

CERTIFICATE OF ACCREDITATION

Korea Testing Laboratory

Accreditation No. : KC01-028

Corporation Registration No. : 254371-0012187

Address of Laboratory :
1. Haean-ro 723, Sa-dong Sangnok-gu Ansan-si Gyeonggi-do,
Republic of Korea
1-① Dosuri 15-1, Techon Gwangju-si Gyeonggi-do, Republic of Korea
2. 10, Chungui-ro Jinju-si Gyeongsangnam-do, Republic of Korea

Date of Initial Accreditation : April 11, 2001.

Validity of Accreditation : December 09, 2021. ~ December 08, 2025.

Scope of Accreditation : Attached Annex

Date of issue : June 26, 2024.

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



CHIN CHONGWOOK

Head

Korea Laboratory Accreditation Scheme

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

Korea Testing Laboratory
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CALIBRATION

Valid To : Dec. 08, 2025.

Accreditation No : KC01-028

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			10303	Autocollimators	N	10504	Non-contact coordinate measuring machines	Y
10101	Laser frequency	N	10304	Bevel protractors	N			
102. Linear dimension			10306	Clinometers	N	10505	Gauge block accessories	N
			10308	Fine angle generators, level comparators	N	10508	Hardness indenters	N
10201	Balls	N				10510	Laser trackers	N
10203	Electrical/mechanical comparators	Y	10311	Plate/square/electric levels	N	10511	Measuring microscopes, profile projectors	Y
			10312	Auto levels	N			
10204	Gauge block comparators	Y	10315	Polygons	N	10512	Micro measuring microscopes	Y
10206	Dial/cylinder gauge testers	Y	10316	Rotary tables	N	10514	Taper plug gauges	N
10207	Doctor blades	N	10317	Sine bars, plates, tables, centers	N	10515	Taper ring gauges	N
10208	Distance meters; electrooptic/laser/ultrasonic	N				10517	Stylus type roughness testers	Y
			10318	Squareness testers, right angle testers	N	10519	Roughness standard /comparison specimens	N
10209	End bars	N						
10210	Extensometers, linear displacement transducers	Y	10319	Cylindrical squares	N	10525	Thread plug gauges	N
			10320	Precision squares	N	10526	Taper thread plug gauges	N
10211	Filler gauges	Y	10321	Theodolites, transits	N	10527	Thread ring gauges	N
10212	Film applicators	N	10322	Angular displacement transducers	Y	10528	Taper thread ring gauges	N
10213	Gap gauges	N				10529	V-blocks, box blocks	N
10214	Gauge blocks, by comparison	N	10323	Alignment telescopes, line of sight collimators	N	10531	SEM/TEM/SPM/AFM microscopes	Y
10216	Height gauges/measuring machines	Y				106. Various dimensional		
			10325	Jig transits	N			
10219	Linear scales	Y	10326	Laser levels	N	10601	Inside/outside/gear tooth calipers, caliper gauges	Y
10220	Standard measuring machines	Y	104. Form			10603	Cylinder/bore gauges	Y
10221	Micro scales/standard scales	N	10401	Form testers	Y	10604	Depth gauges, depth micrometers	Y
10223	Electronic micrometers	Y	10404	Optical flats	N			
10224	Height micrometers, riser blocks	N	10405	Optical parallels	N	10605	Dial/digital gauges	Y
10225	Laser scan micrometers	Y	10406	Parallel blocks	N	10608	Grind gauges	N
10227	Standard tape rules, peripheral gauges	N	10407	Precision surface plates	Y	10609	Micro indicators, test indicators	Y
10228	Cylindrical plug/pin thread measuring wire	N	10408	Profile gauges	N	10610	Micrometer heads	Y
			10409	Roundness measurement instruments	Y	10611	3-Point micrometers	Y
10229	Radius gauges	N				10612	Inside micrometers	Y
10230	Cylindrical ring gauges	N	10410	Form standard specimens	N	10613	Outside micrometers	Y
10231	Step blocks	N	10411	Roundness standard /roundness magnification standard specimens	N	10614	Offset of retroreflectors	N
10232	Step gauges	N				10615	Particle counters	N
10233	Taper thickness gauges	N				10617	Standard sieves	N
10234	Ultrasonic thickness gauges	N	10412	Straight edges	Y	10618	Total stations	N
10235	Ultrasonic/coating specimens	N	10413	Straight rules	N	10619	Water level meters	N
			10415	Test bars	N	10620	Welding gauges	N
10236	Coating thickness testers	N	105. Complex geometry			201. Mass		
10237	Torque arms	Y	10502	Bench centers	N	20102	Auto-hopper scale balances	Y
10238	Width Measuring Specimens	N	10503	Contact coordinate measuring machines	Y	20103	Auto-packer scale balances	Y
103. Angle						20104	Axle weigher balances	N
10302	Angle gauge blocks	N				20105	Counter beam balances	Y

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site					
20106	Dial platform scale balances	Y	20707	Chloride meters	N	302. Velocity & revolution							
20107	Swing Dial scales	N	208. Viscosity			30201	Standard RPM generators	Y					
20109	Electric balances	Y				30202	Contact type tachometers	Y					
20112	Platform scale balances	Y				20801	Kinetic viscometers; capillary, etc	N	30203	Photo tachometers/stroboscopes	Y		
20113	Spring scale balances	Y				20802	Dynamic viscometers; rotational, etc	N	30204	Speed meters	Y		
20116	Weights	Y	209. Fluid flow			30205	wow-flutter generators	Y					
202. Force		209. DC volatage & current				30206	Wow-flutter meters	Y					
20202	Force measuring devices					N							
20203	Tension/compression testing machines					Y							
20204	Push-pull gauges				N	20908	Gas flowmeters; differential pressure	N	40101	DC ammeters	Y		
203. Torque		20909			Liquid flowmeters; differential pressure	N	40102	Transconductance amplifiers	Y				
					20302	Torque measuring devices	Y	40103	DC voltage/current calibrators	Y			
					20303	Torque wrenches/drivers	Y	40104	Electrical temperature	Y			
					20399	Others; Nut runners	Y	20910	Liquid flowmeters; electromagnetic	Y	40105	DC current shunts	Y
204. Pressure		20911			Gas flowmeters; thermal mass, etc.	N	40106	Galvanometers/null detectors	Y				
					20401	Altimeters	Y	20912	Liquid flowmeters; Coriolis, etc.	N	40107	Potentiometers	Y
					20402	Manometers	N	20913	Liquid flowmeters; open channel, etc.	N	40108	DC power supplies	Y
					20403	Pneumatic pressure	N	20914	Liquid flowmeters; open channel, etc.	N	40109	Standard cells	Y
20404	Hydraulic pressure ballances	N	20915	Gas flowmeters; positive displacement	N	40110	DC voltage dividers	Y					
20405	Air data test systems	N	20916	Gas flowmeters; positive displacement	Y	40111	DC voltage standards	Y					
20406	Absolute pressure gauges	Y	20917	Liquid flowmeters; positive displacement	Y	40112	DC voltmeters	Y					
20407	Blood pressure gauges	N	20918	Gas flowmeters; turbine	N	40113	Static/Ionic voltmeter	Y					
20408	Compound pressure gauges	Y	20919	Liquid flowmeters; turbine	N	402. Resistance, Capacitance, and Inductance							
20409	Differential pressure gauges	Y	20920	Gas flowmeters; turbine	N								
20411	Gauge pressure gauges	Y	20921	Liquid flowmeters; turbine	N								
20412	Pressure transducers/ transmitters	Y	20922	Gas flowmeters; ultrasonic	N								
20413	Dial type vacuum gauges	Y	20923	Liquid flowmeters; ultrasonic	N	40201	Capacitance bridges/ indicators	Y					
20414	Water depth meters	Y	20924	Liquid flowmeters; ultrasonic	N	40202	Decade capacitors	Y					
205. Vacuum		210. Hardness			20925	Gas flowmeters; variable area	N	40204	Standard capacitors	Y			
					20501	Capacitance diaphragm gauges	N	20926	Liquid flowmeters; variable area	N	40205	Earth testers	Y
					20502	Spinning rotor gauges	N	20927	Liquid flowmeters; variable area	N	40206	Inductance bridges/ indicators	Y
					20503	Ionization gauges	N	20928	Liquid flowmeters; variable area	N	40208	Inductors	Y
20504	Thermal conductivity gauges; pirani, thermocouple, convectron etc.	N	21001	Brinell hardness testers	Y	40209	Mutual inductors	Y					
20505	Standard leaks, Helium leak detectors	N	21002	Rockwell hardness testers	Y	40210	Insulation testers	Y					
206. Volume		211. Impact			21003	Shore hardness testers	Y	40211	Q-meters	Y			
					21004	Vickers hardness testers	Y	40212	Direct reading ratio sets	Y			
					21005	Durometer hardness testers	N	40213	Resistance bridges & Similar instruments	Y			
					21006	Leeb hardness testers	N	40214	Resistance meters	Y			
20601	Volumetric glasswares	N	21102	Charpy impact testers	Y	40215	Resistors	Y					
20602	Pycnometers	N	21103	Izod impact testers	Y	40216	Conductivity Meter	N					
20603	Rain gauges	N	301. Time/frequency			40217	Impedance bridges/LCR meters	Y					
20604	Standard volume vessels	N				40301	AC ammeters	Y					
20605	Concrete air content meters	N				40302	Clamp ammeters/voltmeters	Y					
20606	Piston type volume meters	N				40303	AC voltage/current Calibrators	Y					
207. Density		30102			40304	Wattmeter calibrators	Y						
					30103	Frequency standards	Y	40305	AC current shunts	Y			
					30104	General frequency sources	Y	40306	Phase angle generators, synchro resolve generators	Y			
					30105	Frequency meters/counters	Y	40307	Voltage/Current Phase meters / synchro resolve	Y			
20702	Liquid density meters	N	30106	Time interval sources	Y	40308	Potential transformer test sets	Y					
20704	Salinity meters	N		Time interval meters/Stop watches/Timers	Y	40309	Potential transformers	Y					
20705	Sucrose meters	N											
20706	Hydrometers : density, specific gravity, API, baume, sugar, milk, soil, salinity, LPG, etc	N											

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
40310	Power factor meters	Y	40508	Magnetometers	N	501. Contact thermometry		
40311	AC power meters	Y	40510	Reference/standard magnets	N	50101	Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	Y
40312	AC power supplies	Y						
40313	Puncture/ safety testers	Y	406. Radio frequency measurements			50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y
40314	Power recorders	Y	40601	RF amplifiers	Y			
40315	Current transformer test sets	Y	40602	coaxial attenuators	Y			
40316	Current / turn current coil transformers	Y	40603	Waveguide attenuators	N	50103	Glass thermometers; in-glass, Beckmann	N
			40604	BER(Bit Error Rate)	Y			
40317	LF thermal voltage converters	Y	40605	Burst pulse generators	Y	50104	Resistance thermometers; SPRT, IPRT, thermistors,etc	Y
40318	AC voltmeters	Y	40607	RF power meter calibrators	Y			
40319	Watt Hour Meters	Y	40608	EMC transducers ; current probes, absorbing clamps, etc.	Y	50105	Thermal expansion thermometers; bimetal, gas or liquid type	Y
40320	Pulsed high voltage & current meters/Welding current meters	Y						
40321	Ratio transformers	Y				40610	Coaxial directional couplers/splitters	Y
404. Other DC & AC Measurements			40611	Waveguide directional	N			
			40612	DS1/DS3 Communications systems	Y			
40401	LF amplifiers	Y	40613	Electrostatic discharge generators	Y	50107	Temperature transducers	Y
40402	DC/LF attenuators	Y	40614	EMC receivers	Y			
40403	Multimeter calibrators	Y	40615	RF filters	Y	50108	Primary fixde-point cells and apparatus	N
40404	Oscilloscope calibrators	Y	40616	RF impedance meters	Y			
40406	Video signal generators	Y	40618	Line impedance stabilization networks; LISN, CDN, ISN, etc.	Y	502. Non Contact thermometry		
40407	Audio distortion analyzers/meters	Y				40619	Coaxial standard mismatches	Y
40408	LF filters	Y	40620	Waveguide standard mismatches	N	50204	Radiation thermometers	N
40409	LF/Audio signal analyzers	Y	40621	Mobile communication test sets	Y	50205	Thermal image apparatus	N
40410	Line frequency meters	Y	40622	Modulation meters	Y	50206	Blackbody furnaces	N
40411	Function generators	Y	40623	Network analyzers	Y	50207	ear thermometers	N
40412	Genescopes	Y	40624	Noise figure meters	Y	503. Humidity		
40413	AC/DC high voltages voltmeters	Y	40626	Noise impulse simulators	Y	50301	Dew-point hygrometer;chilled mirror, alumina thinfilm, etc.	N
40414	LF Impulse generators	Y	40628	Coaxial noise sources	Y			
40416	Leakage current testers	Y	40631	RF phase meters	Y	50302	Relative humidity hygrometers;polymer thinfilm, hair, etc.	Y
40417	Electronic AC/DC loads	Y	40635	RF power meters	Y			
40418	Modulation meters	Y	40636	Diode power sensors	Y	50303	Pscygrometers;assmann ventilated, PRT type, etc.	N
40419	Analogue/digital Multimeters	Y	40637	Thermocouple Power sensors	Y			
40420	Noise meters	Y	40638	Pulse generators	Y	50304	Temperature humidity recorders; Hygrothermograph, etc.	Y
40421	Oscilloscopes	Y	40639	Radar test sets	Y			
40422	LF phase meters	Y	40640	RF signal generators	Y	50305	Transducers; dew-point/relative humidity	Y
40423	Random wave generators	Y	40641	RF Spectrum analyzers	Y			
40424	Volt/Current recorders	Y	40642	RF speed guns	Y	50306	Humidity generators;two-pressure, two-temperature, flow mixing humidity generator, constant temperature and humidity chamber, etc.	Y
40425	Relay test sets	Y	40643	Surge generators	Y			
40426	LF signal generators	Y	40644	SWR meters	Y			
40427	LF spectrum analyzers	Y	40645	RF terminations	Y			
40429	Sweep generators	Y	40646	Coaxial thermistor mounts	Y			
40430	Signal transducers	Y	40648	Transmission trouble testers	Y			
40431	AC-DC transfer standards	Y	40650	RF voltmeters	Y	504. Moisture		
40432	Transistor curve tracers	Y	40651	Vector voltmeters	Y			
40433	Waveform analyzers	Y	40652	Field strength meters	Y	50401	Cereal moisture meters	Y
40434	AC/DC high voltage generators	Y	40653	AM/FM test sources	Y	50402	Wood moisture meters	N
40435	AC/DC High voltage probes	Y	40654	DIP simulator	Y	50403	Paper moisture meters	N
40436	Logic analyzers	Y	40699	Permittivity meters	N	601. Sound in air		
40437	Telephone testers	Y	40699	Waveguide calibration kit	N			
40438	Video signal analyzers	Y	407. Field strength & antennas			60102	Sound Calibrators	N
40499	Ultrasonic Flaw Detector	Y				60104	Microphones	N
405. Low frequency electric & magnetic fields			40702	Probes	N	60106	Sound level meters	Y
			40703	Dipole Antennas	N			
			40704	Loop antennas	N			
40503	Flux meters	N	40705	Monopole Antennas	N			
40504	Flux sources	N	40707	Horn antennas	N			

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
603. Vibration			70321	Refractometers	N			
60301	Vibration calibrators	N	70323	Transmittance meters	N			
60302	Vibration transducers	N	70325	Spectrophotometers including FT-IR spectrophotometers	Y			
60303	Vibration measuring instruments	N	70326	Wavelength reference materials; absorption cell, bandpass filter, etc	N			
701. Photometry								
70101	Illuminance meters	N						
70102	Luminance meters	N						
70103	Total luminous flux meters	Y	704. Fiber optics					
70104	Luminous intensity meters	Y	70402	Broadband Optical Light Sources	Y			
702. Properties of detector & sources			70408	Multichannel laser sources	Y			
70202	Color temperature meters	Y	70410	Optical attenuators	Y			
70203	Color temperature standard lamps	N	70411	Optical couplers	Y			
70204	Colorimeters; source color	Y	70412	Fiber-optic power meters	Y			
70207	Laser power meters	N	70413	Optical loss Testers	Y			
70209	Total luminous flux lamps	N	70415	Optical multimeters	Y			
70211	Pyranometers and pyrhemometers	N	70417	Optical spectrum analyzers	Y			
70213	Display color analyzers; luminance, chromaticity, white balance, etc.	Y	70418	Optical time domain reflectors, OTDR	Y			
70214	Luminous intensity standard lamps	N	70419	PDH/SDH Analyzers	Y			
70215	Spectral irradiance lamps	N	70423	Return loss test sets	Y			
70216	Total spectral radiant flux	N	70424	SDH/SONET Analyzers	Y			
70217	Luminance standard source	N	70426	Multi-laser wavelength	Y			
70218	Spectral radiant standard	N	70429	Frequency stabilized laser and LDs	Y			
70219	UV irradiance meters	N	70430	ASE light sources	Y			
70220	Spectral irradiance meters	Y	70431	CW-laser Wavelength meters	Y			
70221	Total spectral radiant flux meters	Y						
70222	Spectral radiance meters	Y	901. Chemical Analysis					
703. Properties of materials			90101	Breath alcohol analyzers	N			
70301	Colorimeters; material color	Y	90102	Environmental air quality monitoring instruments	Y			
70302	Color standard filters	N	90103	Gas analyzers	Y			
70304	Color standard tiles	N	90104	Exhaust Gas test Instruments	Y			
70305	Dioptrimeters	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						

