

Name: Jilin Institute of Metrology

Address: No.2699, Yiju Road, High-Tech Zone, Changchun, Jilin, China

Registration No. CNAS L1423

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

Effective Date: 2024-08-21 Expiry Date: 2030-03-11

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、Geometrical Parameter							
1	Gauge Block	Length	V.R. of Gauge Blocks JJG146	(0.5~1000)mm	$U=0.08\mu m+1\times 10^{-6}L_n$		
2	Micrometer	Length	V.R.of Micrometer JJG21	(0~250)mm	$U=1\mu m$		
				(>250~500)mm	$U=2\mu m$		
3	Large Dimension Outside Micrometers	Length	C. S. for Large Dimension Outside Micrometers JJF1088	(500~3000)mm	$U=3.5\mu m+5.2\times 10^{-6}L$		
4	Current Calipers	Length	V.R. of Current Calipers JJG30	(0~1000)mm	$U=0.02mm$		
5	Dial Gauges	length	V.R. of Dial Gauges JJG34	Dial 0.01mm,(0~100)mm	$U=(4\sim 9)\mu m$		
				Dial 0.001mm,(0~5)mm	$U=1.7\mu m$		
				Digital 0.01mm,(0~100)mm	$U=9\mu m$		



No. CNAS L1423

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
6	Steel Tape	Length	V.R. of Steel Measuring Tape JJG4	Digital 0.001mm,(0~30)mm	$U=3.6 \mu\text{m}$		
				Digital 0.005mm,(5)mm	$U=4.8 \mu\text{m}$		
				(0~5)m	$U=0.2\text{mm}$		
				(>5~20)m	$U=0.4\text{mm}$		
				(>20~30)m	$U=0.5\text{mm}$		
				(>30~50)m	$U=0.6\text{mm}$		
7	Steel Rule	Length	V.R. of Steel Rule JJG1	(>50~100)m	$U=0.8\text{mm}$		
				(0~2000)mm	$U=0.04\text{mm}+0.03 \times 10^{-3}L$		
8	*Length Measuring Machine	Length	C.S. for Length Measuring Machine JJF1066	DCM scale: (100~3000)mm	$U=0.7 \mu\text{m}+10^{-6}L$		
				Mm scale: (0~100)mm	$U=0.08 \mu\text{m}+1.2 \times 10^{-6}L$		
				Micron scale: (-100~100) μm	$U=0.07 \mu\text{m}$		
9	*Toolmaker's Microscope	Length	V.R. of Toolmaker's Microscopes JJG56	(200×100)mm	$U=0.2 \mu\text{m}+0.4 \times 10^{-6}L$		
10	*Optimeter	Length	V.R. of Optimeter JJG45	(-100~+100) μm	$U=0.07 \mu\text{m}$		
11	*Contact-Type Interferometers	Length	V.R. of Contact-Type Interferometer JJG101	(-10~10) μm	$U=0.01 \mu\text{m}$		
12	*Tester for Dial Gauges	Length	V.R. of Testers for Dial Gauges JJG201	Raster indicator verification instrument: (0~10)mm	$U=0.3 \mu\text{m}$		
				Raster indicator verification instrument: (>10~100)mm	$U=0.2\mu\text{m}+18 \times 10^{-6}L$		



No. CNAS L1423

第 2 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Tester for 0.001mm: (0~5)mm	$U=0.2 \mu m$		
				Tester for 0.01mm: (0~ 25)mm	$U=0.3 \mu m$		
13	*Ultrasonic Thickness Instruments	Length	C.S. for Ultrasonic Thickness Instrument JJF1126	(0~15)mm	$U=0.02mm$		
				(>15~75)mm	$U=0.03mm$		
				(>75~200) mm	$U=0.06mm$		
14	*Coordinate Measuring Machine	Length	C.S. for Coordinate Measuring Machine JJF1064	(0~2)m	$U=0.2 \mu m+0.4 \times 10^{-6}L$		
				(>2~40)m	$U=0.2 \mu m+2 \times 10^{-6}L$		
				Probe Error: ϕ (25~ 30) mm	$U=0.10 \mu m$		
15	*Calibrators for Levels	Angle	V.R. of Calibrators for Levels JJG191	(0.002~1.5)mm/m	$U_{rel}=1.9\%$		
16	Electronic Levels and Coincidence Levels	Angle	V.R. of Electronic Levels and Coincidence Levels JJG103	Electronic Levels:(-0.5~ +0.5)mm/m	$U=0.001mm/m$		
				Electronic Levels:(-0.5~ 5)mm/m, (0.5~ +5)mm/m	$U=0.01mm/m$		
				Coincidence Levels:(-1~ +1)mm/m	$U=0.002mm/m$		
				Coincidence Levels:(-1~ -5)mm/m, (+1~ +5)mm/m	$U=0.003mm/m$		
17	*Contact(Stylus)In struments of Surface Roughness	Roughness	C.S for Contact(Stylus)Instruments of Surface Roughness	Ra (2.0~10.0) μm	$U=0.09 \mu m$		
				Ra (0.1~2.0) μm	$U=0.01 \mu m$		



No. CNAS L1423

第 3 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Measurement by the Profile Method		Measurement by the Profile Method JJF1105	$Ra (0.01 \sim 0.1) \mu m$	$U=0.005 \mu m$		
18	Roughness Comparison Specimens	Roughness	C.S. for Roughness Comparison Specimens JJF1099	$Ra:(0.012 \sim 25) \mu m$	$U_{rel}=6\%$		
19	*Surface Plates	Flatness	V.R.of Surface Plates JJG117	$(160 \times 100)mm \sim (2500 \times 4000)mm$	$U=0.8 \mu m + 1 \times 10^{-6}L$		
20	Internal Micrometers	Length	V.R.of Internal Micrometers JJG22	$(50 \sim 1000)mm$	$U=1.0 \mu m + 3.4 \times 10^{-6}L$		
21	Micrometers of Measuring Inside Dimension	Length	C.S.for Micrometers of Measuring Inside Dimension JJF1411	$(5 \sim 300)mm$	$U=1.0 \mu m + 5 \times 10^{-6}L$	Three point inside micrometer measuring $\phi 50mm$ or more	
22	Feel Gauges	Length	V.R.of Feeler Gauges JJG62	$(0.02 \sim 0.10)mm$	$U=1.4 \mu m$		
				$(>0.10 \sim 3.00)mm$	$U=3.0 \mu m$		
23	General Bevel Protractors	Angle	C.S.of General Bevel Protractors JJF1959	$0^\circ \sim 360^\circ$	$U=1.1'$		
24	Frame Levels and Shaft Levels	Angle	C.S. for Frame Levels and Shaft Levels JJF1084	$(0.02 \sim 0.10)mm/m$	$U_{rel}=5.8\%$		
25	*Projectors	Length	C.S.for Projectors JJF1093	$(0 \sim 500)mm$	$U=0.8 \mu m + 7 \times 10^{-6}l_n$		
26	*Length Measuring Instrument	Length	C.S.for Length Measuring Instrument JJF1189	$(0 \sim 1000)mm$	$U=0.08 \mu m + 1.2 \times 10^{-6}L$		
27	*Height Measuring Instrument with Digital Display	Length	C.S.for Height Measuring Instrument with Digital Display JJF1254	$(0 \sim 1000)mm$	$U=0.3 \mu m + 1.5 \times 10^{-6}L$		
28	Inductive Micrometers	Length	C.S.for Inductive Micrometers JJF1331	$(-1 \sim +1)mm$	$U=0.07 \mu m$		

No. CNAS L1423

第 4 页 共 85 页



The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
29	*Biological Microscopes	Length	C.S. for Biological Microscopes JJF1402	(0.01~1)mm	$U_{rel}=1.2\%$		
30	Pile Displacement Sensor	Length	C.S. for the Pile Displacement Sensor JJF(Ji) 83	(-10~+40)mm	$U=0.01\text{mm}$		
31	Cylindrical Measuring Pin	Length	C.S. for Cylindrical Measuring Pin JJF1207	$\Phi(0.1\sim 25)\text{mm}$	$U=0.4\text{ }\mu\text{m}$		
32	Tire Tread Depth Gauge	length	C.S. for Tire Tread Depth Gauges JJF1477	digital(0~30)mm	$U=0.01\text{mm}$		
				vernier(0~50)mm	$U=0.03\text{mm}$		
33	Plain Limit Gauges	length	V.R. of Plain Limit Gauges JJG343	Plug gauge: $\Phi(1\sim 300)\text{mm}$	$U=0.22\text{ }\mu\text{m}+4\times 10^{-6}L$		
				Ring gauge: $\Phi(2\sim 200)\text{mm}$	$U=0.6\text{ }\mu\text{m}+1\times 10^{-6}L$		
34	*Thickness Gauges	length	C.S. for Thickness Gauges JJF1255	Dial indicator: (0~1)mm	$U=1.7\text{ }\mu\text{m}$		
				Dial indicator: (>1~10)mm	$U=3\text{ }\mu\text{m}$		
				Dial expression: (0~30)mm	$U=5\text{ }\mu\text{m}$		
35	Test Sieves	length	C.S. for Test Sieves JJF1175	(0.040~5)mm	$U=0.002\text{mm}$		
				(>5~125)mm	$U=0.03\text{mm}$		
36	Linear Displacement Sensors	length	C.S. for Linear Displacement Sensors JJF1305	(0.1~2000)mm	$U_{rel}=0.08\%$	合格评定 国家认可 认可证书专用章	
37	Angular-Position Transducers/Sensors	Angle	C.S. for Angular-Position Transducers/Sensors JJF1352	(0.01~360) $^{\circ}$	$U_{rel}=0.08\%$		



