

Name: Wuxi Institute of Inspection, Testing and Certification (Wuxi Institute of Metrology and Testing/Wuxi Center of Fiber Inspection)

Address: No. 8, Chunxin East Road, Dongting, Wuxi, Jiangsu, China

Registration No. CNAS L0260

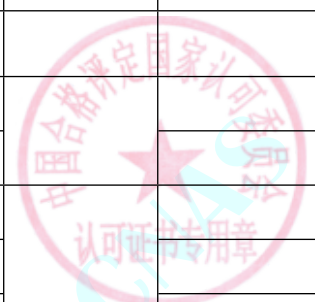
Accreditation Criteria: ISO/IEC 17025:2017 and relevant requirements of CNAS

Effective Date: 2023-06-19 Expiry Date: 2028-09-16

SCHEDULE 5 ACCREDITED CALIBRATION AND MEASUREMENT CAPABILITY SCOPE

Note: The instruments with * represents onsite calibration can be performed.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
I Geometric measuring instrument							
1	*Measuring microscope	Length	V.R.of Reading Microscope JJG571	(0~40)mm	$U=2 \mu m$		
				(>40~50)mm	$U=3 \mu m$		
2	*Micro-scope for reading	Length	V.R.of Reading Microscope JJG571	(0~6)mm	$U=3 \mu m$		
3	*Projector	Length	C.S. for Projectors JJF1093	(0~500)mm	$U=2 \mu m$		
		Magnification		$4\times \sim 200\times$	$U_{rel}=0.02\%$		
4	*Linear comparator	Length	V.R.of Linear comparator JJG72	(0~50)mm	$U=0.4 \mu m$		
				(>50~100)mm	$U=0.5 \mu m$		
				(>100~150)mm	$U=0.6 \mu m$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>150~200)mm	$U=0.7 \mu m$		
5	*Universal Measuring Microscope and Makers Microscope	Length	V.R.of Universal Measuring Microscope and Makers Microscope JJG56	(0~200) mm	$U=0.2 \mu m+2 \times 10^{-6}L$		
6	*Cable Length Meter	Length	V.R.of Cable Length Meter JJG987-2004 JJG987	(5~1000)m	$U_{rel}=0.20\%$		
7	Steel ruler	Length	V.R.of Steel rule JJG1	(0~2000)mm	$U=0.03mm+3 \times 10^{-5}L$		
8	steel tape	Length	V.R.of steeltape JJG4	measure length (0~100) m	$U=0.04mm+1.8 \times 10^{-5}L$		
				measure depth (0~30) m	$U=0.04mm+1.8 \times 10^{-5}L$		
9	Pi tapes	Length	Calibration Specification for Pi tapes JJF1423	ϕ (9~1600) mm	$U=0.01mm+0.8 \times 10^{-5}L$		
10	standard line	Length	V.R.of Cable Length Meter JJG987-2004 JJG987	(0~100)m	$U=0.06mm+2.8 \times 10^{-5}L$		
11	Wooden Rule(Wooden Folded Rule)	Length	V.R.of Wooden Rule(Wooden Folded Rule) JJG2	0~3000mm	$U=0.2mm+10^{-4}L$		
12	*Imageing Probe Measuring Machines	Length	C.S.for Imageing Probe Measuring Machines JJF1318	(0~500)mm	$U=0.8 \mu m + 10^{-6}L$		
				(>500~2000)mm	$U=1.0 \mu m + 2 \times 10^{-6}L$		
13	*Calibration Specification for Linear Displacement	Length	C.S.for Linear Displacement Sensoys JJF1305	Guyed displacement sensor: (0~5000)mm	$U=0.001mm$		
				Resistance displacement sensor: (0~1000)mm	$U=0.001mm$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Sensoys			Magnetostrictive displacement sensor: (0~3000)mm	$U=0.001\text{mm}$		
				Laser displacement sensor: (0~2000)mm	$U=0.0005\text{mm}$		
14	*Calibration Specification for Biological microscope	Length	C.S.for Biological microscope JJF1402	(0~100)mm	$U=2.6\ \mu\text{m}$		
		Zoom		Objective lens Zoom: 5×~100×	$U_{\text{rel}}=1.2\%$		
15	Proof bar	Length	V.R.of Micrometer JJG21,C.S.for Large Dimension Outside Micrometers JJF1088	25mm~1000mm	$U=0.4\ \mu\text{m}+4\times 10^{-6}L$		
				>1000mm~3000mm	$U=1.0\ \mu\text{m}+3\times 10^{-6}L$		
16	Internal micrometer	Length	V.R. of Internal micrometers JJG22	(0~1000)mm	$U=1.1\ \mu\text{m}+3\times 10^{-6}L$		
				>1000mm~3000mm	$U=1.7\ \mu\text{m}+2.9\times 10^{-6}L$		
17	*Micrometer with dial comparater	Length	V.R.of Micrometer with Dial Comparater and Indicating Snap Gauge JJG26	(0~100)mm	$U=1\ \mu\text{m}$		
18	*Height caliper	Length	V.R.of Height caliper JJG31	0~500mm	$U=0.01\text{mm}$		
				>500mm~1000mm	$U=0.02\text{mm}$		
				>1000mm~1500mm	$U=0.03\text{mm}$		
				>1500mm~2000mm	$U=0.04\text{mm}$		
19	*Current calipers	Length	V.R.of current calipers JJG30	0~500mm	$U=0.01\text{mm}$		
				>500mm~1000mm	$U=0.02\text{mm}$		
				>1000mm~1500mm	$U=0.03\text{mm}$		



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				>1500mm~2000mm	U=0.04mm		
20	*Micrometer	Length	V.R.of Micrometer JJG21,C.S.for Large Dimension Outside Micrometers JJF1088	(0~100) mm	U=1 μ m		
				>100mm~500mm	U=2 μ m		
				>500mm~700mm	U=5 μ m		
				>700mm~900mm	U=6 μ m		
				>900mm~1200mm	U=8 μ m		
				>1200mm~2000mm	U=9 μ m		
21	*Depth micrometer	Length	V.R.of Depth Micrometers JJG24	(0~300)mm	U=0.6 μ m+8×10 ⁻⁶ L		
22	*Dial test indicator	Length	V. R. of Dial test indicator JJG35	Reading in 0.001mm:(0~0.4)mm	U=1.2 μ m		
				Reading in 0.01mm:(0~1)mm	U=2 μ m		
23	*comparator of machine type	Length	V.R.of Comparators of Machine TypeJJG39-2004 JJG39	-0.05mm~+0.05mm (division value0.5 μ m)	U=0.08 μ m		
				-0.1mm~+0.1mm (division value1 μ m)	U=0.15 μ m		
				-0.2mm~+0.2mm (division value 2 μ m)	U=0.3 μ m		
				-0.5mm~+0.5mm (division value5 μ m)	U=0.6 μ m		
				-1mm~+1mm (division value10 μ m)	U=1.2 μ m		

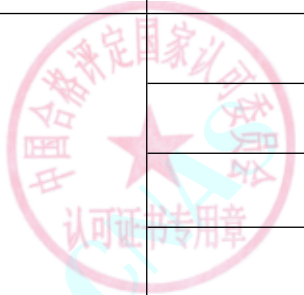


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
24	*Bore dial indicator	Length	C.S.for Bore Dial Indicator JJF1102	Reading in 0.01mm:2mm~18mm	U=2 μ m		
				Reading in 0.01mm:2>18mm~50mm	U=3 μ m		
				Reading in 0.01mm:2>50mm~160mm	U=4 μ m		
				Reading in 0.01mm:2>160mm~450mm	U=5 μ m		
				Reading in 0.001mm:6mm~10mm	U=1.2 μ m		
				Reading in 0.001mm:>10mm~35mm	U=1.3 μ m		
				Reading in 0.001mm:>35mm~50mm	U=1.5 μ m		
				Reading in 0.001mm:>50mm~160mm	U=1.6 μ m		
				Reading in 0.001mm:>160mm~450mm	U=1.8 μ m		
25	*Microcator	Length	V.R.of Microcator JJG118	-0.1mm~0.1mm	U=0.02 μ m		
26	*Dial Gauges	Length	V.R. of Dial Gauges(dial and digital) JJG34	Reading in 0.01mm:(0~10)mm	U=3 μ m		
				Reading in 0.001mm:(0~1)mm	U=1.2 μ m		
				Reading in 0.001mm:>1mm~2mm	U=1.4 μ m		
				Reading in 0.001mm:>2mm~5mm	U=1.7 μ m		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Reading in 0.001mm: > 5mm~10mm	U=2.0 μ m		
27	Gauge Blocks	Length	V.R.of Gauge Blocks JJG146	(0.5~1000)mm	U=0.07 μ m+0.7× 10 ⁻⁶ L		
28	*Snap Gauge Reading in 0.01mm	Length	V.R.of Snap Gauge Reading in 0.01mm JJG109	Digital display:(0~100)mm	U=3 μ m		
				Digital display:> 100mm~300mm	U=4 μ m		
				Digital display:> 300mm~500mm	U=5 μ m		
				Digital display:> 500mm~600mm	U=6 μ m		
				Digital display:> 600mm~800mm	U=7 μ m		
				Digital display:> 800mm~1000mm	U=8 μ m		
				Indi-cator:0~300mm	U=3 μ m		
				Indi-cator:> 300mm~500mm	U=4 μ m		
				Indi-cator:> 500mm~600mm	U=5 μ m		
				Indi-cator:> 600mm~800mm	U=6 μ m		
Indi-cator:> 800mm~900mm	U=7 μ m						
Indi-cator:> 900mm~1000mm	U=8 μ m						
29	*Depth Dial Gauge	Length	V.R.of Depth Dial Gauge JJG830	0.01mm:(0~50)mm	U=2 μ m		

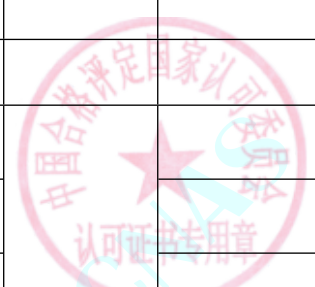


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				0.01mm: >50mm~100mm	U=3 μ m		
				0.01mm: >100mm~200mm	U=4 μ m		
				0.01mm: >200mm~300mm	U=5 μ m		
				0.001mm: (0~30)mm	U=1.0 μ m		
				0.001mm: >30mm~50mm	U=1.2 μ m		
				0.001mm: >50mm~100mm	U=1.4 μ m		
				0.001mm: >100mm~150mm	U=1.6 μ m		
				0.001mm: >150mm~200mm	U=1.9 μ m		
				0.001mm: >200mm~300mm	U=2.5 μ m		
				30	*Wide Range Dauges Reading in 0.01mm		
				>30mm~100mm	U=7 μ m		
31	*Micrometers with Gauge	Length	V.R.of Micrometers with Gauge JJG427	(0~100)mm	U=1.3 μ m		
32	*Thickness gauges	Length	Calibration Specification for Thickness gauges JJF1255	(0~30)mm (pointer type 0.001mm)	U=1.2 μ m		
				(0~10)mm (pointer type 0.002)	U=1.5 μ m		
				(0~30)mm (pointer type 0.01mm)	U=4 μ m		

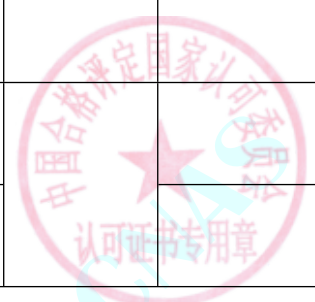


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(0~30)mm (pointer type 0.1mm)	U=16 μ m		
				(0~30)mm (Digital display 0.01mm type)	U=9 μ m		
				(0~30)mm (Digital display type 0.001mm)	U=2 μ m		
33	*Dial snap gauge	Length	Calibration Specification for Dial snap gauges JJF1253	(0~100)mm,division value0.01mm	U=8 μ m		
				(0~100)mm,division value0.1mm	U=24 μ m		
				(0~100)mm,division value0.02mm	U=10 μ m		
				(0~100)mm,division value0.05mm	U=16 μ m		
				(0~100)mm,division value0.005mm	U=4 μ m		
34	*Wide Range Gauges with Digital Display Reading in 0.001mm	Length	Calibration Specification for Wide Range Digital Display Gauges Reading in 0.001mm QTC13-001	(0~50) mm	U=2 μ m		
35	*Tester for dial indicator gauge	Length	V.R. of Tester for Dial Indicator Gauge JJG201	Dial gauges reading in 0.001mm verification instrument: (0~5)mm	U=0.2 μ m		
				Dial gauges reading in 0.01mm verification instrument: (0~50)mm	U=0.8 μ m		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Raster indicator verification instrument: (0~100)mm	$U=0.8 \mu m$		
36	Electronic level	Angle	V.R. of Electronic levels and Coincidence levels JJG103	$\pm 10\text{mm/m}$ (division value:0.001mm/m)	$U=0.001\text{mm/m}$		
				$\pm 10\text{mm/m}$ (division value: 0.005mm/m)	$U=0.005\text{mm/m}$		
				$\pm 10\text{mm/m}$ (division value: 0.01mm/m)	$U=0.01\text{mm/m}$		
37	Coincidence level	Angle	V.R. of Electronic levels and Coincidence levels JJG103	(-5~5)mm/m	$U=0.003\text{mm/m}$		
38	Angle gauge blocks	Angle	V.R. of Angle gauge blocks JJG70	(0~90)°	$U=2.5''$		
39	Square	Verticality	V.R. of squares JJG7	column square: 200mm~500mm	$U=0.5 \mu m$		
				square of wide seat: 63mm~500mm	$U=1 \mu m$		
				blade square: 50mm~ 200mm	$U=1 \mu m$		
				rectangle square: 125mm~200mm	$U=0.3 \mu m$		
				Graduated steel square: 150mm~500mm	$U=0.04\text{mm}$		
40	*Sine bar	Angle	V.R. of Sine bars JJG37	30°	$U=2.0''$		
41	Straight edge	Straight ness	V.R. of Straight edge JJG63	(75~175) mm	$U=0.3 \mu m$		
				>175mm~300mm	$U=0.5 \mu m$		
				>300mm~500mm	$U=0.7 \mu m$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
42	Frame Levels and Shaft Levels	Angle	C.S. for Frame Levels and Shaft Levels JJF1084	(0.02~0.10)mm/m	$U_{rel}=4\%$		
43	Level ruler	Angle	C.S. for Level Rules JJF1085	(0.5~10)mm/m	$U_{rel}=7\%$		
44	*Protractor for multiple point tool	Angle	V.R. of Protractors for multiple point tool JJG275	(0~180)°	$U=5'$		
45	*Universal bevel protractors	Angle	V.R. OF universal Bevel protractors JJG33	(0~320)° (DIV.2')	$U=1'$		
				(0~360)° (DIV.5')	$U=2'$		
46	*Combined Type Angle Rules	Angle	C.S. for Combined Type Angle Rules JJF1132	(0~180)°	$U=3'$		
47	Square gauge	Verticality	V.R. of Square gauge JJG1046	100mm,150mm	$U=0.2 \mu m$		
				200mm,250mm	$U=0.3 \mu m$		
				315mm,400mm	$U=0.4 \mu m$		
				500mm	$U=0.5 \mu m$		
				630mm	$U=0.6 \mu m$		
48	Electronic digital display clinometer	Angle	Calibration Specification for Clinometers JJF1915	(0~360)°	$U=0.01^\circ$		
49	*Gonio-meter	Angle	V.R. of Goniometer JJG97	(0~360)°	$U=0.8''$		
50	*Optical rotary table	Angle	C.S. of Optical&Digital Dividing Tables JJF1114	(0~360)° (division value 1'')	$U=1.3''$		
				(0~360)° (division value 2'')	$U=1.4''$		



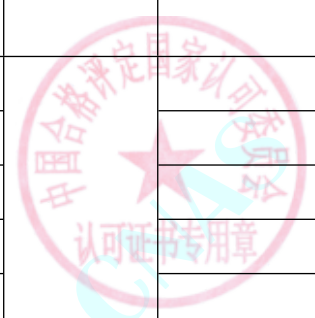
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(0~360)° (division value 5")	U=3"		
51	*Optical dividing head	Angle	V.R. of Optical Digital Dividing Head JJG57	(0~360)° (division value 1")	U=0.8"		
				(0~360)° (division value 2")	U=1.1"		
				(0~360)° (division value 3")	U=2.0"		
				(0~360)° (division value 5")	U=3.1"		
				(0~360)° (division value 10")	U=5.4"		
52	Auto-collimator	Angle	V.R. of Autocollimator JJG202	-120" ~ 120" (division value 0.1")	U=0.24"		
				-120" ~ 120" (division value 0.2")	U=0.27"		
				-500" ~ 500" (division value 0.5")	U=0.30"		
				-500" ~ 500" (division value 1")	U=0.37"		
53	*Box plate	Verticality	V.R. of Box plate JJG194	100mm	U=2.3 μ m		
				160mm	U=2.6 μ m		
				200mm	U=2.9 μ m		
				250mm	U=3.1 μ m		
				315mm	U=3.5 μ m		



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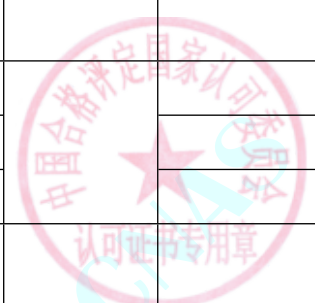
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				400mm	$U=4.3 \mu\text{m}$		
54	*Square tester	Verticality	C.S.for Square tester JJF1140	(0~500)mm	$U=0.8 \mu\text{m}$		
55	*Calibrator for level	Angle	V.R. of Calibrators for the Level JJG191	0.001mm/m、 Division value:0.005mm/m、 0.01mm/m	$U=0.00016\text{mm/m}$		
56	*Calibration Specification for Angular-Position Transducers/Sensors	Angle	C.S.for Angular-Position Transducers/Sensors JJF1352	(0~360)°	$U=1''$		
57	*Calibration Specification for Photoelectric Shaft Encoders	Angle	C.S.for Photoelectric Shaft Encoders JJF1115	(0~360)°	$U=1''$		
58	Optical theodolite	Angle	V.R.of Optical theodolites JJG414	(0~360)°	$U=0.4''$		
59	Water level	Angle	V.R.of Water Levels JJG425	-25'' ~25''	$U=3''$		
60	*Digital Display Height Measuring Instrument	Length	C.S.for Digital Display Height Measuring Instrument JJF1254	(0~1000)mm	$U=0.16 \mu\text{m}+1.6 \times 10^{-6}L$		
61	Plumb Instruments	Angle	C.S.for Plumb Instruments JJF1081	-100'' ~100''	$U=0.6''$		
62	*Concentricity Testers	Length	C.S.for Concentricity Testers JJF1109	(0~20) μm	$U=3 \mu\text{m}$		
63	*Bearing Inside and Outside Diameter Testers	Length	V.R.of Bearing Inside and Outside Diameter Testers JJG471	ϕ (3~230)mm	$U=0.6 \mu\text{m}$		
64	*Gear tooth caliper	Length	C.S. for Gear Tooth Calipers JJF1072	M(1~26)	$U=0.01\text{mm}$		



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65	*Common normal micrometer	Length	V.R.of the Common Normal Micrometer JJG82	(0~50)mm	$U=1 \mu m$		
				>50mm~200mm	$U=2 \mu m$		
66	Screw Templates	Length	V.R.of Screw Templates JJG60	P: (0.4~6)mm	$U=3 \mu m$		
67	Instruments of Thread Inspection of Casing, Tubing Line Pipe and New Rotary Shouldered Connection	Length	C.S.for Instruments of Thread Inspection of Casing, Tubing, Line Pipe and New Rotary Shouldered Connection JJF1063	monomial parameter gauges:(0~25)mm	$U=5 \mu m$		
				Gauge Length:(0~102.390)mm	$U=1.6 \mu m$		
				Gauge angle: (30°)	$U=3'$		
68	*Screw Thread Micrometers	Length	V.R.of Screw Thread Micrometers JJG25	error: (0~100)mm	$U=3 \mu m$		
				error: (>100~200)mm	$U=4 \mu m$		
				Micrometer head: (0~200)mm	$U=1 \mu m$		
69	*Micrometers with Prismatically Arranged Measuring Faces	Length	V.R.of Micrometers with Prismatically Arranged Measuring Faces JJG182	(1~85) mm	$U=1 \mu m$		
70	Light-section micro-scope	Length	C.S. for Light-section microscopes JJF1092	(0.5~60) μm	$U_{rel}=2\%$		
71	*Contact instrument for the measurement of surface roughness	Roughness	C.S. for Contact(stylus) instrument of surface roughness measurement by the profile method JJF1105	$2 \mu m < Ra \leq 10 \mu m$	$U_{rel}=2.2\%$		
				$0.1 \mu m < Ra \leq 2 \mu m$	$U_{rel}=4.2\%$		
				$0.02 \mu m < Ra \leq 0.1 \mu m$	$U_{rel}=8.2\%$		
72	Flatness interfero-meter with parallel light brightening	Flatness	C.S. for Flat Equal Thickness Interferometers JJF1100	$\Phi 150mm$	$U=0.01 \mu m$		



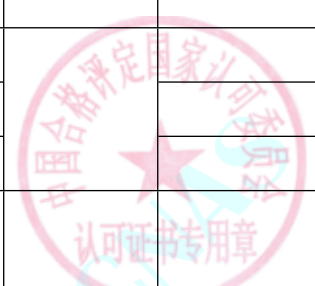
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73	*Pneumatic Measuring Instruments for Micrometer	Length	V.R. of Pneumatic Measuring Instrument for Micrometers JJG356	-8 μm~8 μm(Buoy type 10000×)	U=0.2 μm		
				-15 μm~15 μm(Buoy type 5000×)	U=0.3 μm		
				-40 μm~40 μm(Buoy type 2000×)	U=0.4 μm		
				-80 μm~80 μm(Buoy type 1000×)	U=0.8 μm		
				-10 μm~10 μm(Electronic column type for Division value of 0.2 μm)	U=0.2 μm		
				-25 μm~25 μm(Electronic column type for Division value of 0.5 μm)	U=0.3 μm		
				-50 μm~50 μm(Electronic column type for Division value of 1 μm)	U=0.7 μm		
74	*Ultrasonic thickness gauge	Length	C.S. for Ultrasonic Thickness Instrument JJF1126	(0.5~10)mm	U=0.02mm		
				(>10~75)mm	U=0.04mm		
				(>75~200)mm	U=0.10mm		
75	*Optimerer	Length	V.R.of Optimerer JJG45	(-80 μm~80 μm) (division value 0.2 μm)	U=0.02 μm		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(-100 μ m ~ 100 μ m) (division value 1 μ m)	U=0.1 μ m		
76	*Horizontal metro-scope	Length	C.S.for Length Measuring Instrument JJF1189	(0~500)mm	U=0.16 μ m+2.9×10 ⁻⁶ L		
77	*Coordinate Measuring Machines	Length	C.S.for Coordinate Measuring Machines JJF1064	(0~1)m	U=0.2 μ m+8×10 ⁻⁷ L		
				(>1~2.5)m	U=0.3 μ m+7×10 ⁻⁷ L		
				(>2.5~4)m	U=0.3 μ m+1.2×10 ⁻⁶ L		
				(>4~10)m	U=1 μ m+1.5×10 ⁻⁶ L		
78	*Magnetic and eddy current measuring instrument for coating thickness	Length	V.R of Magnetic and eddy current measuring instrument for coating thickness JJG818	(0~8000) μ m	U=0.15 μ m+4.4×10 ⁻³ H		
79	*Measurement Standard Instrument of Roundness	Roundness	V.R.of Measurement Standard Instrument of Roundness and Cylindricity JJG429	(0.5~10) μ m	U=0.04 μ m		
80	Calibrator of Extensometer	Length	C.S.for Calibrator of Extensometer JJF1096	(0~1/3)mm	U=0.10 μ m		
				(>1/3~25)mm	U _{rel} =0.03%		
81	*the Tool Presetting Instrument	Length	V.R.of The Tool Presetting Instrument JJG938	(0~1000)mm	U=0.38 μ m+2.7×10 ⁻⁶ L		
82	*Grating Micro-meter	Length	Calibration Specification for Grating Micrometers JJF1682	(0~25)mm (Level: 0.2 μ m)	U=0.1 μ m		
				(0~50)mm (Level: 0.5 μ m)	U=0.2 μ m		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(0~100)mm (Level: 1 $\mu\text{m} \sim 10 \mu\text{m}$)	$U=0.3 \mu\text{m}$		
83	Plug gauges	Length	V.R. of Plain limit gauges JJG343	1mm~10mm	$U=0.4 \mu\text{m}$		
				> 10mm~50mm	$U=0.5 \mu\text{m}$		
				> 50mm~300mm	$U=0.3 \mu\text{m}+4 \times 10^{-6}L$		
84	Ring gauges	Length	V.R. of Plain limit gauges JJG343	3mm~20mm	$U=0.7 \mu\text{m}$		
				>20mm~300mm	$U=0.5 \mu\text{m}+6 \times 10^{-6}L$		
85	Snap gauges	Length	V.R. of Plain limit gauges JJG343	3mm~20mm	$U=0.7 \mu\text{m}$		
				>20mm~300mm	$U=0.5 \mu\text{m}+6 \times 10^{-6}L$		
86	Feeler gauges	Length	V.R. of Feeler gauges JJG62	0.02mm~0.10mm	$U=1.5 \mu\text{m}$		
				>0.10mm~3.00mm	$U=2.5 \mu\text{m}$		
87	Thread Measuring Wires	Length	C.S. for Cylindrical measuring pin JJF1207	$\phi(0.118 \sim 6.585)\text{mm}$	$U=0.13 \mu\text{m}$		
88	*Welding measuring rulers	Angle	V.R. of Callipers for Welding inspection JJG704	ruler for measuring angle(0~60)°	$U=8'$		
		Length		angle gauge(0~60)°	$U=8'$		
				undercut depth ruler: (0~60)mm	$U=0.03\text{mm}$		
				edge linear gauge of main ruler: (0~60)mm	$U=0.06\text{mm}$		
				height ruler: (0~60)mm	$U=0.1\text{mm}$		
		width ruler: (0~60)mm		$U=0.1\text{mm}$			



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				clearance ruler: (0~60)mm	$U=0.04\text{mm}$		
89	Roughness comparison specimens	rough-ness	C.S.for Roughness comparison specimens JJF1099	Ra: (0.012~25) μm	$U_{\text{rel}}=7\%$		
90	Optical flat	Flatness	V.R.of Optical Flat JJG28	ϕ (30~60)mm	$U=0.010\ \mu\text{m}$		
				ϕ 80mm	$U=0.012\ \mu\text{m}$		
				ϕ (100~150)mm	$U=0.016\ \mu\text{m}$		
91	Cylindrical Screws Thread Gauges	Length	C.S.for Cylindrical Thread Gauges JJF1345	(3~400)mm Thread ring gauge pitch diameter	$U=1.8\ \mu\text{m} + 1.5 \times 10^{-5}L$		
				(3~400)mm Thread ring gauge pitch	$U=1.0\ \mu\text{m} + 5 \times 10^{-6}L$		
				(1~400)mm Thread plug pitch diameter	$U=1.5\ \mu\text{m} + 1.5 \times 10^{-5}L$		
				(1~400)mm Thread plug pitch	$U=1.0\ \mu\text{m} + 5 \times 10^{-6}L$		
92	Radius Gauge	Length	V.R.of Radius Gauge JJG58	R: (1~25)mm	$U=7\ \mu\text{m}$		
93	Test Sieves	Length	C.S.for Test Sieves JJF1175	(0.020~5)mm	$U=2\ \mu\text{m}$		
				(5~125)mm	$U=26\ \mu\text{m}$		
94	Pin gauge	Length	C.S.for Cylindrical measuring pin JJF1207	ϕ (0.1~25)mm	$U=0.2\ \mu\text{m}$		
95	Standard ring gauge	Length	V.R.of Standard ring gauge JJG894	3mm~300 mm	$U=0.5\ \mu\text{m} + 4 \times 10^{-6}L$		
96	Electronic Plug Gauges	Length	Calibration Specification for Electronic Plug Gauges JJF1310	ϕ (6~130)mm	$U=1.5\ \mu\text{m}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
97	*Length measuring instituter	Length	C.S. of Length measuring instituters JJF1066	Micron meter: ($\pm 100 \mu\text{m}$)	$U=0.1 \mu\text{m}$		
				Millimeter: (0~100)mm	$U=0.16 \mu\text{m}+2.9 \times 10^{-6}L$		
				Decimeter: (0~3)m	$U=0.3 \mu\text{m}+3 \times 10^{-6}L$		
98	*Inductive Micrometers	Length	C.S. for Inductive Micrometers JJF1331	(-1000~+1000) μm	$U=(0.02 \sim 2.0) \mu\text{m}$		
99	*Contact type inter-ferometer	Length	V.R. of Contact type interferometer JJG101	-50 $\mu\text{m} \sim +50 \mu\text{m}$	$U=0.012 \mu\text{m}$		
100	*Flat plate	Degree of the Plate	V.R. of Flat plate JJG117	160mm \times 100mm~ 4000mm \times 2500mm	$U=0.8 \mu\text{m}+0.7 \times 10^{-6}L$		
101	*Flat edge	Straight ness	C.S. for Calibration Specification for Straight Edges JJF1097	(0~5000)mm	$U=0.3 \mu\text{m}+4 \times 10^{-7}L$		
102	Inter-ference micro-scope	Roughness	V.R. of Interference microscope JJG77	H(0.05~0.20) μm	$U_{\text{rel}}=8\%$		
				H(>0.20~1.00) μm	$U_{\text{rel}}=2.2\%$		
103	*ThicStirs up the flash ranging diameter meterkness table	Length	C.S. for ThicStirs up the flash ranging diameter meterkness table JJF1250	(0.1~30)mm	$U=0.26 \mu\text{m}$		
104	*Measuring System of Coordinate Position	angle	C.S. for Measuring System of Coordinate Position JJF1251	(0~360) $^{\circ}$	$U=2.8''$		
		Length		(0~40)m	$U=1.9 \mu\text{m}+1.6 \times 10^{-6}L$		
105	*X-Ray Fluorescence Coating Thickness Instrument	Length	C.S. for X-Ray Fluorescence Coating Thickness Instrument JJF1306	0.05 μm	$U_{\text{rel}}=10\%$		
				(>0.05~50) μm	$U_{\text{rel}}=5.5\%$		
106	Mould	Length	C.S. for Moulds JJF1307	(0~300)mm	$U=0.05\text{mm}$		



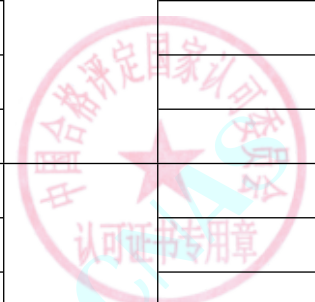
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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>300~600)mm	U=0.1mm		
107	*Metallographic Microscope	Length	Calibration Specification for Metallographic Microscope JJF1914	(0~100)mm	U=1.5 μ m		
108	Standard Thickness Pieces Of X-Ray Fluorescence Coating Thickness Instrument	Length	C.S.for X-Ray Fluorescence Coating Thickness Instrument JJF1306	(0.1~50) μ m	U _{rel} =6.2%		
109	*Calibration Specification for Articulated Arm Coordinate Measuring Machines	Length	C.S.for Articulated Arm Coordinate Measuring Machines JJF1408	R(10~500)mm	U=5 μ m		
				R(>500~1000)mm	U=10 μ m		
				R(>1000~2000)mm	U=15 μ m		
				R(>2000~3500)mm	U=20 μ m		
110	High-precision Line Scale	Length	V.R.of High-precision Line Scale JJG73	(0~1000)mm	U=0.1 μ m+0.4×10 ⁻⁶ L(k=3)		
111	Fineness of Grind Gage	Length	V.R.of Fineness of Grind Gage JJG905	(0~25) μ m	U=0.6 μ m		
				(25~50) μ m	U=0.7 μ m		
				(50~100) μ m	U=0.8 μ m		
				(100~150) μ m	U=1.3 μ m		
112	Line Template	Roughness	Calibration Specification for Line Template JJF(WXJL)002	Ra: (0.05~0.2) μ m	U _{rel} =5.2%		
				Ra: >0.2 μ m~0.4 μ m	U _{rel} =4.2%		
				Ra: >0.4 μ m~0.8 μ m	U _{rel} =3.3%		

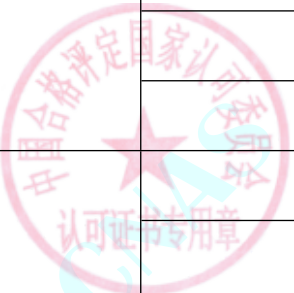


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Ra: >0.8 μ m~4 μ m	$U_{rel}=2.4\%$		
				Ra: >4 μ m~10 μ m	$U_{rel}=2.2\%$		
				H: (0.1~20) μ m	$U_{rel}=4.6\%$		
				H: >20 μ m~30 μ m	$U_{rel}=2.4\%$		
				H: >30 μ m~50 μ m	$U_{rel}=1.4\%$		
113	*Micrometers of Measuring Inside Dimension	Length	Calibration Specification for Micrometers of Measuring Inside Dimension JJF1411	Tri diameter: (6~300)mm	$U=0.9 \mu m+8 \times 10^{-6}L$		
			Inside: (5~150)mm	$U=1.9 \mu m+6 \times 10^{-6}L$			
			Digital Inside: (5~200)mm	$U=0.9 \mu m+8 \times 10^{-6}L$			
114	Film Cross-cut Tester	Length	Calibration specification for Film Cross-cut Tester JJF(su)196	(1~3)mm	$U=0.003mm$		
115	Calibration Specification for Surface Profile Gauges		C.S.for Surface Profile Gauges JJF1476	Digital: (0~6.5)mm/1 μ m	$U=2 \mu m$		
				Digital: (0~6.5)mm/0.1 μ m	$U=1.1 \mu m$		
				Pointer: (0~6.5)mm/0.002mm	$U=2 \mu m$		
				Pointer: (0~6.5)mm/0.01mm	$U=6 \mu m$		
116	Wet Film Thickness Gauges	Length	C.S.for Wet Film Thickness Gauges JJF1484	comb gauge: (5~100) μ m	$U=1 \mu m$		
				comb gauge: (>100~3000) μ m	$U=3 \mu m$		