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 (l 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 (l 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 (l 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 (l unit : mm) $\sqrt{0.6^2 + (2.0 \times 10^{-3} \times l)^2}$ µm (l 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 (l 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 (l unit : mm) $\sqrt{1.2^2 + (2.1 \times 10^{-3} \times l)^2}$ µm (l 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 (l unit : mm) $\sqrt{76^2 + 1.4^2 \times l^2}$ nm (l 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	$\sqrt{0.4^2 + (1.9 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks, End bars /CP801-10216-1
Linear scales	10219	(0 ~ 2 000) mm	$\sqrt{0.2^2 + (1.5 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Laser interferometers /CP801-10219-1
Standard measuring machines	10220	(0 ~ 600) mm	$\sqrt{70^2 + 0.74^2 \times l^2} \text{ nm}$ (<i>l</i> unit : mm)	Laser interferometers /CP801-10220-1
Micro scales/standard scales	10221	(0 ~ 600) mm	$\sqrt{0.3^2 + (0.8 \times 10^{-3} \times l)^2} \mu\text{m}$ (<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 Head calibration Block calibration Parallelism of riser blocks	10224	(0 ~ 25) mm (0 ~ 1 000) mm (0 ~ 600) mm	0.6 μm $\sqrt{0.5^2 + (1.9 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) 0.6 μm	Gauge blocks /CP801-10224-1
Laser scan micrometers	10225	(Ø0 ~ Ø5) mm (Ø5 ~ Ø100) mm	0.22 μm 0.34 μm	Cylindrical plug/ pin gauges /CP801-10225-1
Standard tape rules, peripheral gauges	10227	(0 ~ 50) m	$\sqrt{74^2 + (10 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Laser interferometers /CP801-10227-1
Cylindrical plug/pin gauges, thread measuring wire gauges Cylindrical plug/pin gauges Thread measuring wire gauges	10228	(Ø0.1 ~ Ø310) mm (Ø0.1 ~ Ø10) mm	$\sqrt{0.13^2 + (2.0 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{0.13^2 + (1.4 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Standard measuring machines /CP801-10228-1 /CP801-10228-2
Radius gauges	10229	(0 ~ 100) mm	1.5 μm	Contact coordinate measuring machines /CP801-10229-1
Cylindrical ring gauges	10230	(Ø0.4 ~ Ø310) mm	$\sqrt{0.29^2 + (2.0 \times 10^{-3} \times l)^2} \mu\text{m}$ (<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 (1 000 ~ 1 500) mm	$\sqrt{0.5^2 + (1.9 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{2.0^2 + (1.4 \times 10^{-3} \times l)^2} \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks /CP801-10232-1

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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 μm 0.020 mm	Ultrasonic specimens /CP801-10234-1
Ultrasonic/coating thickness specimens	10235	(0 ~ 4) mm (4 ~ 500) mm	0.2 μm 1.0 μm	Electronic micrometers /CP801-10235-1
Coating thickness testers	10236	(0 ~ 25) mm	2.0 μm	Gauge blocks /CP801-10236-1
Torque arms	10237	(0 ~ 2 000) mm	6 μm	Contact coordinate measuring machines /CP801-10237-1
Width Measuring Specimens	10238	(0.01 ~ 1) mm	$\sqrt{0.4^2 + (3.0 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Contact coordinate measuring machines /CP801-10238-1
		(1 ~ 2 000) mm	$\sqrt{1.2^2 + (2.1 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	

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	±1°	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 μm	
Straightness		(0 ~ 300) mm	1 μm	
Parallelism		(0 ~ 300) mm	10 μm	
Clinometers	10306	±90°	3.6"	Rotary tables /CP801-10306-1
Angle of accuracy	10308	±(0° ~ 2.0°)	0.4"	Laser interferometers /CP801-10308-1
Fine angle generators, level comparators	10311	±1°	0.5"	Fine angle generators /CP801-10311-1
Plate/square/electric levels		±2°	0.3"	
Precision flat		300 mm	2 μm	
Electrical				/CP801-10311-2
Squareness				

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Auto levels Accuracy of level Straightness of line of sight Repeatability	10312	0 m ~ ∞ 0 m ~ ∞ (0 ~ 60) m	0.2 mm 2" 0.2 mm	Standard scales, theodolite calibrators /CP801-10312-1
Polygons	10315	0° ~ 360°	0.4"	Indexing tables /CP801-10315-1
Rotary tables	10316	0° ~ 360°	0.5"	Indexing tables /CP801-10316-1
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	$\sqrt{0.5^2 + (2.2 \times 10^{-3} \times l)^2}$ μm (l 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)° (0 ~ 360)°	2" 2" 6"	Theodolite calibrators /CP801-10321-1
Angular displacement transducers	10322	0° ~ 360°	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
Jig transits Straightness of line of sight Scale accuracy of optical micrometer	10325	0.6 m ~ ∞ ±5 mm	0.08 mm 0.01 mm	Line of sight collimators, Height micrometers /CP801-10325-1
Laser levels Deviation from absolute horizontal	10326	(0 ~ 10)'	10"	Autocollimators, Plate/square/electric levels /CP801-10326-1

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			Form standard specimens /CP801-10401-1
Vertical accuracy		(0 ~ 200) mm	$\sqrt{0.09^2 + (1.2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	
Horizontal accuracy		(0 ~ 200) mm	0.7 μm	
Angle		0° ~ 180°	2"	
Radius		(0 ~ 50) mm	0.7 μm	
Optical flats	10404			Optical flats /CP801-10404-1
Flatness		(\varnothing 0 ~ \varnothing 100) mm	0.05 μm	
		(\varnothing 100 ~ \varnothing 150) mm	0.10 μm	
Optical parallels	10405			Optical flats /CP801-10405-1
Flatness		(\varnothing 0 ~ \varnothing 50) mm	0.06 μm	
Parallelism		(\varnothing 0 ~ \varnothing 50) mm	0.09 μm	
Parallel blocks	10406			Electronic micrometers /CP801-10406-1
Parallelism		(0 ~ 1 000) mm	0.8 μm	
Difference of both blocks		(0 ~ 1 000) mm	0.8 μm	
Precision surface plates	10407	(0 ~ 18) m ²	1.5 μm	Electrical levels /CP801-10407-1
Profile gauges	10408	(0 ~ 5) mm	0.3 μm	Dial gauge testers /CP801-10408-1
Roundness measurement instruments	10409			Roundness standard specimens /CP801-10409-1
Rotation accuracy of circumference direction		360°	13 nm	
Rotation accuracy of shaft direction		360°	19 nm	
Accuracy of detector		(0 ~ 1 000) μm	$\sqrt{0.12^2 + (1.1 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	
Form standard specimens	10410			Standard measuring machines /CP801-10410-1
Height		(0 ~ 100) mm	0.3 μm	
Pitch		(0 ~ 100) mm	0.4 μm	
Radius		(0 ~ 100) mm	0.3 μm	
Angle		0° ~ 180°	7.2"	

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Roundness standard/ roundness magnification standard specimens Roundness standard specimens Roundness magnification standard specimens	10411	360° (0 ~ 300) μm	13 nm $\sqrt{0.23^2 + (4.8 \times 10^{-3} \times l)^2}$ μm (l unit : μm)	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 μm 1.0 μm 2.0 μm 0.5 μm 1.0 μm 2.0 μm	Electronic micrometers /CP801-10412-1
Straight rules	10413	(0 ~ 3 000) mm	0.03 mm	Laser interferometers /CP801-10413-1
Test bars Angle Roundness Cylindricity Run-out	10415	0° ~ 30° (0 ~ 800) mm (0 ~ 800) mm (0 ~ 800) mm	0.4° 0.05 μm 2.2 μm 0.7 μm	Standard measuring machines /CP801-10415-1

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Bench centers Difference of both center Flatness of both bed	10502	(0 ~ 800) mm (0 ~ 800) mm	1.7 μm 0.9 μm	Electronic micrometers /CP801-10502-1
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

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Non-contact coordinate measuring machines	10504			Laser interferometers /CP801-10504-1
Length		(0 ~ 2 500) mm	$\sqrt{0.2^2 + (8.4 \times 10^{-4} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	
		(2 500 ~ 5 000) mm	$\sqrt{3.1^2 + (9.0 \times 10^{-4} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	
		(5 000 ~ 10 000) mm	$\sqrt{5.7^2 + (9.0 \times 10^{-4} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> 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	
Laser trackers	10510			Laser interferometers /CP801-10510-1
Volumetric system tests		2.3 m	1.1 μm	
Two face tests		(1 ~ 6) m	1 μm	
Range tests		(1 ~ 45) m	$\sqrt{1.2^2 + (0.27 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	
Measuring microscopes, profile projectors	10511			Standard scale /CP801-10511-1
Length		(0 ~ 600) mm	$\sqrt{0.46^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	
Angle		0° ~ 360°	2"	
Micro measuring microscopes	10512	(0 ~ 50) mm	3 μm	Standard scale /CP801-10512-1

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Taper plug gauges	10514			Contact coordinate measuring machines /CP801-10514-1
Outside dia. of small part		($\varnothing 0.5 \sim \varnothing 500$) mm	2.5 μm	
Outside dia. of large part		($\varnothing 0.5 \sim \varnothing 500$) mm	3.1 μm	
Taper angle		0° ~ 180°	0.001°	
Taper ring gauges	10515			Contact coordinate measuring machines /CP801-10515-1
Inside dia. of small part		($\varnothing 0.5 \sim \varnothing 250$) mm	2.3 μm	
Inside dia. of large part		($\varnothing 0.5 \sim \varnothing 250$) mm	1.8 μm	
Taper angle		0° ~ 180°	0.001°	
Stylus type roughness testers	10517			Roughness standard specimens /CP801-10517-1
Arithmetic mean(Ra)		(0 ~ 2) μm (2 ~ 10) μm	0.007 μm 0.040 μm	
Max. height(Rz)		(0 ~ 10) μm (10 ~ 1 000) μm	0.024 μm 0.11 μm	
Depth(d)		(0 ~ 10) μm (10 ~ 1 000) μm	0.021 μm 0.14 μm	
Roughness standard /comparison specimens	10519			Stylus type roughness testers /CP801-10519-1
Roughness standard specimens				
Arithmetic mean(Ra)		(0 ~ 2) μm (2 ~ 10) μm	0.010 μm 0.042 μm	
Max. height(Rz)		(0 ~ 10) μm (10 ~ 20) μm	0.026 μm 0.15 μm	
Depth(d)		(0 ~ 10) μm (10 ~ 1 000) μm	0.026 μm 0.17 μm	
Roughness comparison specimens				
Max. height(Rz)		(0 ~ 10) μm (10 ~ 1 000) μm	0.027 μm 0.15 μm	
Thread plug gauges	10525			Standard measuring machines /CP801-10525-1
Outside dia.		($\varnothing 0.4 \sim \varnothing 300$) mm	0.8 μm	
Effective dia.		($\varnothing 0.4 \sim \varnothing 300$) mm	1.0 μm	
Pitch		(0.1 ~ 10) mm	0.8 μm	
Half angle of thread		0° ~ 80°	2'	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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	$\sqrt{9^2 + (2 \times 10^{-3} \times l)^2}$ µm (l unit : mm)	Step gauges /CP801-10601-1
Cylinder/bore gauges	10603	(0 ~ 1 000) mm	0.6 µm	Dial gauge testers /CP801-10603-1

106. Various dimensional

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Depth gauges, depth micrometers	10604	(0 ~ 300) mm (300 ~ 1 000) mm	$\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<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	$\sqrt{0.7^2 + (1.8 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<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	$\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{2^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<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	$\sqrt{0.2^2 + (1.9 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{0.9^2 + (1.9 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm) $\sqrt{3.0^2 + (1.4 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<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) μm	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 μm	
sieve		(0.01 ~ 150) mm	4 μm	
Total stations	10618			Theodolite calibrators, Geodesic baselines /CP801-10618-1
Horizontal angle		(0 ~ 360) $^{\circ}$	2"	
Vertical angle		(0 ~ 360) $^{\circ}$	6"	
Distance		(0 ~ 41) m	1.0 mm	
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 $^{\circ}$ ~ 180 $^{\circ}$	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
		(10 ~ 40) kg	10 g	/CP801-20103-1

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
Swing Dial Scales	20107	(0 ~ 25) kg	0.1 kg	Weight /CP801-20107-1
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 ~ 300) kg (300 ~ 1 000) kg (1 000 ~ 2 000) kg	1.2 µg 1.2 µg 1.2 µg 1.2 µg 1.5 µg 1.9 µg 2.4 µg 3.0 µg 3.9 µg 4.7 µg 6.2 µg 8.0 µg 10 µg 13 µg 20 µg 50 µg 0.1 mg 0.2 mg 0.5 mg 2.0 mg 3.0 mg 5.0 mg 20 mg 0.3 g 0.7 g 0.1 kg 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

201. Mass

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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	(E2 class) 1.8 µg 1.8 µg 1.8 µg 2.4 µg 3.0 µg 4.0 µg 5.0 µg 6.0 µg 8.0 µg 9.0 µg 12 µg 15 µg 18 µg 24 µg 30 µg 50 µg 90 µg 0.24 mg 0.48 mg 0.90 mg 2.4 mg 4.8 mg 9.0 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.
Force measuring devices Case A	20202	(1 ~ 50) N 50 N ~ 20 kN 20 kN ~ 5 MN	1.2×10^{-4} 6.0×10^{-5} 5.1×10^{-4}	Force calibration machine /CP801-20202-1
Case B		(1 ~ 50) N 50 N ~ 20 kN 20 kN ~ 5 MN	1.4×10^{-4} 7.0×10^{-5} 5.1×10^{-4}	
Case C		(10 ~ 50) N 50 N ~ 20 kN 20 kN ~ 5 MN	1.7×10^{-4} 7.1×10^{-5} 5.3×10^{-4}	
Case D		(1 ~ 50) N 50 N ~ 20 kN 20 kN ~ 5 MN	1.7×10^{-4} 7.8×10^{-5} 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
		(0.002 ~ 0.05) N·m	6.8×10^{-3}	
		(0.05 ~ 0.5) N·m	1.9×10^{-3}	
		(0.5 ~ 1) N·m	9.9×10^{-4}	
		(1 ~ 2) N·m	7.1×10^{-4}	
		(2 ~ 5) N·m	6.1×10^{-4}	
		(5 ~ 10) N·m	4.6×10^{-4}	
		(10 ~ 20) N·m	4.6×10^{-4}	
		(20 ~ 50) N·m	3.1×10^{-4}	
		(50 ~ 100) N·m	3.5×10^{-4}	
		(100 ~ 200) N·m	2.7×10^{-4}	
		(200 ~ 500) N·m	1.6×10^{-4}	
		(500 ~ 1 000) N·m	6.6×10^{-4}	
		(1 ~ 2) kN·m	7.1×10^{-4}	
		(2 ~ 5) kN·m	7.7×10^{-4}	
		(5 ~ 10) kN·m	5.1×10^{-4}	
		(10 ~ 25) kN·m	4.8×10^{-4}	
		(25 ~ 50) kN·m	5.0×10^{-4}	

203. Torque

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Torque wrenches/drivers	20303	(0.01 ~ 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 ~ 500) N·m (500 ~ 700) N·m (700 ~ 2 000) N·m	1.5×10^{-2} 1.2×10^{-2} 1.2×10^{-2} 7.0×10^{-3} 1.0×10^{-2} 1.0×10^{-2} 2.9×10^{-3} 2.7×10^{-3} 5.0×10^{-3} 9.0×10^{-3} 6.0×10^{-3}	Torque measuring devices /CP801-20303-1
Others; Nut runners Electrically Controlled	20399	(1 ~ 10) N·m (10 ~ 50) N·m (50 ~ 250) N·m	7.3×10^{-3} 2.3×10^{-3} 3.4×10^{-3}	Torque measuring devices /CP801-20399-1
Electric		(0.2 ~ 25) N·m (25 ~ 60) N·m (60 ~ 180) N·m (180 ~ 500) N·m (500 ~ 2 000) N·m (2 000 ~ 6 600) N·m	3.9×10^{-3} 4.8×10^{-3} 7.7×10^{-3} 5.8×10^{-3} 5.0×10^{-3} 2.0×10^{-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	5.0×10^{-3} 2.0×10^{-3} 4.8×10^{-3}	
Pneumatic		(0.2 ~ 25) N·m (25 ~ 60) N·m (60 ~ 180) N·m (180 ~ 500) N·m (500 ~ 2 000) N·m (2 000 ~ 6 600) N·m	2.6×10^{-3} 4.8×10^{-3} 7.4×10^{-3} 5.5×10^{-3} 5.0×10^{-3} 2.0×10^{-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} 1.7×10^{-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·m ³ /s (0.000 1 ~ 1) μ Pa·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	4.4×10^{-5} 1.5×10^{-4}	Balance /CP801-20604-1
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	(0.0 ~ 1.5) %	0.000 8 %	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
Capillary viscometers		(2.5~ 100 000) mm ² /s	0.8×10^{-2}	Viscosity son'n /CP801-20801-3
		(100 000~ 200 000) mm ² /s	1.0×10^{-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

209. Fluid flow

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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
Gas flowmeters; thermal mass, etc.	20911	(1.2×10 ⁻³ ~ 60) m ³ /h	2.5×10^{-3}	SONIC NOZZLE /CP801-20911-1
		(1.2 ~ 10) m ³ /h	2.4×10^{-3}	BELL PROVER /CP801-20911-2
		(1.2×10 ⁻⁴ ~ 2.4) m ³ /h	2.8×10^{-3}	MASTER METER /CP801-20911-3
Liquid flowmeters; Coriolis, etc.	20912	(1.2×10 ³ ~ 1.2×10 ⁵) kg/h	4.0×10^{-3}	MASTER METER /CP801-20912-1
Liquid flowmeters; open channel, etc.	20913	(5 ~ 150) m ³ /h	4.0×10^{-3}	ELECTROMAGNETIC FLOWMETER /CP801-20913-1
Gas flowmeters; positive displacement	20914	(1.2 ~ 10) m ³ /h	2.4×10^{-3}	BELL PROVER /CP801-20914-1
		(1.2×10 ⁻³ ~ 60) m ³ /h	2.5×10^{-3}	SONIC NOZZLE /CP801-20914-2
		(1.2×10 ⁻⁴ ~ 2.4) m ³ /h	2.8×10^{-3}	MASTER METER /CP801-20914-3
Liquid flowmeters; positive displacement	20915	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20915-2
Gas flowmeters; turbine	20916	(1.2×10 ⁻³ ~ 60) m ³ /h	2.5×10^{-3}	SONIC NOZZLE /CP801-20916-1
		(1.2 ~ 10) m ³ /h	2.4×10^{-3}	BELL PROVER /CP801-20916-2
		(1.2×10 ⁻⁴ ~ 2.4) m ³ /h	2.8×10^{-3}	MASTER METER /CP801-20916-3
Liquid flowmeters; turbine	20917	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20917-1
Gas flowmeters; ultrasonic	20918	(1.2×10 ⁻³ ~ 60) m ³ /h	2.5×10^{-3}	SONIC NOZZLE /CP801-20918-1
		(1.2 ~ 10) m ³ /h	2.4×10^{-3}	BELL PROVER /CP801-20918-2
		(1.2×10 ⁻⁴ ~ 2.4) m ³ /h	2.8×10^{-3}	MASTER METER /CP801-20918-3
Liquid flowmeters; ultrasonic	20919	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20919-1
Gas flowmeters; variable area	20920	(1.2×10 ⁻³ ~ 60) m ³ /h	2.5×10^{-3}	SONIC NOZZLE /CP801-20920-1
		(1.2 ~ 10) m ³ /h	2.4×10^{-3}	BELL PROVER /CP801-20920-2
		(1.2×10 ⁻⁴ ~ 2.4) m ³ /h	2.8×10^{-3}	MASTER METER /CP801-20920-3
Liquid flowmeters; variable area	20921	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20921-1
Liquid flowmeters; vortex	20923	(1.2 ~ 120) m ³ /h	4.0×10^{-3}	MASTER METER /CP801-20923-1
Anemometers; vane, etc.	20925	(2 ~ 35) m/s	1.5×10^{-2}	WIND TUNNEL /CP801-20925-1