No. CNAS L1423

第 5 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

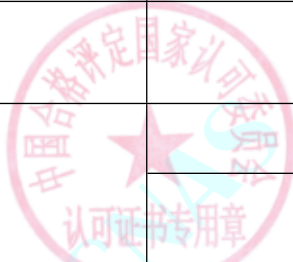
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
38	Wedge-shape Filler Gauges	length	C.S. for Wedge-shape Filler Gauges JJF1548	I type : (0.05~60)mm	$U=9 \mu m$		
				II type: (0.05~15)mm	$U=11 \mu m$		
				digimatic: (0.05~ 40)mm	$U=10 \mu m$		
39	Cylindrical Thread Gauges	Length	C.S. for Cylindrical Thread Gauges JJF1345	Thread Plug Gauge: (3~ 160)mm	$U=2.9 \mu m+5 \times 10^{-6}L$		
				Thread Ring Gauge:(3~ 160)mm	$U=3.4 \mu m+5 \times 10^{-6}L$		
40	Standard Ring Gauge	length	V.R. of Standard Ring Gauge JJG894	Φ (2~200)mm	$U=0.6 \mu m+1 \times 10^{-6}L$		
41	Dipmeters	Angle	C.S. of Clinometers JJF1915	$(-180 \sim +180)^{\circ}$	$U=0.006^{\circ}$		
42	Calibrator of Extensometers	Length	C.S. of Calibrator of Extensometers JJF1096	$(0 \sim 1/3) mm$	$U=0.10 \mu m$		
				$(>1/3 \sim 25) mm$	$U_{rel}=0.04\%$		
43	gap&flush instrument	Length	C.S. of Gap&Flush Instrument JJF(Gan)014	$(0 \sim 25) mm$	$U=0.02 mm$		
44	Coordinate Measuring Spheres	Roughness	C.S. for Coordinate Measuring Spheres JJF1422	$Ra (0.012 \sim 10) \mu m$	$U_{rel}=6.0\%$		
		Length		$\Phi (10 \sim 50) mm$	$U=0.29 \mu m$		
		Roundness		$(0 \sim 10) \mu m$	$U=0.02 \mu m$		
45	Cross Line Laser	Angle	Calibration Specification for Laser Markers JJF2002	$(-5 \sim 5) mm/m$	$U=0.2 mm/m$		
46	OCTG Thread Working Gauges	Length	C.S. for OCTG Thread Working Gauges JJF1108	Pitch diameter: Φ (56.642~242.741)mm	$U=2.5 \mu m+L/200$		
				Close Distance: (7.620~ 15.875)mm	$U=8 \mu m$		



No. CNAS L1423

第 6 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
47	Instruments of Thread Inspection of Casing, Tubing, Line Pipe and New Rotary Shouldered Connection	Length	C.S. for Instruments of Thread Inspection of Casing, Tubing, Line Pipe and New Rotary Shouldered Connection JJF1063	micrometer drum wheel: (0~25) mm	$U=0.7 \mu\text{m}$		
				Tooth spacing of pitch template: (0.5~100) mm	$U=0.8 \mu\text{m}$		
				High pattern of threaded teeth: (0.5~3) mm	$U=0.7 \mu\text{m}$		
				Single parameter gauge: (0~25) mm	$U=6 \mu\text{m}$		
48	*Metallurgical Microscopes	length	C.S. for Metallurgical Microscopes JJF1914	(0~10)mm	$U=0.5 \mu\text{m}+0.8\%L$		
		length		$4\times\sim 100\times$	$U_{\text{rel}}=0.8\%$		
49	*Extensometer	Length	V.R. of Extensometer Spectrometer JJG762	(0.03~0.3)mm	$U=0.5 \mu\text{m}$		
				(0.3~25)mm	$U_{\text{rel}}=0.18\%$		
50	Reading Microscope	Length	V.R. of Reading Microscope and Measuring Microscope JJG571	(0~8)mm	$U=0.24 \mu\text{m}$		
51	Grating Micrometers	Length	C.S. for Grating Micrometers JJF1682	(0~100)mm	$U=0.11 \mu\text{m}+1.2\times 10^{-6}L$		
52	*Laser Tracker 3-Dimensional Measuring System	Length	C.S. for Laser Tracker 3-Dimensional Measuring System JJF1242	Field calibration device for laser tracker (0~2) m	$U=6 \mu\text{m}$		
53	*Optical 3D Measuring Systems Based on Structured Light Scanning	Length	C. S. for Optical 3D Measuring Systems Based on Structured Light Scanning JJF 1951	Ball center distance (16~320) mm	$U=8 \mu\text{m}$		
				Length measurement (0~2) m	$U=5 \mu\text{m}$		



No. CNAS L1423

第 7 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
54	*Pneumatic Measuring Instrument	Length	V.R. of Pneumatic Measuring Instrument for Micrometer JJG356	(20~100) μm	$U=0.17 \mu\text{m}$		
55	Microscale	Length	C. S.for Micropattern Standards JJF1917	(0~10) mm	$U=0.03 \mu\text{m}$		
				(>10~200) mm	$U=0.5 \mu\text{m}$		
56	*C.S. for Articulated Arm Coordinate Measuring Machines	Length	C.S. for Articulated Arm Coordinate Measuring Machines JJF1408	(0~3) m	$U=0.013\text{mm}$		
57	Height Caliper	Length	V.R. of Height Caliper JJG31	(0~300)mm	$U=0.01\text{mm}$		
				(>300~500) mm	$U=0.02\text{mm}$		
				(500~1000)mm	$U=0.03\text{mm}$		
58	Horizontal ruler	Angle	Calibration Specification for Level Rules JJF1085	(0.5~10) mm/m	$U_{\text{rel}}=8\%$		
59	Standard Ball Bars	Length	Calibration Specification for Standard Ball Bars JJF1859	(0~2000)mm	$U=0.6 \mu\text{m}+1.3L/1000$		
				(1200~2000)mm	$U=2.8 \mu\text{m}+3.2L/1000$		
60	*Coaxiality Measuring Instruments	长度	Calibration Specification for Coaxiality Measuring Instruments JJF (Ji) 116	Extensometer: (0.1~2) mm	$U_{\text{rel}}=0.02\%$		
				Coaxiality: (0.1~2) mm	$U_{\text{rel}}=0.2\%$		
61	*Photoelectric Shaft Encoders	Angle	Calibration Specification for Photoelectric Shaft Encoders JJF 1115	(0~360) °	$U=0.4''$		
62	*Imaging Probe Measuring Machines	Length	Calibration Specification for Imaging Probe Measuring Machines JJF 1318	X、Y: (0~500) mm	$U=1.2 \mu\text{m}$		



No. CNAS L1423

第 8 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Z: (0~200) mm	$U=1.6 \mu m$		
63	*Depth Dial Gauge	Length	Verification Regulation of Depth Dial Gauge JJG830	(0~300)mm	$U=0.13 \mu m + 1.4 \times 10^{-6}L$		
64	Paint Film Scriber	Length	Calibration Specification for Paint Film Scriber JJF (Ji) 122	1mm, 2mm, 3mm	$U=3 \mu m$		
		Angle		20° ~30°	$U=6.2'$		
65	Angle Gauge Blocks	Angle	Verification Regulation of Angle Gauge Blocks JJG70	(0~360)°	$U=0.7'$		
66	*Dial Snap Gauges	Length	Calibration Specification for Dial Snap Gauges JJF1253	(5~100)mm	$U=0.0052mm$		
2、thermology							
1	Bimetallic Thermometers	temperature	C. S. for Bimetallic thermometers JJF 1908	(-80~300)°C	$U=0.3^{\circ}C$		
				(300~500)°C	$U=0.6^{\circ}C$		
2	Filled System Thermometers	temperature	C. S. for Filled System Thermometers JJF 1909	(-80~300)°C	$U=0.3^{\circ}C$		
				(300~500)°C	$U=0.6^{\circ}C$		
3	Liquid-in-Glass Thermometers for Petroleum Products	temperature	V.R. of Liquid-in-Glass Thermometer for Working JJG130	(-80~100)°C	$U=0.05^{\circ}C$		
				(100~500)°C	$U=0.06^{\circ}C$		
4	*Temperature Transmitter	temperature	C. S. of the Temperature Transmitter JJF1183	(-80~300)°C	$U=0.05^{\circ}C$	Onsite calibration scope (-40~660) °C	
				(300~1100)°C	$U=1.0^{\circ}C$		
5	*Electric Resistance Furnace	temperature	C.S. for Box type Resistance Furnace JJF1376	(300~500)°C	$U=1.8^{\circ}C$		
				(500~900)°C	$U=2.0^{\circ}C$		



No. CNAS L1423

第 9 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(900~1100)°C	U=2.2°C		
6	Working Noble Metal Thermometer	temperature	V.R. of Working Noble Metal Thermocouples JJG141	419.527°C	U=0.6°C		
				660.323°C	U=0.7°C		
				1084.62°C	U=0.6°C		
7	The Working Radiation Thermometers	temperature	V. R. of the Radiation Thermometers JJG856	(-80~30)°C	U=1.0°C		
				(5~400)°C	U=(0.9~1.3)°C		
				(400~1600)°C	U=(1.2~1.9)°C		
8	Industrial Resistance Thermistor	temperature	V.R. of Industrial Platinum Copper Resistance Thermometers JJG229	0°C	U=0.03°C		
				100°C	U=0.04°C		
9	Standard Platinum Resistance thermo meter	temperature	V.R. of Standard Platinum Resistance Thermometer JJG160	0.01°C	U=0.0020°C		
				231.928°C	U=0.0044°C		
				419.527°C	U=0.0060°C		
10	Standard Platinum - Rhodium10/platinu m Thermocouple	temperature	V.R. of the Standard Platinum-Rhodium 10/Platinum Thermocouple JJG75	419.527°C	U=0.6°C		
				660.323°C	U=0.7°C		
				1084.62°C	U=0.6°C		
11	*Digital Temperature Indicators and Controllers	temperature	V.R. of Digital Temperature Indicators and Controllers JJG617	Configuration of Thermal Resistance: (-200~800) °C	U=0.1°C		
				Configuration of Thermocouple :(0~1300) °C	U=0.3°C		