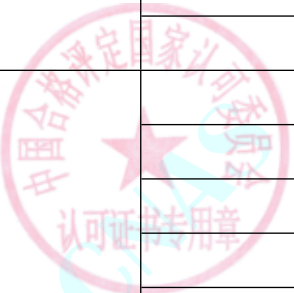


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
				wheel gauge: (0~125) μm	U=0.6 μm			
				wheel gauge: (>125~1500) μm	U=2.0 μm			
117	Calibration Specification for Blocks used in Ultrasonic Testing	Length	C.S.for Blocks used in Ultrasonic Testing JJF1487	(0~600)mm	U=6 μm+1.2×10 ⁻⁵ L			
118	Single and Three Phase Plugs	length	Calibration Specification for Single and Three Phase Plugs JJF(WXJL)007	CMM: (0~300)mm	U=0.002mm			
				CMM: R(0.5~2)mm	U=0.01mm			
				CMM: R(>2~20)mm	U=0.005mm			
				CMM: 0° ~360°	U=3'			
		Angle		length	IPMM: (0~300)mm			U=0.01mm
					IPMM: R(0.5~2)mm			U=0.02mm
					IPMM: R(>2~20)mm			U=0.01mm
					IPMM: 0° ~360°			U=13'
Quality	(0~5)kg	U=0.7g						
119	Access Probe	length	Calibration Specification for Access Probe JJF(WXJL)003	CMM: (0~300)mm	U=0.002mm			
				CMM: R(0.5~2)mm	U=0.01mm			
				CMM: R(>2~20)mm	U=0.005mm			
		CMM: 0° ~360°		U=3'				
		length		IPMM: (0~300)mm	U=0.01mm			



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				IPMM: R(0.5~2)mm	$U=0.02\text{mm}$		
				IPMM: R(>2~20)mm	$U=0.01\text{mm}$		
		Angle		IPMM: 0° ~360°	$U=13'$		
		Force		(1~200)N	$U_{\text{rel}}=0.6\%$		
120	Spline Gauge	length	Calibration Specification for Straight Cylindrical Involute Spline Gauges JJF1557	Major diameter, minor diameter: (0~180)mm	$U=1\ \mu\text{m}+1\times 10^{-5}L$		
				Tooth thickness, measurement over two pins: (0~180)mm	$U=1.2\ \mu\text{m}+1\times 10^{-5}L$		
				Space width, measurement between two pins: (0-180)mm	$U=1.5\ \mu\text{m}+1\times 10^{-5}L$		
121	Chamfer Gages for Measuring The Diameter for Tapered Hole	length	Calibration Specification for Chamfer Gages for Measuring The Diameter for Tapered Hole JJF (Su) 212	(0~150)mm	$U=0.01\text{mm}$		
122	Length Meter with Laser-based	length	Calibration Specification for Length Meter with Laser-based Measurement JJF (Su) 195	(0.1~9999)m	$U_{\text{rel}}=0.013\%$		
123	Roundness Flick	length	Calibration Specification for Roundness Flick Calibration Standard JJF1485	Chord Height(1~50) μm	$U_{\text{rel}}=5.6\%$		
124	*Fiber Diameter	length	Calibration Specification for Fiber Diameter Analyzer JJF (textile) 065	(0~1000) μm	$U=1.7\ \mu\text{m}$		
125	Thickness slice	thickness	V.R of Magnetic and eddy current measuring	(0~50) μm	$U=0.2\ \mu\text{m}$		




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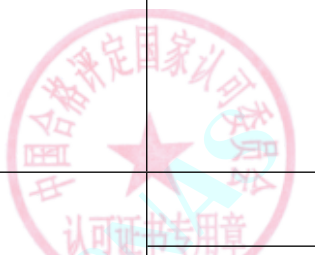
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			instrument for coating thickness JJG818	$> 50 \mu\text{m} \sim 10\text{mm}$	$U_{\text{rel}}=0.4\%$		
126	*Indication Snap Gauge	(length)	Verification Regulation of Micrometers with Dial Comparator Indication Snap Gauge JJG26	(0~200)mm	$U=0.4 \mu\text{m}$		
127	Fiber Tapes And Measuring Ropes	length	Verification Regulation of Fiber Tapes And Measuring Ropes JJG5	(0~200)m	$U=0.1\text{mm}+1.4 \times 10^{-4}L$		
128	*Center Distance Calipers	length	Calibration Specification for Center Distance Calipers JJF(Su)199	(0~500)mm	$U=0.02\text{mm}$		
				(> 500~1000)mm	$U=0.03\text{mm}$		
129	*Step Gauges	length	Calibration Specification for Step Gauges JJF(Yi)154	(-100~100)mm	$U= (3 \sim 10) \mu\text{m}$		
130	*Calipers and Gauges of Chamfer	length	Calibration Specification for Calipers and Gauges of Chamfer JJF(Su)211	Calipers of Chamfer: (0~10)mm	$U=0.02\text{mm}$		
				Gauges of Chamfer: (0~10)mm	$U=0.017\text{mm}$		
131	Wedge-Shape Filler Gauges	length	Calibration Specification for Wedge-Shape Filler Gauges JJF1548	(0~60)mm	$U=0.010\text{mm}$		
132	*Detecting The Notch of Test Sample	Magnification	Calibration Specification for Projectors for Detecting The Notch of Test Sample JJF(zhe) 1133	$5 \times \sim 100 \times$	$U_{\text{rel}}=0.34\%$		
133	*X-Ray thickness gauge	Length	X-Ray thickness gauge JJG480	(0~30)mm	$U=0.002\text{mm}$		
134	*Solder Paste Inspector	Length	Calibration Specification for Solder Paste Inspector JJF (Su) 191	(0~500) μm	$U=2 \mu\text{m}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
135	*Instrument for measuring contact angle with image method	angle	Calibration Specification for Instrument for measuring contact angle with image method JJF (Su) 219	(6~180)°	U=0.3°		
136	Hand-held Laser Distance Meters	Length	Verification Regulation of hand-held laser distance meters JJG966	(0~60)m	U=0.8mm		
137	Laser Micrometers	Length	Calibration specification for Laser Micrometers JJF1663	(-30~30)mm	U=0.011%FS		
138	Electronic Tachometer Total Station	Angle	Verification Regulation of Electronic Tachometer Total Station JJG100	(0~360)°	U=0.3"		
139	*optical Clinometers	Angle	Calibration Specification for Clinometers JJF1915	(0~360)°	U=6"		
140	*Atomic Force Microscope	Length	Calibration Specification for Atomic Force Microscope JJF (Su) 236	Z-direction t (20~500)nm	U=(3~5)nm		
141	*Scanning Electron Microscope	Length	Calibration specification for Scanning Electron Microscopes(SEM) JJF1916	(100~2000)nm	U=(3~8)nm		
142	Measuring Tools for Wheel-Diameter	Length	V.R.of Measuring Instrument for Wheel-Diameter of Railway Locomotives and Vehicles— Part 2:Measuring Tools for Wheel-Diameter JJG1081.2	(760~860)mm	U=0.05mm		
143	Concrete Crack Width and Depth Measuring Instrument)	Length	Calibration Specification for Concrete Crack Width and Depth Measuring Instruments JJF1334	(0.01~10)mm (Width Measuring Instrument)	U=0.004mm		
				(0.01~10)mm (Width standard plate)	U=0.003mm		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(20~200)mm (Depth Measuring Instrument)	U=3mm		
				(20~500)mm (Diphth standard plate)	U=0.5mm		
144	Construction Quality Tester sets	length	Calibration Specification for Construction Quality Tester sets JJF1110	Diagonal detection ruler: (0~100)mm	U=0.2mm		
				Feeler Gauges: (0~15)mm	U=0.04mm		
				Hundred grid: (10~300)mm	U _{rel} =0.1%		
		Angle		Verticality detection ruler: (0~15)mm/2m	U=0.2mm/2m		
				Inside and outside right angle detection ruler: (0~10)mm/150mm	U=0.2mm/150mm		
				Slope ruler: (0~30)mm/m	U=0.1mm/m		
145	Borehole Clinometers	Angle	Calibration Specification for Borehole Clinometers JJF1550	(-30° ~+30°)	U=0.008%FS		
146	*Brick Calipers	length	Calibration Specification for Brick Calipers JJF(Zhe)1109	Bending ruler: (-15~30)mm	U=0.05mm		
				Main ruler: (45~500)mm	U=0.2mm		
147	*Geometrical Quantity Precision for Part of Bicycle	Length	Specification for calibration of geometric accuracy checking tools for bicycle parts JJF(light industry)119	size: (0~500)mm	U=0.01mm		
				run-out: (0~0.1)mm	U=5 μ m		
148	Critical Flflow Venturi Nozzle	Length	V.R.of Critical Flflow Venturi Nozzle JJG620	(50~75)mm	U=3 μ m		



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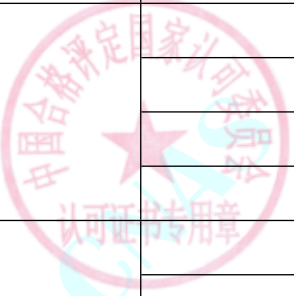
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>75~500)mm	U=4 μ m		
149	*Optical 3D Measuring Systems Based on Structured Light Scanning	Length	Calibration Specification for Optical 3D Measuring Systems Based on Structured Light Scanning JJF 1951	(50~3588) mm	U=0.008mm		
150	*Gear Measuring Centers	length	Specification for the calibration of gear measuring centers JJF 1561	Tooth Profile: r _b (30~197) mm	U=1.8 μ m		
				Spiral Line: r _b (29~33) mm、β : (0~30) °	U=1.8 μ m		
				Tooth Pitch: m4、z25	U=1.8 μ m		
151	Coordinate Measuring Spheres	length	Calibration Specification for Coordinate Measuring Spheres JJF 1422	diameter (0~50) mm	U=0.21 μ m+0.6×10 ⁻⁶ L		
				Roundness (0~50) mm	U=0.03 μ m		
II Thermal measuring instrument							
1	Standard Platinum-10% Rhodium/Platinum Thermocouple	Temperature	V.R.of Standard Platinum-10% Rhodium/Platinum Thermocouple JJG75	(419.527~1084.62)°C	U=0.7°C		
2	Working Noble Metal Thermocouples	Temperature	V.R.of Working Noble Metal Thermocouples JJG141	S:(300~1100)°C	U=0.8°C	Accredited only for double-poles method	
				R:(300~1100)°C	U=0.8°C		
				B:(1100~1600)°C	U=2.8°C		
3	Base Metal Thermocouples	Temperature	C.S. for Base Metal Thermocouples JJF1637	(-40~300)°C	U=0.3°C		
				(>300~1100)°C	U=1.0°C		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
4	Standard Mercury-in-Glass Thermometers	Temperature	V.R.of Standard Mercury-in-Glass Thermometers JJG161	(-30~0)°C	U=0.04°C		
				(>0~100)°C	U=0.03°C		
				(>100~200)°C	U=0.05°C		
				(>200~300)°C	U=0.06°C		
5	Thermistor Thermometers	Temperature	C.S. of Thermistor Thermometers JJF1379	(-50~-30)°C	U=0.07°C		
				(>-30~100)°C	U=0.06°C		
				(>100~200)°C	U=0.07°C		
6	Liquid-in-Glass Thermometers for Working	Temperature	V.R. of Liquid-in-Glass Thermometers for Working JJG130	(-80~-30)°C	U=0.08°C		
				(>-30~100)°C	U=0.06°C		
				(>100~200)°C	U=0.07°C		
				(>200~300)°C	U=0.09°C		
				(>300~500)°C	U=0.6°C		
7	Bimetallic thermometer	Temperature	C.S. of Bimetallic thermometer JJF1908	(-80~-30)°C	U=0.4°C		
				(>-30~100)°C	U=0.2°C		
				(>100~300)°C	U=0.4°C		
				(>300~500)°C	U=1°C		
8	Filled System Thermometers	Temperature	C.S. of Filled System Thermometers JJF1909	(-80~-30)°C	U=0.4°C		
				(>-30~100)°C	U=0.2°C		

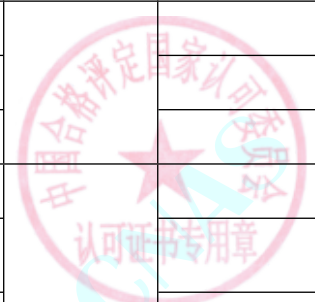


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>100~300)°C	U=0.4°C		
				(>300~500)°C	U=1°C		
9	Industry Platinum Resistance Thermometers	Temperature	V.R.of Industry Platinum and Copper Resistance Thermometers JJG229	(-80~0)°C	U=0.03°C	Accredited only for Industrial Platinum Resistance Thermometer	
				(>0~100)°C	U=0.04°C		
				(>100~200)°C	U=0.05°C		
				(>200~300)°C	U=0.06°C		
				(>300~420)°C	U=0.6°C		
10	Surface Thermometers	Temperature	C.S.for the Surface Thermometers JJF1409	(50~400)°C	U=(0.5~0.7)°C		
11	Surface Platinum Resistance Thermometer	Temperature	V.R.of Surface Platinum Resistance Thermometer JJG684	(-30~300)°C	U=0.3°C		
12	Sheathed Thermocouples	Temperature	C.S. for Sheathed Thermocouples JJF1262	(-40~300)°C	U=0.2°C		
				(>300~1100)°C	U=1.0°C		
13	*Digital Thermometer	Temperature	C.S.for Digital Thermometer JJF(su)95	(-80~100)°C	U=0.03°C		
				(>100~300)°C	U=0.04°C		
				(>300~1100)°C	U=1.0°C		
14	*Digital Temperature Indicators and Controllers	Temperature	V.R.of Digital Temperature Indicators and Controllers JJG617	IPRT Input(-200~850)°C	U=(0.2~0.4)°C		
				Tc K,N,J Input(-200~1200)°C	U=(0.3~0.4)°C		
				Tc S Input(0~1600)°C	U=(0.3~0.5)°C		



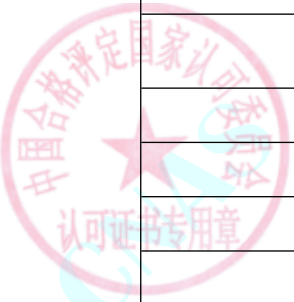
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Tc B Input(0~1800)°C	U=(0.3~0.6)°C		
				Tc R Input(0~1700)°C	U=(0.3~0.6)°C		
				Tc T Input(-200~400)°C	U=0.3°C		
				Tc E Input(-200~1000)°C	U=(0.3~0.4)°C		
15	*Self-balance Display Instruments	Temperature	V.R.of Recorders for Industrial-Process Measurement JJG74	IPRT Input(-200~850)°C	U=(0.2~0.4)°C		
				Tc K,N,J Input(-200~1200)°C	U=(0.3~0.4)°C		
				Tc S Input(0~1600)°C	U=(0.3~0.5)°C		
				Tc B Input(0~1800)°C	U=(0.3~0.6)°C		
				Tc R Input(0~1700)°C	U=(0.3~0.6)°C		
				Tc T Input(-200~400)°C	U=0.3°C		
				Tc E Input(-200~1000)°C	U=(0.3~0.4)°C		
16	*Analogue Temperature Indicators and Controllers	Temperature	V.R.of Analogue Temperature Indicators and Controllers JJG951	IPRT Input(-200~850)°C	U=0.8°C		
				Tc K,N,J Input(-200~1200)°C	U=(0.8~1.0)°C		
				Tc S Input(0~1600)°C	U=(0.8~1.0)°C		
				Tc B Input(0~1800)°C	U=(0.8~1.0)°C		
				Tc R Input(0~1700)°C	U=(0.8~1.0)°C		
				Tc T Input(-200~400)°C	U=0.8°C		

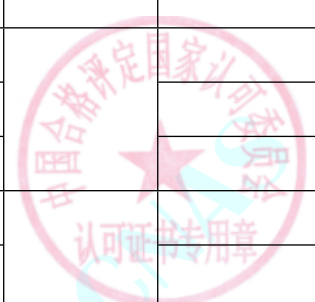


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
17	Temperature Transmitter	Temperature	C.S. of the Temperature Transmitter JJF1183	Tc E Input(-200~1000) °C	U=0.8°C		
				With sensor (-30~300) °C	U=0.4°C		
				With sensor(>300~1100) °C	U=1.5°C		
18	*Data Acquisition System	Temperature	C.S. of Data Acquisition System JJF1048	Without sensor(4~20)mA	U=0.016mA		
				IPRT Input(-200~850) °C	U=(0.2~0.4) °C		
				Tc K,N,J Input(-200~1200) °C	U=(0.3~0.4) °C		
				Tc S Input(0~1600) °C	U=(0.3~0.5) °C		
				Tc B Input(0~1800) °C	U=(0.3~0.6) °C		
				Tc R Input(0~1700) °C	U=(0.3~0.6) °C		
				Tc T Input(-200~400) °C	U=0.3 °C		
Tc E Input(-200~1000) °C	U=(0.3~0.4) °C						
19	Temperature Itinerant Detecting Instrument	Temperature	C.S. for Temperature Itinerant Detecting Instrument JJF1171	(-60~100) °C	U=0.08°C		
				(>100~200) °C	U=0.12°C		
				(>200~300) °C	U=0.16°C		
20	*Environmental Testing Equipment	Temperature	C.S. for Environmental Testing Equipment for Temperature and Humidity Parameters JJF1101	(-80~300) °C	U=0.3°C		
		Humidity		10%RH~95%RH	U=1.5%RH~2%RH		



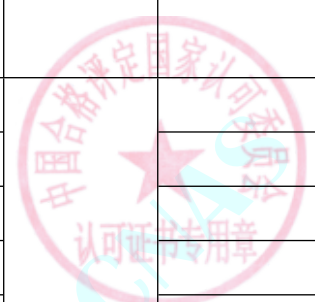
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
21	*Box-type Resistance Furnace	Temperature	C.S. for Box-type Resistance Furnace JJF1376	furnace temperature uniformity(300~600)°C	U=2.4°C		
				furnace temperature uniformity(>600~1000)°C	U=3.5°C		
22	*Thermostatic Bath	Temperature	Measurement and Test Norm of Thermostatic Bath's Metrological Characteristics JJF1030	Temperature Uniformity(-80~300)°C	U=0.004°C		
				Temperature Flutuauon(-80~300)°C	U=0.006°C		
23	*Thermocouple Calibration Furnaces	Temperature	Testing Specification of Temperature Uniformity in Thermocouple Calibration Furnaces JJF1184	(300~1100)°C	U=0.25°C		
				(>1100~1300)°C	U=0.3°C		
24	*Temperature Block Calibrators	Temperature	Calibration Guideline of the Temperature Block Calibrators JJF1257	(-80~300)°C	U=0.32°C		
				(>300~1100)°C	U=1.4°C		
25	*Salt Mist Testing Chambers	Tempera- ture	C.S.for Salt Mist Testing Chambers JJF(liao)75	35°C	U=0.4°C		
		precipitation rate of salt spray		50°C	U=0.4°C		
				0.5mL/h*80cm ² ~ 3mL/h*80cm ²	U=0.2mL/h*80cm ²		
26	Radiation Thermometers	Temperature	V.R.of Radiation Thermometers JJG856	(-30~100)°C	U=0.3°C		
				(>100~300)°C	U=0.5°C		
				(>300~600)°C	U=1.5°C		
				(>600~1000)°C	U=2.5°C		
				(>1000~1200)°C	U=4.5°C		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>1200~1600)°C	U=6.0°C		
27	Thermal Imagers	Temperature	C.S. for Thermal Imagers JJF1187	(>-20~20)°C	U=(0.5~0.3)°C		
				(>20~100)°C	U=(0.3~0.6)°C		
				(>100~500)°C	U=(0.6~1.6)°C		
				(>500~1600)°C	U=(2.1~6.0)°C		
28	Infrared Thermometers for Measurement of Human Temperature	Temperature	C.S of Infrared Thermometers for Measurement of Human Temperature JJF1107	(22~42)°C	U=0.1°C		
29	Mechanical Thermo hygrometers	Temperature	V.R. of Mechanical Thermo hygrometers JJG205	(5~50)°C	U=0.5°C		
		Moisture		30%RH~95%RH	U=2%RH		
30	Precision Dew-point Hygrometers	Dew-point Temperature	V.R. of Precision Dew-point Hygrometers JJG499	dew-point temperature(-70~20)°C	U=(0.39~0.25)°C		
31	Resistance and Capacitance Dew Point Hygrometer	Dew-point Temperature	C.S. for Resistance and Capacitance Dew Point Hygrometer JJF1272	dew-point temperature(-70~20)°C	U=(0.7~0.5)°C		
32	Digital Temperature-hygrometers	Humidity	C.S. for Digital Temperature-hygrometers JJF 1076	5%RH~95%RH	U=(1.3~2.0)%RH		
		Temperature		(-20~60)°C	U=0.3°C		
33	*Thermostatic Water bath	Temperature	C.S. of Electrically-heated Thermostatic Water bath JJF (liao)118	(5~95)°C	U=0.3°C		



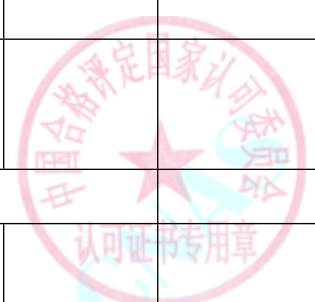
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
34	Temperature Calibration Devices for Polymerase Chain Reaction Analyzers	Temperature	C.S. for Temperature Calibration Devices for Polymerase Chain Reaction Analyzers JJF 1821	(0~120)°C	U=0.04°C		
35	*On-line Temperature Measuring System	Temperature	C.S. for On-line Temperature Measuring System JJF(chuan)143	(-100~400)°C	U=0.32°C		
				(>400~700)°C	U=1.4°C		
36	*Temperature Indicators	Temperature	C.S. for Temperature Indicators JJF 1664	IPRT Input(-200~850)°C	U=(0.2~0.4)°C		
				Tc K,N,J Input(-200~1200)°C	U=(0.3~0.4)°C		
				Tc S Input(0~1600)°C	U=(0.3~0.5)°C		
				Tc B Input(0~1800)°C	U=(0.3~0.6)°C		
				Tc R Input(0~1700)°C	U=(0.3~0.6)°C		
				Tc T Input(-200~400)°C	U=0.3°C		
Tc E Input(-200~1000)°C	U=(0.3~0.4)°C						
37	Working Copper/Copper-Nickel Thermocouple	Temperature	V.R. of Working Copper/Copper-Nickel Thermocouple JJG 368	(-80~300)°C	U=0.3°C		
III Mechanical measuring instrument							
1	Extensometers	Length	V. R. of Extensometers JJG762,Standard Practice for Verification and Classification of	(0~0.3)mm	U=0.8 μm		



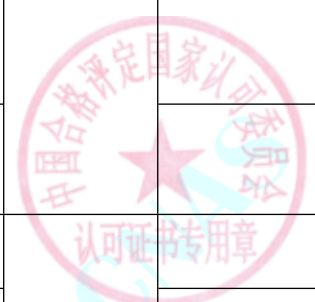
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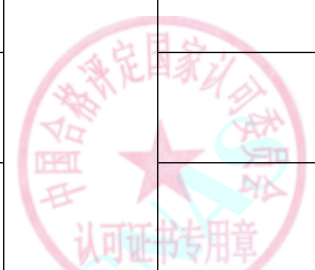
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			Extensometer Systems ASTM E83-16	(>0.3~500)mm	$U_{rel}=0.2\%$		
III Mechanical measuring instrument							
(1) mass							
1	*Table balance	Mass	V.R.of Table Balances JJG156	(0~5)kg	$U=(0.03\sim 1.3)g$		
2	*Analogue indication weighing instrument	Mass	V.R.of Analogue Indication Weighing Instruments JJG13	(0~10) kg, e=	$U=0.6g\sim 3g$		
				(10~50) g, (0~50) e			
				(0~10) kg, e=	$U=0.6g\sim 3g$		
				(10~50) g, (>50~200) e			
				(0~10) kg, e=	$U=0.6g\sim 3g$		
				(10~50) g, (>200~1000) e			
(>10~140) kg, e=	$U=6g\sim 59g$						
(100~500) g, (0~50) e							
(>10~140) kg, e=	$U=6g\sim 59g$						
(100~500) g, (>50~200) e							
(>10~140) kg, e=	$U=6g\sim 59g$						
(100~500) g, (>200~1000) e							
3	*Non-self-indication weighing instrument	Mass	V.R.of Non-self-indication Weighing Instruments JJG14	(0~50) kg, e= (2~20) g, (0~500) e	$U=0.23g\sim 2.6g$		
				(0~50) kg, e= (2~20) g, (>500~2000) e			



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(0~50) kg, e= (2~20) g, (>2000~10000) e	U=0.34g~3.7g		
				(>50~1000) kg, e= (20~500) g, (0~500) e	U=2.3g~0.06kg		
				(>50~1000) kg, e= (20~500) g, (>500~2000) e	U=2.4g~0.08kg		
				(>50~1000) kg, e= (20~500) g, (>2000~10000) e	U=3.3g~0.08kg		
				(>1~10) t, e= (1~5) kg, (0~500) e	U=0.12kg~0.21kg		
				(>1~10) t, e= (1~5) kg, (>500~2000) e	U=0.13kg~1.3kg		
				(>1~10) t, e= (1~5) kg, (>2000~10000) e	U=0.27kg~1.3kg		
				(>10~50) t, e= (10~20) kg, (0~500) e	U=1.2kg~2.6kg		
				(>10~50) t, e= (10~20) kg, (>500~2000) e	U=1.3kg~5.2kg		

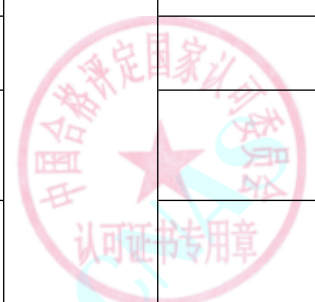


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				(>10~50) t, e= (10~20) kg, (>2000~10000) e	U=5.2kg~7.9kg		
4	*Digital indicating weighing instrument	Mass	V.R.of Digital Indicating Weighing Instrument JJG539	(0~30) kg, e= (1~10) g, (0~500) e	U=0.12g~1.2g		
				(0~30) kg, e= (1~10) g, (>500~2000) e	U=0.12g~1.7g		
				(0~30) kg, e= (1~10) g, (>2000~10000) e	U=0.17g~2.2g		
				(>30~1000) kg, e= (20~500) g, (0~500) e	U=2.3g~0.06kg		
				(>30~1000) kg, e= (20~500) g, (>500~2000) e	U=2.4g~0.08kg		
				(>30~1000) kg, e= (20~500) g, (>2000~10000) e	U=3.3g~0.08kg		
				(>1~10) t, e= (1~5) kg, (0~500) e	U=0.12kg~0.21kg		
				(>1~10) t, e= (1~5) kg, (>500~2000) e	U=0.13kg~1.3kg		
				(>1~10) t, e= (1~5) kg, (>2000~10000) e	U=0.27kg~1.3kg		



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				(>10~150) t, e= (10~50) kg, (0~ 500) e	U=1.2kg~6.5kg		
				(>10~150) t, e= (10~50) kg, (>500~2000) e	U=1.3kg~13kg		
				(>10~150) t, e= (10~50) kg, (>2000~10000) e	U=5.2kg~20kg		
5	*Electronic conveyor belt scale	Mass	V.R.of Continuous Totalizing Automatic Weighing Instruments JJG195	(0.5~3000)t/h	U _{rel} =0.09%~0.12%		
6	Retail appliance for vegetable oil	Mass	V.R.of Retail Appliance for Vegetable Oil JJG615	(50~2500) g	U=(0.4~19)g		
7	*Discontinuous totalizing automatic weighing instrument	Mass	V.R.of Discontinuous Totalizing Automatic Weighing Instrument JJG648	50kg~100t	U=(0.016~45)kg		
8	*Quantitative automatic weighing instrument	Mass	V.R.of Automatic Gravimetric Filling Instruments JJG564	100g~1000kg	U _{rel} =0.04%~0.4%		
9	Weight	Mass	V.R.of Weights JJG99	F ₁ Grade: 1mg~500mg	U=(0.005~0.017)mg		
				F ₁ Grade: 1g~500g	U=(0.02~0.4)mg		
				F ₁ Grade: 1kg~20kg	U=(0.7~13)mg		
				F ₂ Grade: 1mg~500mg	U=(0.01~0.04)mg		



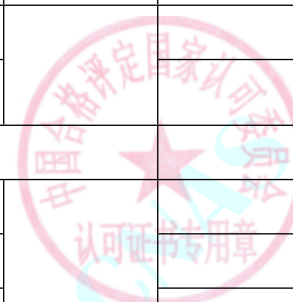
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				F ₂ Grade: 1g~500g	U=(0.05~1.3)mg		
				F ₂ Grade: 1kg~20kg	U=(2~37)mg		
				M ₁ Grade: 1mg~500mg	U=(0.07~0.28)mg		
				M ₁ Grade: 1g~500g	U=(0.34~9.5)mg		
				M ₁ Grade: 1kg~30kg	U=(0.019~0.55)g		
				M ₁ Grade: (50~100)kg	U=(0.93~2.2)g		
(2) density							
1	Working Glass Hydrometer	Density	V.R of Working Glass Hydrometer JJG42	Density meter:(650~1800)kg/m ³	U=(0.2~0.4) kg/m ³		
				Alcohol meter:(0~100)%	U=0.04%		
				BaUme meter:(0~64)Bh	U=0.04 Bh		
2	Laboratory Oscillation-type Liquid Density meter	Density value	V.R.of Laboratory Oscillation-type Liquid Density Meters JJG1058	(650~1800)kg/m ³	U=0.046 kg/m ³		
3	*Thermogravimetric Moisture Meter	Mass	Verification Regulation of Thermogravimetric Moisture Meters JJG 658	1mg~500g	U=(0.2~0.6)mg		
		Content of water		(94.5~95.5)%	U=0.10%		
(3) capacity							
1	General Volumetric Glass	volume	V.R.General Volumetric Glass JJG196	(0.1~1)mL	U=0.002mL		
				(>1~10)mL	U=0.003mL		
				(>10~25)mL	U=0.008mL		

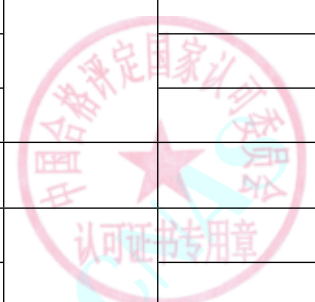


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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>25~100)mL	$U=0.011\text{mL}$		
				(>100~500)mL	$U=0.027\text{mL}$		
				(>500~2000)mL	$U=0.10\text{mL}$		
2	*Tank car volume	volume	V.R.of Tank car volume JYG133	(5000~50000)L	$U_{\text{rel}}=0.19\%$		
3	Standard capacity measures (glass)	volume	V.R.of Standard capacity measures (glass) JYG20	(0.1~1)mL	$U=0.0001\text{mL}$		
				(>1~10)mL	$U=0.0003\text{mL}$		
				(>10~25)mL	$U=0.0010\text{mL}$		
				(>25~200)mL	$U=0.003\text{mL}$		
				(>200~500)mL	$U=0.02\text{mL}$		
				(>500~1000)mL	$U=0.04\text{mL}$		
4	*Quantitative Filling Machine for Liquid Material	Mass	V.R.of Quantitative Filling Machine for Liquid Material JYG687	(0.2~1000)kg	$U_{\text{rel}}=0.05\%$		
		volume		0.5mL~500L	$U_{\text{rel}}=0.1\%$		
5	*vertical Metal tank capacity	volume	V.R.of vertical Metal tank capacity JYG168-2005 JYG168	(20~100)m ³	$U_{\text{rel}}=0.24\%$		
				(>100~700)m ³	$U_{\text{rel}}=0.14\%$		
				(>700~1000)m ³	$U_{\text{rel}}=0.10\%$		
6	*metallichorizontal tank	volume	V.R.of metallichorizontal tank JYG266	(1~60)m ³	$U_{\text{rel}}=0.38\%$		
7	Locomotive Pipette	volume	V.R.of Locomotive Pipette JYG646	(1~5) μL	$U_{\text{rel}}=4.9\%$		
				(>5~40) μL	$U_{\text{rel}}=1.4\%$		