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 Brinell hardness testers Brinell hardness CRM	21001	(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 (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 6.2 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 Guage	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Vickers hardness testers Vickers hardness testers	21004	(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	5.0 HV 0.1 13 HV 0.1 19 HV 0.1 4.3 HV 0.2 13 HV 0.2 19 HV 0.2 4.3 HV 0.3 14 HV 0.3 18 HV 0.3 4.1 HV 0.5 12 HV 0.5 18 HV 0.5 4.8 HV 1 14 HV 1 18 HV 1 22 HV 1 31 HV 1 2.8 HV 2 7.7 HV 2 11 HV 2 3.1 HV 5 6.0 HV 5 9.9 HV 5 2.4 HV 10 8.0 HV 10 9.5 HV 10 2.2 HV 20 6.2 HV 20 8.8 HV 20 3.1 HV 30 6.2 HV 30 8.7 HV 30 3.4 HV 50 5.1 HV 50 11 HV 50	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	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	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.
Vickers hardness testers Vickers hardness CRM	21004	(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	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
Durometer hardness testers Durometer hardness testers IRHD 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 (30 ~ 100) IRHDN (84.8 ~ 100) IRHDH (9.9 ~ 34.9) IRHDL (30 ~ 100) IRHDM	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 0.003 mm, 0.004 N 0.003 mm, 0.004 N 0.003 mm, 0.004 N 0.003 mm, 0.004 N	Durometer calibration device /CP801-21005-1 IRHD calibration device /CP801-21005-2
Leeb hardness testers D-type G-type	21006	(400~700) HLD (700~1 000) HLD (350~450) HLG (450~600) HLG (600~750) HLG	4.4 HLD 5.2 HLD 5.4 HLG 5.2 HLG 5.0 HLG	CRM /CP801-21006-1 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
Count		≥ 1	0.58	
Stop watch calibrator Reference frequency		100 kHz ~ 10 MHz	7.2×10^{-8}	Stop Watch Calibrator / CP801-30106-2
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}	$1.0 \times 10^{-2} \text{ min}^{-1}$ $5.8 \times 10^{-2} \text{ min}^{-1}$	
Contact type tachometers RPM	30202	(1 ~ 4 000) min^{-1} (4 000 ~ 10 000) min^{-1}	$5.9 \times 10^{-2} \text{ min}^{-1}$ $8.7 \times 10^{-2} \text{ min}^{-1}$	Standard RPM Source / CP801-30202-1
Photo tachometers / stroboscopes	30203			Standard RPM Source / CP801-30203-1
RPM (Tachometers)		(1 ~ 10 000) min^{-1} (10 000 ~ 200 000) min^{-1}	$1.0 \times 10^{-2} \text{ min}^{-1}$ $5.8 \times 10^{-2} \text{ min}^{-1}$	
RPM (Stroboscope)		(30 ~ 10 000) min^{-1} (10 000 ~ 100 000) min^{-1}	$1.0 \times 10^{-2} \text{ min}^{-1}$ $5.8 \times 10^{-2} \text{ min}^{-1}$	
Frequency		10 mHz ~ 1 kHz (1 ~ 200) kHz	0.59 mHz 5.8 mHz	
Speed meters Velocity	30204	10 m/h ~ 1 000 km/h (2 cm ~ 50 cm) 10 m/h ~ 1 000 km/h (0.5 m ~ 10 m)	3.8×10^{-3} 1.2×10^{-3}	Frequency Counter, Time Delay Generator / CP801-30204-1
Velocity (Main Frame)		0.1 cm/s ~ 500 m/s	5.8×10^{-5}	
Wow-flutter generators Wow-flutter Deviation (JIS, NAB, CCIR, DIN, etc.)	30205	(0.01 ~ 3) %	$1.9 \times 10^{-4} \text{ % (abs.)}$	Wow Flutter Meter / CP801-30205-1
CCIR pulse		(1 ~ 100) ms	0.58 μs	
Frequency		1 Hz ~ 1 kHz (1 ~ 100) kHz	5.8 mHz 58 mHz	
Wow-flutter meters Wow-flutter deviation (JIS, NAB, CCIR, DIN, etc.)	30206	0.01 % 0.03 % 0.1 % 0.3 % 1 % 3 %	$1.2 \times 10^{-4} \text{ %}$ $3.6 \times 10^{-4} \text{ %}$ $1.2 \times 10^{-3} \text{ %}$ $3.6 \times 10^{-3} \text{ %}$ $1.2 \times 10^{-2} \text{ %}$ $3.6 \times 10^{-2} \text{ %}$	Wow Flutter Gen. / CP801-30206-1
CCIR pulse		(10 ~ 100) ms	1.2 ms	
Frequency		1 Hz ~ 1 kHz (1 ~ 10) kHz	5.8 mHz 58 mHz	

401. DC voltage & current

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
DC ammeters DC Current	40101	$\pm(1 \text{ nA} \sim 1 \text{ mA})$ $\pm(1 \text{ mA} \sim 1 \text{ A})$ $\pm(1 \sim 10) \text{ A}$ $\pm(10 \sim 100) \text{ A}$	$17 \text{ } \mu\text{A/A}$ $3.4 \text{ } \mu\text{A/A}$ $6.6 \text{ } \mu\text{A/A}$ 0.58 mA/A	Calibrator / CP801-40101-1
Transconductance amplifiers DC Current AC Current	40102	$\pm(100 \text{ } \mu\text{A} \sim 10 \text{ A})$ $\pm(10 \sim 100) \text{ A}$ $(10 \text{ Hz} \sim 1 \text{ kHz})$ $100 \text{ } \mu\text{A} \sim 10 \text{ A}$ $(10 \sim 100) \text{ A}$ $(50 \text{ Hz} \sim 1 \text{ kHz})$ $(100 \sim 360) \text{ A}$ $(1 \text{ kHz} \sim 10 \text{ kHz})$ $100 \text{ } \mu\text{A} \sim 10 \text{ A}$ $(10 \sim 100) \text{ A}$ 100 kHz 1 mA 100 A	$10 \text{ } \mu\text{A/A}$ $28 \text{ } \mu\text{A/A}$ $68 \text{ } \mu\text{A/A}$ 0.31 mA/A 0.1 mA/A $84 \text{ } \mu\text{A/A}$ 0.31 mA/A $78 \text{ } \mu\text{A/A}$ 0.33 mA/A	Calibrator, DMM, STD. Resistor / CP801-40102-1
DC voltage/current calibrators DC Voltage DC Current	40103	$\pm(100 \text{ } \mu\text{V} \sim 100 \text{ mV})$ $\pm(100 \text{ mV} \sim 10 \text{ V})$ $\pm(10 \sim 1 \text{ 000}) \text{ V}$ $\pm(100 \text{ } \mu\text{A} \sim 1 \text{ A})$ $\pm(1 \sim 10) \text{ A}$	$1.6 \text{ } \mu\text{V/V}$ $0.96 \text{ } \mu\text{V/V}$ $1.3 \text{ } \mu\text{V/V}$ $3.0 \text{ } \mu\text{A/A}$ $6.4 \text{ } \mu\text{A/A}$	DMM, STD. Resistor / CP801-40103-1
Electrical temperature calibrators Resistance Voltage	40104	$(0 \sim 1) \text{ } \Omega$ $(1 \sim 10) \text{ } \Omega$ $(10 \sim 100) \text{ } \Omega$ $100 \text{ } \Omega \sim 1 \text{ k}\Omega$ $(1 \sim 10) \text{ k}\Omega$ $(-10 \sim 100) \text{ mV}$ $100 \text{ mV} \sim 1 \text{ V}$	$5.9 \text{ } \mu\Omega/\Omega$ $3.1 \text{ } \mu\Omega/\Omega$ $1.4 \text{ } \mu\Omega/\Omega$ $1.5 \text{ } \mu\Omega/\Omega$ $3.1 \text{ } \mu\Omega/\Omega$ $1.3 \text{ } \mu\text{V}$ $6.1 \text{ } \mu\text{V/V}$	STD. Resistor / CP801-40104-1 Calibrator / CP801-40104-2
DC current shunts DC	40105	$(1 \sim 100) \text{ } \mu\Omega$ $(0.1 \sim 1) \text{ m}\Omega$ $(1 \sim 10) \text{ m}\Omega$ $10 \text{ m}\Omega \sim 1 \text{ k}\Omega$ $(1 \sim 10) \text{ k}\Omega$	$0.22 \text{ m}\Omega/\Omega$ $24 \text{ } \mu\Omega/\Omega$ $16 \text{ } \mu\Omega/\Omega$ $14 \text{ } \mu\Omega/\Omega$ $22 \text{ } \mu\Omega/\Omega$	Calibrator, DMM / CP801-40105-1
Galvanometers/null detectors DC Voltage	40106	$0 \text{ mV} \sim 1 \text{ 000 V}$	5.8 mV/V	Calibrator / CP801-40106-1
Potentiometers DC Voltage	40107	$1 \text{ mV} \sim 1 \text{ 000 V}$	$6.2 \text{ } \mu\text{V/V}$	Calibrator, DMM / CP801-40107-1

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 power supplies	40108			DMM, Electric load, AC power source / CP801-40108-1
DC Voltage		$\pm(0 \text{ mV} \sim 1 \text{ kV})$ $\pm(1 \sim 10) \text{ kV}$	$82 \mu\text{V/V}$ 0.8 mV/V	
DC Current		$\pm(0 \text{ mA} \sim 100 \text{ A})$ $\pm(100 \sim 1\,000) \text{ A}$ $\pm(1\,000 \sim 8\,000) \text{ A}$	$82 \mu\text{A/A}$ 0.14 mA/A 1.5 mA/A	
Rising time		$100 \mu\text{s} \sim 1 \text{ ms}$ $1 \text{ ms} \sim 1 \text{ s}$ $(1 \sim 5) \text{ s}$	$4.4 \mu\text{s}$ 2.1 ms/s 0.9 ms/s	
Resistance		$0 \Omega \sim 500 \text{ M}\Omega$	$1.3 \text{ m}\Omega/\Omega$	
PARD rms V_{p-p}		$(0 \sim 10) \text{ V}$ $(0 \sim 30) \text{ V}$	0.62 mV/V 1.6 mV/V	
Line regulation		$(-10 \sim 10) \%$	0.013%	
Load regulation		$(-10 \sim 10) \%$	0.013%	
Standard cells	40109			STD. cell / CP801-40109-1
Standard cells, Saturated		1.018 V	$0.6 \mu\text{V/V}$	
Standard cells, Unsaturated		1.019 V	$0.6 \mu\text{V/V}$	STD. cell / CP801-40109-2
DC voltage dividers	40110			Calibrator, Null detector / CP801-40110-1
DC Voltage		$10 \text{ mV} \sim 1 \text{ kV}$		
Ratio		$0.01 \sim 1$	2.0×10^{-7}	
DC voltage standards	40111			DC STD. / CP801-40111-1
DC Voltage		1 V	$0.6 \mu\text{V/V}$	
		1.018 V	$0.6 \mu\text{V/V}$	
		10 V	$0.6 \mu\text{V/V}$	
DC voltmeters	40112			Calibrator / CP801-40112-1
DC Voltmeter		0 mV	$0.17 \mu\text{V}$	
		$\pm(0 \sim 1) \text{ mV}$	$0.21 \mu\text{V}$	
		$\pm(1 \sim 10) \text{ mV}$	$22 \mu\text{V/V}$	
		$\pm(10 \sim 100) \text{ mV}$	$5.4 \mu\text{V/V}$	
		$\pm(100 \text{ mV} \sim 1 \text{ V})$	$5.1 \mu\text{V/V}$	
		$\pm(1 \sim 10) \text{ V}$	$2.9 \mu\text{V/V}$	
		$\pm(10 \sim 100) \text{ V}$	$4.6 \mu\text{V/V}$	
		$\pm(100 \sim 1\,000) \text{ V}$	$5.9 \mu\text{V/V}$	
Static/Ionic voltmeter	40113			Hi voltage power supply, STD C,R / CP801-40113-1
DC Voltage		$\pm(0 \sim 50) \text{ kV}$	17 mV/V	

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) (0 ~ 1) pF 1 pF ~ 1 nF 1 nF ~ 1 μF 1 μF ~ 10 mF (10 ~ 100) mF (1 kHz ~ 100 kHz) 0 pF ~ 1 μF 1 μF ~ 10 mF	98 μF/F 24 μF/F 96 μF/F 1.4 mF/F 3.2 mF/F 0.30 mF/F 1.4 mF/F	STD. Capacitor / CP801-40201-1 / CP801-40201-2
AC Voltage		(0 ~ 10) MHz (0 ~ 100) V	3.7 mV/V	
Frequency		0 Hz ~ 10 MHz	6.5×10^{-5}	
tanδ		(0 ~ 100) %	2.6×10^{-3}	
Schering Bridge Capacitance		(50 Hz ~ 60 Hz) 1 nF ~ 100 μF	0.6 mF/F	STD. Capacitor / CP801-40201-3
tanδ		(0 ~ 100) %	2.6×10^{-3}	
Decade capacitors Capacitance	40202	(100 Hz/120 Hz) 0 pF ~ 10 μF (1 kHz) 0 pF ~ 10 μF	65 μF/F 62 μF/F	Capacitance indicator / CP801-40202-1
Standard capacitors Capacitance	40204	(20 Hz ~ 1 kHz) (0 ~ 1) pF 1 pF ~ 1 nF 1 nF ~ 1 μF 1 μF ~ 10 mF (10 ~ 100) mF (1 kHz ~ 100 kHz) 0 pF ~ 1 μF (1 ~ 10) μF (100 kHz ~ 1 MHz) (0 ~ 1) pF 1 pF ~ 1 μF (1 ~ 5) MHz (1 ~ 1 000) pF (5 ~ 13) MHz (1 ~ 1 000) pF	13 μF/F 7.6 μF/F 12 μF/F 1.4 mF/F 3.2 mF/F 12 μF/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

402. Resistance, Capacitance, and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Earth testers Resistance AC Voltage AC Current	40205	(1 ~ 100) mΩ (0.1 ~ 1) Ω (1 ~ 100) Ω (0.1 ~ 10) kΩ 0 V ~ 1 kV 0 A ~ 100 A	5.8 mΩ/Ω 0.83 mΩ/Ω 0.59 mΩ/Ω 0.59 mΩ/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) μH 100 μH ~ 1 H (1 ~ 10) H (1 kHz) (0 ~ 100) μH 100 μH ~ 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 6.5×10 ⁻⁵	STD. Inductor Frequency Counter / CP801-40206-1 / CP801-40206-2
Inductors Standard Inductor / Inductance Decade Inductor / Inductance	40208	(100 Hz/120 Hz) (0 ~ 100) μH 100 μH ~ 1 H (1 ~ 10) H (1 kHz) (0 ~ 100) μH 100 μH ~ 10 H (100 Hz/120 Hz) (0 ~ 100) μH 100 μH ~ 1 H (1 kHz) 0 μH ~ 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

402. Resistance, Capacitance, and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Insulation testers 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
Resistance meters Ohmmeters DC AC DC Test Current	40214	10 $\mu\Omega$ (10 ~ 100) $\mu\Omega$ (0.1 ~ 1) m Ω (1 ~ 10) m Ω (10 ~ 100) m Ω (0.1 ~ 1) Ω (1 ~ 10) Ω (10 ~ 100) Ω (0.1 ~ 1) k Ω (1 ~ 10) k Ω (10 ~ 100) k Ω (50 Hz ~ 1 kHz) 1 m Ω (1 ~ 10) m Ω (10 ~ 100) m Ω 100 m Ω ~ 10 k Ω (10 ~ 100) k Ω (1 kHz ~ 1 MHz) 10 Ω ~ 100 k Ω 10 mA ~ 600 A	1.4 m Ω / Ω 0.20 m Ω / Ω 35 $\mu\Omega$ / Ω 17 $\mu\Omega$ / Ω 5.9 $\mu\Omega$ / Ω 3.7 $\mu\Omega$ / Ω 3.2 $\mu\Omega$ / Ω 3.2 $\mu\Omega$ / Ω 3.2 $\mu\Omega$ / Ω 2.6 $\mu\Omega$ / Ω 4.9 $\mu\Omega$ / Ω 0.80 m Ω / Ω 0.60 m Ω / Ω 0.18 m Ω / Ω 0.16 m Ω / Ω 0.18 m Ω / Ω 0.50 m Ω / Ω 0.20 mA/A	Decade resistor, Hi voltage meter, Standard Resistor, DMM, AC Resistor / CP801-40214-1

