

Name: Inner Mongolia Institute of Metrology and Testing

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Registration No. CNAS L1645

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

Effective Date: 2026-09-29 Expiry Date: 2030-11-06

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
1、 Geometric quantity							
1	Third class standard metal linear ruler	Length	Verification regulation of third-class standard metal linear ruler JJG71	(0~100) mm	$U=4.0 \mu m$		
				(100~300) mm	$U=9.0 \mu m$		
				(300~500) mm	$U=11 \mu m$		
				(500~1000) mm	$U=15 \mu m$		
2	Steel Measuring Tapes	Length	Verification Regulation of Steel Measuring Tapes JJG 4	(0~200) m	$U=0.1mm+2 \times 10^{-5}L$	合格评定国家认可委员会 认可证书专用章	
3	*Toolmaker' s Microscope	Length	Verification Regulation of Toolmaker' s Microscope JJG56	(0~200) mm	$U=0.2 \mu m+4 \times 10^{-6}L$		
4	*Projector	Length	Calibration Specification for Projectors JJF 1093	(0 ~100)mm	$U=0.7 \mu m+8.7 \times 10^{-6}L$		
5	Gauge Blocks	Length	Verification Regulation of Gauge Blocks JJG146	(0.5~1000)mm	$U=0.20 \mu m+2 \times 10^{-6}Ln(k=2.6)$		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
6	Micrometer	Length	Verification Regulation of Micrometer JJG 21	(0~500)mm	$U=0.9 \mu m+7.4 \times 10^{-6}L$		
7	Large Dimension Outside Micrometers	Length	Calibration Specification for Large Dimension Outside Micrometers JJF 1088	(500~1000)mm	$U=1.1 \mu m+8 \times 10^{-6}L$		
8	*Dial Gauges	Length	Verification regulation of indicator (pointer type and digital display type) JJG34	div0.001mm: (0~1) mm	$U=2 \mu m$		
				div0.01mm: (0~10) mm	$U=6 \mu m$		
				div0.01mm: (10~100) mm	$U=8 \mu m$		
9	Dial Test Indicator	Length	Verification Regulation of Dial Test Indicator JJG 35	(0~1.0) mm	$U=2.6 \mu m$		
10	Bore Dial Indicators	Length	Calibration Specification for Bore Dial Indicators JJF 1102	div0.01mm: (10~100) mm	$U=4.0 \mu m$		
				div0.001mm: (10~100) mm	$U=2.0 \mu m$		
11	Current Calipers	Length	Verification Regulation of Current Calipers JJG 30	(0~1000) mm	$U=4 \mu m+2 \times 10^{-5}L$		
12	Height Caliper	Length	Verification Regulation of Height Caliper JJG 31	(0~1000) mm	$U=7 \mu m+1.6 \times 10^{-5}L$		
13	*Tester for Dial Indicator Gauges	Length	Verification Regulation of Testers for Dial Gauges JJG 201	(0~25) mm	$U=0.6 \mu m$	合格评定国家认可委员会 CNAS 认可证书专用章	
14	Angle block	Angle	Verification regulation of angle block JJG70	15° 10' ~90°	$U=3''$		
15	*Optimeter	Length	Verification Regulation of Optimeter JJG 45	(-100~+100) μm	$U=0.08 \mu m$		
16	Autocollimators	Angle	Verification regulation of Autocollimator JJG202	0' ~10'	$U=0.6''$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
17	General Bevel Protractors	AngleGauge	Calibration specification for universal angle ruler JJF 1959	0° ~ 360°	$U=1'$		
18	Frame Levels and Shaft Levels	AngleGauge	Calibration Specification for Frame Levels and Shaft Levels JJF 1084	(0.02~0.10)mm/m	$U_{rel}=5.8\%$		
19	Electronic level and Coincidence Levels	Angle	Verification regulation of electronic level and combined image level JJG103	Electronic level: (-5~+5) mm/m	$U=0.5 \mu m/m$		
				Coincidence Levels: (-5~+5) mm/m	$U=3 \mu m/m$		
20	Straight Edges	Linearity	Calibration Specification for Straight Edges JJF 1097	(500~2000) mm	$U=0.3 \mu m+1 \times 10^{-6}L$		
21	Level Rules	AngleGauge	Calibration Specification for Level Rules JJF1085	(0.5~10) mm/m	$U_{rel}=4.8\%$		
22	Electronic Tachometer Total Station	Angle	Verification regulation of total station electronic tachometer JJG100, Verification regulation of photoelectric rangefinder JJG703	0° ~ 360°	$U=0.20''$		
		Length		(24~1200) m	$U=0.5mm$ (additive constant), $U=0.8mm/km$ (multiplying constant)		
23	Global Navigation Satellite System	Length	Verification Regulations for Global Navigation Satellite System (GNSS) Receiver (Geodetic and Navigation) JJG 1200	6m~ 35.2km	$U=(0.8\sim2.3) mm$ (static state), $U=1.9mm$ (dynamic)		
24	Levels	Angle	V.R.of Levels JJG 425	-30'' ~ +30''	$U=1.7''$		
25	Optical Theodolite	Angle	V.R.of Optical Theodolites JJG 414	0° ~ 360°	$U=0.4''$		
26	Electronic theodolite	Angle	V. R.of Electronic Tachometer Total Station JJG 100	0° ~ 360°	$U=0.3''$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
27	Electro-optical Distance Meter	Length	Verification regulation of photoelectric rangefinder JJG703	(24~1200) m	$U=0.5\text{mm}$ (additive constant), $U=0.8\text{mm/km}$ (multiplying constant)		
28	Telescope Rangefinders	Length	Calibration specification for telescopic rangefinder JJF1704	(0~3) km	$U=0.1\text{m}$		
29	*Level Verification System	Angle	Verification regulation of level verification device JJG960	$-30'' \sim +30''$	$U=1.0''$		
30	Optical Flat	Flatness	Verification Regulation of Optical Flat JJG 28	Optical FlatD(30~150)mm	$U=0.01 \mu\text{m}$		
		Parallelism		Optical FlatD(15~100)mm	$U=0.28 \mu\text{m}$		
31	*Surface Plates	Flatness	Verification Regulation of Surface Plates JJG 117	(160×100)mm ~ (450×450)mm	$U=0.6 \mu\text{m}$		
				(450×450)mm ~ (630×400)mm	$U=0.8 \mu\text{m}$		
				(630×400)mm ~ (800×600)mm	$U=1.2 \mu\text{m}$		
				(800×600)mm ~ (1000×800)mm	$U=1.5 \mu\text{m}$		
				(1000×800)mm ~ (1500×1000)mm	$U=1.7 \mu\text{m}$		
				(1500×1000)mm ~ (3000×2000)mm	$U=5.0 \mu\text{m}$		
32	Feeler gauge	Length	Verification regulation of feeler gauge JJG62	(0.02~3.00) mm	$U=3.0 \mu\text{m}$		
33	*Length Measuring Instrument	Length	Calibration Specification for Length Measuring Instrument JJF 1189	(0 ~100)mm	$U=0.2 \mu\text{m} + 3.2 \times 10^{-6}L$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
34	*Contact-type Interferometer	Length	Verification Regulation of Contact-type Interferometers JJG 101	(-5~+5) μ m	U=0.012 μ m		
35	*Length Measuring Machine	Length	Calibration Specification for Length Measuring Machine JJF 1066	(0~100) μ m	U=0.08 μ m		
				(0.1~100) mm	U=0.18 μ m+1.2×10 ⁻⁶ L		
				(100~1000) mm	U=0.1 μ m+2×10 ⁻⁶ L		
36	*Ultrasonic Thickness Instruments	Length	Calibration specification for ultrasonic thickness gauge JJF1126	(0.5~200) mm	U=0.04mm		
37	*Dissolution Testers	Length	Calibration Specification for Dissolution Testers JJF (Inner Mongolia) 068	(0~3)mm	U=0.06mm		
38	Steel ruler	Length	Verification Regulation of Steel Rule JJG 1	(0~1000) mm	U=0.05mm+2×10 ⁻⁵ L		
39	Welding Inspection Callipers	Angle	Calibration Specification for Welding Inspection Callipers JJF 2161	10° ~170°	U=7.4'		
		Length		Main scale: (0~60) mm	U=4.8 μ m		
				Height scale: (0~20) mm	U=11 μ m		
				Undercut depth scale: (0~35) mm	U=32 μ m		
40	Thickness Gauges	Length	Calibration Specification for Thickness Gauges JJF 1255	(0~1) mm	U=2.0 μ m		
				(1~10) mm	U=2.8 μ m		
				(10~30) mm	U=4.7 μ m		
2、Thermology							



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
1	Base Metal Thermocouples	Temperature	Calibration Specification for Base Metal Thermocouples JJF 1637	(100~300) °C	$U=0.3^{\circ}\text{C}$		
				(300~1100) °C	$U=1.0^{\circ}\text{C}$		
				(1100~1200) °C	$U=2.0^{\circ}\text{C}$		
2	Industry Platinum Resistance Thermometers	Temperature	Verification Regulation of Industrial Platinum and Copper Resistance Thermometers JJG 229	(-60~95) °C	$U=0.02^{\circ}\text{C}$		
				(95~300) °C	$U=0.04^{\circ}\text{C}$		
3	Temperature Transmitter	Temperature	Calibration Specification of the Temperature Transmitter JJF 1183	With Sensor: (-60~300) °C	$U=0.08^{\circ}\text{C}$		
4	*Thermostatic Baths for Temperature Calibration	Temperature	Measurement and Test Norm of Metrological Characteristics of Thermostatic Baths for Temperature Calibration JJF 1030	Fluctuation: (-60~300) °C	$U=0.010^{\circ}\text{C}$		
				Uniformity: (-60~300) °C	$U=0.010^{\circ}\text{C}$		
5	*Environmental Testing Equipment	Temperature	Calibration Specification of Environmental Testing Equipment for Temperature and Humidity Parameters JJF 1101	(-30~200) °C	$U=0.2^{\circ}\text{C}$		
		Relative humidity		30%~90% (10°C~60°C)	$U=1.5\%$		
6	*Box-type Resistance Furnace	Temperature	Calibration Specification for Box-type Resistance Furnace JJF 1376	(300~1000) °C	$U=1.8^{\circ}\text{C}$		
				(1000~1100) °C	$U=2.0^{\circ}\text{C}$		
7	*Liquid Constant Temperature Testing Equipment	Temperature	Measurement Specification for Temperature Performance of Liquid Constant Temperature Testing Equipment JJF 2019	(10~95) °C	$U=0.2^{\circ}\text{C}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
8	*Steam Sterilizers	Temperature	Calibration Specification for Temperature and Pressure Parameters of Steam Sterilizers JJF (Meng) 028	(30~134)℃	<i>U</i> =0.2℃		
		Pressure		Absolute pressure:(10~400)kPa	<i>U</i> =1.5kPa		
9	Heat Meters	Temprature	Verification Regulation of Heat Meters JJG 225	(4~95)℃	<i>U</i> =0.03℃		
		Flow		DN15~DN300: (1.2~600) m ³ /h	<i>U</i> _{rel} =0.2%		
		Heat quantity		(0.01~99999999) kWh	<i>U</i> _{rel} =0.9%		
10	Radiation Thermometers	Temperature	Verification Regulation of Radiation Thermometers JJG 856	(30~100)℃	<i>U</i> =2.0℃		
				(100~300)℃	<i>U</i> =2.5℃		
				(300~700)℃	<i>U</i> =3.0℃		
11	Mechanical Thermo-hygrometers	Temperature	Verification Regulation of Mechanical Thermo-hygrometers JJG 205	(5~50)℃	<i>U</i> =0.6℃		
		Relative humidity		30%~95% (10℃~30℃)	<i>U</i> =1.4%		
12	Digital Temperature-hygrometers	Temperature	Calibration Specification for Digital Temperature-hygrometers JJF 1076	(5~50)℃	<i>U</i> =0.4℃		
		Relative humidity		30%~95% (10℃~30℃)	<i>U</i> =1.2%		
13	*Large Steam Sterilizers	Temperature	Calibration Specification for Temperature,Pressure and Time Parameters of Large Steam Sterilizers JJF 2088	(0~150)℃	<i>U</i> =0.2℃		
		Pressure		(0~400)kPa	<i>U</i> =1.2kPa		
		Time		(0.1~3600) s	<i>U</i> =0.1s		
3、 Mechanics							
1	Weights	Mass	Verification Regulation of Weights JJG99	1mg~100mg	<i>U</i> =0.002mg		



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				100mg~500mg	$U=0.002\text{mg}\sim 0.004\text{mg}$		
				1g~100g	$U=0.006\text{mg}\sim 0.05\text{mg}$		
				100g~500g	$U=0.05\text{mg}\sim 0.17\text{mg}$		
				1kg~20kg	$U=0.9\text{mg}\sim 20\text{mg}$		
				50kg	$U=0.3\text{g}$		
				500kg	$U=7\text{g}$		
				1000kg	$U=11\text{g}$		
2	*Electronic Balances	Mass	Calibration Specification for Electronic Balances JJF1847	(0~1) g	$U=0.2\text{mg}$		
				(1~100) g	$U=(0.2\sim 0.3)\text{mg}$		
				(0.1~5) kg	$U=(0.3\sim 11)\text{mg}$		
				(5~10) kg	$U=11\text{mg}\sim 0.03\text{g}$		
				(10~20) kg	$U=(0.03\sim 0.16)\text{g}$		
				(20~100) kg	$U=(0.16\sim 2.5)\text{g}$		
				(100~300) kg	$U=(2.5\sim 21)\text{g}$		
3	*Mass Comparators	Mass	Calibration Specification for Mass Comparators JJF1326	1mg~10g	$U=3.5\text{ }\mu\text{g}$		
				10g~200g	$U=4\text{ }\mu\text{g}\sim 5\text{ }\mu\text{g}$		
				200g~500g	$U=16\text{ }\mu\text{g}\sim 21\text{ }\mu\text{g}$		
				500g~2kg	$U=0.2\text{mg}\sim 0.3\text{mg}$		
				2kg~5kg	$U=2\text{mg}\sim 3\text{mg}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				5kg~150kg	$U=0.02\text{g}\sim 0.14\text{g}$		
				150kg~300kg	$U=0.2\text{g}\sim 0.3\text{g}$		
4	*Table Balances	Mass	Verification Regulation of Table Balances JJG156	100g~5kg	$U=0.02\text{g}\sim 2\text{g}$		
5	*Concrete Batching Scales	Mass	Verification Regulation of Concrete Batching Scales JJG1171	(1~100) kg	$U=0.02\text{kg}$		
				(100~800) kg	$U=0.12\text{kg}$		
				(800~2000) kg	$U=1.2\text{kg}$		
6	*Continuous Totalizing Automatic Weighing Instruments (Belt Weighers)	Mass	Verification Regulation of Continuous Totalizing Automatic Weighing Instruments(Belt Weighers) JJG195	(57.6~100) t/h	$U_{\text{rel}}=0.28\%$		
				(100~500) t/h	$U_{\text{rel}}=0.7\%$		
				(500~1500) t/h	$U_{\text{rel}}=1.2\%$		
7	*Automatic Gravimetric Filling Instruments	Mass	Verification Regulation of Automatic Gravimetric Filling Instruments JJG564	2.5kg~50kg	$U_{\text{rel}}=0.06\%$		
				50kg~1t	$U_{\text{rel}}=0.3\%$		
				1t~20t	$U_{\text{rel}}=1.2\%$		
				20t~70t	$U_{\text{rel}}=2.9\%$		
8	*Digital Indicating Weighing Instruments	Mass	Verification Regulation of Digital Indicating Weighing Instruments JJG539	2g~200g	$U=(0.014\sim 0.018)\text{g}$		
				200g~1kg	$U=(0.018\sim 0.06)\text{g}$		
				1kg~10kg	$U=(0.06\sim 0.6)\text{g}$		
				10kg~100kg	$U=(0.6\sim 6)\text{g}$		
				100kg~1t	$U=(0.006\sim 0.06)\text{kg}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				1t~3t	$U=(0.06\sim0.23)\text{ kg}$		
				3t~15t	$U=(0.23\sim1.2)\text{ kg}$		
				15t~60t	$U=(1.2\sim5)\text{ kg}$		
				60t~200t	$U=(5\sim21)\text{ kg}$		
9	*Automatic Instruments for Weighing Road Vehicles in Motion	Mass	Verification Regulation of Automatic Instruments for Weighing Road Vehicles in Motion JJG907	Motion (5~31) t	$U=(0.21\sim1.0)\times10^2\text{ kg}$		
				Motion (31~49) t	$U=(0.1\sim0.15)\times10^3\text{ kg}$		
				Static (1~60) t	$U=(4\sim8)\text{ kg}$		
10	*Portable Automatic Instruments for Weighing Axle Loads of Vehicle in Motion	Mass	Calibration Specification for Portable Automatic Instruments for Weighing Axle Loads of Vehicle in Motion JJF1212	Motion (5~31) t	$U=(0.09\sim0.19)\times10^3\text{ kg}$		
				Motion (31~49) t	$U=(0.19\sim0.26)\times10^3\text{ kg}$		
11	Standard Glass Hydrometers	Density	Verification Regulation of Standard Glass Hydrometers JJG86	Second class standard densitometer: (650~1500) kg/m^3	$U=0.15\text{ kg/m}^3$		
				Second class standard petroleum densimeter: (650~1100) kg/m^3	$U=0.15\text{ kg/m}^3$		
		Alcohol degree		Second class standard alcohol meter: (0~100) %	$U=0.06\%$		
12	Working Glass Hydrometers	Density	Verification Regulation of Working Glass Hydrometers JJG42	Precision and common densitometer: (650~1800) kg/m^3 , $d=0.5\text{ kg/m}^3$	$U=0.15\text{ kg/m}^3$		