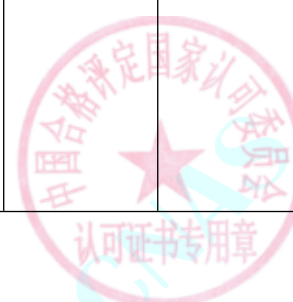


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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>40~100) μ L	$U_{rel}=0.8\%$		
				(>100~500) μ L	$U_{rel}=0.6\%$		
				(>500~2500) μ L	$U_{rel}=0.5\%$		
				(>2500~10000) μ L	$U_{rel}=0.2\%$		
8	Working Metal Tank	volume	V.R.of Standard Metal Tank JJG259	(1~1000)L	$U_{rel}=0.038\%$		
9	Microinjector	volume	Calibration Specification for Microinjector JJF(jing)19	(0.5~1000) μ L	$U_{rel}=0.5\%~5\%$		
(4) flow							
1	*Coriolis Mass Flowmeter	Flow	On Line Calibration Specification for Coriolis Mass Flowmeters by Master Meter Method JJF1708	(0.004~50)t/h	$U_{rel}=0.24\%$		
2	*Electromagnetic Flowmeter	Flow	Calibration Specification for Electromagnetic Flowmeters JJF(Su) 228	Weighing method, Medium: liquid, DN(2~50): (0.001~0.3)mm ³ /h	$U_{rel}=0.56\%$		
				Standard meter (mobile linking up device), Medium: liquid, DN(10~100): (0.004~50)m ³ /h (DN(10~100)mm)	$U_{rel}=0.28\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Standard meter (External clamp type Ultrasonic flowmeter), Medium: liquid, DN(50~600): (10~100)m ³ /h	$U_{rel}=1.8\%$		
3	*Swinging Pipe Type Rain Test Chamber	Length	Calibration Specification for Swinging Pipe Type Rain Test Chamber JJF(WXJL)009	R: (200~1600)mm	$U=1.5\text{mm}$		
		Timer		(300~600)s	$U=1.3\text{s}$		
		Flow		(0.1~7)L/min	$U_{rel}=1.4\%$		
4	Reference Lesks	flow	Calibration Specification for Reference Leaks by Soap Film Flowmeter JJF1627	1mL/min~10L/min	$U_{rel}=2.4\%$		
5	Air biological sampler	Flow	Calibration Specification for Air biological samplers JJF(S)188	(20~200)L/min	$U_{rel}=1.3\%$		
6	Vortex Precession Flowmeters	flow	Verification Regulation of Vortex Precession Flowmeters JJG1121	5mL/min~4m ³ /h	$U_{rel}=0.6\%$		
				(4~4000)m ³ /h	$U_{rel}=0.44\%$		
7	Differential Pressure Flowmeters	flow	V.R.of Differential Pressure Flowmeters JJG640	Water medium, , DN (15~100) : (0.3~100)m ³ /h	$U_{rel}=0.26\%$		
				Air medium : 5mL/min~4m ³ /h	$U_{rel}=0.60\%$		
				Air medium : (4~4000)m ³ /h	$U_{rel}=0.44\%$		
8	*Liquefied Natural Gas Dispensers	flow	V.R.Liquefied Natural Gas Dispensers JJG1114	(10~80)kg/min	$U_{rel}=0.41\%$		
9	Gas Displacement	flow	V.R.of Gas Displacement Meters JJG633	Wet Gas Meters: (0.016~6)m ³ /h	$U_{rel}=0.78\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Meters			Gas Vane Wheel Type Flowmeter: (4~ 4000)m ³ /h	$U_{rel}=0.56\%$		
10	*Thermal Mass Gas Flowmeters	flow	V.R.of Thermal Mass Gas Flowmeters JJG1132	(0.2~5) mL/min	$U_{rel}=1.2\%$		
				>5mL/min~66.67L/min	$U_{rel}=0.60\%$		
				(4~4000)m ³ /h	$U_{rel}=0.46\%$		
11	Diaphragm Gas Meters	Flow	Diaphragm Gas Meters JJG577	(0.016~120)m ³ /h	$U_{rel}=0.50\%$		
12	*Standard Bell Prover	flow	V.R.of Standard Bell Prover JJG165	(1~1000)L	$U_{rel}=0.052\%$		
13	target (bluff body) type flow transducer	flow	V.R.of target (bluff body) type flow transducer JJG461	Air medium: 5mL/min~ 4m ³ /h	$U_{rel}=0.60\%$		
				Air medium: (>4~ 4000)m ³ /h	$U_{rel}=0.44\%$		
				Water medium: (0.3~ 100)m ³ /h	$U_{rel}=0.26\%$		
14	Vortex Shedding Flowmeter	Flow	V.R.of Vortex-shedding Flowmeter JJG1029	Water medium: (0.3~ 100)m ³ /h	$U_{rel}=0.26\%$		
				Air medium: (4~ 4000)m ³ /h	$U_{rel}=0.44\%$		
15	Electromag- netism Flowmeter	Flow	V.R.of electromagnetic flowmeters JJG1033	DN(15~100): (0.3~ 100)m ³ /h	$U_{rel}=0.26\%$		
16	Goriolis Mass Flow Meters	flow	Goriolis Mass Flow Meters JJG1038	DN(15~100): (0.3~ 100)m ³ /h	$U_{rel}=0.11\%$		
17	*Verification Facility for Water Meters	Volum	Verification Facility for Water Meters JJG1113	(1~1000)L	$U_{rel}=0.05\%$		
18	Turbine Flowmeter	Flow	V.R.of turbine flowmeters JJG1037	Water medium: (0.3~ 100)m ³ /h	$U_{rel}=0.26\%$		

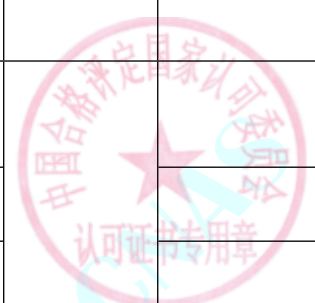
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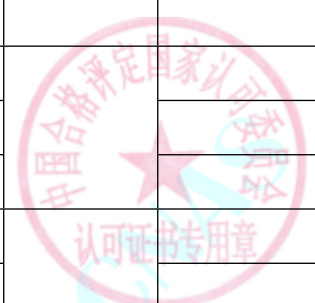
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Air medium: (4~4000)m ³ /h	U _{rel} =0.44%		
19	Ultrasonic Flowmeters (liquid)	flow	Ultrasonic Flowmeters JJG1030	Meidum:water: (0.3~100)m ³ /h	U _{rel} =0.44%		
				Medium air : 5mL/min~4m ³ /h	U _{rel} =0.6%		
				Medium air :(4~4000)m ³ /h	U _{rel} =0.44%		
20	*Weirs and Flumes for Flow Measurement	flow	V.R.of Weirs and Flumes for Flow Measurement JJG711	(0.1~1000)m ³ /h	U _{rel} =3.0%		
21	Float Meter	Flow	Float Meter JJG257	Medium air: (0.005~500) L/min	U _{rel} =0.68%		
				Medium air: >500L/min~120m ³ /h	U _{rel} =0.50%		
				liquid:(0.3~100)m ³ /h	U _{rel} =0.2%		
22	Oval Gear Flowmeter	flow	V.R.of Liquid Positive Displacement Flow Meter JJG667	DN(15~80): (0.1~100)m ³ /h	U _{rel} =0.24%		
23	Flow Intergration Meters	flow	V.R.of Flow Intergration Meters JJG1003	(0.01~9999)m ³ /h	U _{rel} =0.02%		
24	Soap film flowme-ter	flow	V.R.of Soap film f low meter JJG586	electronic soap film flow meter (5mL/min~60L/min)	U _{rel} =0.60%		
		Volum		soap film flow meter: (10~1000)mL	U _{rel} =0.82%		
				soap film flow meter: (>1000~4000)mL	U _{rel} =0.60%		
(5) pressure							



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1	Piston Gauge	Pressure	V.R.of Piston Gauge JJG59	(0.04~60)MPa	$U_{rel}=0.02\%$		
		Mass		(0.1~5)kg	$U_{rel}=0.002\%$		
2	*Compensated Micro-manometer	Pressure	V.R.of Compensated Micro-manometer JJG158	(-2.5~2.5)kPa	$U=(0.5~0.6)Pa$		
3	*Tilting Tube Micromanometers	Pressure	V.R.of Tilting Tube Micromanometers JJG172	(-2000~2000)Pa	$U=2.1Pa$		
4	*Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use	Pressure	V.R.of Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use JJG52	(-0.1~250)MPa	$U=0.31\%FS$		
5	Elastic Element Precise Pressure Gauges and Vacuum Gauges	Pressure	V.R.of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG49	(-0.1~250)MPa	$U=0.11\%FS\sim 0.14\%FS$		
6	*Digital Pressure Gauges	Pressure	V.R.of Digital Pressure Gauges JJG875	(-0.1~250)MPa	$U=0.014\%FS$		
7	*Pressure Transducer(Static)	Pressure	V.R.of The Pressure Transducer(Static) JJG860	(-0.1~250)MPa	$U=0.06\%FS$		
8	*Liquid Manometer for Working	Pressure	V.R.of Liquid Manometer for Working JJG540	(0~2.5)kPa	$U=5Pa$		
				(2.5~15) kPa	$U=7Pa$		
				(15~250) kPa	$U=(0.01\sim 0.15)kPa$		
9	*Liquid Level Gauges	Length	V.R.of Liquid Level Gauges JJG971	(0~1)m	$U=1.1mm$		
				(1~30)m	$U=13mm$		

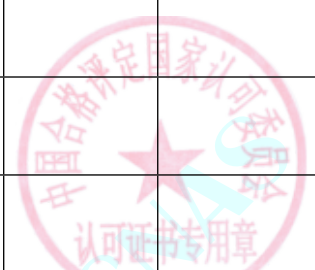


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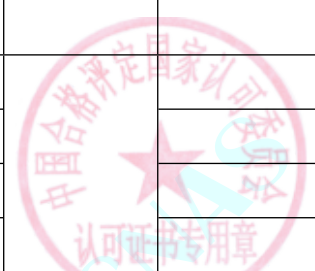
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Pressure		1kPa~6MPa	$U_{rel}=0.12\% \sim 0.06\%$		
10	*Pressure Controllers	Pressure	V.R.of Pressure Controllers JIG544	(-0.1~250)MPa	$U=0.2\%FS$		
11	*Stream Sterilizer	Pressure Temperature	C.S.for Temperature and Pressure of Stream Sterilizer JJF(su)96	(0~400)kPa (40~140)°C	$U=1.3kPa$ $U=0.24^{\circ}C$		
12	*Vacuum Drying Chamber	Temperature Pressure	Calibration Specification for Temperature and Pressure of Vacuum Drying Chamber JJF(su)177	(40~150)°C (0~400)kPa	$U=0.64^{\circ}C$ $U=1.3kPa$		
13	Automatic Standard Pressure Generators	Pressure	V.R.of Automatic Standard Pressure Generators JIG1107	(0~6)MPa (0~60)MPa (>60~250)MPa	$U=0.016\%FS$ $U=0.016\%FS$ $U=0.059\%FS$		
14	*Pressure Transmitter	Pressure	V.R. of Pressure Transmitters JIG882	(-0.1~250)MPa (0~6)MPa	$U=0.015\%FS$ $U=0.015\%FS$		
15	Pressure Regulators with Bourdon Tube Pressure Gauge	pressure	Calibration Specification for Pressure Regulators with Bourdon Tube Pressure Gauge JJF 1328	(0~25)MPa	$U=1.2\%FS$		
16	*Medical Suction Equipment	pressure	Calibration Specification of Medical Suction Equipment JJF1810	(-95~0)kPa	$U=1kPa$		
17	Vacuum Helium Leaks	Leak Rate	Calibration Specification for Vacuum Helium Leaks JJF 1833	$(1 \times 10^{-10} \sim 1 \times 10^{-4}) Pa \cdot m^3 \cdot s^{-1}$	$U_{rel}=13\% \sim 23\%$		
(6) vacuum							



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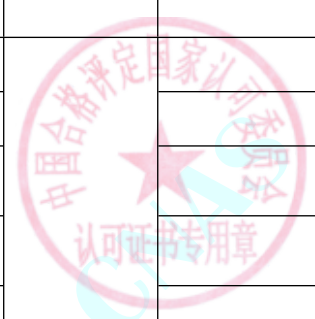
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1	Piezoresistive Vacuum Gauge	Pressure	V.R.of Piezoresistive Vacuum Gauge JJG932	$(1 \times 10^2 \sim 1 \times 10^5) \text{Pa}$	$U_{\text{rel}}=7\%$		
2	Working Thermal Conductivity Vacuum Gauge	Pressure	C.S.of Working Thermal Conductivity Vacuum Gauge JJF1050	$(1 \times 10^{-1} \sim 1 \times 10^5) \text{Pa}$	$U_{\text{rel}}=7\%$		
3	Ionization Vacuum Gauge	Pressure	C.S.of Ionization Vacuum Gauge JJF1062	$(1 \times 10^{-4} \sim 1 \times 10^{-2}) \text{Pa}$	$U_{\text{rel}}=15\%$		
(7) Force							
1	*Mechanical Balance	Mass	V.R.of Mechanical Balance JJG98	Max:(0~200)g,d=0.1mg	$U=(0.016 \sim 0.11) \text{mg}$		
				Max:(0~1)kg,d=0.5mg	$U=(0.19 \sim 0.73) \text{mg}$		
				Max:(0~5)kg,d=2.5mg	$U=(0.49 \sim 4.0) \text{mg}$		
				Max:(0~20)kg,d=10mg	$U=(1.0 \sim 14) \text{mg}$		
2	*Refrigerant Leak Detector	Leak	Calibration Specification for Refrigerant Leak Detector JJF (light industry) 125	$(0.2 \sim 10) \text{g/a}$	$U_{\text{rel}}=20\%$		
3	*Mass Spectrometric Leak Detector	Leak	Calibration Specification for Helium Mass Spectrometric leak detector JJF (Su) 129	$(1 \times 10^{-10} \sim 1 \times 10^{-4}) \text{Pa} \cdot \text{m}^3 \cdot \text{s}^{-1}$	$U_{\text{rel}}=20\%$		
4	*Electronic balance	Mass	Calibration Specification for Electronic Balances JJF1847	$(1 \text{mg} \sim 20 \text{g}), d=0.001 \text{mg}$	$U=(0.005 \sim 0.048) \text{mg}$		
				$(20 \sim 200) \text{g}, d=0.01 \text{mg}$	$U=(0.06 \sim 0.17) \text{mg}$		
				$(200 \text{g} \sim 5 \text{kg}), d=0.1 \text{mg}$	$U=(0.3 \sim 2.6) \text{mg}$		
				$(5 \sim 40) \text{kg}, d=1 \text{mg}$	$U=(5.6 \sim 50) \text{mg}$		
5	*Torsion balance	Mass	V.R.of torsion balance JJG46	$(0 \sim 500) \text{mg}$	$U=(0.002 \sim 0.092) \text{mg}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
6	*Working Dynamo-meter	Force	V.R.of Working Dynamometer JJG455	1cN~10kN	$U_{rel}=0.05\% \sim 0.3\%$		
7	Standard Dynamo-meter	Force	V.R.of Standard Dynamometer JJG144	1N~1000N	$U_{rel}=0.04\%$		
8	*Tension compression and universal testing machine for nonmetallic	Force	V.R.Tension, Compression and Universal Testing Machines JJG139	1N~3000kN	$U_{rel}=0.20\%$		
9	*Flexure Testing Machine	Force	V. R. of Flexure Testing Machine JJG476	(0.1~300)kN	$U_{rel}=0.14\%$		
10	*Cupping Testing Machine	Length	V. R. of Cupping Testing Machine JJG583	(0~16)mm	$U=6 \mu m$		
11	*hydraulic jack	Force	V.R.of hydraulic jack JJG621	10kN~10MN	$U_{rel}=0.9\% \sim 1.7\%$		
12	*Ball pressure test device	Force	V.R.of Working Dynamometer JJG455	20N	$U=0.03N$		
13	*Building Material Testing Machine Of Constant Loading Speed	force	V.R.of Building Material Testing Machine Of Constant Loading Speed JJG1025	5N~1000kN	$U_{rel}=0.13\%$		
				(> 1000~3000)kN	$U_{rel}=0.36\%$		
		Loading Speed		(0.01~30)kN/s	$U_{rel}=3.6\%$		
14	*Material testing machine	Force	Standard Practices for Force Verification of Testing Machines ASTM E4, Standard Practices for Verification of Displacement Measuring Systems and Devices used in Material Testing Machines ASTM E2309/E2309M, Practices for	1N~1000kN	$U_{rel}=0.13\%$		
				(> 1000~3000)kN	$U_{rel}=0.36\%$		
		Displacement		(0.01~50)mm	$U=(0.008 \sim 0.019)mm$		
				(5~300)mm	$U=(0.06 \sim 0.12)mm$		
				(> 300~1000)mm	$U_{rel}=0.13\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Speed	Verification of Speed for Material Testing Machines E2658, Standard Practice for	(0.1~10)mm/min	$U=0.03\text{mm/min}$		
			Verification of Testing Frame and Specimen Alignment Under Tensile and	10mm/min~45m/min	$U_{\text{rel}}=0.3\%$		
		Coaxiality	Compressive Axial Force Application ASTM E1012	(0.001~2450) $\mu\text{m/m}$	$U_{\text{rel}}=2.0\%$		
15	*Fatigue testing machines	Force	Axial Force Fatigue Testing Machines JJG556	Static Force: 1N~500kN	$U_{\text{rel}}=0.13\%$		
16	*High-Temperature Creep and Strength-Rupture Testing Machines	Force	High-Temperature Creep and Strength-Rupture Testing Machines JJG276	1N~1000kN	$U_{\text{rel}}=0.13\%$		
				(> 1000~3000)kN	$U_{\text{rel}}=0.36\%$		
		(0~300)°C		$U=0.5^\circ\text{C}$			
		(> 300~1200)°C		$U=1.5^\circ\text{C}$			
17	*Spring tension and compression testing machine	Force	C.S. for working force measuring machines for special purposes JJF1134	1cN~10kN	$U_{\text{rel}}=0.14\%$		
18	Screen Tension Meters	Mesh Tension	Calibration Specification for Screen Tension Meters JJF1465	(7~50)N/cm	$U=1.2\%\text{FS}$		
19	*Interface Tensiometers	Interaical Tension	Calibration Specification for Interface Tensiometers JJF1464	(10~300)mN/m	$U_{\text{rel}}=0.16\%$		
20	*Oil Consumption Meters of Mass Method	mass	Calibration Specification for Oil Consumption Meters of Mass Method JJF 1670	(0~2000)g	$U=0.2\text{g}$		
21	*Tension, Compression and Universal Testing	Force	V.R.Tension, Compression and Universal Testing Machines JJG139	1N~1000kN	$U_{\text{rel}}=0.13\%$		
				(1000~3000)kN	$U_{\text{rel}}=0.36\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date					
	Machines	Coaxiality	ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	(0~50)%	$U=1.4\%$							
				$\phi 2\text{mm} \sim \phi 20\text{mm}$	$U=0.3\text{mm}$							
		Speed		(0.1~10)mm/min	$U=0.03\text{mm/min}$							
				10 mm/min~45m/min	$U_{\text{rel}}=0.3\%$							
		Displacement		(0.01~50)mm	$U=(0.008 \sim 0.019)\text{mm}$							
				(5~300)mm	$U=(0.06 \sim 0.12)\text{mm}$							
22	*Electronic Universal Testing Machine	Force	V. R. of Electronic Universal Testing Machine JJG475	1N~1000kN	$U_{\text{rel}}=0.13\%$							
				(1000~3000)kN	$U_{\text{rel}}=0.36\%$							
		Coaxiality		(0~50)%	$U=1.4\%$							
				$\phi 2\text{mm} \sim \phi 20\text{mm}$	$U=0.3\text{mm}$							
		Speed		(0.1~10)mm/min	$U=0.03\text{mm/min}$							
				10 mm/min~45m/min	$U_{\text{rel}}=0.3\%$							
		Displacement		(0.01~50)mm	$U=(0.008 \sim 0.019)\text{mm}$							
				(5~300)mm	$U=(0.06 \sim 0.12)\text{mm}$							
				(300~1500)mm	$U_{\text{rel}}=0.13\%$							
		23		*abrasion testing machine	Mass			Calibration Specification for Abrasion Resistance Instruments JJF(Zhe)1070	(1~2500)g	$U=0.5\text{g}$		
					Rotational speed				(80 ~350)r/min	$U_{\text{rel}}=0.2\%$		
(8) torque												

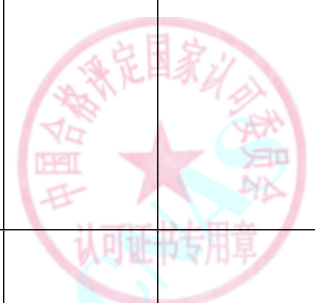


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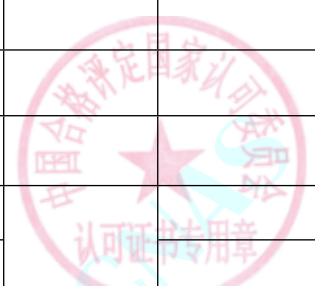
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1	*Torque Wrench	Torque	V.R.of Torque Wrench JJG707	(0.02~5000)Nm	$U_{rel}=1.4\%$		
2	*Calibrating Instrument for Torque Wrenches	Torque	V.R.of Calibrating Instrument for Torque Wrenchs JJG797	2mNm~5000Nm	$U_{rel}=0.23\%$		
3	*Torsion Testing Machines	Torque	V.R.of Torsion Testing Machines JJG269	2mNm~2500Nm	$U_{rel}=0.20\% \sim 0.13\%$		
4	*Electric and Pneumatic Torque wrenches	Torque	Calibration Specification for Electric and Pneumatic Torque wrenches JJF1610	(0.5~1400)Nm	$U_{rel}=1.5\%$		
5	*Working Torque-meter	Torque	Verification Regulation of Working Torque-meters JJG 1146	0.02cNm~10Nm	$U_{rel}=0.10\% \sim 0.31\%$		
				(>10~5000)Nm	$U_{rel}=0.12\%$		
6	*Equipment of Power Measuring	Torque	V.R.of Equipment of Power Measuring JJG653	1mNm~5000Nm	$U_{rel}=0.12\%$		
		Rotate speed		(10~1000)r/min	$U=(0.14 \sim 0.16)r/min$		
				(>1000~60000)r/min	$U_{rel}=0.01\%$		
(9) hardness							
1	*Metal Brinell hardness tester	Hardness	V.R.of Metal Brinell hardness tester JJG150, Standard Test Method for Brinell Hardness of Metallic Materials Annexes A1. Verification of Brinell Hardness Testing Machines ASTM E10 Annexes A1	(8~650)HBW	$U_{rel}=1.3\%$		
2	*Metal superficial Rockwell hardness tester	Hardness	V.R.of Metal superficial Rockwell hardness testers (scales A,B,C,D,E,F,G,H,K,N,T)	(20~91)HRN	$U=(0.8 \sim 0.5)HRN$		

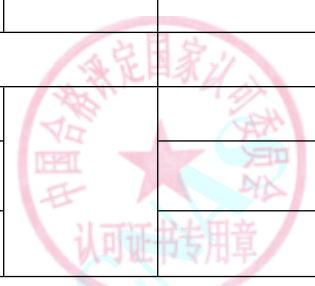


No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			JJG112	(12~93)HRTW	$U=(0.9\sim 0.5)HRTW$		
3	*Metal Rockwell hardness tester	Hardness	V.R.of Metal superficial Rockwell hardness testers (scales A,B,C,D,E,F,G,H,K,N,T) JJG112,Standard Test Method for Rockwell Hardness of Materials Annexes A1. Verification of Rockwell Hardness Testing machines ASTM E18-2016 Annexes A1	(20~95)HRC (A,B)	$U=0.6HR$		
4	*Metal Vickers hardness tester	Hardness	V.R.of Metal Vickers hardness tester	(5~1000)HV	$U_{rel}=1.7\%$		
		Force	JJG151,Standard test method for Vickers hardness and Knoop Hardness of Metallic materials Annexes A1.	5mN~1500N	$U_{rel}=0.2\%$		
		Length	Verification of Vickers hardness and Knoop Hardness Testing Machines ASTM E92 Annexes A1	(0.2~10)mm	$U=1.5\mu m$		
5	*Shore hardness tester	Hardness	V.R.of Shore hardness tester JJG346	(26~99)HSD	$U=0.8HSD$		
6	*Leeb Hardness Tester	Hardness	V.R.of Leeb Hardness Tester JJG747	(465~847)HL	$U=(5.7\sim 8.4)HLD$		
7	*Shore A Durometers	Hardness	V.R.of Shore A Durometers	(0~100)HA	$U=(0.3\sim 0.4)HA$		
		Length	JJG304	(0~8)mm	$U=0.003mm$		
8	*D type Shao surname rubber	Hardness	V.R.of D type Shao surname rubber hardness	(0~100)HD	$U=0.5HD$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	hardness	Length	JJG1039	(0~8)mm	U=0.003mm		
9	*Webster Hardness Testing Machine	Hardness	V.R.of Metallic Webster Hardness Testing Machine JJG944	(5~18)HW	U=0.4HW		
10	*Brinell hardness tester	Length	Standard Test Method for Brinell Hardness of Metallic Materials Annexes A1.Verification of Brinell Hardness Testing Machines ASTM E10 Annexes A1	(0.1~10)mm	U=3 μm		
		Force		5N~1kN	U _{rel} =0.40%		
				(1~30)kN	U _{rel} =0.15%		
11	*Rockwell hardness tester	Force	Standard Test Method for Rockwell Hardness of Materials Annexes A1. Verification of Rockwell Hardness Testing machines ASTM E18 Annexes A1	(500~1500)N	U _{rel} =0.2%		
12	*Barcol Hardness Testers	Hardness	Type A Barcol Hardness Testers JJG 610	(42~88)HBa	U=0.5HBa		
13	*Pencil Hardness Testers	Aload	Calibration Specification for Pencil Hardness Testers JJF (SH) 007	(2~3000)g	U=2.5g		
		Angle		0° ~360°	U=0.2°		
(10) Vibration, shock, acceleration							
1	*Standard Vibrator	Frequency	V.R.of Standard Vibrator in Middle Frequency Band(Comparison Method) JJG298	(20~2000)Hz	U _{rel} =0.06%		
		Acceleration		(0.5~1000)m/s ² ,(20~2000)Hz	U _{rel} =4%		
		Harmonic Distortion		0.1%~30%	U _{rel} =3%		

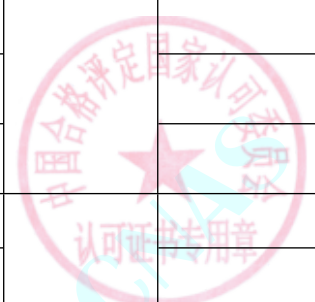


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	*Portable Braking Performance Tester for Motor Vehicles	Acceleration	C.S.for Portable Braking Performance Tester for Motor Vehicles JJF1168	(0~9.81)m/s ²	U=(0.04~0.03)m/s ²		
3	*Dynamic Balance Machine	Unbalancedness	V.R. of Dynamic Balance Machine JJG(su)68	(0.1~10000)g · mm/kg	U _{rel} =0.9%		
		Phase		(0~360)°	U=1.2°		
4	*Pendulum impact testing machine	Energy	V.R. of Pendulum impact testing machine JJG145	Direct Method:(1~300)J	U _{rel} =0.3%		
				Indirect Method:(25~300)J	U _{rel} =2.5%		
5	*Cantilever-Beam(Izod-Type) Impact Testing Machine	Energy	V. R. of Cantilever-Beam(Izod-Type) Impact Testing Machine JJG608	(0.1~100)J	U _{rel} =1.1%~0.5%		
6	*Impact tester	Mass	Calibration Specification for Film Impact Tester JJF(Yu)171	(0.1~5.0)kg	U=2mg		
		Length		Height:(10 ~3000)mm	U=(0.04~0.3)mm		
7	*Mechanical vibration generator for testing	Frequency	V.R. of Mechanical vibration generator for testing JJG189	(5~5000)Hz	U _{rel} =0.06%		
		Acceleration		(0.5~1000)m/s ² ,(5~5000)H	U _{rel} =4%		
		Displacement		(0.5~100)mm,(5~5000)Hz	U _{rel} =4%		
		Velocity		(0.001~5)m/s,(5~5000)Hz	U _{rel} =4%		
8	*Hydraulic Vibration Generator System	Frequency	V.R. of Hydraulic Vibration Testing System JJG638	(1~300)Hz	U _{rel} =0.06%		
		Acceleration		(0.5~1000)m/s ² ,(1~300)Hz	U _{rel} =4%		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Displacement		(0.5~100)mm,(1~300)Hz	$U_{rel}=4\%$		
		Velocity		(0.001~5)m/s,(1~300)Hz	$U_{rel}=4\%$		
9	*Electrodynamic Vibration Testing Systems	Frequency	V.R.of Electrodynamic Vibration Testing Systems JIG948	(5~5000)Hz	$U_{rel}=0.06\%$		
		Acceleration		(0.5~1000)m/s ² ,(5~5000)Hz	$U_{rel}=4\%$		
		Distortion		0.1%~30%	$U_{rel}=3\%$		
10	*Electrodynamic Horizontal Vibration Generator for Testing	Frequency	V.R.of Electrodynamic Horizontal Vibration Generator for Testing JIG1000	(5~5000)Hz	$U_{rel}=0.06\%$		
		Acceleration		(0.5~1000)m/s ² ,(5~5000)Hz	$U_{rel}=4\%$		
		Displacement		(0.5~100)mm,(5~5000)Hz	$U_{rel}=4\%$		
		Distortion		0.1%~30%	$U_{rel}=3\%$		
11	*Falling Body Type Shock Testing Machine	Acceleration	Verification Regulation of Shock&Bump Testing Machines JIG1174	(10~50000)m/s ²	$U_{rel}=4.5\%$		
12	Spring Hammers	Energy	Calibration Specification for Spring Hammers JJF1475	(0.2~2)J	$U_{rel}=0.8\%$		
13	*Impact machine	energy	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials ASTM E23	(1~300)J	$U_{rel}=2.5\%$		
(11) Rotating speed							
1	*Roller Type Speedometer Tester	Speed	V.R.of Roller Type Speedometer Tester JIG909	(30~120)km/h	$U_{rel}=0.44\%~0.16\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	*Fixed Radar Vehicle Speed Measurement Devices	Speed	V.R.of Fixed Radar Vehicle Speed Measurement Devices JJG527	(20~180)km/h	$U=(1.2\sim 2.4)\text{km/h}$		
3	*Constance Acceleration Centrifugal Test Machines	Rotational Speed	V.R of Constance Acceleration Centrifugal Test Machines JJG972	(30~40000)r/min	$U_{\text{rel}}=(0.5\sim 0.2)\%$		
		Acceleration		(1~100000)m/s ²	$U_{\text{rel}}=(0.8\sim 0.2)\%$		
4	*Medical Centrifuge	Rotate Speed	Calibration Specification of Medical Centrifuge JJF167(Hebei)	(10~30000)r/min	$U_{\text{rel}}=0.15\%$		
IV Acoustic measuring instrument							
1	*Ultrasonic Flow Detectors	Electricity Ultrasonic Electricity Calm	V.R.of Ultrasonic Flow Detectors JJG746	(0.1~70)dB	$U=0.2\text{dB}$		
2	sound wave belt tension meter	Frequency	C.S.of sound wave belt tension meter JJF1216	(0~100)Hz	$U=0.2\text{Hz}$		
				(>100~1000)Hz	$U=2.0\text{Hz}$		
V Electromagnetic measuring instrument							
1	Potentiometer	Voltage	V.R.of DC potentiometer JJG123	(0.1 μV~0.01V)	$U=0.5\ \mu\text{V}$		
				(0.01V~2.1111110V)	$U_{\text{rel}}=0.007\%$		
2	Standard battery	Voltage	V.R.of Standard battery JJG153	(1.01855~1.01868)V	$U=7\ \mu\text{V}$		
3	Current transformer	Ratio error	V.R.of Measuring Current Transformer JJG313	(0.1~5000)A/5A,(5~5000)A/1A,5%In	$U_{\text{rel}}=0.06\%$		
				(0.1~5000)A/5A,(5~5000)A/1A,20%In	$U_{\text{rel}}=0.03\%$		



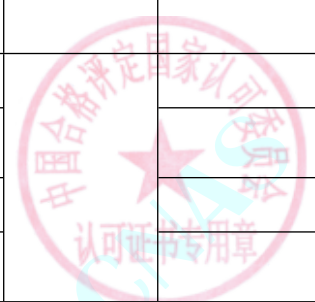
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Angle error	V.R. of Angle Meters JJG125	(0.1~5000)A/5A,(5~5000)A/1A,100%In	$U_{rel}=0.02\%$		
				(0.1~5000)A/5A,(5~5000)A/1A,120%In	$U_{rel}=0.02\%$		
				0.01' ~ 900', 5%In	$U=1.9'$		
				0.01' ~ 900', 20%In	$U=1.0'$		
				0.01' ~ 900', 100%In	$U=0.8'$		
				0.01' ~ 900', 120%In	$U=0.8'$		
4	D. C. bridge	Resistance	V.R. of D.C. bridge JJG125	0.01 Ω ~ 0.1 Ω	$U_{rel}=1.0\%$		
				0.1 Ω ~ 1 Ω	$U_{rel}=0.1\%$		
				1 Ω ~ 10 Ω	$U_{rel}=0.01\%$		
				10 Ω ~ 100k Ω	$U_{rel}=0.002\%$		
5	Megger	Resistance	V.R. of High Insulation Resistance Meters JJG690	(1~10)G Ω	$U_{rel}=3\%$		
				(10~1000)G Ω	$U_{rel}=5\%$		
				(10~1000)V	$U_{rel}=2\%$		
6	Amperemeter、 Voltmeter、 Wattmeter	DC Current	V.R. of Amperemeter voltmeter wattmeter and Ohmmeter JJG124	(0.01~20)A	$U_{rel}=0.06\%$		
		AC Current		(0.01~20)A, (45~65)Hz	$U_{rel}=0.06\%$		
		DC Voltage		(0.01~1000)V	$U_{rel}=0.06\%$		
		AC Voltage		(0.01~1000)V, (45~65)Hz	$U_{rel}=0.06\%$		