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 Tera Ohmmeters DC	40214	(0.1 ~ 1) MΩ (1 ~ 10) MΩ (10 ~ 100) MΩ (0.1 ~ 1) GΩ (1 ~ 10) GΩ (10 ~ 100) GΩ (0.1 ~ 1) TΩ (1 ~ 10) TΩ	4.3 μΩ/Ω 6.8 μΩ/Ω 17 μΩ/Ω 0.29 mΩ/Ω 0.41 mΩ/Ω 0.61 mΩ/Ω 1.2 mΩ/Ω 1.8 mΩ/Ω	Decade resistor, Hi resistor DMM / CP801-40214-2
Resistors Standard Resistor DC	40215	1 μΩ 10 μΩ 0.1 mΩ 1 mΩ 10 mΩ 100 mΩ 1 Ω 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1 GΩ 10 GΩ 100 GΩ 1 TΩ 10 TΩ 100 TΩ	0.3 nΩ 3 nΩ 0.083 nΩ 0.81 nΩ 7.9 nΩ 78 nΩ 0.78 μΩ 7.8 μΩ 83 μΩ 0.88 mΩ 11 mΩ 0.11 Ω 1.1 Ω 52 Ω 0.98 kΩ 11 kΩ 3.4 MΩ 46 MΩ 0.58 GΩ 20 GΩ 0.46 TΩ	Bridge Teraohmmeter / CP801-40215-1
AC High Resistor		(1 kHz) 1 mΩ ~ 1 MΩ (10 ~ 100) MΩ (0.1 ~ 1) GΩ (1 ~ 10) GΩ (10 ~ 100) GΩ (0.1 ~ 1) TΩ (1 ~ 10) TΩ (10 ~ 100) TΩ	60 μΩ/Ω 9.0 kΩ 0.12 MΩ 3.6 MΩ 46 MΩ 0.60 GΩ 20 GΩ 0.46 TΩ	Teraohmmeter / CP801-40215-2

402. Resistance, Capacitance, and Inductance

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Resistance meters Decade Resistor	40214	(1 ~ 10) mΩ (10 ~ 100) mΩ (0.1 ~ 1) Ω (1 ~ 10) Ω (10 ~ 100) Ω (0.1 ~ 1) kΩ (1 ~ 10) kΩ (10 ~ 100) kΩ (0.1 ~ 1) MΩ (1 ~ 10) MΩ (10 ~ 100) MΩ (0.1 ~ 1) GΩ (1 ~ 10) GΩ (10 ~ 100) GΩ (0.1 ~ 1) TΩ (1 ~ 10) TΩ (10 ~ 100) TΩ Zero Resistance	12 mΩ/Ω 1.2 mΩ/Ω 0.13 mΩ/Ω 28 μΩ/Ω 19 μΩ/Ω 19 μΩ/Ω 19 μΩ/Ω 19 μΩ/Ω 19 μΩ/Ω 36 μΩ/Ω 70 μΩ/Ω 0.59 mΩ/Ω 0.64 mΩ/Ω 0.86 mΩ/Ω 2.4 mΩ/Ω 4.3 mΩ/Ω 8.5 mΩ/Ω 9 μΩ	DMM Teraohmmeter / CP801-40215-3
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

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
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	
Inductance		(100 Hz/120 Hz) (0 ~ 100) μH 100 μH ~ 1 H (1 ~ 10) H (1 kHz) (0 ~ 100) μH 100 μH ~ 10 H (10 kHz) (0 ~ 100) μH 100 μH ~ 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	82 μΩ/Ω 0.32 mΩ/Ω 82 μΩ/Ω 0.31 mΩ/Ω 1.0 mΩ/Ω 4.0 mΩ/Ω 6.0 mΩ/Ω 82 μΩ/Ω 0.31 mΩ/Ω 0.50 mΩ/Ω 2.0 mΩ/Ω 3.0 mΩ/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.
Impedance bridges/LCR meters	40217			
Resistance		100 Ω ~ 1 k Ω 60 Hz ~ 10 kHz (10 ~ 100) kHz 100 kHz ~ 5 MHz (5 ~ 10) MHz (10 ~ 13) MHz	82 $\mu\Omega/\Omega$ 0.31 m Ω/Ω 0.51 m Ω/Ω 2.1 m Ω/Ω 3.0 m Ω/Ω	STD Capacitor, STD Inductor, STD Resistor / CP801-40217-1
		(1 ~ 10) k Ω 60 Hz ~ 10 kHz (10 ~ 100) kHz 100 kHz ~ 1 MHz	82 $\mu\Omega/\Omega$ 0.21 m Ω/Ω 0.31 m Ω/Ω	
		(10 ~ 100) k Ω 1 kHz (1 ~ 100) kHz 100 kHz ~ 1 MHz	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	40301			Calibrator / CP801-40301-1
AC Current		(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	
Clamp ammeters/voltmeters	40302			Calibrator, Decade box / CP801-40302-1
DC Voltage		(0 ~ 1 000) V	60 μ V/V	
DC Current		0 mA ~ 5 000 A	1.6 mA/A	
AC Current		(10 Hz ~ 10 kHz) 0 mA ~ 5 000 A	2.4 mA/A	
AC Voltage		(10 Hz ~ 10 kHz) (0 ~ 1 000) V	0.6 mV/V	
Resistance		(0 ~ 10) M Ω	6.2 $\mu\Omega/\Omega$	
Frequency		10 Hz ~ 10 MHz	1.9 mHz/Hz	
Turn Current Coil				Calibrator / CP801-40302-2
DC Ratio		2 ~ 50	0.12 %	
AC Ratio		(60 Hz) 2 ~ 50	0.15 %	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
AC voltage/current Calibrators	40303			AC Current shunt, DMM / CP801-40303-1
AC Voltage		(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	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	
AC Current		(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	31 μ A/A 35 μ A/A 0.10 mA/A 31 μ A/A 92 μ A/A 0.11 mA/A	
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}	

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
Total Harmonic Distortion				
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}	
AC current shunts	40305			AC/DC Transfer STD. / CP801-40305-1
AC Current Shunt				
AC Current		(10 Hz ~ 1 kHz) 10 mA 100 mA 1 A 10 A (1 kHz ~ 10 kHz) 10 mA 100 mA 1 A 10 A	$18 \mu\text{A/A}$ $20 \mu\text{A/A}$ $24 \mu\text{A/A}$ $35 \mu\text{A/A}$ $18 \mu\text{A/A}$ $20 \mu\text{A/A}$ $26 \mu\text{A/A}$ $92 \mu\text{A/A}$	
AC Resistance		(10 Hz ~ 1 kHz) (1 ~ 10) mΩ (10 ~ 100) mΩ 100 mΩ ~ 1 Ω (1 ~ 10) Ω 10 Ω ~ 10 kΩ	$0.22 \text{ m}\Omega/\Omega$ $0.18 \text{ m}\Omega/\Omega$ $0.12 \text{ m}\Omega/\Omega$ $96 \mu\Omega/\Omega$ $92 \mu\Omega/\Omega$	

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.
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 Compomator, / 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 Compomator / 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			Power calibrator, Trans. Amp., Calibrator, Power Meter / CP801-40311-1
AC power meters				
Active power		(50 ~ 60) Hz 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 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} (Squre)		(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}	

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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 AC power/digital	40314	60 W 600 W 6 kW 30 kW 60 W 600 W 6 kW 30 kW	10 mW 0.11 W 1.2 W 16 W 7.7 mW 67 mW 0.83 W 5.7 W	Power calibrator / CP801-40314-1
Current transformer test sets Current transformer test sets Ratio error Phase Angle error Burden VA Power Factor Ratio Tester Ratio	40315	(5 ~ 50) A (-19.99 ~ + 19.99) % (50 ~ 10 000) A (-19.99 ~ + 19.99) % (5 ~ 50) A (-680 ~ + 680)' (50 ~ 10 000) A (-680 ~ + 680)' (0.125 ~ 600) VA 0.8 ~ 1.0 5 ~ 700	0.018 % 0.011 % 0.9' 0.7' 7.0×10^{-3} 1.0×10^{-3} 2.0×10^{-4}	Wide ratio CT, STD. CT, CT Comporator, / CP801-40315-1 Precision power analyzer / CP801-40315-2 Ratio Transformer / CP801-40315-3
Current / turn current coil transformers Ratio error Phase Angle error	40316	(5 ~ 50) A (-19.99 ~ + 19.99) % (50 ~ 10 000) A (-19.99 ~ + 19.99) % (5 ~ 50) A (-680 ~ + 680)' (50 ~ 10 000) A (-680 ~ + 680)'	0.016 % 0.008 % 0.80' 0.55'	CT Comporator / CP801-40316-1
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	(10 Hz ~ 1 kHz)		
AC Voltmeter		(10 ~ 100) mV	1.5 mV/V	Calibrator / CP801-40318-1
		100 mV ~ 1 V	44 μ V/V	
		(1 ~ 10) V	71 μ V/V	
		(10 ~ 100) V	52 μ V/V	
		10 mV ~ 1 000 V	47 μ V/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				Calibrator / CP801-40318-3
Voltage		(10 Hz)		
		(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
Watt hour meters		(0 ~ 527.8) Wh	1.5×10^{-4}	/ CP801-40319-1
		(527.8 ~ 1 266.7) Wh	1.7×10^{-4}	
VA hour meter		(50 ~ 60) Hz		VA hour meter
		(0 ~ 527.8) VAh	1.5×10^{-4}	/ CP801-40319-2
		(527.8 ~ 1 266.7) VAh	1.7×10^{-4}	
Var hour meters		(50 ~ 60) Hz		Var hour meter
		(0 ~ 527.8) varh	1.5×10^{-4}	/ CP801-40319-3
		(527.8 ~ 1 266.7) varh	1.7×10^{-4}	
Reference watt hour meters				Reference watt hour
Active Power		(50 ~ 60) Hz		meter
		(60 ~ 440) V		/ CP801-40319-4
		(0.05 ~ 120) A		
		(0.25 ~ 1)		
		(-100 ~ 100) %	0.010 %	
		(50 ~ 60) Hz		
		(60 ~ 440) V		
		(0.05 ~ 120) A		
		(-1 ~ 0.25)		
		(-100 ~ 100) %	0.021 %	
Reactive Power		60 Hz		
		(120 ~ 600) V		
		(0.2 ~ 200) A		
		(0.5 ~ 1)		
		(0 ~ 60)°		
		(-100 ~ 100) %	0.003 %	
		60 Hz		
		(60 ~ 440) V		
		(0.05 ~ 0.5) A		
		(-1 ~ 1)		
		(-100 ~ 100) %	0.031 %	
		60 Hz		
		(60 ~ 440) V		
		(0.5 ~ 120) A		
		(-1 ~ 1)		
		(-100 ~ 100) %	0.021 %	
		(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 ~ 1 000) V 1 mA ~ 900 A (-100 ~ 100) %	0.023 %	Reference watt hour meter / CP801-40319-4
Watt hour meter test systems Active Power		(50 ~ 60) Hz (63.51 ~ 380) V (0.05 ~ 120) A (0.25 ~ 1) (-100 ~ 100) %	0.010 %	Reference watt hour meter / CP801-40319-5
		(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 %	
DC Power		(30 ~ 500) V 5 A (-100 ~ 100) % 200 V 1 mA ~ 120 A (-100 ~ 100) %	0.039 % 0.080 %	

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 Resistance Welding Current Meter AC Resistance Welding Current AC Resistance Welding Voltage DC Resistance Welding Current DC Resistance Welding Voltage Arc Welding Current meter AC Arc Welding Current AC Arc Welding Voltage DC Arc Welding Current DC Arc Welding Voltage	40320	(40 Hz ~ 1 kHz) 1 A ~ 15 kA (15 ~ 25) kA (40 Hz ~ 1 kHz) 0 mV ~ 10 V 1 A ~ 20 kA 0 mV ~ 10 V (10 Hz ~ 10 kHz) (1 ~ 1 000) A (10 Hz ~ 10 kHz) 0 mV ~ 100 V (1 ~ 1 000) A 0 mV ~ 100 V	 10 mA/A 12 mA/A 0.6 mV/V 10 mA/A 0.6 mV/V 2.4 mA/A 0.6 mV/V 1.6 mA/A 0.6 mV/V	Monitoring sys. Calibrator / CP801-40320-1 Monitoring sys., Calibrator / CP801-40320-2
Ratio transformers Ratio	40321	(0 ~ 1 000)	 4.0×10 ⁻⁵	Calibrator,DMM null detector bridge / CP801-40321-1

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 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 9.8 mA/A	
		(1 ~ 100) mA (1 ~ 30) MHz (1 ~ 100) mA (30 ~ 50) MHz (1 ~ 100) mA	11 mA/A 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 $\mu\text{Hz}/\text{Hz}$ 0.11 mV/V 0.19 mV/V 10 $\mu\text{V}/\text{V}$ 9.7 $\mu\text{V}/\text{V}$ 10 $\mu\text{V}/\text{V}$ 12 $\mu\text{A}/\text{A}$ 9.8 $\mu\Omega/\Omega$ 9.8 $\mu\Omega/\Omega$ 84 $\mu\text{Hz}/\text{Hz}$ 93 $\mu\text{V}/\text{V}$ 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 $\mu\text{V}/\text{V}$ 12 $\mu\text{V}/\text{V}$ 59 $\mu\text{A}/\text{A}$ 0.25 mA/A 75 $\mu\text{V}/\text{V}$ 17 $\mu\text{V}/\text{V}$ 59 $\mu\text{V}/\text{V}$ 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			
Color pattern generators				
Frequency (NTSC/PAL/SECAM)		1 MHz ~ 1.3 GHz 50 Hz ~ 20 kHz	5.8×10^{-8} 5.8×10^{-5}	Frequency Couter, Video Analyzer, Oscilloscope / CP801-40406-1
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°	
Video signal generators				
VGA/SD/HD				
Y Level		(0 ~ 0.1) V (0.1 ~ 1) V	7.0×10^{-3} 6.6×10^{-3}	Frequency Couter, Video Analyzer, Oscilloscope / CP801-40406-2
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}	

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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 / CP801-40407-3
Distortion meter		(10 Hz ~ 1 kHz)		
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 kHz ~ 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)		
		(10 ~ 1 000) V	7.7 mV/V	
		(1 kHz ~ 100 kHz)		
		(10 ~ 1 000) V	9.8 mV/V	
dB		(10 Hz ~ 1 kHz)		
		(+ 50 ~ + 20) dB	0.055 dB	
		(10 Hz ~ 1 kHz)		
		(+ 20 ~ -50) dB	0.025 dB	
		(10 Hz ~ 1 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	
Distortion		(10 Hz ~ 1 kHz)		
		(0 ~ -40) dB	0.029 dB	
		(-40 ~ -60) dB	0.037 dB	
		(-60 ~ -90) dB	0.063 dB	
		(1 kHz ~ 160 kHz)		
		(0 ~ -40) dB	0.037 dB	
		(-40 ~ -60) dB	0.057 dB	
		(-60 ~ -70) dB	0.073 dB	
LF filters	40408			Frequency Couter, DMM, True RMS Voltmeter / CP801-40408-1
Filter characteristics		(10 Hz ~ 1 kHz)		
		(0 ~ -40) dB	0.025 dB	
		(10 Hz ~ 1 kHz)		
		(-40 ~ -60) dB	0.033 dB	
		(10 Hz ~ 1 kHz)		
		(-60 ~ -80) dB	0.075 dB	
		(1 ~ 100) kHz		
		(0 ~ -40) dB	0.028 dB	
		(1 ~ 100) kHz		
		(-40 ~ -60) dB	0.055 dB	
		(1 ~ 100) kHz		
		(-60 ~ -80) dB	0.088 dB	
		(100 kHz ~ 30 MHz)		
		(0 ~ -40) dB	0.055 dB	
		(100 kHz ~ 30 MHz)		
		(-40 ~ -60) dB	0.083 dB	
		(100 kHz ~ 30 MHz)		
		(-60 ~ -80) dB	0.12 dB	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
LF/Audio signal analyzers	40409			
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)		Frequency Couter, Calibrator, True RMS Voltmeter / CP801-40409-1
		(+ 10 ~ -40) dB	0.034 dB	
		(-40 ~ -80) dB	0.077 dB	
Audio frequency analyzers Output frequency		1 Hz ~ 500kHz	6.1×10^{-6}	True RMS Voltmeter / CP801-40409-2
Output voltage		(10 Hz)		
		(1 ~ 10) mV	1.2 mV/V	
		(10 ~ 100) mV	0.58 mV/V	
		100 mV ~ 10 V	0.39 mV/V	
		(10 ~ 30) V	0.42 mV/V	
		(10 Hz ~ 10 kHz)		
		(1 ~ 10) mV	0.86 mV/V	
		10 mV ~ 10 V	0.22 mV/V	
		(10 ~ 30) V	0.32 mV/V	
		(10 ~ 100) kHz		
		(1 ~ 10) mV	6.0 mV/V	
		10 mV ~ 10 V	1.0 mV/V	
		(10 ~ 30) V	1.4 mV/V	
		(100 ~ 160) kHz		
		1 mV ~ 30 V	7.1 mV/V	
Output level		(10 Hz ~ 100 kHz)		
		(+ 30 ~ -50) dBm	0.017 dB	
		(-50 ~ -60) dBm	0.038 dB	
		(-60 ~ -80) dBm	0.068 dB	
		(100 ~ 160) kHz		
		(+ 30 ~ -60) dBm	0.063 dB	
		(-60 ~ -80) dBm	0.084 dB	
Input Frequency		1 Hz ~ 500 kHz	6.1×10^{-6}	
Input voltage		(10 Hz)		
		(0.1 ~ 1) mV	5.8 mV/V	
		(1 ~ 10) mV	0.85 mV/V	
		10 mV ~ 150 V	0.40 mV/V	
		(10 Hz ~ 10 kHz)		
		(0.1 ~ 1) mV	4.9 mV/V	
		(1 ~ 10) mV	0.67 mV/V	
		10 mV ~ 150 V	0.20 mV/V	
		(10 ~ 100) kHz		
		(0.1 ~ 1) mV	7.6 mV/V	
		(1 ~ 10) mV	1.0 mV/V	
		10 mV ~ 150 V	0.42 mV/V	
		(100 ~ 500) kHz		
		10 mV ~ 10 V	4.2 mV/V	
Input level		(10 Hz ~ 1 kHz)		
		(+ 50 ~ -50) dBm	0.015 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	0.043 dB	
		(-60 ~ -80) dBm	0.058 dB	
		(100 ~ 500) kHz		
		(+ 20 ~ -60) dBm	0.066 dB	
		(-60 ~ -80) dBm	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_{D-D})		(-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				
Period				
(Analogue)		100 ps ~ 10 s	8.4 ms/s	Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-2
(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_{D-D})		10 mV ~ 100 V	10 mV/V	
Function generators, synthesizer				
Reference frequency		1 MHz, 10 MHz	6.1×10^{-11}	Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-3
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 Function generators, synthesizer Voltage	40411	(10 Hz)		Frequency Couter, DMM, True RMS Voltmeter / CP801-40411-3
		(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_{D-D})		(-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			
ECG Simulator				
Frequency		0.5 Hz ~ 100 kHz	6.1×10^{-5}	Frequency Couter, DMM Oscilloacope
DC Voltage		(-20 ~ +20) V	0.61 mV/V	Low Noise Amp. / CP801-40411-4
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			
Output frequency				
(Analogue)		10 Hz ~ 100 MHz	12 mHz/Hz	Frequency Couter, DMM,
(Digital)		10 Hz ~ 100 MHz	5.8×10^{-9}	True RMS Voltmeter / CP801-40412-1
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
DC Voltage		$\pm(0.01 \sim 10) \text{ kV}$	1.9×10^{-4}	Voltage Divider,
		$\pm(10 \sim 50) \text{ kV}$	6.0×10^{-4}	Potential Transformer,
		$\pm(50 \sim 100) \text{ kV}$	1.2×10^{-3}	DC Power Supply,
				Digital multimeter
AC Voltage (60 Hz)		$(0.01 \sim 10) \text{ kV}$	9.8×10^{-3}	/ CP801-40413-1
		$(10 \sim 20) \text{ kV}$	1.1×10^{-3}	
		$(20 \sim 100) \text{ kV}$	1.2×10^{-3}	
Oscilloscope High Voltage Probe				Hi voltage power supply,
Attenuation ratio (DC)		$(0.01 \sim 1) \text{ kV}$		Digital multimeter
		1:1 ~ 1 000 :1	2.6×10^{-3}	RF Power Meter
(AC)		$(0.01 \sim 1) \text{ kV}$		RMS Voltmeter
(60 Hz ~ 1 kHz)		1:1 ~ 1 000 :1	4.0×10^{-3}	/ CP801-40413-2
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}	
		$(500 \sim 3\,500) \text{ MHz}$		
		1 mV ~ 2 V	5.3×10^{-2}	
kVp Meters	40414			High Voltage Power
DC Voltage		$\pm(1 \sim 60) \text{ kV}$	3.0×10^{-3}	Supply, DC High
				Voltage Divider, AC
AC Current (60 Hz)		$(1 \sim 10) \text{ A}$	8.0×10^{-3}	Voltage Current STD
DC Current		$(100 \sim 300) \text{ mA}$	2.1×10^{-2}	DC Power Supply,
				Digital multimeter
				/ CP801-40413-3
LF Impulse generators	40414			Oscilloscope
Pulse voltage		0 V ~ 40 kV	0.016	/ CP801-40414-1
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 Current Indication		Unweighted touch current measuring network(U1)		
		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	40416	Perception or reaction measuring network(U2)		Calibrator,DMM / CP801-40416-4
Touch current tester		20 Hz		
Input Voltage to Output		(4.75 ~ 5.25)mA	0.03 mA	
Current Indication		50 Hz		
		(4.77 ~ 5.27)mA	0.03 mA	
		60 Hz		
		(4.77 ~ 5.27)mA	0.03 mA	
		100 Hz		
		(4.79 ~ 5.29)mA	0.03 mA	
		200 Hz		
		(4.92 ~ 5.44)mA	0.03 mA	
		500 Hz		
		(5.36 ~ 5.92)mA	0.03 mA	
		1 kHz		
		(5.55 ~ 6.13)mA	0.03 mA	
		2 kHz		
		(4.674 ~ 5.166)mA	19 μA	
		5 kHz		
		(2.527 ~ 2.793)mA	14 μA	
		10 kHz		
		(1.345 ~ 1.487)mA	11 μA	
		20 kHz		
		(0.684 ~ 0.756)mA	9 μA	
		50 kHz		
		(275.5 ~ 304.5)μA	0.7 μA	
		100 kHz		
		(137.4 ~ 151.8)μA	0.4 μA	
		200 kHz		
		(68.8 ~ 76.0)μA	0.2 μA	
		500 kHz		
		(27.6 ~ 30.5)μA	0.2 μA	
		1 MHz		
		(13.7 ~ 15.2)μA	0.1 μA	