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			ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	Precision and common densitometer: （650～1800） kg/m ³ , <i>d</i> =1kg/m ³	<i>U</i> =0.3kg/m ³			
				Petroleum densimeter Milk meter: （650～1100） kg/m ³	<i>U</i> =0.15kg/m ³			
		Baume degrees		（0～70） Bh	<i>U</i> =0.3Bh			
		Soil degree		（3～50） s°	<i>U</i> =0.30s°			
		Milk degree		（15～40） m°	<i>U</i> =0.3m°			
		Alcohol degree		Precision alcohol meter: （0～100） %	<i>U</i> =0.05%			
				Alcohol meter: （0～100） %	<i>U</i> =0.3%			
13	Standard Metal Tank	Capacity	Verification Regulation of Standard Metal Tank JJG 259	2 Class Standard Metal Tank: （1～2500） L	<i>U</i> _{rel} =0.0083%			
				3 Class Standard Metal Tank: （1～5000） L	<i>U</i> _{rel} =0.03%			
14	*Verification Facility for Water Meters	Flow	Verification Regulation of Verification Facility for Water Meters JJG 1113	（0.004～32） m ³ /h	<i>U</i> _{rel} =0.03%			
15	Working Glass Container	Capacity	Verification regulation of common glass measuring instruments JJG196	（0.1～0.5） mL	<i>U</i> =0.002mL			
				（0.5～25） mL	<i>U</i> =0.006mL			
				（25～100） mL	<i>U</i> =0.03mL			
				（100～500） mL	<i>U</i> =0.09mL			



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				(500～1000) mL	<i>U</i> =0.18mL		
				(1000～2000) mL	<i>U</i> =0.20mL		
16	Special Glassware	Capacity	Verification regulation of special glass gauge JJG10	(5～10) mL	<i>U</i> =0.01mL		
				(10～50) mL	<i>U</i> =0.09mL		
				(50～100) mL	<i>U</i> =0.20mL		
17	Locomotive Pipette	Capacity	Verification regulation of pipette JJG646	(0.1～10) μ L	<i>U</i> =0.01 μ L		
				(10～100) μ L	<i>U</i> =0.03 μ L		
				(100～1000) μ L	<i>U</i> =0.07 μ L		
				(1000～10000) μ L	<i>U</i> =3.5 μ L		
18	*Road Tankers Capacity	Capacity	Verification Regulation of Road Tankers Capacity JJG 133	(0.1～50)m ³	<i>U</i> _{rel} =0.03%		
19	*Quantitative Filling Machine For Liquid Material	Capacity	Verification regulation of quantitative filling machine for liquid materials JJG 687	(10～50)mL	<i>U</i> _{rel} =1.2%		
				(50～100)mL	<i>U</i> _{rel} =0.7%		
				(100～500)mL	<i>U</i> _{rel} =0.5%		
				(500～1000)mL	<i>U</i> _{rel} =0.3%		
		Quality		(10～50)g	<i>U</i> _{rel} =1.2%		
				(50～100)g	<i>U</i> _{rel} =0.8%		
				(100～1000)g	<i>U</i> _{rel} =0.4%		



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20	*Standard Bell Powers of Gas Flow	Flow	Verification Regulation of Standard Bell Powers of Gas Flow JJG 165	(0.016~30) m ³ /h	$U_{rel}=0.14\%$		
21	Liquid Positive Displacement Flowmeter	Flow	Verification Regulation of Liquid Positive Displacement Flowmeter JJG 667	DN15~DN300: (0.5~1500) m ³ /h DN15~DN80: (0.03~100) m ³ /h	$U_{rel}=0.056\%$ (Static mass method) $U_{rel}=0.32\%$ (Master meter method)		
22	Float Meter	Flow	Verification Regulation of Float Meter JJG 257	Liquid, DN15~ DN300: (0.5~1500) m ³ /h	$U_{rel}=0.1\%$ (Static mass method)		
23	Goriolis Mass Flow Meters	flow	Verification Regulation of Goriolis Mass Flow Meters JJG 1038	Liquid, DN15~DN80: (0.03~100) m ³ /h Liquid, DN15~ DN300: (0.5~1500) m ³ /h	$U_{rel}=0.32\%$ (Master meter method) $U_{rel}=0.056\%$ (Static mass method)		
24	Turbine Flowmeter	Flow	Verification Regulation of Turbine Flowmeter JJG 1037	Gas, DN10~DN300: (0.4~5000) m ³ /h Liquid, DN15~DN80: (0.03~100) m ³ /h Liquid, DN15~ DN300: (0.5~1500) m ³ /h	$U_{rel}=0.36\%$ (Nozzle method) $U_{rel}=0.32\%$ (Master meter method) $U_{rel}=0.056\%$ (Static mass method)		
25	*Electromagnetic Flowmeters	Flow	Verification Regulation of Electromagnetic Flowmeters JJG 1033; Online Calibration Specification for Electromagnetic Flowmeters JJF 2216	DN15~DN300: (0.5~1500) m ³ /h DN15~DN80: (0.03~100) m ³ /h DN50~DN1200: (5~ 10058) m ³ /h	$U_{rel}=0.056\%$ (Static mass method) $U_{rel}=0.32\%$ (Master meter method) $U_{rel}=0.85\%$ (Online method)		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
26	Gas Displacement Meters	Flow	Verification Regulation of Gas Displacement Meters JJG 633	DN10~DN300: (0.4~5000)m ³ /h	$U_{rel}=0.36\%$		
27	Vortex-shedding Flowmeter	Flow	Verification Regulation of Vortex-shedding Flowmeter JJG 1029	Gas, DN10~DN300: (0.4~5000)m ³ /h	$U_{rel}=0.36\%$ (Nozzle method)		
				Liquid, DN15~DN80: (0.03~100) m ³ /h	$U_{rel}=0.32\%$ (Master meter method)		
				Liquid, DN15~DN300: (0.5~1500) m ³ /h	$U_{rel}=0.07\%$ (Static mass method)		
28	*Ultrasonic Flowmeters	flow	Verification Regulation of Ultrasonic Flowmeters JJG 1030; Online Calibration Specification for Electromagnetic Flowmeters JJF 2216	Liquid, DN15~DN80: (0.03~100) m ³ /h	$U_{rel}=0.32\%$ (Master meter method)		
				Liquid, DN15~DN300: (0.5~1500)m ³ /h	$U_{rel}=0.056\%$ (Static mass method)		
				Gas, DN10~DN300: (0.4~5000) m ³ /h	$U_{rel}=0.36\%$ (Nozzle method)		
				Liquid, DN50~DN1200: (5~10058) m ³ /h	$U_{rel}=0.85\%$ (Online method)		
29	Cold Potable Water Meters	Flow	Verification Regulation of Cold Potable Water Meters JJG 162	(0.5~1500) m ³ /h	$U_{rel}=0.1\%$		
30	Master Meter Method Verification Facility of Compressed Natural Gas Dispenser	Flow	Calibration Specification for Master Meter Method Verification Facility of Compressed Natural Gas Dispenser JJF 1583	(1~80) kg/min	$U_{rel}=0.3\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
31	Flow Integration Meters	Flow	Verification Regulation of Flow Integration Meters JJG 1003	(0.5~20000) m ³ /h	$U_{rel}=0.05\%$		
32	*Weirs and Flumes for Flow Measurement	flow	Weirs and Flumes for Flow Measurement JJG 711	water elevation: (0.015~1.5) m flow: (0.324~9000) m ³ /h	$U=1.0\text{mm}$ $U_{rel}=4\%$		
33	*Vertical Metal Tank Capacity	capacity	Vertical Metal Tank Capacity JJG 168	(20~100) m ³ (inclusive of 100m ³) (100~700) m ³ (inclusive of 700m ³) (700~100000) m ³	$U_{rel}=0.3\%$ $U_{rel}=0.2\%$ $U_{rel}=0.1\%$		
34	*Horizontal Metal Tank Capacity	capacity	Horizontal Metal Tank Capacity JJG 266	(10~100)m ³	$U_{rel}=0.25\%$ ($k=2$) (more than 75% of the total capacity)		
35	Liquid-medium Piston Gauges	Pressure	Verification regulation of Liquid-medium Piston Gauges JJG 59	(0.04~60)MPa	$U_{rel}=0.0028\%$		
36	Piston Pressure Vacuum Gauge	Pressure	Verification regulation of piston pressure vacuum gauge JJG 236	(0.1~-0.01)MPa (0.01~0.25) MPa	$U_{rel}=0.0054\%$ $U_{rel}=0.0054\%$		
37	Elastic Element Precise Pressure Gauges and Vacuum Gauges	pressure	Verification Regulation of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG 49	(-0.1~100)MPa	$U=0.07\%\text{FS}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
38	*Elastic Element Pressure Gauges, Pressur-Vacuum Gauges and Vacuum Gauges for General Use	pressure	Verification Regulation of Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use JJG 52	(-0.1~100)MPa	$U=0.5\%FS$		
39	Digital Pressure Gauges	Pressure	Verification regulation of digital pressure gauge JJG 875	(-0.1~60)MPa	$U=0.024\%FS$		
				(60~100)MPa	$U=0.06\%FS$		
40	Aneroid Barometer & Aneroid Barograph	air pressure	Verification Regulation of Aneroid Barometer & Aneroid Barograph JJG 272	(800~1060)hPa	$U=0.6hPa$		
		Temperature Coefficient		(-0.14~0.25)hPa/°C	$U=0.03hPa/°C$		
41	Digital Barometers	air pressure	Verification Regulation of Digital Barometers JJG 1084	(800~1060)hPa	$U=0.14hPa$		
42	*Pressure Transmitters	Pressure	Verification regulation of pressure transmitter JJG882	(0~100)MPa	$U=0.06\%FS$		
43	Compensated Micro-manometer	pressure	Verification regulation of compensated micro manometer JJG158	(-2.5~2.5)kPa	$U=0.58Pa$		
44	Tilting Tube Micromanometers	pressure	Verification Regulation of Tilting Micromanometer JJG172	(-2.0~2.0)kPa	$U=4.8Pa$		
45	Standard Dynamometers	Force	Verification Regulation of Standard Dynamometers JJG144	(0.1~10)kN	$U_{rel}=0.06\%$		
				(10~60)kN	$U_{rel}=0.09\%$		
				(60~2000)kN	$U_{rel}=0.13\%$		
46	Working Dynamometers	Force	Verification Regulation of Working Dynamometer JJG455	(20~100)N	$U_{rel}=0.29\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(0.1~2000)kN	$U_{rel}=0.20\%$		
47	*Flexure Testing Machines	Force	Verification Regulation of Flexure Testing Machines JJG 476	5N~50kN	$U_{rel}=0.16\%$		
		Speed		(45~55)N/s	$U=0.17N/s$		
48	Hydraulic Jacks	Force	Verification Regulation of Hydraulic Jacks JJG 621	100N~5MN	$U_{rel}=0.41\%$		
49	*Tension, Compression and Universal Testing Machines	Force	Verification Regulation of Tension, Compression and Universal Testing Machines JJG 139	1N~100N	$U_{rel}=0.35\%$		
				100N~3000kN	$U_{rel}=0.16\%$		
				3MN~5MN	$U_{rel}=0.35\%$		
50	*Electro-hydraulic Servo Universal Testing Machines	Force	Verification Regulation of Electro-hydraulic Servo Universal Testing Machines JJG 1063	100N~2000kN	$U_{rel}=0.16\%$		
		Coaxiality		(0.1~20)%	$U=3\%$		
51	*Electronic Universal Testing Machine	Force	Verification Regulation of Electronic Universal Testing Machine JJG 475	1N~100N	$U_{rel}=0.35\%$		
				100N~1000kN	$U_{rel}=0.16\%$		
		Coaxiality		(0.1~20)%	$U=3\%$		
52	*Interface Tensionmeters	Tension	Calibration Specification for Interface Tensionmeters JJF1464	(1~200)mN/m	$U_{rel}=0.6\%$		
53	*Pendulum Impact Testing Machines	Impact energy	Verification Regulation of Pendulum Impact Testing Machines JJG145	Indirect method:(10~30)J	$U=1.0J$		
				Indirect method:(80~100)J	$U=2.3J$		
				Indirect method:(120~140)J	$U=2.2J$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Indirect method:(220~240)J	$U=4.4J$		
				Direct method:(0.1~300)J	$U_{rel}=0.4\%$		
54	Torque Wrenches	Torque	Verification Regulation of Torque Wrenches JJG707	(0.6~3000)Nm	$U_{rel}=0.4\%$		
55	Hydraulic Torque Bench	Torque	Verification Regulation of Hydraulic Torque Bench JJG(Xin)16	(700~20000)Nm	$U_{rel}=1.2\%$		
56	Working Torque- meters	Torque	Verification Regulation of Working Torque-meters JJG1146	(700~20000)Nm	$U_{rel}=1.2\%$		
57	*Metallic Brinell Hardness Testers	Hardness	Verification Regulation of Metallic Brinell Hardness Testers JJG150	(100~350)HBW	$U_{rel}=(0.8\sim 1.1)\%$		
58	*Metallic Rockwell Hardness Testing Machines (Scales A,B,C,D,E,F,G,H,K,N,T)	Hardness	Verification Regulation of Metallic Rockwell Hardness Testing Machines (Scales A,B,C,D,E,F,G,H,K,N,T) JJG112	(20~88) HRA	$U=0.6HR$	Accredited only for A、B、C scales.	
				(20~100) HRB	$U=0.8HR$		
				(20~30) HRC	$U=0.9HR$		
				(35~55) HRC	$U=0.7HR$		
				(60~70) HRC	$U=0.6HR$		
59	*Equotip Hardness tester	Hardness	Verification Regulation of Equotip Hardness Tester JJG747	(490~830)HLD	$U_{rel}=(1.4\sim 1.9)\%$		
60	*Metallic Vickers Hardness Testers	Hardness	Verification Regulation of Metallic Vickers Hardness Testers JJG151	(400~600)HV	$U_{rel}=(1.7\sim 2.5)\%$		
61	Vibration Displacement	Displacement	Verification Regulation of Vibration Displacement	Dynamic:(0.01~2)mm, 80Hz	$U_{rel}=1.0\%$		