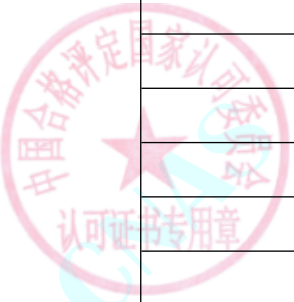


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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		AC Power		(0.01~20)kW,(45~65)Hz	$U_{rel}=0.09\%$		
7	D.C magnetoelectric galvanometer	current	V.R.of the DC Magnetoelectric Galvanometer JJG495	(10 ⁻⁶ ~10 ⁻¹⁰)安/格	$U_{rel}=3.3\%$		
8	High voltage electrostratic voltmeter	Voltage	V.R.of High Voltage Electrostratic Voltmeter JJG494	AC (1~100)kV,50Hz	$U_{rel}=0.88\% \sim 0.15\%$		
				DC (1~100)kV	$U_{rel}=0.88\% \sim 0.17\%$		
9	Single-phase phasometer	phase	V.R.of 50Hz single-phase phasometer JJG440	power factor: (0~1)	$U=0.002$		
				phase angle: (-90° ~ +90°)	$U=0.2^\circ$		
10	DC standard voltage source	DC Voltage	Calibration Specification for Multifunction Standard Sources JJF1638	10mV~200mV	$U_{rel}=2.0 \times 10^{-5}$		
				200mV~2V	$U_{rel}=1.0 \times 10^{-5}$		
				2V~20V	$U_{rel}=1.0 \times 10^{-5}$		
				20V~200V	$U_{rel}=1.0 \times 10^{-5}$		
				200V~1000V	$U_{rel}=1.0 \times 10^{-5}$		
11	DC standard resistor	resistance	V.R.of DC Resistors JJG166	0.001 Ω	$U=0.019 \mu \Omega$		
				0.01 Ω	$U=0.19 \mu \Omega$		
				0.1 Ω	$U=1.4 \mu \Omega$		
				1 Ω	$U=14 \mu \Omega$		
				10 Ω	$U=0.14m \Omega$		
				100 Ω	$U=1.4m \Omega$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				1000 Ω	$U=0.014 \Omega$		
				10000 Ω	$U=0.14 \Omega$		
				100000 Ω	$U=1.9 \Omega$		
12	Earth resistance meter	resistance	V.R.of Earth Resistance Meters JJG366	(0.1~1.0) Ω	$U_{rel}=1.2\%$		
				(1.0~1000) Ω	$U_{rel}=0.7\%$		
13	Megohm-meter	resistance	V.R.of Megohmmeter JJG622	(1~10)M Ω	$U_{rel}=1.4\%$		
				(10~100)M Ω	$U_{rel}=1.6\%$		
				(100~1000)M Ω	$U_{rel}=1.9\%$		
		(1000~2500)M Ω		$U_{rel}=3\%$			
		Voltage		(50~2500)V	$U_{rel}=1.8\%$		
14	DC resistor box	resistance	resistance JJG982	0.001 Ω~0.1 Ω	$U_{rel}=1.0\%$		
				0.1 Ω~1 Ω	$U_{rel}=0.1\%$		
				1 Ω~10 Ω	$U_{rel}=0.01\%$		
				10 Ω~1M Ω	$U_{rel}=0.002\%$		
15	Alternating current Watt-Hour meter	AC Energy	V.R.of Electromechanical Meters for Measuring Alternating-current Electrical Energy JJG307	(57.7~380)V/(0.05~100)A (Balanced three-phase load), (cos φ=1.0)	$U_{rel}=0.15\%$		
				(57.7~380)V/(0.05~100)A (Balanced three-phase load), [cos φ=0.5(L)、0.8(C)]	$U_{rel}=0.18\%$		



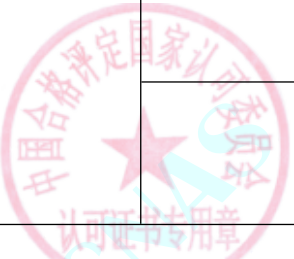
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(57.7~380)V/(0.05~100)A(Balanced three-phase load),[cos φ=0.5(C)]	$U_{rel}=0.21\%$		
				(57.7~380)V/(0.05~100)A (Balanced three-phase load),[cos φ=0.25(L)]	$U_{rel}=0.31\%$		
				(57.7~380)V/(0.05~100)A(Unbalanced three-phase load),(cos φ=1.0)	$U_{rel}=0.16\%$		
				(57.7~380)V/(0.05~100)A(Unbalanced three-phase load),[cos φ=0.5(L)]	$U_{rel}=0.18\%$		
16	Electrical Energy Meters with Electronics	AC Energy	V.R.of Electrical Meters for Measuring Alternating-current Electrical Energy JJG596	(57.7~380)V/(0.05~100)A (Balanced three-phase load),(cos φ=1.0)	$U_{rel}=0.06\%$		
				(57.7~380)V/(0.05~100)A(Balanced three-phase load),[cos φ=0.5(L)、0.8(C)]	$U_{rel}=0.06\%$		
				(57.7~380)V/(0.05~100)A (Balanced three-phase load),[cos φ=0.5(C)]	$U_{rel}=0.06\%$		

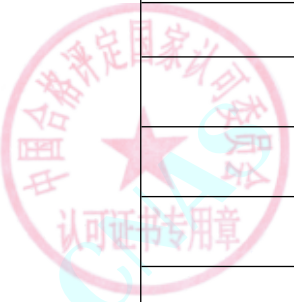


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(57.7~380)V/(0.05~100)A (Balanced three-phase load),[cos φ=0.25(L)]	$U_{rel}=0.24\%$		
				(57.7~380)V/(0.05~100)A (Unbalanced three-phase load),(cos φ=1.0)	$U_{rel}=0.06\%$		
				(57.7~380)V/(0.05~100)A (Unbalanced three-phase load),[cos φ=0.5(L)]	$U_{rel}=0.06\%$		
17	Digital Multimeter	DC Voltage	C.S.for Digital Multimeter JJF1587	1mV~10mV	$U_{rel}=0.05\%$		
				10mV~220mV	$U_{rel}=0.005\%$		
				220mV~2.2V	$U_{rel}=0.0015\%$		
				2.2V~22V	$U_{rel}=0.0010\%$		
				22V~220V	$U_{rel}=0.0010\%$		
		AC Voltage		220V~1000V	$U_{rel}=0.0012\%$		
				2.2mV~22mV,(10Hz~20Hz)	$U_{rel}=0.3\%$		
				22mV~220mV,(10Hz~20Hz)	$U_{rel}=0.07\%$		
				220mV~2.2V,(10Hz~20Hz)	$U_{rel}=0.04\%$		
				2.2V~22V,(10Hz~20Hz)	$U_{rel}=0.04\%$		

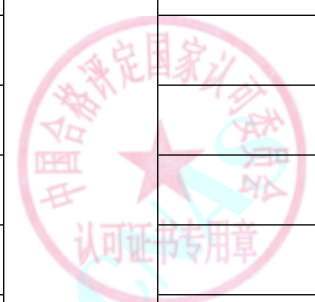


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				22V~220V,(10Hz~20Hz)	$U_{rel}=0.04\%$		
				10mV~22mV,(20Hz~40Hz)	$U_{rel}=0.2\%$		
				22mV~220mV,(20Hz~40Hz)	$U_{rel}=0.06\%$		
				220mV~2.2V,(20Hz~40Hz)	$U_{rel}=0.02\%$		
				2.2V~22V,(20Hz~40Hz)	$U_{rel}=0.02\%$		
				22V~220V,(20Hz~40Hz)	$U_{rel}=0.02\%$		
				220V~1000V,(20Hz~40Hz)	$U_{rel}=0.04\%$		
				10mV~22mV,(40Hz~20kHz)	$U_{rel}=0.2\%$		
				22mV~220mV,(40Hz~20kHz)	$U_{rel}=0.06\%$		
				220mV~2.2V,(40Hz~20kHz)	$U_{rel}=0.01\%$		
				2.2V~22V,(40Hz~20kHz)	$U_{rel}=0.01\%$		
				22V~220V,(40Hz~20kHz)	$U_{rel}=0.015\%$		
				220V~1000V,(40Hz~20kHz)	$U_{rel}=0.01\%$		
				10mV~22mV,(20kHz~50kHz)	$U_{rel}=0.2\%$		
				22mV~220mV,(20kHz~50kHz)	$U_{rel}=0.07\%$		

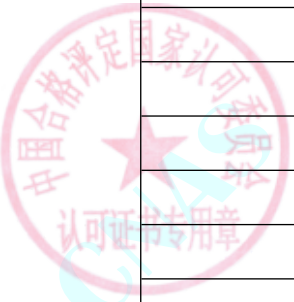


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				220mV~2.2V,(20kHz~50kHz)	$U_{rel}=0.01\%$		
				2.2V~22V,(20kHz~50kHz)	$U_{rel}=0.02\%$		
				22V~220V,(20kHz~50kHz)	$U_{rel}=0.02\%$		
				10mV~22mV,(50kHz~100kHz)	$U_{rel}=0.4\%$		
				22mV~220mV,(50kHz~100kHz)	$U_{rel}=0.08\%$		
				220mV~2.2V,(50kHz~100kHz)	$U_{rel}=0.04\%$		
				2.2V~22V,(50kHz~100kHz)	$U_{rel}=0.04\%$		
				22V~220V,(50kHz~100kHz)	$U_{rel}=0.04\%$		
				10 μ A~220 μ A	$U_{rel}=0.08\%$		
				220 μ A~2.2mA	$U_{rel}=0.007\%$		
		DC Current		2.2mA~22mA	$U_{rel}=0.006\%$		
				22mA~220 mA	$U_{rel}=0.008\%$		
				220mA~2.2A	$U_{rel}=0.02\%$		
				2.2A~11A	$U_{rel}=0.07\%$		
				11A~20A	$U_{rel}=0.15\%$		
		AC Current		10 μ A~220 μ A,(10Hz~20Hz)	$U_{rel}=0.22\%$		



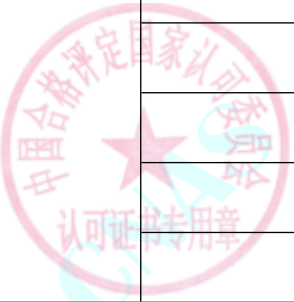
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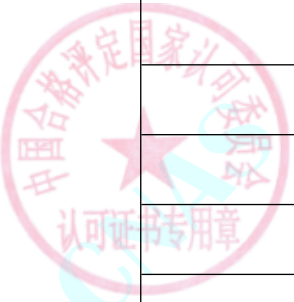
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				220 μ A ~ 2.2mA,(10Hz~20Hz)	$U_{rel}=0.08\%$		
				2.2mA ~ 22mA,(10Hz~ 20Hz)	$U_{rel}=0.06\%$		
				22mA ~ 220 mA,(10Hz~ 20Hz)	$U_{rel}=0.06\%$		
				10 μ A ~ 220 μ A,(20Hz~40Hz)	$U_{rel}=0.15\%$		
				220 μ A ~ 2.2mA,(20Hz~40Hz)	$U_{rel}=0.04\%$		
				2.2mA ~ 22mA,(20Hz~ 40Hz)	$U_{rel}=0.04\%$		
				22mA ~ 220mA,(20Hz~ 40Hz)	$U_{rel}=0.03\%$		
				220mA ~ 2.2A,(20Hz~ 40Hz)	$U_{rel}=0.05\%$		
				10 μ A ~ 220 μ A,(40Hz~1kHz)	$U_{rel}=0.11\%$		
				220 μ A ~ 2.2mA,(40Hz~1kHz)	$U_{rel}=0.04\%$		
				2.2mA ~ 22mA,(40Hz~ 1kHz)	$U_{rel}=0.04\%$		
				22mA ~ 220 mA,(40Hz~ 1kHz)	$U_{rel}=0.03\%$		
				220mA ~ 2.2A,(40Hz~ 1kHz)	$U_{rel}=0.05\%$		
				2.2A ~ 11A,(40Hz~ 1kHz)	$U_{rel}=0.06\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				11A~20A,(40Hz~1kHz)	$U_{rel}=0.18\%$		
				10 μ A~220 μ A,(1kHz~5kHz)	$U_{rel}=0.18\%$		
				220 μ A~2.2mA,(1kHz~5kHz)	$U_{rel}=0.07\%$		
				2.2mA~22mA,(1kHz~5kHz)	$U_{rel}=0.05\%$		
				22mA~220 mA(1kHz~5kHz)	$U_{rel}=0.04\%$		
				220mA~2.2A(1kHz~5kHz)	$U_{rel}=0.09\%$		
				2.2A~11A(1kHz~5kHz)	$U_{rel}=0.17\%$		
				11A~20A(1kHz~5kHz)	$U_{rel}=3.2\%$		
				10 μ A~220 μ A(5kHz~10kHz)	$U_{rel}=1.1\%$		
				220 μ A~2.2mA(5kHz~10kHz)	$U_{rel}=0.4\%$		
				2.2mA~22mA(5kHz~10kHz)	$U_{rel}=0.4\%$		
				22mA~220 mA(5kHz~10kHz)	$U_{rel}=0.17\%$		
				220mA~2.2A(5kHz~10kHz)	$U_{rel}=0.9\%$		
				2.2A~11A(5kHz~10kHz)	$U_{rel}=0.5\%$		
		Resistance		(1~11) Ω	$U_{rel}=0.01\%$		

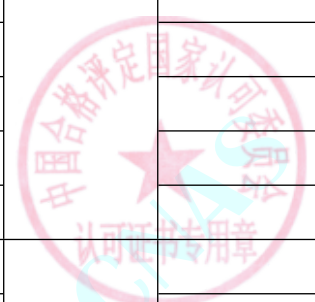


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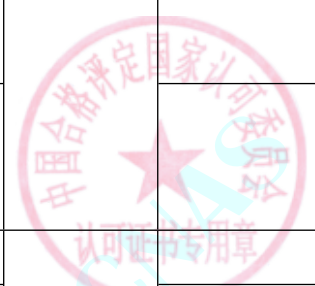
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				11 Ω ~ 33 Ω	$U_{rel}=0.01\%$		
				33 Ω ~ 110k Ω	$U_{rel}=0.004\%$		
				110k Ω ~ 1.1M Ω	$U_{rel}=0.004\%$		
				1.1M Ω ~ 3.3M Ω	$U_{rel}=0.007\%$		
				3.3M Ω ~ 11M Ω	$U_{rel}=0.015\%$		
				11M Ω ~ 33M Ω	$U_{rel}=0.058\%$		
				33M Ω ~ 110M Ω	$U_{rel}=0.36\%$		
18	Withstanding Voltage tester	voltage	V.R.of Withstanding Voltage Testers JJG795	AC (0.5~10)kV	$U_{rel}=1.1\%~0.7\%$		
				AC (10~15)kV	$U_{rel}=0.7\%~1.2\%$		
				DC (0.5~10)kV	$U_{rel}=1.1\%~0.7\%$		
				DC (10~15)kV	$U_{rel}=0.7\%~1.2\%$		
		current		AC (0.5~200)mA	$U_{rel}=1.1\%~0.6\%$		
				AC (200~500)mA	$U_{rel}=0.6\%~0.9\%$		
				DC (0.5~200)mA	$U_{rel}=1.1\%~0.6\%$		
				DC (200~500)mA	$U_{rel}=0.6\%~0.9\%$		
		time		AC test: (1~900)s	$U_{rel}=1.4\%~1.2\%$		
				DC test: (1~900)s	$U_{rel}=1.2\%$		
19	High voltage and value D.C.resistors	resistance	V.R.of High Voltage and Value D.C.Resistors JJG1072	100 Ω ~ 10M Ω	$U_{rel}=0.06\%$		
				10M Ω ~ 100M Ω	$U_{rel}=0.12\%$		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	100M Ω ~ 1G Ω	$U_{rel}=0.24\%$		
				1G Ω ~ 10G Ω	$U_{rel}=0.58\%$		
				10G Ω ~ 333G Ω	$U_{rel}=1.2\%$		
				333G Ω ~ 1000G Ω	$U_{rel}=2.3\%$		
20	Earth Continuity Tester	resistance	V.R.of Earth-Continuity Testers JJG984	10m Ω ~ 11.11 Ω	$U_{rel}=1\% \sim 0.3\%$		
		current		1A ~ 60A	$U_{rel}=0.7\%$		
21	Verification Equipment for Electrical Energy Meter	Electrical Energy	V.R.of Verification Equipment for AC Electrical Energy Meter JJG597	(57.7~480)V,(0.1~100)A,(单相和三相平衡负载)cos φ=1.0	$U_{rel}=0.06\%$		
				(57.7~480)V,(0.1~100)A,(单相和三相平衡负载)cos φ=0.5L	$U_{rel}=0.06\%$		
				(57.7~480)V,(0.1~100)A,(单相和三相平衡负载)cos φ=0.8C	$U_{rel}=0.06\%$		
				(57.7~480)V,(0.1~100)A,(三相不平衡负载)cos φ=1.0	$U_{rel}=0.06\%$		
				A(57.7~480)V,(0.1~100)A,(三相不平衡负载)cos φ=0.5L,(三相不平衡负载)cos φ=1.0	$U_{rel}=0.06\%$		
22	Leakage Current Tester	current	V.R.of Leakage Current Instrument and Meter JJG843	DC:20 μ A ~ 20mA	$U_{rel}=0.3\%$		
				AC:(0.1~20)mA	$U_{rel}=0.5\%$		



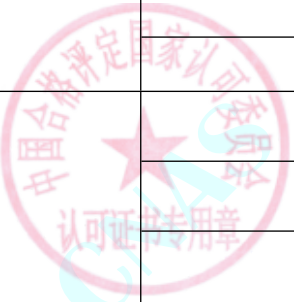
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		voltage		DC:(50~300)V	$U_{rel}=0.3\%$		
				AC:(50~300)V (50Hz)	$U_{rel}=0.3\%$		
23	Wrist zone tester	Resistance	V.R.of High Insulation Resistance Meters JJG690	1000 Ω ~ 10M Ω	$U_{rel}=0.24\%$		
				10M Ω ~ 100M Ω	$U_{rel}=0.58\%$		
				100M Ω ~ 1G Ω	$U_{rel}=1.16\%$		
				1G Ω ~ 10G Ω	$U_{rel}=2.3\%$		
24	AC current Source	AC Current	AC Standard Current Source JJG(military industry)70	10 μ A ~ 200 μ A,(10Hz~2kHz)	$U_{rel}=0.7\%$		
				200 μ A ~ 20mA,(10Hz~2kHz)	$U_{rel}=0.26\%$		
				20mA ~ 200mA,(10Hz~2kHz)	$U_{rel}=0.1\%$		
				200mA ~ 2A,(10Hz~2kHz)	$U_{rel}=0.15\%$		
				2A ~ 20A,(10Hz~2kHz)	$U_{rel}=0.17\%$		
				20A ~ 1000A,(45Hz~65Hz)	$U_{rel}=0.4\%$		
		frequency		10Hz~100kHz	$U_{rel}=0.01\%$		
25	AC Standard Voltage Source	AC Voltage	AC Standard Voltage Source JJG(Military Industry)71	10mV~200mV,(10Hz~100Hz)	$U_{rel}=0.06\%$		
				200mV~1000V,(10Hz~100Hz)	$U_{rel}=0.02\%$		
				10mV~200mV,(100Hz~2kHz)	$U_{rel}=0.04\%$		

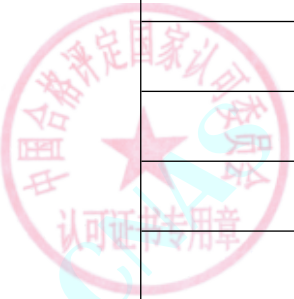


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		frequency		200mV~ 1000V,(100Hz~2kHz)	$U_{rel}=0.02\%$		
				10Hz~100kHz	$U_{rel}=0.01\%$		
26	DC Low Resistance Meters	Resistance	V.R.of DC Low Resistance Meters JJG837	100 $\mu\Omega$ ~ 20m Ω 20m Ω ~ 190k Ω	$U_{rel}=0.12\%$ $U_{rel}=0.02\%$		
27	Digital Powermeter	current	C.S.for Digital AC Electrical Parameters Meter JJF1491	DCI:(10~300)mA	$U_{rel}=0.02\%$		
				DCI:300 mA~3A	$U_{rel}=0.03\%$		
				DCI:3A ~11A	$U_{rel}=0.07\%$		
				DCI: 11A ~20A	$U_{rel}=0.12\%$		
				DCI:20A~40A	$U_{rel}=0.04\%$		
				(1~10)mA(45Hz~10kHz)	$U_{rel}=0.59\%$		
				(10~300)mA(45Hz~1kHz)	$U_{rel}=0.07\%$		
				(10~300)mA(1kHz~10kHz)	$U_{rel}=0.24\%$		
				300 mA ~3A(45Hz~1kHz)	$U_{rel}=0.08\%$		
				300 mA ~3A(1kHz~5kHz)	$U_{rel}=0.7\%$		
3A ~11A(45Hz~100Hz)	$U_{rel}=0.10\%$						
3A ~11A(100Hz~1kHz)	$U_{rel}=0.17\%$						

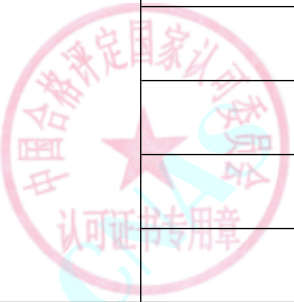


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
				11A ~20A(45Hz~100Hz)	$U_{rel}=0.17\%$			
					11A ~20A(100Hz~1kHz)	$U_{rel}=0.18\%$		
					20A~40A(45Hz~65Hz)	$U_{rel}=0.04\%$		
					40A~80A(45Hz~65Hz)	$U_{rel}=0.07\%$		
		voltage		DCV:(1~30)V	$U_{rel}=0.01\%$			
					DCV:30V~300V	$U_{rel}=0.01\%$		
					DCV:300V~1000V	$U_{rel}=0.01\%$		
					ACV:(1~30)V(45Hz~10kHz)	$U_{rel}=0.02\%$		
					ACV:30V~300V(45Hz~1kHz)	$U_{rel}=0.03\%$		
					ACV:30V~300V(1kHz~10kHz)	$U_{rel}=0.06\%$		
		Power		DCV:(1~1000)V	$U_{rel}=0.03\%$			
						DCI:(10~300)mA		
					DCV:(1~1000)V DCI: 300 mA ~11A	$U_{rel}=0.08\%$		
					DCV:(1~1000)V DCI: 11A ~20A	$U_{rel}=0.14\%$		

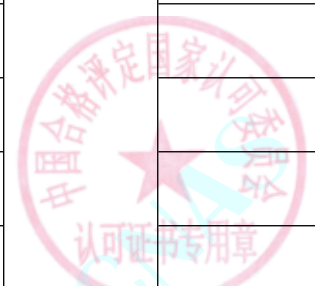


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				DCV:(1~1000)V DCI: 20A ~40A	$U_{rel}=0.06\%$		
				ACV:(1~1000)V, ACI:(1~10)mA(45Hz~ 10kHz)	$U_{rel}=0.68\%$		
				ACV:(1~1000)V, ACI:(10~ 300)mA(45Hz~65Hz)	$U_{rel}=0.09\%$		
				ACV:(1~1000)V, ACI:(10~ 300)mA(65Hz~10kHz)	$U_{rel}=0.32\%$		
				ACV:(1~1000)V, ACI: 300mA ~3A(45Hz~ 65Hz)	$U_{rel}=0.10\%$		
				ACV:(1~1000)V, ACI: 300mA ~3A(65Hz~ 5kHz)	$U_{rel}=0.82\%$		
				ACV:(1~1000)V, ACI: 3A~11A(45Hz~65Hz)	$U_{rel}=0.14\%$		
				ACV:(1~1000)V, ACI: 3A~11A(65Hz~1kHz)	$U_{rel}=0.3\%$		
				ACV:(1~1000)V, ACI: 11A~20A(45Hz~65Hz)	$U_{rel}=0.22\%$		
				ACV:(1~1000)V, ACI: 11A~20A(65Hz~1kHz)	$U_{rel}=0.3\%$		
				ACV:(1~1000)V, ACI: 20A~40A(45Hz~65Hz)	$U_{rel}=0.06\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			ilac-M	ACV:(1~1000)V, ACI: 40A~80A(45Hz~65Hz)	$U_{rel}=0.14\%$		
		Power		40Hz~1kHz	$U=0.002\text{Hz}$		
		Power Factor		-1~1	$U=0.002$		
28	Digital Clamp Ammeter	DC Voltage	C.S.for Digital Multimeter JJF1587,C.S.of Clamp Ammeters JJF1075	(1~1000)V	$U_{rel}=0.1\%$		
		AC Voltage		(1~1000)V, (40Hz~ 400Hz)	$U_{rel}=0.1\%$		
		DC Current		(0.1~2000)A	$U_{rel}=0.2\%$		
		AC Current		(0.1~2000)A, (40Hz~ 400Hz)	$U_{rel}=0.2\%$		
		Resistance		10 Ω ~ 1M Ω	$U_{rel}=0.1\%$		
29	Digital Ohmmeter	Resistance	C.S.for Digital Multimeter JJF1587	1 Ω ~ 11 Ω	$U_{rel}=0.01\%$		
				11 Ω ~ 33 Ω	$U_{rel}=0.01\%$		
				33 Ω ~ 110k Ω	$U_{rel}=0.004\%$		
				110k Ω ~ 1.1M Ω	$U_{rel}=0.004\%$		
				1.1M Ω ~ 3.3M Ω	$U_{rel}=0.007\%$		
				3.3M Ω ~ 11M Ω	$U_{rel}=0.015\%$		
				11M Ω ~ 33M Ω	$U_{rel}=0.06\%$		
				33M Ω ~ 110M Ω	$U_{rel}=0.4\%$		
30	Digital Calibration Device for	DC Voltage	C.S.of calibrators for electrical meters JJF1284	(1~200)mV	$U_{rel}=0.018\%$		
				200mV~200V	$U_{rel}=0.015\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Amperemeters Volt meters and Ohmmeters	AC Voltage	ilac-M	(200~1000)V	$U_{rel}=0.02\%$		
				10mV~100mV(40Hz~10kHz)	$U_{rel}=0.06\%$		
				100mV~1000V(40Hz~10kHz)	$U_{rel}=0.03\%$		
		DC Current		10 μ A~200 mA	$U_{rel}=0.018\%$		
				200mA~2A	$U_{rel}=0.024\%$		
				2A~20A	$U_{rel}=0.05\%$		
		AC Current		10 μ A~200 μ A(40Hz~2kHz)	$U_{rel}=0.26\%$		
				200 μ A~2mA(40Hz~2kHz)	$U_{rel}=0.08\%$		
				2mA~2A(40Hz~2kHz)	$U_{rel}=0.07\%$		
				2A~20A(40Hz~2kHz)	$U_{rel}=0.06\%$		
		Resistance		1 Ω ~20k Ω	$U_{rel}=0.02\%$		
				20k Ω ~100M Ω	$U_{rel}=0.05\%$		
		31		DC Stabilized power Supplies	C.S.for DC Stable Power Supply JJF1597		
current	100 μ A~20A		$U_{rel}=0.02\%~0.046\%$				
	(20~1000)A		$U_{rel}=0.02\%~0.2\%$				
	0.01%~1%		$U=0.01\%$				
	0.01%~1%		$U=0.01\%$				
	0.005%~0.5%		$U=0.002\%$				

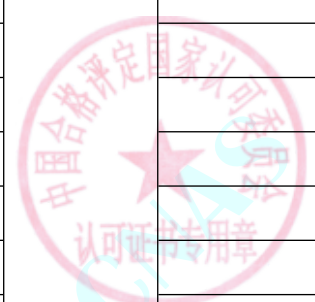


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				0.01%~1%	U=0.01%		
				0.01%~0.5%	U=0.002%		
				0.01%~1%	U=0.002%		
32	High-Voltage Divider at Power Frequency	Voltage Divider	V.R.of High Voltage Divider at Power Frequency JJG496	(1~100)kV	U _{rel} =0.12%		
33	DC High Voltage Divider	Voltage Divider	V.R.of DC High Voltage Dividers JJG1007	(1~100)kV	U _{rel} =0.12%		
34	Security Analyzer	Withstanding Voltage	V.R.of Withstanding Voltage Testers JJG795,V.R.of Electronic Insulating Resistance Meters JJG1005,V.R.of Earth-Continuity Testers JJG984,V.R.of Leakage Current Instrument and Meter JJG843	AC(0.5~10)kV	U _{rel} =1.1%~0.7%		
				AC (10~15)kV	U _{rel} =0.7%~1.2%		
				DC(0.5~10)kV	U _{rel} =1.1%~0.7%		
				DC (10~15)kV	U _{rel} =0.7%~1.2%		
		current		AC(0.5~200)mA	U _{rel} =1.1%~0.6%		
				AC(200~500)mA	U _{rel} =0.6%~0.9%		
				DC(0.5~200)mA	U _{rel} =1.1%~0.6%		
				DC(200~500)mA	U _{rel} =0.6%~0.9%		
		time		AC(10~900)s	U _{rel} =1.4%~1.2%		
				DC(10~900)s	U _{rel} =1.2%		
		voltage		(50~1000)V	U _{rel} =1.8%		
		Resistance		(1~2000)MΩ	U _{rel} =0.3%~1.8%		
resistance	AC (50~500)mΩ	U _{rel} =0.18%~0.12%					



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		current	ilac-MRA	DC (50~500)mΩ	$U_{rel}=0.14\% \sim 0.06\%$		
				AC (10~25)A	$U_{rel}=0.59\% \sim 0.26\%$		
				DC (10~25)A	$U_{rel}=0.59\% \sim 0.26\%$		
				AC (0.1~2)mA	$U_{rel}=1.3\% \sim 0.2\%$		
		current		AC (5~20)mA	$U_{rel}=0.4\% \sim 0.2\%$		
				DC (0.02~2)mA	$U_{rel}=0.3\% \sim 0.1\%$		
				DC (2~20)mA	$U_{rel}=0.2\% \sim 0.1\%$		
				voltage	AC (50~300)V		
DC (50~300)V	$U_{rel}=0.2\%$						
35	Resistance Strain Gauge Indicator	Strain	V.R.of Resistance Strain Gauge Indicators JJG623	$(10 \sim 10^5) \mu \epsilon$	$U=(1 \sim 58) \mu \epsilon$		
36	Voltage transformers of measuring service	Ratio error	V.R.of Voltage transformers of measuring service JJG314	(3~35)kV/(100,100/3,100/3 ^{1/2})V,20%Un	$U_{rel}=0.05\%$	合格评定 国家认可 有限公司 认可证书专用章	
				(3~35)kV/(100,100/3,100/3 ^{1/2})V,50%Un	$U_{rel}=0.04\%$		
				(3~35)kV/(100,100/3,100/3 ^{1/2})V,80%Un	$U_{rel}=0.03\%$		
				(3~35)kV/(100,100/3,100/3 ^{1/2})V,100%Un	$U_{rel}=0.03\%$		



