d) Roughness comparison specimens Max. height(Rz)	10519	(0 ~ 2) μm (2 ~ 10) μm (0 ~ 10) μm (10 ~ 20) μm (0 ~ 10) μm (10 ~ 1 000) μm (0 ~ 10) μm (10 ~ 1 000) μm	0.010 μm 0.042 μm 0.026 μm 0.15 μm 0.026 μm 0.17 μm 0.027 μm 0.15 μm	Stylus type roughness testers /CP801-10519-1

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Thread plug gauges	10525			Standard measuring machines /CP801-10525-1
Outside dia.		(Ø0.4 ~ Ø300) mm	0.8 µm	
Effective dia.		(Ø0.4 ~ Ø300) mm	1.0 µm	
Pitch		(0.1 ~ 10) mm	0.8 µm	
Half angle of thread		0° ~ 80°	2'	
Taper thread plug gauges	10526			Standard measuring machines /CP801-10526-1
Outside dia.		(Ø0.4 ~ Ø350) mm	0.8 µm	
Effective dia.		(Ø0.4 ~ Ø350) mm	1.6 µm	
Pitch		(0.1 ~ 10) mm	0.8 µm	
Length		(0.1 ~ 300) mm	1.5 µm	
Half angle of thread		0° ~ 45°	2'	
Thread ring gauges	10527			Contact coordinate measuring machines /CP801-10527-1
Inside dia.		(Ø3.0 ~ Ø150) mm	1.0 µm	
Effective dia.		(Ø3.0 ~ Ø150) mm	2.3 µm	
Pitch		(0.7 ~ 10) mm	1.0 µm	
Taper thread ring gauges	10528			Contact coordinate measuring machines /CP801-10528-1
Alternation of Inside dia.		±3 mm	2 µm	
Alternation of Effective dia.		±3 mm	2 µm	
Length		(0 ~ 100) mm	1 µm	
V-blocks, box blocks	10529			Electronic micrometers /CP801-10529-1
Flatness		(0 ~ 300) mm	1.0 µm	
Gradient		(0 ~ 300) mm	1.0 µm	
Difference of both part		(0 ~ 300) mm	1.3 µm	
Parallelism		(0 ~ 300) mm	1.3 µm	
Squareness		(0 ~ 300) mm	1.8 µm	
SEM/TEM/SPM/AFM microscopes	10531	1 000 × ~ 500 000 ×	2.4×10^{-2}	MRS /CP801-10531-1

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	(0 ~ 2 000) mm	$\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Step gauges /CP801-10601-1
Cylinder/bore gauges	10603	(0 ~ 1 000) mm	0.6 μm	Dial gauge testers /CP801-10603-1
Depth gauges, depth micrometers	10604	(0 ~ 300) mm (300 ~ 1 000) mm	$\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks /CP801-10604-1
Dial/digital gauges	10605	(0 ~ 100) mm	0.3 μm	Gauge blocks /CP801-10605-1
Grind gauges Depth of inclined plane Straightness of scraper	10608	(0 ~ 1) mm (0 ~ 150) mm	1.0 μm 0.5 μm	Electronic micrometers /CP801-10608-1
Micro indicators, test indicators	10609	(0 ~ 5) mm	0.5 μm	Dial gauge testers /CP801-10609-1
Micrometer heads	10610	(0 ~ 100) mm	$\sqrt{0.7^2 + (1.8 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks /CP801-10610-1
3-Point micrometers	10611	($\varnothing 2 \sim \varnothing 300$) mm	1.0 μm	Cylindrical ring gauges /CP801-10611-1
Inside micrometers Caliper type Bar type Extension rods	10612	(4 ~ 300) mm (25 ~ 300) mm (300 ~ 1 100) mm (13 ~ 1 000) mm	$\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{2^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks /CP801-10612-1
Outside micrometers Outside micrometers V-anvil micrometers	10613	(0 ~ 25) mm (25 ~ 1 000) mm (1 000 ~ 2 000) mm (0.2 ~ 100) mm	$\sqrt{0.2^2 + (1.9 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{0.9^2 + (1.9 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{3.0^2 + (1.4 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) 1.0 μm	Gauge blocks, cylindrical plug gauges /CP801-10613-1 /CP801-10613-2
Offset of retroreflectors	10614	(0 ~ 40) mm	0.05 mm	Laser trackers /CP801-10614-1

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Particle counters	10615			Particle counters, Liquid flowmeters /CP801-10615-1
[Airborne]				
Counting efficiency		(0.1 ~ 1) μ m	5.3 %	
Flow rate		(0 ~ 2.83) L/min	0.05 L/min	
		(2.83 ~ 28.3) L/min	0.34 L/min	
		(28.3 ~ 50) L/min	0.60 L/min	
		(50 ~ 75) L/min	0.89 L/min	
		(75 ~ 100) L/min	1.2 L/min	
Threshold voltage		(0 ~ 10) V	0.003 V	
[Liquid]				
Flow rate		(10 ~ 50) mL/min	7.3 mL/min	
		(50 ~ 100) mL/min	8.3 mL/min	
Threshold voltage		(0 ~ 10) V	0.003 V	
Standard sieves	10617			Measuring microscopes /CP801-10617-1
wire		(0.01 ~ 10) mm	3 μ m	
sieve		(0.01 ~ 150) mm	4 μ m	
Water level meters	10619			Laser interferometers /CP801-10619-1
Non-contact type		(0 ~ 9.3) m	2.8 mm	
Contact type		(0 ~ 9) m	1.6 mm	
		(9 ~ 18) m	2.0 mm	
		(18 ~ 27) m	2.4 mm	
		(27 ~ 36) m	2.7 mm	
		(36 ~ 45) m	3.0 mm	
Welding gauges	10620			Measuring microscopes /CP801-10620-1
Length calibration		(0 ~ 100) mm	0.1 mm	
Angle calibration		0° ~ 180°	4'	

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 ~ 200) kg	48 g	Weight /CP801-20102-1
Auto-packer scale balances	20103	(0 ~ 10) kg	1.0 g	Weight /CP801-20103-1
		(10 ~ 40) kg	10 g	

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Axle weigher balances Portable axle load weigher	20104	(500 ~ 1 000) kg (1 000 ~ 2 000) kg (2 000 ~ 5 000) kg (5 000 ~ 20 000) kg	1.0 kg 4 kg 6 kg 20 kg	Force calibration machine /CP801-20104-1
Counter beam balances	20105	(0 ~ 311) g (311 ~ 2 610) g 2 610 g ~ 5 kg	9.0 mg 91 mg 0.8 g	Weight /CP801-20105-1
Dial platform scale balances	20106	(0 ~ 10) kg (10 ~ 50) kg (50 ~ 200) kg	2.8 mg 10 g 0.1 kg	Weight /CP801-20106-1
Electric balances	20109	(0 ~ 2) mg (2 ~ 5) mg (5 ~ 10) mg (10 ~ 20) mg (20 ~ 50) mg (50 ~ 100) mg (100 ~ 200) mg (200 ~ 500) mg 500 mg ~ 1 g (1 ~ 2) g (2 ~ 5) g (5 ~ 10) g (10 ~ 20) g (20 ~ 50) g (50 ~ 100) g (100 ~ 200) g (200 ~ 500) g 500 g ~ 1 kg (1 ~ 2) kg (2 ~ 5) kg (5 ~ 10) kg (10 ~ 20) kg (20 ~ 30) kg (30 ~ 100) kg (100 ~ 200) kg (200 ~ 1 000) kg	1.2 µg 1.2 µg 1.2 µg 1.2 µg 2.4 µg 2.4 µg 2.4 µg 2.4 µg 3.5 µg 4.7 µg 5.8 µg 9 µg 10 µg 13 µg 20 µg 40 µg 0.1 mg 0.2 mg 0.4 mg 2.0 mg 3.0 mg 4.0 mg 0.01 g 1.0 g 2.0 g 0.2 kg	Weight /CP801-20109-1
Platform scale balances	20112	(0 ~ 10) kg (10 ~ 50) kg (50 ~ 200) kg	2.8 mg 10 g 0.1 kg	Weight /CP801-20112-1
Spring scale balances	20113	(0 ~ 1) kg (1 ~ 10) kg (10 ~ 50) kg	1.0 g 9.0 g 0.1 kg	Weight /CP801-20113-1

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	(E2 class)	Weight /CP801-20116-1
		1 mg	1.8 µg	
		2 mg	1.8 µg	
		5 mg	1.8 µg	
		10 mg	2.4 µg	
		20 mg	3.0 µg	
		50 mg	4.0 µg	
		100 mg	5.0 µg	
		200 mg	6.0 µg	
		500 mg	8.0 µg	
		1 g	9.0 µg	
		2 g	12 µg	
		5 g	15 µg	
		10 g	18 µg	
		20 g	24 µg	
		50 g	30 µg	
		100 g	50 µg	
		200 g	90 µg	
		500 g	0.24 mg	
		1 kg	0.48 mg	
		2 kg	0.90 mg	
		5 kg	2.4 mg	
		10 kg	4.8 mg	
		20 kg	9.0 mg	

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Force measuring devices	20202			Force calibration machine /CP801-20202-1
Case A		(1 ~ 50) N	1.2×10^{-4}	
		50 N ~ 20 kN	6.0×10^{-5}	
		20 kN ~ 5 MN	5.1×10^{-4}	
Case B		(1 ~ 50) N	1.4×10^{-4}	
		50 N ~ 20 kN	7.0×10^{-5}	
		20 kN ~ 5 MN	5.1×10^{-4}	
Case C		(10 ~ 50) N	1.7×10^{-4}	
		50 N ~ 20 kN	7.1×10^{-5}	
		20 kN ~ 5 MN	5.3×10^{-4}	
Case D		(1 ~ 50) N	1.7×10^{-4}	
		50 N ~ 20 kN	7.8×10^{-5}	
		20 kN ~ 5 MN	5.4×10^{-4}	

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			Force measuring devices /CP801-20203-1
(Tension/compression)		(1 ~ 500) N	2.2×10^{-4}	
(Tension/compression)		500 N ~ 1 kN	5.6×10^{-4}	
(Tension/compression)		(1 ~ 2) kN	9.5×10^{-4}	
(Tension/compression)		(2 ~ 5) kN	8.5×10^{-4}	
(Tension/compression)		(5 ~ 10) kN	4.0×10^{-4}	
(Tension/compression)		(10 ~ 20) kN	5.8×10^{-4}	
(Compression)		(20 ~ 50) kN	5.9×10^{-4}	
(Tension)		(20 ~ 50) kN	7.5×10^{-4}	
(Compression)		(50 ~ 100) kN	7.5×10^{-4}	
(Tension)		(50 ~ 100) kN	7.5×10^{-4}	
(Compression)		(100 ~ 200) kN	3.6×10^{-4}	
(Tension)		(100 ~ 200) kN	7.5×10^{-4}	
(Compression)		(200 ~ 500) kN	3.5×10^{-4}	
(Tension)		(200 ~ 500) kN	9.4×10^{-4}	
(Compression)		500 kN ~ 1 MN	4.8×10^{-4}	
(Tension)		500 kN ~ 1 MN	8.1×10^{-4}	
(Tension)		(1 ~ 2) MN	1.0×10^{-3}	
(Compression)		(1 ~ 3) MN	1.5×10^{-3}	
(Compression)		(3 ~ 10) MN	1.9×10^{-3}	
Push-pull gauges	20204			Force measuring devices /CP801-20204-1
		(0.049 ~ 2) N	1.9×10^{-2}	
		(2 ~ 25) N	5.9×10^{-4}	
		25 N ~ 5 kN	5.8×10^{-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 measuring devices	20302			Torque calibration machines /CP801-20302-1
		(0.01 ~ 0.05) N·m	6.8×10^{-3}	
		(0.05 ~ 0.5) N·m	1.4×10^{-3}	
		(0.5 ~ 1) N·m	1.2×10^{-3}	
		(1 ~ 2) N·m	9.1×10^{-4}	
		(2 ~ 5) N·m	6.1×10^{-4}	
		(5 ~ 10) N·m	4.6×10^{-4}	
		(10 ~ 20) N·m	4.5×10^{-4}	
		(20 ~ 50) N·m	3.1×10^{-4}	
		(50 ~ 100) N·m	4.9×10^{-4}	
		(100 ~ 200) N·m	4.2×10^{-4}	
		(200 ~ 500) N·m	2.5×10^{-4}	
		(500 ~ 1 000) N·m	2.7×10^{-4}	
		(1 ~ 2) kN·m	7.1×10^{-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	(0.05 ~ 0.09) N·m (0.09 ~ 0.6) N·m (0.6 ~ 2) N·m (2 ~ 6) N·m (6 ~ 20) N·m (20 ~ 50) N·m (50 ~ 100) N·m (100 ~ 200) N·m (200 ~ 360) N·m (360 ~ 700) N·m (700 ~ 2 000) N·m	1.2×10^{-2} 1.0×10^{-2} 1.3×10^{-2} 7.0×10^{-3} 9.0×10^{-3} 9.0×10^{-3} 2.3×10^{-3} 2.7×10^{-3} 8.0×10^{-3} 9.0×10^{-3} 9.0×10^{-3}	Torque measuring devices /CP801-20303-1
Nut runners Electrically Controlled	20399	(1 ~ 10) N·m (10 ~ 50) N·m (50 ~ 250) N·m	6.9×10^{-3} 2.6×10^{-3} 3.4×10^{-3}	Torque measuring devices /CP801-20399-1
Electric		(667 ~ 2 000) N·m (2 000 ~ 6 600) N·m	9.4×10^{-3} 2.3×10^{-3}	Torque measuring devices /CP801-20399-2
Hydraulic		(667 ~ 2 000) N·m (2 000 ~ 6 600) N·m (6 600 ~ 50 000) N·m	8.9×10^{-3} 2.3×10^{-3} 4.5×10^{-3}	
Pneumatic		(2.5 ~ 25) N·m (25 ~ 75) N·m (75 ~ 180) N·m (180 ~ 500) N·m (500 ~ 2 000) N·m (2 000 ~ 6 600) N·m	5.7×10^{-3} 9.9×10^{-3} 8.2×10^{-3} 3.4×10^{-3} 8.9×10^{-3} 2.3×10^{-3}	

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Altimeters	20401	(0 ~ 32) km (32 ~ 55) km	12 m 1.5×10^{-3}	DHI PG7601 /CP801-20401-1
Manometers Inclined tube, U tube, Well type	20402	(0 ~ 200) kPa	5.0×10^{-4}	DHI PG7601 /CP801-20402-1
Pneumatic pressure ballances	20403	4.9 kPa ~ 7.2 MPa	5.2×10^{-5}	DHI PG7601 /CP801-20403-1
Hydraulic pressure ballances	20404	(0.5 ~ 200) MPa (200 ~ 500) MPa	6.2×10^{-5} 2.2×10^{-4}	DHI PG7302 /CP801-20404-1
Air data test systems	20405	(1.4~350) kPa abs	5.5×10^{-5}	Reference Pressure Gauge /CP801-20405-1

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	1.4 kPa abs. ~ 7 MPa abs. (7.0 ~ 100) MPa abs.	5.5×10^{-5} 6.2×10^{-5}	DHI PG7601 DHI PG7302 /CP801-20406-1
Blood Pressure gauges	20407	(0 ~ 40) kPa	5.0×10^{-4}	DHI PG7601 /CP801-20407-1
Compound pressure gauges	20408	-100 kPa ~ 7.0 MPa	5.0×10^{-4}	DHI PG7601 /CP801-20408-1
Differential pressure gauges	20409	-100 kPa ~ 7 MPa (7 ~ 100) MPa	5.5×10^{-5} 6.2×10^{-5}	DHI PG7601 DHI PG7302 /CP801-20409-1
Gauge pressure gauges	20411	-100 kPa ~ 7 MPa (7 ~ 200) MPa (200 ~ 500) MPa	5.5×10^{-5} 6.2×10^{-5} 1.7×10^{-4}	Reference Pressure Gauge /CP801-20411-1
Pressure transducers / transmitters Absolute Gauge	20412	0 kPa abs. ~ 7 MPa abs. -100 kPa ~ 7 MPa (7 ~ 200) MPa (200 ~ 500) MPa	5.5×10^{-5} 5.5×10^{-5} 6.2×10^{-5} 1.7×10^{-4}	Reference Pressure Gauge /CP801-20412-1
Dial type vacuum gauges	20413	(-100 ~ 0) kPa	1.0×10^{-3}	Reference Pressure Gauge /CP801-20413-1
Water depth meters	20414	(0 ~ 100) m	1.5×10^{-4}	Reference Pressure Gauge /CP801-20414-1

205. Vacuum

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Capacitance diaphragm gauges	20501	(0.1 ~ 133) Pa abs. 133 Pa abs. ~ 1.33 kPa abs. (1.33 ~ 10) kPa abs.	0.03 Pa 0.8 Pa 10 Pa	MKS 690A /CP801-20501-1
Spinning rotor gauges	20502	0.5 mPa abs. ~ 0.5 Pa abs.	0.1 mPa	Reference Vacuum Gauge /CP801-20502-1
Ionization gauges	20503	0.05 μ Pa abs. ~ 0.1 Pa abs.	0.01 μ Pa	Reference Vacuum Gauge /CP801-20503-1
Thermal conductivity gauges	20504	(0.1 ~ 133.3) Pa abs. 133.3 Pa abs. ~ 1.333 kPa abs. (1.333 ~ 10) kPa abs.	0.03 Pa 0.8 Pa 0.13 kPa	Reference Vacuum /CP801-20504-1
Standard leaks, Helium leak detectors Helium leak detectors Helium standard leaks	20505	(0.000 1 ~ 1) μ Pa \cdot m ³ /s (0.000 1 ~ 1) μ Pa \cdot m ³ /s	2.1×10^{-1} 2.1×10^{-1}	Standard Calibrated leak, Detector /CP801-20505-1 Standard Calibrated leak, Detector /CP801-20505-2

206. Volume

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 ~ 0.5) mL (0.5 ~ 1) mL (1 ~ 2) mL (2 ~ 5) mL (5 ~ 10) mL (10 ~ 25) mL (25 ~ 50) mL (50 ~ 100) mL (100 ~ 250) mL (250 ~ 500) mL (500 ~ 1 000) mL (1 000 ~ 2 000) mL	0.68 μ L 1.2 μ L 1.6 μ L 2.2 μ L 2.8 μ L 3.5 μ L 4.6 μ L 9.0 μ L 36 μ L 59 μ L 99 μ L 0.16 mL	Balance /CP801-20601
Pycnometers	20602	(0 ~ 50) mL (50 ~ 100) mL (100 ~ 500) mL	1.0 μ L 1.4 μ L 17 μ L	Balance /CP801-20602-1
Rain gauges	20603	(10 ~ 200) mm	0.3 mm	Balance /CP801-20603-1
Standard volume vessels	20604	(0 ~ 0.5) L (0.5 ~ 200) L (200 ~ 10 000) L	4.4×10^{-5} 1.5×10^{-4} 1.8×10^{-3}	Balance, Master meter /CP801-20604-1 /CP801-20604-3
Concrete air content meters	20605	(0 ~ 10) %	0.1 %	Balance /CP801-20605-1
Piston type volume meters	20606	(0 ~ 1) μ L (1 ~ 2) μ L (2 ~ 5) μ L (5 ~ 10) μ L (10 ~ 20) μ L (20 ~ 50) μ L (50 ~ 100) μ L (100 ~ 200) μ L (200 ~ 500) μ L (500 ~ 1000) μ L (1 ~ 2) mL (2 ~ 5) mL (5 ~ 10) mL (10 ~ 25) mL (25 ~ 50) mL (50 ~ 100) mL	5.0 nL 5.3 nL 6.5 nL 7.2 nL 9.6 nL 0.033 μ L 0.066 μ L 0.090 μ L 0.17 μ L 0.36 μ L 0.77 μ L 1.5 μ L 3.0 μ L 4.4 μ L 15 μ L 62 μ L	Balance /CP801-20606-1

207. Density

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Liquid density meters	20702	(0.650 ~ 1.850) g/cm ³	0.000 063 g/cm ³	STD density /CP801-20702-1
Salinity meters	20704	(0.5 ~ 25) %	0.012 %	NaCl /CP801-20704-1
Sucrose meters	20705	(0.000 ~ 60.000) % (60.000 ~ 82.319) %	0.027 % 0.031 %	Sucrose /CP801-20705-1

207. Density

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Hydrometers	20706			
Density hydrometers		(0.650 ~ 2.000) g/cm ³	1.7×10^{-4} g/cm ³	STD density /CP801-20706-1
Specific gravity hydrometers		0.650 ~ 2.000	1.7×10^{-4}	STD density /CP801-20706-2
Alcohol hydrometers		(0 ~ 100) %	0.12 %	STD density /CP801-20706-3
API hydrometers		0 ~ 70	0.14	STD density /CP801-20706-4
Baume hydrometers		0 ~ 70	0.013	STD density /CP801-20706-5
Sugar hydrometers		0 ~ 60	0.12	STD density /CP801-20706-6
Chloride meters	20707	(0.001 ~ 1.000) %	0.002 %	Cl ⁻ sol'n /CP801-20707-1

208. Viscosity

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Kinetic viscometers; capillary, etc	20801			
Ford cup viscometers		(10 ~ 1 000) mm ² /s	2.8×10^{-2}	Viscosity sol'n /CP801-20801-1
Zahn cup viscometers		(10 ~ 1 000) mm ² /s	3.0×10^{-2}	Viscosity sol'n /CP801-20801-2
Dynamic viscometers; rotational, etc	20802			
Viscometers, rotational		(10 ~ 200 000) mPa·s	1.6×10^{-2}	Viscosity sol'n /CP801-20802-1
Viscometers, stomer		(500 ~ 5 000) mPa·s	2.8×10^{-2}	Viscosity sol'n /CP801-20802-2

209. Fluid flow

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Anemometers; hot-wire	20901	(2 ~ 35) m/s	1.5×10^{-2}	WIND TUNNEL /CP801-20901-1
Anemometers; pitot tube, etc.	20902	(2 ~ 35) m/s	1.5×10^{-2}	WIND TUNNEL /CP801-20902-1
Gas flowmeters; differential pressure	20908	$(1.2 \times 10^{-3} \sim 60)$ m ³ /h	2.5×10^{-3}	SONIC NOZZLE /CP801-20908-1
		(1.2 ~ 10) m ³ /h	2.4×10^{-3}	BELL PROVER /CP801-20908-2
		$(1.2 \times 10^{-4} \sim 2.4)$ m ³ /h	2.8×10^{-3}	MASTER METER /CP801-20908-3
Liquid flowmeters; differential pressure	20909	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20909-1
Liquid flowmeters; electromagnetic	20910	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20915-2

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; thermal mass, etc.	20911	$(1.2 \times 10^{-3} \sim 60) \text{ m}^3/\text{h}$	2.5×10^{-3}	SONIC NOZZLE /CP801-20911-1
		$(1.2 \sim 10) \text{ m}^3/\text{h}$	2.4×10^{-3}	BELL PROVER /CP801-20911-2
		$(1.2 \times 10^{-4} \sim 2.4) \text{ m}^3/\text{h}$	2.8×10^{-3}	MASTER METER /CP801-20911-3
Liquid flowmeters; Coriolois, etc.	20912	$(1.2 \times 10^3 \sim 1.2 \times 10^5) \text{ kg/h}$	4.0×10^{-3}	MASTER METER /CP801-20912-1
Liquid flowmeters; open channel, etc.	20913	$(5 \sim 150) \text{ m}^3/\text{h}$	4.0×10^{-3}	ELECTROMAGNETIC FLOWMETER /CP801-20913-1
Gas flowmeters; positive displacement	20914	$(1.2 \sim 10) \text{ m}^3/\text{h}$	2.4×10^{-3}	BELL PROVER /CP801-20914-1
		$(1.2 \times 10^{-3} \sim 60) \text{ m}^3/\text{h}$	2.5×10^{-3}	SONIC NOZZLE /CP801-20914-2
		$(1.2 \times 10^{-4} \sim 2.4) \text{ m}^3/\text{h}$	2.8×10^{-3}	MASTER METER /CP801-20914-3
Liquid flowmeters; positive displacement	20915	$(1.2 \sim 120) \text{ m}^3/\text{h}$	4.0×10^{-3}	MASTER METER /CP801-20915-2
Gas flowmeters; turbine	20916	$(1.2 \times 10^{-3} \sim 60) \text{ m}^3/\text{h}$	2.5×10^{-3}	SONIC NOZZLE /CP801-20916-1
		$(1.2 \sim 10) \text{ m}^3/\text{h}$	2.4×10^{-3}	BELL PROVER /CP801-20916-2
		$(1.2 \times 10^{-4} \sim 2.4) \text{ m}^3/\text{h}$	2.8×10^{-3}	MASTER METER /CP801-20916-3
Liquid flowmeters; turbine	20917	$(1.2 \sim 120) \text{ m}^3/\text{h}$	4.0×10^{-3}	MASTER METER /CP801-20917-1
Gas flowmeters; ultrasonic	20918	$(1.2 \times 10^{-3} \sim 60) \text{ m}^3/\text{h}$	2.5×10^{-3}	SONIC NOZZLE /CP801-20918-1
		$(1.2 \sim 10) \text{ m}^3/\text{h}$	2.4×10^{-3}	BELL PROVER /CP801-20918-2
		$(1.2 \times 10^{-4} \sim 2.4) \text{ m}^3/\text{h}$	2.8×10^{-3}	MASTER METER /CP801-20918-3
Liquid flowmeters; ultrasonic	20919	$(1.2 \sim 120) \text{ m}^3/\text{h}$	4.0×10^{-3}	MASTER METER /CP801-20919-1
Gas flowmeters; variable area	20920	$(1.2 \times 10^{-3} \sim 60) \text{ m}^3/\text{h}$	2.5×10^{-3}	SONIC NOZZLE /CP801-20920-1
		$(1.2 \sim 10) \text{ m}^3/\text{h}$	2.4×10^{-3}	BELL PROVER /CP801-20920-2
		$(1.2 \times 10^{-4} \sim 2.4) \text{ m}^3/\text{h}$	2.8×10^{-3}	MASTER METER /CP801-20920-3
Liquid flowmeters; variable area	20921	$(1.2 \sim 120) \text{ m}^3/\text{h}$	4.0×10^{-3}	MASTER METER /CP801-20921-1
Liquid flowmeters; vortex	20923	$(1.2 \sim 120) \text{ m}^3/\text{h}$	4.0×10^{-3}	MASTER METER /CP801-20923-1
Anemometers; vane, etc.	20925	$(2 \sim 35) \text{ m/s}$	1.5×10^{-2}	WIND TUNNEL /CP801-20925-1

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 Brinell hardness testers Brinell hardness CRM	21001	(75 ~ 250) HBW 10/500 (95 ~ 250) HBW 10/3 000 (250~ 450) HBW 10/3 000 (450~ 653) HBW 10/3 000 (75 ~ 250) HBW 10/500 (250 ~ 450) HBW 10/500 (95 ~ 250) HBW 10/3 000 (250 ~ 450) HBW 10/3 000 (450 ~ 653) HBW 10/3 000	3.0 HBW 10/500 2.5 HBW 10/3 000 4.4 HBW 10/3 000 6.9 HBW 10/3 000 2.9 HBW 10/500 6.2 HBW 10/500 2.5 HBW 10/3 000 4.4 HBW 10/3 000 6.3 HBW 10/3 000	CRM /CP801-21001-1 Brinell hardness testers, Non contact coordinate measuring machines /CP-801-21001-2
Rockwell hardness testers Rockwell hardness testers Rockwell hardness CRM	21002	(20 ~ 95) HRA (10 ~ 100) HRBW (10 ~ 70) HRC (70 ~ 102) HREW (60 ~ 100) HRFW (80 ~ 100) HRHW (60 ~ 120) HRMW (100 ~ 130) HRRW (65 ~ 94) HR15N (35 ~ 86) HR30N (15 ~ 77) HR45N (67 ~ 93) HR15TW (29 ~ 82) HR30TW (10 ~ 72) HR45TW (20 ~ 95) HRA (10 ~ 100) HRBW (10 ~ 70) HRC (70 ~ 102) HREW (60 ~ 100) HRFW (80 ~ 100) HRHW (60 ~ 120) HRMW (100 ~ 130) HRRW (65 ~ 94) HR15N (35 ~ 86) HR30N (15 ~ 77) HR45N (67 ~ 93) HR15TW (29 ~ 82) HR30TW (10 ~ 72) HR45TW	0.37 HRA 0.63 HRBW 0.33 HRC 1.3 HREW 1.3 HRFW 1.4 HRHW 1.4 HRMW 1.3 HRRW 0.63 HR15N 0.63 HR30N 0.63 HR45N 1.1 HR15TW 1.1 HR30TW 1.1 HR45TW 0.37 HRA 0.63 HRBW 0.33 HRC 1.3 HREW 1.3 HRFW 1.4 HRHW 1.4 HRMW 1.3 HRRW 0.63 HR15N 0.63 HR30N 0.63 HR45N 1.1 HR15TW 1.1 HR30TW 1.1 HR45TW	CRM /CP801-21002-1 Rockwell hardness testers /CP801-21002-2
Shore hardness testers Shore hardness testers Shore hardness CRM	21003	(30 ~ 100) HS (25 ~ 35) HS (45~ 55) HS (55 ~ 65) HS (75 ~ 85) HS (90 ~ 100) HS	1.0 HS 0.9 HS 0.9 HS 0.9 HS 1.0 HS 1.2 HS	CRM /CP801-21003-1 Vickers hardness testers /CP801-21003-2

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Vickers hardness testers Vickers hardness testers	21004	(50 ~ 250) HV 0.2 (250 ~ 650) HV 0.2 (650 ~ 850) HV 0.2 (50 ~ 250) HV 0.3 (250 ~ 650) HV 0.3 (50 ~ 250) HV 0.5 (250 ~ 650) HV 0.5 (650 ~ 850) HV 0.5 (650 ~ 850) HV 1 (850 ~ 1 200) HV 1 (1 200 ~ 2 000) HV 1 (50 ~ 250) HV 5 (250 ~ 650) HV 5 (50 ~ 250) HV 10 (250 ~ 650) HV 10 (650 ~ 850) HV 10 (250 ~ 650) HV 20 (650 ~ 850) HV 30	5.2 HV 0.2 13 HV 0.2 20 HV 0.2 4.8 HV 0.3 12 HV 0.3 6.1 HV 0.5 12 HV 0.5 21 HV 0.5 20 HV 1 31 HV 1 41 HV 1 3.0 HV 5 6.0 HV 5 2.4 HV 10 7.7 HV 10 12 HV 10 6.0 HV 20 12 HV 30	CRM /CP801-21004-1
Vickers hardness CRM		(30 ~ 250) HV 0.1 (250 ~ 650) HV 0.1 (650 ~ 1 000) HV 0.1 (30 ~ 250) HV 0.2 (250 ~ 650) HV 0.2 (650 ~ 1 000) HV 0.2 (30 ~ 250) HV 0.3 (250 ~ 650) HV 0.3 (650 ~ 1 000) HV 0.3 (30 ~ 250) HV 0.5 (250 ~ 650) HV 0.5 (650 ~ 1 000) HV 0.5 (30 ~ 250) HV 1 (250 ~ 650) HV 1 (650 ~ 850) HV 1 (850 ~ 1 200) HV 1 (1 200 ~ 2 000) HV 1 (30 ~ 250) HV 2 (250 ~ 650) HV 2 (650 ~ 1 000) HV 2 (30 ~ 250) HV 5 (250 ~ 650) HV 5 (650 ~ 1 000) HV 5 (30 ~ 250) HV 10 (250 ~ 650) HV 10 (650 ~ 1 000) HV 10 (30 ~ 250) HV 20 (250 ~ 650) HV 20 (650 ~ 1 000) HV 20 (30 ~ 250) HV 30 (250 ~ 650) HV 30 (650 ~ 1 000) HV 30 (30 ~ 250) HV 50 (250 ~ 650) HV 50 (650 ~ 1 000) HV 50	8.5 HV 0.1 20 HV 0.1 31 HV 0.1 6.6 HV 0.2 20 HV 0.2 25 HV 0.2 5.3 HV 0.3 16 HV 0.3 23 HV 0.3 5.7 HV 0.5 14 HV 0.5 20 HV 0.5 5.9 HV 1 14 HV 1 19 HV 1 22 HV 1 40 HV 1 2.2 HV 2 9.0 HV 2 16 HV 2 2.9 HV 5 8.9 HV 5 15 HV 5 2.9 HV 10 8.0 HV 10 9.7 HV 10 2.4 HV 20 6.4 HV 20 9.1 HV 20 3.2 HV 30 6.6 HV 30 8.8 HV 30 3.4 HV 50 5.7 HV 50 11 HV 50	Vickers hardness testers /CP801-21004-2