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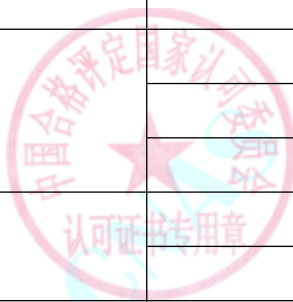
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Transducer		Transducer JJG644	Dynamic:(0.01~2)mm, (20~500)Hz	$U_{rel}=2.0\%$		
				Static:(0.01~50)mm	$U_{rel}=0.6\%$		
62	Electromagnetic Velocity Transducer	Speed	Verification Regulation of Electromagnetic Velocity Transducer JJG134	(0.1~200)m/s, 160Hz (0.1~200)m/s, (20~ 2000)Hz	$U_{rel}=1.0\%$ $U_{rel}=2.0\%$		
63	Piezoelectric Accelerometer	Acceleration	Verification Regulation of Piezoelectric Accelerometer JJG233	(1~100)m/s ² , 160Hz (1~100)m/s ² , (20~ 2000)Hz	$U_{rel}=1.0\%$ $U_{rel}=2.0\%$		
64	*Hydraulic Vibration Testing System	Frequency	Verification Regulation of Hydraulic Vibration Testing System JJG 638	(20~2000)Hz	$U=0.2$ Hz		
		Acceleration		(1~100)m/s ²	$U_{rel}=3.5\%$		
		Distortion Degree		(0.01~100)%	$U=2.0\%$		
65	*Mechanical Vibration Generator for Testing	Frequency	Verification Regulation of Mechanical Vibration Generator for Testing JJG 189	(20~1000)Hz	$U=0.2$ Hz		
		Acceleration		(1~100)m/s ²	$U_{rel}=3.5\%$		
		Distortion Degree		(0.01~100)%	$U=2.0\%$		
66	*Electrodynamic Horizontal Vibration Generator for Testing	Frequency	Verification Regulation of Electrodynamic Horizontal Vibration Generator for Testing JJG 1000	(20~4000)Hz	$U=0.2$ Hz		
		Acceleration		(1~100)m/s ²	$U_{rel}=3.5\%$		
		Distortion Degree		(0.01~100)%	$U=2.0\%$		
67	*Electrodynamic Vibration Testing Systems	Frequency	Verification regulation of electric vibration test system JJG 948	(20~4000)Hz	$U_{rel}=0.2$ Hz		
		Acceleration		(1~100)m/s ²	$U_{rel}=3.5\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Distortion Degree		(0.01~100)%	$U=2.0\%$		
68	Vibration Meters	Acceleration	Verification Regulation of Vibration Meters JJG 676	(0.1~100)m/s ² , 160Hz	$U_{rel}=1.0\%$		
				(1~100)m/s ² , (20~2000)Hz	$U_{rel}=2.0\%$		
		Speed		(0.1~100)m/s, 160Hz	$U_{rel}=1.0\%$		
				(0.1~100)m/s, (20~2000)Hz	$U_{rel}=2.0\%$		
		Displacement		(0.01~5)mm, 160Hz	$U_{rel}=1.0\%$		
				(0.01~5)mm, (20~2000)Hz	$U_{rel}=2.0\%$		
		Frequency		(20~2000)Hz	$U=0.2\text{ Hz}$		
69	Pile Dynamic Measuring Instruments	Frequency	Verification Regulation of Pile Dynamic Measuring Instruments JJG930	(20~2000) Hz	$U_{rel}=0.3\%$	ExCept for impact method and pile dynamic measuring	
		Acceleration		(5~100)m/s ²	$U_{rel}=2.0\%$		
70	Tachometers	Revolution	Verification Regulation of Tachometers JJG105	(30~30000)r/min	$U_{rel}=0.01\%$		
71	*Taximeters	Distance	Verification regulation of Taximeter JJG517	Used distance:(0.1~5)km	$U_{rel}=0.32\%$		
				Taximeters:(1~4)km	$U_{rel}=0.16\%$		
		Time		(300 ~900)s	$U_{rel}=0.1\%$		
72	Standard Equipment for Taximeter	Revolution	Verification Regulation of Standard Equipment for Taximeter JJG738	(500~4000)r/min	$U_{rel}=0.42\%$		
		Speed		(30~360)km/h	$U=0.7\text{km/h}$		
73	*Fixed Radar	frequency	Verification regulation of	(10~40)GHz	$U=2\text{MHz}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Vehicle Speed Measurement Devices	Speed	Fixed Radar Vehicle Speed Measurement Devices JJG 527	Simulated speed:(20~180)km/h	$U=1\text{km/h}$		
				Field speed:(20~100)km/h	$U=1\text{km/h}$		
74	*Mobile Radar Vehicle Speed Measurement Devices	frequency	Verification regulation of mobile motor vehicle radar velocimeter JJG 528	(10~40)GHz	$U=2\text{MHz}$		
		Speed		Simulated speed:(20~180)km/h	$U=1\text{km/h}$		
				Field speed:(20~100)km/h	$U=1\text{km/h}$		
75	*Laboratory Centrifuge	Rotating Speed	Calibration Specification for Laboratory Centrifuge JJF(Meng)039	(500~30000)r/min	$U_{\text{rel}}=0.7\%$		
76	*Elevator Overspeed Governor Testers	Speed	Calibration Specification for Elevator Overspeed Governor Testers JJF1374	(1.000~5.000)m/s	$U_{\text{rel}}=0.4\%$		
77	*Chassis Dynamometers of Automobile Emissions Testing	Speed	Calibration Specification for Chassis Dynamometers of Automobile Emissions Testing JJF1221	(1~100) km/h	$U_{\text{rel}}=0.11\%$		
		Torsion		(200~10000) N	$U_{\text{rel}}=0.34\%$		
		Time		(0.1~150) s	$U_{\text{rel}}=1.46\%$		
78	*Equipment of Power Measuring	Torsion	Verification Regulation of Equipment of Power Measuring JJG 653	(200~10000) N	$U_{\text{rel}}=0.5\%$		
		speed		(1~120) km/h	$U_{\text{rel}}=0.3\%$		
4、Acoustics							
1	Sound Level Meters	Sound Pressure Level	Verification regulation of Sound Level Meters JJG 188	Sound signal:(10~94)dB,(10~250)Hz	$U=0.5\text{dB}$		
				Sound signal:(10~94)dB,(315~3150)Hz	$U=0.5\text{dB}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date	
				Sound signal:(10~94)dB,(4000~8000)Hz	<i>U</i> =0.6dB			
				Sound signal:(10~94)dB,(10~20)kHz	<i>U</i> =0.7dB			
				Electrical Signal:(1~140)dB,(1~8)kHz	<i>U</i> =0.2dB			
				Burst Signal:(1~140)dB, (0.25~1000)ms	<i>U</i> =0.2dB			
		Time weighting		F:(1~50)dB/s, 4kHz	<i>U</i> =3.0dB/s			
		S:(1~50)dB/s, 4kHz		<i>U</i> =0.3dB/s				
2	Noise Level Statistical Analyzers	Sound Pressure Level	Verification regulation of Noise Level Statistical Analyzers JJG 778	Sound signal:(10~94)dB, (10~250)Hz	<i>U</i> =0.5dB			
				Sound signal:(10~94)dB, (315~3150)Hz	<i>U</i> =0.5dB			
				Sound signal:(10~94)dB, (4000~8000)Hz	<i>U</i> =0.6dB			
				Sound signal:(10~94)dB, (10~20)kHz	<i>U</i> =0.7dB			
				Electrical Signal:(1~140)dB, (1~8)kHz	<i>U</i> =0.2dB			
				Burst Signal:(1~140)dB, (0.25~1000)ms	<i>U</i> =0.2dB			
				Time weighting	F:(1~50)dB/s, 4kHz			<i>U</i> =3.0dB/s
		S:(1~50)dB/s, 4kHz		<i>U</i> =0.3dB/s				



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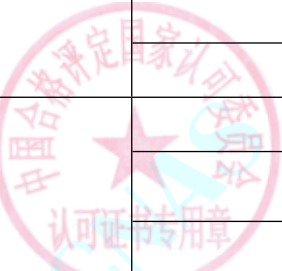
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
3	*Ultrasonic Source for Medical Ultrasonic Diagnostic Equipment	Ultrasonic Power	Verification regulation of Ultrasonic Source for Medical Ultrasonic Diagnostic Equipment JJG 639	(1~100)mW	$U_{rel}=20\%$		
4	*Ultrasound Bone Sonometers	Speed of Sound	Calibration specification for ultrasound bone Sonometers JJF 1649	Calcaneus:(1400~1700)m/s Radius:(2500~3000)m/s	$U=28\text{m/s}$ $U=28\text{m/s}$		
5、 Electromagnetism							
1	*Amperemeters, Voltmeters, Wattmeters and Ohmmeters	DC Voltage	Verification Regulation of Amperemeters, Voltmeters, Wattmeters and Ohmmeters JJG 124	10mV~1000V	$U_{rel}=0.1\%$		
		AC Voltage		(0.1~1000)V, (50Hz、60Hz、400Hz)	$U_{rel}=0.1\%$		
		DC Current		1mA~20A	$U_{rel}=0.1\%$		
		AC Current		2mA~20A, (50Hz、60Hz、400Hz)	$U_{rel}=0.11\%$		
		DC Power		10W~7kW	$U_{rel}=0.2\%$		
		AC Power		10W~10kW, (50Hz)	$U_{rel}=0.2\%$		
		DC Resistance		1 Ω ~ 1M Ω	$U_{rel}=0.3\%$		
2	D.C. Potentiometers	DC Voltage	Verification Regulation of D.C. Potentiometers JJG 123	(0.1~0.211111)V	$U=2.4 \times 10^{-5} U_x + 0.024 \mu\text{V}$		
				(0.211111~2.111110)V	$U=1.2 \times 10^{-5} U_x + 0.12 \mu\text{V}$		
3	*Transformers Turn Ratio Test Sets	Ratio	Verification Regulation of Transformers Turn Ratio Test Sets JJG 970	1~1000	$U_{rel}=0.014\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
4	Instrument Voltage Transformers	Ratio	Verification Regulation of Instrument Voltage Transformers JJG 314	(2~10)kV/100V, 20%U _n	U=0.020%			
				(2~10)kV/100V, (50%~120%)U _n	U=0.012%			
		Phase		±(0.001' ~100'), (2~10)kV/100V, 20%U _n	U=0.8'			
				±(0.001' ~100'), (2~10)kV/100V, (50%~120%)U _n	U=0.4'			
5	*Withstanding Voltage Testers	DC Voltage	Verification Regulation of Withstanding Voltage Testers JJG 795	(0.5~15)kV	U _{rel} =0.6%			
		AC Voltage		(0.5~15)kV, (50Hz)	U _{rel} =0.6%			
		DC Current		(0.4~200)mA	U _{rel} =0.8%			
		AC Current		(0.4~200)mA, (50Hz)	U _{rel} =0.8%			
		Time		10s~99s	U _{rel} =0.8%			
6	*AC High Voltage Test Device	AC Voltage	Calibration Specification for AC High Voltage Test Device JJF(Zhe) 1144	(10~100)kV, (50Hz)	U _{rel} =1.4%			
		Frequency		(45~65)Hz	U _{rel} =0.13%			
		Distortion		0.1%~5%, (50Hz)	U _{rel} =3%			
7	Instrument Current Transformers	Ratio	Verification Regulation of Instrument Current Transformers JJG 313	(5~2000)A/5A, 5%I _n	U=0.024%			
				(5~2000)A/5A, (20%~120%)I _n	U=0.012%			
		Phase		(0.01' ~999.9'), (5~2000)A/5A, 5%I _n	U=0.70'			