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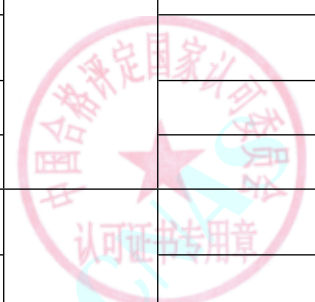
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Angle error	ilac-M	(3~35)kV/(100,100/3,100/3 ^{1/2})V,120%Un	U _{rel} =0.03%		
				0.01' ~900',20%Un	U=2.2'		
				0.01' ~900',50%Un	U=1.5'		
				0.01' ~900',80%Un	U=1.0'		
				0.01' ~900',100%Un	U=1.0'		
				0.01' ~900',120%Un	U=1.0'		
37	flux mete	Magnetic flux	C.S. for Fluxmeter JJF1905	(0.1~0.5)mWb	U _{rel} =0.4%		
				(0.5~10000)mWb	U _{rel} =0.2%		
38	Magnetometer	Magnetic flux density	Calibration Specification for(1 mT~2.5 T) Magnetometers JJF 1832	(1~10)mT	U _{rel} =0.3%		
				(10~2000) mT	U _{rel} =0.13%		
39	Digit high voltage meter	Voltage	C.S. of Digit high voltage meter JJF(su)88	AC (1~100)kV(50Hz)	U _{rel} =0.12%~0.10%		
				DC (1~100)kV	U _{rel} =0.14%~0.12%		
40	Loop resistance tester	Resistance	V.R.of Loop resistance tester、DC resistance meters JJG1052	(50~1900) μΩ	U _{rel} =0.15%~0.06%		
		Current		(10~600)A	U _{rel} =0.15%~0.06%		
41	Surface resistance tester	Resistance	C.S.for Surface Resistance Tester JJF1285	1000 Ω ~10M Ω	U _{rel} =0.3%	合格评定 国家认可 母 认可证书专用章	
				10M Ω ~100M Ω	U _{rel} =0.6%		
				100M Ω ~1G Ω	U _{rel} =1.2%		
				1G Ω ~10G Ω	U _{rel} =3%		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
42	DC Shunts	Voltage	V.R.of DC Shunts JJG1069	(45~100)mV/(1~50)A	$U_{rel}=2.0 \times 10^{-3}$		
				(45~100)mV/(50~100)A	$U_{rel}=2.0 \times 10^{-3}$		
				(45~100)mV/(100~200)A	$U_{rel}=8 \times 10^{-4}$		
				(45~100)mV/(200~5000)A	$U_{rel}=4 \times 10^{-4}$		
43	clamp earth resistance meters	Resistance	V.R.of clamp earth resistance meters JJG1054	(0.1~9.999) Ω	$U= (0.007 \sim 0.03) \Omega$		
				(10~99.99) Ω	$U= (0.03 \sim 0.2) \Omega$		
				(100~999.9) Ω	$U= (0.3 \sim 2.1) \Omega$		
44	Burden Box of Instrument Transformers	Impedance	C.S.for Burden box of Instrument Transformer JJF1264	Active(0.1~100) Ω	$U_{rel}=0.9\%$		
		admittance		reactive(0.1~100) Ω	$U_{rel}=1.0\%$		
				active(0.1~100)mS	$U_{rel}=0.9\%$		
				reactive(0.1~100)mS	$U_{rel}=1.0\%$		
45	Transformers Test Set	Ratio error	V.R.of Instrument Transformer Test Set JJG169	1.999‰~199.9‰	$U_{rel}=0.3\%$		
		Phase displacement		9.00' ~900.00'	$U_{rel}=0.3\%$		
		Impedance		1.999 Ω ~ 19.99 Ω	$U_{rel}=0.3\%$		
		Admittance		1.999mS~19.99mS	$U_{rel}=0.3\%$		
46	Measuring transducers for converting a.c. electrical	Input AC Voltage	V.R.of measuring transducers for converting a.c.electrical quantities into d.c.electrical quantities JJG126	(10~600)V	$U_{rel}=0.1\%$		
		Input AC Current		(0.1~20)A	$U_{rel}=0.1\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	quantities into d.c. electrical quantities	Input AC Active Power		(10~600)V(0.1~20)A, 功率因数:(0.5~1)	$U_{rel}=0.1\%$		
47	Electronic Insulating Resistance Meters	resistance	V.R. of Electronic Insulating Resistance Meters JJG1005	100 Ω ~ 10M Ω	$U_{rel}=0.3\%$		
				10M Ω ~ 100M Ω	$U_{rel}=0.6\%$		
				100M Ω ~ 1G Ω	$U_{rel}=1.1\%$		
				1G Ω ~ 1T Ω	$U_{rel}=2.4\%$		
		open-circuit voltage		(50~5000)V	$U_{rel}=1.8\%$		
48	Micro-transformer of current	ratio error	V.R. of measuring current transformer JJG313	(0.6~60)A/(1~50)mA, 1%In	$U_{rel}=0.05\%$		
				(0.6~60)A/(1~50)mA, 5%In	$U_{rel}=0.03\%$		
				(0.6~60)A/(1~50)mA, 20%In	$U_{rel}=0.03\%$		
		angle error		0.01' ~ 900.0', 1%In	$U=1.5'$		
				0.01' ~ 900.0', 5%In	$U=0.8'$		
				0.01' ~ 900.0', 20%In	$U=0.8'$		
49	Contactless electrostatic voltage measuring instrument	Electrostatic voltage	C.S. for Contactless electrostatic voltage measuring instrument JJF1517	(0.1~15)kV	$U_{rel}=2\%$		
50	Magnetic Particle Flaw Detectors	Magnetization Current	C.S. for Magnetic Particle Flaw Detectors JJF1273	(100~5000)A(Circumferential Magnetization Current)	$U_{rel}=0.8\%$		



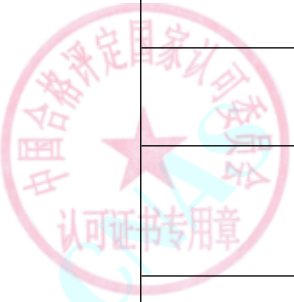
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(100~5000)A(Portrait Magnetization Current)	$U_{rel}=1.2\%$		
51	Four point probe resistivity tester	specific resistance	V.R.of Four point probe resistivity tester JJG508	(0.01~1214) $\Omega \cdot \text{cm}$	$U_{rel}=3\%$		
52	Processcalibrator	DC Voltage Output	C.S.for Process Calibrators JJF1472	1mV~10mV	$U_{rel}=0.012\%$		
				10mV~100V	$U_{rel}=0.002\%$		
		DC Current Output		10 μA ~30 μA	$U_{rel}=0.006\%$		
				30 μA ~20mA	$U_{rel}=0.002\%$		
				20 mA~30 mA	$U_{rel}=0.008\%$		
				30 mA~100 mA	$U_{rel}=0.006\%$		
				100 mA~200 mA	$U_{rel}=0.005\%$		
				0.2A~2A	$U_{rel}=0.03\%$		
				Resistance output	1 Ω ~3 Ω		
		3 Ω ~2M Ω			$U_{rel}=0.006\%$		
		Frequency output		10Hz~100kHz	$U_{rel}=0.01\%$		
		Temperature(Thermocouple analog output)		(-200~1800) $^{\circ}\text{C}$	$U_{rel}=0.3^{\circ}\text{C}$		
		Temperature(Thermal resistance analog output)		(-200~800) $^{\circ}\text{C}$	$U_{rel}=0.2^{\circ}\text{C}$		
DC Voltage measurement	1mV~10mV	$U_{rel}=0.02\%$					



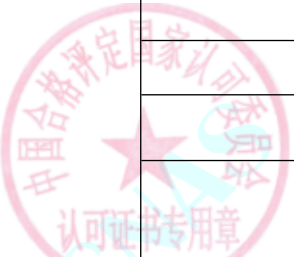
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				10mV~20V	$U_{rel}=0.003\%$		
				20V~30V	$U_{rel}=0.037\%$		
				30V~200V	$U_{rel}=0.011\%$		
				200V~300V	$U_{rel}=0.18\%$		
				300V~1000V	$U_{rel}=0.052\%$		
		AC Voltage measurement		10mV~22mV(45Hz~1kHz)	$U_{rel}=0.3\%$		
		AC Voltage measurement		22mV~1000V(45Hz~1kHz)	$U_{rel}=0.1\%$		
		DC Current measurement		10 μ A~30 μ A	$U_{rel}=0.046\%$		
		DC Current measurement		30 μ A~2A	$U_{rel}=0.031\%$		
		DC Current measurement		2A~3A	$U_{rel}=0.23\%$		
		DC Current measurement		3A~10A	$U_{rel}=0.1\%$		
		Resistance Measurement		(1~10) Ω	$U_{rel}=0.011\%$		
		Resistance Measurement		10 Ω ~1M Ω	$U_{rel}=0.05\%$		
		Resistance Measurement		1M Ω ~100M Ω	$U_{rel}=0.02\%$		
		Frequency measurement		10Hz~100kHz	$U_{rel}=0.01\%$		
		Temperature(Thermocouple measurement)		(-200~1800)°C	$U_{rel}=0.3\%$		

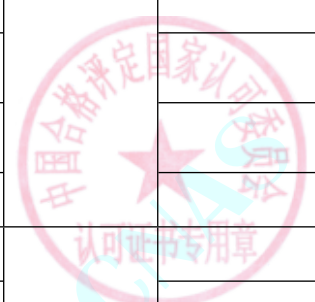


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Temperature(Thermal resistance analog outputThermal resistance measurment)		(-200~800)°C	$U_{rel}=0.2\%$		
53	Magnetometers Based Magnetic Force	magnetic induction	Calibration Specification for Magnetometers Based Magnetic Force JJF1656	(0.05~10)mT	$U_{rel}=1.7\%$		
54	Alternating Current Resistance Box	Resistance	C.S.for Alternating Current Resistance Box JJF1636	(1~10) Ω (1kHz)	$U_{rel}=2\%$		
				(10~100) Ω (1kHz)	$U_{rel}=0.3\%$		
				100 Ω ~100k Ω (1kHz)	$U_{rel}=0.03\%$		
55	Impulse Voltage Testers for Winding Interturn Insulation	Output Shock Voltage	C.S.for Impulse Voltage Testers for Winding Interturn Insulation JJF1691	(0.5~15)kV	$U_{rel}=2.2\%$		
		Wave Front Time		0.2 μ s	$U_{rel}=10\%$		
				1.2 μ s	$U_{rel}=4\%$		
56	High-Voltage Generator	Voltage	Calibration Specification for (20~200)kV High-Voltage Generator JJF(WXJL)006	(20~200)kV (DC)	$U_{rel}=0.7\%$		
				(20~200)kV (50Hz,60Hz)	$U_{rel}=0.7\%$		
		Current		(10~5000) μ A (50Hz,60Hz)	$U_{rel}=0.2\%$		
				(10~5000) μ A (DC)	$U_{rel}=0.2\%$		
57	Multifunction Standard Sources	DC Voltage	Calibration Specification for Multifunction Standard Sources JJF1638	1mV~200mV	$U_{rel}=1.2 \times 10^{-4} \sim 7 \times 10^{-6}$		
				200mV~2V	$U_{rel}=7 \times 10^{-6} \sim 6 \times 10^{-6}$		



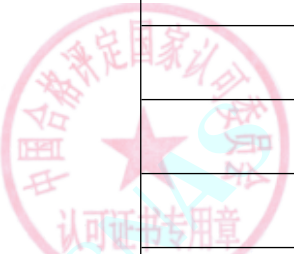
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date		
				2V~20V	$U_{rel}=6 \times 10^{-6} \sim 4 \times 10^{-6}$				
				20V~200V	$U_{rel}=4 \times 10^{-6} \sim 7 \times 10^{-6}$				
				200V~1000V	$U_{rel}=7 \times 10^{-6}$				
		DC Current		100 μ A~2mA	$U_{rel}=1.8 \times 10^{-5}$				
					2mA~20mA	$U_{rel}=1.8 \times 10^{-5} \sim 2 \times 10^{-5}$			
					20mA~200mA	$U_{rel}=2 \times 10^{-5} \sim 5 \times 10^{-5}$			
					200mA~2A	$U_{rel}=5 \times 10^{-5} \sim 1.9 \times 10^{-4}$			
					2A~20A	$U_{rel}=1.9 \times 10^{-4} \sim 5 \times 10^{-4}$			
				DC Resistance		1 Ω ~1G Ω	$U_{rel}=2.0 \times 10^{-5} \sim 2.6 \times 10^{-4}$		
				AC Voltage		(10~200) mV (10Hz~40Hz)	$U_{rel}=6 \times 10^{-4}$		
			200mV~2V (10Hz~40Hz)			$U_{rel}=1.6 \times 10^{-4}$			
			(2~20) V (10Hz~40Hz)			$U_{rel}=1.5 \times 10^{-4}$			
			(20~200) V (10Hz~40Hz)			$U_{rel}=1.5 \times 10^{-4}$			
			(200~1000) V (10Hz~40Hz)			$U_{rel}=1.6 \times 10^{-4}$			
			(10~200) mV (40Hz~100Hz)			$U_{rel}=6 \times 10^{-4}$			
			200mV~2V (40Hz~100Hz)			$U_{rel}=1.3 \times 10^{-4}$			

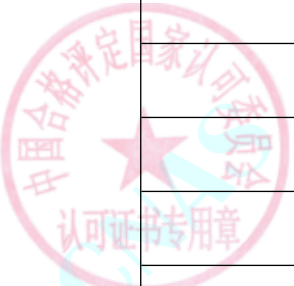


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(2~20) V (40Hz~100Hz)	$U_{rel}=1.3 \times 10^{-4}$		
				(20~200) V (40Hz~100Hz)	$U_{rel}=1.3 \times 10^{-4}$		
				(200~1000) V (40Hz~100Hz)	$U_{rel}=1.4 \times 10^{-4}$		
				(10~200) mV (100Hz~2kHz)	$U_{rel}=4 \times 10^{-4}$		
				200mV~2V (100Hz~2kHz)	$U_{rel}=1.2 \times 10^{-4}$		
				(2~20) V (100Hz~2kHz)	$U_{rel}=1.1 \times 10^{-4}$		
				(20~200) V (100Hz~2kHz)	$U_{rel}=1.1 \times 10^{-4}$		
				(200~1000) V (100Hz~2kHz)	$U_{rel}=1.4 \times 10^{-4}$		
				(10~200) mV (2kHz~10kHz)	$U_{rel}=6 \times 10^{-4}$		
				200mV~2V (2kHz~10kHz)	$U_{rel}=1.3 \times 10^{-4}$		
				(2~20) V (2kHz~10kHz)	$U_{rel}=1.3 \times 10^{-4}$		
				(20~200) V (2kHz~10kHz)	$U_{rel}=1.3 \times 10^{-4}$		
				(200~1000) V (2kHz~10kHz)	$U_{rel}=1.4 \times 10^{-4}$		
				(10~200) mV (10kHz~30kHz)	$U_{rel}=1.2 \times 10^{-3}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				200mV~2V (10kHz~30kHz)	$U_{rel}=4 \times 10^{-4}$		
				(2~20) V (10kHz~30kHz)	$U_{rel}=2.9 \times 10^{-4}$		
				(20~200) V (10kHz~30kHz)	$U_{rel}=2.9 \times 10^{-4}$		
				(200~1000) V (10kHz~30kHz)	$U_{rel}=2.9 \times 10^{-4}$		
				(10~200) mV (30kHz~100kHz)	$U_{rel}=2.8 \times 10^{-3}$		
				200mV~2V (30kHz~100kHz)	$U_{rel}=1.0 \times 10^{-3}$		
				(2~20) V (30kHz~100kHz)	$U_{rel}=1.0 \times 10^{-3}$		
				(20~200) V (30kHz~100kHz)	$U_{rel}=1.0 \times 10^{-3}$		
				(200~1000) V (30kHz~100kHz)	$U_{rel}=1.0 \times 10^{-3}$		
				200mV~2V (100kHz~300kHz)	$U_{rel}=1.4\%$		
				(2~20) V (100kHz~300kHz)	$U_{rel}=0.8\%$		
				(20~200) V (100kHz~300kHz)	$U_{rel}=0.8\%$		
				200mV~2V (300kHz~1MHz)	$U_{rel}=12\%$		
				(2~20) V (300kHz~1MHz)	$U_{rel}=4\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		AC Current	ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF A PEKING UNIVERSITY CERTIFICATE	(20~200) V (300kHz~1MHz)	$U_{rel}=6\%$		
				0.1~20) mA (10Hz~10kHz)	$U_{rel}=5 \times 10^{-4}$		
				(20~200) mA (10Hz~10kHz)	$U_{rel}=7 \times 10^{-4}$		
				200mA~2A (10Hz~2kHz)	$U_{rel}=1.1 \times 10^{-3}$		
				(2~20) A (10Hz~2kHz)	$U_{rel}=1.3 \times 10^{-3}$		
				200mA~2A (2kHz~10kHz)	$U_{rel}=1.2 \times 10^{-3}$		
				(2~20) A (2kHz~10kHz)	$U_{rel}=3 \times 10^{-3}$		
58	Off-board Charger for Electric Vehicles	Energy	Off-board Charger for Electric Vehicles JJG1149	DCV: (15~1000)V; DCI: (2.5~250)A; DC Power: (1.5~187.5)kW	$U_{rel}=0.20\%$		
59	AC Charging Spot for Electric Vehicles	Energy	AC Charging Spot for Electric Vehicles JJG1148	交流电压: 120V~480V; 交流电流: 20mA~60A; 交流功率: 4.8W~28.8kW	$U_{rel}=0.20\%$		
60	AC Peak Voltmeter	Voltage	V.R.of AC Peak Voltmeters JJG1168	1V~1500V,(10Hz~5kHz)	$U_{rel}=0.15\%$		
61	Eddy Current Conductivity Meter	Conductivity	C.S. for Eddy Current Conductivity Meters JJF1692	0.58MS/m~58MS/m	$U=0.10MS/m \sim 0.36MS/m$		
62	Direct-current Electrical Energy	Electrical Energy	V.R.of Electronic Meters for Measuring Direct-current Electrical Energy JJG842	10mV~1000V, 10mA~500A	$U_{rel}=0.06\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Day Timing Error		(10~10)s/d	$U=0.06s/d$		
63	Multiparameter Physiological Simulators	ECG Amplitude	C.S.for Multiparameter Physiological Simulators JJF1470	(0.5~5.5)mV	$U_{rel}=1\%$		
		ECG Frequency		(30~300)min ⁻¹	$U_{rel}=0.2\%$		
		Base respiratory impedance		(500~2000)Ω	$U_{rel}=1\%$		
64	*Uninterruptible Power Supply	Voltage	Calibration Specification for Uninterruptible Power Supply JJF (DZ) 0027	110V~300V (50Hz)	$U=0.16V$		
		Frequency		50Hz、60Hz	$U=0.010Hz$		
		rated power		(110V~250V),(1A~20A) (50Hz)	$U_{rel}=0.2\%$		
		efficiency		10%~100%	$U_{rel}=0.2\%$		
		time		1ms~2s	$U_{rel}=1.6\%$		
		degree of distortion		0.01%~20%,(50Hz, 60Hz)	$U_{rel}=12\%$		
65	*Instantaneous Discontinuity Testing Instruments	Instantaneous Discontinuity Resisistance	Calibration Specification of Instantaneous Discontinuity Testing Instruments JJF (DZ) 0042	1Ω~99.99Ω	$U_{rel}=3\%$		
		Instantaneous Time		0.1μs~99.99μs	$U=0.05μs$		
66	*Hall Current(Voltage)Transducer	Alternating current	Hall Current(Voltage)Transducer JJG (Chuan) 136	100mA~2000A,(45Hz~400Hz)	$U_{rel}=0.08\%$		
		DC current		100mA~5000A	$U_{rel}=0.01\%$		
		AC voltage		1V~600V,(45Hz~1000Hz)	$U_{rel}=0.05\%$		



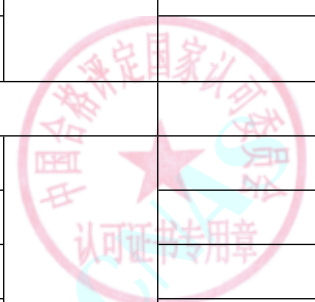
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		DC voltage		1V~600V	$U_{rel}=0.03\%$		
67	*High Current Generator	Alternating current	Calibration Specification of High Current Generator JJF (JX) 1037	5A~5000A,(50Hz)	$U_{rel}=0.5\%$		
68	*charge & discharge of battery test system	DCV	Calibration specification for charge & discharge of battery test system JJF(DZ)0016	1mV~100mV	$U_{rel}=0.3\%$		
				100mV~1000V	$U_{rel}=0.03\%$		
		Direct current		1mA~100mA	$U_{rel}=0.2\%$		
				100mA~20A	$U_{rel}=0.05\%$		
				20A~1000A	$U_{rel}=0.07\%$		
				Resistance	10 Ω ~ 1000 Ω	$U_{rel}=0.2\%$	
		Time		10s~12h	$U=0.3s$		
				12h~24h	$U=0.6s$		
		Rise time		10 μ s~10ms	$U_{rel}=1.6\%$		
		Pulse current		100A~1000A	$U_{rel}=1.9\%$		
Discharge capacity	0.1Ah~1kAh	$U_{rel}=0.6\%$					
VI Radio measuring instrument							
1	*Alternating Current Bridge	Capacitance	V.R. of Alternating Current Bridge JJG 441	1pF,(1kHz)	$U_{rel}=1.2\%$		
				10pF~1000pF,(1kHz)	$U_{rel}=0.12\%$		
				10nF~1 μ F,(1kHz)	$U_{rel}=0.06\%$		
				10 μ F~100 μ F,(100Hz)	$U_{rel}=0.12\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Inductance		100 μ H,(1kHz)	$U_{rel}=0.06\%$		
				1mH~1H,(1kHz)	$U_{rel}=0.03\%$		
		Resistance		1 Ω ~ 10 Ω ,(1kHz)	$U_{rel}=0.12\%$		
				10 Ω ~ 100k Ω ,(1kHz)	$U_{rel}=0.06\%$		
2	*Low-frequency Volt-meters	voltage	Calibration Specification for Low-frequency Volt-meters JJF 1925	10mV~300V,(20Hz~50kHz)	$U_{rel}=0.8\%$		
				0.9V~1.1V,(50kHz~100kHz)	$U_{rel}=1.4\%$		
				0.9V~1.1V,(100kHz~1MHz)	$U_{rel}=1.5\%$		
3	*Electronic Voltmeter	voltage	V.R.of Electronic Voltmeter JJG 250	10mV~10V,(100Hz~1MHz)	$U_{rel}=0.9\%$		
				1V,(1MHz~500MHz)	$U_{rel}=2.6\%$		
4	*Low-frequency Signal Generators	Frequency	V.R. of Low-frequency Signal Generators JJG 602	1Hz~1MHz	$U_{rel}=6 \times 10^{-5}$		
		Voltage		10mV~300V,(1kHz)	$U_{rel}=1\%$		
		Frequency Response		-3dB~3dB,(10Hz~1MHz)	$U=0.24dB$		
		Distortion		0.03%~10%,(20Hz~20kHz)	$U_{rel}=3\%$		
5	*Semiconductor Device Curve Tracers	Current	Calibration Specification for Semiconductor Device Curve Tracers JJF 1236	100 μ A~0.5A	$U_{rel}=1.4\%$		
				0.5A~10A	$U_{rel}=1.7\%$		
		Voltage		0.01V~20V	$U_{rel}=1.3\%$		
				20V~500V	$U_{rel}=1.7\%$		



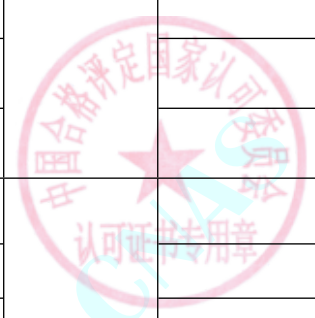
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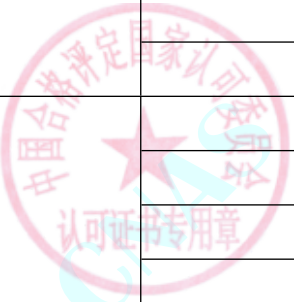
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Resistance		1 Ω ~ 100k Ω	$U_{rel}=0.5\%$		
6	*Distortion Meter	voltage	Calibration Specification for Distortion Meters JJF 1852	10mV ~ 300V, (20Hz ~ 50kHz)	$U_{rel}=0.8\%$		
				0.9V, (50kHz ~ 100kHz)	$U_{rel}=1.0\%$		
				0.9V, (100kHz ~ 1MHz)	$U_{rel}=1.2\%$		
				0.01% ~ 0.03%, (10Hz ~ 10kHz)	$U=0.006\%$		
				0.03% ~ 1%, (10Hz ~ 10kHz)	$U_{rel}=10\%$		
		Distortion		1% ~ 100%, (10Hz ~ 10kHz)	$U_{rel}=2\%$		
				0.1% ~ 0.3%, (10kHz ~ 100kHz)	$U_{rel}=12\%$		
				0.3% ~ 1%, (10kHz ~ 100kHz)	$U_{rel}=5\%$		
				1% ~ 100%, (10kHz ~ 100kHz)	$U_{rel}=1.0\%$		
				0.1% ~ 0.3%, (100kHz ~ 200kHz)	$U_{rel}=12\%$		
7	*Oscilloscope Calibrator	square wave voltage	V.R. of Oscilloscope Calibrator JJG 278	10mV ~ 200V, (1kHz)	$U_{rel}=0.2\%$		
		DC voltage		10mV ~ 200V	$U_{rel}=0.007\%$		
		time		10ns ~ 5s	$U_{rel}=0.005\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		rising time	ilac-M	450ps~2ns	$U=0.05ns$		
		Sine wave Amplitude		-50dBm~20dBm, (10kHz~6GHz)	$U=0.35dB$		
		Amplitude flatness		-3dB~3dB, (10kHz~2GHz)	$U=0.35dB$		
		Frequency		10kHz~6GHz	$U_{rel}=1 \times 10^{-6}$		
		Waveform Generator Amplitude		10mV~50V, (1kHz)	$U_{rel}=0.2\%$		
		Period		20ns~1s	$U=2ns$		
				1s~10s	$U_{rel}=2 \times 10^{-7}$		
8	*Distortion Meter Calibrator	Voltage	V.R for Distortion Meter Calibrators JJG 802	10mV~3V, (20Hz~20kHz)	$U_{rel}=0.2\%$		
				10mV~3V, (20kHz~100kHz)	$U_{rel}=0.9\%$		
				10mV~3V, (100kHz~400kHz)	$U_{rel}=4\%$		
		Distortion		0.03%~10%,(20Hz~20kHz)	$U_{rel}=3\%$		
		Frequency		20Hz~400kHz	$U_{rel}=0.05\%$		
9	*Analog Oscilloscope	Voltage	V.R.of Analogue Oscilloscope JJG 262	1mV~200V	$U_{rel}=1\%$		
		Time		500ps~10s	$U_{rel}=1\%$		
		Rise time		700ps~40ns	$U_{rel}=6.5\%$		
		Bandwidth		1MHz~500MHz	$U_{rel}=5\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Resistance	ilac-MRA	50 Ω, 1M Ω	$U_{rel}=0.5\%$		
		Calibration Signal Amplitude		(0.3~5)V, (0.5kHz~5kHz)	$U_{rel}=0.5\%$		
		Calibration Signal Frequency		0.5kHz~5kHz	$U_{rel}=0.001\%$		
10	*Spectrum Analyzer	Frequency	Calibration Specification for Spectrum Analyzer JJF1396	100Hz~40GHz	$U_{rel}=1.2 \times 10^{-7}$		
		Calibration Signal Level		-20dBm~-10dBm, (10MHz~1GHz)	$U=0.20\text{dB}$		
		Reference Level		-20dBm~10dBm, (10MHz~1GHz)	$U=0.3\text{dB}$		
				-60dBm~-20dBm, (10MHz~1GHz)	$U=0.5\text{dB}$		
				-90dBm~-60dBm, (10MHz~1GHz)	$U=0.6\text{dB}$		
		Span		100Hz~40GHz	$U_{rel}=0.5\%$		
		Resolution Bandwidth		10Hz~10MHz	$U_{rel}=0.5\%$		
		Resolution Bandwidth Conversion Effect		(-10~10)dB, (Frequency: 10MHz~1GHz, RBW: 10Hz~10MHz)	$U=0.2\text{dB}$		
Attenuation Conversion Effect	(-10~10)dB, (Frequency: 10MHz~1GHz, Attenuation: 0dB~80dB)	$U=0.3\text{dB}$					

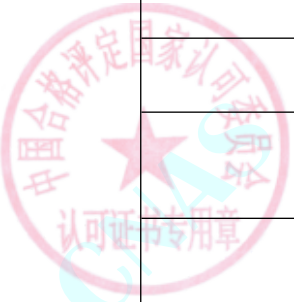


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Vertical Scale		(0~10)dB, (1dB/div, 10MHz~1GHz)	U=0.05dB		
				(10~80)dB, (10dB/div, 10MHz~1GHz)	U=0.2dB		
		Input Frequency Response		(-10~10)dB, (100kHz~26.5GHz)	U=0.3dB		
		Absolute Magnitude		(-30~10)dBm, (10MHz~1GHz)	U=0.3dB		
11	*Signal Generator	Frequency	Calibration Specification for Signal Generators JJF 1931	100kHz~26.5GHz	$U_{rel}=1 \times 10^{-7}$		
		Power		20dBm~30dBm,(30MHz~2GHz)	U=0.22dB		
				-110dBm~20dBm,(30MHz~2GHz)	U=0.13dB		
				-127dBm~-110dBm,(30MHz~2GHz)	U=0.6dB		
				20dBm~30dBm,(2GHz~18GHz)	U=0.26dB		
				-110dBm~20dBm,(2GHz~18GHz)	U=0.18dB		
				-127dBm~-110dBm,(2GHz~18GHz)	U=0.7dB		
				20dBm~30dBm,(18GHz~26.5GHz)	U=0.29dB		

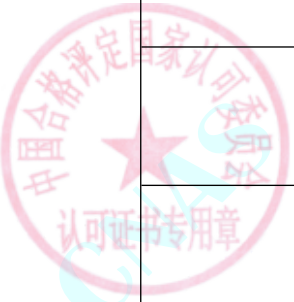


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Harmonic	ilac-M	-110dBm~ 20dBm,(18GHz~ 26.5GHz)	U=0.23dB		
				-127dBm~- 110dBm,(18GHz~ 26.5GHz)	U=0.7dB		
				-100dBc~- 25dBc,(10MHz~3GHz)	U=0.8dB		
				-100dBc~- 25dBc,(3GHz~6.6GHz)	U=1.1dB		
			-100dBc~- 25dBc,(6.6GHz~ 13.2GHz)	U=1.3dB			
		AM		5%~99%,(Carrier frequency:100kHz~ 10MHz,Moduiation frequenc:1kHz)	U _{rel} =0.9%		
				5%~20%,(Carrier frequency:10MHz~ 3GHz,Moduiation frequency:1kHz)	U _{rel} =2.9%		
				20%~99%,(Carrier frequency:10MHz~ 3GHz,Moduiation frequenc:1kHz)	U _{rel} =0.6%		
				5%~20%,(Carrier frequency:3GHz~ 26.5GHz,Moduiation frequenc:1kHz)	U _{rel} =6%		



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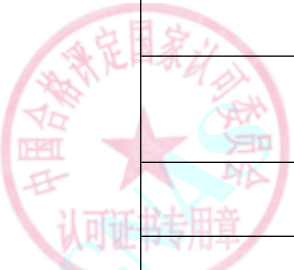
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		FM	ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF A CALIBRATION CERTIFICATE	20%~99%,(Carrier frequency:3GHz~26.5GHz,Modulation frequency:1kHz)	$U_{rel}=1.8\%$		
				250Hz~400kHz,(Carrier frequency:100kHz~26.5GHz,Modulation frequency:1kHz)	$U_{rel}=1.2\%$		
		PM		4rad~400rad,(Carrier frequency:100kHz~26.5GHz,Modulation frequenc:1kHz)	$U_{rel}=1.2\%$		
		Frequency of modulation signal generator		20Hz~1kHz	$U=0.03\text{Hz}$		
				1kHz~100kHz	$U=0.04\text{Hz}$		
		Amplitude of modulation signal generator		100mV~3V, (1kHz)	$U_{rel}=1.2\%$		
		12		*Vector Network Analyzers	Scattering Parameter Modulus		
50dB,(0.3GHz~18GHz)	$U=0.4\text{dB}$						
Scattering Parameter Phase	-180° ~180° ,(0.3~8)GHz		$U=0.7^\circ$				
	-180° ~180° ,(8~18)GHz		$U=1.0^\circ$				
Frequency	9kHz~18GHz		$U_{rel}=2 \times 10^{-7}$				
Power	(-40~20)dBm, (9kHz~18GHz)	$U=0.3\text{dB}$					



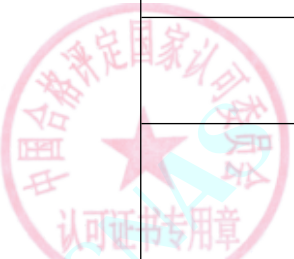
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Modulus Dynamic Accuracy		(0~1)dB, (300kHz~18GHz)	U=0.05dB		
		Crosstalk		(-150~-70)dB, (300kHz~18GHz)	U=2dB		
		Background Noise		(-140~-70)dBm, (300kHz~18GHz)	U=3dB		
13	*Synthesized Signal Generators	Frequency	V.R.of Synthesized Signal Generators JJG502	5kHz~1MHz	U _{rel} =1×10 ⁻⁸		
				1MHz~26.5GHz	U _{rel} =1×10 ⁻⁹		
		power		30dBm~20dBm,(30MHz~2GHz)	U=0.21dB		
				30dBm~20dBm,(2GHz~18GHz)	U=0.25dB		
				30dBm~20dBm,(18GHz~26.5GHz)	U=0.29dB		
				20dBm~0dBm,(30MHz~2GHz)	U=0.12dB		
				20dBm~0dBm,(2GHz~18GHz)	U=0.18dB		
				20dBm~0dBm,(18GHz~26.5GHz)	U=0.23dB		
				0dBm~-30dBm,(30MHz~2GHz)	U=0.14dB		
				0dBm~-30dBm,(2GHz~18GHz)	U=0.19dB		