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Durometer hardness testers Durometer hardness testers	21005	(0 ~ 100) HDA (0 ~ 100) HDAM (0 ~ 100) HDAO (0 ~ 100) HDB (0 ~ 100) HDC (0 ~ 100) HDC2 (0 ~ 100) HDCS (0 ~ 100) HDD (0 ~ 100) HDDO (0 ~ 100) HDE (0 ~ 100) HDE2 (0 ~ 100) HDF (0 ~ 100) HDFO (0 ~ 101) HDFP (0 ~ 100) HDM (0 ~ 100) HDO (0 ~ 100) HDOO (0 ~ 100) HD000 (0 ~ 100) HD000-S (0 ~ 100) HDSKH	0.5 HDA 0.5 HDAM 0.5 HDAO 0.5 HDB 0.5 HDC 0.5 HDC2 0.5 HDCS 0.5 HDD 0.5 HDDO 0.5 HDE 0.5 HDE2 0.5 HDF 0.5 HDFO 0.6 HDFP 0.5 HDM 0.5 HDO 0.5 HDOO 0.5 HD000 0.5 HD000-S 0.5 HDSKH	Durometer calibration device /CP801-21005-1
IRHD hardness testers		(30 ~ 100) IRHDN (84.8 ~ 100) IRHDH (9.9 ~ 34.9) IRHDL (30 ~ 100) IRHDM	0.003 mm, 0.004 N 0.003 mm, 0.004 N 0.003 mm, 0.004 N 0.003 mm, 0.004 N	IRHD calibration device /CP801-21005-2
Leeb hardness testers D-type	21006	(400~700) HLD (700~1 000) HLD	4.4 HLD 5.2 HLD	CRM /CP801-21006-1
G-type		(350~450) HLG (450~600) HLG (600~750) HLG	5.4 HLG 5.2 HLG 5.0 HLG	CRM /CP801-21006-2

211. Impact

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Charpy impact testers Metal	21102	(50 ~ 900) J	—	Non contact height measuring machine /CP801-21102-1
Plastic		(0.5 ~ 50) J	—	Height gauge /CP801-21102-2
Izod impact testers Metal	21103	(50 ~ 900) J	—	Non contact height measuring machine /CP801-21103-1
Plastic		(0.5 ~ 50) J	—	Height gauge /CP801-21103-2

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 Frequency	30102	1 MHz 5 MHz 10 MHz	4.4×10^{-13} 4.4×10^{-13} 4.4×10^{-13}	Cesium Frequency Standard / CP801-30102-1
Voltage		10 mV ~ 10 V	6.5 mV/V	
General frequency sources Frequency	30103	DC ~ 10 MHz	5.8×10^{-9}	Frequency Counter / CP801-30103-1
Voltage		10 mV ~ 10 V	6.5 mV/V	
Frequency meters / counters Time base output frequency	30104	1 MHz, 5 MHz, 10 MHz	6.2×10^{-13}	Cesium Frequency Standard / CP801-30104-1
Input frequency		1 MHz, 5 MHz, 10 MHz	5.8×10^{-12}	
Sensitivity voltage		(DC ~ 1 GHz) 10 mV ~ 10 V	30 mV/V	
Sensitivity decibel (dB)		(50 kHz ~ 40 GHz) (+ 10 ~ -50) dBm	0.30 dB	
frequency difference		10 kHz ~ 10 MHz	2.8×10^{-12}	
Time interval sources Reference frequency	30105	1 MHz, 10 MHz	5.8×10^{-10}	Frequency Counter / CP801-30105-1
Time interval		10 μ s ~ 10 s	5.8×10^{-8}	
Time interval meters / stop watches/ Timers Time interval	30106	(0.01 ~ 1 000) s ≥ 1 000 s	67 μ s 6.7×10^{-8}	Frequency Counter / CP801-30106-1 Stop Watch Calibrator / CP801-30106-2
Count		≥ 1	0.58	
Stop watch calibrator Reference frequency		100 kHz ~ 10 MHz	7.2×10^{-8}	
Accuracy/day		(+ 9.99 ~ -9.99) s/d	5.8 ms/d	

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 Frequency	30201	1 Hz ~ 10 MHz	2.0×10^{-8}	Frequency Counter / CP801-30201-1
Optical type RPM		(1 ~ 10 000) min^{-1} (10 000 ~ 600 000) min^{-1}	$1.0 \times 10^{-3} \text{ min}^{-1}$ $5.8 \times 10^{-3} \text{ min}^{-1}$	
Contact type RPM		(1 ~ 10 000) min^{-1} (10 000 ~ 30 000) min^{-1}	$1.0 \times 10^{-2} \text{ min}^{-1}$ $5.8 \times 10^{-2} \text{ min}^{-1}$	

302. Velocity & revolution

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Contact type tachometers RPM	30202	(1 ~ 4 000) min ⁻¹ (4 000 ~ 10 000) min ⁻¹	5.9×10^{-2} min ⁻¹ 8.7×10^{-2} min ⁻¹	Standard RPM Source / CP801-30202-1
Photo tachometers / stroboscopes RPM (Tachometers) RPM (Stroboscope) Frequency	30203	(1 ~ 10 000) min ⁻¹ (10 000 ~ 200 000) min ⁻¹ (30 ~ 10 000) min ⁻¹ (10 000 ~ 100 000) min ⁻¹ 10 mHz ~ 1 kHz (1 ~ 200) kHz	1.0×10^{-2} min ⁻¹ 5.8×10^{-2} min ⁻¹ 1.0×10^{-2} min ⁻¹ 5.8×10^{-2} min ⁻¹ 0.59 mHz 5.8 mHz	Standard RPM Source / CP801-30203-1
Speed meters Velocity Velocity (Main Frame)	30204	10 m/h ~ 1 000 km/h (2 cm ~ 50 cm) 10 m/h ~ 1 000 km/h (0.5 m ~ 10 m) 0.1 cm/s ~ 500 m/s	3.8×10^{-3} 1.2×10^{-3} 5.8×10^{-5}	Frequency Counter, Time Delay Generator / CP801-30204-1
Wow-flutter generators Wow-flutter Deviation (JIS, NAB, CCIR, DIN, etc.) CCIR pulse Frequency	30205	(0.01 ~ 3) % (1 ~ 100) ms 1 Hz ~ 1 kHz (1 ~ 100) kHz	1.9×10^{-4} %(abs.) 0.58 μs 5.8 mHz 58 mHz	Wow Flutter Meter / CP801-30205-1
Wow-flutter meters Wow-flutter deviation (JIS, NAB, CCIR, DIN, etc.) CCIR pulse Frequency	30206	0.01 % 0.03 % 0.1 % 0.3 % 1 % 3 % (10 ~ 100) ms 1 Hz ~ 1 kHz (1 ~ 10) kHz	1.2×10^{-4} % 3.6×10^{-4} % 1.2×10^{-3} % 3.6×10^{-3} % 1.2×10^{-2} % 3.6×10^{-2} % 1.2 ms 5.8 mHz 58 mHz	Wow Flutter Gen. / CP801-30206-1

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 DC Current	40101	±(1 nA ~ 1 mA) ±(1 mA ~ 1 A) ±(1 ~ 10) A ±(10 ~ 100) A	17 μA/A 3.4 μA/A 6.6 μA/A 0.58 mA/A	Calibrator / CP801-40101-1

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.
Transconductance amplifiers DC Current AC Current	40102	$\pm(100 \mu\text{A} \sim 10 \text{ A})$ $\pm(10 \sim 100) \text{ A}$ (10 Hz \sim 1 kHz) 100 $\mu\text{A} \sim 10 \text{ A}$ (10 \sim 100) A (50 Hz \sim 1 kHz) (100 \sim 360) A (1 kHz \sim 10 kHz) 100 $\mu\text{A} \sim 10 \text{ A}$ (10 \sim 100) A 100 kHz 1 mA 100 A	10 $\mu\text{A/A}$ 28 $\mu\text{A/A}$ 68 $\mu\text{A/A}$ 0.31 mA/A 0.1 mA/A 84 $\mu\text{A/A}$ 0.31 mA/A 78 $\mu\text{A/A}$ 0.33 mA/A	Calibrator, DMM, STD. Resistor / CP801-40102-1
DC voltage/current calibrators DC Voltage DC Current	40103	$\pm(100 \mu\text{V} \sim 100 \text{ mV})$ $\pm(100 \text{ mV} \sim 10 \text{ V})$ $\pm(10 \sim 1\,000) \text{ V}$ $\pm(100 \mu\text{A} \sim 1 \text{ A})$ $\pm(1 \sim 10) \text{ A}$	1.6 $\mu\text{V/V}$ 0.96 $\mu\text{V/V}$ 1.3 $\mu\text{V/V}$ 3.0 $\mu\text{A/A}$ 6.4 $\mu\text{A/A}$	DMM, STD. Resistor / CP801-40103-1
Electrical temperature calibrators Resistance Voltage	40104	(0 \sim 1) Ω (1 \sim 10) Ω (10 \sim 100) Ω 100 $\Omega \sim 1 \text{ k}\Omega$ (1 \sim 10) $\text{k}\Omega$ (-10 \sim 100) mV 100 mV \sim 1 V	5.9 $\mu\Omega/\Omega$ 3.1 $\mu\Omega/\Omega$ 1.4 $\mu\Omega/\Omega$ 1.5 $\mu\Omega/\Omega$ 3.1 $\mu\Omega/\Omega$ 1.3 μV 6.1 $\mu\text{V/V}$	STD. Resistor / CP801-40104-1 Calibrator / CP801-40104-2
DC current shunts DC	40105	(1 \sim 100) $\mu\Omega$ (0.1 \sim 1) m Ω (1 \sim 10) m Ω 10 m $\Omega \sim 1 \text{ k}\Omega$ (1 \sim 10) $\text{k}\Omega$	0.22 m Ω/Ω 24 $\mu\Omega/\Omega$ 16 $\mu\Omega/\Omega$ 14 $\mu\Omega/\Omega$ 22 $\mu\Omega/\Omega$	Calibrator, DMM / CP801-40105-1
Galvanometers/null detectors DC Voltage	40106	0 mV \sim 1 000 V	5.8 mV/V	Calibrator / CP801-40106-1
Potentiometers DC Voltage	40107	1 mV \sim 1 000 V	6.2 $\mu\text{V/V}$	Calibrator, DMM / CP801-40107-1
DC power supplies DC Voltage DC Current Rising time Resistance PARD rms V_{n-n} Line regulation Load regulation	40108	$\pm(0 \text{ mV} \sim 1 \text{ kV})$ $\pm(1 \sim 10) \text{ kV}$ $\pm(0 \text{ mA} \sim 100 \text{ A})$ $\pm(100 \sim 1\,000) \text{ A}$ $\pm(1\,000 \sim 8\,000) \text{ A}$ 100 $\mu\text{s} \sim 1 \text{ ms}$ 1 ms \sim 1 s (1 \sim 5) s 0 $\Omega \sim 500 \text{ M}\Omega$ (0 \sim 10) V (0 \sim 30) V (-10 \sim 10) % (-10 \sim 10) %	82 $\mu\text{V/V}$ 0.8 mV/V 82 $\mu\text{A/A}$ 0.14 mA/A 1.5 mA/A 4.4 μs 2.1 ms/s 0.9 ms/s 1.3 m Ω/Ω 0.62 mV/V 1.6 mV/V 0.013 % 0.013 %	DMM, Electric load, AC power source / CP801-40108-1

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.
Standard cells Standard cells, Saturated	40109	1.018 V	0.6 μ V/V	STD. cell / CP801-40109-1
Standard cells, Unsaturated		1.019 V	0.6 μ V/V	STD. cell / CP801-40109-2
DC voltage dividers DC Voltage	40110	10 mV ~ 1 kV		Calibrator, Null detector / CP801-40110-1
Ratio		0.01 ~ 1	2.0×10^{-7}	
DC voltage standards DC Voltage	40111	1 V	0.6 μ V/V	DC STD. / CP801-40111-1
		1.018 V	0.6 μ V/V	
		10 V	0.6 μ V/V	
DC voltmeters DC Voltmeter	40112	0 mV	0.17 μ V	Calibrator / CP801-40112-1
		$\pm(0 \sim 1)$ mV	0.21 μ V	
		$\pm(1 \sim 10)$ mV	22 μ V/V	
		$\pm(10 \sim 100)$ mV	5.4 μ V/V	
		$\pm(100 \text{ mV} \sim 1 \text{ V})$	5.1 μ V/V	
		$\pm(1 \sim 10)$ V	2.9 μ V/V	
		$\pm(10 \sim 100)$ V	4.6 μ V/V	
		$\pm(100 \sim 1 \text{ 000})$ V	5.9 μ V/V	
Static/Ionic voltmeter DC Voltage	40113	$\pm(0 \sim 50)$ kV	17 mV/V	Hi voltage power supply,STD C,R / CP801-40113-1

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.
Capacitance bridges /indicators Capacitance Bridge/Indicator Capacitance	40201	(100 Hz / 1 kHz)		STD. Capacitor / CP801-40201-1 / CP801-40201-2
		(0 ~ 1) pF	98 μ F/F	
		1 pF ~ 1 nF	24 μ F/F	
		1 nF ~ 1 μ F	96 μ F/F	
		1 μ F ~ 10 mF	1.4 mF/F	
		(10 ~ 100) mF	3.2 mF/F	
		(1 kHz ~ 100 kHz)		
		0 pF ~ 1 μ F	0.30 mF/F	
		1 μ F ~ 10 mF	1.4 mF/F	
		(0 ~ 10) MHz		
		(0 ~ 100) V	3.7 mV/V	
AC Voltage				
Frequency		0 Hz ~ 10 MHz	6.5×10^{-5}	STD. Capacitor / CP801-40201-3
$\tan\delta$		(0 ~ 100) %	2.6×10^{-3}	
Schering Bridge Capacitance		(50 Hz ~ 60 Hz) 1 nF ~ 100 μ F	0.6 mF/F	
$\tan\delta$		(0 ~ 100) %	2.6×10^{-3}	

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.
Decade capacitors	40202	(100 Hz/120 Hz) 0 pF ~ 10 μ F (1 kHz) 0 pF ~ 10 μ F	65 μ F/F 62 μ F/F	Capacitance indicator / CP801-40202-1
Standard capacitors	40204	(20 Hz ~ 1 kHz) (0 ~ 1) pF 1 pF ~ 1 nF 1 nF ~ 1 μ F 1 μ F ~ 10 mF (10 ~ 100) mF (1 kHz ~ 100 kHz) 0 pF ~ 1 μ F (1 ~ 10) μ F (100 kHz ~ 1 MHz) (0 ~ 1) pF 1 pF ~ 1 μ F (1 ~ 5) MHz (1 ~ 1 000) pF (5 ~ 13) MHz (1 ~ 1 000) pF	13 μ F/F 7.6 μ F/F 12 μ F/F 1.4 mF/F 3.2 mF/F 12 μ F/F 1.4 mF/F 0.31 mF/F 0.30 mF/F 0.90 mF/F 3.9 mF/F	Capacitance Bridge / CP801-40204-1
Earth testers Resistance AC Voltage AC Current	40205	(1 ~ 100) m Ω (0.1 ~ 1) Ω (1 ~ 100) Ω (0.1 ~ 10) k Ω 0 V ~ 1 kV 0 A ~ 100 A	5.8 m Ω / Ω 0.83 m Ω / Ω 0.59 m Ω / Ω 0.59 m Ω / Ω 0.59 mV/V 0.59 mA/A	Calibrator, Decade box / CP801-40205-1
Inductance bridges / indicators Inductance Bridge / Inductance Tester Inductance AC Voltage Frequency	40206	(100 Hz/120 Hz) (0 ~ 100) μ H 100 μ H ~ 1 H (1 ~ 10) H (1 kHz) (0 ~ 100) μ H 100 μ H ~ 1 H (1 ~ 10) H (0 Hz ~ 100 kHz) (0 ~ 100) V 0 Hz ~ 100 kHz	0.61 mH/H 0.23 mH/H 0.23 mH/H 0.42 mH/H 0.16 mH/H 0.16 mH/H 3.7 mV/V 6.5 $\times 10^{-5}$	STD. Inductor Frequency Counter / CP801-40206-1 / CP801-40206-2

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.
Inductors Standard Inductor / Inductance Decade Inductor / Inductance	40208	(100 Hz/120 Hz) (0 ~ 100) μ H 100 μ H ~ 1 H (1 ~ 10) H (1 kHz) (0 ~ 100) μ H 100 μ H ~ 10 H (100 Hz/120 Hz) (0 ~ 100) μ H 100 μ H ~ 1 H (1 kHz) 0 μ H ~ 1 H	1.4 mH/H 0.88 mH/H 1.1 mH/H 0.42 mH/H 0.28 mH/H 1.9 mH/H 1.3 mH/H 0.45 mH/H	Inductance Bridge / CP801-40208-1 Inductance Indicator / CP801-40208-2
Mutual inductors Mutual Inductance	40209	(1 ~ 200) mH	4.0 mH/H	Inductance Indicator / CP801-40209-1
Insulation testers Resistance AC Voltage Test Voltage	40210	0 Ω ~ 10 M Ω (10 ~ 100) M Ω 100 M Ω ~ 1 G Ω (1 ~ 10) G Ω 0 V ~ 1 kV 10 V ~ 10 kV	1.3 m Ω / Ω 1.4 m Ω / Ω 3.0 m Ω / Ω 3.1 m Ω / Ω 5.8 mV/V 8.2 mV/V	Calibrator, Decade box / CP801-40210-1
Q-meters Quality Factor Frequency Capacitance	40211	5 ~ 1 000 0 Hz ~ 100 MHz (1 kHz) 0 pF ~ 10 μ F	6.5×10^{-3} 6.5×10^{-5} 62 μ F/F	Frequency Counter Capacitance Indicator / CP801-40211-1
Direct reading ratio sets Measuring Arm Ratio Arm	40212	1 m Ω ~ 10 k Ω 1 m Ω ~ 10 k Ω	1.1 $\mu\Omega$ / Ω 1.1 $\mu\Omega$ / Ω	STD. Resistor / CP801-40212-1
Resistance bridges & Similar instruments Measuring Arm Ratio Arm	40213	1 m Ω ~ 100 Ω 100 Ω ~ 100 M Ω 1 m Ω ~ 100 Ω 100 Ω ~ 100 M Ω	1.1 $\mu\Omega$ / Ω 1.3 $\mu\Omega$ / Ω 1.1 $\mu\Omega$ / Ω 1.3 $\mu\Omega$ / Ω	STD. Resistor / CP801-40213-1

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			Decade resistor, Hi voltage meter, Standard Resistor, DMM, AC Resistor / CP801-40214-1
Ohmmeters				
DC		10 $\mu\Omega$	1.4 m Ω/Ω	
		(10 ~ 100) $\mu\Omega$	0.20 m Ω/Ω	
		(0.1 ~ 1) m Ω	35 $\mu\Omega/\Omega$	
		(1 ~ 10) m Ω	17 $\mu\Omega/\Omega$	
		(10 ~ 100) m Ω	5.9 $\mu\Omega/\Omega$	
		(0.1 ~ 1) Ω	3.7 $\mu\Omega/\Omega$	
		(1 ~ 10) Ω	3.2 $\mu\Omega/\Omega$	
		(10 ~ 100) Ω	3.2 $\mu\Omega/\Omega$	
		(0.1 ~ 1) k Ω	3.2 $\mu\Omega/\Omega$	
		(1 ~ 10) k Ω	2.6 $\mu\Omega/\Omega$	
		(10 ~ 100) k Ω	4.9 $\mu\Omega/\Omega$	
AC		(50 Hz ~ 1 kHz)		
		1 m Ω	0.80 m Ω/Ω	
		(1 ~ 10) m Ω	0.60 m Ω/Ω	
		(10 ~ 100) m Ω	0.18 m Ω/Ω	
		100 m Ω ~ 10 k Ω	0.16 m Ω/Ω	
		(10 ~ 100) k Ω	0.18 m Ω/Ω	
		(1 kHz ~ 1 MHz)		
		10 Ω ~ 100 k Ω	0.50 m Ω/Ω	
DC Test Current		10 mA ~ 600 A	0.20 mA/A	Hi resistor DMM / CP801-40214-2
Tera Ohmmeters				
DC		(0.1 ~ 1) M Ω	4.3 $\mu\Omega/\Omega$	
		(1 ~ 10) M Ω	6.8 $\mu\Omega/\Omega$	
		(10 ~ 100) M Ω	17 $\mu\Omega/\Omega$	
		(0.1 ~ 1) G Ω	0.29 m Ω/Ω	
		(1 ~ 10) G Ω	0.41 m Ω/Ω	
		(10 ~ 100) G Ω	0.61 m Ω/Ω	
		(0.1 ~ 1) T Ω	1.2 m Ω/Ω	
		(1 ~ 10) T Ω	1.8 m Ω/Ω	

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.
Resistors	40215			
Standard Resistor DC		$1\ \mu\Omega$ $10\ \mu\Omega$ $0.1\ m\Omega$ $1\ m\Omega$ $10\ m\Omega$ $100\ m\Omega$ $1\ \Omega$ $10\ \Omega$ $100\ \Omega$ $1\ k\Omega$ $10\ k\Omega$ $100\ k\Omega$ $1\ M\Omega$ $10\ M\Omega$ $100\ M\Omega$ $1\ G\Omega$ $10\ G\Omega$ $100\ G\Omega$ $1\ T\Omega$ $10\ T\Omega$ $100\ T\Omega$	$0.3\ n\Omega$ $3\ n\Omega$ $0.083\ n\Omega$ $0.81\ n\Omega$ $7.9\ n\Omega$ $78\ n\Omega$ $0.78\ \mu\Omega$ $7.8\ \mu\Omega$ $83\ \mu\Omega$ $0.88\ m\Omega$ $11\ m\Omega$ $0.11\ \Omega$ $1.1\ \Omega$ $52\ \Omega$ $0.98\ k\Omega$ $11\ k\Omega$ $3.4\ M\Omega$ $46\ M\Omega$ $0.58\ G\Omega$ $20\ G\Omega$ $0.46\ T\Omega$	Bridge Teraohmmeter / CP801-40215-1
AC		$(1\ kHz)$ $1\ m\Omega \sim 1\ M\Omega$ $(10 \sim 100)\ M\Omega$ $(0.1 \sim 1)\ G\Omega$ $(1 \sim 10)\ G\Omega$ $(10 \sim 100)\ G\Omega$ $(0.1 \sim 1)\ T\Omega$ $(1 \sim 10)\ T\Omega$ $(10 \sim 100)\ T\Omega$	$60\ \mu\Omega/\Omega$ $9.0\ k\Omega$ $0.12\ M\Omega$ $3.6\ M\Omega$ $46\ M\Omega$ $0.60\ G\Omega$ $20\ G\Omega$ $0.46\ T\Omega$	Teraohmmeter / CP801-40215-2
High Resistor		$(1 \sim 10)\ m\Omega$ $(10 \sim 100)\ m\Omega$ $(0.1 \sim 1)\ \Omega$ $(1 \sim 10)\ \Omega$ $(10 \sim 100)\ \Omega$ $(0.1 \sim 1)\ k\Omega$ $(1 \sim 10)\ k\Omega$ $(10 \sim 100)\ k\Omega$ $(0.1 \sim 1)\ M\Omega$ $(1 \sim 10)\ M\Omega$ $(10 \sim 100)\ M\Omega$ $(0.1 \sim 1)\ G\Omega$ $(1 \sim 10)\ G\Omega$ $(10 \sim 100)\ G\Omega$ $(0.1 \sim 1)\ T\Omega$ $(1 \sim 10)\ T\Omega$ $(10 \sim 100)\ T\Omega$ Zero Resistance	$12\ m\Omega/\Omega$ $1.2\ m\Omega/\Omega$ $0.13\ m\Omega/\Omega$ $28\ \mu\Omega/\Omega$ $19\ \mu\Omega/\Omega$ $19\ \mu\Omega/\Omega$ $19\ \mu\Omega/\Omega$ $19\ \mu\Omega/\Omega$ $19\ \mu\Omega/\Omega$ $36\ \mu\Omega/\Omega$ $70\ \mu\Omega/\Omega$ $0.59\ m\Omega/\Omega$ $0.64\ m\Omega/\Omega$ $0.86\ m\Omega/\Omega$ $2.4\ m\Omega/\Omega$ $4.3\ m\Omega/\Omega$ $8.5\ m\Omega/\Omega$ $9\ \mu\Omega$	DMM Teraohmmeter / CP801-40215-3
Decade Resistor				

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.
Electrical conductivity meter Electrical conductivity meters	40216	59.21 MS/m 36.00 MS/m 28.14 MS/m 13.12 MS/m	0.49 MS/m 0.36 MS/m 0.32 MS/m 0.32 MS/m	Conductivity STD. / CP801-40216-1
Electrical conductivity		(22 ~ 30) MS/m (30 ~ 40) MS/m (40 ~ 60) MS/m	0.15 MS/m 0.19 MS/m 0.33 MS/m	Electrical conductivity meter / CP801-40216-2
Surface resistivity meters (Sheet resistance meters)		10 mΩ (10 ~ 100) mΩ (0.1 ~ 1) Ω (1 ~ 100) Ω (0.1 ~ 10) kΩ (0.01 ~ 1) MΩ (1 ~ 100) MΩ (0.1 ~ 1) GΩ	12 mΩ/Ω 6.3 mΩ/Ω 6.0 mΩ/Ω 6.3 mΩ/Ω 7.0 mΩ/Ω 6.2 mΩ/Ω 8.1 mΩ/Ω 16 mΩ/Ω	Multimeter, Surface resistivity standard specimens / CP801-40216-3
Surface resistivity standard specimens (Sheet resistance standard specimens)		10 mΩ (10 ~ 100) mΩ (0.1 ~ 1) Ω (1 ~ 100) Ω (0.1 ~ 10) kΩ (0.01 ~ 1) MΩ (1 ~ 100) MΩ (0.1 ~ 1) GΩ	11 mΩ/Ω 4.3 mΩ/Ω 3.9 mΩ/Ω 4.2 mΩ/Ω 5.3 mΩ/Ω 4.1 mΩ/Ω 6.7 mΩ/Ω 15 mΩ/Ω	Multimeter / CP801-40216-4
Impedance bridges/LCR meters	40217			STD Capacitor, STD Inductor, STD Resistor / CP801-40217-1
Capacitance		(20 Hz ~ 1 kHz) (0 ~ 1) pF 1 pF ~ 1 nF 1 nF ~ 1 μF 1 μF ~ 10 mF 10 mF ~ 100 mF (1 ~ 10) kHz (0 ~ 1) pF 1 pF ~ 1 nF 1 nF ~ 1 μF 1 μF ~ 10 mF 10 mF ~ 100 mF (10 kHz ~ 1 MHz) (0 ~ 1) pF 1 pF ~ 1 μF (1 ~ 5) MHz (1 ~ 1 000) pF (5 ~ 13) MHz (1 ~ 1 000) pF	0.12 mF/F 66 μF/F 0.11 mF/F 1.4 mF/F 3.2 mF/F 87 μF/F 59 μF/F 82 μF/F 1.4 mF/F 3.2 mF/F 0.31 mF/F 0.30 mF/F 0.90 mF/F 3.9 mF/F	

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 Capacitor, STD Inductor, STD Resistor / CP801-40217-1
Inductance		(100 Hz/120 Hz) (0 ~ 100) μ H 100 μ H ~ 1 H (1 ~ 10) H (1 kHz) (0 ~ 100) μ H 100 μ H ~ 10 H (10 kHz) (0 ~ 100) μ H 100 μ H ~ 10 mH	0.40 mH/H 0.20 mH/H 1.2 mH/H 0.40 mH/H 0.20 mH/H 1.8 mH/H 0.88 mH/H	
Resistance		1 Ω 60 Hz ~ 1 kHz (1 ~ 10) kHz (1 ~ 10) Ω 60 Hz ~ 10 kHz 10 kHz ~ 1 MHz (1 ~ 5) MHz (5 ~ 10) MHz (10 ~ 13) MHz (10 ~ 100) Ω 60 Hz ~ 10 kHz 10 kHz ~ 1 MHz (1 ~ 5) MHz (5 ~ 10) MHz (10 ~ 13) MHz 100 Ω ~ 1 k Ω 60 Hz ~ 10 kHz (10 ~ 100) kHz 100 kHz ~ 5 MHz (5 ~ 10) MHz (10 ~ 13) MHz (1 ~ 10) k Ω 60 Hz ~ 10 kHz (10 ~ 100) kHz 100 kHz ~ 1 MHz (10 ~ 100) k Ω 1 kHz (1 ~ 100) kHz 100 kHz ~ 1 MHz	82 $\mu\Omega/\Omega$ 0.32 m Ω/Ω 82 $\mu\Omega/\Omega$ 0.31 m Ω/Ω 1.0 m Ω/Ω 4.0 m Ω/Ω 6.0 m Ω/Ω 82 $\mu\Omega/\Omega$ 0.31 m Ω/Ω 0.50 m Ω/Ω 2.0 m Ω/Ω 3.0 m Ω/Ω 82 $\mu\Omega/\Omega$ 0.31 m Ω/Ω 0.51 m Ω/Ω 2.1 m Ω/Ω 3.0 m Ω/Ω 82 $\mu\Omega/\Omega$ 0.21 m Ω/Ω 0.31 m Ω/Ω 0.11 m Ω/Ω 0.31 m Ω/Ω 0.31 m Ω/Ω	
AC Voltage		(0 ~ 10) GHz (0 ~ 10) V	3.7 mV/V	
Frequency		0 Hz ~ 10 GHz	6.5×10^{-5}	
$\tan\delta$		(0 ~ 100) %	2.6×10^{-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 AC Current	40301	(40 Hz ~ 10 kHz) 100 μ A ~ 10 mA 10 mA ~ 10 A (10 ~ 100) A	68 μ A/A 0.22 mA/A 0.70 mA/A	Calibrator / CP801-40301-1
Clamp ammeters/voltmeters DC Voltage DC Current AC Current AC Voltage Resistance Frequency Turn Current Coil DC Ratio AC Ratio	40302	(0 ~ 1 000) V 0 mA ~ 5 000 A (10 Hz ~ 10 kHz) 0 mA ~ 5 000 A (10 Hz ~ 10 kHz) (0 ~ 1 000) V (0 ~ 10) M Ω 10 Hz ~ 10 MHz 2 ~ 50 (60 Hz) 2 ~ 50	60 μ V/V 1.6 mA/A 2.4 mA/A 0.6 mV/V 6.2 $\mu\Omega/\Omega$ 1.9 mHz/Hz 0.12 % 0.15 %	Calibrator, Decade box / CP801-40302-1 Calibrator / CP801-40302-2
AC voltage/current Calibrators AC Voltage AC Current	40303	(10 Hz ~ 1 kHz) (1 ~ 100) mV 100 mV ~ 10 V (10 ~ 1 000) V (1 kHz ~ 100 kHz) (1 ~ 100) mV 100 mV ~ 10 V (10 ~ 1 000) V (100 kHz ~ 1 MHz) 10 mV ~ 10 V (10 Hz ~ 1 kHz) 100 μ A ~ 1 A (1 ~ 10) A (10 ~ 100) A (1 ~ 10) kHz 100 μ A ~ 1 A (1 ~ 10) A (10 ~ 100) A	94 μ V/V 19 μ V/V 44 μ V/V 0.28 mV/V 56 μ V/V 0.23 mV/V 3.0 mV/V 31 μ A/A 35 μ A/A 0.10 mA/A 31 μ A/A 92 μ A/A 0.11 mA/A	AC Current shunt, DMM / CP801-40303-1