No. CNAS L1423

第 10 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
12	Standard Mercury-in-Class Thermometer	temperature	V.R. of Standard Mercury-in-Glass Thermometer JJG161	$(-60 \sim 100)^{\circ}\text{C}$	$U=0.03^{\circ}\text{C}$		
				$(100 \sim 300)^{\circ}\text{C}$	$U=0.04^{\circ}\text{C}$		
13	Base Metal Thermocouples	temperature	C.S. for Base Metal Thermocouples JJF1637	$(300 \sim 1100)^{\circ}\text{C}$	$U=0.8^{\circ}\text{C}$		
14	*High-temperature Sterilization Instrument	temperature	C.S. for Sterilization Parameters of High-temperature Sterilization Instrument JJF(Ji)29	Steam sterilizer: $(0 \sim 150)^{\circ}\text{C}$	$U=0.28^{\circ}\text{C}$		
				Dry heat sterilizers: $(100 \sim 400)^{\circ}\text{C}$	$U=0.62^{\circ}\text{C}$		
15	*The Equipment of the Environmental Testing	Temperature	C. S. for the Equipment of Environmental Testing for Temperature and Humidity Parameter JJF1101	$(-80 \sim 0)^{\circ}\text{C}$	$U=0.6^{\circ}\text{C}$		
				$(0 \sim 100)^{\circ}\text{C}$	$U=0.4^{\circ}\text{C}$		
				$(100 \sim 300)^{\circ}\text{C}$	$U=0.6^{\circ}\text{C}$		
		Relative humidity		$10\% \sim 95\%$	$U=1.3\%$		
16	Temperature Itinerant Detecting Instrument	temperature	C.S. for Temperature Itinerant Detecting Instrument JJF1171	$(-60 \sim 300)^{\circ}\text{C}$	$U=0.04^{\circ}\text{C}$		
17	*The temperature Block Calibrators	Temperature	Calibration Guideline of the Temperature Block Calibrators JJF1257	$(-80 \sim 300)^{\circ}\text{C}$	$U=0.04^{\circ}\text{C}$		
				$(300 \sim 600)^{\circ}\text{C}$	$U=1.2^{\circ}\text{C}$		
				$(600 \sim 1100)^{\circ}\text{C}$	$U=1.6^{\circ}\text{C}$		
18	Temperature Data Acquisition Instruments	Temperature	C.S. of Temperature Data Acquisition Instruments JJF1366	$(-60 \sim 500)^{\circ}\text{C}$	$U=0.03^{\circ}\text{C}$		



No. CNAS L1423

第 11 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
19	*Thermostatic Baths for Temperature Calibration	Temperature	Measurement and Test Norm of Metrological Characteristics of Thermostatic Baths for Temperature Calibration JJF1030	$(-80\sim 300)^{\circ}\text{C}$	$U=0.004^{\circ}\text{C}$		
20	*Thermocouple Calibration Furnaces	Temperature	Testing Specification of Temperature Uniformity in Thermocouple Calibration Furnaces JJF1184	$(300\sim 1100)^{\circ}\text{C}$	$U=0.25^{\circ}\text{C}$		
21	safety barrier	Current	V.R. of Safety Barrier JJG(HG) 8	$(4\sim 20)\text{mA}$	$U_{\text{rel}}=0.011\%$		
		Voltage		$(1\sim 5)\text{V}$	$U=0.0003\text{V}$		
22	*Salt spray test equipment	Salt fog deposition rate	C.S. for Salt mist testing Equipments JJF (Ji) 92	$(1.0\sim 2.0)\text{mL}/(\text{h}\cdot 80\text{cm}^2)$	$U=0.06\text{mL}/(\text{h}\cdot 80\text{cm}^2)$		
		Temperature		$(10\sim 50)^{\circ}\text{C}$	$U=0.4^{\circ}\text{C}$		
23	Digital Temperature-hygrometers	Temperature	C.S. for Humidity Sensors JJF1076	$(-10\sim 40)^{\circ}\text{C}$	$U=0.2^{\circ}\text{C}$		
		Relative Humidity		$(20\sim 90)\% (20^{\circ}\text{C})$	$U=1.5\%$		
24	Sheathed Thermocouples	temperature	C.S. for Sheathed Thermocouples JJF1262	$(-40\sim 300)^{\circ}\text{C}$	$U=0.4^{\circ}\text{C}$		
				$(300\sim 1100)^{\circ}\text{C}$	$U=0.8^{\circ}\text{C}$		
25	*Auto-measuring System of Thermocouples and Resistance Thermometers	temperature	C.S. for Auto-measuring System of Thermocouples and Resistance Thermometers JJF1098	Resistance Thermometers System: $(0\sim 300)^{\circ}\text{C}$	$U=0.1^{\circ}\text{C}$		
				Thermocouples System: $(300\sim 1100)^{\circ}\text{C}$	$U=0.5^{\circ}\text{C}$		
	*Blackbody		C.S. for Blackbody Radiation Sources of Radiation	$(-10\sim 20)^{\circ}\text{C}$	$U=0.9^{\circ}\text{C}$		



在线扫码获取验证

No. CNAS L1423

第 12 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	of Radiation Thermometry from -10 °C to 200 °C		Thermometry from -10 °C to 200 °C JJF1552	(20~50)°C	U=0.19°C		
				(50~200)°C	U=0.7°C		
27	*Temperature Indicators	temperature	C.S.for Temperature Indicators JJF1664	Configuration of Thermal Resistance: (-200~400)°C	U=0.4°C		
				Configuration of Thermocouple: (0~1900)°C	U=0.8°C		
28	Temperature Indicators and Simulators by Electrical Simulation and Measurement	temperature	C.S.of Temperature Indicators and Simulators by Electrical Simulation and Measurement JJF1309	Resistance Thermometers: (-200~800)°C	U=0.01°C		
				Thermocouples: (0~1300)°C	U=0.12°C		
29	*Temperature and Humidity Standard Chambers	temperature	C.S.for Temperature and Humidity Standard Chambers JJF1564	(5~50)°C	U=0.02°C		
		Humidity		(10~90)%RH	U=0.8%RH		
30	(-80~1100)°C Temperature Itinerant Detecting Instrument	temperature	"C.S.for (-80~1100)°C Temperature Itinerant Detecting Instrument " ZB/JLY (Yuan) 16	(-80~300)°C	U=0.04°C	Only calibrate the temperature circuit detector with the lower limit of temperature measurement below -60°C or the upper limit of	



No. CNAS L1423

第 13 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(300~1100)°C	U=0.9°C	temperature measurement higher than 300° C	
31	*Heat Distortion and Vicat Softening Temperature Apparatus	temperature	C.S. for Heat Distortion and Vicat Softening Temperature Apparatus JJF(Zhe)1051	(20~300)°C	U=0.3°C		
		Heating Rate		(50~200)°C/h	U=0.2°C/h		
		length		(0.5~5)mm	U=0.02mm		
		mass		(50~5000)g	U=0.3g		
32	*Microwave Digestion Instrument	temperature	C.S. for Temperature Parameter of Microwave Digestion Instrument ZB/JLY (Yuan) 17	(50~170)°C	U=0.3°C		
33	Infrared Ear Thermometers	temperature	V.R. of Infrared Ear Thermometers JJG1164	(35~42)°C			
34	Thermal Imagers	temperature	C. S. for Thermal Imagers JJF1187	(-80~30)°C	U=1.3°C		
				(30~600)°C	U=1.4°C		
				(600~1600)°C	U=2.4°C		
35	* (Automatic) Nucleic Acid Extractors	temperature	C.S. for (Automatic) Nucleic Acid Extractors JJF 1874	(30~100)°C	U=0.3°C		
		Frequency		(0.1~10)Hz	U=0.18Hz		
		Volume		(0~200) μL	U=1.2 μL		
		Density		1024ng/ul	U _{rel} =1.9%		
36	*Eight-Basket Oven	temperature	C.S. for Eight-Basket Oven JJF(FZ)011	(-80~300)°C	U=0.3°C		



No. CNAS L1423

第 14 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
37	Clinical Electronic Thermometers	temperature	V.R.of Clinical Electronic Thermometers JJG1162	(35~41)°C	$U=0.02^{\circ}\text{C}$		
38	*Reference Blackbody Radiator for Radiation Thermometry from -50°C to 1300°C	temperature	C.S. for Reference Blackbody Radiator for Radiation Thermometry from -50°C to 1300°C ZB/JLY (Yuan) 27	(-50~10)°C	$U=0.9^{\circ}\text{C}$	Only calibrate Blackbody Radiation sources whose lower temperature limit is lower than -10° C or whose upper temperature limit is higher than 200° C.	
				(10~150)°C	$U=0.7^{\circ}\text{C}$		
				(150~400)°C	$U=1.2^{\circ}\text{C}$		
				(400~1000)°C	$U=2.0^{\circ}\text{C}$		
				(1000~1300)°C	$U=2.8^{\circ}\text{C}$		
39	Precision Dew-point Hygrometer	Dew-point Hygrometer	V.R. of the Precision Dew-point Hygrometer JJG499	(-70~20)°C	$U=0.42^{\circ}\text{C}$		
40	Mechanical Thermo hygrometers	Temperature	V.R. of Mechanical Thermo hygrometers JJG205	(5~50)°C	$U=0.4^{\circ}\text{C}$		
		Relative humidity		40%~90%	$U=1.6\%$		
41	Resistance and Capacitance Dew Point Hygrometer	Dew point temperature	C.S. for Resistance and Capacitance Dew Point Hygrometer JJF1272	(-70~20)°C	$U=0.4^{\circ}\text{C}$		
42	*Medical refrigerated freezer	Temperature	Calibration Specification for Medical refrigerated freezer JJF(Liao)499	(-164~ -25) °C	$U=0.6^{\circ}\text{C}$		



No. CNAS L1423

第 15 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
43	*Rapid Nucleic Acid Detectors	Temperature	Calibration Specification for Rapid Nucleic Acid Detectors JJF(Ji)105	(30~95)℃	$U=(0.4\sim0.7)^{\circ}\text{C}$		
44	Digital Thermometer	temperature	C.S.for Digital Thermometer JJF(苏) 95	(-196~300)℃	$U=0.04^{\circ}\text{C}$		
				(300~1200)℃	$U=0.8^{\circ}\text{C}$		
45	*Reference Blackbody Radiators for Radiation Thermometry from 800℃ to 3000℃	Temperature	C.S.for Reference Blackbody Radiators for Radiation Thermometry from 800℃ to 3000℃ ZB/JLY (Yuan) 43	(800~2700)℃	$U=(2.6\sim11)^{\circ}\text{C}$		
46	*Cal ibration Specification of Temperature Cal ibration Devices for Polymerase Chain Reaction Analyzers	Temperature	Calibration Specification of Temperature Calibration Devices for Polymerase Chain Reaction Analyzers JJF1821	(0~120)℃	$U=0.04^{\circ}\text{C}$		
47	*Sand and Dust Testiong Equipments	Temperature	Calibration Specification for Sand and Dust Testing Equipments JJF (Ji) 121	23℃, 60℃	$U=0.2^{\circ}\text{C}$		
		Relative Humidity		10%~30%	$U=1.3\%$		
		concentration		10.6g/m ³	$U=0.8\text{g/m}^3$		
		wind speed		(1.5~8.9)m/s	$U_{\text{rel}}=2.0\%$		
48	*Infrared Human Body Surface Temperature Rapid Screening Instrument	Temperature	Calibration Specification of Infrared Thermometers for Measurement of Human Temperature JJF 1107	(35~42)℃	$U=0.2^{\circ}\text{C}$		