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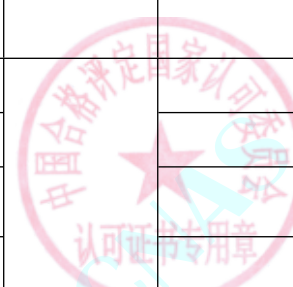
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Attenuation (relative level)		0dBm~-30dBm,(18GHz~26.5Hz)	U=0.24dB		
				0dB~110dB,(30MHz~2GHz)	U=0.20dB		
				0dB~110dB,(2GHz~18GHz)	U=0.24dB		
				0dB~110dB,(18GHz~26.5GHz)	U=0.29dB		
				110dB~120dB,(30MHz~2GHz)	U=0.4dB		
				110dB~120dB,(2GHz~18GHz)	U=0.4dB		
				110dB~120dB,(18GHz~26.5GHz)	U=0.5dB		
		Harmonic		-100dBc~-25dBc,(10MHz~3GHz)	U=0.8dB		
				-100dBc~-25dBc,(3GHz~6.6GHz)	U=1.1dB		
				-100dBc~-25dBc,(6.6GHz~13.2GHz)	U=1.3dB		
		AM		5%~20%,(Carrier frequency:10MHz~3GHz,Modulation frequency:1kHz)	U _{rel} =2.9%		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				20%~99%,(Carrier frequency:10MHz~3GHz,Moduiation frequency:1kHz)	$U_{rel}=0.6\%$		
				5%~20%,(Carrier frequency:3GHz~26.5GHz, Moduiation frequency:1kHz)	$U_{rel}=5\%$		
				20%~99%,(Carrier frequency:3GHz~26.5GHz, Moduiation frequency:1kHz)	$U_{rel}=1.8\%$		
		PM	4rad~400rad, (Carrier frequency:30MHz~26.5GHz, Moduiation frequency:1kHz)	$U_{rel}=1.2\%$			
		FM		200Hz~400kHz, (Carrier frequency:30MHz~26.5GHz, Moduiation frequency:1kHz)	$U_{rel}=1.2\%$		
14	*Function Generators	Frequency	V.R.of Function Generators JYG840	0.1Hz~250MHz	$U_{rel}=3 \times 10^{-9}$		
		Amplitude		5mV~55V,(1kHz)	$U_{rel}=0.1\%$		
		Amplitude Faltness		-3dB~3dB,(10Hz~250MHz)	$U=0.24dB$		
		Distortion degree		0.02%~1%,(20Hz~20kHz)	$U_{rel}=16\%$		
		Rise Time		1ns~10 μs	$U_{rel}=6\%$		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		DC Voltage		0.1V~20V	$U_{rel}=0.1\%$		
		Duty Cycle		5%~95%, (1kHz~1MHz)	$U_{rel}=0.6\%$		
15	*Audio Analyzer	Frequency Measurement	Calibration Specification for Audio Analyzer JJF1395	10Hz~200kHz	$U_{rel}=5 \times 10^{-4}$		
		Voltage Measurement		100mV~300V,(1kHz)	$U_{rel}=0.8\%$		
		Distortion Measurement		0.1%~30%, (10Hz~200kHz)	$U_{rel}=10\%$		
		Frequency Output		10Hz~200kHz	$U_{rel}=6 \times 10^{-5}$		
		Voltage Output		10mV~20V,(1kHz)	$U_{rel}=0.2\%$		
		Voltage Output		1V, (10Hz~200kHz)	$U_{rel}=1\%$		
		Distortion Output		0.02%~0.1%,(20Hz~20kHz)	$U_{rel}=16\%$		
16	*Digital RLC meters	Capacitance	Verification regulation for wide range digital RLC meter GJB 8817	1pF,(1kHz)	$U_{rel}=1.2\%$		
				10pF~1000pF,(1kHz)	$U_{rel}=0.12\%$		
				10nF~1 μ F,(1kHz)	$U_{rel}=0.06\%$		
				10 μ F~100 μ F,(100Hz)	$U_{rel}=0.12\%$		
		Inductance		100 μ H,(1kHz)	$U_{rel}=0.06\%$		
				1mH~1H,(1kHz)	$U_{rel}=0.03\%$		
		Resistance		1 Ω ~10 Ω ,(1kHz)	$U_{rel}=0.12\%$		
				10 Ω ~100k Ω ,(1kHz)	$U_{rel}=0.06\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Loss		0.0001,(1kHz)	$U=0.00028$		
				0.001,(1kHz)	$U=0.00028$		
				0.01,(1kHz)	$U=0.00028$		
				0.1,(1kHz)	$U=0.00052$		
				0.2,(1kHz)	$U=0.0008$		
				0.5,(1kHz)	$U=0.0014$		
				1,(1kHz)	$U=0.003$		
17	*Standard Capacitors	Capacitor	V.R.of Standard Capacitors JJG183	10pF~100pF,(1kHz)	$U_{rel}=0.12\%$		
				100pF~1000pF,(1kHz)	$U_{rel}=0.07\%$		
				10nF~1 μ F,(1kHz)	$U_{rel}=0.03\%$		
				10pF~100pF,(100 Hz)	$U_{rel}=0.26\%$		
				100pF~1000pF,(100 Hz)	$U_{rel}=0.13\%$		
				10nF~1 μ F,(100 Hz)	$U_{rel}=0.05\%$		
				10pF~100pF,(10kHz)	$U_{rel}=0.26\%$		
				100pF~1000pF,(10kHz)	$U_{rel}=0.13\%$		
10nF~1 μ F,(10kHz)	$U_{rel}=0.06\%$						
18	*Standard Inductors	Inductor	V.R.of Standard Inductors JJG726	1000 μ H~1H,(1kHz)	$U_{rel}=0.05\%$		
19	*Coaxial Attenuator	Attenuation	V.R.of Coaxial Attenuator JJG387	(0~100)dB,(50 Ω ,250kHz~18GHz)	$U=0.62\text{dB}$		



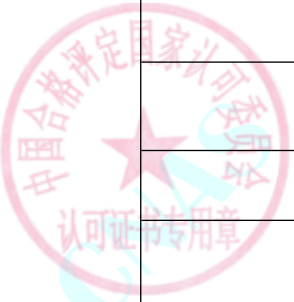
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
20	*Digital Storage Oscilloscope	Voltage	Calibration Specification for Digital Storage Oscilloscope JJF1057	1mV~200V	$U_{rel}=1\%$		
		Time		500ps~10s	$U_{rel}=0.6\%$		
		Rising Time		75ps~40ns	$U_{rel}=6.5\%$		
		Bandwidth		1MHz~20GHz	$U_{rel}=5\%$		
		Resisance		50Ω, 75Ω, 1MΩ	$U_{rel}=0.5\%$		
		Calibration Signal Amplitude		(0.3~5)V, (1kHz~1MHz)	$U_{rel}=0.5\%$		
		Calibration Signal Frequency		1kHz~1MHz	$U_{rel}=0.001\%$		
21	*Small & Medium Scale Digital Integrated Circuit Testing System	DPS Voltage Parameters	Calibration Specification of Small & Medium Scale Digital Integrated Circuit Testing System JJF1160	-10mV~-40V	$U_{rel}=0.06\%$		
				10mV~40V	$U_{rel}=0.06\%$		
		DPS Current Parameters		-10μA~-500mA	$U_{rel}=0.06\%$		
				10μA~500mA	$U_{rel}=0.06\%$		
		PMU Set Voltage Measure Current Parameters		-10μA~-100mA,(-10mV~-20V)	$U_{rel}=0.06\%$		
				10μA~100mA,(10mV~20V)	$U_{rel}=0.06\%$		
		PMU Set Current Measure Voltage Parameters		-10mV~-20V,(-10μA~-100mA)	$U_{rel}=0.06\%$		
				10mV~20V,(10μA~100mA)	$U_{rel}=0.06\%$		

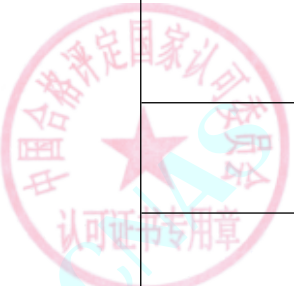


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Drive Unit Voltage		-10mV~-20V	$U_{rel}=0.06\%$		
		Setting Parameters		10mV~20V	$U_{rel}=0.06\%$		
		Comparing Unit Voltage		-10mV~-20V	$U_{rel}=0.07\%$		
		Measuring Parameters		10mV~20V	$U_{rel}=0.07\%$		
22	*Artificial Mains Networks	Impedance Modulus	Calibration Specification for Artificial Mains Networks JJF1705	5 Ω ~ 100 Ω, (9kHz~108MHz)	$U_{rel}=7\%$		
		Impedance Phase		-180° ~ 180°, (9kHz~108MHz)	$U=3.5^\circ$		
		rated voltage coefficient		(-10~0)dB, (9kHz~108MHz)	$U=0.4dB$		
23	*Measuring Receivers	Frequency	Calibration Specification for Measuring Receivers JJF1173	10MHz	$U_{rel}=3 \times 10^{-9}$		
		Frequency		100kHz~40GHz	$U_{rel}=3 \times 10^{-9}$		
		Level		-120dB~-100dB,(100kHz~20GHz)	$U=0.5dB$		
				-100dB~-70dB,(100kHz~20GHz)	$U=0.4dB$		
				-70dB~-40dB,(100kHz~20GHz)	$U=0.5dB$		
				-40dB~0dB,(100kHz~20GHz)	$U=0.4dB$		

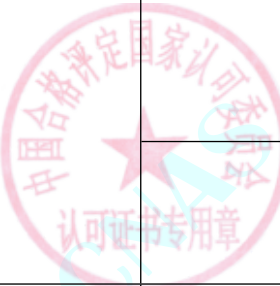


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
				-120dB~-100dB,(20GHz~26.5GHz)	U=0.7dB			
				-100dB~-70dB,(20GHz~26.5GHz)	U=0.4dB			
				-70dB~-40dB,(20GHz~26.5GHz)	U=0.7dB			
				-40dB~0dB,(20GHz~26.5GHz)	U=0.4dB			
				-110dB~-10dB,(26.5GHz~40GHz)	U=0.5dB			
				-10dB~0dB,(26.5GHz~40GHz)	U=0.4dB			
				AM	10%~90%,(Carrier frequency:100kHz~40GHz,Moduiation frequenc:400Hz、1kHz)			U _{rel} =1.3%
				FM	10kHz~400kHz,(Carrier frequency:100kHz~40GHz,Moduiation frequency:400Hz、1kHz)			U _{rel} =1.3%
PM	4rad~400rad,(Carrier frequency:100kHz~40GHz,Moduiation frequenc:400Hz、1kHz)	U _{rel} =1.3%						
24	*EMI Testing Receivers	Level	Calibration Specification for EMI Testing Receivers	(0~120)dB μV ,(9kHz~1GHz)	U=0.7dB			

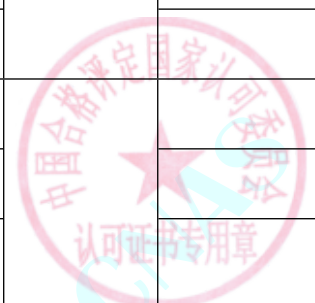


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Pulse amplitude	JJF1144	(0~60)dB μ V, (9kHz~1GHz)	$U=1.2$ dB		
		Repetitive frequency response		(0~60)dB μ V, (9kHz~1GHz)	$U=1.1$ dB		
		Frequency		9kHz~100MHz	$U_{rel}=2 \times 10^{-5}$		
				100MHz~20GHz	$U_{rel}=2 \times 10^{-7}$		
		Attenuation		(0~90)dB, (9kHz~20GHz)	$U=0.4$ dB		
		Indicate Linear		(0~60)dB, (9kHz~1GHz)	$U=0.2$ dB		
		Resolution Bandwidth		200Hz~1MHz	$U_{rel}=2\%$		
25	*Directional Coupler	Optical Return Loss	Calibration Specification for Directional Coupler and SWR Bridges JJF1680	(15~60)dB, (300kHz~8GHz)	$U=0.8$ dB		
		Insertion loss		(0~3)dB, (300kHz~8GHz)	$U=0.26$ dB		
		The coupling coefficient		(10~40)dB, (300kHz~8GHz)	$U=0.33$ dB		
		directional		(20~50)dB, (300kHz~8GHz)	$U=0.52$ dB		
26	*RF&Microwave Power Amplifier	power rating	C.S. for RF&Microwave Power Amplifiers JJF1678	(10~60)dBm, (10kHz~18GHz)	$U=0.6$ dB		
		Gain		(10~80)dB, (10kHz~18GHz)	$U=0.7$ dB		
		power output at 1dB compression		(10~60)dBm, (10kHz~18GHz)	$U=0.8$ dB		



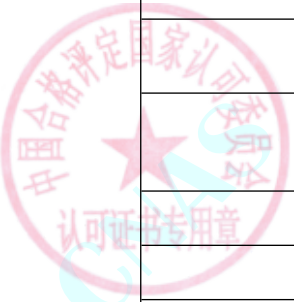
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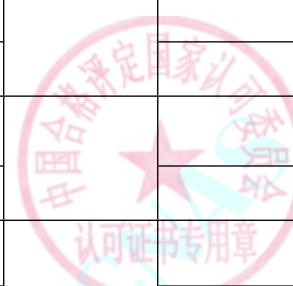
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		harmonic distortion		(-60~0)dBc, (10kHz~18GHz)	$U=0.7\text{dB}$		
27	*High Voltage Capacitance Bridge	Capacitance Ratio	V.R.of High Voltage Capacitance Bridges JJG563	0.1~1, (50Hz)	$U=0.0002$		
28	*High Voltage Dielectric Loss Tester	Voltage	V.R.of High Voltage Dielectric Loss Tester JJG1126	(1~10)kV, (50Hz)	$U_{\text{rel}}=1.3\%$		
		Capacitance		100pF~500nF, (50Hz)	$U_{\text{rel}}=0.2\%$		
		Dielectric Loss		0~0.002, (50Hz)	$U=0.00005$		
				0.005~0.02, (50Hz)	$U=0.0002$		
				0.05, (50Hz)	$U=0.0003$		
				0.1, (50Hz)	$U=0.0005$		
29	*Pulse Generator	Pulse amplitude	V.R.of Pulse Generator JJG490	10mV~4V, (0.01Hz~500MHz,50 Ω)	$U_{\text{rel}}=1.8\%$		
				4V~20V, (0.01Hz~500MHz,50 Ω)	$U_{\text{rel}}=3.2\%$		
				10mV~50V, (0.01Hz~500MHz,1M Ω)	$U_{\text{rel}}=1.8\%$		
				50V~200V,(0.01Hz~10MHz,1M Ω)	$U_{\text{rel}}=3\%$		
		Rise Time/Fall Time		1ns~10ns	$U_{\text{rel}}=6\%$		
		Frequency		0.1Hz~500MHz	$U_{\text{rel}}=0.005\%$		
		Pulse Width		1ns~20ns	$U_{\text{rel}}=0.6\%$		
				20ns~100ms	$U=2\text{ns}$		



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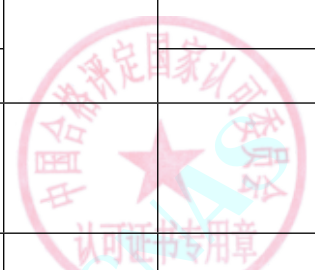
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Delay Time		100ms~1s	$U_{rel}=6 \times 10^{-8}$		
				100ns~1ms	$U=2ns$		
				1ms~10s	$U_{rel}=2 \times 10^{-8}$		
		DC Voltage		0.1V~20V	$U_{rel}=0.5\%$		
				Pulse Count	1~10000		
30	*Network Cable Analyzers	DC resistance	Calibration Specification for Network Cable Analyzers JJF1494	(1~1000) Ω	$U_{rel}=1.2\%$		
		Propagation delay		(80~500)ns	$U_{rel}=2\%$		
		insert loss		(0~40)dB,(1MHz~250MHz)	$U=0.4dB$		
		FEXT		(20~70) dB,(1MHz~250MHz)	$U=0.6dB$		
		FEXT		(10~60) dB,(1MHz~250MHz)	$U=0.6dB$		
		Return Loss		(8~26.5) dB,(1MHz~250MHz)	$U=0.8dB$		
		length		(20~100) m	$U_{rel}=0.4\%$		
31	*RF&Microve Power Sensors	calibration factor	Calibration Specification for RF & Microwave Power Sensors JJF1887	50%~150%,(1MHz~8GHz)	$U=2.2\%$		
		VSWR		1~2,(1MHz~8GHz)	$U=0.01$		
32	*RF and Microwave Power Meters	Reference source power	Calibration Specification for RF and Microwave Power Meters JJF1885	1mW,(50MHz)	$U_{rel}=0.76\%$		
		calibration factor		50%~150%,(1MHz~8GHz)	$U=2.2\%$		

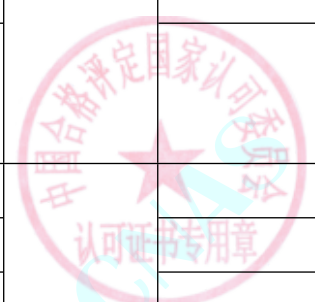


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Linearity		-20dBm~+10dBm,(50MHz)	$U=0.06\text{dB}$		
		VSWR		1~2,(1MHz~8GHz)	$U=0.01$		
33	*High Voltage Standard Capacitors	Capacitance	Verification Regulation of High Voltage Standard Capacitors JJG1075	1pF~10 μ F,(50Hz)	$U_{\text{rel}}=0.05\%$		
		Loss factor		0~0.1,(50Hz)	$U=0.00006\sim 0.0006$		
VII Time and frequency measuring instrument							
1	Stopwatches	Time Interval	V.R.of Stopwatches JJG 237	Mechanical stopwatches: 2s~3600s	$U=0.2\text{s}$		
				Electronic stopwatches: 2s~3600s	$U=0.03\text{s}$		
				Electronic stopwatches: Daily clock time difference rate: -9.99s~9.99s	$U=0.05\text{s}$		
2	*Universal Counters	Frequency	V.R.of Universal Counters JJG 349	0.1Hz~18GHz	$U_{\text{rel}}=1\times 10^{-7}$		
		Period		20ns~100s	$U_{\text{rel}}=2\times 10^{-7}$		
		Time interval		20ns~1ms	$U=2\text{ns}$		
				1ms~10000s	$U_{\text{rel}}=7\times 10^{-7}$		
3	Crystal Oscillators	Frequency	V.R.of Crystal Oscillator inside the Electrical Measurement Instrument JJG 180	1MHz、5MHz、10MHz	$U_{\text{rel}}=9\times 10^{-8}$		
4	*Telephone Accounter	time interval	V.R.of Single and Dispersion Controled Centrely Telephone Accounter JJG107	(1~1200)s	$U=0.01\text{s}$		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
5	Time Interval Generator	time interval	V.R.of Time Interval Generator JJG601	0.1ms~1s	$U=1\ \mu s$		
				1s~3600s	$U=1ms$		
				3600s~10000s	$U_{rel}=1\times 10^{-8}$		
		Frequency		1MHz、5MHz、10MHz	$U_{rel}=1\times 10^{-8}$		
6	*Frequency Meters	frequency	V.R.of Frequency Meters JJG603	10Hz~10kHz	$U_{rel}=0.01\%$		
7	*Electronic Time Relay	Time interval	Calibration Specification for Electronic time relay JJF1282	(0.1~10)s	$U=0.004s$		
				(10~100)s	$U=0.04s$		
				(100~9999)s	$U_{rel}=0.4\%$		
8	*Time Interval Meters	Time	V.R.of Time Interval Meters JJG238	20ns~1ms	$U=2ns$		
				1ms~10000s	$U_{rel}=3\times 10^{-7}$		
9	*Electronic Parking Meters	time	Verification Regulation of Electronic Parking Meters JJG1010	(10~86400)s	$U=3s$		
10	*Residual Current Operated Protective Device Operated Characteristic Tester	Break Time	Calibration Specification for Residual Current Operated Protective Device Operated Characteristic Tester JJF1283	(20~5000)ms	$U=2.6ms$		
		Residued Current		(5~500)mA	$U_{rel}=1\%$		
11	*Pulse Counters	Number of pulses	Calibration Specification for Pulse Counters JJF1686	1~10000	$U=1$		
				10000~100000	$U=2$		
				100000~1000000	$U=4$		

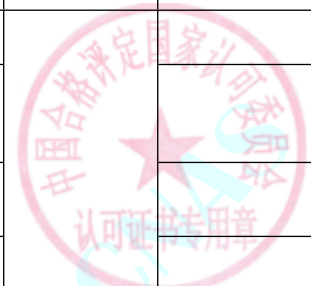


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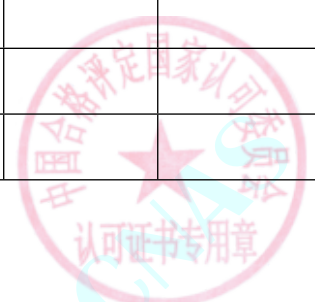
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
12	*Vibrating Wire Frequency Readout	Frequency	C.S. for Vibrating Wire Frequency Readouts JJF 1401	300Hz~6000Hz	$U=0.1\text{Hz}$		
13	*Time Interval Generator	Pulse Period	Calibration Specification for Time Interval Generators JJF 1902	20ns~1s	$U=2\text{ns}$		
				1s~1000s	$U_{\text{rel}}=2 \times 10^{-9}$		
				1000s~10000s	$U_{\text{rel}}=2 \times 10^{-7}$		
		Pulse Width		20ns~1s	$U=2\text{ns}$		
				1s~1000s	$U_{\text{rel}}=2 \times 10^{-9}$		
				1000s~10000s	$U_{\text{rel}}=2 \times 10^{-7}$		
		Time Interval		20ns~1ms	$U=2\text{ns}$		
				1ms~1000s	$U_{\text{rel}}=2 \times 10^{-8}$		
				1000s~10000s	$U_{\text{rel}}=2 \times 10^{-7}$		
				Rise Time	1ns~10ns		
Pulse Amplitude	0.1V~10V	$U_{\text{rel}}=1.5\%$					
14	*Verification Instruments of Parking Timers	Current time	Calibration Specification for Verification Instruments of Parking Timers JJF1900	0h0min0s~23h59min59s	$U=0.83\text{s}$		
		Second pulse timing deviation		-1.00s~+1.00s	$U=27\text{ns}$		
		Frequency		10kHz、100kHz、10MHz、20MHz	$U_{\text{rel}}=5 \times 10^{-9}$		
		Time		60s~90000s	$U_{\text{rel}}=1 \times 10^{-6}$		
VIII Optical measuring instrument							



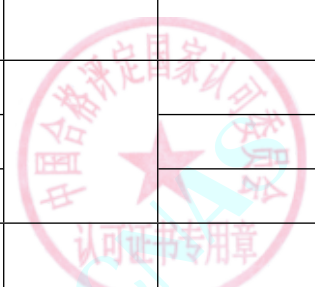
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1	Abbe Refractometer	Abbe	V.R.of Abbe Refractometer JYG625	$n_D(1.4 \sim 1.6)$	$U=4.4 \times 10^{-5}$		
2	*Focimete	Focimeters	V. R. of Focimeters JYG580	$-25m^{-1} \sim +25m^{-1}$	$U=0.03 m^{-1}$		
3	Trial Case Lense	Focimeters	V. R. of Trial Case Lenses JYG579	$-20m^{-1} \sim +20m^{-1}$	$U=0.03 m^{-1}$		
4	*Eye Refractometer	Focimeters	V. R. of Eye Refractometers JYG892	$-20m^{-1} \sim +20m^{-1}$	$U=0.08 m^{-1}$		
5	Illuminometer	Illuminance	V.R.of Illuminometer JYG245-2005 JYG245	$(20 \sim 3000)lx$	$U_{rel}=1.4\%$		
6	standard light source box	Illuminance	C.S.of standard light source box JYG(Spin)055	$(20 \sim 3000)lx$	$U_{rel}=5\%$		
		Temperature Colour		$(2300 \sim 6500)K$	$U=(66 \sim 1.6 \times 10^2) K$		
7	Whiteness Meter	Whiteness	V.R.for Whiteness Meter JYG512	$(60 \sim 90)$	$U=2.1$		
8	Luminance meter	brightness	V.R.of Luminance meter JYG211	$(50 \sim 500)cd/m^2$	$U_{rel}=3.4\%$		
9	Colorimeters and Colour Difference Meters	Chroma	V.R.of Colorimeters and Colour Difference Meters JYG595	Y:(0~100)	$U=2.1$		
				x:(color domain)	$U=0.0051$		
				y:color domain	$U=0.0051$		
10	Specular Gloss Meters	Gloss	V.R.of Specular Gloss Meters and Gloss Plates JYG696	$(0 \sim 120)GU$	1.2GU		
11	Gloss Plates	Gloss	V.R.of Specular Gloss Meters and Gloss Plates JYG696	$(0 \sim 120)GU$	1.6GU		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
12	Ultraviolet Irradiance Meter	Irradiance	V.R.of Specular Ultraviolet IrradianceMeter JJG879	UV-A1:(10~2000) μ W/cm ² , UV-365:(10~2000) μ W/cm ² , UV-310:(10~200) μ W/cm ² , UV-254:(10~200) μ W/cm ²	U _{rel} =24%		
13	Clarify Tester	Illuminance	C.S.for Clarify Tester JJF1287	(1000~4000)lx	U _{rel} =12%		
14	Haze Meter	Haze	C.S.for Haze Meter JJF1303	0~30	U=0.31		
		Transmittance		0.5~1.0	U=0.009		
15	*Stabilized Laser Sources for Optical Transmit	Power	V.R.of Stabilized Laser Sources for Optical Transmit JJG958	(-60~0)dBm	U _{rel} =2.6%		
		Wavelength		(700~1650)nm	U=0.005nm		
16	*Power	Power	V.R.of Optical Power Meter in Telecommuni-cation JJG965	(-60~0)dBm (850nm ±20nm, 1310nm ±20nm, 1550nm ±20nm)	U _{rel} =2.6%		
17	*Optical Attenuator for Telecommunicatio ns	Attenua tor	C.S.of Optical Attenuator for Telecommunications JJF1199	(0~70)dB (1310nm ±20nm, 1550nm ±20nm)	U=0.03dB		
18	*Optical Time Domain Reflectometer	length	V.R.of Optical Time Domain Reflectomete JJG959	(0~40)km (1310nm)	U=0.2m+1.5×10 ⁻⁵ L		
		Wastage		(0~20)dB (1310nm)	U=0.03 dB/dB		
		(0~20)dB (1550nm)		U=0.03 dB/dB			
19	Color analyzers	Color coordinate	C.S.for athord ray tube (CRT) color analyzers JJF1079	x: (0~1)y: (0~1)	U=0.002		
		brightness		Y: (10~300) cd/m ²	U _{rel} =2.5%		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
20	*Optical Return Loss Meters for Telecommunication	Return loss value	C.S.for Optical Return Loss Meters for Telecommunication JJF1325	0.2dB (1310nm,1550nm)	$U=0.3\text{dB}$		
				14.8dB (1310nm,1550nm)	$U=0.3\text{dB}$		
				31.1dB (1310nm,1550nm)	$U=1.2\text{dB}$		
				41.1dB (1310nm,1550nm)	$U=1.8\text{dB}$		
21	Laser Power Meters	Laser Power	0.1mW~200W Laser Power Meters JJG249	0.1mW~500mW(530nm~1600nm)	$U_{\text{rel}}=4\%$		
22	Diffuse Transmission Visual Densitometer	Density	V. R. of Diffuse Transmission Visual Densitometer JJG920	0~2.0	$U=0.020$		
				>2.0~4.0	$U=0.024$		
23	Black and White Step Tablet	Density	V.R.of Black and White Step Tablet JJG452-2006 JJG452	0.05~2.0	$U=0.012$		
				>2.0~4.0	$U=0.017$		
24	Reference Filter for Calibration spectrophotometer	peak wavelength	V.R.of Reference Filter for Calibration Spectrophotometer JJG1034	(200~700)nm	$U=0.3\text{nm}$		
25	*Fiber Optical Power Meters	Optical Power	V.R. of Fiber Optical Power Meters JJG813	(0~-60)dBm,(1310nm、1550nm)	$U=0.13\text{dB}$		
26	*Reflectometer	Reflectivity	Calibration Specification for Reflectometers JJF 1232	(50~100)%	$U=1.6\%$		
27	*Irradiance of Artificial Accelerated Weathering Apparatus of Xenon Arc Lamp	Irradiance	Calibration Specification for Irradiance of Artificial Accelerated Weathering Apparatus of Xenon Arc Lamp JJF 1525	(0.1~1500)W/m ²	$U_{\text{rel}}=12\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
IX Chemical measuring instrument							
1	*Open/Closed Cup Flash Point Testers	Temperature	C.S. for Open/Closed Cup Flash Point Testers JJF1384	Closed Cup: (70~110) °C	$U=3.4^{\circ}\text{C}$		
				Closed Cup:(111~180) °C	$U=4.7^{\circ}\text{C}$		
				Open Cup:(115~170) °C	$U=6.2^{\circ}\text{C}$		
				Open Cup: (171~230) °C	$U=7.6^{\circ}\text{C}$		
2	*Air Sampler	Flow	V.R. of Air Samplers JJG956	(100~1000) mL/min	$U_{\text{rel}}=1.3\%$		
				(>1000~6000) mL/min	$U_{\text{rel}}=0.8\%$		
3	*Dust Samplers	Flow	V.R. of Dust Samplers JJG520	(1~100) L/min	$U_{\text{rel}}=1.3\%$		
4	*Total Suspended Particulate Sampler	Flow	V.R. of Total Suspended Particulate Sampler JJG943	(20~120)L/min	$U_{\text{rel}}=1.5\%$		
				(800~1200)L/min	$U_{\text{rel}}=1.5\%$		
5	*The bomb calorimeter	Calorific Value	V.R. of The bomb calorimeter JJG672	(26430~26490) J/g	$U_{\text{rel}}=0.16\%$		
6	*Differential Scanning Calorimeters	Temperature	V.R. of the Differential Scanning Calorimeter JJG936	(150~450) °C	$U=1.0^{\circ}\text{C}$		
		Caloric		(20~110)J/g	$U=1.4\text{ J/g}$		
7	*pH Meter	Voltage	V.R. of Laboratory pH Meter JJG119	(-2000~2000)mV	$U=0.01\%\text{FS}$		
		Acidity		Potentiometer: 0~14	$U=0.01$		
				Instrument : 4~10	$U=0.01$		
		Temperature		(5~60) °C	$U=0.1^{\circ}\text{C}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
8	*Polarimeter	Optical Rotation	V.R. of Polarimeter and Saccharimeter JJG536	$-45^{\circ} \sim +45^{\circ}$	$U=0.005^{\circ}$		
9	*Electrolytic conductivity meter	Conductivity	V.R. of Electrolytic Conductivity Meter JJG376	Potentiometer: $(0.05 \sim 2 \times 10^5) \mu S/cm$	$U_{rel}=0.2\%$		
		Temperature		Mating: $(0.05 \sim 2 \times 10^5) \mu S/cm$ $(15 \sim 35)^{\circ}C$	$U_{rel}=0.4\%$ $U=0.2^{\circ}C$		
10	*Mercury Analyzers	Detection Limit	V.R. of Mercury Analyzers JJG548	Cold Atomic Absorption Analyzer of Mercury: $\leq 1.0ng$	$U=0.20ng$		
				Cold Atomic Fluorescence Analyzer of Mercury: $\leq 0.1ng$	$U=0.02ng$		
11	*Flame Photometer	Concentration	V.R. of Flame Photometer JJG630	K: $(0.004 \sim 0.2)mmol/L$	$U_{rel}=2.0\%$		
				Na: $(0.004 \sim 1)mmol/L$	$U_{rel}=2.0\%$		
12	*Ultraviolet, Visible, Near-Infrared Spectrophotometer	Wave length	V.R. of Ultraviolet, Visible, Near-Infrared Spectrophotometers JJG178	$(220 \sim 899)nm$	$U=0.4 nm$		
		Transmission		$(900 \sim 2600)nm$ $(5 \sim 40)\%$	$U=1.0 nm$ $U=0.4\%$		
13	*Atomic Absorption Spectrophotometers	Detection Limit	V.R. of Atomic Absorption Spectrophotometers JJG694	Flame Atomizer(Cu): $\leq 0.02 \mu g/mL$	$U_{rel}=10\%$		
				Graphite Furnace Atomizer(Cd): $\leq 4pg$	$U_{rel}=12\%$		
14	*Gas Chromatograph	Sensitivity	V.R. of Gas Chromatograph JJG700	TCD (Benzene: $\geq 800 mV \cdot mL/mg$)	$U_{rel}=8.0\%$		
		Detection Limit		FID (n-Hexadecane, methane) : $\leq 0.5ng/s$	$U_{rel}=12\%$		



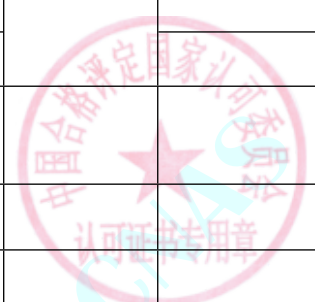
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				ECD (Lindane) : $\leq 5\text{pg/mL}$	$U_{\text{rel}}=12\%$		
				FPD: (S) $\leq 0.5\text{ng/s}$ /(P) $\leq 0.1\text{ng/s}$	$U_{\text{rel}}=12\%$		
				NPD: (N) $\leq 5\text{pg/s}$ /(P) $\leq 10\text{pg/s}$	$U_{\text{rel}}=14\%$		
15	*Liquid Chromatographs	Detection Limit	V.R. of Liquid Chromatographs JJG705	UV,VWD:(Napthalene): $\leq 5 \times 10^{-8} \text{g/mL}$	$U_{\text{rel}}=10\%$		
				FLD:(Napthalene): $\leq 5 \times 10^{-9} \text{g/mL}$	$U_{\text{rel}}=10\%$		
				RID:(Cholesterol): $\leq 5 \times 10^{-6} \text{g/mL}$	$U_{\text{rel}}=12\%$		
				ELSD:(Cholesterol): $\leq 5 \times 10^{-6} \text{g/mL}$	$U_{\text{rel}}=12\%$		
16	*Melting-Point Measurement Instruments	Melting Point	V.R. of Melting-Point Measurement Instruments JJG 701	(50~300)°C	$U=0.3 \text{ } ^\circ\text{C}$		
17	*Extrusion Plastometer	Melt Flow Rate	V.R. for Extrusion Plastometer JJG878	(1~10)g/10min	$U=(0.18\sim 0.37)\text{g}/10\text{min}$		
18	*Alarmer Detectors of Combustible Gas	Concentration	V.R. of Alarmer Detectors of Combustible Gas JJG693	(1~100)%LEL	$U_{\text{rel}}=2.0\%$		
		Time		(1~60)s	$U=1.0\text{s}$		
19	*Atomic Fluoreacence Spectrometers	Detection Limit	V.R. of Atomic Fluorescence Spectrometers JJG939	As: $\leq 0.4 \text{ ng}$; Sb: $\leq 0.4 \text{ ng}$	$U_{\text{rel}}=10 \%$		
20	*Rotational Viscometers	Viscosity	V.R. of Rotational Viscometer JJG1002	(1~1.2×10 ⁵)mPa•s	$U_{\text{rel}}=1.2\%$		
21	Flow Cups Viscosimeter	Viscosity	V.R. of Flow Cups Viscometers JJG743	(1~1100)mm ² /s	$U_{\text{rel}}=1.0\%$		