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.
Wattmeter calibrators	40304			Power meter,DMM, Shunt, CT, STD Resistance, Voltage Divider / CP801-40304-1
Active power		(50 ~ 60) Hz 0.24 mW ~ 38 kW	1.0×10^{-4}	
Apparent Power		(50 ~ 60) Hz 0.24 mVA ~ 38 kVA	1.0×10^{-4}	
Reactive power		(50 ~ 60) Hz 0.24 mvar ~ 38 kvar	1.0×10^{-4}	
Power factor		(50 ~ 60) Hz -1 ~ 1	1.1×10^{-4}	
Total Harmonic Distortion (Voltage)		(50 ~ 3 000) Hz (0.5 ~ 20) %	0.042 %	
(Current)		(50 ~ 3 000) Hz (0.5 ~ 20) %	0.042 %	
AC Voltage		(40 ~ 1 000) Hz (1 ~ 1 000) V	1.5×10^{-4}	
AC Current		(40 ~ 10 000) Hz 1 mA ~ 100 A (50 ~ 5 000) Hz 100 A ~ 300 A	1.2×10^{-4} 1.7×10^{-4}	
Frequency		(10 ~ 1 000) Hz	0.9×10^{-5}	
DC Power		0.01 mW ~ 2 kW (2 ~ 200) kW (200 ~ 300) kW	1.2×10^{-4} 1.7×10^{-4} 1.8×10^{-4}	
DC Voltage		(0.1 ~ 1 000) V	1.7×10^{-5}	
DC Current		0.1 mA ~ 100 A (100 ~ 1 000) A	1.1×10^{-5} 2.1×10^{-4}	
P _{inst} (Sine)		(0.5 ~ 33.333) Hz 0.25 ~ 5	1.9×10^{-3}	
P _{inst} (Squire)		(0.5 ~ 28) Hz 0.25 ~ 5 30.5 Hz 0.25 ~ 5 33.333 Hz 0.25 ~ 5	2.4×10^{-3} 1.1×10^{-2} 2.4×10^{-3}	
P _{st}		(1 ~ 4 000) cpm 0.25 ~ 5	2.7×10^{-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 current shunts AC Current Shunt AC Current	40305	(10 Hz ~ 1 kHz) 10 mA 100 mA 1 A 10 A (1 kHz ~ 10 kHz) 10 mA 100 mA 1 A 10 A	18 μA/A 20 μA/A 24 μA/A 35 μA/A	AC/DC Transfer STD. / CP801-40305-1
AC Resistance		(10 Hz ~ 1 kHz) (1 ~ 10) mΩ (10 ~ 100) mΩ 100 mΩ ~ 1 Ω (1 ~ 10) Ω 10 Ω ~ 10 kΩ	0.22 mΩ/Ω 0.18 mΩ/Ω 0.12 mΩ/Ω 96 μΩ/Ω 92 μΩ/Ω	
Phase angle generators, synchro resolve generators Phase Power factor	40306	(-360 ~ 360)° -1 ~ 1	0.003 5° 1.1×10 ⁻⁴	Power calibrator / CP801-40306-1
Voltage/Current Phase angle meters/synchro resolve meters Phase	40307	(-360 ~ 360)°	0.003 5°	Power calibrator / CP801-40307-1
Potential transformer test sets Potential transformer test sets Ratio error Phase Angle error Burden VA Power Factor Ratio Tester Ratio	40308	(110 ~ 110 000) V (-19.99 ~ + 19.99) % (110 ~ 110 000) V (-680 ~ + 680)' (0.125 ~ 600) VA 0.8 ~ 1.0 5 ~ 700	0.018 % 0.9' 7.0×10 ⁻³ 1.0×10 ⁻³ 2.0×10 ⁻⁴	Wide ratio transformer, STD PT, PT Compocator, / CP801-40308-1 Precision power analyzer / CP801-40308-2 Ratio Transformer / CP801-40308-3
Potential transformer Ratio Phase Angle	40309	110 V ~ 110 000 V (-100 ~ 1 000) % (-1 000 ~ 1 000)'	0.016 % 0.75'	PT Compocator / CP801-40309-1
Power factor meters Power factor meter Reactive factor meter	40310	-1 ~ 1 -1 ~ 1	1.2 × 10 ⁻⁴ 1.2 × 10 ⁻⁴	Power calibrator / CP801-40310-1 Power calibrator / CP801-40310-2

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.
AC power meters	40311			
AC power meters				
Active power		(50 ~ 60) Hz 0.24 mW ~ 38 kW (38 ~ 100) kW (100 ~ 300) kW (300 ~ 5 000) kW	1.2×10^{-4} 3.4×10^{-4} 5.2×10^{-4} 1.6×10^{-3}	Power calibrator, Trans. Amp., Calibrator, Power Meter / CP801-40311-1
Power factor		(50 ~ 60) Hz -1 ~ 1	1.2×10^{-4}	
Total Harmonic Distortion(Voltage)		(50 ~ 3 000) Hz (0.5 ~ 20) %	0.041 %	
(Current)		(50 ~ 3 000) Hz (0.5 ~ 20) %	0.041 %	
AC voltage		(50 ~ 60) Hz 5 V ~ 1 kV	1.3×10^{-4}	
AC current		(50 ~ 60) Hz 1 mA ~ 20 A (20 ~ 100) A (100 ~ 300) A (300 ~ 5 000) A	2.4×10^{-4} 3.0×10^{-4} 4.9×10^{-4} 1.6×10^{-3}	
Frequency		10 Hz ~ 1 MHz	0.8×10^{-4}	
DC voltage		(0.1 ~ 1 000) V	1.7×10^{-5}	
DC current		0.1 mA ~ 2 A (2 ~ 300) A (300 ~ 5 000) A	1.0×10^{-4} 1.5×10^{-4} 1.6×10^{-3}	
DC Power		0.01 mW ~ 2 kW (2 ~ 300) kW (300 ~ 5 000) kW	1.1×10^{-4} 1.6×10^{-4} 1.6×10^{-3}	
P _{inst} (Sine)		(0.5 ~ 33.333) Hz 0.25 ~ 5	1.9×10^{-3}	
P _{inst} (Squire)		(0.5 ~ 28) Hz 0.25 ~ 5 30.5 Hz 0.25 ~ 5 33.333 Hz 0.25 ~ 5	2.4×10^{-3} 1.1×10^{-2} 2.4×10^{-3}	
P _{st}		(1 ~ 4 000) cpm 0.25 ~ 5	2.7×10^{-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 power meters	40311			
Apparent power meters		(50 ~ 60) Hz		Power calibrator, Trans. Amp., Calibrator, / CP801-40311-2
Apparent power		0.24 mW ~ 38 kW	1.2×10^{-4}	
		(38 ~ 100) kW	3.4×10^{-4}	
		(100 ~ 300) kW	5.2×10^{-4}	
		(300 ~ 5 000) kW	1.6×10^{-3}	Power calibrator, Trans. Amp., Calibrator, / CP801-40311-3
Reactive power meters		(50 ~ 60) Hz		
Reactive power		0.24 mW ~ 38 kW	1.2×10^{-4}	
		(38 ~ 100) kW	3.4×10^{-4}	
		(100 ~ 300) kW	5.2×10^{-4}	
		(300 ~ 5 000) kW	1.6×10^{-3}	
Power signal converter				Power calibrator,DMM / CP801-40311-4
Output Current		(-10 ~ 10)A	4.6×10^{-4}	
AC power supplies	40312			
AC power supplies		(10 Hz ~ 1 kHz)		DMM / CP801-40312-1
AC Voltage		(1 ~ 1 000) V	0.58 mV/V	
AC Current		(10 Hz ~ 1 kHz)		DMM, Current Transformer / CP801-40312-2
		1 mA ~ 20 A	0.73 mA/A	
Frequency	40313	(10 ~ 1 000) Hz	10 μ Hz/Hz	High Voltage Meter, Decade box / CP801-40313-1
AC Current Source				
AC Current				
	40313	(50 ~ 60) Hz		
		100 A ~ 10 kA	3.0 mA/A	
Puncture/ safety testers				
DC voltage		(0 ~ 20) kV	0.52 V/kV	
		(20 ~ 60) kV	1.5 V/kV	
		(60 ~ 90) kV	6.2 V/kV	
AC voltage		(0 ~ 40) kV	1.1 V/kV	
(60 Hz)		(40 ~ 90) kV	10 V/kV	
Breaking current		0.5 mA	5.4 μ A	
		1.0 mA	11 μ A	
		2.0 mA	22 μ A	
		5.0 mA	54 μ A	
		10.0 mA	0.11 mA	
		100 mA	1.1 mA	
Insulation resistance		0 Ω ~ 10 M Ω	1.3 m Ω/Ω	
		(10 ~ 100) M Ω	1.4 m Ω/Ω	
		100 M Ω ~ 1 G Ω	3.0 m Ω/Ω	
		(1 ~ 10) G Ω	3.1 m Ω/Ω	
Operating time		(0 ~ 60) s	0.07 s	

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.
Power recorders AC power/analogue	40314	60 W 600 W 6 kW 30 kW	10 mW 0.11 W 1.2 W 16 W	Power calibrator / CP801-40314-1
AC power/digital		60 W 600 W 6 kW 30 kW	7.7 mW 67 mW 0.83 W 5.7 W	
Current transformer test sets Current transformer test sets Ratio error	40315	(5 ~ 50) A (-19.99 ~ + 19.99) % (50 ~ 10 000) A (-19.99 ~ + 19.99) %	0.018 % 0.011 %	Wide ratio CT, STD. CT, CT Comporator, / CP801-40315-1
Phase Angle error		(5 ~ 50) A (-680 ~ + 680)' (50 ~ 10 000) A (-680 ~ + 680)'	0.9' 0.7'	
Burden VA		(0.125 ~ 600) VA	7.0×10^{-3}	
Power Factor		0.8 ~ 1.0	1.0×10^{-3}	Precision power analyzer / CP801-40315-2
Ratio Tester Ratio		5 ~ 700	2.0×10^{-4}	Ratio Transformer / CP801-40315-3
Current / turn current coil transformers Ratio error	40316	(5 ~ 50) A (-19.99 ~ + 19.99) % (50 ~ 10 000) A (-19.99 ~ + 19.99) %	0.016 % 0.008 %	CT Comporator / CP801-40316-1
Phase Angle error		(5 ~ 50) A (-680 ~ + 680)' (50 ~ 10 000) A (-680 ~ + 680)'	0.80' 0.55'	
LF thermal voltage converters AC Voltage	40317	(10 Hz ~ 10 kHz) 100 mV 1 V 10 V 100 V 1 000 V	32 μ V/V 12 μ V/V 16 μ V/V 26 μ V/V 34 μ V/V	AC/DC Transfer STD. / CP801-40317-1

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 voltmeters	40318	(40 Hz ~ 1 kHz)		Calibrator / CP801-40318-1
AC Voltmeter		10 mV ~ 1 000 V	32 μ V/V	
		(1 ~ 100) kHz		
		10 mV ~ 1 000 V	0.28 mV/V	
AC Differential Voltmeter		(40 Hz ~ 1 kHz)		Calibrator / CP801-40318-2
		(1 ~ 10) V	69 μ V/V	
		(10 ~ 100) V	83 μ V/V	
		(100 ~ 1 000) V	0.10 mV/V	
AC RMS voltmeter		(10 Hz)		Calibrator / CP801-40318-3
Voltage		(0 ~ 1) mV	5.8 mV/V	
		(1 ~ 10) mV	0.85 mV/V	
		10 mV ~ 1 000 V	0.40 mV/V	
		(10 Hz ~ 10 kHz)		
		(0 ~ 1) mV	4.9 mV/V	
		(1 ~ 10) mV	0.67 mV/V	
		10 mV ~ 1 000 V	0.20 mV/V	
		(10 ~ 100) kHz		
		(0 ~ 1) mV	7.6 mV/V	
		(1 ~ 10) mV	1.0 mV/V	
		10 mV ~ 100 V	0.42 mV/V	
		(100 kHz ~ 1 MHz)		
		(1 ~ 100) mV	4.2 mV/V	
		100 mV ~ 10 V	3.1 mV/V	
		(1 ~ 30) MHz		
		100 mV ~ 1 V	21 mV/V	
Level		(10 Hz ~ 1 kHz)		
		(+ 50 ~ -50) dBm	0.016 dB	
		(-50 ~ -60) dBm	0.038 dB	
		(-60 ~ -80) dBm	0.055 dB	
		(1 ~ 100) kHz		
		(+ 40 ~ -50) dBm	0.016 dB	
		(-50 ~ -60) dBm	0.042 dB	
		(-60 ~ -80) dBm	0.058 dB	
		(100 kHz ~ 1 MHz)		
		(+ 20 ~ -40) dBm	0.034 dB	
		(-40 ~ -80) dBm	0.077 dB	
		(1 ~ 30) MHz		
		(+ 10 ~ 0) dBm	0.090 dB	

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.
Watt hour meters	40319	(50 ~ 60) Hz		Watt hour meter / CP801-40319-1
Watt hour meters		(0 ~ 527.8) Wh	1.5×10^{-4}	
		(527.8 ~ 1 266.7) Wh	1.7×10^{-4}	
VA hour meter		(50 ~ 60) Hz		VA hour meter / CP801-40319-2
		(0 ~ 527.8) VAh	1.5×10^{-4}	
		(527.8 ~ 1 266.7) VAh	1.7×10^{-4}	
Var hour meters		(50 ~ 60) Hz		Var hour meter / CP801-40319-3
		(0 ~ 527.8) varh	1.5×10^{-4}	
		(527.8 ~ 1 266.7) varh	1.7×10^{-4}	
Reference watt hour meters				Reference watt hour meter / CP801-40319-4
Active Power		(50 ~ 60) Hz		
		(63.51 ~ 380) V		
		(0.05 ~ 120) A		
		(0.25 ~ 1)		
		(-100 ~ 100) %	0.010 %	
		(50 ~ 60) Hz		
		(63.51 ~ 380) V		
		(0.05 ~ 120) A		
		(-1 ~ 0.25)		
		(-100 ~ 100) %	0.021 %	
		60 Hz		
		(120 ~ 600) V		
		(0.2 ~ 200) A		
		(0.5 ~ 1)		
		(0 ~ 60)°		
		(-100 ~ 100) %	0.003 %	
Reactive Power		60 Hz		
		(120 ~ 600) V		
		(0.2 ~ 200) A		
		(0.5 ~ 1)		
		(30 ~ 90)°		
		(-100 ~ 100) %	0.003 %	
Apparent Power		60 Hz		
		(120 ~ 600) V		
		(0.2 ~ 200) A		
		(0.5 ~ 1)		
		(0 ~ 60)°		
		(-100 ~ 100) %	0.003 %	

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.
Watt hour meters Reference watt hour meters DC Power	40319	(30 ~ 200) V (1 ~ 3) mA (-100 ~ 100) % (30 ~ 200) V 3 mA ~ 10 A (-100 ~ 100) % (30 ~ 200) V (10 ~ 120) A (-100 ~ 100) % (200 ~ 1 000) V (10 ~ 100) A (-100 ~ 100) % (200 ~ 1 000) V (100 ~ 500) A (-100 ~ 100) %	0.050 % 	Reference watt hour meter / CP801-40319-4
Watthour meter test systems Active Power		(50 ~ 60) Hz (63.51 ~ 380) V (0.05 ~ 120) A (0.25 ~ 1) (-100 ~ 100) % (50 ~ 60) Hz (63.51 ~ 380) V (0.05 ~ 120) A (-1 ~ 0.25) (-100 ~ 100) % 60 Hz (120 ~ 600) V (0.2 ~ 200) A (0.5 ~ 1) (0 ~ 60)° (-100 ~ 100) %	0.010 % 	Reference watt hour meter / CP801-40319-5
Reactive Power		60 Hz (120 ~ 600) V (0.2 ~ 200) A (0.5 ~ 1) (30 ~ 90)° (-100 ~ 100) %	0.003 % 	
Apparent Power		60 Hz (120 ~ 600) V (0.2 ~ 200) A (0.5 ~ 1) (0 ~ 60)° (-100 ~ 100) %	0.003 % 	
DC Power		(30 ~ 500) V 5 A (-100 ~ 100) % 200 V 1 mA~ 120 A (-100 ~ 100) %	0.039 % 	

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.
Pulsed high voltage & current meters/Welding current meters	40320			
Resistance Welding Current Meter				Monitoring sys. Calibrator / CP801-40320-1
AC Resistance Welding Current		(40 Hz ~ 1 kHz) 1 A ~ 15 kA (15 ~ 25) kA	10 mA/A 12 mA/A	
AC Resistance Welding Voltage		(40 Hz ~ 1 kHz) 0 mV ~ 10 V	0.6 mV/V	
DC Resistance Welding Current		1 A ~ 20 kA	10 mA/A	
DC Resistance Welding Voltage		0 mV ~ 10 V	0.6 mV/V	
Arc Welding Current meter				Monitoring sys., Calibrator / CP801-40320-2
AC Arc Welding Current		(10 Hz ~ 10 kHz) (1 ~ 1 000) A	2.4 mA/A	
AC Arc Welding Voltage		(10 Hz ~ 10 kHz) 0 mV ~ 100 V	0.6 mV/V	
DC Arc Welding Current		(1 ~ 1 000) A	1.6 mA/A	
DC Arc Welding Voltage		0 mV ~ 100 V	0.6 mV/V	
Ratio transformers	40321			Calibrator,DMM null detector bridge / CP801-40321-1
Ratio		(0 ~ 1 000)	4.0×10^{-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.
LF amplifiers	40401			
LF amplifier Gain(DC)		(0 ~ 60) dB	0.005 dB	Frequency Couter, DMM, True RMS Voltmeter Calibrator / CP801-40401-1
Gain(AC)		0.5 Hz 1 mV (0 ~ 60) dB (1 mV ~ 10 V)	0.035 dB	
		(0 ~ 60) dB 0.5 Hz ~ 100 kHz 1 mV	0.008 dB	
		(0 ~ 60) dB (1 mV ~ 100 V)	0.045 dB	
		(0 ~ 60) dB 100 kHz ~ 1 MHz 1 mV ~ 10 V	0.009 dB	
		(0 ~ 60) dB 1 MHz ~ 10 MHz (1 mV ~ 3.162 3 V)	0.040 dB	
		(0 ~ 60) dB	0.052 dB	
Frequency		(1 Hz ~ 10 MHz)	6.0×10^{-7}	
Charge/voltage Amplifier Gain		20 Hz (-30 ~ 0) dB (0 ~ 60) dB (20 Hz ~ 10 kHz)	0.010 dB 0.045 dB	Frequency Couter, DMM, True RMS Voltmeter / CP801-40401-2
		(-30 ~ 0) dB (0 ~ 60) dB (10 ~ 100) kHz	0.009 dB 0.036 dB	
		(-30 ~ 0) dB (0 ~ 60) dB	0.011 dB 0.041 dB	
Current probe and current probe amplifier for oscilloscope Current (Ap-p)		(DC ~ 1 kHz) (1 ~ 100) mA 100 mA ~ 1 A (1 ~ 20) A (20 ~ 150) A	7.5 mA/A 6.5 mA/A 7.7 mA/A 7.8 mA/A	Frequency Couter, DMM, True RMS Voltmeter / CP801-40401-3
Bandwidth		(DC ~ 100 kHz) (1 ~ 100) mA (100 kHz ~ 1 MHz)	6.8 mA/A	
		(1 ~ 100) mA (1 ~ 30) MHz	9.8 mA/A	
		(1 ~ 100) mA (30 ~ 50) MHz	11 mA/A	
		(1 ~ 100) mA	13 mA/A	
Rise time		≤ 7 ns	0.64 ns	

404. Other DC & LF Measurements

[illegible]

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 Multi Function Calibrator Frequency (output) AC Voltage (output) DC Voltage (input) DC Current (input) Resistance (input) Frequency (input) AC Voltage (input)	40403	10 Hz ~ 1 MHz (10 Hz ~ 1 kHz) 100 mV ~ 1 000 V (1 ~ 100) kHz 100 mV ~ 1 000 V $\pm(0 \sim 100)$ mV $\pm(100 \text{ mV} \sim 10 \text{ V})$ $\pm(10 \sim 1 000)$ V $\pm(0 \sim 1)$ A 1 Ω ~ 100 k Ω 100 k Ω ~ 1 M Ω 10 Hz ~ 100 kHz (10 Hz ~ 1 kHz) (1 ~ 1 000) V (1 kHz ~ 100 kHz) (1 ~ 1 000 V)	10 $\mu\text{Hz/Hz}$ 0.11 mV/V 0.19 mV/V 10 $\mu\text{V/V}$ 9.7 $\mu\text{V/V}$ 10 $\mu\text{V/V}$ 12 $\mu\text{A/A}$ 9.8 $\mu\Omega/\Omega$ 9.8 $\mu\Omega/\Omega$ 84 $\mu\text{Hz/Hz}$ 93 $\mu\text{V/V}$ 0.13 mV/V	DC STD, AC/DC Transfer STD, STD. Resistor, DMM, calibrator / CP801-40403-2
Oscilloscope calibrators Reference frequency Output frequency DC voltage DC current AC voltage(Vp-p) Time marker period Flatness voltage (Vp-p) Flatness decibel (dB) Rising time, falling time Impedance Measurement	40404	1 MHz, 10 MHz 100 Hz ~ 6 GHz (1 ~ 10) mV 10 mV ~ 200 V 100 μA ~ 100 mA 100 mA ~ 10 A (100 Hz ~ 10 kHz) (1 ~ 10) mV 10 mV ~ 100 V (100 ~ 200) V 1 ns ~ 5 s (50 ~ 100) kHz 100 mV ~ 1 V (100 kHz ~ 1 MHz) 100 mV ~ 1 V (1 MHz ~ 1 GHz) 100 mV ~ 1 V (1 GHz ~ 6 GHz) 100 mV ~ 1 V (50 ~ 100) kHz (+ 10 ~ -10) dB (100 kHz ~ 1 MHz) (+ 10 ~ -10) dB (1 MHz ~ 1 GHz) (+ 10 ~ -10) dB (1 ~ 6) GHz (+ 10 ~ -10) dB ≥ 100 ps (1 ~ 100) Ω (1 ~ 19) M Ω	6.1×10^{-11} 6.1×10^{-10} 0.65 $\mu\text{V/V}$ 12 $\mu\text{V/V}$ 59 $\mu\text{A/A}$ 0.25 mA/A 75 $\mu\text{V/V}$ 17 $\mu\text{V/V}$ 59 $\mu\text{V/V}$ 6.1×10^{-8} 2.6 mV/V 7.1 mV/V 14 mV/V 17 mV/V 0.013 dB 0.031 dB 0.063 dB 0.074 dB 6.0×10^{-3} 10 m Ω 0.25 m Ω/Ω	Frequency Couter, DMM, True RMS Voltmeter / CP801-40404-1

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.
Video signal generators	40406			Frequency Couter, Video Analyzer, Oscilloscope / CP801-40406-1
Color pattern generators				
Frequency (NTSC/PAL/SECAM)		1 MHz ~ 1.3 GHz 50 Hz ~ 20 kHz	5.8×10^{-8} 5.8×10^{-5}	
Luminance (NTSC/PAL)		(0.05 ~ 0.1) V (0.1 ~ 0.95) V	7.0×10^{-3} 6.6×10^{-3}	
Chrominance (NTSC/PAL)		(0.05 ~ 0.1) V (0.1 ~ 0.95) V	9.0×10^{-3} 8.4×10^{-3}	
Time		(10 ~ 100) ns 100 ns ~ 1 ms	6.0×10^{-3} 6.0×10^{-3}	
Phase		(0 ~ 360)°	0.80°	Frequency Couter, Video Analyzer, Oscilloscope / CP801-40406-2
Video signal generators				
VGA/SD/HD				
Y Level		(0 ~ 0.1) V (0.1 ~ 1) V	7.0×10^{-3} 6.6×10^{-3}	
Pb Pr Level(Positive)		(0 ~ 0.1) V (0.1 ~ 1) V	7.0×10^{-3} 6.6×10^{-3}	
Pb Pr Level(Negative)		(0 ~ 0.1) V (0.1 ~ 1) V	7.0×10^{-3} 6.6×10^{-3}	
Positive Sync Level		(0.2 ~ 0.4) V	0.6 mV	
Negative Sync Level		(0.2 ~ 0.4) V	0.6 mV	
R G B Level		(0.5 ~ 1) V	0.6 mV	
R G B Sync Level		(4 ~ 6) V	6 mV	
Frequency		1 MHz ~ 1.3 GHz	5.8×10^{-8}	
Time		10 ns ~ 100 ns 100 ns ~ 1 ms	6.0×10^{-3} 6.0×10^{-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.
Audio distortion analyzers/ meters	40407			Calibrator, Distortion Meter Calibrator / CP801-40407-1
Audio distortion analyzers Voltage		(10 Hz ~ 1 kHz) (0.1 ~ 10) mV (1 kHz ~ 100 kHz) (0.1 ~ 10) mV (10 Hz ~ 1 kHz) 10 mV ~ 10 V (1 ~ 100) kHz 10 mV ~ 10 V (100 kHz ~ 10 MHz) 10 mV ~ 10 V (20 Hz ~ 1 kHz) (10 ~ 1 000) V (1 ~ 100) kHz (10 ~ 1 000) V	4.8 mV/V 3.2 mV/V 2.8 mV/V 2.2 mV/V 8.8 mV/V 7.7 mV/V 9.8 mV/V	
dB		(10 Hz ~ 10 kHz) (+ 50 ~ + 20) dB (10 Hz ~ 10 kHz) (+ 20 ~ -50) dB (10 Hz ~ 10 kHz) (-50 ~ -80) dB (10 kHz ~ 10 MHz) (+ 20 ~ -50) dB (10 kHz ~ 10 MHz) (-50 ~ -80) dB	0.055 dB 0.025 dB 0.068 dB 0.033 dB 0.077 dB	
Distortion		(10 Hz ~ 1 kHz) (0 ~ -40) dB (-40 ~ -60) dB (-60 ~ -90) dB (1 kHz ~ 100 kHz) (0 ~ -40) dB (-40 ~ -60) dB (-60 ~ -90) dB	0.029 dB 0.037 dB 0.063 dB 0.037 dB 0.057 dB 0.073 dB	
Harmonic		(20 Hz ~ 1 MHz) (+ 10 ~ -10) dBc	0.038 dB	
Distortion meter calibrators Level		(10 Hz ~ 10 kHz) (+ 20 ~ -50) dB (10 kHz ~ 100 kHz) (+ 20 ~ -50) dB	0.018 dB 0.022 dB	Frequency Couter, DMM, True RMS Voltmeter / CP801-40407-2
Distortion		(10 Hz ~ 100 kHz) (0 ~ -40) dB (10 Hz ~ 100 kHz) (-40 ~ -50) dB (10 Hz ~ 100 kHz) (-50 ~ -80) dB	0.025 dB 0.033 dB 0.055 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 Distortion meter Voltage	40407	(10 Hz ~ 1 kHz) (0.1 ~ 10) mV (1 ~ 100) kHz (0.1 ~ 10) mV (10 Hz ~ 1 kHz) 10 mV ~ 10 V (1 kHz ~ 100 kHz) 10 mV ~ 10 V (100 kHz ~ 10 MHz) 10 mV ~ 10 V (20 Hz ~ 1 kHz) (10 ~ 1 000) V (1 kHz ~ 100 kHz) (10 ~ 1 000) V	4.8 mV/V 3.2 mV/V 2.8 mV/V 2.2 mV/V 8.8 mV/V 7.7 mV/V 9.8 mV/V	Calibrator, Distortion Meter Calibrator / CP801-40407-3
dB		(10 Hz ~ 1 kHz) (+ 50 ~ + 20) dB (10 Hz ~ 1 kHz) (+ 20 ~ -50) dB (10 Hz ~ 1 kHz) (-50 ~ -80) dB (10 kHz ~ 10 MHz) (+ 20 ~ -50) dB (10 kHz ~ 10 MHz) (-50 ~ -80) dB	0.055 dB 0.025 dB 0.068 dB 0.033 dB 0.077 dB	
Distortion		(10 Hz ~ 1 kHz) (0 ~ -40) dB (-40 ~ -60) dB (-60 ~ -90) dB (1 kHz ~ 160 kHz) (0 ~ -40) dB (-40 ~ -60) dB (-60 ~ -70) dB	0.029 dB 0.037 dB 0.063 dB 0.037 dB 0.057 dB 0.073 dB	
LF filters Filter characteristics	40408	(10 Hz ~ 1 kHz) (0 ~ -40) dB (10 Hz ~ 1 kHz) (-40 ~ -60) dB (10 Hz ~ 1 kHz) (-60 ~ -80) dB (1 ~ 100) kHz (0 ~ -40) dB (1 ~ 100) kHz (-40 ~ -60) dB (1 ~ 100) kHz (-60 ~ -80) dB (100 kHz ~ 30 MHz) (0 ~ -40) dB (100 kHz ~ 30 MHz) (-40 ~ -60) dB (100 kHz ~ 30 MHz) (-60 ~ -80) dB	0.025 dB 0.033 dB 0.075 dB 0.028 dB 0.055 dB 0.088 dB 0.055 dB 0.083 dB 0.12 dB	Frequency Couter, DMM, True RMS Voltmeter / CP801-40408-1

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			
LF signal analyzers				Frequency Couter, Calibrator, True RMS Voltmeter / CP801-40409-1
Output frequency		1 Hz ~ 1 MHz	6.1×10^{-6}	
Output voltage		(10 Hz) (1 ~ 10) mV (10 ~ 100) mV 100 mV ~ 10 V (10 ~ 30) V (10 Hz ~ 10 kHz) (1 ~ 10) mV 10 mV ~ 10 V (10 ~ 30) V (10 ~ 100) kHz (1 ~ 10) mV 10 mV ~ 10 V (10 ~ 30) V (100 kHz ~ 1 MHz) 1 mV ~ 30 V	1.2 mV/V 0.58 mV/V 0.39 mV/V 0.42 mV/V 0.86 mV/V 0.22 mV/V 0.32 mV/V 6.0 mV/V 1.0 mV/V 1.4 mV/V 7.1 mV/V	
Output level		(10 Hz ~ 100 kHz) (+ 30 ~ -50) dBm (-50 ~ -60) dBm (-60 ~ -80) dBm (100 kHz ~ 1 MHz) (+ 30 ~ -60) dBm (-60 ~ -80) dBm	0.017 dB 0.038 dB 0.068 dB 0.063 dB 0.084 dB	
Input frequency		1 Hz ~ 100 kHz	6.1×10^{-6}	
Input voltage		(10 Hz) (0.1 ~ 1) mV (1 ~ 10) mV 10 mV ~ 150 V (10 Hz ~ 10 kHz) (0.1 ~ 1) mV (1 ~ 10) mV 10 mV ~ 150 V (10 ~ 100) kHz (0.1 ~ 1) mV (1 ~ 10) mV 10 mV ~ 150 V (100 kHz ~ 2 MHz) 10 mV ~ 10 V	5.8 mV/V 0.85 mV/V 0.40 mV/V 4.9 mV/V 0.67 mV/V 0.20 mV/V 7.6 mV/V 1.0 mV/V 0.42 mV/V 4.2 mV/V	
Input level		(10 Hz ~ 1 kHz) (+ 50 ~ -50) dBm (-50 ~ -60) dBm (-60 ~ -80) dBm (1 ~ 100) kHz (+ 40 ~ -50) dBm (-50 ~ -60) dBm (-60 ~ -80) dBm (100 kHz ~ 2 MHz) (+ 20 ~ -60) dBm (-60 ~ -80) dBm	0.015 dB 0.038 dB 0.055 dB 0.016 dB 0.043 dB 0.058 dB 0.066 dB 0.077 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 LF signal analyzers Filter characteristics (weight, low pass, high pass, etc.)	40409	(10 Hz ~ 2 MHz) (+ 10 ~ -40) dB (-40 ~ -80) dB	0.034 dB 0.077 dB	Frequency Couter, Calibrator, True RMS Voltmeter / CP801-40409-1
Audio frequency analyzers Output frequency Output voltage		1 Hz ~ 500kHz (10 Hz) (1 ~ 10) mV (10 ~ 100) mV 100 mV ~ 10 V (10 ~ 30) V (10 Hz ~ 10 kHz) (1 ~ 10) mV 10 mV ~ 10 V (10 ~ 30) V (10 ~ 100) kHz (1 ~ 10) mV 10 mV ~ 10 V (10 ~ 30) V (100 ~ 160) kHz 1 mV ~ 30 V	6.1×10^{-6} 1.2 mV/V 0.58 mV/V 0.39 mV/V 0.42 mV/V 0.86 mV/V 0.22 mV/V 0.32 mV/V 6.0 mV/V 1.0 mV/V 1.4 mV/V 7.1 mV/V	True RMS Voltmeter / CP801-40409-2
Output level		(10 Hz ~ 100 kHz) (+ 30 ~ -50) dBm (-50 ~ -60) dBm (-60 ~ -80) dBm (100 ~ 160) kHz (+ 30 ~ -60) dBm (-60 ~ -80) dBm	0.017 dB 0.038 dB 0.068 dB 0.063 dB 0.084 dB	
Input Frequency		1 Hz ~ 500 kHz	6.1×10^{-6}	
Input voltage		(10 Hz) (0.1 ~ 1) mV (1 ~ 10) mV 10 mV ~ 150 V (10 Hz ~ 10 kHz) (0.1 ~ 1) mV (1 ~ 10) mV 10 mV ~ 150 V (10 ~ 100) kHz (0.1 ~ 1) mV (1 ~ 10) mV 10 mV ~ 150 V (100 ~ 500) kHz 10 mV ~ 10 V	5.8 mV/V 0.85 mV/V 0.40 mV/V 4.9 mV/V 0.67 mV/V 0.20 mV/V 7.6 mV/V 1.0 mV/V 0.42 mV/V 4.2 mV/V	
Input level		(10 Hz ~ 1 kHz) (+ 50 ~ -50) dBm (-50 ~ -60) dBm (-60 ~ -80) dBm (1 ~ 100) kHz (+ 40 ~ -50) dBm (-50 ~ -60) dBm (-60 ~ -80) dBm (100 ~ 500) kHz (+ 20 ~ -60) dBm (-60 ~ -80) dBm	0.015 dB 0.038 dB 0.055 dB 0.016 dB 0.043 dB 0.058 dB 0.066 dB 0.077 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 Audio frequency analyzers Input DC voltage Distortion SINAD S/N Filter characteristics (weight, low pass, high pass, etc.)	40409	(-300 ~ + 300) V (10 Hz ~ 1 kHz) (0 ~ -40) dB (-40 ~ -50) dB (-50 ~ -90) dB (1 ~ 160) kHz (0 ~ -40) dB (-40 ~ -60) dB (10 Hz ~ 301.5 kHz) (+ 20 ~ -20) dB (10 Hz ~ 10 kHz) (0 ~ 50) dB (50 ~ 90) dB (10 ~ 500) kHz (0 ~ 50) dB (50 ~ 90) dB (10 Hz ~ 500 kHz) (+ 10 ~ -40) dB (-40 ~ -80) dB	85 μ V/V 0.029 dB 0.037 dB 0.063 dB 0.037 dB 0.057 dB 0.055 dB 0.055 dB 0.025 dB 0.077 dB 0.034 dB 0.034 dB 0.077 dB	True RMS Voltmeter / CP801-40409-2
Line frequency meters	40410	(10 ~ 400) V 10 Hz ~ 1 kHz	 1.9 mHz/Hz	Calibrator / CP801-40410-1
Function generators Function generators Reference frequency Frequency (Analogue) (Digital) Voltage Level	40411	1 MHz, 10 MHz 1 mHz ~ 50 MHz 1 mHz ~ 50 MHz (10 Hz) (1 ~ 10) mV (10 ~ 100) mV 100 mV ~ 20 V (10 Hz ~ 10 kHz) (1 ~ 10) mV 10 mV ~ 10 V (10 ~ 20) V (10 ~ 100) kHz (1 ~ 10) mV 10 mV ~ 10 V (10 ~ 20) V (100 kHz ~ 1 MHz) 1 mV ~ 7 V (1 ~ 50) MHz 1 mV ~ 7 V (10 Hz ~ 100 kHz) (+ 30 ~ -40) dBm (-40 ~ -60) dBm (-60 ~ -80) dBm (100 kHz ~ 50 MHz) (+ 30 ~ -60) dBm (-60 ~ -80) dBm	6.1×10^{-11} 6.1×10^{-5} 6.1×10^{-10} 1.2 mV/V 0.58 mV/V 0.49 mV/V 0.86 mV/V 0.26 mV/V 0.39 mV/V 6.0 mV/V 1.0 mV/V 1.5 mV/V 7.6 mV/V 14 mV/V 0.017 dB 0.043 dB 0.072 dB 0.065 dB 0.084 dB	Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-1