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(0.01' ~ 999.9'), (5~2000)A/5A, (20%~120%) I_n	$U=0.34'$		
8	*High Current Generator	AC Current	Calibration Specification of High Current Generator JJF(JX) 1037	(5~2000)A, (50Hz)	$U_{rel}=0.1\%$		
9	DC Standard Resistors	DC Resistance	Verification Regulation of DC Standard Resistors JJG 166	1m Ω 、10m Ω 、100k Ω	$U_{rel}=5 \times 10^{-6}$		
				1 Ω	$U_{rel}=1.8 \times 10^{-6}$		
				0.1 Ω 、10 Ω 、100 Ω 、1k Ω 、10k Ω	$U_{rel}=3 \times 10^{-6}$		
10	*High Voltage and Value D.C.Resistors	DC Resistance	Verification Regulation of High Voltage and Value D.C.Resistors JJG 1072	100 Ω ~ 100M Ω	$U_{rel}=0.12\%$		
				100M Ω ~ 10G Ω	$U_{rel}=0.29\%$		
				10G Ω ~ 100G Ω	$U_{rel}=0.64\%$		
				100G Ω ~ 1T Ω	$U_{rel}=1.2\%$		
11	*DC Resistive Volt Ratio Box	Voltage Division Ratio	Verification Regulation of DC Resistive Volt Ratio Box JJG 531	10~500, (100mV~1000V)	$U_{rel}=3 \times 10^{-5}$		
12	D.C. Resistance Boxes	DC Resistance	Verification Regulation of D.C. Resistance Boxes JJG 982	1 Ω ~ 100k Ω	$U_{rel}=0.002\%$		
				10m Ω ~ 1 Ω	$U_{rel}=0.03\%$		
				1m Ω ~ 10m Ω	$U_{rel}=1\%$		
13	D.C. Bridges	DC Resistance	Verification Regulation of D.C. Bridges JJG 125	1 Ω ~ 100k Ω	$U_{rel}=0.002\%$		
				10m Ω ~ 1 Ω	$U_{rel}=0.03\%$		
				1m Ω ~ 10m Ω	$U_{rel}=1\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
14	*Megohmmeter	DC Resistance	Verification regulation of insulation resistance meter (megger) JJG 622	100 Ω ~ 10M Ω	$U_{rel}=0.24\%$		
				10M Ω ~ 100M Ω	$U_{rel}=0.58\%$		
				100M Ω ~ 1G Ω	$U_{rel}=1.2\%$		
				1G Ω ~ 1T Ω	$U_{rel}=2.4\%$		
		DC Voltage		(100~5000)V	$U_{rel}=1.7\%$		
15	*Electronic Insulation Resistance Meters	DC Resistance	Verification Regulation of Electronic Insulation Resistance Meters JJG 1005	100 Ω ~ 10M Ω	$U_{rel}=0.24\%$		
				10M Ω ~ 100M Ω	$U_{rel}=0.58\%$		
				100M Ω ~ 1G Ω	$U_{rel}=1.2\%$		
				1G Ω ~ 1T Ω	$U_{rel}=2.4\%$		
		DC Voltage		100V~10kV	$U_{rel}=1.7\%$		
16	*Earth Resistance Tester	Resistance	Verification Regulation of Earth Resistance Meters JJG 366	0.010 Ω ~ 0.1 Ω	$U_{rel}=12\%$		
				0.10 Ω ~ 1 Ω	$U_{rel}=1.4\%$		
				1 Ω ~ 2011.110 Ω	$U_{rel}=0.12\%$		
17	Reference Meters for Electrical Energy	AC Electrical Energy	Verification Regulation of Reference Meters for Electrical Energy JJG 1085	Three-phase balance loads: $3 \times (57.7 \sim 380)V$, $3 \times (0.1 \sim 100)A$, 50Hz, $\cos \phi = 1.0$, 0.5L, 0.8C	$U_{rel}=0.024\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Three-phase balance loads: $3 \times (57.7 \sim 380)\text{V}$, $3 \times (0.1 \sim 100)\text{A}$, 50Hz, $\cos \phi = 0.5\text{C}$	$U_{\text{rel}}=0.035\%$		
				Three-phase unbalance loads: $3 \times (57.7 \sim 380)\text{V}$, $3 \times (0.1 \sim 100)\text{A}$, 50Hz, $\cos \phi = 1.0$, 0.5L, 0.8C	$U_{\text{rel}}=0.024\%$		
				Three-phase unbalance loads: $3 \times (57.7 \sim 380)\text{V}$, $3 \times (0.1 \sim 100)\text{A}$, 50Hz, $\cos \phi = 0.5\text{C}$	$U_{\text{rel}}=0.035\%$		
18	*Verification Equipment for AC Electrical Energy Meters	AC Electrical Energy	Verification Regulation of Verification Equipment for AC Electrical Energy Meters JJG 597	Three-phase balance loads: $3 \times (57.7 \sim 380)\text{V}$, $3 \times (0.1 \sim 100)\text{A}$, 50Hz, $\cos \phi = 1.0$, 0.5L, 0.8C	$U_{\text{rel}}=0.024\%$		
				Three-phase balance loads: $3 \times (57.7 \sim 380)\text{V}$, $3 \times (0.1 \sim 100)\text{A}$, 50Hz, $\cos \phi = 0.5\text{C}$	$U_{\text{rel}}=0.035\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			ilac-M	Three-phase unbalance loads: $3 \times (57.7 \sim 380)V$, $3 \times (0.1 \sim 100)A$, 50Hz, $\cos \phi = 1.0, 0.5L, 0.8C$	$U_{rel}=0.024\%$		
				Three-phase unbalance loads: $3 \times (57.7 \sim 380)V$, $3 \times (0.1 \sim 100)A$, 50Hz, $\cos \phi = 0.5C$	$U_{rel}=0.035\%$		
		AC Voltage		$(57.7 \sim 380)V, 50Hz$	$U_{rel}=0.12\%$		
		AC Current		$(0.1 \sim 100)A, 50Hz$	$U_{rel}=0.12\%$		
		AC Power		$(5.777 \sim 38000)W, 50Hz$	$U_{rel}=0.15\%$		
		Phase Angle		$0^\circ \sim 360^\circ, 50Hz$	$U=0.18^\circ$		
19	*Zinc-oxide Arrester Testers	Voltage	Calibration Specification for Zinc-oxide Arrester Testers JJF 2194	$(10 \sim 250)V, 50Hz$	$U_{rel}=0.5\%$		
		Current		$(1 \sim 20)mA, 50Hz$	$U_{rel}=0.5\%$		
		Phase Angle		$0^\circ \sim 180^\circ, 50Hz$	$U=0.9^\circ$		
20	Process Calibrators	DC voltage (measurement)	Calibration specification for process instrument calibrators JJF1472	$10mV \sim 300V$	$U_{rel}=4.6 \times 10^{-5}$		
		DC current (measurement)		$\pm (1 \sim 100) mA$	$U_{rel}=1.5 \times 10^{-4}$		
		Resistance (measurement)		$(10 \sim 10000) \Omega$	$U_{rel}=2.9 \times 10^{-4}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Frequency (measurement)		1Hz~100kHz	$U_{rel}=2 \times 10^{-4}$		
		Temperature(Thermal resistance measurement)		(-200~800) °C	$U=0.058^{\circ}\text{C}$		
		Temperature(Thermocouple measurement)		(100~1000) °C	$U=0.41^{\circ}\text{C}$		
		AC voltage (measurement)		100mV~300V, (50Hz~1kHz)	$U_{rel}=1.1 \times 10^{-4}$		
		AC current (measurement)		(10~200)mA, (50Hz~1kHz)	$U_{rel}=2.4 \times 10^{-4}$		
		DC voltage (output)		10mV~300V	$U_{rel}=5.2 \times 10^{-5}$		
		DC Current (Output)		(1~100)mA	$U_{rel}=1.2 \times 10^{-4}$		
		Resistance (Output)		(10~10000) Ω	$U_{rel}=1.3 \times 10^{-4}$		
		Frequency (output)		1Hz~100kHz	$U_{rel}=2 \times 10^{-4}$		
		Temperature(Thermal resistance output)		(-200~800) °C	$U=0.058^{\circ}\text{C}$		
		Temperature(Thermocouple output)		(100~1000) °C	$U=0.41^{\circ}\text{C}$		
				(1000~1700) °C	$U=0.29^{\circ}\text{C}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date	
21	Multifunction Standard Source	DC voltage	Calibration Specification for Multifunction Standard Sources JJF1638	(0.1~1) V	$U=1.6\times 10^{-5}R_d+0.7\mu V$			
				(1~10) V	$U=1.3\times 10^{-5}R_d+5\mu V$			
				(10~100) V	$U=1.7\times 10^{-5}R_d+70\mu V$			
				(100~1000) V	$U=1.6\times 10^{-5}R_d+0.4mV$			
		DC current		10mA~19A	$U_{rel}=0.04\%$			
		AC voltage		(0.1~1) V, (40Hz~10kHz)	$U=1.8\times 10^{-4}R_d+90\mu V$			
				(1~10) V, (40Hz~10kHz)	$U=2.6\times 10^{-4}R_d+0.9mV$			
				(10~100) V, (40Hz~10kHz)	$U=3.2\times 10^{-4}R_d+9mV$			
				(100~1000) V, (40Hz~10kHz)	$U=4\times 10^{-4}R_d+0.09V$			
				AC current	100 μ A~19A, (40Hz~10kHz)		$U_{rel}=0.1\%$	
				Resistance	(1~2) Ω		$U=2.2\times 10^{-5}R_d+5\mu\Omega$	
		(2~20) Ω			$U=1.2\times 10^{-5}R_d+18\mu\Omega$			
		(20~200) Ω			$U=1.0\times 10^{-5}R_d+60\mu\Omega$			
		200 Ω ~2k Ω			$U=1.0\times 10^{-5}R_d+0.6m\Omega$			
		2k Ω ~20k Ω			$U=1.0\times 10^{-5}R_d+6m\Omega$			
		20k Ω ~200k Ω			$U=1.0\times 10^{-5}R_d+60m\Omega$			
		200k Ω ~2M Ω			$U=1.2\times 10^{-5}R_d+1.2\Omega$			



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				2M Ω ~ 20M Ω	$U=2.5 \times 10^{-5} R_d+0.12\text{k} \Omega$		
				20M Ω ~ 200M Ω	$U=1.5 \times 10^{-4} R_d+12\text{k} \Omega$		
				200M Ω ~ 1G Ω	$U=1.9 \times 10^{-3} R_d+1.2\text{M} \Omega$		
22	Digital multimeter	DC voltage	Calibration Specification for Multimeters JJF1587	100mV ~ 220mV	$U=1.0 \times 10^{-5} R_d+0.7\mu\text{V}$		
				220mV ~ 2.2V	$U=9 \times 10^{-6} R_d+1.2\mu\text{V}$		
				2.2V ~ 11V	$U=9 \times 10^{-6} R_d+80\mu\text{V}$		
				11V ~ 22V	$U=9 \times 10^{-6} R_d+80\mu\text{V}$		
				22V ~ 220V	$U=1.0 \times 10^{-5} R_d+0.10\text{mV}$		
				220V ~ 1000V	$U=1.1 \times 10^{-5} R_d+0.6\text{mV}$		
		DC current		100 μ A ~ 220 μ A	$U=6 \times 10^{-5} R_d+10\text{nA}$		
				220 μ A ~ 2.2mA	$U=6 \times 10^{-5} R_d+10\text{nA}$		
				2.2mA ~ 22mA	$U=6 \times 10^{-5} R_d+0.10\mu\text{A}$		
				22mA ~ 220mA	$U=7 \times 10^{-5} R_d+1.0\mu\text{A}$		
				220mA ~ 2.2A	$U=1.0 \times 10^{-4} R_d+30\mu\text{A}$		
				2.2A ~ 10A	$U=5 \times 10^{-4} R_d+0.6\text{mA}$		
		AC voltage		(0.5 ~ 2.2)V, (40Hz ~ 20kHz)	$U=9 \times 10^{-5} R_d+7\mu\text{V}$		
				(2.2 ~ 22)V, (40Hz ~ 20kHz)	$U=9 \times 10^{-5} R_d+70\mu\text{V}$		
				(22 ~ 220)V, (40Hz ~ 20kHz)	$U=1.0 \times 10^{-4} R_d+1.0\text{mV}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
		AC current	ilac-M	(220~1000)V, (40Hz~1kHz)	$U=1.0\times 10^{-4}R_d+5\text{mV}$		
				(10~22)mA, (40Hz~1kHz)	$U=2.0\times 10^{-4}R_d+0.5\mu\text{A}$		
				(22~220)mA, (40Hz~1kHz)	$U=2.0\times 10^{-4}R_d+5\mu\text{A}$		
				220mA~2.2A, (40Hz~1kHz)	$U=8\times 10^{-4}R_d+50\mu\text{A}$		
				2.2A~10A, (40Hz~1kHz)	$U=6\times 10^{-4}R_d+0.2\text{mA}$		
		DC ohmmeter		10 Ω	$U_{\text{rel}}=4\times 10^{-5}$		
				19 Ω	$U_{\text{rel}}=4\times 10^{-5}$		
				100 Ω	$U_{\text{rel}}=2.0\times 10^{-5}$		
				190 Ω	$U_{\text{rel}}=2.0\times 10^{-5}$		
				1k Ω	$U_{\text{rel}}=1.6\times 10^{-5}$		
				1.9k Ω	$U_{\text{rel}}=1.6\times 10^{-5}$		
				10k Ω	$U_{\text{rel}}=1.4\times 10^{-5}$		
				19k Ω	$U_{\text{rel}}=1.4\times 10^{-5}$		
				100k Ω	$U_{\text{rel}}=1.7\times 10^{-5}$		
				190k Ω	$U_{\text{rel}}=1.7\times 10^{-5}$		
				1M Ω	$U_{\text{rel}}=2.4\times 10^{-5}$		
				1.9M Ω	$U_{\text{rel}}=2.5\times 10^{-5}$		



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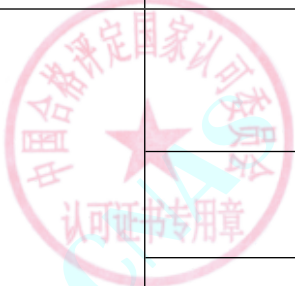
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				10M Ω	$U_{rel}=4.7\times 10^{-5}$		
				19M Ω	$U_{rel}=5.5\times 10^{-5}$		
				100M Ω	$U_{rel}=1.3\times 10^{-4}$		
23	*Burden Box of Instrument Transformers	Impedance	Calibration Specification for Burden Box of Instrument Transformers JJF 1264	(0.06~10) Ω	$U_{rel}=0.24\%$		
		Admittance		(0.075~12)mS	$U_{rel}=0.24\%$		
24	*Transformer Characteristic Testers	Voltage	Calibration Specification for Transformer Characteristic Testers T/JJF (HUABEI) 5006	(0.1~1000)V,50Hz	$U_{rel}=0.3\%$		
		Current		(0.1~20)A,50Hz	$U_{rel}=0.3\%$		
		Ratio		1~400	$U_{rel}=0.16\%$		
		Secondary load (impedance)		(0.1~1.0) Ω	$U_{rel}=0.24\%$		
		Secondary load (admittance)		(0.1~1.0)mS	$U_{rel}=0.24\%$		
		Secondary winding resistance		(0.1~100) Ω	$U_{rel}=2\%$		
25	*Instrument Transformers Test Set	Ratio Error	Verification regulation of transformer calibrator JJG 169	-10%~-0.02%,0.02%~10%	$U_{rel}=0.24\%$		
		Phase difference		-50'~-0.5',0.5'~50'	$U_{rel}=0.24\%$		
6、 Radio							
1	*Dielectric loss and volume resistivity tester of insulating oil	Dielectric Loss	Calibration Specification for Insulating Oil Dielectric Dissipation Factor and Volume Resistivity Testers	(0.01~9.996)%	$U=0.6\%R_d+0.01\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Volume resistivity	JJF 1618	$(1.13 \times 10^6 \sim 1.13 \times 10^{12}) \Omega \cdot m$	$U_{rel}=0.5\%$		
		Capacity		100pF	$U_{rel}=0.6\%$		
		AC Voltage		(0.1~2)kV, 50Hz	$U_{rel}=0.6\%$		
		Temperature		(50~100)° C	$U=0.1^{\circ} C$		
2	*High Voltage Dielectric Loss Tester	Dielectric Loss Factor	Verification regulation of high voltage dielectric loss factor tester JJG 1126	(0.01~9.996)%	$U=0.6\%R_d+0.01\%$		
		Capacity		100pF	$U_{rel}=0.5\%$		
7、 Time frequency							
1	*Clock Testers	Frequency measurement	C. S. for Clock Testers JJF 1662	1Hz~10MHz	$U_{rel}=1.2 \times 10^{-6}$		
		Frequency output		100kHz、 50kHz、 10kHz、 1kHz	$U_{rel}=1.2 \times 10^{-6}$		
		Time interval (Daily difference)		-10s~10s	$U=0.02s$		
		Moment		0h0min0s~23h59min59s	$U=3.2s$		
2	Mechanical stopwatch	Time	Verification regulation of stopwatch JJF2195	MECHANICAL STOPWATCH:0.1s~15min, (Resolution 0.1s)	$U=0.10s$		
				Mechanical Stopwatch:0.2s~30min (Resolution 0.2s)	$U=0.2s$		
				Electronic Stopwatch: (1~3600) s			