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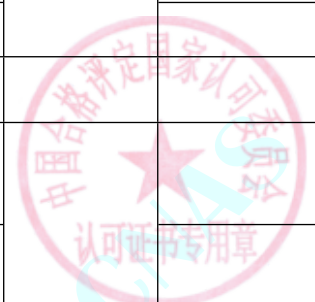
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
22	*Ion Chromatographs	Detection Limit	V.R. of Ion Chromatographs JIG823	Conductivity detector $\leq 0.02 \mu\text{g/mL}$	$U_{\text{rel}}=12\%$		
				UV visible detector $\leq 0.02 \mu\text{g/mL}$	$U_{\text{rel}}=12\%$		
				Electrochemical detector $\leq 0.02 \mu\text{g/mL}$	$U_{\text{rel}}=13\%$		
23	*Ionometers	Voltage	V.R. of Laboratory Ion meters JIG757	(-2000~2000)mV	$U=0.01\%FS$		
		pX		Electrometer pX: (0~14)	$U=0.001$		
		Temperature		instrument pX: (2~4)	$U=0.002$		
				(5~45) $^{\circ}C$	$U=0.1^{\circ}C$		
24	*Inductively Coupled Plasma-optical Emission Spectrometer	Detection Limit	V.R. of Emission Spectrometer JIG768	Zn213.856nm: $\leq 0.003\text{mg/L}$ /Ni231.604nm : $\leq 0.01\text{mg/L}$ /Mn257.610nm : $\leq 0.002\text{mg/L}$ /Cr267.716nm : $\leq 0.007\text{mg/L}$ /Cu324.754nm : $\leq 0.007\text{mg/L}$ /Ba455.403nm : $\leq 0.001\text{mg/L}$	$U_{\text{rel}}=8.0\%$		
		Wave length		(190~800)nm	$U=0.003\text{ nm}$		
25	Routine Capillary Viscometers	Viscosity	V.R. of Routine Capillary Viscometers JIG155	(1~1.2 $\times 10^5$)mm ² /s	$U_{\text{rel}}=0.8\%$		
26	*Chemical Oxygen Demand (COD)	Concentration	V.R. of Chemical Oxygen Demand (COD) Meters	A:(10~1000)mg/L	$U_{\text{rel}}=2.4\%$		



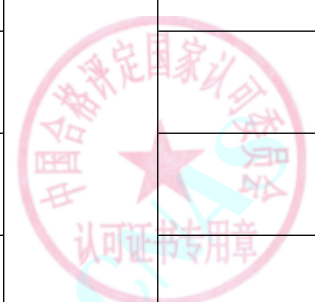
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Meters		JJG975	B:(10~1000)mg/L	U=1.0mg/L		
		Temperature		(100~200)°C	U=0.6°C		
27	*Total Organic Carbon Analyzer	Concentration	V.R. of Total Organic Carbon Analyzer JJG 821	(0.05~1000)mg/L	U _{rel} =1.4%		
28	*Electrochemical Oxygen Meter	Concentration	V.R. of Electrochemical Oxygen Meter JJG365	(0.01~100)%mol/mol	U _{rel} =1.1%		
		Time		(1~60)s	U=1.0s		
29	*Carbon Monoxide Detectors	Concentration	V.R. of Carbon Monoxide Detectors JJG915	(0.1~2000) μ mol/mol	U _{rel} =2.0 %		
		Time		(1~60)s	U=1.0s		
30	Engler Viscosimeter	Time	V.R. of Engler Viscosimeter JJG742	(50~52)s	U=0.50 s		
31	*Determinators for Total Sulfur in Coal	Concentration of Sulfur	V.R. of Determinators for Total Sulfur in Coal JJG1006	S: 0.4%~5.0%	U=0.06%~0.14%		
		Temperature		(1150~1350)°C	U=1.6°C		
32	*Automatic Potentiometric Titrators	Voltage	V.R. of Automatic Potentiometric Titrators JJG 814	(-2000~2000)mV	U=0.20mV		
		Concentration		0.1mol · L ⁻¹	U _{rel} =0.34%		
		capacity		(1~100)mL	U=(0.003~0.030)mL		
33	*Oil Content in Water Analyzer	Concentration	V.R. of Oil Content in Water Analyzer JJG950	(5~1000)mg/L	U _{rel} =3.5 %		
34	*Carbon-sulfur Analyzers	Concentration	V.R. for Carbon-sulfur Analyzers JJG395	IR Carbon-sulfur Analyzers: C: 0.005%~0.010%	U=0.0005%		
				IR Carbon-sulfur Analyzers: C: >0.010%~0.100%	U=0.002%		



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			IR Carbon-sulfur Analyzers: C :	>0.100%~1.000%	U=0.004%		
			IR Carbon-sulfur Analyzers: C:1.00%~4.00%		U=0.02%		
			IR Carbon-sulfur Analyzers: S:0.003%~0.010%		U=0.0004%		
			IR Carbon-sulfur Analyzers: S: >0.010%~0.100%		U=0.002%		
			IR Carbon-sulfur Analyzers: S: >0.100%~0.200%		U=0.003%		
			High Speed Automatic Carbon Sulfur Analyzers: C: 0.030%~0.100%		U=0.003%		
			High Speed Automatic Carbon Sulfur Analyzers: C: >0.100%~0.500%		U=0.005%		
			High Speed Automatic Carbon Sulfur Analyzers: C:>0.500%~1.000%		U=0.007%		
			High Speed Automatic Carbon Sulfur Analyzers: C: >1.00%~4.00%		U=0.02%		
			High Speed Automatic Carbon Sulfur Analyzers: S:0.003%~0.010%		U=0.001%		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				High Speed Automatic Carbon Sulfur Analyzers: S:0.010%~0.050%	U=0.002%		
				High Speed Automatic Carbon Sulfur Analyzers: S: >0.010%~0.050%	U=0.003%		
				High Speed Automatic Carbon Sulfur Analyzers: S:>0.100%~0.200%	U=0.005%		
35	*Fluorescence Spectrophotometer	Detection Limit	V.R. of Fluorescence Spectrophotometer JJG537	A 类: $\leq 5 \times 10^{-10}$ g/ml B: $\leq 1 \times 10^{-8}$ g/ml	$U_{rel}=11\%$ $U_{rel}=10\%$		
36	*Fourier Transform Infrared Spectrometers	Wave Number	C.S. for Fourier Transform Infrared Spectrometers JJF1319	(4000~400)cm ⁻¹	U=0.09cm ⁻¹		
37	*Sulfur Hydrogen Gas Detectors	Concentration Time	V.R. of Sulfur Hydrogen Gas Detectors JJG695	(1~200) × 10 ⁻⁶ mol/mol (1~60)s	$U_{rel}=2.3\%$ U=1.0s		
38	*Sulfur Dioxide Gas Detectors	Concentration Time	V.R. of Sulfur Dioxide Gas Detectors JJG551	(0.1~1000) × 10 ⁻⁶ mol/mol (1~60)s	$U_{rel}=2.0\%$ U=1.0s		
39	*Carbon Monoxide and Carbon Dioxide Infrared Gas Analyzer	Concentration Time	V.R. of Carbon Monoxide and Carbon Dioxide Infrared Gas Analyzer JJG635	CO: (0.1~500) × 10 ⁻⁶ mol/mol CO ₂ : (5~100000) × 10 ⁻⁶ mol/mol (1~90)s	$U_{rel}=2.0\%$ $U_{rel}=2.0\%$ U=1.0s		
40	*Flue Gas Analyzers	Concentration	V.R. of Flue Gas Analyzers JJG968	SO ₂ : (10~1000) × 10 ⁻⁶ mol/mol	$U_{rel}=2.0\%$		



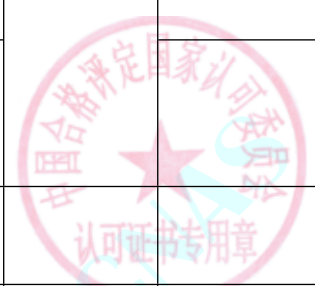
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				NO: (10~3000)×10 ⁻⁶ mol/mol	U _{rel} =1.1%		
				CO: (0.1~10000)×10 ⁻⁶ mol/mol	U _{rel} =1.0%		
				O ₂ : (0.01~25)%	U _{rel} =1.6%		
		Time		(1~90)s	U=1.0s		
41	*Ammonia-Nitrogen Automatic Analyzers	Concentration	V.R. of Ammonia-Nitrogen Automatic Analyzers JJG631	(0.1~100)mg/L	U _{rel} =2.8%		
42	*Gas Chromatography-Mass Spectrometries	Signal Noise Ratio	C.S. for Gas Chromatography-Mass Spectrometries JJF1164	Ion Trap、Unipolar Quadrupole、Triple Quadrupole: ≥10:1	U _{rel} =15%		
		Mass		Time of Flight、Electyostatic Field Orbit Hydrazin: ≥50:1	U _{rel} =15%		
43	*ICP Mass Spectrometers	Detection Limit	C.S. for Quadrupole Inductively Coupled Plasma Mass Spectrometers JJF1159	Be≤30ng/L、In≤10ng/L、Bi≤10ng/L	U _{rel} =10%		
		Sensitivity		Be≥5 Mcps/(mg·L ⁻¹)、In≥30 Mcps/(mg·L ⁻¹)、Bi≥20 Mcps/(mg·L ⁻¹)	U _{rel} =8%		
44	*Static Light Scattering Particle Size Analyzers	Partical Diameter	C.S. for Static Light Scattering Particle Size Analyzers JJF1211	(1~120) μ m	U _{rel} =3%		
45	*Liquid-borne Particle Counters	Partical Number	V.R. of Liquid-borne Particle Counters JJG1061	(10~2500)grain/mL	U _{rel} =4%		



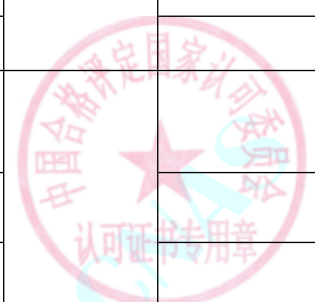
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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
46	*Instrument for KF Coulometry Titration	Content of Water	V.R. of Instrument for KF Coulometry Titration JYG1044	(10~5000) μg	$U_{rel}=3\%$		
47	Hand Saccharimeter(Content-meter) and Hand Refractometer	Sugar content	V.R. of Hand Saccharimeter (Content-meter) and Hand Refractometer JYG820	(0.1~80)%	$U=0.2\%$		
		Refractive index		1.3330~1.5200	$U=0.0003$		
48	Wood Moisture Content Measuring Meters	Moisture Content	V.R. of Wood Moisture Content Measuring Meters JYG986	(6~28)%	$U=0.6\%$		
49	Airborne Particle Counter	Particle Concentration	C.S. for Airborne Particle Counter JJF1190	(4500~5500)Unit/28.3L	$U=10\%FS$		
				(45000~55000)Unit/28.3L	$U=15\%FS$		
		Particle size		(0.1~10) μm	$U_{rel}=10\%$		
		Flow		(0.1~50)L/min	$U_{rel}=1.5\%$		
		Time		(1~3600)s	$U=0.3s$		
50	*Volatile Organic Compounds Photo Ionization Detector	Concentration	C.S. for Volatile Organic Compounds Photo Ionization Detectors JJF1172	(20~2000) μmol/mol	$U_{rel}=3.3\%$		
		Time		(1~20)s	$U=1.0s$		
51	*Biochemical Oxygen Demand (BOD ₅) Meter	Concentration	V.R. of Biochemical Oxygen Demand (BOD ₅) Meter JYG824	Glucoseamino Acid Standard Solution Method(1~1000)mg/L	$U_{rel}=6\%$		
				Sodium Sulfite Method(1~1000)mg/L	$U_{rel}=2.3\%$		
				Standard Manometer Method(1~1000)mg/L	$U_{rel}=0.4\%$		

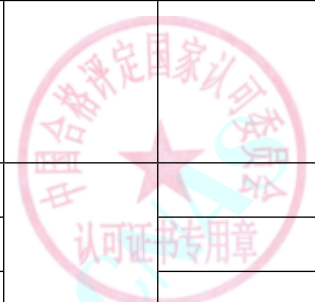


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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
52	Breath Alcohol Analyzers	Concentration	V.R. of Breath Alcohol Analyzers JJG657	Direct use of primary reference substances: (0.01~2.0)mg/L	$U_{rel}=1.5\%$		
				Source method: (0.01~2.0)mg/L	$U_{rel}=3.3\%$		
53	*Paramagnetic Oxygen Analyzer	Concentration	V.R. of Paramagnetic Oxygen Analyzers JJG662	(0.01~30)%	$U_{rel}=1.6\%$		
		Time		(1~50)s	$U=1.0s$		
54	*Micro Oxygen Analyzers	Concentration	V.R. of Micro Oxygen Analyzers JJG945	(0.1~1000) μ mol/mol	$U_{rel}=2\%$		
		Time		(1~60)s	$U=1.0s$		
55	*Kinematic Viscosity Tester	Viscosity	C.S. for Kinematic Viscosity Tester JJF1274	(1~30000)mm ² /s	$U_{rel}=1.0\%$		
		Temperature		Temperature Uniformity and Fluctuation: (20~100)°C	$U=0.004^{\circ}C$		
56	*Liquid Chromatography-Mass Spectrometers	Signal Noise Ratio	C.S. for Liquid Chromatography-Mass Spectrometers JJF1317	QQQ: $\geq 30:1$ /Single quadrupole、ion trap : $\geq 10:1$	$U_{rel}=11\%$		
57	*Full(half)-automation Nitrogen Determination Instrument	Content	C.S. for Elemental Analyzers JJF1321	N: (10~50)%	$U_{rel}=0.8\%$		
58	*O、N、H Analyzer in Metal	Content	C.S. for Elemental Analyzers JJF1321	N: (30~1000) μ g/g	$U_{rel}=10\%$		
				H: (1.1~30) μ g/g	$U_{rel}=11\%$		
				O: (5~200) μ g/g	$U_{rel}=11\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
59	*On-line Automatic Monitors of Permanganate Index	Concentration	C. S. for On-line Automatic Monitors of Permanganate Index JJF 1875	(0.1~5)mg/L	$U_{rel}=5.0\%$		
				(>5~20)mg/L	$U_{rel}=4.2\%$		
60	*Water Quality On-line Analyzers of Total Phosphorus and Total Nitrogen	Concentration	V.R. of Water Quality On-line Analyzers of Total Phosphorus and Total Nitrogen JJG1094	TP: (0.1~10)mg/L	$U_{rel}=3\%$		
				TN: (0.1~50)mg/L	$U_{rel}=3\%$		
61	*On-line Total Organic Carbon Analyzer	Concentration	V.R. of On-line Total Organic Carbon Analyzer JJG(su) 118	(0.05~1000)mg/L	$U_{rel}=3\%$		
62	*Zirconia Oxygen Analyzers	Concentration	V.R. of Zirconia Oxygen Analyzers JJG535	(0.01~100)%	$U_{rel}=2\%$		
		Time		(1~20)s	$U=1.0s$		
63	*Turbidimeters	Turbidity	V.R. of Turbidimeters JJG880	(0.1~400)NTU	$U_{rel}=3.6\%$		
64	*Ammonia Gas Detectors	Concentration	V.R. of Ammonia Gas Detectors JJG1105	$(0.1\sim 200)\times 10^{-6}\text{mol/mol}$	$U_{rel}=3\%$		
		Time		(1~180)s	$U=1.0s$		
65	Ozone Gas Analyzers	Concentration	V.R. of Ozone Gas Analyzers JJG1077	$(0.1\sim 1)\times 10^{-6}\text{mol/mol}$	$U_{rel}=3\%$		
		Time		$(>1\sim 35)\times 10^{-6}\text{mol/mol}$	$U_{rel}=4\%$		
66	Dissolved Oxygen Meters	Concentration	V.R. of Dissolved Oxygen Meters JJG291	(5~12)mg/L	$U=0.2\text{mg/L}$		
		Temperature		(10~30)°C	$U=0.1\text{°C}$		



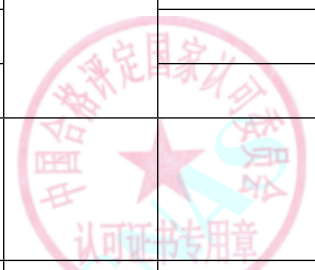
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
67	*Energy Dispersive X-ray Fluorescence Spectrometers	Detection Limit	C.S. for Energy Dispersive X-Ray Fluorescence Spectrometers JJF(min)1047	Handle: Cr: $\leq 40\text{mg/kg}$ table model: Cr: $\leq 30\text{mg/kg}$	$U=2\text{mg/kg}$		
68	*Optical Emission Spectrometer	Detection Limit	V.R. of Emission Spectrometer JJG768	C: $\leq 0.005\%$	$U=0.001\%$		
				Si: $\leq 0.005\%$	$U=0.0008\%$		
				Mn: $\leq 0.003\%$	$U=0.0007\%$		
				Cr: $\leq 0.003\%$	$U=0.0007\%$		
				Ni: $\leq 0.005\%$	$U=0.0008\%$		
V: $\leq 0.001\%$	$U=0.0005\%$						
69	*Polymerase Chain Reaction Analyzers	Temperature	C.S. for Polymerase Chain Reaction Analyzers JJF1527	$(4\sim 100)^\circ\text{C}$	$U=0.2^\circ\text{C}$		
		Sample concentration		$(1\times 10^1\sim 1.1\times 10^7)\text{Copy}/\mu\text{L}$	$U_{\text{rel}}=10\%$		
70	*On-line pH Meters	Acidity	C.S. for On-line pH Meters JJF1547	Potentiometer: $0\sim 14$	$U=0.01$		
		Voltage		Instrument: $4\sim 10$	$U=0.02$		
				$(-2000\sim 2000)\text{mV}$	$U=0.01\%\text{FS}$		
		Temperature		$(5\sim 60)^\circ\text{C}$	$U=0.1^\circ\text{C}$		
71	*Water Quality On-line Analyzers of Heavy Metals	Concentration	C.S. for Water Quality On-line Analyzers of Heavy Metals JJF1565	Pb、Cd、Hg、As、Cr ⁶⁺ 、Cr、Cu、Zn、Ni、Fe、Mn: $(0.01\sim 1.0)\text{mg/L}$	$U_{\text{rel}}=3\%$		
72	*Osmometer	Osmolarity	V.R. of Osmometers JJG1089	$(100\sim 400)\text{mOsmol}\cdot\text{kg}^{-1}$	$U=1.9\text{mOsmol}\cdot\text{kg}^{-1}$		

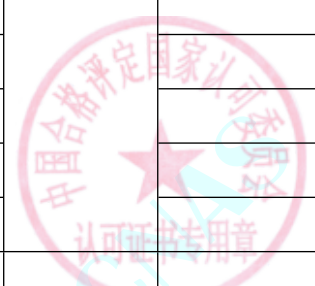


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>400~700)mOsmol • kg ⁻¹	U _{rel} =0.6%		
73	*Flow Analyzers with Spectrophotography	Detection Limit	C.S. for Flow Analyzers with Spectrophotography JJF1568	CN-, VHB: ≤ 0.002mg/L	U _{rel} =48%		
				Cr ⁶⁺ : ≤ 0.004mg/L	U _{rel} =48%		
				Sulphide: ≤ 0.005mg/L	U _{rel} =48%		
				TP: ≤ 0.01mg/L	U _{rel} =48%		
				TN、NH ₄ ⁺ -N: ≤ 0.04mg/L	U _{rel} =48%		
				Anionic Detergent: ≤ 0.05mg/L	U _{rel} =48%		
74	*Industrial Analyzers	Weight	V.R. of Industrial Analyzers JJG1140	1g	U=0.3mg		
		Temperature		107°C	U=1.4°C		
				815°C	U=2.8°C		
				900°C	U=3.0°C		
				Ash Content	(8~15)%	U=0.13%	
		(>15~30)%			U=0.16%		
		(>30~45)%			U=0.24%		
		Volatile			(8~20)%	U=0.21%	
(>20~40)%	U=0.35%						
75	Formaldehyde Gas Analyzers	Concentration	V.R. of Formaldehyde Gas Analyzers JJG1022	(0.08~1.3) μ mol/mol	U _{rel} =3%		
		Time		(1~180)s	U=1.0s		



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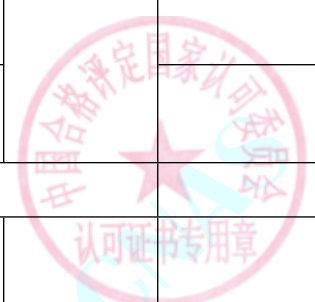
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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
76	*Thermogravimetric Analyzers	Curie Temperature Point	V.R. for Thermogravimetric Analyzers JJG1135	Curie Point of Alumel Alloy: 153.8°C	$U=1.1^{\circ}\text{C}$		
				Ni: 358.6°C	$U=1.2^{\circ}\text{C}$		
				Fe: 772.0°C	$U=2.2^{\circ}\text{C}$		
		Melting Point		In: 156.52°C	$U=0.40^{\circ}\text{C}$		
				Sn: 231.81°C	$U=0.50^{\circ}\text{C}$		
				Pb: 327.77°C	$U=0.70^{\circ}\text{C}$		
Zn: 420.67°C	$U=0.90^{\circ}\text{C}$						
77	*On-line Automatic Determination of Chemical Oxygen Demand(COD)	concentration	V. R. of On-line Automatic Determination of Chemical Oxygen Demand JJG 1012	(16~1000)mg/L	$U_{\text{rel}}=2.0\%$		
78	*Alarmer Detectors of Benzene	concentration	C. S. for Alarmer Detectors of Benzene JJF 1674	(0.1~10) $\mu\text{mol/mol}$	$U=0.21\mu\text{mol/mol}$		
		Time		(>10~100) $\mu\text{mol/mol}$	$U_{\text{rel}}=3.3\%$		
79	*Antibiotics Potency Analyzer	Diameter	C.S. for Antibiotics Potency Analyzers JJF 1614	(15~22)mm	$U=0.02\text{mm}$		
		Absorbance		0.3~1.0	$U_{\text{rel}}=0.7\%$		
		Temperature		(20~40) $^{\circ}\text{C}$	$U=0.3^{\circ}\text{C}$		
80	*Chlorine Alarm Detector	Concentration	C.S. for Chlorine Alarm Detectors JJF1433	(0.1~10) $\mu\text{mol/mol}$	$U_{\text{rel}}=3.3\%$		
		Time		(1~60)s	$U=1.0\text{s}$		
81	*Alarmer Detector	Concentration	C.S. for the Alarmer Detector	(1~1000) $\mu\text{mol/mol}$	$U_{\text{rel}}=1.7\%$		

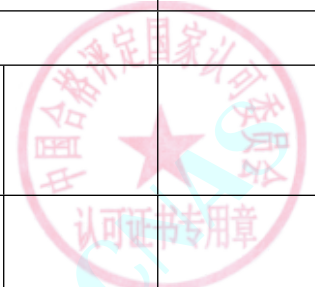


No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	of Sulfur Hexafluoride	Time	of Sulfur Hexafluoride JJF 1263	(1~30)s	$U=1.0s$		
82	*Residual Chlorine Meter	Concentration	C.S. for Residual Chlorine Meters JJF 1609	total residual chlorine: (0.05~10)mg/L	$U_{rel}=1.3%$		
				free residual chlorine: (0.05~10)mg/L	$U_{rel}=2.3%$		
83	*Pour Point and Cloud Point Testers of Petroleum Product	Temperature	C. S. for Pour Point and Cloud Point Testers of Petroleum Products JJF 1869	Pour Point: (-30~-2.5) °C	$U=4.4^{\circ}C$		
				Cloud Point: (-21~0.5)°C	$U=2.2^{\circ}C$		
84	*Nonmethane Hydrocarbons Detectors	Nonmethane total hydrocarbon concentration	Calibration Specification for Nonmethane Hydrocarbons Detectors JJF (Su) 225	Methane channel: (10~500) μ mol/mol	$U_{rel}=2.2%$		
				Total hydrocarbon channel: (10~500) μ mol/mol	$U_{rel}=2.3%$		
85	Dust Concentration Measuring Instruments	Dust Concentration	Dust Concentration Measuring Instruments JJG 846	(0.1~50) mg/m ³	$U_{rel}=6%$		
86	*On-line Monitoring Instrument of Volatile Organic Compounds in Stationary Sources	Total hydrocarbons concentration	Calibration Specification for On-line Monitoring Instrument of Volatile Organic Compounds in Stationary Sources JJF(Su) 230	(10~500) μ mol/mol	$U_{rel}=1.6%$ (As methane)		
		Benzene compound concentration		(1~50) μ mol/mol	$U_{rel}=2.1%$ (Benzene compound)		
X Ionizing radiation measuring instrument							
1	*Medical diagnostic X- ray radiation source	Air kerma rate	V.R.of Medical diagnostic X- ray radiation source JJG744	0.1mGy/min~1Gy/min	$U_{rel}=6%$		



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2	*Medical diagnostical X-ray radiation source for Spiral computer tomography(CT)	CTDI	V.R.of Medical diagnostical X-ray radiation source for Spiral computer tomography(CT) JJG961	0.1mGy~100mGy	$U_{rel}=6\%$		
3	*Flow petectors	Air kerma rate	V.R.of X-ray Flaw Detectors JJG40	0.1mGy/min~10Gy/min	$U_{rel}=5\%$		
4	*X-ray RadiationSource for Medical Digital Radiography System	Air kerma	V.R. of X-ray RadiationSource for Medical Digital Radiography System JJG1078	0.1mGy~1Gy	$U_{rel}=6\%$		
5	*X-ray Security Inspection Equipment	Air kerma rate	C.S.for X-ray Security Inspection Equipment JJF1275	(0.001~1)mGy·h ⁻¹	$U_{rel}=10\%$		
6	*X、gamma-ray densitometry for Bone Mineral Density	Air kerma rate	V.R. of X、gamma-ray densitometry for Bone Mineral Density JJG1050	(0.001~1)mGy·h ⁻¹	$U_{rel}=10\%$		
XI、special measuring instruments							
(1) Special measuring instrument for papermaking and paper							
1	*Puncture Resistance Tester for Board	Energy	Verification Regulation Of Puncture Resistance Tester for Board JJG(Light Industry)56	(0.1~48)J	$U_{rel}=(0.5~0.4)\%$		
2	*Compression Strength Tester for Corrugated Box	Force	V.R.of Compression Strength Tester for Corrugated Box JJG(Light industry)115	(0.5~50)kN	$U_{rel}=0.17\%~0.12\%$		



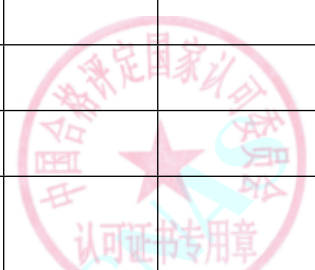
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
3	*Compression Strength Tester for Board	Force	V.R.of Compression Strength Tester for Board JJG(Light industry)49	(60~3000)N	$U_{rel}=0.18\% \sim 0.12\%$		
4	*Bursting Strength Testers for Paper(Board)	Pressure	Calibration Specification for Bursting Strength Testers for Paper(Board) JJF 1811	(100~6000)kPa	$U=5kPa$		
5	*Paper and Bord-Tester of Thickness	length	Calibration Specification for Paper and Bord-Tester of Thickness JJF(Ji)78	(0~25)mm	$U=0.4 \mu m$		
		Parallelism		(0~0.1)mm	$U=0.2 \mu m$		
Medical measuring instruments							
1	*Blood cell analyzer	Concentration	V.R.of Blood cell analyzer JJG714	RBC:(2~6)×10 ¹² /L	$U_{rel}=2.6\%$		
				WBC:(2~15)×10 ⁹ /L	$U_{rel}=3.1\%$		
				HDB:(71~166)g/L	$U_{rel}=2.1\%$		
				PLT:(106~503)×10 ⁹ /L	$U_{rel}=3.1\%$		
2	*Pulmonary Function Measuring Instrument	vital capacity	C.S.for the Pulmonary Function Measuring Instrument JJF1213	(0.1~10)L	$U_{rel}=0.7\%$		
		Peak Expiratory Flow		(2~14)L/s	$U_{rel}=3\%$		
3	*Urine Analyzers	GLU Concentration	C.S.of UrineAnalyzers JJF1129	(0.1~10)mmol/L	$U=2.4 \text{ mmol/L}$		
4	*ELISA Analytical Instruments	Absorbance	V. R. of ELISA Analytical Instruments JJG861	0.1~1.5	$U=0.006$		
5	*NIBP	Static Pressure	V.R.of Non-invasive Automated Sphygmomanometers JJG692	(0~40)kPa	$U=0.2kPa$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
6	*Semiautomatic clinical chemistry analyzers	Absorbency	V.R. of Semiautomatic Clinical Chemistry Analyzer JJG464	0.5~1.0	$U=0.006$		
7	*Cardiac Defibrillators	Delivered Energy	C.S.for Cardiac Defibrillators JJF1149	(2~360)J	$U_{rel}=5\%$		
8	*Electrocardiograph	Scaled Voltage	V.R.of Electrocardiograph JJG543	(0.1~1)mV	$U=0.02mV$		
9	*sphygmomanometer	Pressure	V.R.of the Sphygmomanometer JJG270	(0~40) kPa	$U=0.2kPa$		
10	*Hemodialysis Equipment	Conductivity	C.S.for Hemodialysis Equipment JJF1353	(5~20)mS/cm	$U=0.12mS/cm$		
		Temperature		(20~40)°C	$U=0.12^{\circ}C$		
		Venous(arterial)Pressure		(-40~60)kPa	$U=0.4kPa$		
		Flow		(200~2000)mL/min	$U_{rel}=2.1\%$		
		acidity		0~14	$U=0.04$		
11	*Electrosurgical Generator	Power	C.S.for Electrosurgical Generator JJF1217	(51~500)W	$U_{rel}=6\%$		
12	*Digital Electroencephalogram Mapping	Voltage	V.R.of Digital Electroencephalographs JJG954	(5~2000) μV	$U_{rel}=1.4\%$		
		Time Interval		(0.05~5)s	$U_{rel}=1.9\%$		
13	*Digital Electrocardiographs	Voltage	V.R.of Digital Electrocardiographs JJG1041	(0.5~5)mV	$U_{rel}=2\%$		
14	*Ambulatory Electrocardiograph	Calibration Voltage	V.R.for Ambulatory Electrocardiograph JJG1042	(0~1)mV	$U=0.02mV$		
15	*Electro cardiac monitor	Scaled Voltage	V.R.of Electro cardiac monitors JJG760	(0.5~2)mV	$U_{rel}=2\%(0.5mV)$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
16	*Electroencephalographs	Scaled Voltage	V.R.of Electroencephalographs JJG1043	(2~1000) μ V	$U_{rel}=3\%$		
17	*Pulse Oximeters	SpO2	C.S.for Pulse Oximeters JJF(Beijing)31	70%~100%	$U=4.6\%$		
18	*Medical Magnetic Resonance Imaging(MRI)	Magnetic field Intensity	V.R.of Medical Magnetic Resonance Imaging(MRI) JJG(su)71	(0.1~2)T	$U_{rel}=3\%$		
19	*Ventilators	Tidal Volume	C.S.for Lung Ventilators JJF1234	(0.02~1)L	$U_{rel}=2.5\%$		
		peep		(0.1~15)kPa	$U_{rel}=1.6\%$		
		Frequency		(10~40)min ⁻¹	$U_{rel}=4\%$		
		Oxygen concentration		21%~100%	$U=2.4\%$		
		air peak pressure		(1.0~3.0)kPa	$U=0.06$ kPa		
20	*Baby Incubator	Temperature Departure	C.S.for Baby Incubator JJF1260	(20~40)°C	$U=0.25$ °C		
21	*blood oxygen saturation Simulator	blood oxygen saturation	Calibration Specification for SpO2 Simulator JJF 1542	35%~100%	$U=1\%$		
		pulse rate		(30~300) min ⁻¹	$U=2$ min ⁻¹		
22	*Impression tonometer	Displacement	V.R.of Impression tonometer JJG574	(0.01~<0.25)mm	$U=0.01$ mm		
				(0.25~1.00)mm	$U=0.02$ mm		
23	*Buoy type oxygen inhaler	Pressure	V.R.of Buoy type oxygen inhaler JJG913	(0.2~16)MPa	$U=0.2$ MPa		
24	*Syringe Pumps and Infusion Pumps	flow	C.S.for Syringe Pumps and Infusion Pumps JJF 1259	10ml/h~300ml/h	$U_{rel}=1.2\%$		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
25	*Ultrasonic Source for Medical Ultrasonic Diagnostic Equipment	Sound Power	V.R.of Ultrasonic Source for Medical Ultrasonic Diagnostic Equipment JJG639	(1~20)mW/cm ²	$U_{rel}=12\%$		
26	*Ultrasonic Source for Ultrasonic Doppler Fetal Monitor	Sound Power	V.R.of Ultrasonic Source for Ultrasonic Doppler Fetal Monitor JJG394	(1~20)mW/cm ²	$U_{rel}=11\%$		
27	*Ultrasonic Source of Ultrasonic Doppler Foetal Meters	Sound Power	V.R.of Ultrasonic Source of Ultrasonic Doppler Foetal Meters JJG893	(1~20)mW/cm ²	$U_{rel}=11\%$		
28	*Color Doppler Ultrasonic Diagnosis Apparatus	Intensity	Color Doppler Ultrasonic Diagnosis Apparatus JJG(su)173	(1~20)mW/cm ²	$U_{rel}=12\%$		
		Velocity		(1~100)cm/s	$U_{rel}=10\%$		
(3) Special measuring instrument for textile							
1	*Wrap Reelers	length	Calibration Specification for Wrap Reelers JJF(spin)019	(0~1000)mm	$U=0.4\text{mm}$		
				(0~200)mm	$U=0.05\text{mm}$		
		Force		1cN~50N	$U_{rel}=1.2\%$		
		Time		(0~3600)s	$U=0.16\text{s}$		
		Rotational speed		(30~250)r/min	$U_{rel}=0.2\%$		
2	*Fabrics Bursting Tester	Rotational speed	Calibration Specification for Fabrics Bursting Tester JJF(spin)036	(10~1000)r/min	$U_{rel}=0.13\%$		
		Quality		(0~500)g	$U=0.6\text{g}$		