No. CNAS L1423

第 16 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
49	*Surface Temperature Sources	Temperature	Calibration Specification for Surface Temperature Sources JJF (Ji) 120	(50~400)℃	<i>U</i> =0.4℃		
50	*Medical Vacuum Freeze Dryer	Temperature	Calibration Specification for Pharmaceutical Vacuum Freeze Dryer JJF(Chuan)190-2022	(-55~60)℃	<i>U</i> =0.2℃		
		Pressure		(1~100)Pa	<i>U</i> _{rel} =20%		
51	*Stream Sterilizer	Temperature	Calibration Specification for Temperature and Pressure Parameter of Stream Sterilizer JJF(Su) 96	(70~140)℃	<i>U</i> =0.40℃		
		Pressure		(10~400)kPa	<i>U</i> =0.7kPa		
52	*Ash Fusibility Testers	Temperature	Calibration Specification for Ash Fusibility Testers JJF (Jin) 81	Deviations of temperature-controlling and stability:(1100~1500)℃	<i>U</i> =2.4℃		
				DT: (1000~1500)℃	<i>U</i> =33℃		
				FT:(1000~1500)℃	<i>U</i> =21℃		
				HT: (1000~1500)℃	<i>U</i> =20℃		
				ST: (1000~1500)℃	<i>U</i> =26℃		
3、Mechanics							
1	*Weight	Mass	V.R. of Weights JJG99	(1~500)mg	<i>U</i> =(0.003~0.009)mg	Only test below F ₂ class on site	
				(1~500)g	<i>U</i> =(0.01~0.4)mg		
				(1~20)kg	<i>U</i> =(0.8~26)mg		
2	*Digital Indicating Weighing Instrument	Mass	V.R. of Digital Indicating Weighing Instruments JJG539	(2~1000) g	<i>U</i> =(0.02~0.21)g		
				(1~100)kg	<i>U</i> =(0.21~6)g		



No. CNAS L1423

第 17 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				(100 ~ 1000) kg	$U=(6\sim60)\text{g}$		
				(1~30) t	$U=(0.06\sim3.8)\text{kg}$		
3	*Mechanical Balance	Mass	V.R. of Mechanical Balance JJG98	(1~200)g	$U=(0.008\sim0.14)\text{mg}$		
				(0.2~20) kg	$U=(0.14\sim6.5)\text{mg}$		
4	*Electronic Balance	Mass	V.R. for Electronic Balance JJG1036	(1~1000)mg	$U=(0.01\sim0.20)\text{mg}$		
				(1~500) g	$U=(0.20\sim1.0)\text{mg}$		
				(0.5~1) kg	$U=(1.0\sim15)\text{mg}$		
5	Working Glass Container	Capacity	V.R. of Working Glass Container JJG196	(0.1~0.5)mL	$U=0.001\text{ mL}$		
				(0.5~2)mL	$U=0.002\text{mL}$		
				(2~10)mL	$U=0.004\text{mL}$		
				(10~25)mL	$U=0.006\text{ mL}$		
				(25~50)mL	$U=0.010\text{mL}$		
				(50~100)mL	$U=0.020\text{ mL}$		
				(100~250)mL	$U=0.04\text{mL}$		
				(250~500)mL	$U=0.14\text{mL}$		
				(500~1000)mL	$U=0.18\text{ mL}$		
				(1000~2000)mL	$U=0.30\text{mL}$		
6	Locomotive Pipette	Capacity	V.R. of Locomotive Pipette JJG646	(1~2) μL	$U_{\text{rel}}=4.0\%$		
				(2~10) μL	$U_{\text{rel}}=2.8\%$		



No. CNAS L1423

第 18 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				(10~25) μ L	$U_{rel}=1.5\%$		
				(25~40) μ L	$U_{rel}=1.1\%$		
				(40~50) μ L	$U_{rel}=1.0\%$		
				(50~100) μ L	$U_{rel}=0.70\%$		
				(100~200) μ L	$U_{rel}=0.49\%$		
				(200~300) μ L	$U_{rel}=0.39\%$		
				(300~500) μ L	$U_{rel}=0.32\%$		
				(500~1000) μ L	$U_{rel}=0.26\%$		
				(1000~10000) μ L	$U_{rel}=0.19\%$		
7	Standard Dynamometer	Force	V.R. of Standard Dynamometer JJG144	(0.2~1000) N	$U_{rel}=0.11\%$		
				(1~1000) kN	$U_{rel}=0.11\%$		
				(1~10) MN	$U_{rel}=0.32\%$		
8	*Tension , Compression and Universal Testing Machines	Force	V.R. of Tension , Compression and Universal Testing Machines JJG139	(0.1~100)kN	$U_{rel}=0.4\%$		
				(0.1~20)MN	$U_{rel}=0.4\%$		
		proper alignment		(0.02~2.00) mm	$U_{rel}=0.6\%$		
		displacement		(1~1000) mm	$U_{rel}=0.2\%$		
		velocity		(1~500) mm/min	$U_{rel}=0.2\%$		
9	Torque Wrench	Torque	V.R. of Torque Wrenches JJG707	0.2N·m~ 10kN·m	$U_{rel}=1.0\%$		



No. CNAS L1423

第 19 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
10	*Metallic Brinell Hardness Testers	Hardness	V.R. of Metallic Brinell Hardness Testers JJG150	$\leq 125\text{HBW}$ (125~225)HBW	$U_{\text{rel}}=2.0\%$ $U_{\text{rel}}=1.5\%$		
11	*Metallic Rockwell Hardness Testers	Hardness	V.R. of Metallic Rockwell Hardness Testing Machines(Scales A,B,C,D,E,F,G,H,K,N,T) JJG112	(20~30)HRC (35~55)HRC (60~70)HRC (20~88)HRA (20~100)HRBW (20~91)HRN (12~93)HRTW	$U=0.79\text{HRC}$ $U=0.62\text{HRC}$ $U=0.52\text{HRC}$ $U=0.52\text{HRA}$ $U=0.86\text{HRBW}$ $U=0.79\text{HRN}$ $U=0.79\text{HRTW}$		
12	*Metallic Vickers Hardness Testers	Hardness	V.R. of Metallic Vickers Hardness Testers JJG151	$\leq 225\text{HV}$ (HV5、HV10、HV20、HV30、HV50、HV100) >225HV (HV5、HV10、HV20、HV30、HV50、HV100) $\leq 225\text{HV}$ (HV0.2、HV0.3、HV0.5、HV1) >225HV (HV0.2、HV0.3、HV0.5、HV1) $\leq 225\text{HV}0.1$ >225HV0.1	$U_{\text{rel}}=3.0\%$ $U_{\text{rel}}=2.1\%$ $U_{\text{rel}}=5.3\%$ $U_{\text{rel}}=4.2\%$ $U_{\text{rel}}=5.4\%$ $U_{\text{rel}}=5.1\%$		
13	Hot bulb anemometer	Wind speed	V.R. of Hot Bulb Anemometer JJG (JS) 0001	(0.2~30)m/s	$U_{\text{rel}}=2\%$		



No. CNAS L1423

第 20 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
14	Micro-Sampling Syringe	Capacity	C.S. of Micro-Sampling Syringe JJF (Ji) 59	(0.25~0.5) μ L	$U_{rel}=6.6\%$		
				(0.5~2) μ L	$U_{rel}=4.7\%$		
				(2~10) μ L	$U_{rel}=2.6\%$		
				(10~25) μ L	$U_{rel}=1.3\%$		
				(25~50) μ L	$U_{rel}=1.0\%$		
				(50~100) μ L	$U_{rel}=0.7\%$		
				(100~250) μ L	$U_{rel}=0.5\%$		
				(250~1000) μ L	$U_{rel}=0.3\%$		
15	Standard Glass Hydrometers	Density	V.R. of Standard Glass Hydrometers JJG86	Second-Class Standard densimeter:(650~1000)kg/m ³	$U=0.18$ kg/m ³		
				Second-Class Standard densimeter:(1000~1500)kg/m ³	$U=0.20$ kg/m ³		
				Second-Class Standard Petroleum densimeter:(650~900)kg/m ³	$U=0.16$ kg/m ³		
				Second-Class Standard Petroleum densimeter:(900~1100)kg/m ³	$U=0.19$ kg/m ³		
		Concentration		Second-Class Standard alcohol meter: q :(0~100)%	$U=0.1\%$		



No. CNAS L1423

第 21 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
16	Working Glass Hydrometers	Density	V.R. of Working Glass Hydrometers JJG42	Density meter:(650～1000)kg/m ³	<i>U</i> =0.3 kg/m ³		
				Density meter:(1000～1800)kg/m ³	<i>U</i> =0.4 kg/m ³		
				Petroleum density meter:(650～950)kg/m ³	<i>U</i> =0.22 kg/m ³		
				Petroleum density meter:(950～1100)kg/m ³	<i>U</i> =0.3 kg/m ³		
		Concentration		Alcohol meter: <i>q</i> :(0～100)%	<i>U</i> =0.5%		
17	*Syringe pump and Infusion Pumps	flow	C.S.for Syringe Pumps and Infusion Pumps JJF1259	(5～20)mL/h	<i>U</i> _{rel} =3.0%		
				(20～200)mL/h	<i>U</i> _{rel} =2.0%		
				(200～1000)mL/h	<i>U</i> _{rel} =3.0%		
		block pressure		(0～200)kPa	<i>U</i> =2.5 kPa		
18	Piezoelectric Accelerometer	acceleration	V.R. of Piezoelectric Accelerometer JJG233	16Hz/160Hz(ref): (1～300)m/s ²	<i>U</i> _{rel} =1.0%		
				(0.02～5000)Hz: (0.01～300)m/s ²	<i>U</i> _{rel} =2.0%		
				(5000～10000)Hz: (1～300)m/s ²	<i>U</i> _{rel} =3.0%		
				(10000～20000)Hz: (1～300)m/s ²	<i>U</i> _{rel} =5.0%		
19	Dynamic Elastic Modulus Measurement Instruments	Resonance frequency	C.S. for Dynamic Elastic Modulus Measurement Instruments JJF1373	10Hz～ 10kHz	<i>U</i> _{rel} =0.4%		
		Transmit frequency		10Hz～ 10kHz	<i>U</i> _{rel} =0.3%		