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) μ A 100 kHz (332.5 ~ 367.5) μ A 200 kHz (166.1 ~ 183.5) μ A 500 kHz (66.5 ~ 73.5) μ A 1 MHz (33.3 ~ 36.8) μ A	0.03 mA 0.02 mA 0.02 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 0.03 mA 15 μ A 11 μ A 9 μ A 0.9 μ A 0.5 μ A 0.2 μ A 0.2 μ A	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 $\pm(0 \sim 10)$ mV $\pm(10 \sim 100)$ mV $\pm(100 \text{ mV} \sim 10 \text{ V})$ $\pm(10 \sim 1\,000)$ V	Calibrator, STD Resistor, Resistance Indicator Frequency Counter / CP801-40419-1 / CP801-40419-2
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) (0.1 ~ 10) mV (1 ~ 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	4.8 mV/V 3.2 mV/V 2.8 mV/V 2.2 mV/V 8.8 mV/V	Calibrator / CP801-40420-1
Voltage		(20 Hz ~ 1 kHz) (10 ~ 1 000) V (1 ~ 100) kHz (10 ~ 1 000) V	7.7 mV/V 9.8 mV/V	
Voltage		(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	
dB		(20 Hz ~ 100 kHz) (+ 10 ~ -50) dB (20 Hz ~ 100 kHz) (-50 ~ -80) dB	0.055 dB 0.077 dB	
Weighting filter (JIS, NAB, CCIR, DIN, CCITT, etc.)				
Oscilloscopes	40421	1 mV ~ 100 V	6.6×10^{-4}	Oscilloscope Calibrator / CP801-40421-1
Vertical axis (voltage)		1 ns ~ 5 s	6.0×10^{-4}	
Horizontal axis (time)		(50 kHz ~ 100 MHz) 100 mV ~ 1 V (100 ~ 600) MHz 100 mV ~ 1 V (600 MHz ~ 3 GHz) 100 mV ~ 1 V (3 ~ 10) GHz 100 mV ~ 1 V (10 ~ 18) GHz 100 mV ~ 1 V (18 ~ 26.5) GHz 100 mV ~ 1 V (26.5 ~ 40) GHz 100 mV ~ 1 V	3.2×10^{-2} 4.2×10^{-2} 3.2×10^{-2} 4.3×10^{-2} 4.7×10^{-2} 5.6×10^{-2} 7.2×10^{-2}	
Bandwidth		1 MHz, 5 MHz, 10 MHz	6.2×10^{-10}	
Timebase output frequency		50 Ω , 1 M Ω	5.2 $\mu\Omega/\Omega$	
Input impedance		(0.1 ~ 100) kHz		
REF Signal OUT(Voltage)		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	
	40423	(100 kHz ~ 10 MHz)		Oscilloscope / CP801-40423-1
		10 mV ~ 20 V	11 mV/V	
Phase		(10 Hz ~ 2 MHz)		
		(-360 ~ +360)°	0.062°	
Random wave generators	40424	0.1 Hz ~ 30 MHz	5.8×10^{-9}	Calibrator / CP801-40424-1
Frequency		(10 Hz ~ 10 kHz)		
		(+30 ~ -50) dB	0.028 dB	
Level		(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	$\pm(0 \text{ mV} \sim 1 \text{ 000 V})$	75 $\mu\text{V/V}$	Calibrator / CP801-40424-1
DC Voltage				
AC Voltage		(10 Hz ~ 10 kHz)		
		0 mV ~ 1 000 V	0.68 mV/V	
DC Current		$\pm(0 \text{ mA} \sim 10 \text{ A})$	90 $\mu\text{A/A}$	
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 $\mu\text{s} \sim 5 \text{ s}$	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	
		(10 kHz ~ 10 MHz)		
		(-50 ~ -80) dBm	0.042 dB	
Resistnce		(0 ~ 10) Ω	7.6 $\mu\Omega/\Omega$	
		10 $\Omega \sim 100 \text{ k}\Omega$	4.2 $\mu\Omega/\Omega$	
		100 $\text{k}\Omega \sim 1 \text{ M}\Omega$	6.0 $\mu\Omega/\Omega$	
		(1 ~ 10) $\text{M}\Omega$	8.4 $\mu\Omega/\Omega$	
		(10 ~ 100) $\text{M}\Omega$	59 $\mu\Omega/\Omega$	
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	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
Signal transducers				
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	CT Test System, Calibrator, Shunt, Transconductance Amplifier, Resistance Multimeter, Current Multimeter, Current Transformer, Current Transducer / CP801-40430-2
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 x 10 ⁻⁴ 4.9 x 10 ⁻⁴	
		(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 x 10 ⁻³ 2.2 x 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 x 10 ⁻³ 3.3 x 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 x 10 ⁻⁵ 7.6 x 10 ⁻⁵	
DC		(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 x 10 ⁻⁴ 2.5 x 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 x 10 ⁻⁴ 3.0 x 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 x 10 ⁻⁴ 3.6 x 10 ⁻⁴	

404. Other DC & LF Measurements

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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)		Frequency Couter, DMM, True RMS Voltmeter / CP801-40433-1
		(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 ~ 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 (V _{p-p}) AC voltage (V _{p-p}) Time Bandwidth (V _{p-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, True RMS Voltmeter / 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

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.
Ultrasonic Flaw Detector Pulse Voltage	40499	(50 ~ 500) V	2.6×10^{-2}	Oscilloscope, Attenuator, Frequency Counter, Signal Generator
Pulse Time (Rise/Fall/Width)		1 ns 1 ns ~ 1 μ s	2.1×10^{-2} 1.3×10^{-2}	/ CP801-40499
Pulse Repetition Rate		5 Hz ~ 10 kHz	2.2×10^{-3}	
Vertical Linearity		(100 kHz ~ 30 MHz) (0 ~ 26) dB	0.2 dB	
Gain Accuracy		(100 kHz ~ 30 MHz) (0 ~ 60) dB	0.2 dB	
Receiver Frequency Response		(100 kHz ~ 30 MHz) (0 ~ 26) dB	0.1 dB	
Linearity of Time base		100 ns ~ 5 ms	3.0×10^{-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	40504	(0.1 ~ 1) mWb 1 mWb ~ 10 Wb	0.1 mWb/Wb 20 μ Wb/Wb	Universal counter, Digital multimeter, Oscilloscope /CP801-40504-1
Time interval		(0.01 ~ 10) s	10 μ s/s	
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	40601	(0 ~ 30) dB 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (40 ~ 50) GHz (50 ~ 67) GHz (67 ~ 80) GHz (80 ~ 95) GHz (95 ~ 110) GHz (30 ~ 60) dB 9 kHz ~ 1 GHz (1 ~ 10) GHz (10 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 40) GHz (40 ~ 50) GHz (50 ~ 67) GHz (67 ~ 80) GHz (80 ~ 95) GHz (95 ~ 110) GHz	0.085 dB 0.13 dB 0.18 dB 0.30 dB 0.49 dB 0.49 dB 0.58 dB 0.69 dB 0.78 dB 0.87 dB 0.11 dB 0.15 dB 0.20 dB 0.31 dB 0.50 dB 0.51 dB 0.60 dB 0.71 dB 0.80 dB 0.90 dB	RF Signal Gen, Thermocouple power sensors, RF spectrum analyzers / CP801-40601-1
Harmonic		(20 ~ 100) dBc 9 kHz ~ 500 MHz 500 MHz ~ 5 GHz (5 ~ 9) GHz (9 ~ 13.25) GHz (13.25 ~ 20) GHz (20 ~ 25) GHz (25 ~ 33.5) GHz (33.5 ~ 40) GHz (40 ~ 47.5) GHz (47.5 ~ 55) GHz	0.52 dB 0.59 dB 0.67 dB 0.87 dB 1.2 dB 1.2 dB 1.4 dB 1.6 dB 1.7 dB 1.9 dB	
Coaxial attenuators Attenuation	40602	(0 ~ 10) dB 9 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 50) GHz (50 ~ 67) GHz (10 ~ 30) dB 9 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 50) GHz (50 ~ 67) GHz (30 ~ 60) dB 9 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26.5) GHz (26.5 ~ 50) GHz (50 ~ 67) 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 0.36 dB 0.44 dB 0.06 dB 0.09 dB 0.23 dB 0.44 dB 0.52 dB 0.09 dB 0.10 dB 0.49 dB 0.56 dB 0.64 dB 0.35 dB 0.38 dB 0.40 dB 0.43 dB 0.65 dB	Network Analyzer / CP801-40602-1

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 Reflection Coefficient	40602	9 kHz ~ 100 MHz 100 MHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz (50 ~ 67) GHz	4.1×10^{-3} 5.8×10^{-3} 7.3×10^{-3} 8.5×10^{-3} 8.5×10^{-3} 1.6×10^{-2} 2.3×10^{-2}	Network Analyzer / CP801-40602-1
Waveguide attenuators Attenuation	40603	(0 ~ 40) dB (40 ~ 110) GHz	0.20 dB	Network Analyzer / CP801-40603-1
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) Negative Burst voltage (50 Ω) Positive Burst voltage (1 000 Ω) Negative Burst voltage (1 000 Ω) Time (Rise/Fall/Width/Period /Duration/Repetition frequency)	40605	10 V (10 ~ 100) V 100 V ~ 1 kV (1 ~ 8) kV -10 V (-10 ~ -100) V -100 V ~ -1 kV (-1 ~ -8) kV 100 V 100 V ~ 1 kV (1 ~ 8) kV -100 V -100 V ~ -1 kV (-1 ~ -8) kV 1 ns 1 ns ~ 1 μ s 1 μ s ~ 1 s	0.29 V 2.6×10^{-2} 2.5×10^{-2} 2.4×10^{-2} 0.29 V 2.6×10^{-2} 2.5×10^{-2} 2.4×10^{-2} 2.6 V 2.5×10^{-2} 2.4×10^{-2} 2.6 V 2.5×10^{-2} 2.4×10^{-2} 0.02 ns 1.3×10^{-2} 7.8×10^{-3}	Oscilloscope, / CP801-40605-1
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
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

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 directional couplers/splitters Coupling ratio	40610	(10 ~ 30) dB (9 ~ 100) kHz 100 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz (50 ~ 67) GHz (30 ~ 70) dB (9 ~ 100) kHz 100 kHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz (50 ~ 67) GHz	0.06 dB 0.07 dB 0.10 dB 0.11 dB 0.12 dB 0.44 dB 0.52 dB 0.08 dB 0.09 dB 0.13 dB 0.14 dB 0.14 dB 0.56 dB 0.64 dB	Network Analyzer / CP801-40610-1
Reflection coefficient		9 kHz ~ 100 MHz 100 MHz ~ 3 GHz (3 ~ 18) GHz (18 ~ 26) GHz (26 ~ 40) GHz (40 ~ 50) GHz (50 ~ 67) GHz	4.1×10^{-3} 5.8×10^{-3} 7.3×10^{-3} 8.5×10^{-3} 8.5×10^{-3} 1.6×10^{-2} 2.3×10^{-2}	
Waveguide directional couplers Coupling ratio	40611	(3 ~ 60) dB (40 ~ 110) GHz	0.20 dB	Network Analyzer / CP801-40611-1
DS1/DS3 communications systems Communication frequency	40612	(1.544 ~ 155) MHz	5.8×10^{-9}	Oscilloscope / CP801-40612-1
Pulse width		5 ns ~ 100 μ s	5.8×10^{-3}	
Electrostatic discharge generators Discharge current (1st order)	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	2.8×10^{-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}	Oscilloscope, Attenuator / CP801-40613-1
Discharge current (30 ns)		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	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}	

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 ~ 50) 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 ~ 50) GHz	0.39 dB	
Quasi peak amplitude relationship (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 ~ 50 GHz	0.18 dB	
intermediate frequency rejection ratio	100 kHz ~ 50 GHz	0.18 dB		
image frequency rejection ratio	100 kHz ~ 50 GHz	0.18 dB		
Spurious response	100 kHz ~ 50 GHz	0.18 dB		
Random noise	100 kHz ~ 50 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 ~ 50) GHz (50 ~ 67) GHz	0.21 dB 0.21 dB 0.26 dB 0.32 dB 0.32 dB 0.36 dB 0.44 dB	Network Analyzer / CP801-40615-1
RF impedance meters Reference frequency Level Impedance Standard load	40616	1 MHz ~ 18 GHz (9 kHz ~ 3 GHz) (0 ~ -20) dBm (3 ~ 6) GHz (0 ~ -20) dBm (6 ~ 18) GHz (0 ~ -20) dBm 1 MHz~ 3 GHz (3 ~ 18) GHz (45 ~ 55) MHz	5.8×10^{-10} 0.078 dB 0.10 dB 0.15 dB 0.60 Ω 1.0 Ω 3.0×10^{-2}	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 ~ 34) GHz (34 ~ 50) GHz (Short circuit, open circuit) 45 MHz ~ 10 GHz (10 ~ 34) GHz (34 ~ 50) GHz	0.008 2 0.008 9 0.009 6 0.014 0.015 0.024 0.029 0.033	Network analyzer / CP801-40619-2
Phase of reflection coefficient		(Short circuit, open circuit) 45 MHz ~ 2 GHz (2 ~ 10) GHz (10 ~ 34) GHz (34 ~ 50) GHz	1.4° 1.8° 3.4° 4.5°	
Waveguide standard mismatches SWR	40620	1.0 ~ 2.0 (40 GHz ~ 110 GHz)	0.12	Network analyzer / CP801-40619-1