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	40411			
Function generators				
Attenuation		(100 Hz ~ 100 kHz) (+ 30 ~ -70) dB	0.06 dB	Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-1
Amplitude modulation		(0 ~ 100) %	1.6×10^{-2}	
Frequency modulation		1 Hz ~ 400 kHz	1.6×10^{-2}	
Phase modulation		(-360 ~ + 360)°	0.06°	
DC offset		(-20 ~ 20) V	84 μ V/V	
rise time, fall time		100 ps ~ 10 s	6.1×10^{-3}	
Symmetry		(0 ~ 100) %	6.1×10^{-2}	
Sawtooth wave linearity		(0 ~ 100) %	1.4×10^{-3}	
sync. TTL output(V_{n-n})		(-20 ~ 20) V	1.1×10^{-3}	
Sweep flatness		(DC ~ 50 MHz) (-10 ~ 10) dB	0.66 dB	
Distortion		(10 Hz ~ 1 kHz) (0 ~ -40) dB (-40 ~ -70) dB (1 ~ 100) kHz (0 ~ -40) dB (-40 ~ -70) dB	0.026 dB 0.071 dB 0.038 dB 0.081 dB	
Harmonics		(10 Hz ~ 50 MHz) (-10 ~ -80) dBc	0.56 dB	
Square wave generators				Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-2
Period				
(Analogue)		100 ps ~ 10 s	8.4 ms/s	
(Digital)		100 ps ~ 10 s	5.8×10^{-9}	
Pulse width		100 ps ~ 10 s	8.4 ms/s	
rise time, fall time		100 ps ~ 10 s	8.4 ms/s	
Overshoot		(0 ~ 100) %	0.035	
Undershoot		(0 ~ 100) %	0.035	
Settling Time		100 ps ~ 10 s	8.4 ms/s	
Duty Ratio		(0 ~ 100) %	0.058	
Voltage (V_{n-n})		10 mV ~ 100 V	10 mV/V	
Function generators, synthesizer				Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-3
Reference frequency		1 MHz, 10 MHz	6.1×10^{-11}	
Frequency		1 mHz ~ 100 MHz	6.1×10^{-10}	

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	40411			Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-3
Function generators, synthesizer				
Voltage		(10 Hz)		
		(1 ~ 10) mV	1.2 mV/V	
		(10 ~ 100) mV	0.58 mV/V	
		100 mV ~ 20 V	0.49 mV/V	
		(10 Hz ~ 10 kHz)		
		(1 ~ 10) mV	0.86 mV/V	
		10 mV ~ 10 V	0.26 mV/V	
		(10 ~ 20) V	0.39 mV/V	
		(10 ~ 100) kHz		
		(1 ~ 10) mV	6.0 mV/V	
		10 mV ~ 10 V	1.0 mV/V	
		(10 ~ 20) V	1.5 mV/V	
		(100 kHz ~ 1 MHz)		
		1 mV ~ 7 V	7.6 mV/V	
		(1 ~ 100) MHz		
		1 mV ~ 7 V	14 mV/V	
Level		(10 Hz ~ 100 kHz)		
		(+ 30 ~ -40) dBm	0.017 dB	
		(-40 ~ -60) dBm	0.043 dB	
		(-60 ~ -80) dBm	0.072 dB	
		(100 kHz ~ 100 MHz)		
		(+ 30 ~ -60) dBm	0.065 dB	
		(-60 ~ -80) dBm	0.084 dB	
Attenuation		(100 Hz ~ 100 kHz)		
		(+ 30 ~ -70) dB	0.06 dB	
Amplitude modulation		(0 ~ 100) %	1.6×10^{-2}	
Frequency modulation		1 Hz ~ 400 kHz	1.6×10^{-2}	
Phase modulation		(-360 ~ + 360)°	0.06°	
DC offset		(-20 ~ 20) V	84 μ V/V	
Rise time, fall time		100 ps ~ 10 s	6.1×10^{-3}	
Symmetry		(0 ~ 100) %	6.1×10^{-2}	
Sawtooth wave linearity		(0 ~ 100) %	1.4×10^{-3}	
Sync. TTL output(V_{n-n})		(-20 ~ 20) V	1.1×10^{-3}	
Sweep flatness		(DC ~ 100 MHz)		
		(-10 ~ 10) dB	0.66 dB	
Distortion		(10 Hz ~ 1 kHz)		
		(0 ~ -40) dB	0.026 dB	
		(-40 ~ -70) dB	0.071 dB	
		(1 ~ 100) kHz		
		(0 ~ -40) dB	0.036 dB	
		(-40 ~ -70) dB	0.081 dB	
Harmonics		(10 Hz ~ 100 MHz)		
		(-10 ~ -80) dBc	0.56 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	40411			Frequency Couter, DMM Oscilloacope Low Noise Amp. / CP801-40411-4
ECG Simulator				
Frequency		0.5 Hz ~ 100 kHz	6.1×10^{-5}	
DC Voltage		(-20 ~ +20) V	0.61 mV/V	
AC Voltage		(1 Hz ~ 10 kHz)		
		(1 ~ 10) mV	2.5 mV/V	
		10 mV ~ 50 V	0.70 mV/V	
Resistance		10 Ω ~ 100 k Ω	60 $\mu\Omega/\Omega$	
ECG Amplitudes (V_{pp})		(0.5 ~ 10) Hz		
		(0.05 ~ 2) mV	3.5 mV/V	
		2 mV ~ 10 V	2.8 mV/V	
Normal Sinus Rate		(30 ~ 600) BPM		
		(2 ~ 0.1) s	1.9×10^{-3}	
		(30 ~ 600) BPM		
		(0.5 ~ 10) Hz	1.9×10^{-3}	
Time		1 μ s ~ 5 s	1.3×10^{-3}	
Period		1 ns ~ 5 s	1.3×10^{-3}	
Pulse width		1 ns ~ 5 s	1.3×10^{-3}	
Genescopes	40412			Frequency Couter, DMM, True RMS Voltmeter / CP801-40412-1
Output frequency				
(Analogue)		10 Hz ~ 100 MHz	12 mHz/Hz	
(Digital)		10 Hz ~ 100 MHz	5.8×10^{-9}	
Output level		(10 Hz ~ 100 kHz)		
		(-20 ~ 0) dB μ V	0.077 dB	
		(10 Hz ~ 100 kHz)		
		(0 ~ 120) dB μ V	0.058 dB	
		(100 kHz ~ 100 MHz)		
		(-20 ~ 0) dB μ V	0.098 dB	
		(100 kHz ~ 100 MHz)		
		(0 ~ 120) dB μ V	0.061 dB	
Input voltage		(10 Hz ~ 100 MHz)		
		10 mV ~ 100 V	6.4 mV/V	
Input level		(10 Hz ~ 100 MHz)		
		(-20 ~ 0) dB	0.098 dB	
		(10 Hz ~ 100 MHz)		
		(0 ~ 90) dB	0.061 dB	
Horizontal axis input		10 ns ~ 5 s	5.8 ms/s	

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.
AC/DC high voltages volt meters	40413			
AC/DC high voltages volt meters				High Voltage Power Supply, DC High Voltage Divider, Potential Transformer, DC Power Supply, Digital multimeter / CP801-40413-1
DC Voltage		$\pm(0.01 \sim 10) \text{ kV}$	1.9×10^{-4}	
		$\pm(10 \sim 50) \text{ kV}$	6.0×10^{-4}	
		$\pm(50 \sim 100) \text{ kV}$	1.2×10^{-3}	
AC Voltage (60 Hz)		$(0.01 \sim 10) \text{ kV}$	9.8×10^{-3}	Hi voltage power supply, Digital multimeter RF Power Meter RMS Voltmeter / CP801-40413-2
		$(10 \sim 20) \text{ kV}$	1.1×10^{-3}	
		$(20 \sim 100) \text{ kV}$	1.2×10^{-3}	
Oscilloscope High Voltage Probe				
Attenuation ratio (DC)		$(0.01 \sim 1) \text{ kV}$		
		1:1 ~ 1 000 :1	2.6×10^{-3}	
(AC)		$(0.01 \sim 1) \text{ kV}$		
(60 Hz ~ 1 kHz)		1:1 ~ 1 000 :1	4.0×10^{-3}	
Bandwidth		$(\text{DC} \sim 100 \text{ kHz})$		
		1 mV ~ 3.5 V	4.0×10^{-3}	
		$(100 \text{ kHz} \sim 1 \text{ MHz})$		
		1 mV ~ 3.5 V	9.2×10^{-3}	
		$(1 \sim 75) \text{ MHz}$		
		1 mV ~ 3.5 V	1.3×10^{-2}	
		$(75 \sim 500) \text{ MHz}$		
		1 mV ~ 2 V	5.3×10^{-2}	High Voltage Power Supply, DC High Voltage Divider, AC Voltage Current STD DC Power Supply, Digital multimeter / CP801-40413-3
		$(500 \sim 3\,500) \text{ MHz}$		
		1 mV ~ 2 V	5.3×10^{-2}	
kVp Meters	40414			High Voltage Power Supply, DC High Voltage Divider, AC Voltage Current STD DC Power Supply, Digital multimeter / CP801-40413-3
DC Voltage		$\pm(1 \sim 60) \text{ kV}$	3.0×10^{-3}	
AC Current (60 Hz)		$(1 \sim 10) \text{ A}$	8.0×10^{-3}	
DC Current		$(100 \sim 300) \text{ mA}$	2.1×10^{-2}	
LF Impulse generators	40414			Oscilloscope / CP801-40414-1
Pulse voltage		0 V ~ 40 kV	0.016	
Pulse rise time		20 ns ~ 100 ms	5.8×10^{-3}	
Pulse width		50 ns ~ 100 ms	5.8×10^{-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.
Leakage current testers	40416			
Leakage current tester				Calibrator,DMM / CP801-40416-1
DC Voltage		0 V ~ 1 kV	4.4 μ V/V	
DC Current		(0 ~ 100) mA	3.4 μ A/A	
AC Voltage		(20 Hz ~ 1 kHz) 0 V ~ 1 kV	0.37 mV/V	
AC Current		(10 Hz ~ 1 kHz) (0 ~ 100) mA	0.1 mA/A	
Resistance		0 Ω ~ 100 k Ω	14 $\mu\Omega/\Omega$	
Safety Analyzer				Calibrator,DMM, Hi voltger meter decade box / CP801-40416-2
leakage current				
DC		(0 ~ 100) mA	3.4 μ A/A	
AC		(10 Hz ~ 1 kHz) (0 ~ 100) mA	0.1 mA/A	
insulation test				
Resistance		0 Ω ~ 100 M Ω	1.4 m Ω/Ω	
Test Voltage		10 V ~ 1 kV	8.2 mV/V	
Earth Resistance				
Resistance		10 m Ω ~ 10 k Ω	0.59 m Ω/Ω	
AC Current		(50 ~ 60) Hz (0 ~ 100) A	0.59 mA/A	
withstand voltage Test				
DC Voltage		0 V ~ 20 kV (20 ~ 60) kV	0.52 V/kV 1.5 V/kV	
AC Voltage		(50 ~ 60) Hz 0 V ~ 40 kV	1.1 V/kV	
AC Voltmeter		(20 Hz ~ 1 kHz)		
AC Voltage		0 V ~ 1 kV	0.37 mV/V	
DC Voltmeter				
DC Voltage		0 V ~ 1 kV	4.4 μ V/V	
mAs Meter				Calibrator, mAs Meter calibrator / CP801-40416-3
DC Current		(1 ~ 20) mA (20 ~ 200) mA (200 ~ 2 000) mA	0.70 μ A/A 0.45 μ A/A 0.44 μ A/A	
AC Current		(50 ~ 60) Hz (1 ~ 20) mA (20 ~ 200) mA (200 ~ 2 000) mA	1.7 μ A/A 0.90 μ A/A 0.90 μ A/A	
DC Current Time Product		(1 ~ 180) mAs (180 ~ 1 800) mAs (1 800 ~ 18 000) mAs	1.7 μ As/mAs 1.7 μ As/mAs 1.7 μ As/mAs	
AC Current Time Product		(50 ~ 60) Hz (1 ~ 180) mAs (180 ~ 1 800) mAs (1 800 ~ 18 000) mAs	1.9 μ As/mAs 1.9 μ As/mAs 1.9 μ As/mAs	

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.
Leakage current testers Touch current tester Input Voltage to Output Voltage Ratio	40416	Unweighted touch current measuring network(U1) 4.00 (20 Hz) 3.98 (50 Hz) 3.97 (60 Hz) 3.92 (100 Hz) 3.72 (200 Hz) 2.87 (500 Hz) 1.96 (1 kHz) 1.35 (2 kHz) 1.07 (5 kHz) 1.02 (10 kHz) 1.00 (20 kHz) 1.00 (50 kHz) 1.00 (100 kHz) 1.00 (200 kHz) 1.00 (500 kHz) 1.00 (1 MHz) Perception or reaction measuring network(U2) 4.00 (20 Hz) 3.99 (50 Hz) 3.99 (60 Hz) 3.96 (100 Hz) 3.87 (200 Hz) 3.54 (500 Hz) 3.43 (1 kHz) 4.06 (2 kHz) 7.50 (5 kHz) 14.1 (10 kHz) 27.8 (20 kHz) 69.2 (50 kHz) 138 (100 kHz) 277 (200 kHz) 691 (500 kHz) 1 382 (1 MHz) Let-go measuring network(U3) 4.00 (20 Hz) 3.99 (50 Hz) 3.98 (60 Hz) 3.95 (100 Hz) 3.83 (200 Hz) 3.36 (500 Hz) 2.87 (1 kHz) 2.65 (2 kHz) 3.57 (5 kHz) 6.09 (10 kHz) 11.6 (20 kHz) 28.7 (50 kHz) 57.2 (100 kHz) 114 (200 kHz) 286 (500 kHz) 572 (1 MHz)	 1.5×10^{-3} 1.5×10^{-3} 1.5×10^{-3} 8.7×10^{-4} 8.2×10^{-4} 6.4×10^{-4} 4.4×10^{-4} 3.1×10^{-4} 2.5×10^{-4} 2.4×10^{-4} 2.4×10^{-4} 4.3×10^{-4} 5.1×10^{-4} 1.8×10^{-3} 0.7×10^{-2} 1.0×10^{-2} 1.5×10^{-3} 1.5×10^{-3} 1.5×10^{-3} 8.8×10^{-4} 8.6×10^{-4} 7.8×10^{-4} 7.6×10^{-4} 9.0×10^{-4} 1.7×10^{-3} 3.1×10^{-3} 6.2×10^{-3} 2.5×10^{-2} 1.4×10^{-2} 2.3×10^{-2} 5.6×10^{-2} 9.1×10^{-2} 1.5×10^{-3} 1.5×10^{-3} 1.5×10^{-3} 8.7×10^{-4} 8.5×10^{-4} 7.4×10^{-4} 6.4×10^{-4} 5.9×10^{-4} 7.9×10^{-4} 1.4×10^{-3} 2.6×10^{-3} 1.0×10^{-2} 2.6×10^{-2} 1.2×10^{-2} 2.4×10^{-2} 4.6×10^{-2}	Calibrator,DMM / CP801-40416-4

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.
Leakage current testers	40416			Calibrator,DMM / CP801-40416-4
Touch current tester				
Resistance		500 Ω	0.1 Ω	
Input Voltage to Output		Unweighted touch current measuring network(U1)		
Current Indication		20 Hz		
		(4.75 ~ 5.25)mA	0.03 mA	
		50 Hz		
		(4.77 ~ 5.27)mA	0.03 mA	
		60 Hz		
		(4.79 ~ 5.29)mA	0.03 mA	
		100 Hz		
		(4.85 ~ 5.36)mA	0.03 mA	
		200 Hz		
		(5.11 ~ 5.65)mA	0.03 mA	
		500 Hz		
		(6.63 ~ 7.33)mA	0.03 mA	
		1 kHz		
		(9.71 ~ 10.73)mA	0.04 mA	
		2 kHz		
		(14.06 ~ 15.54)mA	0.05 mA	
		5 kHz		
		(17.80 ~ 19.68)mA	0.06 mA	
		10 kHz		
		(18.68 ~ 20.64)mA	0.06 mA	
		20 kHz		
		(18.92 ~ 20.92)mA	0.06 mA	
		50 kHz		
		(18.98 ~ 20.98)mA	0.06 mA	
		100 kHz		
		(19.00 ~ 21.00)mA	0.06 mA	
		200 kHz		
		(19.00 ~ 21.00)mA	0.06 mA	
		500 kHz		
		(19.00 ~ 21.00)mA	0.06 mA	
		1 MHz		
		(19.00 ~ 21.00)mA	0.06 mA	

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.
Leakage current testers Touch current tester Input Voltage to Output Current Indication	40416	Perception or reaction measuring network(U2) 20 Hz (4.75 ~ 5.25)mA 50 Hz (4.77 ~ 5.27)mA 60 Hz (4.77 ~ 5.27)mA 100 Hz (4.79 ~ 5.29)mA 200 Hz (4.92 ~ 5.44)mA 500 Hz (5.36 ~ 5.92)mA 1 kHz (5.55 ~ 6.13)mA 2 kHz (4.674 ~ 5.166)mA 5 kHz (2.527 ~ 2.793)mA 10 kHz (1.345 ~ 1.487)mA 20 kHz (0.684 ~ 0.756)mA 50 kHz (275.5 ~ 304.5)μA 100 kHz (137.4 ~ 151.8)μA 200 kHz (68.8 ~ 76.0)μA 500 kHz (27.6 ~ 30.5)μA 1 MHz (13.7 ~ 15.2)μA	0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 19 μA 14 μA 11 μA 9 μA 0.7 μA 0.4 μA 0.2 μA 0.2 μA 0.1 μA	Calibrator,DMM / CP801-40416-4

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.
Leakage current testers Touch current tester Input Voltage to Output Current Indication	40416	Let-go measuring network(U3) 20 Hz (4.75 ~ 5.25)mA 50 Hz (4.77 ~ 5.27)mA 60 Hz (4.77 ~ 5.27)mA 100 Hz (4.81 ~ 5.31)mA 200 Hz (4.96 ~ 5.48)mA 500 Hz (5.66 ~ 6.26)mA 1 kHz (6.61 ~ 7.31)mA 2 kHz (7.16 ~ 7.92)mA 5 kHz (5.32 ~ 5.88)mA 10 kHz (3.116 ~ 3.444)mA 20 kHz (1.634 ~ 1.806)mA 50 kHz (0.663 ~ 0.733)μA 100 kHz (332.5 ~ 367.5)μA 200 kHz (166.1 ~ 183.5)μA 500 kHz (66.5 ~ 73.5)μA 1 MHz (33.3 ~ 36.8)μA	0.03 mA 0.02 mA 0.02 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 15 μA 11 μA 9 μA 0.9 μA 0.5 μA 0.2 μA 0.2 μA	Calibrator,DMM / CP801-40416-4

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.
Electronic AC/DC loads Electronic AC/DC loads DC Voltage	40417	(0 ~ 1) V (1 ~ 800) V	0.08 mV 82 μ V/V	Power supply, DMM, STD Resistor / CP801-40417-1
DC Current		(0 ~ 2) A (2 ~ 100) A	0.17 mA 86 μ A/A	
AC Voltage		(50 ~ 400) Hz (1 ~ 350) V	0.12 V	
AC Current		(50 ~ 400) Hz (1 ~ 20) A	0.07 A	
I-V TESTER DC Voltage		(0 ~ 300) V (300 ~ 1 000) V	24 μ V/V 35 μ V/V	
AC Voltage		(0 ~ 20) A (20 ~ 30) A	66 μ A/A 0.21 mA/A	
Modulation meters Amplitude modulation	40418	(50 kHz ~ 100 MHz) (0 ~ 100) %	0.016	AM/FM Test Source / CP801-40418-1
Frequency modulation		(150 kHz ~ 100 MHz) 1 Hz ~ 400 kHz	0.016	
Phase modulation		(150 kHz ~ 100 MHz) (0 ~ 100) rad	0.016	
Analogue/digital Multimeters	40419	DC Voltage	0 mV \pm (0 ~ 10) mV \pm (10 ~ 100) mV \pm (100 mV ~ 10 V) \pm (10 ~ 1 000) V	Calibrator, STD Resistor, Resistance Indicator Frequency Counter / CP801-40419-1 / CP801-40419-2
			0.19 μ V 3.2 μ V/V 2.0 μ V/V 1.2 μ V/V 2.6 μ V/V	
		AC Voltage	(1 ~ 10) mV 0.5 Hz ~ 10 Hz 10 Hz ~ 1 kHz 1 kHz ~ 100 kHz	
			1.5 mV/V 0.10 mV/V 0.28 mV/V	
			(10 ~ 100) mV 0.5 Hz ~ 10 Hz 10 Hz ~ 1 kHz 1 kHz ~ 100 kHz	
			74 μ V/V 44 μ V/V 0.13 mV/V	
			100 mV ~ 1 V 0.5 Hz ~ 1 Hz 1 Hz ~ 10 Hz 10 Hz ~ 1 kHz 1 kHz ~ 100 kHz	
			66 μ V/V 43 μ V/V 22 μ V/V 60 μ V/V	
			(1 ~ 10) V 0.5 Hz ~ 10 Hz 10 Hz ~ 1 kHz 1 kHz ~ 100 kHz 100 kHz ~ 500 kHz 500 kHz ~ 1 MHz	
			69 μ V/V 23 μ V/V 59 μ V/V 0.19 mV/V 0.80 mV/V	

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			STD Resistor, Resistance Indicator Frequency Counter / CP801-40419-1 / CP801-40419-2
AC Voltage		(10 ~ 100) V 10 Hz ~ 1 kHz 1 kHz ~ 100 kHz	36 μ V/V 88 μ V/V	
		(100 ~ 1 000) V 10 Hz ~ 1 kHz 1 kHz ~ 100 kHz	52 μ V/V 0.23 mV/V	
DC Current		0 nA \pm (0 ~ 100) nA \pm (100 nA ~ 1 μ A) \pm (1 ~ 10) μ A \pm (10 μ A ~ 100 mA) \pm (100 mA ~ 1 A) \pm (1 ~ 20) A	0.36 nA 82 μ A/A 17 μ A/A 6.0 μ A/A 3.4 μ A/A 6.6 μ A/A 58 μ A/A	
AC Current		20 μ A 1 kHz 10 kHz	5.1 nA 14 nA	
		20 μ A ~ 100 μ A 10 Hz ~ 1 kHz 1 kHz ~ 10 kHz	68 μ A/A 91 μ A/A	
		100 μ A ~ 10 mA 10 Hz ~ 10 kHz	76 μ A/A	
		(10 ~ 100) mA 10 Hz ~ 10 kHz	0.10 mA/A	
		100 mA ~ 1 A 10 Hz ~ 10 kHz	0.17 mA/A	
		(1 ~ 20) A 10 Hz ~ 10 kHz	0.31 mA/A	
Resistance		(0 ~ 1) Ω (1 ~ 10) Ω 10 Ω ~ 100 k Ω 100 k Ω ~ 1 M Ω (1 ~ 10) M Ω (10 ~ 100) M Ω 100 M Ω ~ 1 G Ω	6.6 $\mu\Omega$ 3.0 $\mu\Omega/\Omega$ 2.2 $\mu\Omega/\Omega$ 3.4 $\mu\Omega/\Omega$ 6.6 $\mu\Omega/\Omega$ 58 $\mu\Omega/\Omega$ 0.17 m Ω/Ω	
Frequency		10 Hz ~ 10 MHz	5.8×10^{-7}	

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.
Noise meters	40420	(10 Hz ~ 1 kHz)		Calibrator / CP801-40420-1
Voltage		(0.1 ~ 10) mV	4.8 mV/V	
		(1 ~ 100) kHz		
		(0.1 ~ 10) mV	3.2 mV/V	
		(10 Hz ~ 1 kHz)		
		10 mV ~ 10 V	2.8 mV/V	
		(1 ~ 100) kHz		
		10 mV ~ 10 V	2.2 mV/V	
		(100 kHz ~ 10 MHz)		
		10 mV ~ 10 V	8.8 mV/V	
		(20 Hz ~ 1 kHz)		
Voltage		(10 ~ 1 000) V	7.7 mV/V	
		(1 ~ 100) kHz		
		(10 ~ 1 000) V	9.8 mV/V	
dB	40421	(10 Hz ~ 10 kHz)		Oscilloscope Calibrator / CP801-40421-1
		(+ 50 ~ + 20) dB	0.055 dB	
		(10 Hz ~ 10 kHz)		
		(+ 20 ~ -50) dB	0.025 dB	
		(10 Hz ~ 10 kHz)		
		(-50 ~ -80) dB	0.068 dB	
		(10 kHz ~ 10 MHz)		
		(+ 20 ~ -50) dB	0.033 dB	
		(10 kHz ~ 10 MHz)		
		(-50 ~ -80) dB	0.077 dB	
Weighting filter (JIS, NAB, CCIR, DIN, CCITT, etc.)		(20 Hz ~ 100 kHz)		
		(+ 10 ~ -50) dB	0.055 dB	
		(20 Hz ~ 100 kHz)		
		(-50 ~ -80) dB	0.077 dB	
Oscilloscopes	40421			Oscilloscope Calibrator / CP801-40421-1
Vertical axis (voltage)		1 mV ~ 100 V	6.6×10^{-4}	
Horizontal axis (time)		1 ns ~ 5 s	6.0×10^{-4}	
Bandwidth		(50 kHz ~ 100 MHz)		
		100 mV ~ 1 V	3.2×10^{-2}	
		(100 ~ 600) MHz		
		100 mV ~ 1 V	4.2×10^{-2}	
		(600 MHz ~ 3 GHz)		
		100 mV ~ 1 V	3.2×10^{-2}	
		(3 ~ 10) GHz		
		100 mV ~ 1 V	4.3×10^{-2}	
		(10 ~ 18) GHz		
		100 mV ~ 1 V	4.7×10^{-2}	
		(18 ~ 26.5) GHz		
		100 mV ~ 1 V	5.6×10^{-2}	
		(26.5 ~ 40) GHz		
		100 mV ~ 1 V	7.2×10^{-2}	
Timebase output frequency	40421	1 MHz, 5 MHz, 10 MHz	6.2×10^{-10}	Oscilloscope Calibrator / CP801-40421-1
Input impedance		50 Ω , 1 M Ω	5.2 $\mu\Omega/\Omega$	
REF Signal OUT(Voltage)		(0.1 ~ 100) kHz		
		0.1 V ~ 5 V	1.5×10^{-2}	