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Electronic Stopwatch:86400s	U=0.06s		
8、Optics							
1	*Water Colorimeters	Chroma	Calibration Specification for Water Colorimeters JJF 1689	Digital display instrument:(0~100)PCU	U=1.7PCU		
				Digital display instrument:(100~ 500)PCU	U=4.4PCU		
				Visual instrument:(0~ 5)PCU	U=4PCU		
				Visual instrument:(5~ 70)PCU	U=7PCU		
2	*Trial Case Lenses	Vertex power	Verification regulation of optometry lens box JJG579	(-20~+20) m ⁻¹	U=0.03m ⁻¹		
				(-6.00~+6.00) m ⁻¹	U=0.06m ⁻¹		
				(0.00~5.00) cm/m	U=0.10cm/m		
				(5.00~10.00) cm/m	U=0.10cm/m		
3	*Focimeters	Vertex power	Verification regulation of Focimeters JJG580	(-25~+25) m ⁻¹	U=0.04m ⁻¹		
				-6.00~+6.00) m ⁻¹	U=0.04m ⁻¹		
				(2.00~20.00) cm/m	U=0.10cm/m		
4	*Eye Refractometers	Vertex power	Verification regulation of optometer JJG892	(-20~+20) m ⁻¹	U=0.16m ⁻¹		
				-3m ⁻¹	U=0.30m ⁻¹		
				(55~75) m	U=1.2mm		
		Corneal axial position		(5.5~10.0) mm	U=0.015mm		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
9、 Chemistry								
1	*Ultraviolet, Visible Spectrophotometers	Wavelength	Verification Regulation of Ultraviolet, Visible, Near-Infrared Spectrophotometers JJG 178	(190~900)nm	U=0.4nm			
		Transmissivity		5%~35%	U=0.4%			
2	*Fourier Transform Infrared Spectrometers	Wave Number	Calibration Specification for Fourier Transform Infrared Spectrometers JJF 1319	(4000~400)cm ⁻¹	U=0.53cm ⁻¹			
3	*Atomic absorption spectrophotometer	Detection limit	Verification Regulation of Atomic Absorption Spectrophotometers JJG 694	Determination by flame atomization (Cu) : ≤0.020 μ g/mL	U=0.005 μ g/mL			
				Graphite furnace atomization method (Cd) : ≤4.0pg	U=0.4pg			
		Concentration		Determination by flame atomization Cu:(0.50~5.00) μ g/mL	U _{rel} =5.4%			
				Graphite furnace atomization method Cd:(0.50~5.00)ng/mL	U _{rel} =7.8%			
4	*Fluorescence Spectrophotometer	Detection limit	Verification Regulation of Fluorescence Spectrophotometer JJG 537	Type A: ≤5×10 ⁻¹⁰ g/mL	U _{rel} =45%			
5	*Atomic Fluorescence Spectrophotometers	Detection limit	Verification Regulation of Atomic Fluorescence Spectrophotometers JJG 939	As: ≤0.4ng	U _{rel} =48%			
				Sb: ≤0.4ng	U _{rel} =48%			
6	*ICP spectrometer	wave length	Verification Regulation of Emission Spectrometer JJG 768	(190~770)nm	U=0.01nm			
		Detection limit		Zn: ≤0.003mg/L	U _{rel} =48%			



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Ni: $\leq 0.01\text{mg/L}$	$U_{\text{rel}}=48\%$		
				Mn: $\leq 0.002\text{mg/L}$	$U_{\text{rel}}=48\%$		
				Cr: $\leq 0.007\text{mg/L}$	$U_{\text{rel}}=48\%$		
				Cu: $\leq 0.007\text{mg/L}$	$U_{\text{rel}}=48\%$		
				Ba: $\leq 0.001\text{mg/L}$	$U_{\text{rel}}=48\%$		
7	*Flame Photometer	Concentration	Verification Regulation of Flame Photometer JJG 630	K: (0~0.200)mmol/L	$U=0.0004\text{mmol/L}$		
				Na: (0~1.00)mmol/L	$U=0.034\text{mmol/L}$		
		Detection limit		K: $\leq 0.004\text{mmol/L}$	$U=0.001\text{mmol/L}$		
				Na: $\leq 0.008\text{mmol/L}$	$U=0.004\text{mmol/L}$		
8	*Polarimeter and Polarimetric Saccharimeters	Optical rotation	Verification Regulation of Polarimeter and Polarimetric Saccharimeters JJG 536	$-75^{\circ} \sim +75^{\circ}$	$U=0.003^{\circ} \sim 0.005^{\circ}$		
		Brix		$-209^{\circ} Z \sim +209^{\circ} Z$	$U=0.02^{\circ} Z$		
9	*Mercury analyzers	Detection limit	Verification Regulation of Mercury Analyzers JJG 548	Absorption class: $\leq 1.0\text{ng}$	$U_{\text{rel}}=47\%$		
				Fluorescence class: $\leq 0.1\text{ng}$	$U_{\text{rel}}=47\%$		
10	*Gas Chromatographs	Sensitivity	Verification Regulation of Gas Chromatographs JJG 700	TCD(Benzene in Toluene): $\geq 800\text{mV} \cdot \text{mL/mg}$	$U_{\text{rel}}=11\%$		
				TCD($\text{CH}_4\text{-N}_2$): $\geq 800\text{mV} \cdot \text{mL/mg}$	$U_{\text{rel}}=10\%$		
		Detection limit		ECD(lindane in isooctane): $\leq 5\text{pg/mL}$	$U_{\text{rel}}=11\%$		
				FID($\text{CH}_4\text{-N}_2$): $\leq 0.5\text{ng/s}$	$U_{\text{rel}}=11\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				FID(n-Hexadecane in isooctane): $\leq 0.5\text{ng/s}$	$U_{\text{rel}}=11\%$		
				FPD(P): $\leq 0.1\text{ng/s}$	$U_{\text{rel}}=16\%$		
				FPD(S): $\leq 0.5\text{ng/s}$	$U_{\text{rel}}=11\%$		
				NPD(N): $\leq 5\text{pg/s}$	$U_{\text{rel}}=11\%$		
				NPD(P): $\leq 10\text{pg/s}$	$U_{\text{rel}}=11\%$		
11	*Liquid Chromatographs	Minimum detection concentration	Verification Regulation of Liquid Chromatographs JJG 705	UV VIS detector: $\leq 5 \times 10^{-8}\text{g/mL}$	$U_{\text{rel}}=4.4\%$		
				DAD detector: $\leq 5 \times 10^{-8}\text{g/mL}$	$U_{\text{rel}}=4.4\%$		
				FLD detector: $\leq 5 \times 10^{-9}\text{g/mL}$	$U_{\text{rel}}=4.4\%$		
				DRD detector: $\leq 5 \times 10^{-6}\text{g/mL}$	$U_{\text{rel}}=5.1\%$		
				Evaporative light scattering detector: $\leq 5 \times 10^{-6}\text{g/mL}$	$U_{\text{rel}}=5.1\%$		
		Flow		(0.1~1.5)mL/min	$U_{\text{rel}}=0.3\%$		
12	*Ion Chromatographs	Minimum detection concentration	Verification Regulation of Ion Chromatographs JJG 823	Conductance detector、UV VIS detector、Electrochemical detector: $\leq 0.02 \mu\text{g/L}$	$U_{\text{rel}}=40\%$		
		Flow		(0.2~1.5)mL/min	$U_{\text{rel}}=0.2\%$		
13	*Quadrupole Inductively Coupled Plasma	Detection limit	Calibration Specification for Quadrupole Inductively Coupled Plasma Mass	Be: $\leq 30\text{ng/L}$	$U_{\text{rel}}=48\%$		
				In: $\leq 10\text{ng/L}$	$U_{\text{rel}}=48\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Mass Spectrometers		Spectrometers JJF 1159	Bi: $\leq 10\text{ng/L}$	$U_{\text{rel}}=48\%$		
14	*Gas Chromatography-Mass Spectrometries	Signal to Noise Ratio	Calibration Specification for Gas Chromatography-Mass Spectrometries JJF 1164	Ion trap, single quadrupole(EI^+ 、 CI^+ 、 CI^-): $\text{S/N} \geq 10:1$	$U_{\text{rel}}=15\%$		
				Triple quadrupole (EI^+ 、 CI^+): $\text{S/N} \geq 10:1$	$U_{\text{rel}}=15\%$		
				Time of flight, electrostatic orbit(EI^+): $\text{S/N} \geq 50:1$	$U_{\text{rel}}=15\%$		
		Atomic mass		(50~700)u	$U=0.06\text{u}$		
15	*Liquid Chromatography-Mass Spectrometers	Signal to Noise Ratio	Calibration Specification for Liquid Chromatography-Mass Spectrometers JJF 1317	Triple quadrupole(ESI^-)、Single quadrupole、ion trap(ESI^- 、 ESI^+ 、 APCI^+): $\geq 10:1$ Triple quadrupole(ESI^+ 、 APCI^+): $\geq 30:1$	$U_{\text{rel}}=10\%$		
		Atomic mass		(190~2300)u	$U=0.10\text{u}$		
16	*Analyzers for Oil Content in Water	Concentration	Verification Regulation of Analyzers for Oil Content in Water JJG 950	(1~10)mg/L	$U=0.2\text{mg/L}$		
				(10~1000)mg/L	$U_{\text{rel}}=3.3\%$		
17	*Turbidimeters	Turbidity	Verification Regulation of Turbidimeters JJG 880	(1~2000)NTU	$U_{\text{rel}}=3.2\%$		
18	Dissolved Oxygen Meters	Concentration	Verification Regulation of Dissolved Oxygen Meters JJG 291	(5~12)mg/L	$U=0.12\text{mg/L}$		
19	*On-line Automatic Determinators of	Concentration	Verification Regulation of On-line Automatic Determinators of Chemical	(16~100)mg/L	$U_{\text{rel}}=2.2\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Chemical Oxygen Demand (COD)		Oxygen Demand (COD) JJG 1012	(100~1000)mg/L	$U_{rel}=1.0\%$		
20	*Chemical Oxygen Demand (COD) Meters	Concentration	Verification Regulation of Chemical Oxygen Demand (COD) Meters JJG 975	Type A: (1~50)mg/L	$U_{rel}=2.6\%$		
				Type A: (50~1000)mg/L	$U_{rel}=1.9\%$		
		Temperature		(100~200)°C	$U=0.3^{\circ}\text{C}$		
21	*Total Organic Carbon Analyzer	Concentration	Verification Regulation of Total Organic Carbon Analyzer JJG 821	organic carbon: (1~1000)mg/L	$U_{rel}=3\%$		
				inorganic carbon: (1~1000)mg/L	$U_{rel}=3\%$		
22	*Ammonia-Nitrogen Automatic Analyzers	Concentration	Verification Regulation of Ammonia-Nitrogen Automatic Analyzers JJG 631	(0.2~2.0)mg/L	$U=0.12\text{mg/L}$		
				(2.0~100)mg/L	$U_{rel}=3\%$		
23	*Total Nitrogen Analyzer	Concentration	Calibration Specification for Total Nitrogen Analyzer T/JJF(North China)5001	(0.1~20)mg/L	$U_{rel}=3.4\%$		
				(20~500)mg/L	$U_{rel}=2\%$		
24	*Silicate Analyzers	Concentration	Calibration Specification for Silicate Analyzers JJF 1539	(2~100) $\mu\text{g/L}$	$U=1.3 \mu\text{g/L}$		
				(100~200) $\mu\text{g/L}$	$U_{rel}=2\%$		
25	*Phosphate Analyzers	Concentration	Calibration Specification for Phosphate Analyzers JJF 1567	(0.1~50)mg/L	$U_{rel}=1.5\%$	合格评定国家认可 CNAS 认可证书专用章	
26	*Flow Analyzers with Spectrophotography	Wavelength	Calibration Specification for Flow Analyzers with Spectrophotography JJF 1568	(360~1100)nm	$U=1.2\text{nm}$		
		Detection limit		Cyanide: $\leq 0.002\text{mg/L}$	$U=0.0003\text{mg/L}$		
				Volatile phenol in water: $\leq 0.002\text{mg/L}$	$U=0.0003\text{mg/L}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Hexavalent chromium: $\leq 0.004\text{mg/L}$	$U=0.0013\text{mg/L}$		
				Total phosphorus: $\leq 0.01\text{mg/L}$	$U=0.002\text{mg/L}$		
				Ammonia nitrogen: $\leq 0.04\text{mg/L}$	$U=0.003\text{mg/L}$		
				Total nitrogen: $\leq 0.04\text{mg/L}$	$U=0.003\text{mg/L}$		
				Sulfide: $\leq 0.005\text{mg/L}$	$U=0.0005\text{mg/L}$		
				Anionic surfactant: $\leq 0.05\text{mg/L}$	$U=0.003\text{mg/L}$		
27	*Analyzer of Copper Content	Concentration	Calibration Specification for Analyzer of Copper Content and Iron Content JJF (Qian) 13	(5~200) $\mu\text{g/L}$	$U=2.0 \mu\text{g/L}$		
28	*Instrument for KF Coulometry Titration	Water content	Verification Regulation of Instrument for KF Coulometry Titration JJG 1044	10 μg	$U_{\text{rel}}=6.6\%$		
				100 μg	$U_{\text{rel}}=3.8\%$		
				(1000~5000) μg	$U_{\text{rel}}=3.2\%$		
29	*Karl Fischer Volumetric Titrators for Water Content	Water content	Verification Regulation of Karl Fischer Volumetric Titrators for Water Content JJG 1154	(1~5)mg	$U_{\text{rel}}=6.2\%$		
				(5~20)mg	$U_{\text{rel}}=1.9\%$		
30	Flow Cup Viscometers	Viscosity	Verification Regulation of Flow Cup Viscometers JJG743	(2~1×10 ⁴)mm ² /s	$U_{\text{rel}}=2.6\%$		
31	Rotational Viscometers	Viscosity	Verification Regulation of Rotational Viscometers JJG1002	(1~1×10 ²)mPa•s	$U_{\text{rel}}=0.9\%$		
				(1×10 ² ~5×10 ³)mPa•s	$U_{\text{rel}}=1.6\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				$(5 \times 10^3 \sim 1 \times 10^5) \text{ mPa} \cdot \text{s}$	$U_{\text{rel}}=2.4\%$		
32	*Laboratory pH Meters	pH	Verification Regulation of Laboratory pH Meters JJG 119	Electricity meter: 0~14	$U=0.001$		
				Meters: 4~10	$U=0.02$		
		Voltage		$(-2000 \sim 2000) \text{ mV}$	$U=0.02\% \text{ FS}$		
33	*On-line pH Meters	pH	Calibration Specification for On-line pH Meters JJF 1547	Electricity meter: 0~14	$U=0.01$		
				instrument: 4~10	$U=0.02$		
		Voltage		$(-2000 \sim 2000) \text{ mV}$	$U=0.02\% \text{ FS}$		
34	*Laboratory Ion Meters	pX	Verification Regulation of Laboratory Ion Meters JJG 757	Electricity meter: 0~14	$U=0.002$		
				Meters: 2~4	$U=0.015$		
		Potential		$(-2000 \sim 2000) \text{ mV}$	$U=0.014\% \text{ FS}$		
35	*Automatic Potentiometric Titrators	Potential	Verification Regulation of Automatic Potentiometric Titrators JJG 814	$(-2000 \sim 2000) \text{ mV}$	$U=0.02\% \text{ FS}$		
		Concentration		0.1mol/L	$U_{\text{rel}}=0.5\%$		
		Capacity		$(1 \sim 25) \text{ mL}$	$U_{\text{rel}}=0.1\%$		
36	Verifying Meters for pH Meters	Electric potential	Verification Regulation of Verifying Meters for pH Meters JJG 919	$(-2000 \sim 2000) \text{ mV}$	$U=0.005 \text{ mV}$		
		pH		0~14	$U=0.0002$		
		Resistance		$1 \text{ G} \Omega$ 、 $3 \text{ G} \Omega$	$U=0.006 \text{ G} \Omega$		
37	*Electrolytic Conductivity Meters	Electrolytic Conductivity	Verification regulation of conductivity meter JJG 376	Potentiometers: $(0.2 \sim 2 \times 10^5) \mu \text{ S} \cdot \text{cm}^{-1}$	$U_{\text{rel}}=0.08\%$		
				Meters: $(100 \sim 2000) \mu \text{ S} \cdot \text{cm}^{-1}$	$U_{\text{rel}}=0.3\%$		