No. CNAS L1423

第 22 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
20	Coriolis Mass flow meters	flow	V.R. of Coriolis Mass flow meters JJG1038	Liquid, DN10~DN400: (0.5~1200)t/h; (quality method)	$U_{rel}=0.07\%$		
				Gas, DN25~DN300: (1~6000)m ³ /h; (master meter method)	$U_{rel}=0.31\%$		
21	*Ultrasonic Flowmeter	flow	V. R. of Ultrasonic Flowmeters JJG1030	Liquid, DN10~DN400: (0.5~1200)m ³ /h; (quality method)	$U_{rel}=0.07\%$	Only use standard meters test Flowmeter of DN20~3000: (1~3000)m ³ /h;	
				Liquid, DN10~DN400: (0.5~1800)m ³ /h; (master meter method)	$U_{rel}=0.26\%$		
				Liquid, DN20~DN3000: (master meter method) (1~30000)m ³ /h;	$U_{rel}=0.66\%$		
				Gas, DN25~DN300: (1~6000)m ³ /h; (master meter method)	$U_{rel}=0.31\%$		
22	*Electromagnetic Flowmeters	flow	V.R. of Electromagnetic Flowmeters JJG1033	Liquid, DN10~DN400: (0.5~1200)m ³ /h; (quality method)	$U_{rel}=0.07\%$	Only use standard meters test liquid	
				liquid, DN10~DN400: (0.5~1800)m ³ /h; (master meter method)	$U_{rel}=0.26\%$	Flowmeter of DN20~3000: (1~3000)m ³ /h;	



No. CNAS L1423

第 23 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				liquid, DN20~DN3000: (1~30000)m ³ /h; (master meter method)	$U_{rel}=0.66\%$	h;	
23	*Float meter	Flow	V.R. of Float Meter JJG257	gas, (0.003~9.0)m ³ /h liquid, (0.01~60)m ³ /h	$U_{rel}=0.3\%$ $U_{rel}=0.5\%$	Only use volume method, Only test Liquid Float Meter on site	
24	*Liquid Positive Displacement Flow Meter	Flow	V.R. of Liquid Positive Displacement Flow Meter JJG667	(0.01~60)m ³ /h	$U_{rel}=0.07\%$	Only use volume method, Only test Liquid Positive Displacement Flow Meter for product oil	
25	Heat meters	temperature difference flow	V.R. of Heat Meters JJG225	(4~96)°C DN15~DN200: (0.03~500)m ³ /h	$U=0.02$ °C $U_{rel}=0.2\%$	Only test integrated Heat meters	
26	Gas Displacement Meters	flow	V.R. of Gas Displacement Meters JJG633	DN25~DN300: (1~6000)m ³ /h	$U_{rel}=0.31\%$		
27	Vortex-shedding Flowmeter	flow	V.R. of Vortex-shedding Flowmeter JJG1029	Gas, DN25~DN300: (1~6000)m ³ /h	$U_{rel}=0.31\%$		
28	Cold Potable Water Meter	flow	V.R. of Cold Potable Water Meter JJG162	DN15~DN400: (1~1700)m ³ /h	$U_{rel}=0.3\%$		



No. CNAS L1423

第 24 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
29	*Fuel Dispenser	flow	V.R. of Fuel Dispensers (for Trial Implementation) JJG443	20L	$U_{rel}=0.1\%$		
				100L	$U_{rel}=0.1\%$		
30	*Verification Facility for Water Meters	Flow	V.R. of Verification Facility for Water Meters JJG1113	(10~5000)L	$U_{rel}=0.09\%$		
31	standard metal tank	capacity	V.R. of Standard Metal Tank JJG259	(10~1000)L	$U_{rel}=0.01\%$		
				(1000~5000)L	$U_{rel}=0.04\%$		
32	*Road Tankers	Capacity	V.R. of Road Tankers Capacity JJG133	(1~100)m ³	$U_{rel}=0.1\%$	Only use liquid compare method	
33	Standard Bell Provers of Gas Flow	Volume	V.R. of Standard Bell Provers of Gas Flow JJG165	(10~2000)L	$U_{rel}=0.05\%$	Only use static volume method	
34	*Tilting Tube Micromanometers	Pressure	V.R. of Tilting Tube Micromanometers JJG172	(-2000~-1500)Pa	$U=3\text{Pa}$		
				(-1500~-500)Pa	$U=2\text{Pa}$		
				(-500~500)Pa	$U=1\text{Pa}$		
				(500~1500)Pa	$U=2\text{Pa}$		
				(1500~2000)Pa	$U=3\text{Pa}$		
35	*Elastic Element Precise Pressure Gauges and Vacuum Gauges	Pressure	V.R. of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG49	Elastic Element Precise Pressure Gauges and Vacuum Gauges: (-0.1~250)MPa	$U=0.07\%FS$		
				Standard sphygmomanometer (0~50)kPa	$U=0.03\text{kPa}$		

No. CNAS L1423

第 25 页 共 85 页



The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
36	*Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use	Pressure	V. R of Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use JJG52	(-0.1~250)MPa	$U=0.5\%FS$		
37	*Pressure Transducer(Static)	Pressure	V.R. of the Pressure Transducer(Static) JJG860	DC voltage output: (0.0001~75)mV	$U_{rel}=0.008\%$		
				DC voltage output: (0.1~30)V	$U_{rel}=0.008\%$		
				DC Output:(0.0001~30)mA	$U_{rel}=0.012\%$		
38	Liquid-medium Piston Gauges	Pressure	V.R. of Liquid-medium Piston Gauges JJG59	(0.04~250)MPa	$U_{rel}=0.017\%$		
39	Piston Pressure Vacuum Gauges	Pressure	V.R. of Piston Pressure Vacuum Gauges JJG236	(-0.1~-0.01)MPa	$U_{rel}=0.017\%$		
				(0.01~0.6)MPa	$U_{rel}=0.017\%$		
40	Compensated Micro-manometer	Pressure	V.R. of Compensated Micro-manometer JJG158	(-2500~2500)Pa	$U=0.6Pa$		
41	*Digital Pressure Gauges	Pressure	V.R. of Digital Pressure Gauges JJG875	(-0.095~0)MPa	$U=0.01kPa$		
				(0.002~250)MPa	$U_{rel}=0.007\%$		
42	*Pressure Transmitters	Pressure	V.R. of Pressure Transmitters JJG882	(-0.1~250)MPa	$U=0.06\%FS$		
43	*Buoy Type Oxygen Inhalers	Flow	V.R. of Buoy Type Oxygen Inhalers JJG913	(1~10)L/min	$U=0.3L/min$		
		Pressure		(0~25)MPa	$U=0.2MPa$		
	*Self-contained open-circuit compressed air	Pressure	C.S. for Self-contained open-circuit compressed air	(-2~2)kPa	$U=10Pa$		



No. CNAS L1423

第 26 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	circuit compressed air breathing apparatus		breathing apparatus JJF(Ji)35	(0.1~3)MPa	$U=0.018\text{MPa}$		
				(3~30)MPa	$U=0.2\text{MPa}$		
45	*Flow Integration Meters	Temperature	V.R. of Flow Integration Meters JJG1003	(-80~300)°C	$U=0.05^\circ\text{C}$		
		Pressure		(0.001~10)MPa	$U_{\text{rel}}=0.23\%$		
		Flow		(0.01~10 ⁵)m ³ /h	$U_{\text{rel}}=0.14\%$		
46	Aneroid Barometer & Aneroid Barograph	absolute pressure	V.R. of Aneroid Barometer and Aneroid Barograph JJG272	absolute pressure (80~ 106)kPa	$U=0.06\text{kPa}$		
47	*Differential Pressure Flowmeters	Flow	V. R. of Differential Pressure Flowmeters JJG640	(1.5~ 75)L/min	$U=1.5\text{L/min}$	Only test Differential Pressure Flowmeters in engine test system	
48	*Linear Compression Internal Compression Testing Machine	Pressure	C.S. for Linear Compression Internal Compression Testing Machine JJF(Ji)75	(0~6)MPa	$U=0.0015\text{MPa}$		
49	Electronic Downhole Pressure Gauge	Pressure	V.R. of Electronic Downhole Pressure Gauges JJG 1173	(0~30)MPa	$U=0.007\text{MPa}$		
				(30~ 60)MPa	$U=0.015\text{MPa}$		
50	*The Theoretical Maximum Density of Asphalt Mixture	Absolute pressure	C.S. for The Theoretical Maximum Density of Asphalt Mixture JJF (Ji) 90	(2~100)kPa	$U=0.3\text{kPa}$		



No. CNAS L1423

第 27 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
51	*Pressure Regulator with Bourdon Tube Pressure Gauge	Pressure	C.S. for Pressure Regulator with Bourdon Tube Pressure Gauge JJF1328	(0~15)MPa	$U=0.8\%FS$		
52	*Pressure Controllers	Pressure	V.R. of Pressure Controller JJG544	(-0.1~60)MPa	$U=0.023\%FS$		
53	Laboratory Oscillation-type Liquid Density meters	Density	V.R. of Laboratory Oscillation-type Liquid Density Meters JJG 1058	(650~2000)kg/m ³	$U=0.5\text{kg/cm}^3$		
54	Special glassware	Capacity	V.R. of Special Glassware JJG 10	(0.01~1) mL	$U=(0.0003\sim0.002)\text{ mL}$		
				(1~10) mL	$U=(0.002\sim0.02)\text{ mL}$		
				(10~25) mL	$U=(0.02\sim0.04)\text{ mL}$		
				(25~50) mL	$U=(0.04\sim0.08)\text{ mL}$		
				(50~100) mL	$U=(0.08\sim0.16)\text{ mL}$		
55	Portable 3-cup Anemometers	Wind speed	V.R. of Portable 3-cup Anemometers JJG 431	(0.5~30) m/s	$U_{\text{rel}}=2\%$		
56	Capacitance accelerometer	Acceleration	C.S. for capacitance accelerometers JJF1918	16Hz/160Hz: (1~300)m/s ²	$U_{\text{rel}}=1.0\%$		
				(0.1~5000)Hz: (0.01~300)m/s ²	$U_{\text{rel}}=2.0\%$		
				(5000~10000)Hz: (1~300)m/s ²	$U_{\text{rel}}=3.0\%$		
		Static sensitivity		(0.01~1)g	$U_{\text{rel}}=0.5\%$		
57	Vibration calibrator	Acceleration	V.R. of Portable Vibration Calibrator JJG1062	10 m/s ² 160 Hz	$U_{\text{rel}}=1.0\%$		