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 phase meters	40422	(10 Hz ~ 1 kHz)		Frequency Counter / CP801-40422-1
Voltage		10 mV ~ 20 V	7.5 mV/V	
		(1 kHz ~ 100 kHz)		
		10 mV ~ 20 V	6.0 mV/V	
		(100 kHz ~ 10 MHz)		
		10 mV ~ 20 V	11 mV/V	
Phase		(10 Hz ~ 2 MHz)		
		(-360 ~ +360)°	0.062°	
Random wave generators	40423	0.1 Hz ~ 30 MHz	5.8×10^{-9}	Oscilloscope / CP801-40423-1
Frequency				
Level		(10 Hz ~ 10 kHz)		
		(+30 ~ -50) dB	0.028 dB	
		(10 Hz ~ 10 kHz)		
		(-50 ~ -80) dB	0.072 dB	
		(10 kHz ~ 10 MHz)		
		(+30 ~ -50) dB	0.039 dB	
		(10 kHz ~ 10 MHz)		
		(-50 ~ -80) dB	0.082 dB	
	(10 MHz ~ 30 MHz)			
	(+30 ~ -50) dB	0.045 dB		
	(10 MHz ~ 30 MHz)			
		(-50 ~ -80) dB	0.097 dB	
Volt/Current recorders	40424			Calibrator / CP801-40424-1
DC Voltage		±(0 mV ~1 000 V)	75 μV/V	
AC Voltage		(10 Hz ~ 10 kHz)		
		0 mV ~ 1 000 V	0.68 mV/V	
DC Current		±(0 mA ~ 10 A)	90 μA/A	
AC Current		(10 Hz ~ 10 kHz)		
		0 mA ~ 10 A	0.93 mA/A	
Vertical axis (voltage)		1 mV ~ 50 V	1.6×10^{-3}	
Horizontal axis (time)		5 μs ~ 5 s	2.4×10^{-3}	
Bandwidth		(10 kHz ~ 100 MHz)		
		100 mV ~ 1 V	7.6×10^{-2}	
Level		(10 Hz ~ 10 kHz)		
		(+50 ~ +20) dBm	0.042 dB	
		(10 Hz ~ 10 kHz)		
		(+20 ~ -50) dBm	0.016 dB	
		(10 Hz ~ 10 kHz)		
		(-50 ~ -80) dBm	0.028 dB	
		(10 kHz ~ 10 MHz)		
		(+20 ~ -50) dBm	0.018 dB	
Resistnce	(10 kHz ~ 10 MHz)			
	(-50 ~ -80) dBm	0.042 dB		
	(0 ~ 10) Ω	7.6 μΩ/Ω		
	10 Ω ~ 100 kΩ	4.2 μΩ/Ω		
	100 kΩ ~ 1 MΩ	6.0 μΩ/Ω		
	(1 ~ 10) MΩ	8.4 μΩ/Ω		
	(10 ~ 100) MΩ	59 μΩ/Ω		
	Frequency	10 Hz ~ 300 kHz	6.0×10^{-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.
Relay test sets	40425			Calibrator, DMM, CT, Power Meter, Counter / CP801-40425-1
AC Voltage		(10 Hz ~ 1 kHz) 0 mV ~ 1 000 V	0.58 mV/V	
AC Current		(10 Hz ~ 1 kHz) (0 ~ 1 500) A (1 500 ~ 6 000) A	0.62 mA/A 2.4 mA/A	
DC Voltage		0 mV ~ 1 000 V	0.58 mV/V	
AC Voltage		(0 ~ 100) A (100 ~ 1 000) A	0.58 mA/A 3 mA/A	
Time interval		(0 ~ 100) s	0.58 ms/s	
Phase		(0 ~ 360)°	0.058°	
Frequency		10 Hz ~ 1 kHz	5.8 mHz	
Resistance		(1 ~ 100) mΩ 100 mΩ ~ 10 kΩ	1 mΩ/Ω 32 μΩ/Ω	
LF signal generators	40426			Frequency Couter, DMM, True RMS Voltmeter / CP801-40426-1
Frequency (Analogue) (Digital)		1 mHz ~ 10 MHz 1 mHz ~ 10 MHz	12 mHz/Hz 5.8×10^{-9}	
Level		(10 Hz ~ 10 kHz) (+ 20 ~ -50) dB (10 Hz ~ 10 kHz) (-50 ~ -80) dB (10 kHz ~ 10 MHz) (+ 30 ~ -50) dB (10 kHz ~ 10 MHz) (-50 ~ -80) dB	0.025 dB 0.068 dB 0.033 dB 0.077 dB	
Distortion		(10 Hz ~ 1 kHz) (0 ~ -40) dB (-40 ~ -60) dB (-60 ~ -70) dB (1 ~ 100) kHz (0 ~ -40) dB (-40 ~ -60) dB (-60 ~ -70) dB	0.029 dB 0.037 dB 0.063 dB 0.037 dB 0.057 dB 0.073 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 spectrum analyzers	40427			Frequency Couter, DMM, True RMS Voltmeter / CP801-40427-1
Reference frequency		1 MHz, 10 MHz	5.8×10^{-9}	
Readout frequency (Marker frequency)		(1 ~ 100) Hz	99 μHz	
		100 Hz ~ 1 kHz	0.99 mHz	
		(1 ~ 10) kHz	9.9 mHz	
		(10 ~ 100) kHz	99 mHz	
		100 kHz ~ 1 MHz	0.99 Hz	
		(1 ~ 10) MHz	9.9 Hz	
Frequency response		(10 Hz ~ 10 MHz) (+ 10 ~ -10) dBm	0.13 dB	
Span		10 Hz ~ 1 MHz	8.8×10^{-3}	
Reference level		(10 Hz ~ 10 MHz) (+ 30 ~ -80) dB	0.10 dB	
		(10 Hz ~ 10 MHz) (-80 ~ -120) dB	0.13 dB	
Input attenuation		(10 Hz ~ 10 MHz) (+ 30 ~ -80) dB	0.10 dB	
		(10 Hz ~ 10 MHz) (-80 ~ -120) dB	0.13 dB	
Cal. signal level		(0 ~ -30) dBm	0.055 dB	
Resolution bandwidth	1 Hz ~ 1 MHz	1.1×10^{-3}		
Absolute amplitude	(10 Hz ~ 10 MHz) (+ 30 ~ -70) dBm	0.10 dB		
Average noise level	(10 Hz ~ 10 MHz) (-50 ~ -120) dB	0.13 dB		
Sweep generators	40429			Frequency Couter, DMM, True RMS Voltmeter / CP801-40429-1
Frequency		0.1 Hz ~ 10 MHz	12 mHz/Hz	
Voltage		(10 Hz ~ 1 kHz)		
		10 mV ~ 20 V	7.5 mV/V	
		(1 kHz ~ 100 kHz)		
		10 mV ~ 20 V	6.0 mV/V	
		(100 kHz ~ 10 MHz)		
		10 mV ~ 20 V	11 mV/V	
dB		(10 Hz ~ 10 kHz)		
		(+ 30 ~ -50) dB	0.025 dB	
		(10 Hz ~ 10 kHz)		
		(-50 ~ -80) dB	0.068 dB	
		(10 kHz ~ 10 MHz)		
		(+ 30 ~ -50) dB	0.033 dB	
Distortion		(10 kHz ~ 10 MHz) (-50 ~ -80) dB	0.077 dB	
	(10 Hz ~ 1 kHz) (0 ~ -70) dB	0.071 dB		
	(1 kHz ~ 100 kHz) (0 ~ -70) dB	0.081 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 Signal transducers	40430	(Input voltage : DC ~ 100 kHz, 10 V ~ 600 V) (Input current : DC ~ 10 kHz, 10 mA ~ 50 A) (Input frequency : DC ~ 100 kHz)		Frequency Couter, DMM, True RMS Voltmeter / CP801-40430-1
Output voltage		200 mV ~ 300 V	0.95 mV/V	
Output current		4 mA ~ 50 A	0.95 mA/A	
Output frequency		(1 ~ 100) Hz 100 Hz ~ 1 kHz (1 ~ 20) kHz	0.58 mHz 5.8 mHz 58 mHz	
Current transducers, Current Transduction Ratio Error AC		(Input Current : (1 ~ 100) A, 40 Hz ~ 1 kHz) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	5.5×10^{-4} 4.9×10^{-4}	CT Test System, Calibrator, Shunt, Transconductance Amplifier, Resistance Multimeter, Current Multimeter, Current Transformer, Current Transducer / CP801-40430-2
		(Input Current: 100 A ~ 5 kA, 60 Hz) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	2.5×10^{-3} 2.2×10^{-3}	
		(Input Current: (5 ~ 10) kA, 60 Hz) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	3.4×10^{-3} 3.3×10^{-3}	
		(Input Current : (1 ~ 100) A) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	9.6×10^{-5} 7.6×10^{-5}	
		(Input Current: 100 A ~ 3 kA) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	3.0×10^{-4} 2.5×10^{-4}	
		(Input Current: 3 kA ~ 6 kA) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	3.4×10^{-4} 3.0×10^{-4}	
		(Input Current: 6 kA ~ 9 kA) (Output Current : 2 mA ~ 20 A) (-19.999 ~ +19.999) % (Output Voltage : 100 mV ~ 20 V) (-19.999 ~ +19.999) %	3.9×10^{-4} 3.6×10^{-4}	
	DC			

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.
AC-DC transfer standards AC Voltage	40431	(10 Hz ~ 1 kHz) (1 ~ 10) mV (10 ~ 100) mV 100 mV ~ 10 V (10 ~ 1 000) V (1 ~ 100) kHz (1 ~ 10) mV (10 ~ 100) mV 100 mV ~ 10 V (10 ~ 1 000) V (100 kHz ~ 1 MHz) 10 mV ~ 1 V (1 ~ 10) V	82 μ V/V 32 μ V/V 16 μ V/V 34 μ V/V 0.26 mV/V 88 μ V/V 44 μ V/V 82 μ V/V 0.78 mV/V 85 μ V/V	Calibrator, DMM, AC/DC Transfer STD. / CP801-40431-1
Transistor curve tracers Input voltage Input current Output voltage Output current Output current(Pulse)	40432	(0 ~ 1 000) V (0 ~ 20) A (0 ~ 1 000) V (0 ~ 20) A 100 mA ~ 1 000 A	6.3 mV/V 6.6 mA/A 6.3 mV/V 6.6 mA/A 9.4 mA/A	Frequency Couter, DMM, STD. Resistor / CP801-40432-1
Waveform analyzers Output frequency Output voltage Output level Input frequency	40433	(1 ~ 100) Hz 100 Hz ~ 1 kHz (1 ~ 10) kHz (10 ~ 100) kHz 100 kHz ~ 1 MHz (10 Hz ~ 1 kHz) 1 mV ~ 30 V (1 kHz ~ 100 kHz) 1 mV ~ 30 V (100 kHz ~ 1 MHz) 1 mV ~ 30 V (10 Hz ~ 10 kHz) (+ 30 ~ -50) dB (10 Hz ~ 10 kHz) (-50 ~ -80) dB (10 kHz ~ 1 MHz) (+ 30 ~ -50) dB (10 kHz ~ 1 MHz) (-50 ~ -80) dB (1 ~ 100) Hz 100 Hz ~ 1 kHz (1 ~ 10) kHz (10 ~ 100) kHz 100 kHz ~ 2 MHz	0.58 mHz 5.8 mHz 58 mHz 0.58 Hz 5.8 Hz 7.5 mV/V 6.0 mV/V 13 mV/V 0.025 dB 0.068 dB 0.040 dB 0.096 dB 0.58 mHz 5.8 mHz 58 mHz 0.58 Hz 5.8 Hz	Frequency Couter, DMM, True RMS Voltmeter / CP801-40433-1

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 Input voltage	40433	(10 Hz ~ 1 kHz) (0.1 ~ 10) mV	4.8 mV/V	Frequency Couter, DMM, True RMS Voltmeter / CP801-40433-1
		(1 ~ 100) kHz (0.1 ~ 10) mV	3.2 mV/V	
		(10 Hz ~ 1 kHz) 10 mV ~ 10 V	2.8 mV/V	
		(1 ~ 100) kHz 10 mV ~ 10 V	2.2 mV/V	
		(100 kHz ~ 2 MHz) 10 mV ~ 10 V	11 mV/V	
		(20 Hz ~ 1 kHz) (10 ~ 150) V	7.7 mV/V	
		(1 ~ 100) kHz (10 ~ 150) V	9.8 mV/V	
Input level		(10 Hz ~ 10 kHz) (+ 50 ~ + 20) dB	0.055 dB	
		(10 Hz ~ 10 kHz) (+ 20 ~ -50) dB	0.025 dB	
		(10 Hz ~ 10 kHz) (-50 ~ -80) dB	0.068 dB	
		(10 kHz ~ 2 MHz) (+ 20 ~ -50) dB	0.036 dB	
		(10 kHz ~ 2 MHz) (-50 ~ -80) dB	0.080 dB	
Input DC voltage		(-50 ~ + 50) V	0.70 mV/V	
Filter characteristics (weight, low pass, high pass, etc.)		(10 Hz ~ 2 MHz) (+ 10 ~ -50) dB	0.058 dB	
		(10 Hz ~ 2 MHz) (-50 ~ -80) dB	0.080 dB	
Distortion		(10 Hz ~ 1 kHz) (0 ~ -40) dB	0.029 dB	
		(-40 ~ -60) dB	0.037 dB	
		(-60 ~ -90) dB	0.063 dB	
		(1 ~ 100) kHz (0 ~ -40) dB	0.037 dB	
		(-40 ~ -60) dB	0.057 dB	
		(-60 ~ -90) dB	0.073 dB	
AC/DC high voltage generators	40434			Voltage divider / CP801-40434-1
DC Voltage		$\pm(0 \sim 10)$ kV	6.1×10^{-4}	
		$\pm(10 \sim 50)$ kV	6.1×10^{-4}	
		$\pm(50 \sim 100)$ kV	1.2×10^{-3}	
AC Voltage		(0 ~ 5) kV	1.2×10^{-2}	
		(5 ~ 20) kV	0.6×10^{-3}	
		(20 ~ 60) kV	0.6×10^{-3}	
		(60 ~ 100) kV	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.
AC/DC High voltage probes Ratio (DC) Ratio (AC)	40435	(-100 kV ~ 100 kV) 100 ~ 100 000 :1 (0 V ~ 50 kV) 100 ~ 100 000 :1	0.03 % 0.14 %	Calibrator / CP801-40435-1
Logic analyzers Threshold voltage (Vp-p) AC voltage (Vp-p) Time Bandwidth (Vp-p)	40436	(-10 ~ +10) V 1 mV ~ 200 V 1 ns ~ 5 s (DC ~ 100 MHz) 100 mV ~ 1 V	6.4 mV/V 6.5 mV/V 5.8 ms/s 20 mV/V	Frequency Couter, DMM, Tone Pulse Simulator / CP801-40436-1
Telephone testers Tone frequency Tone level Bell Frequency Bell Voltage Loop Current Loop Voltage	40437	(500 ~ 1 500) Hz (+ 5 ~ -15) dBm (10 ~ 100) Hz (10 ~ 150) V (10 ~ 100) mA (20 ~ 100) V	5.8×10^{-4} 0.022 dB 5.8×10^{-3} 5.8×10^{-3} 5.8×10^{-3} 5.8×10^{-3}	Tone Pulse Simulator, DMM / CP801-40437-1
Video signal analyzers Vector scopes Chrominance (NTSC/PAL) Phase Video signal analyzers Squarewave voltage (NTSC/PAL) Sinewave voltage (NTSC/PAL) Sinewave (50 kHz) Sinewave (3.6 MHz) Sinewave (4.43 MHz) Sinewave (5.8 MHz) Time Phase Burst Frequency Video signal monitors Luminance (NTSC/PAL) Chrominance (NTSC/PAL) Frequency response (50 kHz ~ 5 MHz) Time	40438	60 mV ~ 1 V (0 ~ 360)° (60 ~ 100) mV 100 mV ~ 0.95 V (60 ~ 100) mV 100 mV ~ 0.95 V (0.4 ~ 0.6) V (0.4 ~ 0.6) V (0.4 ~ 0.6) V (0.4 ~ 0.6) V 10 ns ~ 100 ns 100 ns ~ 1 ms (0 ~ 360)° (3 ~ 5) MHz (0.1 ~ 1) V (0.1 ~ 1) V (0.4 ~ 0.6) V (10 ~ 100) ns 100 ns ~ 1 ms	6.2×10^{-3} 0.80° 3.6×10^{-3} 3.5×10^{-3} 6.2×10^{-3} 6.1×10^{-3} 6.1×10^{-3} 1.0×10^{-2} 1.0×10^{-2} 1.0×10^{-2} 5.8×10^{-3} 5.8×10^{-4} 0.80° 0.058 Hz 3.6×10^{-3} 6.2×10^{-3} 1.0×10^{-2} 5.8×10^{-3} 5.8×10^{-4}	Video Signal Generator / CP801-40438-1 Video Signal Generator / CP801-40438-2 Video Signal Generator / CP801-40438-3

405. Low frequency electric & magnetic fields

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Flux meters	40503	0.1 mWb ~ 10 Wb	0.7 mWb/Wb	Volt second Generator, DMM / CP801-40503-1
Flux sources Flux Time interval	40504	(0.1 ~ 1) mWb 1 mWb ~ 10 Wb (0.01 ~ 10) s	0.1 mWb/Wb 20 μ Wb/Wb 10 μ S/s	Universal counter, Digital multimeter, Oscilloscope /CP801-40504-1
Magnetometers	40508	(0 ~ 0.1) mT (0.1 ~ 1) mT (1 ~ 25) mT (0.046 ~ 1.7) T	2 μ T 6.5 mT/T 2.3 mT/T 0.4 mT/T	Magnet, Tesla Meter, Helmholtz coil / CP801-40508-1
Reference/standard Magnets	40510	(1 ~ 25) mT (0.046 ~ 1.7) T	3.0 mT/T 2.3 mT/T	Magnet, Tesla Meter, Gauss Meter / CP801-40510-1

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF amplifiers Gain Harmonic	40601	(0 ~ 30) dB 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (30 ~ 60) dB 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (100 kHz ~ 18 GHz) (20 ~ 100) dBc	0.085 dB 0.13 dB 0.18 dB 0.30 dB 0.49 dB 0.11 dB 0.15 dB 0.20 dB 0.31 dB 0.50 dB 0.53 dB	RF Signal Gen / CP801-40601-1

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Coaxial attenuators Attenuation	40602	(0 ~ 10) dB 9 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (10 ~ 30) dB 9 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (30 ~ 60) dB 9 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (60 ~ 110) dB 100 kHz ~ 4.2 GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.06 dB 0.08 dB 0.16 dB 0.32 dB 0.06 dB 0.09 dB 0.23 dB 0.44 dB 0.09 dB 0.10 dB 0.49 dB 0.88 dB 0.35 dB 0.38 dB 0.40 dB 0.43 dB 0.65 dB	Network Analyzer / CP801-40602-1
Reflection Coefficient		9 kHz ~ 100 MHz 100 MHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz	4.1×10^{-3} 5.8×10^{-3} 7.3×10^{-3} 8.5×10^{-3} 8.5×10^{-3}	
BER(Bit Error Rate) testers Communication frequency	40604	(1.544 ~ 155) MHz	5.8×10^{-9}	Rubidium Frequency STD / CP801-40604-1
Pulse width		5 ns ~ 100 μ s	5.8×10^{-3}	
Burst pulse generators Positive Burst voltage (50 Ω)	40605	10 V (10 ~ 100) V 100 V ~ 1 kV (1 ~ 8) kV	0.29 V 2.6×10^{-2} 2.5×10^{-2} 2.4×10^{-2}	Oscilloscope, / CP801-40605-1
Negative Burst voltage (50 Ω)		-10 V (-10 ~ -100) V -100 V ~ -1 kV (-1 ~ -8) kV	0.29 V 2.6×10^{-2} 2.5×10^{-2} 2.4×10^{-2}	
Positive Burst voltage (1 000 Ω)		100 V 100 V ~ 1 kV (1 ~ 8) kV	2.6 V 2.5×10^{-2} 2.4×10^{-2}	
Negative Burst voltage (1 000 Ω)		-100 V -100 V ~ -1 kV (-1 ~ -8) kV	2.6 V 2.5×10^{-2} 2.4×10^{-2}	
Time (Rise/Fall/Width/Period /Duration/Repetition)		1 ns 1 ns ~ 1 μ s 1 μ s ~ 1 s	0.02 ns 1.3×10^{-2} 7.8×10^{-3}	
RF power meter calibrators Power	40607	100 mW 10 mW 1 mW 100 μ W 10 μ W	1.1×10^{-4} 7.6×10^{-5} 9.0×10^{-5} 1.3×10^{-4} 3.0×10^{-3}	DMM / CP801-40607-1

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
EMC transducers; current probes, absorbing clamps, etc. Transfor impedance	40608	5 Hz ~ 1 GHz	1.2 dB	Network analyzer / CP801-40608-1
Delay lines	40609	(1 MHz ~ 18 GHz) 100 ps ~ 1 ms	0.011	Network Analyzer / CP801-40609-1
Coaxial directional couplers/splitters Coupling ratio Reflection coefficient	40610	(10 ~ 30) dB (9 ~ 100) kHz 100 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (30 ~ 70) dB (9 ~ 100) kHz 100 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz 9 kHz ~ 100 MHz 100 MHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz	0.06 dB 0.07 dB 0.10 dB 0.11 dB 0.12 dB 0.08 dB 0.09 dB 0.13 dB 0.14 dB 0.14 dB 4.1×10^{-3} 5.8×10^{-3} 7.3×10^{-3} 8.5×10^{-3} 8.5×10^{-3}	Network Analyzer / CP801-40610-1
DS1/DS3 communications systems Communication frequency Pulse width	40612	(1.544 ~ 155) MHz 5 ns ~ 100 μ s	5.8×10^{-9} 5.8×10^{-3}	Oscilloscope / CP801-40612-1
Electrostatic discharge generators Discharge current (1st order) Discharge current (30 ns)	40613	2 kV/ 7.5 A 4 kV/ 15 A 6 kV/ 22.5 A 8 kV/ 30 A 15 kV/ 56 A 30 kV/ 112 A -2 kV/ -7.5 A -4 kV/ -15 A -6 kV/ -22.5 A -8 kV/ -30 A -15 kV/ -56 A -30 kV/ -112 A 2 kV/ 4 A 4 kV/ 8 A 6 kV/ 12 A 8 kV/ 16 A 15 kV/ 30 A 30 kV/ 60 A -2 kV/ 4 A -4 kV/ 8 A -6 kV/ 12 A -8 kV/ 16 A -15 kV/ -30 A -30 kV/ -60 A	2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 2.8×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2} 5.1×10^{-2}	Oscilloscope, Attenuator / CP801-40613-1

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Electrostatic discharge generators Discharge current (60 ns)	40613	2 kV/ 2 A	9.9×10^{-2}	Oscilloscope, Attenuator / CP801-40613-1
		4 kV/ 4 A	9.9×10^{-2}	
		6 kV/ 6 A	9.9×10^{-2}	
		8 kV/ 8 A	9.9×10^{-2}	
		15 kV/ 15 A	9.9×10^{-2}	
		30 kV/ 30 A	9.9×10^{-2}	
		-2 kV/ 2 A	9.9×10^{-2}	
		-4 kV/ 4 A	9.9×10^{-2}	
		-6 kV/ 6 A	9.9×10^{-2}	
		-8 kV/ 8 A	9.9×10^{-2}	
		-15 kV/ -15 A	9.9×10^{-2}	
		-30 kV/ -30 A	9.9×10^{-2}	
Rising time (1st order)		(0.5 ~ 1) ns	5.8×10^{-3}	
		(1 ~ 10) ns	5.8×10^{-3}	
		(10 ~ 200) ns	5.8×10^{-3}	
Discharge voltage		(100 ~ 1 000) V	2.8×10^{-2}	
		(1 ~ 8) kV	2.8×10^{-2}	
		(8 ~ 30) kV	2.8×10^{-2}	
Discharge current		(0.1 ~ 1) A	2.8×10^{-2}	
		(1 ~ 20) A	2.8×10^{-2}	
		(20 ~ 100) A	2.8×10^{-2}	
EMC receivers	40614			EMI calibration pulse generator / CP801-40614-1
Frequency Accuracy		(5 ~ 100) MHz	5.8×10^{-10}	
Input Impedance (VSWR)		10 Hz ~ 10 MHz	0.008 5	
		10 MHz ~ 20 GHz	0.019	
		(20 ~ 40) GHz	0.030	
Frequency Respose (sine wave)		10 Hz ~ 100 kHz	0.082 dB	
		100 kHz ~ 10 GHz	0.20 dB	
		(10 ~ 18) GHz	0.23 dB	
		(18 ~ 26) GHz	0.32 dB	
		(26 ~ 40) GHz	0.39 dB	
Quasi peak amplitude (absolute calibration)		9 kHz ~ 1 GHz	0.55 dB	
Variation with repetition (CISPR Band)		(9 ~ 150) kHz	0.09 dB	
		150 kHz ~ 30 MHz	0.10 dB	
		(30 ~ 300) MHz	0.13 dB	
		300 MHz ~ 1 GHz	0.14 dB	
Overall selectivity		100 kHz ~ 40 GHz	0.18 dB	
Intermediate frequency		100 kHz ~ 40 GHz	0.18 dB	
Image frequency rejection		100 kHz ~ 40 GHz	0.18 dB	
Spurious response		100 kHz ~ 40 GHz	0.18 dB	
Random noise		100 kHz ~ 40 GHz	0.19 dB	
Resolution Bandwidth		10 Hz ~ 20 MHz	1.1×10^{-2}	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF filters Insertion loss	40615	(9 ~ 300) kHz 300 kHz ~ 3 GHz (3 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz	0.21 dB 0.21 dB 0.26 dB 0.32 dB 0.32 dB 0.33 dB	Network Analyzer / CP801-40615-1
RF impedance meters Reference frequency Level Impedance	40616	1 MHz ~ 18 GHz (100 kHz ~ 1 GHz) (0 ~ -20) dBm (1 ~ 4) GHz (0 ~ -20) dBm (4 ~ 10) GHz (0 ~ -20) dBm (10 ~ 18) GHz (0 ~ -20) dBm 1 MHz~ 3 GHz (3 ~ 18) GHz	5.8×10^{-10} 0.13 dB 0.14 dB 0.18 dB 0.22 dB 0.60 Ω 1.0 Ω	Calibration Kit / CP801-40616-1
Line impedance stabilization networks ; LISN, CDN, ISN, etc. LISN Impedance Voltage Division Factor Phase Angle Isolation Absorbing clamp Insertion Loss Reflection coefficient CDN Impedance Phase Angle Voltage Division Factor Longitudinal conversion loss ISN Impedance Phase Angle Voltage division factor Isolation Conversion loss	40618	 5 Hz ~ 1 GHz 5 Hz ~ 1 GHz 5 Hz ~ 1 GHz 5 Hz ~ 1 GHz 9 kHz ~ 1 GHz 9 kHz ~ 1 GHz 5 Hz ~ 1 GHz 5 Hz ~ 1 GHz 5 Hz ~ 1 GHz 5 Hz ~ 1 GHz 100 kHz ~ 100 MHz 100 kHz ~ 100 MHz 100 kHz ~ 100 MHz 100 kHz ~ 100 MHz 100 kHz ~ 100 MHz	 0.60 Ω 0.15 dB 0.88° 0.21 dB 0.9 dB 1.6×10^{-2} 1.7×10^{-2} 0.19° 0.15 dB 0.28 dB 0.74 Ω 1.8° 0.12 dB 0.24 dB 0.28 dB	Impedance Meter / CP801-40618-1 Network analyzer / CP801-40618-2 Impedance Meter / CP801-40618-3 Network analyzer / CP801-40618-4

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Coaxial standard mismatches Coaxial standard mismatches SWR	40619	1.0 ~ 1.1 (10 MHz ~ 2 GHz) (2 ~ 26.5) GHz 1.1 ~ 1.2 (10 MHz ~ 2 GHz) (2 ~ 26.5) GHz 1.2 ~ 1.3 (10 MHz ~ 2 GHz) (2 ~ 26.5) GHz 1.3 ~ 1.5 (10 MHz ~ 2 GHz) (2 ~ 26.5) GHz 1.5 ~ 2.0 (10 MHz ~ 2 GHz) (2 ~ 26.5) GHz	0.011 0.018 0.012 0.020 0.013 0.022 0.017 0.031 0.028 0.057	Network analyzer / CP801-40619-1
Calibration kit Magnitude of reflection coefficient		(Termination) 45 MHz ~ 2 GHz (2 ~ 7) GHz (7 ~ 19) GHz (19 ~ 26.5) GHz (Short circuit, open circuit) 45 MHz ~ 2 GHz (2 ~ 7) GHz (7 ~ 19) GHz (19 ~ 26.5) GHz	0.008 2 0.008 9 0.009 6 0.014 0.035 0.029 0.030 0.034	Network analyzer / CP801-40619-2
Phase of reflection coefficient		(Short circuit, open circuit) 45 MHz ~ 1 GHz (1 ~ 7) GHz (7 ~ 19) GHz (19 ~ 26.5) GHz	2.1° 3.0° 5.9° 7.7°	
Mobile communication test sets	40621	9 kHz ~ 40 GHz (+ 20 ~ -20) dBm 9 kHz ~ 3 GHz (3 ~ 6) GHz (6 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz (-20 ~ -60) dBm 9 kHz ~ 3 GHz (3 ~ 6) GHz (6 ~ 18) GHz (18 ~ 26) GHz (26 ~ 34) GHz (34 ~ 40) GHz (40 ~ 50) GHz (-60 ~ -80) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	5.8×10^{-10} 0.078 dB 0.10 dB 0.15 dB 0.23 dB 0.28 dB 0.33 dB 0.10 dB 0.14 dB 0.18 dB 0.26 dB 0.31 dB 0.41 dB 0.57 dB 0.20 dB 0.23 dB 0.28 dB 0.30 dB 0.35 dB 0.48 dB	RF Power Meter / CP801-40621-1
Frequency				
Output level				