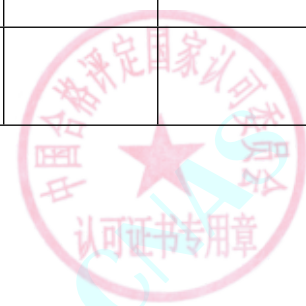


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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
38	*Micro Oxygen Analyzers	Concentration	Verification regulation of Micro Oxygen Analyzers JJG945	$(10 \sim 100) \mu \text{ mol/mol}$	$U_{\text{rel}}=2.0\%$		
39	*Electrochemical Oxygen Meter	Concentration	Verification Regulation of Electrochemical Oxygen Meter JJG365	$(5 \sim 25) \times 10^{-2} \text{ mol/mol}$	$U_{\text{rel}}=1.3\%$		
40	*Thermal Conductivity Hydrogen Analyzer	Concentration	Verification regulation of thermal conductivity hydrogen analyzer JJG663	$(15 \sim 85) \times 10^{-2} \text{ mol/mol}$	$U_{\text{rel}}=1.8\%$		
41	Formaldehyde Gas Analyzers	Concentration	Verification regulation of Formaldehyde Gas Analyzers JJG1022	$(0.3 \sim 1.2) \mu \text{ mol/mol}$	$U_{\text{rel}}=2.8\%$		
42	*Volatile Organic Compounds Photo Ionization Detectors	Concentration	Calibration Specification for Volatile Organic Compounds Photo Ionization Detectors JJF1172	$(20 \sim 80) \mu \text{ mol/mol}$	$U_{\text{rel}}=2.6\%$		
43	*Carbon Monoxide and Carbon Dioxide Infrared Gas Analyzer	Concentration	Verification regulation of Carbon Monoxide and Carbon Dioxide Infrared Gas Analyzer JJG635	CO: $(10 \sim 200) \mu \text{ mol/mol}$	$U_{\text{rel}}=1.8\%$		
				CO ₂ : $(0.1 \sim 16) \times 10^{-2} \text{ mol/mol}$	$U_{\text{rel}}=1.6\%$		
44	*Carbon Monoxide Detectors	Concentration	Verification regulation of Carbon Monoxide Detectors JJG915	$(10 \sim 2000) \mu \text{ mol/mol}$	$U_{\text{rel}}=1.5\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
45	*Alarmer Detectors of Combustible Gas	Concentration	Verification regulation of Alarmer Detectors of Combustible Gas JJG693	(0.1~60)%LEL	$U_{rel}=2.4\%$	Accredited only for methane detectors, hydrogen detectors, isobutane detectors, acetylene detectors, propane detectors	
46	*Sulfur Dioxide Gas Detectors	Concentration	Verification regulation of sulfur dioxide gas detector JJG 551	(20~100) μ mol/mol	$U_{rel}=1.9\%$		
47	*Ammonia Gas Detectors	Concentration	Verification regulation of Ammonia Gas Detectors JJG 1105	(10~100) μ mol/mol	$U_{rel}=2.4\%$		
48	*Sulfur Hydrogen Gas Detectors	Concentration	Verification regulation of Sulfur Hydrogen Gas Detectors JJG695	(0.1~100) μ mol/mol	$U_{rel}=1.5\%$		
49	*Alarmer Detector of Sulfur Hexafluoride	Concentration	Calibration Specification for the Alarmer Detector of Sulfur Hexafluoride JJF1263	(20~1000) μ mol/mol	$U_{rel}=1.5\%$		
50	*Hydrogen Chloride Gas Detectors and Alarms	Concentration	Calibration Specification for Hydrogen Chloride Gas Detectors and Alarms JJF1888	(1~20) μ mol/mol	$U_{rel}=3.4\%$		
51	*Flue Gas Analyzers	Concentration	Verification regulation of Flue Gas Analyzers JJG968	CO:(0.1~1.0) $\times 10^{-2}$ mol/mol	$U_{rel}=1.1\%$		
				O ₂ :(5~25) $\times 10^{-2}$ mol/mol	$U_{rel}=1.2\%$		



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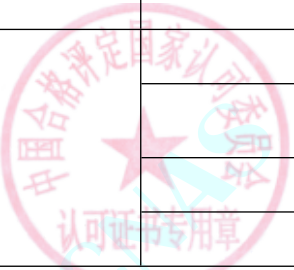
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				SO ₂ : (0.1~0.5)×10 ⁻² mol/mol	U _{rel} =2.0%		
				NO: (0.1~0.4)×10 ⁻² mol/mol	U _{rel} =1.1%		
52	*Dust Sampler	Flow Rate	Verification Regulation of Dust Sampler JJG520	(2~80)L/min	U _{rel} =1.2%		
53	*Samplers for Stack Dust	Flow Rate	Verification Regulation of Samplers for Stack Dust JJG 680	(5~150)L/min	U _{rel} =1.2%		
54	*Air Samplers	Flow Rate	Verification Regulation of Air Samplers JJG956	(100~6000)mL/min	U _{rel} =1.3%		
55	*Total Suspended Particulates Sampler	Flow Rate	Verification Regulation of Total Suspended Particulates Sampler JJG943	(5~150)L/min	U _{rel} =1.2%		
				(800~1200)L/min	U _{rel} =1.2%		
56	Airborne Particle counter	Concentration	Calibration specification for Airborne Particle counter JJF 1190	(1000~1×10 ⁵)pieces / 28.3L	U _{rel} =14%		
57	*Carbon dioxide detection alarm	Concentration	Calibration specification for carbon dioxide detection alarm JJF(ji)66	(0.1~16)×10 ⁻² mol/mol	U _{rel} =2.6%		
58	*Alarms and Detectors of Chloroethylene Gas	Concentration	Verification Regulation Alarms and Detectors of Chloroethylene Gas JJG1125	(2~100) μ mol/mol	U _{rel} =2.5%		
59	*nitric oxide and nitrogen dioxide gas detector	Concentration	Verification regulation of nitric oxide and nitrogen dioxide gas detector JJG (xin) 01	NO: (20~60) μ mol/mol	U _{rel} =2.2%		
				NO ₂ : (20~60) μ mol/mol	U _{rel} =2.2%		
60	*Alarmer Detectors of Benzene	Concentration	Calibration Specification for Alarmer Detectors of Benzene JJF1674	(2~100) μ mol/mol	U _{rel} =3.2%		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
61	*Chlorine Alarm Detectors	Concentration	Calibration Specification for Chlorine Alarm Detectors JJF1433	(5~20) μ mol/mol	$U_{rel}=2.7\%$		
62	*Flue Gas Samplers	Flow Rate	Verification Regulation of Flue Gas Samplers JJG 1169	(100~2000)mL/min	$U_{rel}=1.2\%$		
		Temperature		(0~200) $^{\circ}$ C	$U=0.06^{\circ}$ C		
		Pressure		(-30~0)kPa	$U=0.1$ kPa		
		Time		(0.1~3600)s	$U=0.2$ s		
		air pressure		(80~106)kPa	$U=0.16$ kPa		
63	Dust Concentration Measuring Instruments	Concentration	Verification Regulation of Dust Concentration Measuring Instruments JJG 846	(0~10)mg/m ³	$U=0.36$ mg/m ³		
64	*Polymerase chain reaction analyzers	Temperature	Calibration specification for Polymerase Chain Reaction Analyzers JJF 1527	(30~95) $^{\circ}$ C	$U=(0.16\sim0.32)^{\circ}$ C		
		Concentration		($1\times10^2\sim1\times10^8$)copies/ μ L	$U_{rel}=10\%$		
65	*Melting-point Measurement instruments	Temperature	Verification regulation of melting point tester JJG 701	(50~300) $^{\circ}$ C	$U=0.26^{\circ}$ C		
66	*Open/ Close Cup Flash Point Testers	Temperature	Calibration specification for open / closed flash point tester JJF 1384	Close cup: (70~110) $^{\circ}$ C	$U=3.2^{\circ}$ C		
				Close cup: (110~180) $^{\circ}$ C	$U=7.0^{\circ}$ C		
				Open cup: (80~200) $^{\circ}$ C	$U=7.0^{\circ}$ C		
				Open cup: (200~230) $^{\circ}$ C	$U=9.0^{\circ}$ C		



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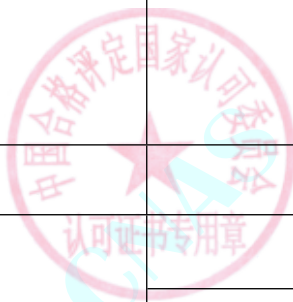
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
67	*Bomb Calorimeters	Calorific value	Verification regulation of oxygen bomb calorimeter JJG672	(26430~26490)J/g	$U=34\text{J/g}$		
68	*Determinators for Total sulfur in Coal	Sulfur content	Verification regulation of total sulfur analyzer in coal JJG1006	0.36%~4.40%	$U=0.05\%$		
69	*Automatic Amino Acid Analyzer	Detection limit	Verification regulation of amino acid analyzer JJG 1064	$\leq 1\text{nmol(S/N=2, His)}$	$U_{\text{rel}}=58\%$		
70	*Elemental analyzers	Concentration	Calibration specification for elemental analyzers JJF 1321	kjeldahl apparatus N: 20%~50%	$U_{\text{rel}}=1.4\%$		
				Coal C: 40%~90%	$U_{\text{rel}}=1.4\%$		
				Coal H: 1.0%~5.0%	$U_{\text{rel}}=3.8\%$		
				Coal N: 0.2%~2.0%	$U_{\text{rel}}=6.0\%$		
				steel O: 0.002%~0.005%	$U_{\text{rel}}=6.6\%$		
				steel H: 0.0001%~0.0003%	$U_{\text{rel}}=16\%$		
				steel N: 0.02%~0.06%	$U_{\text{rel}}=4.2\%$		
71	*Residual chlorine tester	concentration	Calibration Specification for Residual Chlorine Meters JJF1609	Total residual chlorine : (0.1~20)mg/L	$U_{\text{rel}}=2.3\%$		
				Simulated free residual chlorine: (0.1~20)mg/L	$U_{\text{rel}}=2.1\%$		
72	*Liquid chromatography-atomic fluorescence spectrometer	Minimum detection quantity	Verification regulation of liquid chromatography-atomic fluorescence instrument JJG1151	As(V): <1.0ng	$U_{\text{rel}}=15\%$		
				MMA: <0.7ng	$U_{\text{rel}}=14\%$		
				DMA: <0.7ng	$U_{\text{rel}}=14\%$		
73	*Ultraviolet	concentration	Calibration specification for	(0.1~200)mg/L	$U_{\text{rel}}=2.6\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	spectrophotometry oil measuring instrument	Minimum detectable concentration	ultraviolet spectrophotometry oil gauges JJF(Ji)202	$\leq 0.05\text{mg/L}$	$U_{\text{rel}}=45\%$		
74	*Liquor analysis by gas chromatography	Detection limit	Calibration specification for gas chromatograph for liquor analysis JJF 2022	$\leq 5.0 \times 10^{-3}\text{mg/mL}$	$U_{\text{rel}}=12\%$		
75	*Osmometers	concentration	V.R. of Osmometers JJG 1089	(100~400)mOsmol/kg	$U=2.3\text{mOsmol/kg}$		
		concentration		(400~700)mOsmol/kg	$U_{\text{rel}}=0.6\%$		
76	*Raw-Milk Freezing Point Testers	temperature	C.S.for Raw-Milk Freezing Point Testers JJF 1816	(-600~-400)m°C	$U=1.1\text{m}^{\circ}\text{C}$		
77	*Permanganate Index Analyzers	Concentration	C.S.for Permanganate Index Analyzers JJF 2173	(1~5)mg/L	$U_{\text{rel}}=3.9\%$		
		Temperature		(50~120) °C	$U=0.11^{\circ}\text{C}$		
78	*Milk Quantitative Component Analyzers	Concentration	C.S.for Milk Quantitative Component Analyzer JJF 1820	Protein (2.1~3.5)g/100g	$U_{\text{rel}}=3.2\%$		
				Fat(2.1~3.5)g/100g	$U_{\text{rel}}=2.2\%$		
				Lactose(2.1~3.5)g/100g	$U_{\text{rel}}=1.0\%$		
79	*Pour Point and Cloud Point Testers of Petroleum Products	Temperature	C.S.for Pour Point and Cloud Point Testers of Petroleum Products JJF 1869	Pour point(-30 ~-3)°C	$U=2.8^{\circ}\text{C}$		
80	*Liquid-borne Particle Counters	Particle counting	V.R.of Liquid-borne Particle Counters JJG 1061	Oil particles: (1~88000) per 10mL	$U_{\text{rel}}=10\%$		
81	*On-line Conductivity Meters	Electrical conductivity	C.S.for On-line conductivity meter JJF (Meng) 084	Electric meter: (20~2× 10 ⁵) μ S/cm	$U_{\text{rel}}=0.3\%$		
				Instrument: (20~1.2× 10 ⁵) μ S/cm	$U_{\text{rel}}=0.5\%$		