No. CNAS L1423

第 28 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
			ilac-M	(1~100)m/s ² (20~2000)Hz	$U_{rel}=1.2\%$		
		Frequency		(20~2000)Hz	$U_{rel}=0.1\%$		
		Distortion		0.01%~100%	$U_{rel}=2.2\%$		
58	Environmental Vibration Analyzer	Acceleration	V.R of Environmental Vibration Analyzers JJG921	(1~100)m/s ² (1~80)Hz	$U_{rel}=2.0\%$		
59	Human vibration meter	Acceleration	V.R of Human Vibration Meters JJG1178	(0.1~100)m/s ² (0.1~1000)Hz	$U_{rel}=2.0\%$		
60	Dynamical signal analyzer	Frequency	V.R of Dynamical Signal Analyzer JJG834	1Hz~200kHz	$U_{rel}=0.01\%$		
		Frequency spectrum amplitude		(0.01~10)V, (1Hz~200kHz)	$U_{rel}=0.3\%$		
61	Impact Accelerometer	Acceleration	C.S.of Measuring Instrument for Shock JJF1943	(300~20000)m/s ²	$U_{rel}=4.0\%$		
				(20000~100000) m/s ²	$U_{rel}=4.8\%$		
62	Vibration Meters	Acceleration	V. R. of Vibration Meters JJG676	(0.01~300)m/s ² , (0.1~10000)Hz	$U_{rel}=2.0\%$		
63	*Shock and Bump Testing Machines	Impact Acceleration	V. R. of Shock and Bump Testing Machines JJG1174	(5~100000) m/s ²	$U_{rel}=5.1\%$		
				(0.2~2)ms	$U_{rel}=5.8\%$		
		Pulse duration		(2.1~100)ms	$U_{rel}=3.5\%$		
64	*Electrodynamic Vibration Testing Systems	Acceleration	V. R. of Electrodynamic Vibration Testing Systems JJG948	(5~1000) m/s ² (1~5000) Hz	$U_{rel}=3.2\%$		
		Frequency		(1~5000)Hz	$U_{rel}=0.01\%$		
		Distortion		0.01%~100%	$U_{rel}=0.8\%$		



No. CNAS L1423

第 29 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Lateral vibration ratio of mesa		0.5%~100%	$U_{rel}=1.5\%$		
		Amplitude uniformity		0.5%~100%	$U_{rel}=1.5\%$		
		Dynamic range		(0.01~100)dB (20Hz~2kHz)	$U_{rel}=1.9\%$		
		Acceleration root mean square		(1~100)g	$U_{rel}=1.6\%$		
		Acceleration spectral density		0.01g ² /Hz~2 g ² /Hz (5Hz~5kHz)	$U_{rel}=4.5\%$		
		Impact Acceleration		(10~1000)m/s ²	$U_{rel}=5.2\%$		
		Impact acceleration pulse width		(1~200)ms	$U_{rel}=2.2\%$		
		velocity change quantity for shock acceleration		(0.1~5)m/s	$U_{rel}=6.8\%$		
		Frequency sweep and vibration determination accuracy		(0.01~60)dB(1Hz~10kHz)	$U_{rel}=3.0\%$		
		resonance frequency		(20~5000)Hz	$U_{rel}=0.4\%$		
	*Electrodynamic	Acceleration	V. R. of Electrodynamic Horizontal Vibration	(5 ~1000) m/s ² (1~5000)Hz	$U_{rel}=3.2\%$		

No. CNAS L1423

第 30 页 共 85 页



在线扫码获取验证

The scope of the accreditation in Chinese remains the definitive version.

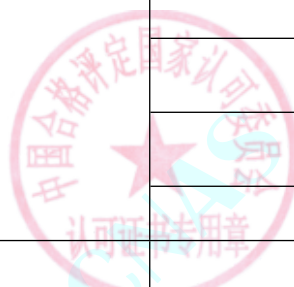
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Vibration Generator for Testing	Frequency	Generator for Testing JJG1000	(1~5000)Hz	$U_{rel}=0.4\%$		
		Distortion		0.01%~100%	$U_{rel}=0.8\%$		
		Lateral vibration ratio of mesa		0.5%~100%	$U_{rel}=1.5\%$		
		Amplitude uniformity		0.5%~100%	$U_{rel}=1.5\%$		
66	*Plastic Rock Well Hardness Testing Machine	Hardness	V.R. of Plastic Rock Well Hardness Testing Machine JJG884	(70~94)HRE	$U=1.2HRE$		
				(100~120)HRL	$U=0.72HRL$		
				(85~100)HRM	$U=0.92HRM$		
					$U=0.72HRR$		
67	*Plastic Ball Indentation Hardness Testing Machine	Force	V.R. of Plastic Ball Indentation Hardness Testing Machine JJG369	(49~961)N	$U_{rel}=0.8\%$		
68	*Microhardness Testing Machine in International Rubber Hardness Degree	Hardness	V.R. of Microhardness Testing Machine in International Rubber Hardness Degree JJG898	(35~85)IRHD	$U=1.0 IRHD$		
69	*Dead-Load Hardness Testing Machine in International Rubber Hardness Degree	Hardness	V.R. of Dead-Load Hardness Testing Machine in International Rubber Hardness Degree JJG666	(35~95)IRHD	$U=1.2IRHD$		



No. CNAS L1423

第 31 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
70	*Calibration Specification for Electric and Pneumatic Torque wrenches	Torque	C.S. for Electric and Pneumatic Torque wrenches JJF1610	1N • m~ 2kN • m	<i>U</i> _{rel} =1.0%		
71	*Calibration Specification for Hydraulic Torque Bench	Torque	C. S.for Hydraulic Torque Wrenches JJF (HuNan) 71	(4~20)kN • m	<i>U</i> _{rel} =1.5%		
72	*actuators	Force	Calibration Specification for actuators JJF (Ji) 102	20N~5MN	<i>U</i> _{rel} =0.4%		
		Length		1mm~3m	<i>U</i> =0.02mm		
73	*compactors	Force	C.S.for compactors JJF (Ji) 103	(0.02~600)kN	<i>U</i> _{rel} =0.4%		
		Length		(1~400) mm	<i>U</i> =0.024mm		
74	*Electro-hydraulic servo universal testing machines	Force	V.R. of electro-hydraulic servo universal testing machines JJG 1063	20N~3MN	<i>U</i> _{rel} =0.4%		
75	*Electronic Universal Testing Machine	Force	V.R. of Electronic Universal Testing Machine JJG 475	20N~5MN	<i>U</i> _{rel} =0.15%		
		proper alignment		(0~25) %	<i>U</i> =0.6%		
		length		Beam displacement: (0.1~1000) mm	<i>U</i> _{rel} =0.2%		
				Extensometer: (0~25) mm	<i>U</i> =0.6 μ m		
		velocity		(1~500) mm/min	<i>U</i> _{rel} =0.2%		
76	*Flexure Testing Machine	Force	V.R. of Flexure Testing Machine JJG 476	(0.5~10)kN	<i>U</i> _{rel} =0.4%		



No. CNAS L1423

第 32 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

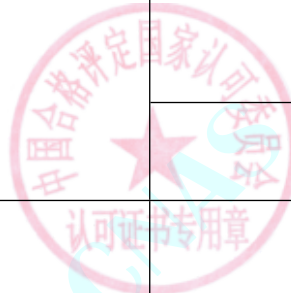
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
77	*Working Force Measuring Machines for Special Purposes	Force	C. S. for Working Force Measuring Machines for Special Purposes JJF 1134	20N~5MN	$U_{rel}=0.4\%$		
78	*High-Temperature Creep and Stress-Rupture Testing Machines	Force	V. R. of High-Temperature Creep and Stress-Rupture Testing Machines JJG 276	20N~5MN	$U_{rel}=0.4\%$		
		temperature		(30~300) °C	$U=0.65^{\circ}\text{C}$		
				(300~1200) °C	$U=1.0^{\circ}\text{C}$		
		proper alignment		(0~25) mm	$U=0.6\text{ }\mu\text{m}$		
				(0~25) %	$U=0.6\%$		
				(5~3600)s	$U_{rel}=0.1\%$		
79	*Recording pressure gauge	Pressure	V.R. of Recording pressure gauge, pressure vacuum gauge and vacuum gauge JJG 926	(-0.1~60)MPa	$U=0.3\%\text{FS}$		
80	Digital Barometer	Absolute pressure	V.R. of Digital Barometer JJG1084	(10~1200)hPa	$U=0.6\text{hPa}$		
81	*Micro Pressure Air Leak Detector	Pressure	C.S. for Micro Pressure Air Leak Detector JJF (Ji) 93	Pressure	$U=0.03\text{kPa}$		
		Flowing		Leakage:(1.5~50)mL/min	$U_{rel}=3.5\%$		
82	*Friability Tester	Rotate speed	C.S. of Friability Tester JJF (Ji) 51	25r/min	$U=1\text{r/min}$		
		Mass		(4~6.5) g	$U_{rel}=0.3\%$		
83	Bypass Digital Differential Pressure Gauges	Pressure	Calibration Specification for Bypass Digital Differential Pressure Gauges JJF(Ji)104	(-2500~2500) Pa	$U=1.3\text{Pa}$		