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Mobile communication test sets	40621	(-80 ~ -100) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.22 dB 0.25 dB 0.30 dB 0.32 dB 0.36 dB 0.49 dB	RF Power Meter / CP801-40621-1
Output level		(-100 ~ -110) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.33 dB 0.35 dB 0.39 dB 0.41 dB 0.45 dB 0.56 dB	
		(-110 ~ -120) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.85 dB 0.87 dB 0.89 dB 0.90 dB 0.91 dB 0.97 dB	
Output frequency modulation		(Rate; 100 Hz ~ 10 kHz) (1 ~ 100) kHz	0.016	
Amplitude modulation		(Rate; 100 Hz ~ 10 kHz) (0 ~ 100) %	0.016	
Output AC level		(10 Hz ~ 1 kHz) (10 ~ 100) mV (1 kHz ~ 25 kHz) (10 ~ 100) mV (10 Hz ~ 1 kHz) 100 mV ~ 1 V (1 ~ 25) kHz 100 mV ~ 1 V (10 Hz ~ 1 kHz) (1 ~ 5) V (1 ~ 25) kHz (1 ~ 5) V	0.15 mV 0.21 mV 14 mV 21 mV 53 mV 97 mV	
Input AC level		(50 Hz ~ 1 kHz) 100 mV ~ 1 V (1 ~ 25) kHz 100 mV ~ 1 V (50 Hz ~ 1 kHz) (1 ~ 10) V (1 ~ 25) kHz (1 ~ 10) V (50 Hz ~ 1 kHz) (10 ~ 30) V (1 ~ 25) kHz (10 ~ 30) V	0.98 mV 2.2 mV 10 mV 29 mV 17 mV 68 mV	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Mobile communication test sets	40621			RF Power Meter / CP801-40621-1
Input level		(+ 20 ~ -20) dBm 9 kHz ~ 3 GHz (3 ~ 6) GHz (6 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz	0.10 dB 0.14 dB 0.18 dB 0.29 dB 0.43 dB 0.47 dB	
		(-20 ~ -60) dBm 9 kHz ~ 3 GHz (3 ~ 6) GHz (6 ~ 18) GHz (18 ~ 26) GHz (26 ~ 34) GHz (34 ~ 40) GHz (40 ~ 50) GHz	0.12 dB 0.16 dB 0.21 dB 0.29 dB 0.44 dB 0.55 dB 0.69 dB	
		(-60 ~ -80) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.21 dB 0.25 dB 0.30 dB 0.33 dB 0.38 dB 0.52 dB	
		(-80 ~ -100) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.23 dB 0.27 dB 0.31 dB 0.34 dB 0.38 dB 0.54 dB	
		(-100 ~ -110) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.34 dB 0.36 dB 0.40 dB 0.42 dB 0.47 dB 0.59 dB	
		(-110 ~ -120) dBm 9 kHz ~ 2 GHz (2 ~ 4.2) GHz (4.2 ~ 8) GHz (8 ~ 12.4) GHz (12.4 ~ 18) GHz (18 ~ 26.5) GHz	0.86 dB 0.88 dB 0.90 dB 0.92 dB 0.93 dB 0.99 dB	
Input frequency modulation		(1 ~ 100) kHz	0.016	
Input amplitude modulation		(0 ~ 100) %	0.016	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Modulation meters	40622			AM/FM Test source / CP801-40622-1
Amplitude modulation		(CW; 150 kHz ~ 1 GHz) (0 ~ 100) %	0.016	
Frequency modulation		(CW; 150 kHz ~ 1 GHz) (1 ~ 100) kHz	0.016	
Phase modulation		(CW; 150 kHz ~ 1 GHz) (-360 ~ 360)°	0.064°	
Amplitude modulation distortion		(0 ~ 100) %	0.015	
Frequency modulation distortion		(0 ~ 100) %	0.015	
Input frequency		(1 ~ 100) Hz 100 Hz ~ 1 kHz (1 ~ 10) kHz (10 ~ 100) kHz	0.58 mHz 5.8 mHz 58 mHz 0.58 Hz	
Input voltage		(50 Hz ~ 1 kHz) 100 mV ~ 3 V (1 ~ 40) kHz 100 mV ~ 3 V	4.8 mV/V 3.2 mV/V	
Power		(150 kHz ~ 18 GHz) 10 µW ~ 100 mW	3.4×10^{-3}	
Tuned RF Level		(0 ~ 30) dB (30 ~ 60) dB (60 ~ 80) dB (80 ~ 90) dB (90 ~ 100) dB (100 ~ 110) dB (110 ~ 120) dB	0.037 dB 0.041 dB 0.045 dB 0.054 dB 0.080 dB 0.091 dB 0.11 dB	
Network analyzers	40623			Calibration kit / CP801-40623-1
Frequency		5 Hz ~ 50 GHz	5.8×10^{-10}	
Source power		(+ 20 ~ -20) dBm 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz	0.082 dB 0.098 dB 0.13 dB 0.21 dB 0.23 dB 0.35 dB	
		(-20 ~ -40) dBm 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz	0.13 dB 0.14 dB 0.16 dB 0.23 dB 0.26 dB 0.36 dB	
		(-40 ~ -70) dBm 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26) GHz	0.17 dB 0.18 dB 0.19 dB 0.25 dB	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Network analyzers	40623	(0 ~ 30) dB		Calibration kit / CP801-40623-1
Dynamic Range		150 kHz ~ 1 GHz	0.14 dB	
		(1 ~ 2) GHz	0.15 dB	
		(30 ~ 60) dB		
		150 kHz ~ 1 GHz	0.16 dB	
		(1 ~ 2) GHz	0.20 dB	
		(60 ~ 90) dB		
		150 kHz ~ 1 GHz	0.23 dB	
		(1 ~ 2) GHz	0.27 dB	
Voltage standing wave ratio		1.1		
		10 MHz ~ 2 GHz	0.012	
		(2 ~ 18) GHz	0.019	
		(18 ~ 26.5) GHz	0.021	
		1.2		
		10 MHz ~ 2 GHz	0.013	
		(2 ~ 18) GHz	0.017	
		(18 ~ 26.5) GHz	0.020	
		(26.5 ~ 40) GHz	0.040	
		(40 ~ 50) GHz	0.049	
		1.3		
		10 MHz ~ 2 GHz	0.014	
		(2 ~ 18) GHz	0.023	
		(18 ~ 26.5) GHz	0.025	
		1.5		
		10 MHz ~ 2 GHz	0.018	
		(2 ~ 18) GHz	0.032	
		(18 ~ 26.5) GHz	0.033	
		(26.5 ~ 40) GHz	0.055	
		(40 ~ 50) GHz	0.071	
		2.0		
		10 MHz ~ 2 GHz	0.029	
		(2 ~ 18) GHz	0.058	
		(18 ~ 26.5) GHz	0.058	
		(26.5 ~ 40) GHz	0.092	
		(40 ~ 50) GHz	0.12	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.		
Noise figure meters	40624			Noise Source / CP801-40624-1		
Reference frequency		10 MHz	5.8×10^{-10}			
Noise source		0 V 28 V	7.2 μV 1.1 mV			
Input VSWR		10 MHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz	0.058 0.084 0.094			
Noise figure Accuracy		10 MHz ~ 10 GHz (10 ~ 18) GHz (18 ~ 26.5) GHz	0.15 dB 0.17 dB 0.19 dB			
Gain measurement		IF ATT 0 dB ~ 70 dB	0.12 dB			
Noise impulse simulators	40626			Oscilloscope, Attenuator / CP801-40626-1		
Positive Impulse voltage		(0 ~ 4) kV	1.5×10^{-2}			
Negative Impulse voltage		(0 ~ 4) kV	1.5×10^{-2}			
Impulse width		50 ns ~ 1 ms	6.0×10^{-3}			
Impulse rising Time		(0.5 ~ 5) ns	6.0×10^{-3}			
Impulse repetation		(1 ~ 100) ms	6.0×10^{-3}			
Coaxial noise sources	40628			Noise source test set / CP801-40628-1		
ENR		(4.5 dB ~ 6.5 dB) (10 ~ 100) MHz 100 MHz ~ 2 GHz (2 ~ 6) GHz (6 ~ 8) GHz (8 ~ 12) GHz (12 ~ 18) GHz (14 dB ~ 16 dB) (10 ~ 100) MHz 100 MHz ~ 2 GHz (2 ~ 6) GHz (6 ~ 8) GHz (8 ~ 12) GHz (12 ~ 18) GHz (12 dB ~ 17 dB) (10 ~ 100) MHz 100 MHz ~ 2 GHz (2 ~ 6) GHz (6 ~ 8) GHz (8 ~ 12) GHz (12 ~ 18) GHz (12 dB ~ 17 dB) (10 ~ 100) MHz 100 MHz ~ 2 GHz (2 ~ 6) GHz (6 ~ 8) GHz (8 ~ 12) GHz (12 ~ 18) GHz (18 ~ 26.5) GHz	 0.25 dB 0.26 dB 0.25 dB 0.26 dB 0.28 dB 0.30 dB 0.25 dB 0.25 dB 0.26 dB 0.25 dB 0.31 dB 0.33 dB 0.25 dB 0.25 dB 0.28 dB 0.25 dB 0.31 dB 0.35 dB 0.36 dB			
Reflection coefficient		(0 ~ 1) 10 MHz ~ 2 GHz (2 ~ 18) GHz (18 ~ 26.5) GHz	 0.004 8 0.007 3 0.007 4			
RF phase meters		40631				Signal Generator / CP801-40631-1
Phase			(1 MHz ~ 18 GHz) (0 ~ 360)°		 0.21°	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF power meters Power CAL factor	40635	(1 MHz ~ 18 GHz) 10 μ W ~ 100 mW (100 kHz ~ 1 GHz) 100 mW ~ 100 W (100 ~ 500) W	3.4×10^{-3} 0.022 0.023	RF Power Meter Calibrator / CP801-40635-1
Diode power sensors CAL Factor	40636	(100 kHz ~ 10 MHz) 1 μ W ~ 1 mW (10 MHz ~ 10 GHz) 1 μ W ~ 1 mW (10 ~ 18) GHz 1 μ W ~ 1 mW (18 ~ 26.5) GHz 1 μ W ~ 1 mW	0.020 0.026 0.031 0.043	Sensor Calibrator / CP801-40636-1
Thermocouple power sensors CAL Factor Reflection Coefficient	40637	(9 kHz ~ 1 GHz) 100 μ W ~ 10 mW (1 ~ 10) GHz 100 μ W ~ 10 mW (10 ~ 18) GHz 100 μ W ~ 10 mW (18 ~ 26.5) GHz 100 μ W ~ 10 mW (26.5 ~ 40) GHz 100 μ W ~ 10 mW (40 ~ 50) GHz 100 μ W ~ 10 mW 9 kHz ~ 2 GHz (2 ~ 26.5) GHz (26.5 ~ 40) GHz (40 ~ 50) GHz	1.3×10^{-2} 1.5×10^{-2} 1.8×10^{-2} 3.6×10^{-2} 4.0×10^{-2} 6.8×10^{-2} 5.2×10^{-3} 8.9×10^{-3} 1.6×10^{-2} 2.1×10^{-2}	Sensor Calibrator / CP801-40637-1
Pulse generators Period (Analogue) (Digital) Delay time Pulse width Rise time, fall time Overshoot Undershoot Settling Time Duty Ratio Voltage(V _{p-p})	40638	100 ps ~ 10 s 100 ps ~ 10 s 100 ps ~ 10 s 100 ps ~ 10 s 100 ps 200 ps 300 ps 400 ps 500 ps 600 ps ~ 10 s (0 ~ 100) % (0 ~ 100) % 100 ps 200 ps 300 ps 400 ps 500 ps 600 ps ~ 10 s (0 ~ 100) % 10 mV ~ 100 V	6.0×10^{-3} 5.8×10^{-9} 6.0×10^{-3} 6.0×10^{-3} 25 ps 13 ps 10 ps 7.0 ps 5.6 ps 6.0×10^{-3} 0.035 0.035 25 ps 13 ps 10 ps 7.0 ps 5.6 ps 6.0×10^{-3} 0.058 10 mV/V	Oscilloscope / CP801-40638-1

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Radar test sets	40639			Power Meter, Signal Geneator, Frequency Counter / CP801-40639-1
Output Frequency		10 Hz ~ 18 GHz	6.1×10^{-10}	
Output level		(+ 20 ~ -20) dBm		
		9 kHz ~ 3 GHz	0.09 dB	
		(3 ~ 6) GHz	0.10 dB	
		(6 ~ 18) GHz	0.15 dB	
		(-20 ~ -60) dBm		
		9 kHz ~ 3 GHz	0.10 dB	
		(3 ~ 6) GHz	0.14 dB	
		(6 ~ 18) GHz	0.18 dB	
		(-60 ~ -80) dBm		
		150 kHz ~ 1.3 GHz	0.33 dB	
		(1.3 ~ 10) GHz	0.38 dB	
		(10 ~ 18) GHz	0.43 dB	
		(-80 ~ -100) dBm		
		150 kHz ~ 1.3 GHz	0.54 dB	
		(1.3 ~ 10) GHz	0.58 dB	
		(10 ~ 18) GHz	0.63 dB	
		(-100 ~ -120) dBm		
		150 kHz ~ 1.3 GHz	0.65 dB	
		(1.3 ~ 10) GHz	0.69 dB	
		(10 ~ 18) GHz	0.70 dB	
Harmonics		9 kHz ~ 18 GHz		
		(-10 ~ -110) dBc	0.37 dB	
Frequency modulation (Output)		(0.1 ~ 500) kHz	1.6×10^{-2}	
Amplitude modulation (Output)		(0.1 ~ 100) %	1.6×10^{-2}	
Phase (Output)		(0 ~ 360) °	3.5×10^{-2} (degree)	
DDM (Output)		-1 ~ 1	2.8×10^{-3}	
SDM (Output)		0.1 ~ 1	2.8×10^{-3}	
Input Frequency	9 kHz ~ 18 GHz	5.8×10^{-8}		

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Radar test sets	40639			Power Meter, Signal Generator, Frequency Counter / CP801-40639-1
Input Level		(+ 20 ~ -20) dBm 9 kHz ~ 3 GHz (3 ~ 6) GHz (6 ~ 18) GHz (-20 ~ -60) dBm 9 kHz ~ 3 GHz (3 ~ 6) GHz (6 ~ 18) GHz (-60 ~ -80) dBm 150 kHz ~ 1.3 GHz (1.3 ~ 10) GHz (10 ~ 18) GHz (-80 ~ -100) dBm 150 kHz ~ 1.3 GHz (1.3 ~ 10) GHz (10 ~ 18) GHz (-100 ~ -120) dBm 150 kHz ~ 1.3 GHz (1.3 ~ 10) GHz (10 ~ 18) GHz	0.11 dB 0.13 dB 0.17 dB 0.12 dB 0.16 dB 0.19 dB 0.36 dB 0.39 dB 0.44 dB 0.55 dB 0.59 dB 0.64 dB 0.66 dB 0.67 dB 0.71 dB	
Frequency modulation (Input)		(0.1 ~ 500) kHz	1.6×10^{-2}	
Amplitude modulation (Input)		(0.1 ~ 100) %	1.6×10^{-2}	
Phase (Input)		(0 ~ 360) °	3.5×10^{-2} (degree)	
DDM (Input)		-1 ~ 1	2.8×10^{-3}	
SDM (Input)		0.1 ~ 1	2.8×10^{-3}	
Input Power		9 kHz ~ 1 GHz 100 mW ~ 100 W	2.2×10^{-3}	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF signal generators	40640	100 kHz ~ 40 GHz	5.8×10^{-10}	Power meter / CP801-40640-1
Frequency		(+ 20 ~ -20) dBm		
		9 kHz ~ 3 GHz	0.078 dB	
		(3 ~ 6) GHz	0.10 dB	
		(6 ~ 18) GHz	0.15 dB	
		(18 ~ 26) GHz	0.23 dB	
		(26 ~ 40) GHz	0.28 dB	
		(40 ~ 50) GHz	0.33 dB	
		(50 ~ 67) GHz	0.42 dB	
		(67 ~ 80) GHz	0.50 dB	
		(80 ~ 95) GHz	0.58 dB	
		(95 ~ 110) GHz	0.70 dB	
Level		(-20 ~ -60) dBm		
		9 kHz ~ 3 GHz	0.10 dB	
		(3 ~ 6) GHz	0.14 dB	
		(6 ~ 18) GHz	0.18 dB	
		(18 ~ 26) GHz	0.26 dB	
		(26 ~ 34) GHz	0.31 dB	
		(34 ~ 40) GHz	0.41 dB	
		(40 ~ 50) GHz	0.57 dB	
		(-60 ~ -80) dBm		
		9 kHz ~ 2 GHz	0.20 dB	
		(2 ~ 4.2) GHz	0.23 dB	
		(4.2 ~ 8) GHz	0.28 dB	
		(8 ~ 12.4) GHz	0.30 dB	
		(12.4 ~ 18) GHz	0.35 dB	
		(18 ~ 26.5) GHz	0.48 dB	
		(-80 ~ -100) dBm		
		9 kHz ~ 2 GHz	0.22 dB	
		(2 ~ 4.2) GHz	0.25 dB	
		(4.2 ~ 8) GHz	0.30 dB	
		(8 ~ 12.4) GHz	0.32 dB	
		(12.4 ~ 18) GHz	0.36 dB	
		(18 ~ 26.5) GHz	0.49 dB	
		(-100 ~ -110) dBm		
		9 kHz ~ 2 GHz	0.33 dB	
		(2 ~ 4.2) GHz	0.35 dB	
		(4.2 ~ 8) GHz	0.39 dB	
		(8 ~ 12.4) GHz	0.41 dB	
		(12.4 ~ 18) GHz	0.45 dB	
		(18 ~ 26.5) GHz	0.56 dB	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF signal generators	40640	(-110 ~ -120) dBm		Power meter / CP801-40640-1
Level		9 kHz ~ 2 GHz	0.85 dB	
		(2 ~ 4.2) GHz	0.87 dB	
		(4.2 ~ 8) GHz	0.89 dB	
		(8 ~ 12.4) GHz	0.89 dB	
		(12.4 ~ 18) GHz	0.91 dB	
		(18 ~ 26.5) GHz	0.97 dB	
Frequency modulation		Rate : 100 Hz ~ 10 kHz DC ~ 300 kHz	1.6×10^{-2}	
Amplitude modulation		Rate : 100 Hz ~ 10 kHz (0 ~ 100) %	1.6×10^{-2}	
Phase modulation		Rate : 100 Hz ~ 10 kHz (0 ~ 80) rad	1.6×10^{-2}	
Frequency modulation distortion		(0 ~ 100) %	1.5×10^{-2}	
Amplitude modulation distortion		(0 ~ 100) %	1.5×10^{-2}	
Phase modulation distortion		(0 ~ 100) %	1.5×10^{-2}	
Harmonic		100 kHz ~ 18 GHz (-10 ~ -110) dBc	0.37 dB	
Spurious		100 kHz ~ 18 GHz (-10 ~ -110) dBc	0.40 dB	
Pulse modulation		1 μ s ~ 1 s	1.6×10^{-2}	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF spectrum analyzers	40641			RF signal generator / CP801-40641-1
Reference frequency		10 MHz	5.8×10^{-10}	
Frequency (Frequency Readout)		9 kHz ~ 110 GHz	7.3×10^{-9}	
Frequency (Frequency Marker Count)		9 kHz ~ 110 GHz	1.3×10^{-9}	
Frequency Response Level		9 kHz ~ 3 GHz	0.10 dB	
		(3 ~ 6) GHz	0.14 dB	
		(6 ~ 18) GHz	0.18 dB	
		(18 ~ 26) GHz	0.29 dB	
		(26 ~ 40) GHz	0.43 dB	
		(40 ~ 50) GHz	0.47 dB	
		(50 ~ 67) GHz	0.56 dB	
		(67 ~ 80) GHz	0.67 dB	
		(80 ~ 95) GHz	0.75 dB	
		(95 ~ 110) GHz	0.84 dB	
Frequency Span		800 Hz ~ 2.4 GHz	1.4×10^{-3}	
Reference level		(-30 ~ 0) dBm	0.11 dB	
		(-70 ~ -30) dBm	0.32 dB	
Input Attenuation Switching		(0 ~ 30) dB	0.11 dB	
		(30 ~ 70) dB	0.40 dB	
Resolution bandwidth		10 Hz ~ 100 MHz	1.1×10^{-3}	
Resolution bandwidth selectivity		10 Hz ~ 100 MHz	3.1×10^{-3}	
Resolution bandwidth switching error		10 Hz ~ 100 MHz	0.11 dB	
Absolute Level		10 MHz ~ 1 GHz		
		(-20 ~ 0) dBm	0.11 dB	
		(-50 ~ -20) dBm	0.16 dB	
Average noise level		9 kHz ~ 18 GHz	0.97 dB	
		(18 ~ 26) GHz	1.4 dB	
		(26 ~ 40) GHz	1.7 dB	
		(40 ~ 50) GHz	2.1 dB	
Sideband noise level		9 kHz ~ 18 GHz	1.7 dB	
Scale Fidelity		(0 ~ 100) dB	0.09 dB	
Reference signal level		(-30 ~ -10) dBm	0.13 dB	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF Speed guns Speed	40642	(5 ~ 3 000) m/s	0.03 m/s	Function Generator, Spectrum Analyzer / CP801-40642-1
Surge generators Positive Surge voltage	40643	(1 ~ 100) V	3.5×10^{-2}	Oscilloscope, High voltage probe / CP801-40643-1
		(0.1 ~ 1) kV	3.6×10^{-2}	
		(1 ~ 40) kV	3.8×10^{-2}	
		(40 ~ 120) kV	4.0×10^{-2}	
Negative Surge voltage		(1 ~ 100) V	3.5×10^{-2}	
		(0.1 ~ 1) kV	3.6×10^{-2}	
		(1 ~ 40) kV	3.8×10^{-2}	
		(40 ~ 120) kV	4.0×10^{-2}	
Positive Surge current		1 A ~ 1 kA	3.3×10^{-2}	
		(1 ~ 50) kA	3.5×10^{-2}	
	(50 ~ 100) kA	3.8×10^{-2}		
	(100 ~ 200) kA	3.8×10^{-2}		
Negative Surge current	1 A ~ 1 kA	3.3×10^{-2}		
	(1 ~ 50) kA	3.5×10^{-2}		
	(50 ~ 100) kA	3.8×10^{-2}		
	(100 ~ 200) kA	3.8×10^{-2}		
Surge rise time		5 ns ~ 1 s	7.8×10^{-3}	
Surge width		20 ns ~ 10 s	7.8×10^{-3}	
SWR meters SWR meter Sensitivity	40644	10 MHz ~ 18 GHz	34 mV	STD Mismatch / CP801-40644-1
Level		10 MHz ~ 18 GHz	0.14 dB	
Site master Frequency		25 MHz ~ 4 GHz	1.4×10^{-7}	
Standing wave ratio		(25 MHz ~ 1 GHz)		
		1.1	0.016	
		1.2	0.018	
		1.3	0.022	
		1.5	0.026	
		2.0	0.044	
		(1 GHz ~ 4 GHz)		
		1.1	0.024	
		1.2	0.027	
		1.3	0.032	
		1.5	0.042	
		2.0	0.068	
RF terminations Reflection Coefficient	40645	5 Hz ~ 100 MHz 100 MHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz	4.1×10^{-3} 5.8×10^{-3} 7.3×10^{-3} 8.5×10^{-3} 8.5×10^{-3}	Network Analyzer / CP801-40645-1

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Coaxial thermistor mounts CAL Factor	40646	(100 kHz ~ 10 MHz) 100 μ W ~ 10 mW (10 MHz ~ 10 GHz) 100 μ W ~ 10 mW (10 GHz ~ 18 GHz) 100 μ W ~ 10 mW (18 ~ 26.5) GHz 100 μ W ~ 10 mW	0.011 0.015 0.020 0.040	Sensor Calibrator / CP801-40646-1
Transmssion trouble testers Transmission analyzer Output frequency	40648	10 Hz ~ 100 Hz 100 Hz ~ 1 kHz (1 ~ 10) kHz (10 ~ 100) kHz 100 kHz ~ 1 MHz	0.58 mHz 5.8 mHz 58 mHz 0.58 Hz 5.8 Hz	Oscilloscope / CP801-40648-1
Output level		(10 Hz ~ 10 kHz) (+ 10 ~ -50) dBm (10 Hz ~ 10 kHz) (-50 ~ -100) dBm (10 kHz ~ 1 MHz) (+ 10 ~ -50) dBm (10 kHz ~ 1 MHz) (-50 ~ -100) dBm	0.025 dB 0.068 dB 0.040 dB 0.096 dB	
Input frequency		(10 ~ 100) Hz 100 Hz ~ 1 kHz (1 ~ 10) kHz (10 ~ 100) kHz 100 kHz ~ 1 MHz	0.58 mHz 5.8 mHz 58 mHz 0.58 Hz 5.8 Hz	
Input level		(10 Hz ~ 10 kHz) (+ 10 ~ -50) dBm (10 Hz ~ 10 kHz) (-50 ~ -100) dBm (10 kHz ~ 1 MHz) (+ 10 ~ -50) dBm (10 kHz ~ 1 MHz) (-50 ~ -100) dBm	0.022 dB 0.025 dB 0.036 dB 0.080 dB	
LAN analyzer Delay Time(100m)		466 ns	0.6 ns	Lan Analyzer / CP801-40648-2
Impedance		(50 ~ 150) Ω	1.0 Ω	
Resistance		825 Ω 453 Ω 953 Ω	0.6 Ω 0.6 Ω 0.6 Ω	
Frequency		(1 ~ 500) MHz	5.8×10^{-8}	
Insertion loss		(1 ~ 500) MHz	0.2 dB	

406. Radio frequency measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
RF voltmeters Voltage	40650	(1 ~ 100) MHz 1 mV ~ 10 V (100 MHz ~ 1 GHz) 1 mV ~ 10 V	9.9×10^{-3} 0.020	RF Voltmeter Calibrator / CP801-40650-1
Vector voltmeters Voltage	40651	(1 ~ 100) MHz 1 mV ~ 10 V (100 MHz ~ 1 GHz) 1 mV ~ 10 V	0.026 0.040	RF Signal Generator / CP801-40651-1
Phase		(0 ~ 360)°	0.21°	
Field strength meters Frequency	40652	100 kHz ~ 3 GHz	1.1×10^{-5}	RF Signal Gen. / CP801-40652-1
Power		(100 kHz ~ 1 GHz) (-20 ~ +15) dBm (-60 ~ -20) dBm (-80 ~ -60) dBm (-100 ~ -80) dBm (1 ~ 3) GHz (-20 ~ +15) dBm (-60 ~ -20) dBm (-80 ~ -60) dBm (-100 ~ -80) dBm	0.17 dB 0.19 dB 0.34 dB 0.56 dB 0.18 dB 0.19 dB 0.42 dB 0.60 dB	
AM/FM test sources Frequency	40653	1 MHz ~ 1 GHz	5.8×10^{-10}	Frequency counter / CP801-40653-1
Residual FM		Bandwidth(50 Hz ~ 3 kHz)	5.9×10^{-3}	
Residual AM		Bandwidth(50 Hz ~ 3 kHz)	5.7×10^{-5}	
FM Distortion		Deviation (12.5 kHz ~ 400 kHz)	0.012	
FM Flatness		Rate(DC ~ 200 kHz)	1.5×10^{-3}	
AM Flatness		Rate(50 Hz ~ 100 kHz)	2.2×10^{-3}	
DIP simulators DIP	40654	(0 ~ 10) % (10 ~ 50) % (50 ~ 120) %	0.1 % 0.3 % 0.6 %	Oscilloscope, DMM / CP801-40654-1
DIP Voltage		(1 ~ 456) V	0.82×10^{-3}	
Duration time		1 ms ~ 10 s	7.8×10^{-3}	
Rising & Falling time		(0.1 ~ 10.0) μs	7.8×10^{-3}	

407. Field strength & antennas

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Probes Field Strength Probe	40702	(10 Hz ~ 10 kHz) (1 ~ 200) V/m	0.12	RF Power Meter / CP801-40702-1
		(10 kHz ~ 80 MHz) (1 ~ 400) V/m	0.13	
		(80 ~ 400) MHz (1 ~ 600) V/m	0.13	
		(400 MHz ~ 1 GHz) (1 ~ 200) V/m	0.15	
		(1 ~ 18) GHz (1 ~ 200) V/m	0.15	
Magnetic Flux Density Probe		(10 Hz ~ 60 Hz) (2.65 ~ 390) mA/m	0.12	DMM / CP801-40702-2
		(0.39 ~ 715) A/m	0.06	
		(60 Hz ~ 1 kHz) (2.65 ~ 390) mA/m	0.12	
		(0.39 ~ 240) A/m	0.06	
		(1 ~ 10) kHz (2.65 ~ 390) mA/m	0.12	
		(0.39 ~ 8.2) A/m	0.06	
		(10 ~ 400) kHz (2.65 ~ 390) mA/m	0.13	
		(0.39 ~ 8.2) A/m	0.06	
		(400 kHz ~ 1 MHz) (2.65 ~ 390) mA/m	0.13	
		(0.39 ~ 2.67) A/m	0.06	
		(1 MHz ~ 80 MHz) (2.65 mA/m ~ 1.06 A/m)	0.13	
		(80 MHz ~ 400 MHz) (2.65 mA/m ~ 1.6 A/m)	0.13	
		(400 MHz ~ 1 GHz) (2.65 ~ 80) mA/m	0.15	
Dipole Antennas Dipole Antenna	40703	(1 ~ 18) GHz	1.1 dB	Network Analyzer / CP801-40703-1
Antenna Factor		(1 ~ 18) GHz	1.3 dB	
Antenna Pattern		20 MHz ~ 18 GHz	0.02	
VSWR				
Biconical Antenna		(1 ~ 18) GHz	1.3 dB	Network Analyzer / CP801-40703-2
Antenna Factor		(1 ~ 18) GHz	1.3 dB	
Antenna Pattern		20 MHz ~ 18 GHz	0.02	
VSWR				
Log-Periodic Antenna		(1 ~ 18) GHz	1.3 dB	Network Analyzer / CP801-40703-3
Antenna Factor		(1 ~ 18) GHz	1.3 dB	
Antenna Pattern		20 MHz ~ 18 GHz	0.02	
VSWR				
Loop antennas	40704			Network Analyzer / CP801-40704-1
Antenna Factor		(10 Hz ~ 400 MHz)	1.3 dB	
Monopole antennas	40705			Network Analyzer / CP801-40705-1
Antenna Factor		(1 kHz ~ 30 MHz)	1.3 dB	

407. Field strength & antennas

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Horn antennas	40707			Network Analyzer / CP801-40707-1
Antenna Factor		200 MHz ~ 18 GHz (18 ~ 40) GHz	0.9 dB 1.4 dB	
Antenna Pattern		(1 ~ 18) GHz	1.3 dB	
VSWR		200 MHz ~ 18 GHz (18 ~ 40) GHz	0.02 0.04	

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	50101			IPRT, TC-T /CP801-50101-1 TC-K /CP801-50101-1 IPRT, TC-T /CP801-50101-2 IPRT, TC-T /CP801-50101-3 IPRT, TC-T /CP801-50101-4 IPRT, TC-T /CP801-50101-5 SPRT , TC-T, TC-K /CP801-50101-6 SPRT , TC-T, TC-K /CP801-50101-6 SPRT, TC-T, TC-K /CP801-50101-7 TC-S /CP801-50101-7 TC-S /CP801-50101-7 TC-B /CP801-50101-7 SPRT /CP801-50101-8 SPRT, TC-S /CP801-50101-9
Temperature Chambers		(-180 ~ 250) °C (250 ~ 650) °C	0.5 °C 1.0 °C	
Incubators		(-10 ~ 60) °C	0.5 °C	
Freezers		(-195 ~ 0) °C	0.5 °C	
Autoclaves		(50 ~ 140) °C	0.5 °C	
PCT		(50 ~ 140) °C	0.5 °C	
Liquid Baths		(-196 ~ -80) °C (-80 ~ 550) °C	0.1 °C 0.02 °C	
Furnaces		(50 ~ 600) °C (600 ~ 1 100) °C (1 100 ~ 1 500) °C (1 500 ~ 1 600) °C	0.2 °C 1.3 °C 2.7 °C 3.2 °C	
Ice-point baths		0 °C	0.006 °C	
Dry-block calibrators		(-100 ~ 660) °C (660 ~ 1 100) °C (1 100 ~ 1 200) °C	0.013 °C 1.0 °C 2.2 °C	

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 indicators/ recorders/controllers (with sensor)	50102			
Thermoelectric recorders / indicators / controllers		(-196 ~ -95) °C (-95 ~ 660) °C (660 ~ 1 100) °C (1 100 ~ 1 500) °C (1 500 ~ 1 600) °C	0.07 °C 0.02 °C 1.0 °C 2.2 °C 2.7 °C	SPRT . TC-S, TC-B /CP801-50102-1
Resistance type recorders / indicators / controllers		(-196 ~ -95) °C (-95 ~ 660) °C	0.07 °C 0.02	SPRT /CP801-50102-2
Electric temperature calibrators		(-196 ~ 660) °C (660 ~ 1 600) °C	0.005 °C 0.19 °C	CALIBRATOR, Thermometer /CP801-50102-9
Temperature indicators/ recorders/controllers (without sensor)				
Thermoelectric recorders / indicators / controllers		(-196 ~ 1 600) °C	0.29 °C	CALIBRATOR /CP801-50102-10
Resistance type recorders / indicators / controllers		(-196 ~ 660) °C	0.014 °C	CALIBRATOR /CP801-50102-13
Glass thermometers; liquid- in-glass, Beckmann	50103			
Beckmann thermometers		(-20 ~ 160) °C	0.02 °C	SPRT /CP801-50103-1
Liquid-in-glass thermometers		(-80 ~ 360) °C	0.04 °C	SPRT /CP801-50103-2
Resistance thermometers; SPRT, TPRT, thermistors, etc.	50104			
Industrial resistance thermometers		(-196 ~ 200) °C (200 ~ 660) °C	0.02 °C 0.05 °C	SPRT /CP801-50104-1
Thermistors		(-80 ~ 200) °C	0.03 °C	SPRT /CP801-50104-2
Standard Platinum Resistance Thermometers		(-200 ~ 0) °C (0 ~ 420) °C (420 ~ 660) °C	1.8 mK 1.9 mK 2.8 mK	ITS-90 Fixed Point Cells /CP801-50104-3
Thermal expansion thermometers; bimetal, gas or liquid type	50105			
Bimetal thermometers		(-50 ~ 500) °C	0.2 °C	SPRT /CP801-50105-1
Thermal expansion thermometer		(-50 ~ 500) °C	0.2 °C	/CP801-50105-2

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Thermocouples; noble metal, base metal, pure metal, special type, etc. Noble-metal thermocouple thermometers Base-metal Thermocouple thermometers	50106	(0 ~ 1 100) °C (1 100 ~ 1 500) °C (1 500 ~ 1 600) °C (-196 ~ -100) °C (-100 ~ 200) °C (200 ~ 500) °C (500 ~ 1 100) °C	0.9 °C 2.2 °C 2.6 °C 0.5 °C 0.2 °C 0.4 °C 1.2 °C	TC-S, TC-B /CP801-50106-1 SPRT, TC-S /CP801-50106-2
Temperature transducers Temperature transducers (with sensor) Temperature transducers (without sensor)	50107	(-196 ~ 660) °C (660 ~ 1 100) °C (1 100 ~ 1 600) °C (-196 ~ 660) °C (660 ~ 1 600) °C	0.16 °C 1.6 °C 2.9 °C 0.15 °C 0.39 °C	SPRT, TC, CALIBRATOR, MULTIMETER /CP801-50107-1
Primary fixed-point cells and apparatus Ar T.P. Cell Hg T.P. Cell Water T.P. Cell Ga M.P. Cell Sn F.P. Cell Zn F.P. Cell Al F.P. Cell	50108	-189.3442 °C -38.8344 °C 0.01 °C 29.7646 °C 231.928 °C 419.527 °C 660.323 °C	0.7 mK 1.3 mK 0.6 mK 0.9 mK 1.3 mK 1.6 mK 2.6 mK	ITS-90 Fixed Point Cells /CP801-50108-1

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.
Optical pyrometers	50203	(900 ~ 1 500) °C	4 °C	STRIP LAMPS /CP801-50203-1
Radiation thermometers	50204	(0 ~ 50) °C (50 ~ 200) °C (200 ~ 800) °C (800 ~ 1 600) °C (1 600 ~ 2 600) °C	0.6 °C 0.7 °C 1.2 °C 1.4 °C 4.7 °C	Standard Radiation Thermometer /CP801-50204-1
Thermal image apparatus	50205	(0 ~ 50) °C (50 ~ 200) °C (200 ~ 800) °C (800 ~ 1 200) °C	0.6 °C 0.7 °C 1.4 °C 1.8 °C	Standard Radiation thermometer /CP801-50205-1
Blackbody furnaces	50206	(0 ~ 50) °C (50 ~ 200) °C (200 ~ 800) °C (800 ~ 1 600) °C (1 600 ~ 2 600) °C	0.6 °C 0.7 °C 1.2 °C 1.4 °C 4.4 °C	Standard Radiation thermometer /CP801-50206-1
Ear thermometers	50207	(34 ~ 42) °C	0.1 °C	SPRT, IR bath /CP801-50207-1