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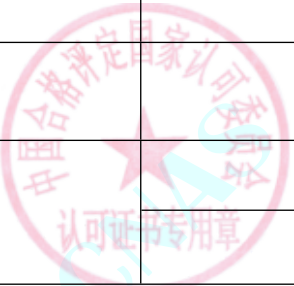
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
82	*Alkylmercury Analyzers	Content	C.S.for Alkylmercury Analyzers JJF (Meng) 119	Methylmercury: (5.0~100)pg	$U_{rel}=5.8\%$		
				Ethylmercury: (5.0~100)pg	$U_{rel}=5.6\%$		
		Detection limit		$\leq 0.3pg$	$U_{rel}=48\%$		
83	*Ultraviolet Fluorescence Sulfur Analyzers	Concentration	C.S.for Ultraviolet Fluorescence Sulfur Analyzers JJF 1685	(1~10)mg/L	$U=0.14mg/L$		
				(10~100)mg/L	$U_{rel}=3.0\%$		
		Detection limit		$\leq 0.2mg/L$	$U_{rel}=46\%$		
84	*Gas-phase molecular absorption spectrometers	Detection limit	C.S.for Gas -phase Molecular Absorption Spectrometers JJF (Meng) 088	Ammonia nitrogen: $\leq 0.020mg/L$	$U_{rel}=45\%$		
				Nitrite nitrogen: $\leq 0.003mg/L$	$U_{rel}=45\%$		
				Nitrate nitrogen: $\leq 0.006mg/L$	$U_{rel}=45\%$		
				Total nitrogen: $\leq 0.050mg/L$	$U_{rel}=45\%$		
				Sulfide: $\leq 0.005mg/L$	$U_{rel}=45\%$		
85	*Disintegration Analyzers	Temperature	Calibration Specification for Disintegration Analyzers JJF 1449	37°C	$U=0.2^{\circ}C$		
		Disintegration time		527s	$U_{rel}=12\%$		
86	Hand Saccharimeter(Content-meter) and Hand Refractometer	Brix	Verification Regulation of Hand Saccharimeter(Content-meter) and Hand Refractometer JJG 820	0~80%	$U=0.1\%$		
		refractive index		$n_D: 1.3330 \sim 1.7000$	$U=0.0005$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
87	*Thin Layer Chromatography Scanners	Concentration	C. S. for Thin Layer Chromatography Scanners JJF 1712	(0.01~0.04)mg/mL	$U=0.0026\text{mg/mL}$		
88	*On-line Turbidimeters	Turbidity	Calibration Specification of On-line Turbidimeters JJF(Meng)120	(1~5) NTU	$U_{\text{rel}}=4.6\%$		
				(5~100) NTU	$U_{\text{rel}}=3.8\%$		
				(100~4000) NTU	$U_{\text{rel}}=3.3\%$		
89	*Iron Analyzers	Concentration	Calibration Specification for Iron Analyzers T/JJF(HB) 5009	(1~200) $\mu\text{g/L}$	$U_{\text{rel}}=1.8\%$		
90	*Carbon-sulfur Analyzers	Content	Verification Regulation of Carbon-sulfur Analyzers JJG 395	C:0.005%~0.010%	$U=0.0007\%$		
				C:0.010%~0.100%	$U=0.003\%$		
				C:0.100%~1.000%	$U=0.004\%$		
				C:1.00%~4.00%	$U=0.02\%$		
				S:0.003%~0.010%	$U=0.0007\%$		
				S:0.010%~0.100%	$U=0.003\%$		
				S:0.100%~0.200%	$U=0.005\%$		
91	*On-line Gas Chromatograph	Sensitivity	Verification Regulation of On-line Gas Chromatograph JJG 1055	TCD (n-Butane) $\geq 1000\text{mV} \cdot \text{mL/mg}$	$U_{\text{rel}}=3.7\%$		
92	*Energy Dispersive X-Ray Fluorescence Spectrometers	content	Calibration Specification for Energy Dispersive X-Ray Fluorescence Spectrometers JJF 2024	polymer matrix Cd: (8~110)mg/kg	$U_{\text{rel}}=6.4\%$		
				polymer matrix Cr: (90~1122)mg/kg	$U_{\text{rel}}=5.3\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				polymer matrix Hg: (90~1200)mg/kg	$U_{rel}=5.3\%$		
				polymer matrix Pb: (90~1200)mg/kg	$U_{rel}=5.1\%$		
93	*Acid Number Testers	Acid number	Calibration Specification for Acid Number Testers JJF(Ji) 3030	(0.05~0.1)mgKOH/g	$U_{rel}=7.5\%$		
				(0.1~2)mgKOH/g	$U_{rel}=2.4\%$		
94	*Micro-spectrophotometers	Concentration	Calibration Specification for Micro-spectrophotometers JJF 1836	Salmon essence DNA: (10~2000)mg/kg	$U_{rel}=2.4\%$		
				Bovine Serum Albumin: (0.05~0.1)mg/mL	$U_{rel}=12\%$		
				Bovine Serum Albumin: (0.1~2)mg/mL	$U_{rel}=6.6\%$		
95	*Bromine Number and Bromine Index Meters	Content	Calibration Specification for Bromine Number and Bromine Index Meters JJF 1569	Bromine value: (5~20)g/100g	$U_{rel}=6.1\%$		
				Bromine value: (20~300)g/100g	$U_{rel}=5.3\%$		
				Bromine index: (5~20)mg/100g	$U_{rel}=8.1\%$		
				Bromine index: (20~600)mg/100g	$U_{rel}=5.3\%$		
96	*Hydrogen Fluoride Alarm Detectors	concentration	Calibration Specification for Hydrogen Fluoride Alarm Detectors JJF(Meng)069	(2~10) μ mol/mol	$U_{rel}=4.1\%$		
10、 Ionizing radiation							
1	*X-ray flaw detectors	Kerma Rate of Air	Verification regulation of X-ray flaw detectors JJG 40	(0.01~19.9)cGy/min	$U_{rel}=3.6\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	*X-ray Security Inspection Equipment	Kerma rate of air	Calibration Specification for X-ray Security Inspection Equipment JJF 1275	(0.1~100) μ Gy/h	$U_{rel}=18\%$		
3	*Medical Diagnostic X-ray Radiation Source for Medical Digital Subtraction Angiography	Kerma rate of air	Verification regulation of Medical Diagnostic X-ray Radiation Source for Medical Digital Subtraction Angiography JJG 1067	1mGy/min ~1Gy/min	$U_{rel}=4.2\%$		
		Tube Voltage		50kV~150kV	$U_{rel}=3\%$		
4	*X-ray Radiation Sources for Medical Digital Radiography Systems(DR)	air kerma	Verification Regulation of X-ray Radiation Sources for Medical Digital Radiography Systems(DR) JJG 1078	0.1mGy~1Gy	$U_{rel}=7\%$		
		Dose Area Product		2.25 μ Gy $\cdot$ m ² ~0.4Gy $\cdot$ m ²	$U_{rel}=7\%$		
		Tube Voltage		50kV~150kV	$U_{rel}=3\%$		
5	*Medical Diagnostic X-Ray Radiation Source for Spiral Computed Tomography (CT)	absorbed dose	Verification Regulation of Medical Diagnostic X-ray Radiation Source for Spiral Computed Tomography (CT) JJG 961	100 μ Gy~ 100mGy	$U_{rel}=6.6\%$		
6	*Low Background Alpha/Beta Measuring Instruments	Surface emission Souices	V.R.of Low Background Alpha/Beta Measuring Instruments JJG 853	$\alpha : (2 \times 10^4 \sim 1.2 \times 10^5) (\text{min} \cdot 2 \pi \text{ sr})^{-1}$	$U_{rel}=2.6\%$		
				$\beta : (2 \times 10^4 \sim 1.2 \times 10^5) (\text{min} \cdot 2 \pi \text{ sr})^{-1}$	$U_{rel}=2.6\%$		
7	*Single Photon Emission Computed Tomography System (SPECT)	Activity	Calibration Specification for Single Photon Emission Computed Tomography System (SPECT) JJF 2044	^{99m} Tc: $(3 \times 10^4 \sim 1.2 \times 10^{11})$ Bq	$U_{rel}=5.9\%$		



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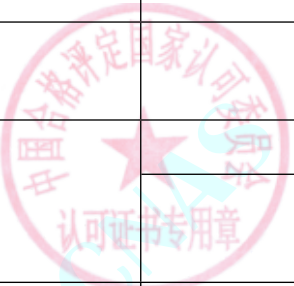
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
11、 Special measuring instruments for motor vehicles							
1	*Filter-Type Smokemeters	smoke	Verification Regulation of Filter-Type Smokemeters JJG847	(1.0~9.0) BSU	$U=0.3$ BSU		
2	*Opacimeters	opacity in the standard effective optical path length	Verification Regulation of Opacimeters JJG976	(0~99.0) %	$U=1.1\%$		
3	*Diesel Vehicle Nitrogen Oxides(NOx) Measuring Instruments	concentration	Calibration Specification for Diesel Vehicle Nitrogen Oxides(NOx) Measuring Instruments JJF 1873	CO ₂ : (2.0~12.0) × 10 ⁻² mol/mol	$U_{rel}=1.4\%$		
				NO: (300~3000) × 10 ⁻⁶ mol/mol	$U_{rel}=1.4\%$		
				NO ₂ : (50~600) × 10 ⁻⁶ mol/mol	$U_{rel}=1.9\%$		
4	*Vehicle Exhaust Emissions Measuring Instruments	concentration	Verification Regulation of Vehicle Exhaust Emissions Measuring Instruments JJG 688	HC: (200~3200) × 10 ⁻⁶ mol/mol	$U_{rel}=1.1\%$		
				O ₂ : (0.5~20.9) × 10 ⁻² mol/mol	$U_{rel}=2.4\%$		
				NO: (300~3000) × 10 ⁻⁶ mol/mol	$U_{rel}=1.4\%$		
				CO ₂ : (3.6~12.00) × 10 ⁻² mol/mol	$U_{rel}=1.5\%$		
				CO: (0.5~4.8) × 10 ⁻² mol/mol	$U_{rel}=1.3\%$		
5	*Headlamp Testers for Motor Vehicle	luminous intensity	Verification Regulation of Headlamp Testers for Motor Vehicle JJG745	(5~60) kcd	$U_{rel}=7\%$		
		angle		Up 1° ~Down 2° , Left 2° ~ Right 2°	$U=6'$		



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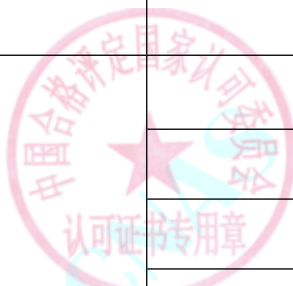
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
6	*Roller Type Speedometer Tester	Speed	Verification Regulation of Roller Type Speedometer Tester JJG 909	(1~120) km/h	$U_{rel}=0.8\%$		
7	*Special Axle(Wheel) Load Scales for Motor Vehicle Test	Wheel weight	Verification Regulation of Special Axle(Wheel) Load Scales for Motor Vehicle Test JJG1014	(500~50000) kg	$U_{rel}=0.6\%$		
8	*Platform Brake Testers	Wheel weight	Verification Regulation of Platform Brake Testers JJG1020	(1~10000) kg	$U_{rel}=0.6\%$		
		Braking force		(1~3500) daN	$U_{rel}=0.6\%$		
9	*Roller Opposite Force Type Brake Testers	Wheel braking force	Verification Regulation of Roller Opposite Force Type Brake Testers JJG906	(500~4500) daN	$U_{rel}=0.8\%$		
10	*Loading Method Automobile Brake Testers	Wheel braking force	Verification Regulation of Loading Method Automobile Brake Testers JJG1160	(100~4500) daN	$U_{rel}=0.8\%$		
		Axle weight		(100~11500) kg	$U_{rel}=0.4\%$		
11	*Automobile Side Slip Tester	Sideslip	Verification Regulation of Automobile Side Slip Tester JJG908	(-10~10)m/km	$U=0.04\text{m/km}$		
12	*Four-wheel Aligners	Single wheel toe in angle	Calibration Specification for Four-wheel Aligners JJF1154	(-10~10)°	$U=1.4'$		
13	Non-contact Automotive Speedometer	speed	Calibration Specification for Non-contact Automotive Speedometer JJF1193	(5~180) km/h	$U_{rel}=0.3\%$		
14	Steering Force-steering Angle Detectors for Steering Wheels of Motor Vehicles	Steering force	Calibration Specification for Steering Force-steering Angle Detectors for Steering Wheels of Motor Vehicles JJF1196	(100~500) N	$U_{rel}=0.6\%$		
		Steering angle		(0~1080) °	$U=0.6^\circ$		
15	*Tyre Pressure Gauges	Pressure	Verification Regulation of Tyre Pressure Gauges JJG927	(0~2.5) MPa	$U=0.5\%FS$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
16	*Portable Braking Performance Tester for Motor Vehicles	Retardation	Calibration Specification for Portable Braking Performance Tester for Motor Vehicles JJF1168	Static: (0~5.0) m/s ²	$U=0.05 \text{ m/s}^2$		
				Static: (5.0~9.8) m/s ²	$U_{\text{rel}}=0.7\%$		
				Dynamic: (1~9.8) m/s ²	$U_{\text{rel}}=1.6\%$		
17	*Calibration Devices of Non-contact Automotive Speedmeters	Linear velocity	Calibration Specification for Calibration Devices of Non-contact Automotive Speedmeters JJF1486	(5.00~180.00) km/h	$U_{\text{rel}}=0.06\%$		
18	*Motor Vehicle Engine Speed Measuring Instruments	speed	Calibration Specification for Motor Vehicle Engine Speed Measuring Instruments JJF 1375	(500~6000) r/min	$U_{\text{rel}}=0.5\%$	Accredited only for calibration of the engine speed measuring instrument with vibration induction	
19	*Vehicle Contour Dimensions Testers	length	Calibration Specification for Vehicle Contour Dimensions Testers JJF1749	(0.1~30) m	$U_{\text{rel}}=0.3\%$		
20	*Zero gas generator	concentration	Calibration Specification for Zero Gas Generators JJF 2159	carbon monoxide: (0~20) × 10 ⁻⁶ mol/mol	$U=0.4 \times 10^{-6} \text{ mol/mol}$		
				carbon dioxide:(0~40) × 10 ⁻⁶ mol/mol	$U=0.6 \times 10^{-6} \text{ mol/mol}$		
				Hydrocarbons:(0~40) × 10 ⁻⁶ mol/mol	$U=0.3 \times 10^{-6} \text{ mol/mol}$		
				nitric oxide :(0~20) × 10 ⁻⁶ mol/mol	$U=0.3 \times 10^{-6} \text{ mol/mol}$		



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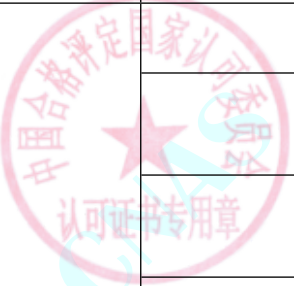
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Nitrogen dioxide: (0~20) $\times 10^{-6}$ mol/mol	$U=0.3 \times 10^{-6}$ mol/mol		
				oxygen: (0~25) $\times 10^{-2}$ mol/mol	$U=0.13 \times 10^{-2}$ mol/mol		
21	*Tread depth gauge	Length	Calibration Specification for Tire Tread Depth Gauges JJF1477	(0~50)mm	$U=0.02$ mm		
12、 Special meteorological and marine measuring instruments							
1	Portable 3-cup Anemometers	Wind Speed	Verification Regulation of Portable 3- cup Anemometers JJG431	(1~10) m/s	$U=0.15$ m/s		
				(10~20) m/s	$U=0.18$ m/s		
				(20~30) m/s	$U=0.26$ m/s		
2	Portable Induction Anemometers	Wind Speed	Verification Regulation of Portable Induction Anemometers JJG515	(2~10) m/s	$U=0.15$ m/s		
				(10~20) m/s	$U=0.18$ m/s		
				(20~30) m/s	$U=0.26$ m/s		
3	Mine Anemometer	Wind Speed	Verification Regulation of Mine Anemometer JJG (Coal) 01	(0.2~1) m/s	$U=0.4$ m/s		
				(1~10) m/s	$U=0.15$ m/s		
				(10~20) m/s	$U=0.18$ m/s		
				(20~30) m/s	$U=0.26$ m/s		
4	Contact Anemorumbometer	Wind Speed	Verification Regulation of Contact Anemorumbometer JJG613	(2~10) m/s	$U=0.15$ m/s		
				(10~20) m/s	$U=0.18$ m/s		
				(20~30) m/s	$U=0.26$ m/s		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
13、 Special medical measuring instruments							
1	*Pulmonary Function Measuring Instrument	Vital Capacity	Calibration specification for pulmonary function measuring instrument JJF 1213	(1~8)L	$U=0.05L$		
		Peak Expiratory Flow		(1~12)L/s	$U_{rel}=3.5\%$		
		Ventilation Volume		(30~100)L/min	$U_{rel}=3.5\%$		
2	*ELISA Analytical Instruments	Absorbance	Verification Regulation of ELISA Analytical Instruments JJG 861	0.1~2.00	$U=0.003$		
		Wave Length		(400~700)nm	$U=0.6nm$		
3	Verification Instrument for Electrocardiograph and Electroencephalograph	Voltage	Verification Regulation of Verification Instrument for Electrocardiograph and Electroencephalograph JJG 749	Square Wave Voltage:0.1mV~5V	$U_{rel}=0.13\%$		
				Sine Wave Voltage (P-P):0.1mV~5V	$U_{rel}=0.13\%$		
				Polarization Voltage: $\pm 300mV$	$U_{rel}=0.13\%$		
				Common-mode Voltage Meter:10V	$U_{rel}=0.13\%$		
		Frequency		0.1Hz~200Hz	$U_{rel}=0.13\%$		
4	Calibration Device for Electric Cardiac Monitor	Voltage	Verification regulation of Calibration Device for Electric Cardiac Monitor JJG 1016	Voltage (peak to peak):0.5mV~2mV	$U_{rel}=0.13\%$		
				Standard Heart Rate Signal Voltage:0.5mV~2mV	$U_{rel}=0.13\%$		
				Standard Heart Rate Signal Voltage:-0.5mV~-2mV	$U_{rel}=0.13\%$		
				Common-mode Voltage Meter:10V	$U_{rel}=0.13\%$		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
			ilac-M	Polarization Voltage: $\pm 300\text{mV}$	$U_{\text{rel}}=0.13\%$		
		Heart Rate		$(27\sim 300)\text{min}^{-1}$	$U_{\text{rel}}=0.13\%$		
		Frequency		$0.1\text{Hz}\sim 100\text{Hz}$	$U_{\text{rel}}=0.13\%$		
		Sampling Resistor		$10\text{k}\Omega$	$U_{\text{rel}}=1.2\%$		
5	*Cardiac Defibrillators	Energy	Calibration specification for cardiac defibrillators JJF 1149	$(1.9\sim 360)\text{J}$	$U=2.4\text{J}$		
		Voltage		$(0.1\sim 4)\text{mV}$	$U=0.02\text{ mV}$		
		Scanning Speed		25mm/s	$U=0.5\text{mm/s}$		
		Heart Rate		$(0\sim 200)\text{min}^{-1}$	$U=0.5\text{min}^{-1}$		
6	*Medical magnetic resonance imaging (MRI)	Field Intensity	Verification regulation of medical magnetic resonance imaging (MRI) JJG (Meng) 027	$(0.17\sim 2.1)\text{T}$	$U=12\text{mT}$		
7	*High Frequency Surgical Units	Power	Calibration Specification for High Frequency Surgical Units JJF 1217	$(10\sim 400)\text{W}$	$U_{\text{rel}}=3.4\%$		
8	*Ventilators	Tidal Volume	Calibration specification for Ventilators JJF 1234	$(50\sim 800)\text{ mL}$	$U_{\text{rel}}=3.8\%$	合格评定国家认可委员会 认可证书专用章	
		Frequency		$(10\sim 40)\text{min}^{-1}$	$U_{\text{rel}}=2.6\%$		
		Pressure		$(0.2\sim 3.0)\text{kPa}$	$U=0.05\text{kPa}$		
		Oxygen Concentration		$21\%\sim 100\%$	$U=2.4\%$		
9	*Baby incubator	Temperature	Calibration Specification for Baby Incubator JJF 1260	32°C 、 36°C	$U=0.09^{\circ}\text{C}$		
		Humidity		$30\%\text{RH}\sim 90\%\text{RH}$	$U=1.1\%\text{RH}$		