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.
Mobile communication test sets	40621			RF Power Meter / CP801-40621-1
Frequency		9 kHz ~ 40 GHz	5.8×10^{-10}	
Output level		(+ 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	
		(-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	
		(-110 ~ -120) dBm		
		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	0.90 dB	
		(12.4 ~ 18) GHz	0.91 dB	
		(18 ~ 26.5) GHz	0.97 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.
Mobile communication test sets	40621			RF Power Meter / CP801-40621-1
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)	0.15 mV	
		(10 ~ 100) mV (10 Hz ~ 1 kHz)	0.21 mV	
		100 mV ~ 1 V (1 ~ 25) kHz	14 mV	
		100 mV ~ 1 V (10 Hz ~ 1 kHz)	21 mV	
		(1 ~ 5) V (1 ~ 25) kHz	53 mV	
		(1 ~ 5) V	97 mV	
Input AC level		(50 Hz ~ 1 kHz) 100 mV ~ 1 V (1 ~ 25) kHz	0.98 mV	
		100 mV ~ 1 V (50 Hz ~ 1 kHz)	2.2 mV	
		(1 ~ 10) V (1 ~ 25) kHz	10 mV	
		(1 ~ 10) V (50 Hz ~ 1 kHz)	29 mV	
		(10 ~ 30) V (1 ~ 25) kHz	17 mV	
		(10 ~ 30) V	68 mV	
Input level		(+ 20 ~ -20) dBm 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	
		(-20 ~ -60) dBm 9 kHz ~ 3 GHz	0.12 dB	
		(3 ~ 6) GHz	0.16 dB	
		(6 ~ 18) GHz	0.21 dB	
		(18 ~ 26) GHz	0.29 dB	
		(26 ~ 34) GHz	0.44 dB	
		(34 ~ 40) GHz	0.55 dB	
		(40 ~ 50) GHz	0.69 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.
Mobile communication test sets	40621			RF Power Meter / CP801-40621-1
Input level		(-60 ~ -80) dBm		
		9 kHz ~ 2 GHz	0.21 dB	
		(2 ~ 4.2) GHz	0.25 dB	
		(4.2 ~ 8) GHz	0.30 dB	
		(8 ~ 12.4) GHz	0.33 dB	
		(12.4 ~ 18) GHz	0.38 dB	
		(18 ~ 26.5) GHz	0.52 dB	
		(-80 ~ -100) dBm		
		9 kHz ~ 2 GHz	0.23 dB	
		(2 ~ 4.2) GHz	0.27 dB	
		(4.2 ~ 8) GHz	0.31 dB	
		(8 ~ 12.4) GHz	0.34 dB	
		(12.4 ~ 18) GHz	0.38 dB	
		(18 ~ 26.5) GHz	0.54 dB	
		(-100 ~ -110) dBm		
		9 kHz ~ 2 GHz	0.34 dB	
		(2 ~ 4.2) GHz	0.36 dB	
		(4.2 ~ 8) GHz	0.40 dB	
		(8 ~ 12.4) GHz	0.42 dB	
		(12.4 ~ 18) GHz	0.47 dB	
		(18 ~ 26.5) GHz	0.59 dB	
		(-110 ~ -120) dBm		
		9 kHz ~ 2 GHz	0.86 dB	
		(2 ~ 4.2) GHz	0.88 dB	
		(4.2 ~ 8) GHz	0.90 dB	
		(8 ~ 12.4) GHz	0.92 dB	
		(12.4 ~ 18) GHz	0.93 dB	
		(18 ~ 26.5) GHz	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			Frequency Counter, Thermocouple power sensors, Calibration kit, STD Mismatch / CP801-40623-1
Frequency		5 Hz ~ 110 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 (50 ~ 67) GHz (67 ~ 80) GHz (80 ~ 95) GHz (95 ~ 110) GHz	0.082 dB 0.098 dB 0.13 dB 0.21 dB 0.23 dB 0.35 dB 0.44 dB 0.53 dB 0.61 dB 0.73 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		Frequency Counter, Thermocouple power sensors, Calibration kit, STD Mismatch / 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 μ V 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 repetition		(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	0.25 dB	
		100 MHz ~ 2 GHz	0.26 dB	
		(2 ~ 6) GHz	0.25 dB	
		(6 ~ 8) GHz	0.26 dB	
		(8 ~ 12) GHz	0.28 dB	
		(12 ~ 18) GHz	0.30 dB	
		(14 dB ~ 16 dB)		
		(10 ~ 100) MHz	0.25 dB	
		100 MHz ~ 2 GHz	0.25 dB	
		(2 ~ 6) GHz	0.26 dB	
		(6 ~ 8) GHz	0.25 dB	
		(8 ~ 12) GHz	0.31 dB	
		(12 ~ 18) GHz	0.33 dB	
		(12 dB ~ 17 dB)		
		(10 ~ 100) MHz	0.25 dB	
		100 MHz ~ 2 GHz	0.25 dB	
		(2 ~ 6) GHz	0.28 dB	
		(6 ~ 8) GHz	0.25 dB	
		(8 ~ 12) GHz	0.31 dB	
		(12 ~ 18) GHz	0.35 dB	
		(18 ~ 26.5) GHz	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	40635			RF Power Meter Calibrator / CP801-40635-1
Reference Power		50 MHz, 1 GHz	8.0×10^{-3}	
Power		10 μ W ~ 100 mW (9 kHz ~ 18 GHz)	3.4×10^{-3}	
CAL factor		1 nW ~ 100 mW (100 kHz ~ 1 GHz)	4.9×10^{-2}	
		100 mW ~ 100 W (100 ~ 500) W	0.014 0.016	
		(1 ~ 3) GHz 100 mW ~ 50 W	0.014	
Diode power sensors	40636			Sensor Calibrator / CP801-40636-1
CAL Factor		(100 kHz ~ 10 MHz) 1 μ W ~ 1 mW	0.020	
		(10 MHz ~ 10 GHz) 1 μ W ~ 1 mW	0.026	
		(10 ~ 18) GHz 1 μ W ~ 1 mW	0.031	
		(18 ~ 26.5) GHz 1 μ W ~ 1 mW	0.043	
Thermocouple power sensors	40637			Sensor Calibrator / CP801-40637-1
CAL Factor		(9 kHz ~ 1 GHz) 100 μ W ~ 10 mW	1.3×10^{-2}	
		(1 ~ 10) GHz 100 μ W ~ 10 mW	1.5×10^{-2}	
		(10 ~ 18) GHz 100 μ W ~ 10 mW	1.8×10^{-2}	
		(18 ~ 26.5) GHz 100 μ W ~ 10 mW	3.6×10^{-2}	
		(26.5 ~ 40) GHz 100 μ W ~ 10 mW	4.0×10^{-2}	
		(40 ~ 50) GHz 100 μ W ~ 10 mW	6.8×10^{-2}	
Reflection Coefficient		9 kHz ~ 2 GHz	5.2×10^{-3}	
		(2 ~ 26.5) GHz	8.9×10^{-3}	
		(26.5 ~ 40) GHz	1.6×10^{-2}	
		(40 ~ 50) GHz	2.1×10^{-2}	
Pulse generators	40638			Oscilloscope / CP801-40638-1
Period (Analogue)		100 ps ~ 10 s	6.0×10^{-3}	
(Digital)		100 ps ~ 10 s	5.8×10^{-9}	
Delay time		100 ps ~ 10 s	6.0×10^{-3}	
Pulse width		100 ps ~ 10 s	6.0×10^{-3}	
Rise time, fall time		100 ps	25 ps	
		200 ps	13 ps	
		300 ps	10 ps	
		400 ps	7.0 ps	
		500 ps	5.6 ps	
		600 ps ~ 10 s	6.0×10^{-3}	
Overshoot		(0 ~ 100) %	0.035	
Undershoot		(0 ~ 100) %	0.035	
Settling Time		100 ps	25 ps	
		200 ps	13 ps	
		300 ps	10 ps	
		400 ps	7.0 ps	
		500 ps	5.6 ps	
		600 ps ~ 10 s	6.0×10^{-3}	
Duty Ratio		(0 ~ 100) %	0.058	
Voltage(Vp-p)		10 mV ~ 100 V	10 mV/V	

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
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	(+ 20 ~ -20) dBm		Power Meter, Signal Generator, Frequency Counter / CP801-40639-1
Input Level		9 kHz ~ 3 GHz	0.11 dB	
		(3 ~ 6) GHz	0.13 dB	
		(6 ~ 18) GHz	0.17 dB	
		(-20 ~ -60) dBm		
		9 kHz ~ 3 GHz	0.12 dB	
		(3 ~ 6) GHz	0.16 dB	
		(6 ~ 18) GHz	0.19 dB	
		(-60 ~ -80) dBm		
		150 kHz ~ 1.3 GHz	0.36 dB	
		(1.3 ~ 10) GHz	0.39 dB	
		(10 ~ 18) GHz	0.44 dB	
		(-80 ~ -100) dBm		
		150 kHz ~ 1.3 GHz	0.55 dB	
		(1.3 ~ 10) GHz	0.59 dB	
		(10 ~ 18) GHz	0.64 dB	
		(-100 ~ -120) dBm		
		150 kHz ~ 1.3 GHz	0.66 dB	
		(1.3 ~ 10) GHz	0.67 dB	
		(10 ~ 18) GHz	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				
Level		(+ 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	
		(-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 Surge generators Positive Surge voltage	40643	(1 ~ 100) V (0.1 ~ 1) kV (1 ~ 40) kV (40 ~ 120) kV	3.5×10^{-2} 3.6×10^{-2} 3.8×10^{-2} 4.0×10^{-2}	Oscilloscope, High voltage probe / CP801-40643-1
Negative Surge voltage		(1 ~ 100) V (0.1 ~ 1) kV (1 ~ 40) kV (40 ~ 120) kV	3.5×10^{-2} 3.6×10^{-2} 3.8×10^{-2} 4.0×10^{-2}	
Positive Surge current		1 A ~ 1 kA (1 ~ 50) kA (50 ~ 100) kA (100 ~ 200) kA	3.3×10^{-2} 3.5×10^{-2} 3.8×10^{-2} 3.8×10^{-2}	
Negative Surge current		1 A ~ 1 kA (1 ~ 50) kA (50 ~ 100) kA (100 ~ 200) kA	3.3×10^{-2} 3.5×10^{-2} 3.8×10^{-2} 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}	
Impulse generators Switching Impulse Positive Voltage(SI)		(100 ~ 600) kV	1.4×10^{-2}	Impulse Analyzing System / CP801-40643-2
Switching Impulse Negative Voltage(SI)		(100 ~ 600) kV	1.4×10^{-2}	
Full Lightning Impulse Positive Voltage(LI)		(100 ~ 800) kV	1.5×10^{-2}	
Full Lightning Impulse Negative Voltage(LI)		(100 ~ 800) kV	1.5×10^{-2}	
Chopped Lightning Impulse Positive Voltage(LIC)		(100 ~ 800) kV	1.5×10^{-2}	
Chopped Lightning Impulse Negative Voltage(LIC)		(100 ~ 800) kV	1.5×10^{-2}	
Switching Impulse Time to Peak(T_p)		(200 ~ 300) μ s	3.1×10^{-2}	
Switching Impulse Time to Half Value(T_2)		(1 000 ~ 4 000) μ s	2.4×10^{-2}	
Full Lightning Impulse Front Time(T_1)		(0.84 ~ 1.56) μ s	2.9×10^{-2}	
Full Lightning Impulse Time to Half Value(T_2)		(40 ~ 60) μ s	2.2×10^{-2}	
Chopped Lightning Impulse Time to Chopping(T_c)		(2 ~ 6) μ s	2.2×10^{-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.
SWR meters	40644			STD Mismatch / CP801-40644-1
SWR meter				
Sensitivity		10 MHz ~ 18 GHz	34 mV	
Level		10 MHz ~ 18 GHz	0.14 dB	
Site master				STD Mismatch / CP801-40644-2
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	40645			Network Analyzer / CP801-40645-1
Reflection Coefficient		5 Hz ~ 100 MHz	4.1×10^{-3}	
		100 MHz ~ 3 GHz	5.8×10^{-3}	
		(3 ~ 18) GHz	7.3×10^{-3}	
		(18 ~ 26) GHz	8.5×10^{-3}	
		(26 ~ 40) GHz	1.5×10^{-2}	
		(40 ~ 110) GHz	1.2×10^{-2}	
Coaxial thermistor mounts	40646			Sensor Calibrator / CP801-40646-1
CAL Factor		(100 kHz ~ 10 MHz)		
		100 μ W ~ 10 mW	0.011	
		(10 MHz ~ 10 GHz)		
		100 μ W ~ 10 mW	0.015	
		(10 GHz ~ 18 GHz)		
		100 μ W ~ 10 mW	0.020	
		(18 ~ 26.5) GHz		
		100 μ W ~ 10 mW	0.040	

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.
Transmssion trouble testers Transmission analyzer Output frequency	40648	10 Hz ~ 100 Hz	0.58 mHz	Oscilloscope / CP801-40648-1
		100 Hz ~ 1 kHz	5.8 mHz	
		(1 ~ 10) kHz	58 mHz	
		(10 ~ 100) kHz	0.58 Hz	
		100 kHz ~ 1 MHz	5.8 Hz	
Output level		(10 Hz ~ 10 kHz)		
		(+ 10 ~ -50) dBm	0.025 dB	
		(10 Hz ~ 10 kHz)		
		(-50 ~ -100) dBm	0.068 dB	
		(10 kHz ~ 1 MHz)		
		(+ 10 ~ -50) dBm	0.040 dB	
		(10 kHz ~ 1 MHz)		
		(-50 ~ -100) dBm	0.096 dB	
Input frequency		(10 ~ 100) Hz	0.58 mHz	
		100 Hz ~ 1 kHz	5.8 mHz	
		(1 ~ 10) kHz	58 mHz	
		(10 ~ 100) kHz	0.58 Hz	
		100 kHz ~ 1 MHz	5.8 Hz	
Input level		(10 Hz ~ 10 kHz)		Lan Analyzer / CP801-40648-2
		(+ 10 ~ -50) dBm	0.022 dB	
		(10 Hz ~ 10 kHz)		
		(-50 ~ -100) dBm	0.025 dB	
		(10 kHz ~ 1 MHz)		
		(+ 10 ~ -50) dBm	0.036 dB	
		(10 kHz ~ 1 MHz)		
		(-50 ~ -100) dBm	0.080 dB	
LAN analyzer Delay Time(100m)		466 ns	0.6 ns	
Impedance		(50 ~ 150) Ω	1.0 Ω	
Resistance		825 Ω	0.6 Ω	
		453 Ω	0.6 Ω	
		953 Ω	0.6 Ω	
Frequency		(1 ~ 500) MHz	5.8×10^{-8}	
Insertion loss		(1 ~ 500) MHz	0.2 dB	
RF voltmeters Voltage	40650	(1 ~ 100) MHz		RF Voltmeter Calibrator / CP801-40650-1
		1 mV ~ 10 V	9.9×10^{-3}	
		(100 MHz ~ 1 GHz)		
		1 mV ~ 10 V	0.020	

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.
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		100 kHz ~ 3 GHz	1.1×10^{-5}	
Power	40652	(100 kHz ~ 1 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	RF Signal Gen. / CP801-40652-1
		(1 ~ 3) GHz (-20 ~ +15) dBm (-60 ~ -20) dBm (-80 ~ -60) dBm (-100 ~ -80) dBm	0.18 dB 0.19 dB 0.42 dB 0.60 dB	
AM/FM test sources Frequency		1 MHz ~ 1 GHz	5.8×10^{-10}	
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) μ s	7.8×10^{-3}	
Permittivity meters Dielectric constant	40699	(1 kHz ~ 15 GHz) 2 ~ 80	3 %	LCR meters, Impedance analyzers, Network analyzer, / CP801-40699-1
Loss tangent		(1 kHz ~ 15 GHz) 0.001 ~ 1	10 %	
Transit time		(0.1 ~ 5) ns	1.2 %	
Waveguide calibration kit Magnitude of reflection coefficient	40699	(Termination) (40 ~ 110) GHz (Linear waveguide domain) (40 ~ 110) GHz (Short circuit) (40 ~ 110) GHz	0.007 1 0.007 0 0.056	Waveguide calibration kit / CP801-40699-2