503. Humidity

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Dew-point hygrometers chilled mirror dew-point hygrometers	50301	(-70 ~ -50) °C D.P.	0.50 °C D.P.	Dew-point hygrometers /CP801-50301-1
Alumina thin film dew-point hygrometers		(-50 ~ 20) °C D.P.	0.30 °C D.P.	Dew-point hygrometers /CP801-50301-2
Relative humidity hygrometers	50302	(-70 ~ 20) °C D.P.	1.9 °C D.P.	
Polymer thin film hygrometers		(5 ~ 80) % R.H. (80 ~ 98) % R.H.	1.3 % R.H. 1.6 % R.H.	Dew-point hygrometers /CP801-50302-1
Digital Thermo-hygrometers		(-40 ~ 0) °C (0 ~ 60) °C (60 ~ 80) °C	0.55 °C 0.30 °C 0.55 °C	Dew-point hygrometers /CP801-50302-2
Hair hygrometers		(5 ~ 80) % R.H. (80 ~ 98) % R.H. (-40 ~ 0) °C (0 ~ 60) °C (60 ~ 80) °C	1.3 % R.H. 1.6 % R.H. 0.55 °C 0.30 °C 0.55 °C	Dew-point hygrometers /CP801-50302-3
Psychrometers	50303	(20 ~ 95) % R.H.	2.5 % R.H.	Dew-point hygrometers /CP801-50303-1
		(0 ~ 60) °C	0.6 °C	
Temperature humidity recorders	50304	(20 ~ 95) % R.H.	3 % R.H.	Dew-point hygrometers /CP801-50304-1
Temperature humidity recorders -Polymer Thin Film		(-20 ~ 80) °C	2 °C	Dew-point hygrometers /CP801-50304-2
Hygrothermograph		(20 ~ 95) % R.H. (-20 ~ 80) °C	3 % R.H. 2 °C	
Transducers; dew- point/relative humidity	50305	(5 ~ 80) % R.H. (80 ~ 98) % R.H.	1.3 % R.H. 1.6 % R.H.	Dew-point hygrometers /CP801-50305-1
Humidity transducers		(-40 ~ 0) °C (0 ~ 60) °C	0.6 °C 0.3 °C	
Humidity generators	50306	(10 ~ 90) % R.H. (90 ~ 98) % R.H. (-80 ~ 200) °C	2.5 % R.H. 2.8 % R.H. 0.5 °C	DATA LOGGER, Humidity transducer /CP801-50306-1
Constant temperature and humidity chamber		(20 ~ 80) % R.H. (80 ~ 95) % R.H. (0 ~ 60) °C	1.6 % R.H. 1.9 % R.H. 0.21 °C	Dew-point hygrometers, IPRT /CP801-50306-2
Two-pressure humidity generators		(5 ~ 25) % R.H. (25 ~ 80) % R.H. (80 ~ 98) % R.H.	1.0 % R.H. 1.5 % R.H. 1.9 % R.H.	Dew-point hygrometers, IPRT /CP801-50306-3

504. Moisture

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Cereal moisture meters	50401	(9 ~ 25) % M.C.	0.5 % M.C.	Balance, Dry oven /CP801-50401-1
Wood moisture meters	50402	(8 ~ 25) % M.C.	3.3 % M.C.	Balance, Dry oven /CP801-50402-1

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 calibrators Pistonphones Sound pressure level calibrators Multifunction acoustic calibrators	60102	250 Hz 1 000 Hz 31.5 Hz (31.5 ~ 63) Hz (63 ~ 4 000) Hz (4 000 ~ 8 000) Hz (8 000 ~ 12 500) Hz (12 500 ~ 16 000) Hz	0.11 dB 0.11 dB 0.15 dB 0.13 dB 0.12 dB 0.14 dB 0.18 dB 0.32 dB	Microphone /CP801-60102-1
Microphones	60104	20 Hz (20 ~ 25) Hz (25 ~ 31.5) Hz (31.5 ~ 40) Hz (40 ~ 50) Hz (50 ~ 8 000) Hz (8 000 ~ 10 000) Hz (10 000 ~ 12 500) Hz (12 500 ~ 16 000) Hz (16 000 ~ 20 000) Hz	0.16 dB 0.14 dB 0.13 dB 0.12 dB 0.11 dB 0.10 dB 0.12 dB 0.13 dB 0.16 dB 0.21 dB	Microphone /CP801-60104-1
Sound level meters	60106	31.5 Hz (31.5 ~ 100) Hz (100 ~ 125) Hz (125 ~ 3 150) Hz (3 150 ~ 8 000) Hz (8 000 ~ 12 500) Hz	0.5 dB 0.4 dB 0.3 dB 0.2 dB 0.3 dB 0.6 dB	Microphone /CP801-60106-1

603. Vibration

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Vibration calibrators	60301	20 Hz ~ 1.25 kHz	1.9×10^{-2}	Vibration transducer /CP801-60301-1

603. Vibration

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Vibration transducers	60302	0.5 Hz	2.1×10^{-2}	Vibration transducer /CP801-60302-1
Vibration transducers		(0.5 ~ 10) Hz	2.1×10^{-2}	
		(10 ~ 2 500) Hz	1.1×10^{-2}	
		(2.5 ~ 5) kHz	2.4×10^{-2}	
		(5 ~ 10) kHz	2.9×10^{-2}	
		(10 ~ 15) kHz	3.6×10^{-2}	
		(15 ~ 20) kHz	4.3×10^{-2}	
Shock transducers		(200 ~ 100 000) m/s ² (Pulse duration : (0.5 ~ 2) ms)	3.1×10^{-2}	Vibration transducer /CP801-60302-2
Vibration measuring instruments	60303			Vibration transducer /CP801-60303-1
Vibration measuring instruments				
Acceleration		0.5 Hz	2.0×10^{-2}	
		(0.5 ~ 0.63) Hz	1.9×10^{-2}	
		(0.63 ~ 2.5) Hz	1.7×10^{-2}	
		2.5 Hz ~ 1.25 kHz	1.5×10^{-2}	
Velocity		0.5 Hz	1.9×10^{-2}	
		(0.5 ~ 0.63) Hz	1.8×10^{-2}	
		(0.63 ~ 2.5) Hz	1.7×10^{-2}	
		2.5 Hz ~ 1.25 kHz	1.5×10^{-2}	
Displacement		0.5 Hz	1.8×10^{-2}	
		(0.5 ~ 0.63) Hz	1.7×10^{-2}	
		(0.63 ~ 2.5) Hz	1.6×10^{-2}	
		(2.5 ~ 160) Hz	1.4×10^{-2}	
		(160 ~ 315) Hz	1.6×10^{-2}	
		(315 ~ 630) Hz	2.2×10^{-2}	
		630 Hz ~ 1.25 kHz	3.4×10^{-2}	
Shock recorders		(5 ~ 200) m/s ² (Pulse duration : (10 ~ 30) ms)	2.5×10^{-2}	Vibration transducer /CP801-60303-2

701. Photometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Illuminance meters	70101	(0.5 ~ 10) lx (10 ~ 20 000) lx	2.0 % 1.7 %	Illuminance meters /CP801-70101-1
Luminance meters	70102	(5 ~ 50) cd/m ² (50 ~ 3 000) cd/m ²	1.6 % 1.4 %	Luminance meters /CP801-70102-1
Total luminous flux meters	70103	(415 ~ 2 260) lm	1.7 %	Total luminous flux meters/CP801-70103-1
Luminous intensity meters	70104	(412 ~ 1 064) cd	1.7 %	Luminous intensity meters/CP801-70104-1

702. Properties of detector & sources

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Color temperature meters	70202	(1 969 ~ 3 224) K (5 450 ~ 5 866) K	22 K 180 K	Color temperature standard lamps /CP801-70202-1
Color temperature standard lamps	70203	(2 000 ~ 3 200) K	26 K	Color temperature standard lamps /CP801-70203-1
Colorimeters; source color	70204	CIE 1931 x, y (Red) x : (0.689~0.710) y : (0.291~0.309) (Green) x : (0.167~0.226) y : (0.701~0.715) (Blue) x : (0.124~0.143) y : (0.045~0.085) (White) x : (0.324~0.334) y : (0.343~0.364)	x : 0.006 y : 0.005 x : 0.006 y : 0.006 x : 0.005 y : 0.005 x : 0.006 y : 0.006	Standard lamps /CP801-70204-1
Laser power meters	70207	408 nm (1 ~ 40) mW 660 nm (1 ~ 40) mW 785 nm (1 ~ 40) mW	1.1 % 1.1 % 1.1 %	Standard Laser power meters /CP801-70207-1
Total luminous flux standard lamps	70209	(415 ~ 2 260) lm	1.7 %	Standard Lamps /CP801-70209-1
Pyranometers and pyrhemimeters Wavelength range irradiance	70211	(250 ~ 2 500) nm (1 000 ± 150) W/m ²	3.2 %	Pyranometers and pyrhemimeters /CP801-70211-1

702. Properties of detector & sources

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Display color analyzers; luminance, chromaticity, white balance, etc. Luminance Chromaticity	70213	(5 ~ 50) cd/m ² (50 ~ 3 000) cd/m ² CIE 1931 x, y (Red) x : (0.689~0.710) y : (0.291~0.309) (Green) x : (0.167~0.226) y : (0.701~0.715) (Blue) x : (0.124~0.143) y : (0.045~0.085) (White) x : (0.324~0.334) y : (0.343~0.364)	1.6 % 1.4 % x : 0.006 y : 0.005 x : 0.006 y : 0.006 x : 0.005 y : 0.005 x : 0.006 y : 0.006	Luminance meters, standard lamps / CP801-70213-1
Luminous intensity standard lamps	70214	(2 ~ 3 000) cd	1.9 %	Illuminance meters /CP801-70214-1
UV irradiance meters	70219	254 nm (0.05 ~ 2.5) mW/cm ² 365 nm (0.07 ~ 140) mW/cm ² 405 nm (0.2 ~ 70) mW/cm ²	4.0 % 3.6 % 3.4 %	UV Sensor /CP801-70219-1
Spectral irradiance meters Wavelength Spectral irradiance Color temperature Chromaticity Illuminance	70220	(250 ~ 1 050) nm (250 ~ 1 050) nm 250 nm (255 ~ 265) nm (265 ~ 280) nm (280 ~ 300) nm (300 ~ 330) nm (330 ~ 365) nm (365 ~ 455) nm (455 ~ 595) nm (595 ~ 1 050) nm (3 014 ~ 3 099) K CIE 1931 x, y x : (0.429 ~ 0.438) y : (0.400 ~ 0.407) (5 841 ~ 7 139) lx	0.25 nm 6.1 % 5.0 % 4.6 % 4.0 % 3.5 % 3.0 % 2.5 % 2.0 % 1.7 % 22 K x : 0.004 y : 0.004 1.9 %	Spectral irradiance standard lamps / CP801-70220-1

702. Properties of detector & sources

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Total spectral radiant flux meters	70221			Total spectral radiant flux standard lamps /CP801-70221-1
Wavelength		(350 ~ 850) nm	0.25 nm	
Total spectral radiant		(350 ~ 850) nm		
		350 nm	5.3 %	
		(355 ~ 365) nm	4.6 %	
		365 nm	4.1 %	
		(370 ~ 395) nm	3.6 %	
		(395 ~ 420) nm	2.3 %	
		(420 ~ 495) nm	1.9 %	
		(495 ~ 850) nm	1.7 %	
Color temperature	(2 599 ~ 2 776) K	22 K		
Chromaticity	CIE 1931 x, y x : (0.452 ~ 0.469) y : (0.406 ~ 0.415)	x : 0.004 y : 0.004		
Total luminous flux	(904 ~ 1 110) lm	1.7 %		
Spectral radiance meters	70222			Spectral radiance light source /CP801-70222-1
Wavelength		(380 ~ 1 040) nm	0.25 nm	
Spectral radiance		(380 ~ 1 040) nm		
		(380 ~ 410) nm	3.4 %	
		(410 ~ 440) nm	2.9 %	
		(440 ~ 470) nm	2.4 %	
		(470 ~ 1 040) nm	1.8 %	
Color temperature		(2 879 ~ 2 919) K	22 K	
Chromaticity		CIE 1931 x, y x : (0.446 ~ 0.450) y : (0.411 ~ 0.415)	x : 0.003 y : 0.003	
Luminance		(9 019 ~ 9 259) cd/m ²	1.6 %	

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Colorimeters; material color (Including Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°)	70301			Color standard tiles /CP801-70301-1
Red		X	0.37	
		Y	0.22	
		Z	0.15	
Yellow		X	0.79	
		Y	0.68	
		Z	0.21	
Blue		X	0.21	
		Y	0.24	
		Z	0.50	
Green		X	0.19	
		Y	0.24	
		Z	0.21	
Pale Grey		X	0.67	
		Y	0.60	
		Z	0.70	
Mid Grey		X	0.30	
		Y	0.27	
		Z	0.32	
Deep Grey		X	0.11	
		Y	0.10	
		Z	0.11	
White		X	0.95	
		Y	0.86	
		Z	0.98	
(Excluding Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°)				
Red		X	0.32	
		Y	0.18	
		Z	0.12	
Yellow		X	0.75	
		Y	0.65	
		Z	0.19	

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Colorimeters; material color (Excluding Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°) Blue Green Pale Grey Mid Grey Deep Grey White	70301	X Y Z X Y Z X Y Z X Y Z X Y Z	0.17 0.21 0.45 0.15 0.20 0.17 0.63 0.57 0.66 0.28 0.25 0.27 0.07 0.06 0.08 0.91 0.82 0.94	Color standard tiles /CP801-70301-1
Color standard filters Standard Illuminant : A, C, D65 Standard Observe : 2°, 10° (380 nm ~ 780 nm)	70302	X Y Z	1.1×10^{-2} 1.1×10^{-2} 1.1×10^{-2}	Spectrophotometer /CP801-70302-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Color standard tiles (Including Specular Component Excluding Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°) (380 nm ~ 780 nm)	70304			Color standard tiles /CP801-70304-1
Red		X Y Z	0.38 0.23 0.16	
Yellow		X Y Z	0.80 0.69 0.22	
Blue		X Y Z	0.21 0.25 0.51	
Green		X Y Z	0.20 0.25 0.22	
Pale Grey		X Y Z	0.68 0.61 0.71	
Mid Grey		X Y Z	0.31 0.28 0.33	
Deep Grey		X Y Z	0.12 0.11 0.12	
White		X Y Z x y	0.96 0.87 0.99 0.002 0.002	
Dioptrometers	70305	(0.0 ~ ± 20.0) D	0.1 D	Standard lens /CP801-70305-1
Gloss meters	70306	20° 60° 85°	7.0×10^{-3} 5.0×10^{-3} 4.8×10^{-3}	Gloss standard plates /CP801-70306-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Gloss standard plates	70307	20° 60° 85°	1.1×10^{-2} 6.4×10^{-3} 6.4×10^{-3}	Gloss meters /CP801-70307-1
Haze meters (H-1) (H-5) (H-10) (H-20) (H-30)	70308	1 5 10 20 30	0.21 0.16 0.2 0.3 0.5	Haze standard plates /CP801-70308-1
Haze standard plates (H-1) (H-5) (H-10) (H-20) (H-30)	70309	1 5 10 20 30	0.15 0.14 0.2 0.3 0.4	Haze meters / CP801-70309-1
Lens meters	70312	(0.00 ~ ± 25.00) D 25 D 20 D 15 D 10 D 5 D -5 D -10 D -15 D -20 D -25 D	0.07 D 0.06 D 0.04 D 0.03 D 0.02 D 0.02 D 0.03 D 0.04 D 0.06 D 0.08 D	Standard lens /CP801-70312-1
Optical densitometers Transmission Densitometer (1 STEP ~ 15 STEP) Reflection Densitometer (Including Specular Component, Excluding Specular Component Standard Illuminant : A Standard Observe : 2°) (380 nm ~ 780 nm)	70315	1 Step ~ 11 Step 12 Step ~ 14 Step 15 Step White Pale Grey Mid Grey Deep Grey Black Red Yellow Green Cyan Magenta	0.03 0.06 0.11 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02	X-ray film step tablet ,Color standard tiles /CP801-70315-1
Optical filters luminous transmittance (380 nm ~ 780 nm)	70316	(0 ~ 100) %	5.1×10^{-3}	Spectrophotometer / CP801-70316-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Polarimeters	70317	633 nm	0.001 2°	Standard polarization plate / CP801-70317-1
Reflectance meters spectral reflectance (380 nm ~ 780 nm)	70319	(0 ~ 100) %	1.1×10^{-2}	Visible absolute spectral reflectance plate / CP801-70319-1
Diffuse-reflectance meters Pale Grey Mid Grey Deep Grey	70320	Y Y Y	0.57 0.23 0.09	Color standard tiles /CP801-70320-1
Refractometers	70321	(1.332 99 ~ 1.496 71) nD	0.000 16 nD	Refractometers / CP801-70321-1
Transmittance meters	70323	ND 20 ND 50 ND 70	0.06 0.11 0.16	Transmittance filter /CP801-70323-1
Spectrophotometers including FT-IR spectrophotometers Spectrophotometers Wavelength Transmittance	70325	(250 ~ 780) nm (900 ~ 2 500) nm (250 ~ 750) nm (0.1 ~ 0.3) 250 nm 300 nm 350 nm 400 nm 450 nm 500 nm 550 nm 600 nm 650 nm 700 nm 750 nm (0.3 ~ 0.6) 250 nm 300 nm 350 nm 400 nm 450 nm 500 nm 550 nm 600 nm 650 nm 700 nm 750 nm	0.4 nm 0.5 nm 8.1×10^{-3} 7.8×10^{-3} 7.8×10^{-3} 5.4×10^{-3} 5.3×10^{-3} 5.2×10^{-3} 5.2×10^{-3} 5.2×10^{-3} 5.2×10^{-3} 5.2×10^{-3} 5.3×10^{-3} 7.8×10^{-3} 7.8×10^{-3} 7.7×10^{-3} 5.2×10^{-3} 5.2×10^{-3} 5.1×10^{-3} 5.1×10^{-3} 5.1×10^{-3} 5.1×10^{-3} 5.1×10^{-3} 5.2×10^{-3}	Wavelength filter /CP801-70325-1 Transmittance filter /CP801-70325-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Spectrophotometers including FT-IR spectrophotometers	70325			
Spectrophotometers				
Transmittance		(0.6 ~ 0.9)		Transmittance filter
		250 nm	7.9×10^{-3}	/CP801-70325-1
		300 nm	7.7×10^{-3}	
		350 nm	7.7×10^{-3}	
		400 nm	5.2×10^{-3}	
		450 nm	5.2×10^{-3}	
		500 nm	5.1×10^{-3}	
		550 nm	5.1×10^{-3}	
		600 nm	5.2×10^{-3}	
		650 nm	5.1×10^{-3}	
		700 nm	5.1×10^{-3}	
		750 nm	5.2×10^{-3}	
Absorbance		(250 ~ 750) nm		
		(0.1 ~ 0.3)		
		250 nm	0.004 1	
		300 nm	0.003 7	
		350 nm	0.003 6	
		400 nm	0.002 7	
		450 nm	0.002 9	
		500 nm	0.003 0	
		550 nm	0.003 0	
		600 nm	0.003 1	
		650 nm	0.003 2	
		700 nm	0.003 2	
		750 nm	0.003 1	
		(0.3 ~ 0.6)		
		250 nm	0.003 5	
		300 nm	0.003 5	
		350 nm	0.003 4	
		400 nm	0.002 3	
		450 nm	0.002 3	
		500 nm	0.002 3	
		550 nm	0.002 3	
		600 nm	0.002 3	
		650 nm	0.002 3	
		700 nm	0.002 3	
		750 nm	0.002 3	

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Spectrophotometers including FT-IR spectrophotometers Spectrophotometers Absorbance	70325	(0.6 ~ 0.9) 250 nm 300 nm 350 nm 400 nm 450 nm 500 nm 550 nm 600 nm 650 nm 700 nm 750 nm (1 100 ~ 2 500) nm 1 100 nm 1 700 nm 2 210 nm 2 500 nm	0.003 5 0.003 4 0.003 4 0.002 3 0.002 3 0.002 3 0.002 3 0.002 3 0.002 3 0.002 3 0.002 3 0.002 3 0.003 5 0.003 5 0.003 5 0.003 5	Transmittance filter /CP801-70325-1
Reflectance (Including Specular Component & Excluding Specular Component)		(250 ~ 2 500) nm (250 ~ 380) nm (380 ~ 780) nm (800 ~ 2 500) nm	 1.4×10^{-2} 1.1×10^{-2} 1.5×10^{-2}	White standard /CP801-70325-1
FT-IR spectrophotometers		(400 ~ 4 000) cm^{-1} 906.82 cm^{-1} 1 028.42 cm^{-1} 1 069.27 cm^{-1} 1 154.62 cm^{-1} 1 583.04 cm^{-1} 1 601.38 cm^{-1} 2 850.20 cm^{-1} 3 001.40 cm^{-1} 3 026.44 cm^{-1} 3 060.14 cm^{-1} 3 082.22 cm^{-1}	0.11 cm^{-1} 0.28 cm^{-1} 0.78 cm^{-1} 0.10 cm^{-1} 0.10 cm^{-1} 0.12 cm^{-1} 0.13 cm^{-1} 0.10 cm^{-1} 0.10 cm^{-1} 0.10 cm^{-1} 0.10 cm^{-1}	Standard filter /CP801-70325-2

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Wavelength reference materials; absorption cell, bandpass filter, etc	70326			Standard filter / CP801-70326-1
Wavelength		(250 ~ 780) nm	0.41 nm	
Transmittance		(250 ~ 750) nm		
		250 nm	8.1×10^{-3}	
		300 nm	7.8×10^{-3}	
		350 nm	7.8×10^{-3}	
		400 nm	5.4×10^{-3}	
		450 nm	5.3×10^{-3}	
		500 nm	5.2×10^{-3}	
		550 nm	5.2×10^{-3}	
		600 nm	5.2×10^{-3}	
		650 nm	5.2×10^{-3}	
		700 nm	5.2×10^{-3}	
		750 nm	5.3×10^{-3}	
Absorbance		(250 ~ 750) nm		
		250 nm	0.004 2	
		300 nm	0.003 8	
		350 nm	0.003 7	
		400 nm	0.002 8	
		450 nm	0.003 0	
		500 nm	0.003 1	
		550 nm	0.003 1	
		600 nm	0.003 2	
		650 nm	0.003 3	
		700 nm	0.003 3	
		750 nm	0.003 2	

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Wavelength reference materials; absorption cell, bandpass filter, etc	70326			White standard / CP801-70326-1
Reflectance (Including Specular Reflectance & Excluding Specular Reflectance)		(380 ~ 780) nm		
		380 nm	9.0×10^{-3}	
		390 nm	9.3×10^{-3}	
		400 nm	9.2×10^{-3}	
		410 nm	9.3×10^{-3}	
		420 nm	9.7×10^{-3}	
		430 nm	9.9×10^{-3}	
		440 nm	9.7×10^{-3}	
		450 nm	1.1×10^{-2}	
		460 nm	9.8×10^{-3}	
		470 nm	9.2×10^{-3}	
		480 nm	9.1×10^{-3}	
		490 nm	8.6×10^{-3}	
		500 nm	8.4×10^{-3}	
		510 nm	8.4×10^{-3}	
		520 nm	8.4×10^{-3}	
		530 nm	8.3×10^{-3}	
		540 nm	8.3×10^{-3}	
		550 nm	8.1×10^{-3}	
		560 nm	8.2×10^{-3}	
		570 nm	8.2×10^{-3}	
		580 nm	8.2×10^{-3}	
		590 nm	8.1×10^{-3}	
		600 nm	8.2×10^{-3}	
		610 nm	7.8×10^{-3}	
		620 nm	7.9×10^{-3}	
		630 nm	7.9×10^{-3}	
		640 nm	7.8×10^{-3}	
		650 nm	7.8×10^{-3}	
		660 nm	7.7×10^{-3}	
		670 nm	7.9×10^{-3}	
		680 nm	7.9×10^{-3}	
		690 nm	7.9×10^{-3}	
		700 nm	7.8×10^{-3}	
		710 nm	8.4×10^{-3}	
		720 nm	7.7×10^{-3}	
		730 nm	7.9×10^{-3}	
		740 nm	7.8×10^{-3}	
		750 nm	7.8×10^{-3}	
		760 nm	7.8×10^{-3}	
		770 nm	7.7×10^{-3}	
		780 nm	8.1×10^{-3}	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Broadband optical light sources	70402			Wavelength Meter, Optical Power Meter / CP801-70402-1
Output wavelength		1 310 nm 1 550 nm	0.15 nm 0.15 nm	
Output stability		(1 310 nm) (0 ~ 3) dB (1 550 nm) (0 ~ 3) dB	0.001 5 dB 0.001 5 dB	
Output power		(1 310 nm) (10 ~ -20) dBm (1 550 nm) (10 ~ -20) dBm	0.13 dB 0.13 dB	
Laser sources, multichannel	70408			Wavelength Meter, Optical Power Meter / CP801-70408-1
Output wavelength		1 310 nm 1 550 nm	7.3×10^{-7} 7.3×10^{-7}	
Output stability		(1 310 nm) (0 ~ 3) dB (1 550 nm) (0 ~ 3) dB	0.001 5 dB 0.001 5 dB	
Output power		(1 310 nm) (10 ~ -20) dBm (1 550 nm) (10 ~ -20) dBm	0.13 dB 0.13 dB	
Optical attenuators	70410			Optical Power Meter / CP801-70410-1
Insertion loss		1 310 nm 1 550 nm	0.029 dB 0.029 dB	
Attenuation		(1 310 nm) (0 ~ 10) dB (10 ~ 20) dB (20 ~ 30) dB (30 ~ 40) dB (40 ~ 50) dB (1 550 nm) (0 ~ 10) dB (10 ~ 20) dB (20 ~ 30) dB (30 ~ 40) dB (40 ~ 50) dB	0.012 dB 0.012 dB 0.016 dB 0.019 dB 0.021 dB 0.012 dB 0.012 dB 0.016 dB 0.019 dB 0.021 dB	
Optical couplers	70411			Optical Power Meter / CP801-70411-1
Coupling ratio		1 310 nm 1 550 nm	0.012 dB 0.012 dB	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Fiber-optic power meters absolute optical power	70412	1 310 nm	0.071 dB	Optical Power Meter / CP801-70412-1
		1 550 nm	0.071 dB	
Linearity measurement		(1 310 nm)		
		(0 ~ -10) dBm	0.012 dB	
		(-10 ~ -20) dBm	0.012 dB	
		(-20 ~ -30) dBm	0.015 dB	
		(-30 ~ -40) dBm	0.018 dB	
		(-40 ~ -50) dBm	0.020 dB	
		(1 550 nm)		
		(0 ~ -10) dBm	0.012 dB	
		(-10 ~ -20) dBm	0.012 dB	
		(-20 ~ -30) dBm	0.015 dB	
		(-30 ~ -40) dBm	0.018 dB	
		(-40 ~ -50) dBm	0.020 dB	
Optical loss testers	70413			Wavelength Meter, Optical Power Meter / CP801-70413-1
Absolute optical power		1 310 nm	0.071 dB	
		1 550 nm	0.071 dB	
Linearity measurement		(1 310 nm)		
		(0 ~ -10) dBm	0.012 dB	
		(-10 ~ -20) dBm	0.012 dB	
		(-20 ~ -30) dBm	0.015 dB	
		(-30 ~ -40) dBm	0.018 dB	
		(-40 ~ -50) dBm	0.020 dB	
		(1 550 nm)		
		(0 ~ -10) dBm	0.012 dB	
		(-10 ~ -20) dBm	0.012 dB	
		(-20 ~ -30) dBm	0.015 dB	
		(-30 ~ -40) dBm	0.018 dB	
		(-40 ~ -50) dBm	0.020 dB	
Output wavelength		1 310 nm	7.3×10^{-7}	
		1 550 nm	7.3×10^{-7}	
Output stability		(1 310 nm)		
		(0 ~ 3) dB	0.001 5 dB	
		(1 550 nm)		
		(0 ~ 3) dB	0.001 5 dB	
Output power		(1 310 nm)		
		(10 ~ -20) dBm	0.13 dB	
		(1 550 nm)		
		(10 ~ -20) dBm	0.13 dB	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Optical multimeters	70415			Wavelength Meter, Optical Power Meter / CP801-70415-1
Absolute optical power		1 310 nm	0.071 dB	
		1 550 nm	0.071 dB	
Linearity measurement		(1 310 nm)		
		(0 ~ -10) dBm	0.012 dB	
		(-10 ~ -20) dBm	0.012 dB	
		(-20 ~ -30) dBm	0.015 dB	
		(-30 ~ -40) dBm	0.018 dB	
		(-40 ~ -50) dBm	0.020 dB	
		(1 550 nm)		
		(0 ~ -10) dBm	0.012 dB	
		(-10 ~ -20) dBm	0.012 dB	
		(-20 ~ -30) dBm	0.015 dB	
		(-30 ~ -40) dBm	0.018 dB	
		(-40 ~ -50) dBm	0.020 dB	
Output wavelength		1 310 nm	7.3×10^{-7}	
		1 550 nm	7.3×10^{-7}	
Output stability		(1 310 nm)		
		(0 ~ 3) dB	0.001 5 dB	
		(1 550 nm)		
		(0 ~ 3) dB	0.001 5 dB	
Output power		(1 310 nm)		
		(10 ~ -20) dBm	0.13 dB	
		(1 550 nm)		
		(10 ~ -20) dBm	0.13 dB	
Optical spectrum analyzers	70417			Wavelength reference Source, Optical Power Meter / CP801-70417-1
Wavelength accuracy		1 310 nm	3.2×10^{-5}	
		1 550 nm	2.7×10^{-5}	
Linearity		(1 310 nm)		
		(0 ~ -10) dBm	0.015 dB	
		(-10 ~ -20) dBm	0.017 dB	
		(-20 ~ -30) dBm	0.019 dB	
		(-30 ~ -40) dBm	0.021 dB	
		(-40 ~ -50) dBm	0.027 dB	
		(1 550 nm)		
		(0 ~ -10) dBm	0.017 dB	
		(-10 ~ -20) dBm	0.016 dB	
		(-20 ~ -30) dBm	0.020 dB	
		(-30 ~ -40) dBm	0.023 dB	
		(-40 ~ -50) dBm	0.024 dB	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Optical time domain reflectors, OTDR	70418			STD Fiber, OSA / CP801-70418-1
Output wavelength		1 310 nm 1 550 nm	0.092 nm 0.092 nm	
Length		(1 310 nm) 10 km (1 550 nm) 10 km	2.9 m 2.9 m	
Return loss		(1 310 nm) 30 dB 50 dB (1 550 nm) 30 dB 50 dB	0.70 dB 2.1 dB 0.70 dB 2.1 dB	
Return loss detection linearity		(1 310 nm) (0 ~ -10) dBm (-10 ~ -20) dBm (-20 ~ -30) dBm (-30 ~ -40) dBm (1 550 nm) (0 ~ -10) dBm (-10 ~ -20) dBm (-20 ~ -30) dBm (-30 ~ -40) dBm	0.015 dB 0.017 dB 0.019 dB 0.021 dB 0.017 dB 0.016 dB 0.020 dB 0.023 dB	
PDH/SDH Analyzers Communication frequency	70419	1.544 MHz ~ 2.5 GHz	5.8×10^{-9}	Frequency Counter / CP801-70419-1
Return loss meters RL reference fiber	70423	1 310 nm 1 550 nm	0.22 dB 0.22 dB	Optical Power Meter / CP801-70423-1
Linearity		(1 310 nm) (0 ~ -20) dBm (-20 ~ -40) dBm (-40 ~ -50) dBm (1 550 nm) (0 ~ -20) dBm (-20 ~ -40) dBm (-40 ~ -50) dBm	0.061 dB 0.063 dB 0.086 dB 0.061 dB 0.063 dB 0.086 dB	
SDH/SONET Analyzers Commnication frequency	70424	1.544 MHz ~ 2.5 GHz	5.8×10^{-9}	Frequency Counter / CP801-70424-1
Multi-laser wavelength meters	70426			Wavelength reference Source / CP801-70426-1
Wavelength accuracy		1 310 nm 1 550 nm	5.4×10^{-7} 4.9×10^{-7}	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Frequency stabilized laser and LDs	70429			
Frequency stabilized laser				
Wavelength accuracy		1 310 nm 1 550 nm	4.0×10^{-7} 4.0×10^{-7}	Wavelength Meter / CP801-70429-1
Tunable laser sources				
Output wavelength		1 310 nm 1 550 nm	1.7×10^{-6} 1.7×10^{-6}	Wavelength Meter, Optical Power Meter / CP801-70429-2
Output stability		(1 310 nm) (0 ~ 3) dB (1 550 nm) (0 ~ 3) dB	0.001 5 dB 0.001 5 dB	
Output linearity		(1 310 nm) (0 ~ -15) dBm (-15 ~ -20) dBm (1 550 nm) (0 ~ -15) dBm (-15 ~ -20) dBm	0.015 dB 0.020 dB 0.015 dB 0.020 dB	
LD sources				
Output wavelength		1 310 nm 1 550 nm	7.3×10^{-7} 7.3×10^{-7}	Wavelength Meter, Optical Power Meter / CP801-70429-3
Output stability		(1 310 nm) (0 ~ 3) dB (1 550 nm) (0 ~ 3) dB	0.001 5 dB 0.001 5 dB	
Output power		(1 310 nm) (10 ~ -20) dBm (1 550 nm) (10 ~ -20) dBm	0.13 dB 0.13 dB	
ASE light sources	70430			
Output wavelength		1 550 nm	0.15 nm	Wavelength Meter, Optical Power Meter / CP801-70430-1
Output stability		(1 550 nm) (0 ~ 3) dB	0.001 5 dB	
Output power		(1 550 nm) (10 ~ -20) dBm	0.13 dB	
CW-laser Wavelength meters	70431			
Wavelength accuracy		1 310 nm 1 550 nm	3.3×10^{-7} 3.3×10^{-7}	Wavelength reference Source / CP801-70431-1

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	(0.000 ~ 0.100) % BAC	1.9×10^{-2}	Alcohol gas /CP801-90101-1
Environmental air quality monitoring instruments	90102			Standard gas /CP801-90102-1
CO		(0 ~ 100) $\mu\text{mol/mol}$	2.0×10^{-2}	
C ₄ H ₈		(0 ~ 100) $\mu\text{mol/mol}$	1.0×10^{-2}	
H ₂ S		(0 ~ 30) $\mu\text{mol/mol}$	3.9×10^{-2}	
O ₂		(0 ~ 20) cmol/mol	2.0×10^{-2}	
NO		(0 ~ 250) $\mu\text{mol/mol}$	2.0×10^{-2}	
SO ₂		(0 ~ 100) $\mu\text{mol/mol}$	2.0×10^{-2}	
CH ₄		(0 ~ 2) cmol/mol	2.0×10^{-2}	
CO ₂		(0 ~ 5 000) $\mu\text{mol/mol}$	2.0×10^{-2}	
NH ₃		(0 ~ 50) $\mu\text{mol/mol}$	4.7×10^{-2}	
C ₄ H ₁₀		(0 ~ 1) cmol/mol	2.0×10^{-2}	
H ₂		(0 ~ 2) cmol/mol	2.1×10^{-2}	
C ₃ H ₈		(0 ~ 1) cmol/mol	2.0×10^{-2}	
Gas analyzers	90103			Standard gas /CP801-90103-1
CO		(0 ~ 100) $\mu\text{mol/mol}$	2.0×10^{-2}	
C ₄ H ₈		(0 ~ 100) $\mu\text{mol/mol}$	1.0×10^{-2}	
H ₂ S		(0 ~ 30) $\mu\text{mol/mol}$	3.9×10^{-2}	
O ₂		(0 ~ 20) cmol/mol	2.0×10^{-2}	
NO		(0 ~ 250) $\mu\text{mol/mol}$	2.0×10^{-2}	
SO ₂		(0 ~ 100) $\mu\text{mol/mol}$	2.0×10^{-2}	
CH ₄		(0 ~ 2) cmol/mol	2.0×10^{-2}	
CO ₂		(0 ~ 5 000) $\mu\text{mol/mol}$	2.0×10^{-2}	
NH ₃		(0 ~ 50) $\mu\text{mol/mol}$	4.7×10^{-2}	
C ₄ H ₁₀		(0 ~ 1) cmol/mol	2.0×10^{-2}	
H ₂		(0 ~ 2) cmol/mol	2.1×10^{-2}	
C ₃ H ₈		(0 ~ 1) cmol/mol	2.0×10^{-2}	
Exhaust Gas test Instruments	90104			Standard gas /CP801-90104-1
CO		(0 ~ 10 000) $\mu\text{mol/mol}$	2.0×10^{-2}	
CO ₂		(0 ~ 6) cmol/mol	3.0×10^{-2}	
NO _x (NO)		(0 ~ 2 000) $\mu\text{mol/mol}$	2.0×10^{-2}	
C ₃ H ₈		(0 ~ 1) cmol/mol	2.0×10^{-2}	
C ₄ H ₁₀		(0 ~ 1) cmol/mol	2.0×10^{-2}	
O ₂		(0 ~ 20) cmol/mol	2.0×10^{-2}	
NH ₃		(0 ~ 50) $\mu\text{mol/mol}$	4.7×10^{-2}	
SO ₂		(0 ~ 1 000) $\mu\text{mol/mol}$	2.0×10^{-2}	

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

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CALIBRATION

Valid To : Dec. 08, 2025.