No. CNAS L1423

第 33 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
84	*Temperature/Humidity/Vibration Combined Environmental Testing System	Acceleration	C.S. for Temperature/Humidity/Vibration Combined Environmental Testing System JJF1270	(5 ~ 1500) m/s ² , (1~5000)Hz	U _{rel} =3.2%		
		Temperature		(-80~0) °C	U=0.5℃		
				(0~300) °C	U=0.4℃		
				Humidity	(20~90)%RH		
85	*Hydraulic-amplification Force Standard Machines	Force	V.R of Hydraulic-amplification Force Standard Machines JJG 1117	20N~1MN	U _{rel} =0.05%		
				(1~2) MN	U _{rel} =0.10%		
86	*Build-up Force Standard Machines	Force	V.R of Build-up Force Standard Machines JJG 1116	20N~1MN	U _{rel} =0.05%		
				(1~2) MN	U _{rel} =0.10%		
87	*Working Dynamometers	Force	V.R of Working Dynamometers JJG455	10N~5MN	U _{rel} =0.4%		
88	*Working Torque-meters	Torque	V.R of Working Torque-meters JJG1146	1.0N • m~ 5kN • m	U _{rel} =0.4%		
89	*Torsion Testing Machines	Torque	V.R of Torsion Testing Machines JJG269	5N • m~ 5kN • m	U _{rel} =0.3%		
90	*Shock Response Spectrum Testing Machines	Shock response spectrum amplitude	C.S. for Shock Response Spectrum Testing Machines JJF 1903	(100~100000) ²	U _{rel} =5.1%		
		Effective duration of shock		(0.2~200)ms	U _{rel} =5.8%		
91	Pressure Leaks	Leak Rates	Calibration Specification for (1×10 ⁻⁴ ~1.6×10 ⁻¹)Pa • m ³ /s Pressure Leaks ZB/JLY (Yuan) 40	(1×10 ⁻⁴ ~1.6×10 ⁻¹)Pa • m ³ /s	U _{rel} =2.2%		



No. CNAS L1423

第 34 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
92	Pynometers	Capacity	Calibration Specification for Pynometers JJF (Ji) 107	(1~100) mL	<i>U</i> =0.04mL		
93	Moisture Receivers	Capacity	Calibration Specification for Moisture Receivers JJF (Ji) 106	(0.2~25) mL	<i>U</i> =0.02mL		
94	plastic containers	Capacity	Calibration Specification for Plastic Containers JJF(Ji)108	(0.1~0.5) mL	<i>U</i> =0.001mL		
				(0.5~2) mL	<i>U</i> =0.003mL		
				(2~10) mL	<i>U</i> =0.006mL		
				(10~25) mL	<i>U</i> =0.01mL		
				(25~100) mL	<i>U</i> =0.03mL		
				(100~250) mL	<i>U</i> =0.05mL		
				(250~500) mL	<i>U</i> =0.08mL		
				(500~1000) mL	<i>U</i> =0.13mL		
				(1000~5000) mL	<i>U</i> =0.20mL		
4、Acoustics							
1	Sound Calibrators	Sound pressure level	V.R. of Sound Calibrator JJG176	(94~124)dB, (20~16000)Hz	<i>U</i> =0.13 dB		
		Frequency		(20~16000)Hz	<i>U</i> _{rel} =0.3%		
2	Ultrasonic Flaw detectors	Attenuation	V.R. for Ultrasonic Flaw detectors JJG746	(0.1~60) dB	<i>U</i> =0.3dB		
		linear		(0.1~60) dB	<i>U</i> _{rel} =1.8%		
3	Audiometers	RETSPL	V.R. of Audiological Equipment Pure-tone Audiometers JJG388	(0~110)dB, 125Hz	<i>U</i> =0.8dB		

No. CNAS L1423

第 35 页 共 85 页



The scope of the accreditation in Chinese remains the definitive version.

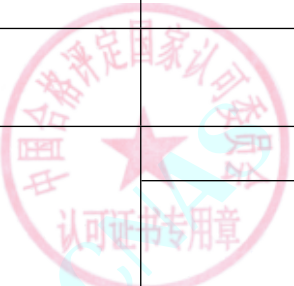
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		RETFL		(0~110)dB, (250~4000) Hz	$U=0.7\text{dB}$		
				(0~110)dB, 6000Hz	$U=0.8\text{dB}$		
				(0~110)dB, 8000Hz	$U=1.1\text{dB}$		
				(0~70)dB, 250Hz	$U=1.5\text{dB}$		
				(0~70)dB, 500Hz	$U=1.3\text{dB}$		
				(0~70)dB, 750Hz	$U=1.5\text{dB}$		
				(0~70)dB, 1000Hz	$U=1.4\text{dB}$		
				(0~70)dB, 1500Hz	$U=1.5\text{dB}$		
				(0~70)dB, 2000Hz	$U=1.5\text{dB}$		
				(0~70)dB, 3000Hz	$U=1.5\text{dB}$		
				(0~70)dB, 4000Hz	$U=1.4\text{dB}$		
				(0~70)dB, 6000Hz	$U=2.5\text{dB}$		
				(0~70)dB, 8000Hz	$U=2.5\text{dB}$		
4	Ultrasonic Source for Ultrasonic Doppler Fetal Monitors	Average sound intensity	V.R. of Ultrasonic Source for Ultrasonic Doppler Fetal Monitor JJG394	(0.5~10) mW/cm ²	$U_{\text{rel}}=12\%$		
5	Sound Level Meters	SPL	V.R. of Sound Level Meters JJG188	(80~130)dB; (10~4000)Hz	$U=0.4\text{ dB}$		
				(80~130)dB; (4~10)kHz	$U=0.5\text{ dB}$		



No. CNAS L1423

第 36 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				(80~130)dB; (10~20)kHz	$U=0.8$ dB		
6	Ultrasonic Source for Medical Ultrasonic Diagnostic Equipment	Output sound intensity	V.R. of Ultrasonic Source for Medical Ultrasonic Diagnostic Equipment JJG639	(0.5~10) mW/cm ²	$U_{rel}=12\%$		
7	Acoustic Detectors	Time of transmitted sound	V.R. of Acoustic Detector JJG990	(1~1500) μ s, (20~500)mm	$U_{rel}=0.5\%$		
8	sound sources	Frequency band sound power level and A weight sound power level"	V.R. of Reference Sound Sources JJG 277	50Hz~20kHz: (10~140) dB	$U=0.5$ dB		
9	*Anechoic Room(Hemi-anechoic Room)	Frequency range and spatial range of free field	C.S. for Acoustic Performance of Anechoic Rooms and Hemi-anechoic Rooms JJF 1147	(0~ 130)dB (50~20000)Hz	$U=0.8$ dB		
		Background noise		(-3~ 50)dB (20~20000)Hz	$U=0.8$ dB		
10	*Reverberation Room	Reverberation time	C.S. for Acoustic Performance of Reverberation Rooms JJF 1143	(0.1~30)s	$U_{rel}=8.7\%$		
11	Sonic Belt Tension Meter	Frequency	C.S. for Sonic Belt Tension Meters JJF1216	(10~5000)Hz	$U_{rel}=0.5\%$		
		Sound pressure level		Sound signal sensitivity: (30~ 90)dB (10~5000)Hz	$U=1.5$ dB		
12	Sound Analyzer	Frequency weighting	C.S. for Multi-Channels Sound Analyzers JJF1288	(20~140)dB 10Hz~20kHz	$U=0.1$ dB		

No. CNAS L1423

第 37 页 共 85 页



The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
		Level linearity		(20~140)dB 10Hz~20kHz	<i>U</i> =0.2dB		
		Frequency		10Hz~20kHz (20~140)dB	<i>U</i> _{rel} =0.1%		
		Voltage		1mV~10V 10Hz~20kHz	<i>U</i> _{rel} =0.2%		
		Distortion		0.01%~10% 10Hz~20kHz	<i>U</i> _{rel} =2.2%		
13	Personal Sound Exposure Meter	Absolute sound sensitivity	V.R of Personal Sound Exposure Meters JJG980	(7.9 ~12.6) Pa ² h,1kHz	<i>U</i> =0.8Pa ² h		
		SPL		pressure field: (80~130)dB, (63~400)Hz	<i>U</i> = (0.3~0.4) dB		
				free field: (80~130)dB, (500~8000)Hz	<i>U</i> = (0.3~0.5) dB		
14	Head and Torso Simulator Used in Acoustical Measurement	Ear sensitivity	C.S. for Head and Torso Simulator Used in Acoustical Measurement JJF1520	(-60~ 40)dB (250Hz或1000Hz)	<i>U</i> =0.6dB		
		Ear frequency response of free field		(-20~30)dB (100Hz~10kHz)	<i>U</i> =0.8dB		
		Ear directivity		(-20~ 20)dB (100Hz~10kHz)	<i>U</i> =0.8dB		
		Amplitude-frequency characteristic of mouth reference point		(-60~ 40)dB (100Hz~10kHz)	<i>U</i> =0.6dB		



No. CNAS L1423

第 38 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Distortion of mouth reference point		(0.01~100) % (100Hz~10kHz)	$U_{rel}=0.3\%$		
		Amplitude-frequency characteristic of mouth free field		(-40~40)dB (100Hz~10kHz)	$U=0.8\text{dB}$		
15	Omnidirectional sound source	Directivity index	C.S for Omnidirectional sound sources JJF1468	(-20~20)dB (50Hz~20kHz)	$U=0.4\text{dB}$		
		Sound power level of Rated power		(40~130)dB (50Hz~20kHz)	$U=0.6\text{dB}$		
16	Working Standard Microphones(Coupler Comparison Method)	Sound pressure sensitivity level	V.R. of Working Standard Microphones(Coupler Comparison Method) JJG 1019	(20~140)dB, (20~16000)Hz	$U=(0.20\sim0.24)\text{dB}$		
				(20~140)dB, 20kHz	$U=0.39\text{dB}$		
17	Working Standard Microphones(Electrostatic Actuator Method)	Sound pressure sensitivity level	V.R. of Working Standard Microphones(Electrostatic Actuator Method) JJG175	(20~140)dB, (20~12500)Hz	$U=(0.27\sim0.35)\text{dB}$		
				(20~140)dB, (16000~20000)Hz	$U=(0.46\sim0.54)\text{dB}$		
		Upper dynamic range		(114~172)dB	$U=0.8\text{dB}$		
18	Working Standard Microphones(Free-field Comparison Method)	Free field sensitivity level	V.R. of Working Standard Microphones(Free-field Comparison Method) JJG1172	(20~140)dB, (20~400)Hz	$U=(0.27\sim0.35)\text{dB}$		
				20dB~140dB, (500~20000) Hz	$U=(0.22\sim0.50)\text{dB}$		