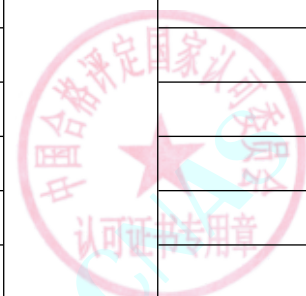
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Displacement		(>500~2000)g	U=1.1g		
				(>2000~30000)g	U=1.5g		
				(0~200)mm	U=0.04mm		
3	*Fabrics Bursting Tester	Diameter	Calibration Specification for Fabrics Bursting Tester JJF(spin)048	(0~200)mm	U=0.04mm		
		Pressure		(100~2500)kPa	U _{rel} =0.14%		
		Time		(0~3600)s	U=0.18s		
4	*Scorch and Sublimation Tester	length	Calibration Specification for Scorch and Sublimation Tester JJF(spin)029	(0~200)mm	U=0.05mm		
		Force		(5~50)N	U _{rel} =0.13%		
		Time		(0~3600)s	U=0.16s		
		Temperature		(0~250)°C	U=0.6°C		
5	*Fiber Cutter	length	Calibration Specification for Fiber Cutter JJF(spin)022	(0~50)mm	U=0.005mm		
6	*Electronic Fabric Strength Machines	Force	Calibration Specification for Electronic Fabric Strength Machines JJF(spin)062	1cN~10000N	U _{rel} =0.35%		
		Coaxiality		Ø2mm~Ø20mm	U=0.3mm		
		length		(0~300)mm	U=0.06mm		
		Speed		(0.1~10)mm/min	U=0.03mm/min		
				10mm/min~45m/min	U _{rel} =0.3%		
		Time		(0~3600)s	U=0.16s		
		mass		(0~500)g	U=0.6g		
				(>500~2000)g	U=1.1g		



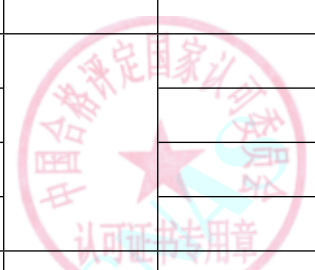
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(>2000~30000)g	U=1.5g		
7	*Fabrics Tearing Tester	length	Calibration Specification for Fabrics Tearing Tester JJF(spín)049	(0~300)mm	U=0.06mm		
		Force		(0.2~128)N	U _{rel} =0.6%		
8	*Corlour Fastness to Friction Testers	Rotational speed	Calibration Specification for Corlour Fastness to Friction Testers JJF(spín)027	(1~10)r/min	U=0.02r/min		
				(>10~200)r/min	U _{rel} =0.2%		
		Force		(1~10)N	U _{rel} =0.24%		
		Displacement		(0~150)mm	U=0.5mm		
9	*Fabric Shrinkage Testers	length	Calibration Specification for Fabric Shrinkage Testers JJF(spín)052	(10~600)mm	U=0.9mm		
		Temperature		(0~100)°C	U=0.7°C		
		Rotational speed		(10~1000)r/min	U=1.0r/min		
		Time		(0~3600)s	U=0.17s		
10	*Perspiration Fastness Instruments	length	Calibration Specification for Perspiration Fastness Instruments JJF(spín)028	(1~200)mm	U=0.05mm		
		Force		(10~150)N	U _{rel} =0.13%		
11	*Yarn Twist Test	Length	Calibration Specification for Yarn Twist Test JJF(spín)010	(0~500)mm	U=0.10mm		
		Force		(10~500)cN	U _{rel} =0.3%		
		Rotational speed		(1~10)r/min	U=0.02r/min		
				(>10~200)r/min	U _{rel} =0.2%		
12	*Circle Sample Cutters	length	Calibration Specification for Circle Sample Cutters JJF(spín)061	(1~150)mm	U=0.3mm		

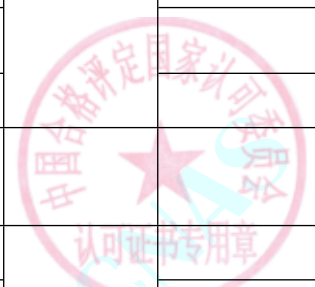


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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
13	*Fabric Thickness Instrument	Length	Calibration Specification for Fabric Thickness Instruments JJF(Textile) 020	(0.5~10)mm	$U=0.006\text{mm}$		
		Time		(0~40)s			
		Weight		(0~200)g	$U=0.1\text{g}$		
		Length		(0~150)mm	$U=0.06\text{mm}$		
14	*Silk Length Measuring Machine	Length	Calibration Specification for Silk Length Measuring Machine JJF(Textile) 043	(0~1500)mm	$U=0.7\text{mm}$		
		Rotate speed		(200~400)r/min	$U_{\text{rel}}=0.4\%$		
15	*Silk Blackboard Shake Machine	Rotate speed	Calibration Specification for Silk Blackboard Shake Machine JJF(Textile)046	(1~300)r/min	$U=1\text{r/min}$		
		Length		Length、Width:(0~1500)mm	$U=0.7\text{mm}$		
				Thickness:(0~50)mm	$U=0.3\text{mm}$		
16	*Wool Fiber Comb Stapling Sorter	Length	Calibration Specification for Wool Fiber Comb Stapling Sorter JJF(Textile)025	(0~150)mm	$U=0.06\text{mm}$		
		Comb plate density		(10~20)pieces/cm	$U=0.5\text{pieces/cm}$		
17	*Winding Black Board Tester	Winding density	Calibration Specification for the Winding Black Board Tester JJF(Textile)012	(7~19)root/cm	$U_{\text{rel}}=1.2\%$		
		Tension tablet weight		(1~50)cN	$U_{\text{rel}}=5\%$		
		Length		(0~500)mm	$U=0.1\text{mm}$		
18	*Traveling Counting Glasses	Length	Calibration Specification for Traveling Counting Glasses JJF(Textile) 023	(0~150)mm	$U=0.08\text{mm}$		
19	*Textile Yarn Length Tester	Length	Calibration Specification for Textile Yarn Length Tester JJF(Textile)021	(0~1000)mm	$U=0.13\text{mm}$		
				(1~200)cN	$U_{\text{rel}}=0.5\%$		

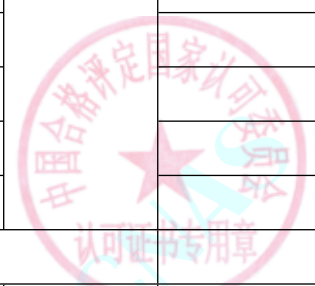


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
20	*capillary effect instrument	Length	Calibration Specification for capillary effect instrument JJF(Textile)056	(0~300)mm	U=0.11mm		
		Weight		(0~10)g	U=0.1g		
		Time		(0~30)min	U=0.2s		
21	*strip length gauge	Drum circumference	Calibration Specification for sliver and roving length sampler JJF(Textile)001	(0~1000)mm	U=0.44mm		
		Weight		(0~5000)g	U=0.2g		
		Drum rotate speed		(1~20)r/min	U=1r/min		
22	*roller type digital display fabric length measuring instrument	Length	Calibration specification for roller type digital display fabric length measuring instrument JJF(Textile)066	(0~300)mm	U=0.01mm		
23	*Down Filing Power Tester	Length	Calibration Specificaion for Down Filing Power Tester JJF (Textile) 074	Diameter:(0~300)mm	U=0.05mm		
				Height:(0~1000)mm	U=0.7mm		
		Weight		(0~100)g	U=0.2g		
24	*Colour Fastness to Washing Testers	Length	Calibration Specification for Colour Fastness to Washing Testers JJF(spin)026	(1~200)mm	U=0.05mm		
		Rotational speed		(1~10)r/min	U=0.02r/min		
				(10~200)r/min	U _{rel} =0.2%		
		Time		(0~3600)s	U=0.2s		
		Temperature		(0~150)°C	U=0.6°C		
(4) Special measuring instruments for construction and traffic							
1	Static Loading Test System on	PressUre	V.R.of Static Loading Test System on Piling Foundation	(5~80)MPa	U _{rel} =0.06%		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Piling Foundation	Force	JJG(S)152	(500~5000)kN	$U_{rel}=0.22\%$		
		Displacement		(0.01~50)mm	$U_{rel}=0.02\text{mm}$		
2	*Concrete Test Hammer	rate constant value	V.R. of Rebound test Hammer JJG817	20~100	$U_{rel}=2.4\%$		
3	reinforced concrete covermeter and floorslab thickness tester	Length	C.S.of reinforced concrete covermeter and floorslab thickness tester JJF1224	(5~330)mm	$U=0.7\text{mm}$		
(5) Special measuring instruments for electrical and electronic appliances							
1	Spark tester	voltage	V.R.of Spark tester JJG(su)74	AC: (1~25)kV,(50Hz)	$U_{rel}=1.3\%\sim 1.2\%$		
				DC: (1~25)kV	$U_{rel}=1.3\%\sim 1.2\%$		
2	Electrical Fast Transient/Burst Simulators	Peak of pulse voltage	Calibration Specification for Electrical Fast Transient/Burst Simulators JJF1672	(0.1~4.4)kV	$U_{rel}=5\%$		
		Rise time of pulse		4ns~200ns	$U_{rel}=9\%$		
		Pulse width		20ns~1 μs	$U_{rel}=4\%$		
		Pulse Repetition Frequency		5kHz~300kHz	$U_{rel}=1.3\%$		
		Burst Duration		0.5ms~500ms	$U_{rel}=2\%$		
		Burst Period		100ms~10s	$U_{rel}=1.4\%$		
3	High Voltage Switch Mechanical Properties	Closing Time	C.S.of High Voltage Switch Mechanical Properties tester JJG1120	10 ms~100 ms	$U=0.2\text{ms}$		
				500ms	$U=0.6\text{ms}$		

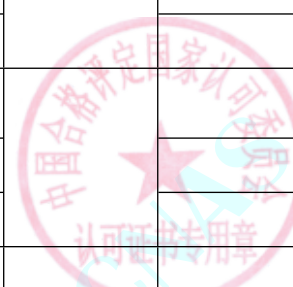


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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Opening time		10 ms~100 ms	$U=0.2\text{ms}$		
				500ms	$U=0.6\text{ms}$		
4	Surge Simulators and coupling and decoupling network	Peak open-circuit voltage	Calibration Specification for Surge Simulators JJF1741	(0.1~12)kV	$U_{\text{rel}}=4\%$		
		open-circuit voltage					
		Wavefront time		0.5 μs~50 μs	$U=0.07 \mu\text{s}$		
		Open-circuit voltage duration		10 μs~1ms	$U=0.6 \mu\text{s}$		
		Peak short-circuit current		(0.25~3)kA	$U_{\text{rel}}=2.0\%$		
		Short-circuit current wavefront time		0.5 μs~50 μs	$U=0.12 \mu\text{s}$		
		Short-circuit current duration		10 μs~1ms	$U=0.5 \mu\text{s}$		
		Phase		(0° ~360°)	$U=1.2^\circ$		
5	Harmonious and Flicker Analysis System	Current	Calibration Specification for Harmonious and Flicker Analysis System JJF1205	(0.05~50)A,(50Hz~2kHz)	$U_{\text{rel}}=0.04\%$		
		Voltage		(1.0~1008)V	$U_{\text{rel}}=0.09\%$		
		Flicker		$P_{\text{st}}=1, P_{\text{st}}=5$	$U=0.02$		
6	Partial Discharge Tester Based Pulse	Up-down cut-off frequency	Calibration Specification for Partial Discharge Testers Based Pulse Current Method	10kHz~500kHz	$U_{\text{rel}}=2.6\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Current Method	Apparent charge magnitude	JJF1616	5pC~5nC	$U_{rel}=6\%$		
		Shift pulse response gain		5pC~5nC, (1kHz)	$U_{rel}=9\%$		
		The polarity response of positive and negative pulses is asymmetrical		5pC~5nC, (1kHz)	$U_{rel}=6\%$		
		Low repetition rate pulse response		5pC~5nC, (50Hz)	$U_{rel}=6\%$		
7	Data Acquisition Switch Unit	DC voltage	C.S.of Data Acquisition System JJF1048,C.S.for Digital Multimeter JJF1587	1mV~10mV	$U_{rel}=0.05\%$		
				10mV~220mV	$U_{rel}=0.005\%$		
				220mV~2.2V	$U_{rel}=0.0015\%$		
				2.2V~220V	$U_{rel}=0.001\%$		
				220V~1000V	$U_{rel}=0.0012\%$		
		AC voltage		10mV~2.2V,(10Hz~20Hz)	$U_{rel}=0.3\%~0.04\%$		
				2.2V~220V,(10Hz~20Hz)	$U_{rel}=0.04\%$		
				10mV~220mV,(20Hz~40Hz)	$U_{rel}=0.6\%~0.06\%$		
				220mV~220V,(20Hz~40Hz)	$U_{rel}=0.020\%$		



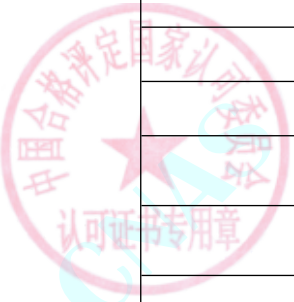
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				220V~1000V,(20Hz~40Hz)	$U_{rel}=0.02\% \sim 0.04\%$		
				10mV~220mV,(40Hz~20kHz)	$U_{rel}=0.6\% \sim 0.06\%$		
				220mV~22V,(40Hz~20kHz)	$U_{rel}=0.01\%$		
				22V~1000V,(40Hz~20kHz)	$U_{rel}=0.015\% \sim 0.01\%$		
				10mV~220mV,(20kHz~50kHz)	$U_{rel}=0.7\% \sim 0.07\%$		
				220mV~2.2V,(20kHz~50kHz)	$U_{rel}=0.01\%$		
				2.2V~220V,(20kHz~50kHz)	$U_{rel}=0.02\%$		
				10mV~220mV,(50kHz~100kHz)	$U_{rel}=0.8\% \sim 0.08\%$		
				220mV~220V,(50kHz~100kHz)	$U_{rel}=0.08\% \sim 0.04\%$		
		DC current		10 μ A ~ 220 μ A	$U_{rel}=0.08\%$		
				220 μ A ~ 220mA	$U_{rel}=0.008\%$		
				220mA ~ 1A	$U_{rel}=0.02\% \sim 0.07\%$		
		AC current		10 μ A ~ 22mA,(10Hz~20Hz)	$U_{rel}=0.22\% \sim 0.06\%$		
				22mA ~ 220mA,(10Hz~20Hz)	$U_{rel}=0.06\%$		
				220mA ~ 2.2A,(10Hz~20Hz)	$U_{rel}=0.03\%$		



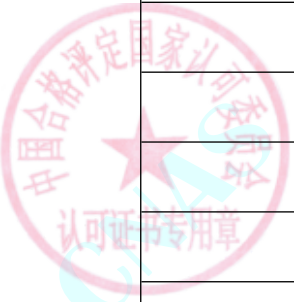
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		resistance		10 μ A ~ 22mA, (20Hz ~ 40Hz)	$U_{rel}=0.15\% \sim 0.03\%$		
				22mA ~ 220 mA, (20Hz ~ 40Hz)	$U_{rel}=0.03\%$		
				220mA ~ 2.2A, (20Hz ~ 40Hz)	$U_{rel}=0.05\%$		
				10 μ A ~ 22mA, (40Hz ~ 1kHz)	$U_{rel}=0.11\% \sim 0.04\%$		
				22mA ~ 220 mA, (40Hz ~ 1kHz)	$U_{rel}=0.03\%$		
				220mA ~ 11A, (40Hz ~ 1kHz)	$U_{rel}=0.05\% \sim 0.06\%$		
				2.2A ~ 11A, (40Hz ~ 1kHz)	$U_{rel}=0.06\%$		
				10 μ A ~ 22mA, (1kHz ~ 5kHz)	$U_{rel}=0.18\% \sim 0.05\%$		
				22mA ~ 220 mA, (1kHz ~ 5kHz)	$U_{rel}=0.04\%$		
				220mA ~ 11A, (1kHz ~ 5kHz)	$U_{rel}=0.09\% \sim 0.17\%$		
				10 μ A ~ 2.2mA, (5kHz ~ 10kHz)	$U_{rel}=1.1\% \sim 0.4\%$		
				2.2mA ~ 22mA, (5kHz ~ 10kHz)	$U_{rel}=0.4\%$		
				22mA ~ 2.2A, (5kHz ~ 10kHz)	$U_{rel}=0.17\% \sim 0.9\%$		
				2.2A ~ 11A, (5kHz ~ 10kHz)	$U_{rel}=0.9\% \sim 0.5\%$		
					(1 ~ 33) Ω		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
			ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	33 Ω ~ 1.1M Ω	$U_{rel}=0.004\%$		
				1.1M Ω ~ 3.3M Ω	$U_{rel}=0.007\%$		
				3.3M Ω ~ 10M Ω	$U_{rel}=0.015\%$		
8	Electrostatic Discharge Generators	Output Voltage	Calibration Specification for Electrostatic Discharge Simulators JJF1397	1kV	$U_{rel}=5.0\%$		
				2kV	$U_{rel}=2.7\%$		
		2kV~30kV		$U_{rel}=2.1\%$			
		3.5A~30A		$U_{rel}=6\%$			
		Current Rising Time		(0.7~1)ns	$U_{rel}=13\%$		
9	Cable Testers	AC Voltage	Calibration Specification for Cable Testers JJF1457	10V~1000V	$U_{rel}=0.6\%$		
				1000V~1500V	$U_{rel}=1.2\%$		
		DC Resistance		1 Ω ~ 100k Ω	$U_{rel}=1\%$		
				10k Ω ~ 1M Ω	$U_{rel}=0.7\%$		
		Insulation Resistance		1M Ω ~ 10M Ω	$U_{rel}=0.9\%$		
			10M Ω ~ 200M Ω	$U_{rel}=1.4\%$			
10	Voltage Dips,Short Interruptions and Voltage Variations Test Generators	Output Voltage	Calibration Specification for Voltage Dips,Short Interruptions and Voltage Variations Test Generators JJF1673	(0.1~300)V	$U_{rel}=0.5\%$		
		Load Adjustment Rate		0.1V~300V	$U_{rel}=7\%$		



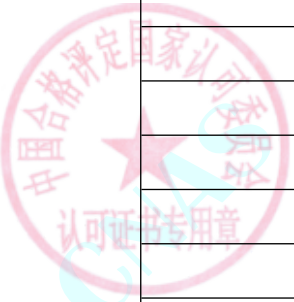
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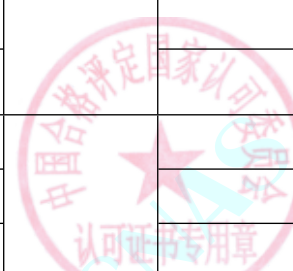
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Voltage rise time/fall time	ilac-MRA	(1~50) μs	$U_{rel}=4\%$		
		Voltage overshoot and undershoot		0.01%~20%	$U_{rel}=6\%$		
		phase angle		(0~360)°	$U=0.6^\circ$		
		Duration		1ms~60s	$U_{rel}=1.4\%$		
		Time Interval		1ms~60s	$U_{rel}=1.4\%$		
11	Oscilloscope Voltage Probes	DC Voltage Attenuation Ratio	Calibration Specification for Oscilloscope Voltage Probes JJF1437	1:1~1000:1	$U_{rel}=0.7\%$		
		Frequency Response		0dB~-6dB,(50kHz~1GHz)	$U=1.1dB$		
		RiseTime		700ps~70ns	$U_{rel}=12\%$		
		Input Resistance		50 Ω ~ 100M Ω	$U_{rel}=0.6\%$		
12	ElectronicLoad	DC Voltage	C.S.for DC Electronic Loads JJF1462	0.1V~10V	$U_{rel}=0.02\%$		
				10V~1000V	$U_{rel}=0.03\%$		
				1mA~10mA	$U_{rel}=6\%$		
				10mA~100mA	$U_{rel}=0.6\%$		
		DC Current		0.1A~1A	$U_{rel}=0.10\%$		
				1A~10A	$U_{rel}=0.06\%$		
				10A~100A	$U_{rel}=0.07\%$		
				100A~1000A	$U_{rel}=0.20\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Dc power		10mW~1W	$U_{rel}=0.8\%$		
				1W~500W	$U_{rel}=0.12\%$		
				500W~2.4kW	$U_{rel}=0.2\%$		
13	Static Friction Coefficient Tester of Enamelled Winding Wire	Angle	Calibration Specification for Static Friction Coefficient Tester of Enamelled Winding Wire JJF (Su) 161	(0~30)°	$U=0.1^\circ$		
		Weight		(0~1000)g	$U=1.2g$		
14	Elongation Tester of Enamelled Winding Wire	Length	Calibration Specification for Elongation Tester of Enamelled Winding Wire JJF (Su) 160	(0~300)mm	$U=0.06mm$		
		Elongation		(10~50)%	$U=0.22\%$		
		Speed		(0~500)mm/min	$U=4.4mm/min$		
15	Jerk Tester of Enamelled Winding Wire	Length	Calibration Specification for Jerk Tester of Enamelled Winding Wire JJF (Su) 162	(0~300)mm	$U=0.12mm$		
		Elongation		(10~50)%	$U=0.22\%$		
		Speed		(0.01~10)m/s	$U_{rel}=2.4\%$		
16	Battery Internal Resistance Tester	DC Voltage	C.S. for Battery Internal Resistance Testers JJF1620	(0.1~0.5)V	$U_{rel}=0.02\%$		
				(0.5~800)V	$U_{rel}=0.006\%$		
				AC Resistance	1mΩ~3000Ω	$U_{rel}=0.12\%$	
17	Proof Tracking Index Tester	Voltage	C.S. for Proof Tracking Index Testers JJF(Su)194	(100~600)V	$U_{rel}=(0.8\sim0.5)\%$		
		Current		(0.2~1)A	$U_{rel}=(1.8\sim1.2)\%$		
		Time Interval		30s	$U=0.4s$		
18	Vertical Combustion Tester	Length	Calibration Specification for Vertical Combustion Testers	(0~800)mm	$U=0.05mm$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		time	JJF(Textile) 068	(0~120)s	$U=0.2s$		
		Velocity		(0~100)mm/s	$U=0.2mm/s$		
		Angel		(0~90)°	$U=6'$		
		Mass		(10~500)g	$U_{rel}=0.2\%$		
19	Soil Number Measuring Instrument	Number of circles	Calibration specification for soil number measuring instrument JJF(Su)193	(1~1000)circle	$U=1circle$		
				(1000~21110)circle	$U_{rel}=0.12\%$		
20	Electrostatic Decay Tester	Electrostatic Voltage	Calibration Specification for Electrostatic Decay Tester JJF(WXJL)005	(0.005~0.1)kV	$U=0.001kV$		
				(0.1~1)kV	$U=0.002kV$		
				(1~2)kV	$U=0.009kV$		
				(2~3)kV	$U=0.02kV$		
				(3~5)kV	$U=0.04kV$		
		Electrostatic Decay Time		(1~600)s	$U=0.1s$		
21	on line widening temperature rise tester	Resistance	C.S. for on line widening temperature rise tester JJF1540	0.1 Ω ~ 1 Ω			
				1 Ω ~ 10 Ω			
				10 Ω ~ 10k Ω			
22	GalvaPluse Corrosion Rate System	Voltage measurement	C.S. for GalvaPluse Corrosion Rate System JJF1341	$\pm(0.1\sim2)V$	$U=1mV$		
		Output voltage		$\pm(0.1\sim2)V$	$U=1mV$		
		Output current		(-200~-20)mA	$U=0.2mA$		



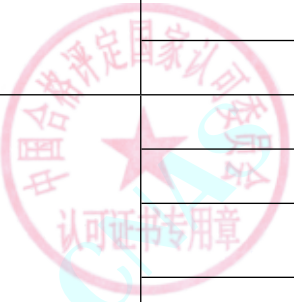
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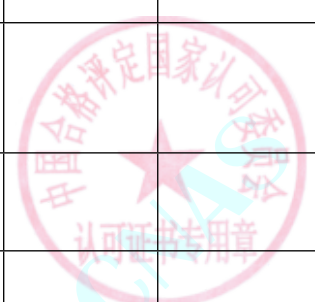
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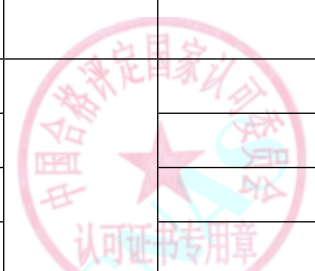
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(-20~-2)mA	U=0.02mA		
				(-2~-0.2)mA	U=0.002mA		
				(0.2~2)mA	U=0.002mA		
				(2~20)mA	U=0.02mA		
				(20~200)mA	U=0.2mA		
23	Resistive Current Testers for Zinc-oxide Surge	Voltage	C.S. for Resistive Current Testers for Zinc-oxide Surge JJF(zhe)1082	(10~500)V,(45~65)Hz	U _{rel} =0.2%		
		Total current		(0.1~0.5)mA,(45~65)Hz	U _{rel} =1.9%		
				(0.5~20)mA,(45~65)Hz	U _{rel} =0.5%		
		Resistive Current		(0.1~0.5)mA,(45~65)Hz	U _{rel} =1.9%		
				(0.5~10)mA,(45~65)Hz	U _{rel} =0.5%		
		Phase Angle		0°	U=0.12°		
24	Needle-flame Tester	Time	C.S. for Needle-flame Tester JJF(WXJL)010	(5~600)s	U=0.5s		
		Length		(0~100)mm	U=0.04mm		
		angle		(0~360)°	U=6'		
25	*Oscilloscope current probe	AC current	Calibration Specification of Oscilloscope Current Probes JJF (DZ) 0036	(0.01~2000)A(50Hz)	U _{rel} =0.7%		
		DC current		(0.01~2000) A	U _{rel} =0.7%		
		Output voltage ratio		1V/1A~1mV/1A (1~1000)	U _{rel} =0.6%		
		frequency bandwidth		50kHz~100MHz	U _{rel} =5%		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		rise/fall time		17.5ns~3.5μs	$U_{rel}=2.8\%$		
26	*Verifying Meter for pH Meters	DCV	Verification Regulation of Verifying Meter for pH Meters JJG 919	1mV~10mV	$U_{rel}=0.012\%$		
				10mV~2V	$U_{rel}=0.002\%$		
(6) Measuring instruments for motor vehicles							
1	*Platform Brake Tester	Force	V.R.of Platform Brake Tester JJG1020	(0.5~50)kN	$U_{rel}=0.44\%~0.15\%$		
		Mass		(1000~4000)kg	$U=6\text{kg}$		
				(>4000~20000)kg	$U_{rel}=0.2\%$		
2	*resonant-Automotive sUSpension tester	Mass	Calibration Specification for AUtomotive SUspension TesterJJF1192-2008 JJF1192	(500~5000)kg	$U_{rel}=0.58\%~0.12\%$		
3	*Bump Testing Machines	Acceleration	Verification Regulation of Shock&Bump Testing Machines JJG1174	(1~1000)m/s ²	$U_{rel}=5\%$		
4	*Special Axle (Wheel) Load Scale for Motor Vehicle Test	Mass	V.R.of Special Axle (Wheel) Load Scale for Motor Vehicle Test JJG1014	(1000~4000)kg	$U=6\text{kg}$		
				(>4000~40000)kg	$U_{rel}=0.2\%$		
5	The AUtomobile Engine Crankcase Force Tester	Flow	V.R.of The AUtomobile Engine Crankcase Force Tester JJG(Traffic) 012	(10~150)L/min	$U_{rel}=2.0\%$		
6	*Roller Opposite Forces Type Brake Tester	Force	V.R.of Roller Opposite Forces Type Brake Tester JJG906	(100~3000)N	$U_{rel}=0.24\%$		
7	*Chassis Dynamometers for Automobile	TorqUe	C.S.for Chassis Dynamometers for Automobile Emissions	(0.1~25000)N	$U_{rel}=0.6\%~0.2\%$		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Emissions Testing	Speed	Testing JJF1221	(5~180)km/h	$U_{rel}=0.12\text{km/h}$		
8	Motor vehicle testers for steering force and steering angle	Force	C.S.of Motor Vehicle Testers for Steering Force and	(100~500)N	$U=(1.2\sim 3.1)\text{N}$		
		Angle	Steering Angle JJF1196	(0~360)°	$U=20'$		
9	*Headlamp tester for motor vehicle	Intension of the Light	V.R.of Headlamp Testers for	(5~60)kcd	$U_{rel}=6.2\%$		
		Optical axis offset	Motor Vehicle JJG745	(0~35)cm/dam	$U=1.8\text{cm/dam}$		
10	*Transmittance Meter of Automobile	Transmittance Ratio	C.S. for transmittance Meter of automobile JJF1225	9.5%~95%	$U_{rel}=0.8\%$		
11	*Filter-type smoke-meter	Smoke intensity	V.R. of Filter-Type Smokemeters JJG847	(1~10)BSU	0.3BSU		
12	*Opacimeters	absorbance ratio	V.R.of Opacimeters JJG976	30%~80%	$U_{rel}=0.8\%$		
13	*Manipulating Force Tester for Automotive Brake	Force	C.S.for Manipulating Force Tester for Automotive Brake JJF1169	(100~1000)N	$U_{rel}=0.86\%\sim 0.21\%$		
14	*Slip plate type automobile side slip tester	Displacement	V.R. of Slip plate type automobile side slip tester JJG908	(0~15)m/km	$U=0.04\text{m/km}$		
15	Non-contact Automotive Speedmeter	Speed	Calibration Specification for Non-contact Automotive Speedmeter JJF1193	(5~50)km/h	$U=0.2\text{km/h}$		
				(>50~180)km/h	$U_{rel}=0.3\%$		
		Displacement		(1.00~30.00)m	$U=0.2\text{m}$		
				(>30.00~999.99)m	$U_{rel}=0.3\%$		
16	*Four-wheel Alignmerter	Angle	C.S.for Four-wheel Alignmerter JJF1154	(0~15)°	$U=1.8'$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
17	*Wheel Dynamic Balancers	Dynamic Unbalance QUANTITY	C.S.for Wheel Dynamic Balancers JJF1151	(80~200)g • mm/kg	$U_{rel}=3.1\%$		
		Phase		(0~360)°	$U=6^\circ$		
18	*Vehicle exhaust emission measuring instrument	Concentration	V.R. of Vehicle Exhaust Emission Measuring Instruments JJG688	O ₂ :(0.5~25)×10 ⁻²	$U_{rel}=1.6\%$		
				CO:(0.5~10)×10 ⁻²	$U_{rel}=1.6\%$		
				HC:(100~2000)×10 ⁻⁶	$U_{rel}=1.2\%$		
				CO ₂ :(3~16)×10 ⁻²	$U_{rel}=1.9\%$		
19	*Devices of Four-wheel Aligner	angle	Calibration Specification for Calibration Devices of Four-wheel Aligner JJF1489	Camber Angle:-10° ~ 10°	$U=30''$		
				Wheel toe-in Angle:-3° ~ 3°	$U=30''$		
				Kkingpin Inclination Angle:-5° ~ 23°	$U=30''$		
				caster angle:-15° ~ 15°	$U=30''$		
				Parallelism:0' ~ 5'	$U=30''$		
20	*Tyre Pressure Gauge	pressure	Verification Regulation of Tyre Pressure Gauge JJG 927	(0~2.5)MPa	$U=0.004\text{MPa}$		
21	*Motor Vehicle Engine Speed Measuring Instrument	Rotate Speed	Calibration Specification for Motor Vehicle Engine Speed Measuring Instruments JJF1375	(500~6000)r/min	$U_{rel}=0.3\%$		
		Time		(0~10)s	$U=1\text{s}$		



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