Accreditation No. : KC01-028(1/15)

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		202.	Force		50105	Thermal expansion thermometers; bimetal, gas or liquid type	Y
10204	Gauge block comparators	Y	20203	Tension/compression testing machines	Y			
10206	Dial/cylinder gauge testers	Y				50106	Thermocouples; noble metal, base metal, pure metal, special type, etc	Y
10210	Extensometers, linear displacement transducers	Y	20204	Push-pull gauges	N			
10213	Gap gauges	N	203.	Torque				
10216	Height gauges/measuring machines	Y	20303	Torque wrenches/drivers	N	50107	Temperature transducers	Y
10219	Linear scales	Y	204.	Pressure		503.	Humidity	
10220	Standard measuring machines	Y	20401	Altimeters	Y	50302	Relative humidity hygrometers; polymer thinfilm, hair, etc.	Y
10225	Laser scan micrometers	Y	20406	Absolute pressure gauges	Y			
10237	Torque arms	Y	20408	Compound pressure gauges	Y	50304	Temperature humidity recorders; Hygrothermograph, etc.	Y
104.	Form		20409	Differential pressure gauges	Y			
10401	Form testers	Y	20411	Gauge pressure gauges	Y	50305	Transducers; dew-point/relative humidity	Y
10407	Precision surface plates	Y	20412	Pressure transducers/transmitters	Y			
10409	Roundness measurement instruments	Y	20413	Dial type vacuum gauges	Y	50306	Humidity generators; two-pressure, two-temperature, flow mixing humidity generator, constant temperature and humidity chamber, etc.	Y
105.	Complex geometry		205.	Vacuum				
10503	Contact coordinate measuring machines	Y	20501	Capacitance diaphragm gauges	N			
10504	Non-contact coordinate measuring machines	Y	20504	Thermal conductivity gauges; pirani, thermocouple, convectron etc.	N			
10511	Measuring microscopes, profile projectors	Y	206.	Volume		504.	Moisture	
10517	Stylus type roughness testers	Y	20601	Volumetric glasswares	N	50401	Cereal moisture meters	Y
10531	SEM/TEM/SPM/AFM microscopes	Y	20602	Pycnometers	N			
106.	Various dimensional		20604	Standard volume vessels	Y	703.	Properties of materials	
10601	Inside/outside/gear tooth calipers, caliper gauges	Y	20606	Piston type volume meters	N	70301	Colorimeters; material color	Y
10603	Cylinder/bore gauges	Y	210.	Hardness		70306	Gloss meters	Y
10604	Depth gauges, depth micrometers	Y	21001	Brinell hardness testers	Y	70308	Haze meters	Y
10605	Dial/digital gauges	Y	21002	Rockwell hardness testers	Y	70325	Spectrophotometers including FT-IR spectrophotometers	Y
10609	Micro indicators, test indicators	Y	21003	Shore hardness testers	Y			
10610	Micrometer heads	Y	21004	Vickers hardness testers	Y			
10612	Inside micrometers	Y	21005	Durometer hardness testers	N			
10613	Outside micrometers	Y	21006	Leeb hardness testers	N			
201.	Mass		501.	Contact thermometry				
20102	Auto-hopper scale balances	Y	50101	Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	Y			
20103	Auto-packer scale balances	Y	50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y			
20109	Electric balances	Y						
20112	Platform scale balances	Y	50104	Resistance thermometers; SPRT, IPRT, thermistors, etc	Y			
20113	Spring scale balances	Y						
20116	Weights	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 noted 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.
Gauge block comparators	10204	(0 ~ 500) mm	0.04 μm	Gauge blocks /CP801-10204-1
Dial/cylinder gauge testers	10206	(0 ~ 100) mm	$\sqrt{0.24^2 + (3 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Gauge blocks /CP801-10206-1
Extensometers, linear displacement transducers	10210	(0 ~ 5 000) mm	$\sqrt{0.13^2 + (0.7 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Laser interferometers /CP801-10210-1
Gap gauges	10213	(5 ~ 300) mm (300 ~ 1 000) mm	1.6 μm $\sqrt{2.4^2 + (3.3 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Contact coordinate measuring machines /CP801-10213-1
Height gauges/measuring machines	10216	(0 ~ 1 000) mm	$\sqrt{1.6^2 + (2.6 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Gauge blocks /CP801-10216-1
Linear scales	10219	(0 ~ 2 000) mm	$\sqrt{0.2^2 + (1.5 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Laser interferometers /CP801-10219-1
Standard measuring machines	10220	(0 ~ 600) mm	$\sqrt{70^2 + 0.74^2 \times l^2}$ nm (l unit : mm)	Laser interferometers /CP801-10220-1
Laser scan micrometers	10225	($\varnothing 0$ ~ $\varnothing 15$) mm	1.0 μm	Pin gauges /CP801-10225-1
Torque arms	10237	(0 ~ 2 000) mm	10 μm	Contact coordinate measuring machines /CP801-10237-1

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			
Vertical accuracy		(0 ~ 200) mm	$\sqrt{0.3^2 + (2.0 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Gauge blocks /CP801-10401-1
Horizontal accuracy		(0 ~ 50) mm	1.2 μm	Form standard specimens /CP801-10401-1
Angle		0° ~ 180°	4"	
Radius		(0 ~ 7.5) mm	1.5 μm	
Precision surface plates	10407	(0 ~ 3) m ² (3 ~ 18) m ²	1.2 μm 1.5 μm	Electrical levels /CP801-10407-1
Roundness measurement instruments	10409			
Rotation accuracy of circumference direction		360°	18 nm	Roundness standard specimens /CP801-10409-1
Rotation accuracy of shaft direction		360°	65 nm	Optical flats /CP801-10409-1
Accuracy of detector		(0 ~ 1 000) μm	$\sqrt{0.13^2 + (1.3 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Gauge blocks /CP801-10409-1

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Contact coordinate measuring machines	10503	(0 ~ 1 500) mm	$\sqrt{0.9^2 + (5.4 \times 10^{-3} \times l)^2} \mu\text{m}$ (l unit : mm)	Step gauges /CP801-10503-1
Non-contact coordinate measuring machines	10504			Laser interferometers /CP801-10504-1
Length		(0 ~ 1 000) mm	$\sqrt{0.6^2 + (5.0 \times 10^{-3} \times l)^2} \mu\text{m}$ (l unit : mm)	
Angle		0° ~ 360°	4"	
Measuring microscopes, profile projectors	10511			
Length		(0 ~ 500) mm	$\sqrt{0.6^2 + (1.6 \times 10^{-3} \times l)^2} \mu\text{m}$ (l unit : mm)	Standard scale /CP801-10511-1
Angle		0° ~ 360°	4"	Angle gauge blocks /CP801-10511-1
Scale		(10 ~ 100) X (100 ~ 1 000) X	3.2×10^{-2} 1.7×10^{-2}	Standard scale /CP801-10511-1
Stylus type roughness testers	10517			Roughness standard specimens /CP801-10517-1
Arithmetic mean(Ra)		(0 ~ 2) μm (2 ~ 10) μm	0.008 μm 0.044 μm	
Max. height(Rz)		(0 ~ 10) μm	0.16 μm	
Depth(H)		(0 ~ 10) μm	0.021 μm	
SEM/TEM/SPM/AFM microscopes	10531	1 000 X ~ 500 000 X	2.4×10^{-2}	MRS /CP801-10531-1

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	(0 ~ 600) mm	$\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (l unit : mm)	Caliper testers /CP801-10601-1
Cylinder/bore gauges	10603	(0 ~ 1 000) mm	0.6 μm	Dial gauge testers /CP801-10603-1
Depth gauges, depth micrometers	10604	(0 ~ 500) mm	$\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \mu\text{m}$ (l unit : mm)	Gauge blocks /CP801-10604-1
Dial/digital gauges	10605	(0 ~ 100) mm	0.3 μm	Gauge blocks /CP801-10605-1
Micro indicators, test indicators	10609	(0 ~ 5) mm	0.6 μm	Dial gauge testers /CP801-10609-1
Micrometer heads	10610	(0 ~ 100) mm	$\sqrt{0.7^2 + (1.8 \times 10^{-3} \times l)^2} \mu\text{m}$ (l unit : mm)	Gauge blocks /CP801-10610-1

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 micrometers Caliper type	10612	(4 ~ 300) mm	$\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (l unit : mm)	Gauge blocks /CP801-10612-1
Outside micrometers Outside micrometers	10613	(0 ~ 25) mm (25 ~ 500) mm	0.2 μm $\sqrt{0.9^2 + (3.1 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (l unit : mm)	Gauge blocks /CP801-10613-1

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 ~ 200) kg	48 g	Weight /CP801-20102-1
Auto-packer scale balances	20103	(0 ~ 10) kg (10 ~ 40) kg	1.0 g 10 g	Weight /CP801-20103-1
Electric balances	20109	(0 ~ 2) mg (2 ~ 5) mg (5 ~ 10) mg (10 ~ 20) mg (20 ~ 50) mg (50 ~ 100) mg (100 ~ 200) mg (200 ~ 500) mg 500 mg ~ 1 g (1 ~ 2) g (2 ~ 5) g (5 ~ 10) g (10 ~ 20) g (20 ~ 50) g (50 ~ 100) g (100 ~ 200) g (200 ~ 500) g 500 g ~ 1 kg (1 ~ 2) kg (2 ~ 5) kg (5 ~ 10) kg (10 ~ 20) kg (20 ~ 30) kg (30 ~ 100) kg (100 ~ 200) kg (200 ~ 1 000) kg	1.2 μg 1.2 μg 1.2 μg 1.2 μg 2.4 μg 2.4 μg 2.4 μg 2.4 μg 3.5 μg 4.7 μg 5.8 μg 9.0 μg 10 μg 13 μg 20 μg 40 μg 0.1 mg 0.2 mg 0.4 mg 2.0 mg 3.0 mg 4.0 mg 0.01 g 1.0 g 2.0 g 0.2 kg	Weight /CP801-20109-1

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Platform scale balances	20112	(0 ~ 10) kg (10 ~ 50) kg (50 ~ 200) kg	2.8 mg 10 g 0.1 kg	Weight /CP801-20112-1
Spring scale balances	20113	(0 ~ 1) kg (1 ~ 10) kg (10 ~ 50) kg	1.0 g 9.0 g 0.1 kg	Weight /CP801-20113-1
Weights	20116	1 mg ~ 20 kg 1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	(F1 class) 6.0 µg 6.0 µg 6.0 µg 8.0 µg 9.0 µg 12 µg 15 µg 18 µg 24 µg 30 µg 40 µg 50 µg 60 µg 80 µg 90 µg 0.15 mg 0.30 mg 0.75 mg 1.5 mg 3.0 mg 7.5 mg 15 mg 30 mg	Weight /CP801-20116-1

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	(0.1 ~ 200) N (200 ~ 500) N 500 N ~ 1 kN (1 ~ 2) kN (2 ~ 5) kN (5 ~ 10) kN (10 ~ 20) kN (20 ~ 50) kN (50 ~ 100) kN (100 ~ 200) kN (200 ~ 500) kN 500 kN ~ 1 MN (1 ~ 3) MN (3 ~ 10) MN	2.8×10^{-4} 7.8×10^{-4} 8.5×10^{-4} 8.5×10^{-4} 7.1×10^{-4} 8.5×10^{-4} 8.8×10^{-4} 9.2×10^{-4} 6.6×10^{-4} 9.3×10^{-4} 1.2×10^{-3} 1.5×10^{-3} 1.6×10^{-3} 2.0×10^{-3}	Force measuring devices(Electronics) /CP801-20203-1

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	(2 ~ 30) N (30 ~ 1 000) N	5.9×10^{-4} 5.8×10^{-4}	Weight /CP801-20204-1

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	(0.3 ~ 0.6) N·m (0.6 ~ 1.8) N·m (1.8 ~ 4.5) N·m (4.5 ~ 6) N·m (6 ~ 20) N·m (20 ~ 50) N·m (50 ~ 100) N·m (100 ~ 200) N·m (200 ~ 360) N·m (360 ~ 1 000) N·m	1.1×10^{-2} 1.2×10^{-2} 1.1×10^{-2} 6.5×10^{-3} 1.1×10^{-2} 8.1×10^{-3} 5.1×10^{-3} 3.5×10^{-3} 4.6×10^{-3} 9.9×10^{-3}	Torque measuring devices /CP801-20303-1

204. Pressure

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Altimeters	20401	(0 ~ 32) km (32 ~ 55) km	16 m 2.2×10^{-3}	RPM4 /CP801-20401-1
Absolute pressure gauges Pneumatic	20406	(4 ~ 7 000) kPa abs.	7.5×10^{-5}	Laon LPB-G /CP801-20406-1
Compound pressure gauges	20408	(-95 ~ 7 000) kPa	7.5×10^{-5}	Laon LPB-G /CP801-20408-1
Differential pressure gauges Pneumatic	20409	(0 ~ 2) kPa (2 ~ 250) kPa	2.0×10^{-3} 8.0×10^{-4}	PPC3, ADT761 /CP801-20409-1
Gauge pressure gauges	20411	(0 ~ 100) MPa	7.9×10^{-5}	Laon LPB-H /CP801-20411-1
Pressure transducers / transmitters Absolute	20412	(4 ~ 7 000) kPa abs.	7.5×10^{-5}	Laon LPB-G /CP801-20412-1
Gauge		(0 ~ 100) MPa	7.9×10^{-5}	Laon LPB-H /CP801-20412-2
Dial type vacuum gauges	20413	(-95 ~ 0) kPa	1.4×10^{-3}	Laon LPB-G /CP801-20413-1

205. Vacuum

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Capacitance diaphragm gauges	20501	(0.9 ~ 133) Pa abs. (0.133 ~ 1.33) kPa abs. (1.33 ~ 10) kPa abs.	0.04 Pa 0.9 Pa 11 Pa	INFICON CDGsci /CP801-20501-1
Thermal conductivity gauges	20504	(0.9 ~ 133) Pa abs. (0.133 ~ 1.33) kPa abs. (1.33 ~ 10) kPa abs.	0.04 Pa 0.9 Pa 0.18 kPa	INFICON CDGsci /CP801-20504-1

206. Volume

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 ~ 0.5) mL (0.5 ~ 1) mL (1 ~ 2) mL (2 ~ 5) mL (5 ~ 10) mL (10 ~ 25) mL (25 ~ 50) mL (50 ~ 100) mL (100 ~ 250) mL (250 ~ 500) mL (500 ~ 1 000) mL (1 000 ~ 2 000) mL	0.73 µL 1.4 µL 1.9 µL 2.5 µL 3.1 µL 3.8 µL 4.9 µL 9.9 µL 47 µL 72 µL 0.13 mL 0.18 mL	Balance /CP801-20601-1
Pycnometers	20602	(0 ~ 50) mL (50 ~ 100) mL (100 ~ 500) mL	1.9 µL 3.8 µL 28 µL	Balance /CP801-20602-1
Standard volume vessels	20604	(0 ~ 500) mL (10 ~ 10 000) L	4.8×10^{-5} 0.18 %	Balance /CP801-20604-1 Master meter /CP801-20604-3
Piston type volume meters	20606	(0 ~ 1) µL (1 ~ 2) µL (2 ~ 5) µL (5 ~ 10) µL (10 ~ 20) µL (20 ~ 50) µL (50 ~ 100) µL (100 ~ 200) µL (200 ~ 500) µL (500 ~ 1 000) µL (1 ~ 2) mL (2 ~ 5) mL (5 ~ 10) mL (10 ~ 25) mL (25 ~ 50) mL (50 ~ 100) mL	0.006 0 µL 0.006 1 µL 0.007 1 µL 0.008 5 µL 0.009 9 µL 0.040 µL 0.073 µL 0.097 µL 0.21 µL 0.39 µL 0.78 µL 1.8 µL 3.4 µL 4.8 µL 19 µL 71 µL	Balance /CP801-20606-1

210. Hardness

Measured Quantity Instrument or Guage	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Brinell hardness testers	21001	(75 ~ 250) HBW 10/500 (95 ~ 250) HBW 10/3 000 (250 ~ 450) HBW 10/3 000 (450 ~ 653) HBW 10/3 000	3.0 HBW 10/500 2.5 HBW 10/3 000 4.4 HBW 10/3 000 6.9 HBW 10/3 000	CRM /CP801-21001-1
Rockwell hardness testers	21002	(20 ~ 95) HRA (10 ~ 100) HRBW (10 ~ 70) HRC (60 ~ 120) HRMW (100 ~ 130) HRRW (65 ~ 94) HR15N (35 ~ 86) HR30N (15 ~ 77) HR45N (67 ~ 93) HR15TW (29 ~ 82) HR30TW (10 ~ 72) HR45TW	0.37 HRA 0.63 HRBW 0.33 HRC 1.4 HRMW 1.3 HRRW 0.63 HR15N 0.63 HR30N 0.63 HR45N 1.1 HR15TW 1.1 HR30TW 1.1 HR45TW	CRM /CP801-21002-1
Shore hardness testers	21003	(30 ~ 100) HS	1.0 HS	CRM /CP801-21003-1
Vickers hardness testers	21004	(50 ~ 300) HV 0.2 (300 ~ 600) HV 0.2 (600 ~ 850) HV 0.2 (50 ~ 300) HV 0.3 (300 ~ 600) HV 0.3 (600 ~ 850) HV 0.5 (50 ~ 300) HV 0.5 (300 ~ 600) HV 0.5 (600 ~ 850) HV 1.0 (50 ~ 300) HV 10 (300 ~ 600) HV 10 (600 ~ 850) HV 10 (300 ~ 600) HV 20 (600 ~ 850) HV 30	5.1 HV 0.2 13 HV 0.2 20 HV 0.2 4.7 HV 0.3 12 HV 0.3 20 HV 0.5 6.0 HV 0.5 12 HV 0.5 20 HV 1.0 2.2 HV 10 7.7 HV 10 12 HV 10 5.9 HV 20 11 HV 20	CRM /CP801-21004-1
Durometer hardness testers	21005	(0 ~ 100) HDA (0 ~ 100) HDD	0.5 HDA 0.5 HDD	Durometer calibration device /CP801-21005-1
Leeb hardness testers	21006	(400 ~ 1 000) HLD (350 ~ 750) HLG	5.2 HLD 5.4 HLG	CRM /CP801-21006-1 CRM /CP801-21006-2

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	50101			
Temperature Chambers		(-180 ~ 250) °C	0.5 °C	IPRT, TC-T /CP801-50101-1
		(250 ~ 650) °C	1.0 °C	TC-K /CP801-50101-1
Incubators		(-10 ~ 60) °C	0.5 °C	IPRT, TC-T /CP801-50101-2
Freezers		(-195 ~ 0) °C	0.5 °C	IPRT, TC-T /CP801-50101-3
Autoclaves		(50 ~ 140) °C	0.5 °C	IPRT, TC-T /CP801-50101-4
PCT		(50 ~ 140) °C	0.5 °C	IPRT, TC-T /CP801-50101-5
Liquid Baths		(-196 ~ -80) °C	0.1 °C	SPRT, TC-T, TC-K /CP801-50101-6
		(-80 ~ 550) °C	0.02 °C	SPRT, TC-T, TC-K /CP801-50101-6
Furnaces		(50 ~ 600) °C	0.2 °C	SPRT, TC-T, TC-K /CP801-50101-7
		(600 ~ 1 100) °C	1.3 °C	TC-S /CP801-50101-7
		(1 100 ~ 1 500) °C	2.7 °C	TC-S /CP801-50101-7
Dry-block calibrators		(-90 ~ 660) °C	0.016 °C	SPRT, TC-S
		(660 ~ 1 100) °C	1.2 °C	/CP801-50101-9
Temperature indicators/ recorders/controllers (with sensor)	50102			
Thermoelectric recorders / indicators / controllers		(-90 ~ 250) °C	0.03 °C	SPRT, TC-S /CP801-50102-1
		(250 ~ 660) °C	0.13 °C	
		(660 ~ 1 100) °C	1.4 °C	
		(1 100 ~ 1 500) °C	2.4 °C	
Resistance type recorders / indicators / controllers		(-90 ~ 250) °C	0.03 °C	SPRT /CP801-50102-2
		(250 ~ 660) °C	0.13 °C	
Electric temperature calibrators		(-90 ~ 660) °C	0.005 °C	CALIBRATOR, Thermometer /CP801-50102-9
		(660 ~ 1 500) °C	0.19 °C	

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 indicators/ recorders/controllers (without sensor) Thermoelectric recorders / indicators / controllers Resistance type recorders / indicators / controllers	50102	(-90 ~ 1 500) °C (-90 ~ 660) °C	0.29 °C 0.015 °C	CALIBRATOR /CP801-50102-10 CALIBRATOR /CP801-50102-13
Resistance thermometers; SPRT, TPRT, thermistors, etc. Industrial resistance thermometers Thermistors	50104	(-90 ~ 250) °C (250 ~ 660) °C (-80 ~ 200) °C	0.03 °C 0.13 °C 0.04 °C	SPRT /CP801-50104-1 SPRT /CP801-50104-2
Thermal expansion thermometers; bimetal, gas or liquid type Bimetal thermometers Thermal expansion thermometer	50105	(-50 ~ 500) °C (-50 ~ 500) °C	0.2 °C 0.2 °C	SPRT /CP801-50105-1 SPRT /CP801-50105-2
Thermocouples; noble metal, base metal, pure metal, special type, etc. Base-metal Thermocouple thermometers	50106	(-90 ~ 660) °C (660 ~ 1 100) °C	0.2 °C 1.5 °C	SPRT, TC-S /CP801-50106-2
Temperature transducers Temperature transducers (with sensor) Temperature transducers (without sensor)	50107	(-90 ~ 660) °C (660 ~ 1 100) °C (1 100 ~ 1 500) °C (-90 ~ 660) °C (660 ~ 1 500) °C	0.16 °C 1.7 °C 3.8 °C 0.16 °C 0.42 °C	SPRT,TC,CALIBRATOR ,MULTIMETER /CP801-50107-1

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 Polymer thin film hygrometers Digital Thermo-hygrometers Hair hygrometers	50302	(5 ~ 98) % R.H. (-40 ~ 80) °C (5 ~ 98) % R.H. (-40 ~ 80) °C (20 ~ 95) % R.H. (-20 ~ 80) °C	1.6 % R.H. 0.8 °C 1.6 % R.H. 0.8 °C 3 % R.H. 0.8 °C	Dew-point hygrometers /CP801-50302-1 Dew-point hygrometers /CP801-50302-2 Dew-point hygrometers /CP801-50302-3

503. Humidity

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Temperature humidity recorders Temperature humidity recorders -Polymer Thin Film Hygrothermograph	50304	(20 ~ 95) % R.H. (-20 ~ 80) °C (20 ~ 95) % R.H. (-20 ~ 80) °C	3 % R.H. 2 °C 3 % R.H. 2 °C	Dew-point hygrometers /CP801-50304-1 Dew-point hygrometers /CP801-50304-2
Transducers; dew- point/relative humidity Humidity transducers	50305	(5 ~ 98) % R.H. (-40 ~ 60) °C	1.8 % R.H. 0.8 °C	Dew-point hygrometers /CP801-50305-1
Humidity generators Constant temperature and humidity chamber Two-pressure humidity generators Flow mixing humidity generators	50306	(10 ~ 90) % R.H. (90 ~ 98) % R.H. (-80 ~ 200) °C (20 ~ 80) % R.H. (80 ~ 95) % R.H. (0 ~ 60) °C (5 ~ 25) % R.H. (25 ~ 80) % R.H. (80 ~ 98) % R.H.	2.5 % R.H. 2.8 % R.H. 0.5 °C 1.8 % R.H. 2.1 % R.H. 0.21 °C 1.3 % R.H. 1.6 % R.H. 1.9 % R.H.	DATALOGGER, Humidity transducer /CP801-50306-1 Dew-point hygrometers, IPRT /CP801-50306-2 Dew-point hygrometers, IPRT /CP801-50306-3

504. Moisture

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Cereal moisture meters	50401	(9 ~ 25) % M.C.	0.5 % M.C.	Balance, Dry oven /CP801-50401-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Colorimeters; material color (Including Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°) Red Yellow	70301	X Y Z X Y Z	0.37 0.23 0.16 0.79 0.68 0.22	Color standard tiles /CP801-70301-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Colorimeters; material color (Including Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°)	70301			Color standard tiles /CP801-70301-1
Blue		X Y Z	0.29 0.17 0.15	
Green		X Y Z	0.32 0.28 0.21	
Pale Grey		X Y Z	0.67 0.62 0.71	
Mid Grey		X Y Z	0.38 0.31 0.32	
Deep Grey		X Y Z	0.29 0.18 0.13	
White		X Y Z	0.85 0.86 0.96	
(Excluding Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°)				Color standard tiles /CP801-70301-1
Red		X Y Z	0.33 0.20 0.14	
Yellow		X Y Z	0.75 0.64 0.20	
Blue		X Y Z	0.28 0.16 0.12	
Green		X Y Z	0.31 0.24 0.17	

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Colorimeters; material color (Excluding Specular Component Standard Illuminant : A, C, D65 Standard Observe : 2°, 10°)	70301			Color standard tiles /CP801-70301-1
Pale Grey		X Y Z	0.63 0.58 0.66	
Mid Grey		X Y Z	0.35 0.27 0.27	
Deep Grey		X Y Z	0.28 0.16 0.10	
White		X Y Z	0.81 0.83 0.94	
Gloss meters	70306	20° 60° 85°	9.0×10^{-3} 9.7×10^{-3} 8.3×10^{-3}	Gloss standard plates /CP801-70306-1
Haze meters (H-1) (H-5) (H-10) (H-20) (H-30)	70308	1 5 10 20 30	0.86 0.72 0.9 1.2 1.9	Haze standard plates /CP801-70308-1

703. Properties of materials

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Spectrophotometers including FT-IR spectrophotometers Spectrophotometers	70325			
Wavelength		(250 ~ 780) nm	0.4 nm	Wavelength filter /CP801-70325-1
Transmittance		(250 ~ 750) nm		Transmittance filter /CP801-70325-1
		250 nm	1.0×10^{-2}	
		300 nm	0.9×10^{-2}	
		350 nm	0.9×10^{-2}	
		400 nm	0.7×10^{-2}	
		450 nm	0.7×10^{-2}	
		500 nm	0.8×10^{-2}	
		550 nm	0.8×10^{-2}	
		600 nm	0.8×10^{-2}	
		650 nm	0.8×10^{-2}	
		700 nm	0.8×10^{-2}	
		750 nm	0.8×10^{-2}	
Absorbance		(250 ~ 750) nm		
		250 nm	0.004 2	
		300 nm	0.004 0	
		350 nm	0.003 8	
		400 nm	0.002 8	
		450 nm	0.002 8	
		500 nm	0.003 0	
		550 nm	0.003 0	
		600 nm	0.003 0	
		650 nm	0.003 0	
		700 nm	0.003 2	
		750 nm	0.003 2	
FT-IR spectrophotometers		(400 ~ 4 000) cm^{-1}		Standard filter /CP801-70325-2
		906.82 cm^{-1}	0.11	
		1 028.42 cm^{-1}	0.28	
		1 069.27 cm^{-1}	0.78	
		1 154.62 cm^{-1}	0.10	
		1 583.04 cm^{-1}	0.10	
		1 601.38 cm^{-1}	0.12	
		2 850.20 cm^{-1}	0.13	
		3 001.40 cm^{-1}	0.10	
		3 026.44 cm^{-1}	0.10	
		3 060.14 cm^{-1}	0.10	
		3 082.22 cm^{-1}	0.10	

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Valid To : Dec. 08, 2025.

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

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.

407. Field strength & antennas

Measured Quantity Instrument or Guage	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Dipole Antennas	40703			
Dipole Antenna		20 MHz ~ 18 GHz	1.1 dB	Network Analyzer / CP801-40703-1
Antenna Factor				
VSWR		20 MHz ~ 18 GHz	0.02	
Biconical Antenna		20 MHz ~ 300 MHz	1.4 dB	Network Analyzer / CP801-40703-2
Antenna Factor		300 MHz ~ 18 GHz	1.3 dB	
VSWR		20 MHz ~ 18 GHz	0.02	
Log-Periodic Antenna	40707	20 MHz ~ 18 GHz	1.3 dB	Network Analyzer / CP801-40703-3
Antenna Factor				
VSWR		20 MHz ~ 18 GHz	0.02	
Horn antennas	40707			
Antenna Factor		200 MHz ~ 18 GHz	0.9 dB	Network Analyzer / CP801-40707-1
		(18 ~ 40) GHz	1.4 dB	
VSWR		200 MHz ~ 18 GHz	0.02	
		(18 ~ 40) GHz	0.04	