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	40702	(10 Hz ~ 10 kHz)		RF Power Meter / CP801-40702-1
Field Strength Probe		(1 ~ 200) V/m	0.12	
		(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)		DMM / CP801-40702-2
		(2.65 ~ 390) mA/m	0.12	
		(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	40703			Network Analyzer / CP801-40703-1
Dipole Antenna		(1 ~ 18) GHz	1.1 dB	
Antenna Factor		(1 ~ 18) GHz	1.3 dB	
Antenna Pattern		20 MHz ~ 18 GHz	0.02	Network Analyzer / CP801-40703-2
VSWR				
Biconical 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				
Log-Periodic Antenna		(1 ~ 18) GHz	1.3 dB	
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	0.9 dB	
		(18 ~ 40) GHz	1.4 dB	
		(40 ~ 110) GHz	1.2 dB	
Antenna Pattern		(1 ~ 18) GHz	1.3 dB	
VSWR		200 MHz ~ 18 GHz	0.02	
		(18 ~ 110) GHz	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			
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
		(1 500 ~ 1 600) °C	3.2 °C	TC-B /CP801-50101-7
Ice-point baths		0 °C	0.006 °C	SPRT /CP801-50101-8
Dry-block calibrators		(-100 ~ 660) °C	0.013 °C	SPRT, TC-S /CP801-50101-9
		(660 ~ 1 100) °C	1.0 °C	
		(1 100 ~ 1 200) °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) Thermoelectric recorders / indicators / controllers Resistance type recorders / indicators / controllers Electric temperature calibrators Temperature indicators/ recorders/controllers (without sensor) Thermoelectric recorders / indicators / controllers Resistance type recorders / indicators / controllers	50102	(-196 ~ -95) °C (-95 ~ 660) °C (660 ~ 1 100) °C (1 100 ~ 1 500) °C (1 500 ~ 1 600) °C (-196 ~ -95) °C (-95 ~ 660) °C (-196 ~ 660) °C (660 ~ 1 600) °C (-196 ~ 1 600) °C (-196 ~ 660) °C	0.07 °C 0.02 °C 1.0 °C 2.2 °C 2.7 °C 0.07 °C 0.02 0.005 °C 0.19 °C 0.29 °C 0.014 °C	SPRT . TC-S, TC-B /CP801-50102-1 SPRT /CP801-50102-2 CALIBRATOR, Thermometer /CP801-50102-9 CALIBRATOR /CP801-50102-10 CALIBRATOR /CP801-50102-13
Glass thermometers; liquid- in-glass, Beckmann Beckmann thermometers Liquid-in-glass thermometers	50103	(-20 ~ 160) °C (-80 ~ 360) °C	0.02 °C 0.04 °C	SPRT /CP801-50103-1 SPRT /CP801-50103-2
Resistance thermometers; SPRT, TPRT, thermistors, etc. Industrial resistance thermometers Thermistors Standard Platinum Resistance Thermometers	50104	(-196 ~ 200) °C (200 ~ 660) °C (-80 ~ 200) °C (-200 ~ 0) °C (0 ~ 420) °C (420 ~ 660) °C	0.02 °C 0.05 °C 0.03 °C 1.8 mK 1.9 mK 2.8 mK	SPRT /CP801-50104-1 SPRT /CP801-50104-2 ITS-90 Fixed Point Cells /CP801-50104-3
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 /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	(-80 ~ -60) °C D.P.	0.35 °C D.P.	Dew-point hygrometers /CP801-50301-1
		(-60 ~ 20) °C D.P.	0.30 °C D.P.	
Alumina thin film dew-point hygrometers		(-80 ~ 20) °C D.P.	1.9 °C D.P.	Dew-point hygrometers /CP801-50301-2
Relative humidity hygrometers	50302	(3 ~ 80) % R.H.	1.3 % R.H.	Dew-point hygrometers /CP801-50302-1
Polymer thin film hygrometers		(80 ~ 98) % R.H.	1.6 % R.H.	
		(-40 ~ 0) °C	0.55 °C	
		(0 ~ 60) °C	0.30 °C	Dew-point hygrometers /CP801-50302-2
Digital Thermo-hygrometers		(60 ~ 120) °C	0.55 °C	
		(3 ~ 80) % R.H.	1.3 % R.H.	
		(80 ~ 98) % R.H.	1.6 % R.H.	Dew-point hygrometers /CP801-50302-3
		(-40 ~ 0) °C	0.55 °C	
		(0 ~ 60) °C	0.30 °C	
		(60 ~ 120) °C	0.55 °C	Dew-point hygrometers /CP801-50302-3
Hair hygrometers		(20 ~ 95) % R.H.	3 % R.H.	
		(-20 ~ 80) °C	0.6 °C	
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		(-20 ~ 80) °C	2 °C	
-Polymer Thin Film		(20 ~ 95) % R.H.	3 % R.H.	Dew-point hygrometers /CP801-50304-2
Hygrothermograph		(-20 ~ 80) °C	2 °C	
Transducers; dew- point/relative humidity	50305	(3 ~ 80) % R.H.	1.3 % R.H.	Dew-point hygrometers /CP801-50305-1
Humidity transducers		(80 ~ 98) % R.H.	1.6 % R.H.	
		(-40 ~ 0) °C	0.6 °C	
		(0 ~ 60) °C	0.3 °C	
		(60 ~ 120) °C	0.6 °C	
Humidity generators	50306	(5 ~ 90) % R.H.	2.5 % R.H.	DATA LOGGER, Humidity transducer /CP801-50306-1
Constant temperature and humidity chamber		(90 ~ 98) % R.H.	2.8 % R.H.	
		(-80 ~ 200) °C	0.5 °C	
Two-pressure humidity generators		(10 ~ 80) % R.H.	1.6 % R.H.	Dew-point hygrometers, IPRT /CP801-50306-2
		(80 ~ 95) % R.H.	1.9 % R.H.	
		(0 ~ 60) °C	0.21 °C	
Flow mixing humidity generators		(3 ~ 25) % R.H.	1.0 % R.H.	Dew-point hygrometers, IPRT /CP801-50306-3
		(25 ~ 80) % R.H.	1.5 % R.H.	
		(80 ~ 98) % R.H.	1.9 % R.H.	

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.	3.2 % M.C.	Balance, Dry oven /CP801-50402-1
Paper moisture meters	50403	(5 ~ 20) % M.C.	3.4 % M.C.	Balance, Dry oven /CP801-50403-1

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	60102	250 Hz	0.11 dB	Microphone /CP801-60102-1
Sound pressure level calibrators (Multi function calibrator included)		31.5 Hz	0.13 dB	
		(31.5 ~ 63) Hz	0.10 dB	
		(63 ~ 4 000) Hz	0.09 dB	
		(4 000 ~ 8 000) Hz	0.13 dB	
		(8 000 ~ 12 500) Hz	0.23 dB	
		(12 500 ~ 16 000) Hz	0.36 dB	
Microphones	60104	20 Hz	0.16 dB	Microphone /CP801-60104-1
(20 ~ 25) Hz		0.14 dB		
(25 ~ 31.5) Hz		0.13 dB		
(31.5 ~ 40) Hz		0.12 dB		
(40 ~ 50) Hz		0.11 dB		
(50 ~ 8 000) Hz		0.10 dB		
(8 000 ~ 10 000) Hz		0.12 dB		
(10 000 ~ 12 500) Hz		0.13 dB		
(12 500 ~ 16 000) Hz		0.16 dB		
(16 000 ~ 20 000) Hz		0.21 dB		
Sound level meters	60106	31.5 Hz	0.5 dB	Microphone /CP801-60106-1
(31.5 ~ 100) Hz		0.4 dB		
(100 ~ 125) Hz		0.3 dB		
(125 ~ 3 150) Hz		0.2 dB		
(3 150 ~ 8 000) Hz		0.3 dB		
(8 000 ~ 12 500) Hz		0.6 dB		

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 Acceleration	60301	10 Hz (10 ~ 20) Hz (20 ~ 2 500) Hz (2.5 ~ 5) kHz	2.7×10^{-2} 2.2×10^{-2} 2.1×10^{-2} 3.0×10^{-2}	Vibration transducer /CP801-60301-1
Vibration transducers Vibration transducers Shock transducers	60302	0.5 Hz (0.5 ~ 10) Hz (10 ~ 2 500) Hz (2.5 ~ 5) kHz (5 ~ 10) kHz (10 ~ 15) kHz (15 ~ 20) kHz (200 ~ 100 000) m/s ² (Pulse duration : (0.5 ~ 2) ms)	2.1×10^{-2} 2.1×10^{-2} 1.1×10^{-2} 2.4×10^{-2} 2.9×10^{-2} 3.6×10^{-2} 4.3×10^{-2} 3.1×10^{-2}	Vibration transducer /CP801-60302-1 Vibration transducer /CP801-60302-2
Vibration measuring instruments Vibration measuring instruments Acceleration Velocity Displacement Shock recorders	60303	0.5 Hz (0.5 ~ 2.5) Hz (2.5 ~ 10) Hz (10 ~ 1 250) Hz (1.25 ~ 5) kHz 0.5 Hz (0.5 ~ 2.5) Hz (2.5 ~ 10) Hz (10 ~ 630) Hz (630 ~ 2 500) Hz 0.5 Hz (0.5 ~ 2.5) Hz (2.5 ~ 10) Hz (10 ~ 100) Hz (100 ~ 630) Hz (630 ~ 1 250) Hz (5 ~ 200) m/s ² (Pulse duration : (10 ~ 30) ms)	3.2×10^{-2} 2.5×10^{-2} 2.4×10^{-2} 2.1×10^{-2} 2.2×10^{-2} 2.9×10^{-2} 2.5×10^{-2} 2.4×10^{-2} 2.1×10^{-2} 2.2×10^{-2} 2.9×10^{-2} 2.5×10^{-2} 2.4×10^{-2} 2.0×10^{-2} 2.1×10^{-2} 3.4×10^{-2} 2.5×10^{-2}	Vibration transducer /CP801-60303-1 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	(360 ~ 380) lm (548.6 ~ 2 280) lm	3.1 % 1.7 %	Total luminous flux meters/CP801-70103-1
Luminous intensity meters	70104	(1 005 ~ 1 065) 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 (5 403 ~ 5 817) 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 : (0.690 ~ 0.710) y : (0.290 ~ 0.309) (Green) x : (0.169 ~ 0.226) y : (0.700 ~ 0.714) (Blue) x : (0.124 ~ 0.143) y : (0.046 ~ 0.086) (White) x : (0.325 ~ 0.335) y : (0.345 ~ 0.365)	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	(360 ~ 2 280) lm	1.7 %	Standard Lamps /CP801-70209-1
Pyranometers and pyrhemimeters 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 : (0.690 ~ 0.710) y : (0.290 ~ 0.309) (Green) x : (0.169 ~ 0.226) y : (0.700 ~ 0.714) (Blue) x : (0.124 ~ 0.143) y : (0.046 ~ 0.086) (White) x : (0.325 ~ 0.335) y : (0.345 ~ 0.365)	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
Spectral irradiance standard lamps Spectral irradiance	70215	(250 ~ 1 050) nm 250 nm (255 ~ 260) nm (265 ~ 275) nm (280 ~ 290) nm (295 ~ 305) nm (310 ~ 345) nm (350 ~ 405) nm (410 ~ 575) nm (580 ~ 1 050) nm	6.3 % 5.5 % 5.1 % 4.6 % 4.2 % 3.8 % 3.3 % 2.8 % 2.5 %	Standard Lamps Spectral irradiance meters /CP801-70215-1
Total spectral radiant flux standard lamps Total spectral radiant	70216	(380 ~ 840) nm (380 ~ 385) nm (390 ~ 445) nm (450 ~ 455) nm (460 ~ 500) nm (505 ~ 555) nm (560 ~ 705) nm (710 ~ 840) nm	4.8 % 3.7 % 3.4 % 3.0 % 2.9 % 2.7 % 2.5 %	Standard Lamps Total spectral radiant flux meters /CP801-70216-1
Luminance standard sources Luminance	70217	(5 ~ 3 000) cd/m ²	1.9%	Luminance meters, /CP801-70217-1

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.
Spectral radiance standard sources Spectral radiance	70218	(380 ~ 1039) nm 380 nm (385 ~ 395) nm (400 ~ 405) nm (410 ~ 420) nm (425 ~ 430) nm (435 ~ 450) nm (455 ~ 480) nm (485 ~ 545) nm (550 ~ 615) nm (620 ~ 670) nm (675 ~ 1 039) nm	6.2 % 5.3 % 4.7 % 4.1 % 3.8 % 3.5 % 3.2 % 2.8 % 2.3 % 2.1 % 2.0 %	Standard sources Spectral radiance meters /CP801-70218-1
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 (3 008 ~ 3 199) K CIE 1931 x, y x : (0.427 ~ 0.438) y : (0.399 ~ 0.407) (6 241 ~ 7 029) lx	0.25 nm 6.1 % 5.0 % 4.6 % 4.0 % 3.5 % 3.0 % 2.5 % 2.0 % 1.7 % 24 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	4.0 %	
		355 nm	3.4 %	
		360 nm	3.1 %	
		365 nm	2.7 %	
		(370 ~ 375) nm	2.4 %	
		(380 ~ 400) nm	2.2 %	
		(405 ~ 410) nm	2.0 %	
Color temperature		(415 ~ 450) nm	1.9 %	
		(455 ~ 850) nm	1.8 %	
		(3 046 ~ 2 774) K	22 K	
Chromaticity		CIE 1931 x, y x : (0.433 ~ 0.456) y : (0.402 ~ 0.412)	x : 0.004 y : 0.004	
Total luminous flux		(549 ~ 2 280) lm	1.7 %	
Spectral radiance meters	70222			Spectral radiance light source /CP801-70222-1
Wavelength		(380 ~ 1 039) nm	0.25 nm	
Spectral radiance		(380 ~ 1 039) nm		
		380 nm	4.9 %	
		(385 ~ 395) nm	4.5 %	
		(400 ~ 410) nm	3.7 %	
		(415 ~ 425) nm	3.3 %	
		(430 ~ 440) nm	2.9 %	
		(445 ~ 455) nm	2.6 %	
		(460 ~ 490) nm	2.3 %	
		(495 ~ 925) nm	2.0 %	
		(930 ~ 990) nm	2.2 %	
		(995 ~ 1 039) nm	2.0 %	
Color temperature		(2 880 ~ 2 920) K	22 K	
		(9 001 ~ 9 241) cd/m ²	1.6 %	
Chromaticity		CIE 1931 x, y x : (0.446 ~ 0.450) y : (0.412 ~ 0.416)	x : 0.003 y : 0.003	
Luminance		(9 001 ~ 9 241) cd/m ²	1.6 %	
Wavelength		(380 ~ 1 039) nm	0.25 nm	Spectral radiance meters /CP801-70222-2
Spectral radiance		(380 ~ 1 039) nm		
		(380 ~ 385) nm	5.3 %	
		(390 ~ 405) nm	4.2 %	
		(410 ~ 425) nm	3.9 %	
		(430 ~ 445) nm	3.6 %	
		(450 ~ 460) nm	3.2 %	
		(465 ~ 475) nm	2.9 %	
		(480 ~ 495) nm	2.5 %	
		(500 ~ 515) nm	2.1 %	
		(520 ~ 1 039) nm	2.0 %	

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°)	70301			Color standard tiles /CP801-70301-1
Blue		X	0.17	
		Y	0.21	
		Z	0.45	
Green		X	0.15	
		Y	0.20	
		Z	0.17	
Pale Grey		X	0.63	
		Y	0.57	
		Z	0.66	
Mid Grey		X	0.28	
		Y	0.25	
		Z	0.27	
Deep Grey		X	0.07	
		Y	0.06	
		Z	0.08	
White		X	0.91	
		Y	0.82	
		Z	0.94	
Color standard filters Standard Illuminant : A, C, D65 Standard Observe : 2°, 10° (380 nm ~ 780 nm)	70302			Spectrophotometer /CP801-70302-1
		X	1.1×10^{-2}	
		Y	1.1×10^{-2}	
		Z	1.1×10^{-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.
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	
Dioptrimeters	70305	(0.0 ~ ± 20.0) D	0.1 D	Standard lens /CP801-70305-1
Gloss meters	70306	20° 60° 85°	0.5 0.5 0.5	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°	0.8 0.7 0.7	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

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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 /CP801-70325-1
		250 nm	8.1×10^{-3}	
		300 nm	8.1×10^{-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	5.1×10^{-3}	
		650 nm	5.1×10^{-3}	
		700 nm	5.2×10^{-3}	
		750 nm	5.2×10^{-3}	
Absorbance		(250 ~ 750) nm		
		(0.1 ~ 0.3)		
		250 nm	0.003 6	
		300 nm	0.003 7	
		350 nm	0.003 4	
		400 nm	0.002 5	
		450 nm	0.002 4	
		500 nm	0.002 4	
		550 nm	0.002 4	
		600 nm	0.002 5	
		650 nm	0.002 4	
		700 nm	0.002 4	
		750 nm	0.002 4	
		(0.3 ~ 0.6)		
		250 nm	0.003 6	
		300 nm	0.003 6	
		350 nm	0.003 5	
		400 nm	0.002 3	
		450 nm	0.002 3	
		500 nm	0.002 3	
		550 nm	0.002 3	
		600 nm	0.002 4	
		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	70325			
Spectrophotometers				
Absorbance		(0.6 ~ 0.9)		Transmittance filter
		250 nm	0.003 6	/CP801-70325-1
		300 nm	0.003 6	
		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	
		(1 100 ~ 2 500) nm		
		1 100 nm	0.008 6	
		1 700 nm	0.008 6	
		2 210 nm	0.008 6	
		2 500 nm	0.008 6	
Reflectance		(250 ~ 2 500) nm		White standard
(Including Specular Component & Excluding Specular Component)		(250 ~ 380) nm	1.3×10^{-2}	/CP801-70325-1
		(380 ~ 780) nm	9.2×10^{-3}	
		(800 ~ 2 500) nm	1.2×10^{-2}	
FT-IR spectrophotometers		(400 ~ 4 000) cm^{-1}		Standard filter
		906.82 cm^{-1}	0.11 cm^{-1}	/CP801-70325-2
		1 028.42 cm^{-1}	0.28 cm^{-1}	
		1 069.27 cm^{-1}	0.78 cm^{-1}	
		1 154.62 cm^{-1}	0.10 cm^{-1}	
		1 583.04 cm^{-1}	0.10 cm^{-1}	
		1 601.38 cm^{-1}	0.12 cm^{-1}	
		2 850.20 cm^{-1}	0.13 cm^{-1}	
		3 001.40 cm^{-1}	0.10 cm^{-1}	
		3 026.44 cm^{-1}	0.10 cm^{-1}	
		3 060.14 cm^{-1}	0.10 cm^{-1}	
		3 082.22 cm^{-1}	0.10 cm^{-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.
Wavelength reference materials; absorption cell, bandpass filter, etc	70326			Standard filter / CP801-70326-1
Wavelength		(250 ~ 780) nm	0.5 nm	
Transmittance		(250 ~ 750) nm		
		250 nm	8.3×10^{-3}	
		300 nm	8.5×10^{-3}	
		350 nm	8.0×10^{-3}	
		400 nm	5.7×10^{-3}	
		450 nm	5.6×10^{-3}	
		500 nm	5.8×10^{-3}	
		550 nm	5.6×10^{-3}	
		600 nm	5.8×10^{-3}	
		650 nm	5.6×10^{-3}	
		700 nm	5.5×10^{-3}	
		750 nm	5.6×10^{-3}	
Absorbance		(250 ~ 750) nm		
		250 nm	0.003 7	
		300 nm	0.003 8	
		350 nm	0.003 6	
		400 nm	0.002 6	
		450 nm	0.002 5	
		500 nm	0.002 5	
		550 nm	0.002 5	
		600 nm	0.002 6	
		650 nm	0.002 5	
		700 nm	0.002 5	
		750 nm	0.002 5	