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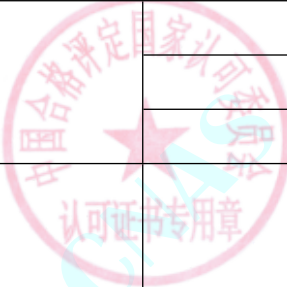
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
10	*Haemodialysis Equipment	conductivity	Calibration Specification for Haemodialysis Equipment JJF 1353	(12.5～15.5)mS/cm	<i>U</i> =0.13mS/cm		
		temperature		(25～40)℃	<i>U</i> =0.13℃		
		Flom		Heparin Pump Flom:(5～20)mL/h	<i>U</i> _{rel} =2.8%		
				Dialysis Flom:(400～700)mL/min	<i>U</i> _{rel} =1.9%		
				Blood Flow:(50～1000)mL/min	<i>U</i> _{rel} =3.6%		
				Dehydration Rate:200mL/min	<i>U</i> _{rel} =1.2%		
		pressure		(0～450) mmHg	<i>U</i> =2.8mmHg		
11	*Urine Analyzers	pH	Calibration Specification of Urine Analyzers JJF 1129	5.5～7.5	<i>U</i> =0.4		
		RBC		(1～200)/ μ L	<i>U</i> _{rel} =7.3%		
		WBC		(1～200)/ μ L	<i>U</i> _{rel} =6.9%		
		PRO		(0.1～2.0)g/L	<i>U</i> _{rel} =10%		
		GLU		(1～42)mmol/L	<i>U</i> =0.16mmol/L		
		SG		1.000～1.025	<i>U</i> =0.005		
12	*Automatic Urinary Sediment Analyzers	RBC	Calibration Specification for Automatic Urinary Sediment Analyzers JJF 1823	(150～2000)/μL	<i>U</i> _{rel} =11%		
		WBC		(50～2000)/μL	<i>U</i> _{rel} =10%		
13	*Non-invasive ventilator	Respiratory rate	Calibration Specification for Non-invasive Ventilators JJF 1997	(10～30)min ⁻¹	<i>U</i> _{rel} =3.4%		
		Pressure		(0.4～2.0)kPa	<i>U</i> =0.12kPa		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Inspiration Flow Oxygen Concentration		21%~60%	U=2.4%		
14	*Blood Cell Analyzers	WBC	Verification Regulation of Blood Cell Analyzers JJG 714	WBC:(2~20)×10 ⁹ /L	U _{rel} =2.7%		
		PLT		PLT:(50~500)×10 ⁹ /L	U _{rel} =2.4%		
		RBC		RBC:(2~10)×10 ¹² /L	U _{rel} =2.3%		
		HGB		HGB:(50~200)g/L	U _{rel} =3.2%		
15	*medical suction equipment	pressure	Calibration Specification for Medical Suction Equipment JJF 1810	(-95~0)kPa	U=0.6kPa		
16	*Insufflator	Pressure	Calibration Specification for Insufflators JJF 1892	(0~40)mmHg	U=0.6mmHg		
		Flow Rate		(0~10)L/min	U=0.6L/min		
				(10~50)L/min	U _{rel} =6%		
17	*Medical Oxygen Generators with Molecular Sieve	flow	Calibration Specification for Medical Oxygen Generators with Molecular Sieve JJF 1891	(1~10)L/min	U _{rel} =4.8%		
18	*Emergency and transport Ventilators	tidal volume	Calibration Specification for Emergency and transport Ventilators JJF 1998	(50~800)mL	U _{rel} =7.0%		
		frequency		(10~40)min ⁻¹	U _{rel} =3.6%		
		pressure		(0.2~3)kPa	U=0.13kPa		
19	*Automatic Closed Luminescence Immunoassay Analyzer	Concentration	Calibration Specification for Automatic Closed Luminescence Immunoassay Analyzers JJF 1752	Insulin: (10~150) pmol/L	U _{rel} =5%		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
20	*Pulse Oximeters	pulse oxygen saturation	Calibration Specification for Pulse Oximeters	70%~ 100%	$U=2.5\%$		
		pulse rate	JJF(Meng)105	(30~ 200)min ⁻¹	$U=2\text{min}^{-1}$		
21	*Glycohemoglobin Analyzers	Concentration	Calibration Specification for Glycohemoglobin Analyzers JJF 1841	4.5%~10.5%	$U_{\text{rel}}=16\%$		
22	*C-reactive Protein Analyzers	Concentration	Calibration Specification for C-reactive Protein Analyzers JJF 2057	(3.3~ 133)mg/L	$U_{\text{rel}}=9.3\%$		
23	*Syringe Pumps and Infusion Pumps	Flow Rate	Calibration Specification for Syringe Pumps and Infusion Pumps JJF 1259	(5~20) mL/h	$U_{\text{rel}}=2.5\%$		
				(20~200) mL/h	$U_{\text{rel}}=1.4\%$		
				(200~1000) mL/h	$U_{\text{rel}}=2.5\%$		
		pressure		(0~200)kPa	$U=4\text{kPa}$		
24	*Buoy type oxygen inhaler	Flow	Verification regulation of buoy oxygen inhalers JJG 913	(1~12)L/min	$U=0.2\text{L/min}$		
		Pressure		(0~10)MPa	$U=0.3\text{MPa}$		
14、 Special measuring instruments for construction and transportation							
1	*Rebound Test Hammer	Length	Verification Regulation of Rebound Test Hammer JJG817	Pointer length: (19.8~20.2) mm	$U=0.06\text{mm}$	Except for the High Strength Concrete Hammer	
				Spherical radius of the end of the Striker: (24.0~26.0) mm	$U=0.1\text{mm}$		
				Working length of spring: (61.2~61.8) mm	$U=0.06\text{mm}$		
				Stretch length of spring: (74.7~75.3) mm	$U=0.06\text{mm}$		



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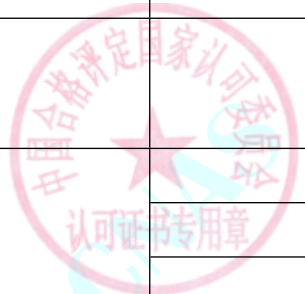
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
		Force		(0.50～0.80)N	<i>U</i> =0.02N		
		Tension spring stiffness		(755～815)N/m	<i>U</i> =0.40N/m		
		Rate setting		78～82	<i>U</i> =0.7		
2	*Flow Table for Determine Cement Mortar Fluidity	Mass	Verification Regulation of Flow Table for Determine Cement Mortar Fluidity JJG（JT）096	(4.2～4.5)kg	<i>U</i> =0.7g		
		Time		(24～26)s	<i>U</i> =0.2s		
		Landing Distance		(9.8～10.2)mm	<i>U</i> =0.12mm		
3	*Nonmetal Building Materials Plastic Limit Measuring Instruments	Mass	Calibration Specification for Nonmetal Building Materials Plastic Limit Measuring Instruments JJF1090	(75.8～301)g	<i>U</i> =0.06g	Except for Apparatus for Determining Penetration of Bituminous Materials	
		length		Diameter: (1～11)mm	<i>U</i> =0.005mm		
				Ruler: (0～70)mm	<i>U</i> =0.2 mm		
				Indicating device: (0～145)mm	<i>U</i> =0.16mm		
				Die head and attachment dimensions: (6～181)mm	<i>U</i> =0.07mm		
		Angle		29.8° ～30.2°	<i>U</i> =0.05°		
		Time		(4.9～5.1)s	<i>U</i> =0.2s		
4	*Pure Slurry Cement Mortar Mixer	Rotating Speed	Verification Regulation of Pure Slurry Cement Mortar Mixer JJG（Meng）2	(57～135)r/min	<i>U</i> =0.6 r/min		
		Time		(10～280)s	<i>U</i> =0.3s		
		Length		(1～3)mm	<i>U</i> =0.06mm		
5	*Jolting Table for	Time	Calibration Specification for	(58～62)s	<i>U</i> =0.2s		

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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Compacting Mortars Specimen	Mass	Jolting Table for Compacting Mortars Specimen JJF（Meng）004	(799~801)mm	U=0.3mm		
6	*Asphalt Mixture's Mixing Machine	Rotating Speed	Verification Regulation of Asphalt Mixture's Mixing Machine JJG(JT)064	(40~80)r/min	U=0.6 r/min		
		Time		(179.1~180.9)s	U=0.22s		
		Temperature		(139~201)℃	U=0.12℃		
7	*Compaction Instrument of Soil	Mass	Verification Regulation of Compaction Instrument of Soil JJG(JT)058	(2495~4505)g	U=0.8g		
		Length		Diameter:(49.5~50.5)mm	U=0.06mm		
				Falling Height:(298~502)mm	U=0.3mm		
8	*Asphalt Mixture's Marshall Compaction Test Apparatus	Mass	Verification Regulation of Asphalt Mixture's Marshall Compaction Test Apparatus JJG(JT)065	(4527~10220)g	U=0.8g		
		Length		Diameter: (68~160)mm	U=0.05mm		
				Falling Height:(455~460)mm	U=0.3 mm		
		Compaction Frequency		(55~65)times/min	U=0.3times/min		
9	Reinforced Concrete Covermeter	Length	Calibration Specification for Reinforced Concrete Covermeter and Floor lab Thickness Tester JJF 1224	(0~100)mm	U=0.23mm		
10	*Apparatus for Determining Penetration of Bituminous Materials	Mass	Calibration Specification for Apparatus for Determining Penetration of Bituminous Materials JJF1208	(99~101)g	U=0.01g		
		Temperature		(24.7~25.3)℃	U=0.1℃		
		Length		(5~50) mm	U=0.018 mm		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
11	*Asphalt Mixture Rut-depth Testing Instrument	Temperature	Calibration Specification for Asphalt Mixture Rut-depth Testing Instrument JJF(Zhe)1094	(57~63)℃	U=0.2℃			
		Length		(3~30)mm	U=0.0022mm			
				(14~240)mm	U=0.05mm			
		Pressure		(0.65~0.75)MPa	U=0.01MPa			
		Rubber hardness		(76~80)IRHD	U=0.6IRHD			
12	*Marshall Test Machine for Bituminous Mixtures	Force Value	Verification Regulation of Marshall Test Machine for Bituminous Mixtures JJG(JT)066	(5~50)kN	U _{rel} =0.4%			
		Displacement		(0.5~10)mm	U=0.03mm			
		Rate of ascent		(45~55)mm/min	U _{rel} =2.0%			
13	*Building Material Testing Machine of Constant Loading Speed	Force	Verification Regulation of Building Material Testing Machine of Constant Loading Speed JJG 1025	100N~3MN	U _{rel} =0.16%			
				3MN~5MN	U _{rel} =0.36%			
		Afterburner speed		(2.4~22.5)kN/s	U _{rel} =2.6%			
14	*Oedometers	Force value	Calibration Specification for Oedometers JJF1311	(0.5~6)kN	U _{rel} =1.0%			
		Length		(0~10)mm	U=6 μ m			
15	Measuring Instrument for Cement Bright Degumming Equipment	Frequency	Verification Regulation of Measuring Instrument for Cement Bright Degumming Equipment JJG974	(20~2000)Hz	U _{rel} =0.1%			
		Rotating		(50~30000)r/min	U _{rel} =0.2%			
		Acceleration		(0.1~100)m/s²	U _{rel} =2.5%			
		Displacement		(0.1~10)mm	U _{rel} =1.2%			
		Time		(0.1~3600)s	U=0.12s			



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
16	*Measuring Instrument for Chloride Ion Content	Concentration	C.S. of Rapid Measuring Instrument for Chloride Ion Content JJF((Jin) 10	0.001mol/L	$U_{rel}=1.7\%$		
		Voltage		(-2000~2000) mV	$U=0.02\%FS$		
17	*Metal Perforated Plate Test Sieves	Length	Calibration Specification for Test Sieves JJF 1175	$\omega: (1\sim4) \text{ mm}$	$U=4 \mu \text{ m}$	The test sieves $\omega: (1\sim4) \text{ mm}$ is not calibrated on site	
				$\omega: (4\sim125) \text{ mm}$	$U=0.04\text{mm}$		
15、 Special measuring instruments for electronic, electrical and electrical appliances							
1	*Battery Internal Resistance Testers	Internal resistance of battery	Calibration Specification for Battery Internal Resistance Testers JJF 1620	$1\text{m} \Omega \sim 3\text{m} \Omega , (1\text{kHz})$	$U_{rel}=0.3\%$		
		DC Voltage		$3\text{m} \Omega \sim 3\text{k} \Omega , (1\text{kHz})$	$U_{rel}=0.1\%$		
				$(0.1\sim800)\text{V}$	$U_{rel}=0.04\%$		
16、 Textile and leather specific measuring instruments							
1	*Fiber Diameter Analyzer	Length	Calibration Specification for fiber diameter analyzer JJF 065 (spinning and weaving)	$(0\sim1000) \mu \text{ m}$	$U=0.36 \mu \text{ m}$		



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