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	7.9×10^{-3}	
		390 nm	7.9×10^{-3}	
		400 nm	7.7×10^{-3}	
		410 nm	7.9×10^{-3}	
		420 nm	8.1×10^{-3}	
		430 nm	8.3×10^{-3}	
		440 nm	8.5×10^{-3}	
		450 nm	8.7×10^{-2}	
		460 nm	8.3×10^{-3}	
		470 nm	7.9×10^{-3}	
		480 nm	7.5×10^{-3}	
		490 nm	7.1×10^{-3}	
		500 nm	7.1×10^{-3}	
		510 nm	7.1×10^{-3}	
		520 nm	7.1×10^{-3}	
		530 nm	7.1×10^{-3}	
		540 nm	7.1×10^{-3}	
		550 nm	7.1×10^{-3}	
		560 nm	7.1×10^{-3}	
		570 nm	7.1×10^{-3}	
		580 nm	7.1×10^{-3}	
		590 nm	7.1×10^{-3}	
		600 nm	7.1×10^{-3}	
		610 nm	7.1×10^{-3}	
		620 nm	7.1×10^{-3}	
		630 nm	7.1×10^{-3}	
		640 nm	7.1×10^{-3}	
		650 nm	7.1×10^{-3}	
		660 nm	7.1×10^{-3}	
		670 nm	7.1×10^{-3}	
		680 nm	7.1×10^{-3}	
		690 nm	7.1×10^{-3}	
		700 nm	7.1×10^{-3}	
		710 nm	7.1×10^{-3}	
		720 nm	7.1×10^{-3}	
		730 nm	7.2×10^{-3}	
		740 nm	7.3×10^{-3}	
		750 nm	7.2×10^{-3}	
		760 nm	7.4×10^{-3}	
		770 nm	7.1×10^{-3}	
		780 nm	7.2×10^{-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 Communication 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

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			201. Mass			209. Fluid flow		
10204	Gauge block comparators	Y	20102	Auto-hopper scale balances	Y	20909	Liquid flowmeters; differential pressure	N
10206	Dial/cylinder gauge testers	Y	20103	Auto-packer scale balances	Y			
10210	Extensometers, linear displacement transducers	Y	20109	Electric balances	Y	20910	Liquid flowmeters; electromagnetic	Y
			20112	Platform scale balances	Y			
10213	Gap gauges	N	20113	Spring scale balances	Y	20912	Liquid flowmeters; Coriolis, etc.	N
10216	Height gauges/measuring machines	Y	20116	Weights	Y			
10219	Linear scales	Y	202. Force			20915	Liquid flowmeters; positive displacement	Y
10220	Standard measuring machines	Y	20203	Tension/compression testing machines	Y	20917	Liquid flowmeters; turbine	N
10225	Laser scan micrometers	Y				20919	Liquid flowmeters; ultrasonic	N
10237	Torque arms	Y	20204	Push-pull gauges	N			
103. Angle			203. Torque			20921	Liquid flowmeters; area	N
10306	Clinometers	N	20303	Torque wrenches/drivers	N	20923	Liquid flowmeters; vortex	N
10322	Angular displacement transducers	Y	204. Pressure			210. Hardness		
104. Form			20401	Altimeters	Y	21001	Brinell hardness testers	Y
			20406	Absolute pressure gauges	Y	21002	Rockwell hardness testers	Y
10401	Form testers	Y	20408	Compound pressure gauges	Y	21003	Shore hardness testers	Y
10407	Precision surface plates	Y	20409	Differential pressure gauges	Y	21004	Vickers hardness testers	Y
10409	Roundness measurement instruments	Y	20411	Gauge pressure gauges	Y	21005	Durometer hardness testers	N
			20412	Pressure transducers/transmitters	Y	21006	Leeb hardness testers	N
105. Complex geometry			20413	Dial type vacuum gauges	Y	401. DC volatage & current		
10503	Contact coordinate measuring machines	Y	20414	Water depth meters	Y	40101	DC ammeters	Y
10504	Non-contact coordinate measuring machines	Y	205. Vacuum			40112	DC voltmeters	Y
10511	Measuring microscopes, profile projectors	Y	20501	Capacitance diaphragm gauges	N	404. Other DC & AC Measurements		
			20502	Spinning rotor gauges	N	40424	Volt/Current recorders	Y
10517	Stylus type roughness testers	Y	20503	Ionization gauges	N	501. Contact thermometry		
			20504	Thermal conductivity pirani, thermocouple, convectron etc.	N	50101	Temperature generators; ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	Y
10531	SEM/TEM/SPM/AFM microscopes	Y						
106. Various dimensional			206. Volume			50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y
10601	Inside/outside/gear tooth calipers, caliper gauges	Y	20601	Volumetric glasswares	N			
10603	Cylinder/bore gauges	Y	20602	Pycnometers	N	50104	Resistance thermometers; SPRT, IPRT, thermistors,etc	Y
10604	Depth gauges, depth micrometers	Y	20604	Standard volume vessels	Y			
10605	Dial/digital gauges	Y	20606	Piston type volume meters	N	50105	Thermal expansion thermometers; bimetal, gas or liquid type	Y
			207. Density					
10609	Micro indicators, test indicators	Y	20704	Salinity meters	N			
10610	Micrometer heads	Y	20705	Sucrose meters	N			
10612	Inside micrometers	Y	20707	Chloride meters	N			
10613	Outside micrometers	Y						

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
50106	Thermocouples; noble metal, base metal, pure metal, special type, etc	Y						
50107	Temperature transducers	Y						
503. Humidity								
50302	Relative humidity hygrometers;polymer thinfilm, hair, etc.	Y						
50304	Temperature humidity recorders;Hygrothermograph, etc.	Y						
50305	Transducers; dew-point/relative humidity	Y						
50306	Humidity generators;two-pressure, two-temperature, flow mixing humidity generator, constant temperature and humidity chamber, etc.	Y						
504. Moisture								
50401	Cereal moisture meters	Y						
701. Photometry								
70101	Illuminance meters	N						
70103	Total luminous flux meters	Y						
70104	Luminous intensity meters	Y						
702. Properties of detector & sources								
70204	Colorimeters; source color	Y						
70221	Total spectral radiant flux meters	Y						
703. Properties of materials								
70301	Colorimeters; material color	Y						
70306	Gloss meters	Y						
70308	Haze meters	Y						
70325	Spectrophotometers including FT-IR spectrophotometers	Y						

Note

1. This laboratory provides calibration services in permanent standard laboratory and at on-site.
2. Laboratory conducts on-site calibration should meet requirements of KOLAS-SR-007.
3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.
4. Measurement uncertainty normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k=2$. It expresses the lowest uncertainty of measurement that can be provided by accredited calibration laboratories in normal conditions.
5. Due to the calibration environment such as reference standards or customers' facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than measurement uncertainty on scope of accreditation in general.

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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	(Ø0 ~ Ø15) 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

103. Angle

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Clinometers Angle	10306	±90°	0.010°	Rotary tables /CP801-10306-1
Angular displacement transducers	10322	(0 ~ 360)°	0.010°	Rotary tables /CP801-10322-1

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	

104. Form

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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	360°	18 nm	Roundness standard specimens /CP801-10409-1
Rotation accuracy of circumference direction		360°	65 nm	Optical flats /CP801-10409-1
Rotation accuracy of shaft direction		(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
Accuracy of detector				

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	$\sqrt{0.9^2 + (5.4 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Step gauges /CP801-10503-1
Non-contact coordinate measuring machines	10504	(0 ~ 1 000) mm	$\sqrt{0.6^2 + (5.0 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Laser interferometers /CP801-10504-1
Length		0° ~ 360°	4"	
Angle				
Measuring microscopes, profile projectors	10511	(0 ~ 500) mm	$\sqrt{0.6^2 + (1.6 \times 10^{-3} \times l)^2}$ μm (l unit : mm)	Standard scale /CP801-10511-1
Length		0° ~ 360°	4"	Angle gauge blocks /CP801-10511-1
Angle		(10 ~ 100) X (100 ~ 1 000) X	3.2×10^{-2} 1.7×10^{-2}	Standard scale /CP801-10511-1
Scale				
Stylus type roughness testers	10517	(0 ~ 2) μm (2 ~ 10) μm	0.008 μm 0.044 μm	Roughness standard specimens /CP801-10517-1
Arithmetic mean(Ra)		(0 ~ 10) μm	0.16 μm	
Max. height(Rz)		(0 ~ 10) μm	0.021 μm	
Depth(H)				
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	$\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> 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	$\sqrt{9^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<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
Micro indicators, test indicators	10609	(0 ~ 5) mm	0.6 μm	Dial gauge testers /CP801-10609-1
Micrometer heads	10610	(0 ~ 100) mm	$\sqrt{0.7^2 + (1.8 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks /CP801-10610-1
Inside micrometers Caliper type	10612	(4 ~ 300) mm	$\sqrt{1^2 + (2 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> unit : mm)	Gauge blocks /CP801-10612-1
Outside micrometers Outside micrometers	10613	(0 ~ 25) mm (25 ~ 500) mm	0.2 μm $\sqrt{0.9^2 + (3.1 \times 10^{-3} \times l)^2} \text{ } \mu\text{m}$ (<i>l</i> 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 ~ 300) kg (300 ~ 1 000) kg (1 000 ~ 2 000) kg	1.2 µg 1.2 µg 1.2 µg 1.2 µg 1.5 µg 1.9 µg 2.4 µg 3.0 µg 3.9 µg 4.7 µg 6.2 µg 8 µg 10 µg 13 µg 20 µg 50 µg 0.10 mg 0.20 mg 0.5 mg 2 mg 3 mg 5 mg 20 mg 0.3 g 0.7 g 0.1 kg 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	(F1 class)	Weight /CP801-20116-1
		1 mg	6.0 μ g	
		2 mg	6.0 μ g	
		5 mg	6.0 μ g	
		10 mg	8.0 μ g	
		20 mg	9.0 μ g	
		50 mg	12 μ g	
		100 mg	15 μ g	
		200 mg	18 μ g	
		500 mg	24 μ g	
		1 g	30 μ g	
		2 g	40 μ g	
		5 g	50 μ g	
		10 g	60 μ g	
		20 g	80 μ g	
		50 g	90 μ g	
		100 g	0.15 mg	
		200 g	0.30 mg	
		500 g	0.75 mg	
		1 kg	1.5 mg	
		2 kg	3.0 mg	
		5 kg	7.5 mg	
		10 kg	15 mg	
		20 kg	30 mg	

202. Force

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Tension/compression testing machines	20203			Force measuring devices(Electronics) /CP801-20203-1
(Tension/compression)		(0.1 ~ 200) N	2.8×10^{-4}	
(Tension/compression)		(200 ~ 500) N	7.8×10^{-4}	
(Tension/compression)		500 N ~ 1 kN	8.5×10^{-4}	
(Tension/compression)		(1 ~ 2) kN	8.5×10^{-4}	
(Tension/compression)		(2 ~ 5) kN	7.1×10^{-4}	
(Tension/compression)		(5 ~ 10) kN	8.5×10^{-4}	
(Tension/compression)		(10 ~ 20) kN	8.8×10^{-4}	
(Tension/compression)		(20 ~ 50) kN	9.2×10^{-4}	
(Tension/compression)		(50 ~ 100) kN	6.6×10^{-4}	
(Tension/compression)		(100 ~ 200) kN	9.3×10^{-4}	
(Tension/compression)		(200 ~ 500) kN	1.2×10^{-3}	
(Tension/compression)		500 kN ~ 1 MN	1.5×10^{-3}	
(Compression)		(1 ~ 3) MN	1.6×10^{-3}	
(Compression)		(3 ~ 10) MN	2.0×10^{-3}	
Push-pull gauges	20204	(2 ~ 30) N	5.9×10^{-4}	Weight
		(30 ~ 1 000) N	5.8×10^{-4}	/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 Gauge	20412	(4 ~ 7 000) kPa abs. (0 ~ 100) MPa	7.5×10^{-5} 7.9×10^{-5}	Laon LPB-G /CP801-20412-1 Laon LPB-H /CP801-20412-2
Dial type vacuum gauges	20413	(-95 ~ 0) kPa	1.4×10^{-3}	Laon LPB-G /CP801-20413-1
Water depth meters	20414	(0 ~ 100) m	1.0×10^{-3}	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	(0.9 ~ 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

205. Vacuum

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Spinning rotor gauges	20502	0.4 mPa abs. ~ 0.01 Pa abs.	0.012 mPa	Reference Vacuum Gauge /CP801-20502-1
Ionization gauges	20503	0.1 mPa abs. ~ 0.006 Pa abs.	3.7 μ Pa	Reference Vacuum Gauge /CP801-20503-1
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 μ L 1.4 μ L 1.9 μ L 2.5 μ L 3.1 μ L 3.8 μ L 4.9 μ L 9.9 μ L 47 μ L 72 μ L 0.13 mL 0.18 mL	Balance /CP801-20601-1
Pycnometers	20602	(0 ~ 50) mL (50 ~ 100) mL (100 ~ 500) mL	1.9 μ L 3.8 μ L 28 μ L	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) 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 ~ 1 000) μ L (1 ~ 2) mL (2 ~ 5) mL (5 ~ 10) mL (10 ~ 25) mL (25 ~ 50) mL (50 ~ 100) mL	0.006 0 μ L 0.006 1 μ L 0.007 1 μ L 0.008 5 μ L 0.009 9 μ L 0.040 μ L 0.073 μ L 0.097 μ L 0.21 μ L 0.39 μ L 0.78 μ L 1.8 μ L 3.4 μ L 4.8 μ L 19 μ L 71 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.
Salinity meters	20704	(0.5 ~ 25) %	0.012 %	NaCl /CP801-20704-1
Sucrose meters	20705	(0 ~ 60) % (60.000 ~ 82.319) %	0.027 % 0.031 %	Sucrose /CP801-20705-1
Chloride meters	20707	(0 ~ 1.5) %	0.000 8 %	Cl- sol'n /CP801-20707-1

209. Fluid flow

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Liquid flowmeters; differential pressure	20909	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20909-2
Liquid flowmeters; electromagnetic	20910	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20910-2
Liquid flowmeters; Coriolis, etc.	20912	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20912-2
Liquid flowmeters; positive displacement	20915	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20915-2
Liquid flowmeters; turbine	20917	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20917-2
Liquid flowmeters; ultrasonic	20919	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20919-2
Liquid flowmeters; variable area	20921	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20921-2
Liquid flowmeters; vortex	20923	(10 ~ 80) m ³ /h	0.14 %	Electric balances /CP801-20923-2

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
Brinell hardness testers	21001	(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

210. Hardness

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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

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	$\pm(2 \sim 20)$ mA $\pm(20 \text{ mA} \sim 2 \text{ A})$	2.0 μ A 0.7 mA	Calibrator /CP801-40101-1
DC voltmeters DC Voltmeter	40112	$\pm(190 \text{ mV} \sim 1 \text{ V})$ $\pm(1 \sim 10) \text{ V}$ $\pm(10 \sim 190) \text{ V}$	20 μ V 0.2 mV 10 mV	Calibrator /CP801-40112-1

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.
Volt/Current recorders DC Voltage	40424	$\pm(190 \text{ mV} \sim 1 \text{ V})$ $\pm(1 \sim 10) \text{ V}$	20 μ V 0.2 mV	Calibrator /CP801-40424-1

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	
(without sensor)				
Thermoelectric recorders / indicators / controllers		(-90 ~ 1 500) °C	0.29 °C	CALIBRATOR /CP801-50102-10
Resistance type recorders / indicators / controllers		(-90 ~ 660) °C	0.015 °C	CALIBRATOR /CP801-50102-13

501. Contact Thermometry

Measured Quantity Instrument or Gauge	Field Code	Range	Measurement uncertainty (The Confidence Level is about 95 %)	Standard/Method of Measurement etc.
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	(3 ~ 98) % R.H. (-40 ~ 0) °C (0 ~ 40) °C (40 ~ 80) °C (3 ~ 98) % R.H. (-40 ~ 0) °C (0 ~ 40) °C (40 ~ 80) °C (20 ~ 95) % R.H. (-20 ~ 80) °C	1.6 % R.H. 0.8 °C 0.5 °C 0.7 °C 1.6 % R.H. 0.8 °C 0.5 °C 0.7 °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) ℃ (20 ~ 95) % R.H. (-20 ~ 80) ℃	3 % R.H. 2 ℃ 3 % R.H. 2 ℃	Dew-point hygrometers /CP801-50304-1 Dew-point hygrometers /CP801-50304-2
Transducers; dew- point/relative humidity Humidity transducers	50305	(3 ~ 98) % R.H. (-40 ~ 0) ℃ (0 ~ 40) ℃ (40 ~ 80) ℃	1.6 % R.H. 0.8 ℃ 0.5 ℃ 0.7 ℃	Dew-point hygrometers /CP801-50305-1
Humidity generators Constant temperature and humidity chamber Two-pressure humidity generators Flow mixing humidity generators	50306	(5 ~ 90) % R.H. (90 ~ 98) % R.H. (-80 ~ 200) ℃ (10 ~ 80) % R.H. (80 ~ 95) % R.H. (0 ~ 60) ℃ (3 ~ 25) % R.H. (25 ~ 80) % R.H. (80 ~ 98) % R.H.	2.5 % R.H. 2.8 % R.H. 0.5 ℃ 1.8 % R.H. 2.1 % R.H. 0.21 ℃ 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

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
Total luminous flux meters	70103	(324.3 ~ 2 218) lm	1.7 %	Total luminous flux meters/CP801-70103-1
Luminous intensity meters	70104	(409 ~ 1 069.2) 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.
Colorimeters; source color	70204	CIE 1931 x, y red x : (0.690 ~ 0.698) y : (0.303 ~ 0.309) Green x : (0.169 ~ 0.179) y : (0.704 ~ 0.708) Blue x : (0.124 ~ 0.130) y : (0.080 ~ 0.085) White x : (0.327 ~ 0.335) y : (0.345 ~ 0.353)	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
Total spectral radiant flux meters Wavelength Total spectral radiant Color temperature Chromaticity Total luminous flux	70221	(350 ~ 850)nm (350 ~ 850) nm 350 nm (355 ~ 365) nm 365 nm (370 ~ 395) nm (395 ~ 420) nm (420 ~ 495) nm (495 ~ 850) nm (2 634 ~ 2 805) K CIE 1931 x, y x : (0.450 ~ 0.467) y : (0.406 ~ 0.415) (594.2 ~ 2 218) lm	0.25 nm 3.9 % 3.8 % 3.2 % 3.1 % 2.2 % 1.9 % 1.7 % 22 K x : 0.004 y : 0.004 1.7 %	Total spectral radiant flux standard lamps /CP801-70221-1

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
Red		X Y Z	0.37 0.23 0.16	
Yellow		X Y Z	0.79 0.68 0.22	
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	

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
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	
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

[illegible]

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 Gauge	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		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	