No. CNAS L1423

第 39 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

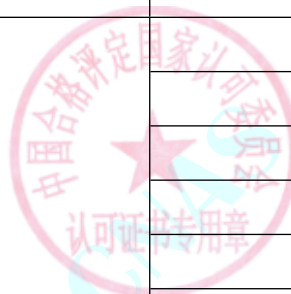
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
19	Audio-frequency Power Amplifiers	Gain	C.S. for Audio-frequency Power Amplifiers JJF1200	(-2~60)dB	$U=0.1\text{dB}$		
		Frequency response		(-10~10)dB,(10Hz~20kHz)	$U=0.08\text{dB}$		
		Distortion		0.001%~10%,(10Hz~20kHz)	$U_{\text{rel}}=0.3\%$		
20	*Acoustic Performance of Audiometry Rooms	Background noise sound pressure level	C.S. for Acoustic Performance of Audiometry Rooms JJF1191	(-3~150) dB	$U=1.0\text{dB}$		
21	Audiometric Equipment—Instruments for the Measurement of Otoacoustic Emissions	frequency	C.S. for Audiometric Equipment—Instruments for the Measurement of Otoacoustic Emissions JJF1289	125 Hz~8 kHz	$U_{\text{rel}}=0.1\%$		
		peak to peak equivalent		(20~140) dB	$U=1.0\text{ dB}$		
22	*Audiometric Equipment: Instruments for the Measurement of Auditory Evoked Potential	Peak-to-peak equivalent reference equivalent threshold sound pressure level	C.S. for Audiometric Equipment: Instruments for the Measurement of Auditory Evoked Potential JJF1579	125 Hz~8kHz;(20 dB~130 dB)	$U=1.0\text{ dB}$		
		Peak-to-peak equivalent reference equivalent threshold vibration level		250 Hz~8 kHz; (20 dB~120 dB)	$U=1.4\text{ dB}$		
23	Noise Dosimeters	Sound pressure level	C.S. for Noise Dosimeters JJG655	(20~130)dB,(63~4000)Hz	$U=0.4\text{dB}$		



No. CNAS L1423

第 40 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				(20~130)dB,(4~8)kHz	<i>U</i> =0.6dB		
24	Air Ultrasound Measuring Instruments	Minimum detected signal	C.S. for Air Ultrasound Measuring Instruments JJF 1504	(20 ~90) dB 40kHz	<i>U</i> =(2~3) dB		
		sound pressure		(-100 ~100) dB (20~ 50) kHz	<i>U</i> =4.8dB		
25	Ultrasonic Phased Array Flaw Detectors	Resolution	C.S. for Ultrasonic Phased Array Flaw Detectors JJF1338	(0.1~150) mm	<i>U</i> _{rel} =2.0%		
		angle		2.5° ~175°	<i>U</i> =0.6°		
5、Electrology							
1	D.C Resistance Box	Resistance	V.R of D.C. Resistance Box JJG982	(1~10)m Ω	<i>U</i> _{rel} =3%		
				(0.01~0.1) Ω	<i>U</i> _{rel} =1%		
				(0.1~1) Ω	<i>U</i> _{rel} =0.3%		
				(1~10) Ω	<i>U</i> _{rel} =6×10 ⁻⁴		
				(10~100) Ω	<i>U</i> _{rel} =1×10 ⁻⁴		
				100 Ω ~1M Ω	<i>U</i> _{rel} =3×10 ⁻⁵		
2	Standard Resistance	Resistance	V.R. of DC Standard Resistors JJG166	1m Ω	<i>U</i> _{rel} =1×10 ⁻⁵		
				10m Ω	<i>U</i> _{rel} =8×10 ⁻⁶		
				0.1 Ω 、 10 Ω	<i>U</i> _{rel} =6×10 ⁻⁶		
				1 Ω	<i>U</i> _{rel} =4×10 ⁻⁶		
				100 Ω 、 1k Ω 、 10k Ω	<i>U</i> _{rel} =5×10 ⁻⁶		
				100k Ω	<i>U</i> _{rel} =8×10 ⁻⁶		



No. CNAS L1423

第 41 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
3	High Voltage Electrostatic Voltmeter	DC Voltage	V.R. of High Voltage Electrostatic voltmeter JJG494	(0.5～5)kV	<i>U</i> _{rel} =0.6%		
4	D.C. Potentiometer	Voltage	V.R. of DC Potentiometers JJG123	(0.1～1) μ V	<i>U</i> _{rel} =4%		
				(1～10) μ V	<i>U</i> _{rel} =0.4%		
				10 μ V～10mV	<i>U</i> _{rel} =4×10 ⁻⁴		
				(10～100)mV	<i>U</i> _{rel} =4×10 ⁻⁵		
				(0.1～2)V	<i>U</i> _{rel} =4×10 ⁻⁶		
5	Instrument Current Transformer	Ratio Error	V.R. of Instrument Current Transformers JJG313	(5～2000)A/5A,5% <i>I</i> _n	<i>U</i> _{rel} =0.023%		
		Phase Error		(5～2000)A/5A, (20%～120%) <i>I</i> _n	<i>U</i> _{rel} =0.012%		
				(0.01～999.9)' ,5% <i>I</i> _n	<i>U</i> =0.75'		
				(0.01～999.9)' ,(20%～120%) <i>I</i> _n	<i>U</i> =0.36'		
6	Instrument Voltage Transformer	Ratio Error	V.R. of Instrument Voltage Transformers JJG314	(3～10) kV/100V,20% <i>U</i> _n	<i>U</i> _{rel} =0.023%		
		(3～10) kV/100V,50% <i>U</i> _n		<i>U</i> _{rel} =0.017%			
				(3～10) kV/100V,(80%～120%) <i>U</i> _n	<i>U</i> _{rel} =0.012%		
		Phase Error		(0.01～999.9)' ,20% <i>U</i> _n	<i>U</i> =0.7'		
			(0.01～999.9)' ,50% <i>U</i> _n	<i>U</i> =0.55'			
			(0.01～999.9)' ,(80%～120%) <i>U</i> _n	<i>U</i> =0.36'			



No. CNAS L1423

第 42 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
7	Reference Meters for Electrical Energy	Electric Energy	V.R. of Reference Meters for Electrical Energy JJG1085	Single-phase:(0.1~100)A,220V, $\cos \phi =1.0$	$U_{rel}=0.012\%$		
				Single-phase:(0.1~100)A,220V, $\cos \phi =0.5L$	$U_{rel}=0.012\%$		
				Single-phase:(0.1~100)A,220V, $\cos \phi =0.8C$	$U_{rel}=0.012\%$		
				Single-phase:(0.1~100)A,220V, $\cos \phi =0.5C$	$U_{rel}=0.018\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi =1.0$	$U_{rel}=0.012\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi =0.5L$	$U_{rel}=0.012\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi =0.8C$	$U_{rel}=0.012\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi =0.5C$	$U_{rel}=0.018\%$		
				Three-phase Unbalance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi =1.0$	$U_{rel}=0.012\%$		



No. CNAS L1423

第 43 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Three-phase Unbalance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.5L$	$U_{rel}=0.018\%$		
8	Electrical Meters for Measuring Alternating-current Electrical Energy	Electric Energy	V.R. of Electrical Meters for Measuring Alternating- current Electrical Energy JJG596	Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 1.0$	$U_{rel}=0.02\%$		
				Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 0.5L$	$U_{rel}=0.02\%$		
				Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 0.8C$	$U_{rel}=0.02\%$		
				Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 0.5C$	$U_{rel}=0.02\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 1.0$	$U_{rel}=0.02\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.5L$	$U_{rel}=0.02\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.8C$	$U_{rel}=0.02\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.5C$	$U_{rel}=0.03\%$		



No. CNAS L1423

第 44 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
9	*Verification Equipment for AC Electrical Energy Meters	Electric Energy	V.R. of Verification Equipment for AC Electrical Energy Meters JJG597	Three-phase Unbalance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 1.0$	$U_{rel}=0.02\%$		
				Three-phase Unbalance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.5L$	$U_{rel}=0.03\%$		
				Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 1.0, 0.1I_b \sim I_{max}$	$U_{rel}=0.012\%$		
				Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 0.5L, 0.5I_b \sim I_{max}$	$U_{rel}=0.012\%$		
				Single-phase: $(0.1 \sim 100)A, 220V, \cos \phi = 0.8C, 0.5I_b \sim I_{max}$	$U_{rel}=0.012\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 1.0, 0.1I_b \sim I_{max}$	$U_{rel}=0.012\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.5L, 0.5I_b \sim I_{max}$	$U_{rel}=0.012\%$		
				Three-phase Balance Load: $3 \times (0.1 \sim 100)A, 3 \times (57.7 \sim 380)V, \cos \phi = 0.8C, 0.5I_b \sim I_{max}$	$U_{rel}=0.012\%$		



No. CNAS L1423

第 45 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

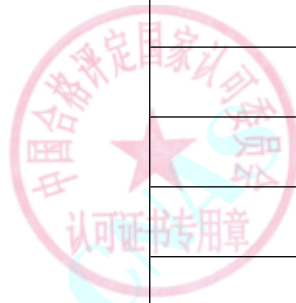
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				Three-phase Unbalance Load:3×(0.1~100)A, 3×(57.7~380)V,cos φ=1.0, 0.1 <i>I</i> _b ~ <i>I</i> _{max}	<i>U</i> _{rel} =0.018%		
				Three-phase Unbalance Load:3×(0.1~100)A, 3×(57.7~380)V,cos φ=0.5L, 0.5 <i>I</i> _b ~ <i>I</i> _{max}	<i>U</i> _{rel} =0.018%		
10	Digital Multimeter	DC Voltage	C.S. for Multimeters JJF1587	(20~220)mV	<i>U</i> =0.0009% <i>V</i> _x +0.4 μ V		
				220mV~2.2V	<i>U</i> =0.0006% <i>V</i> _x +0.7 μ V		
				(2.2~22)V	<i>U</i> =0.0005% <i>V</i> _x +4 μ V		
				(22~220)V	<i>U</i> =0.0006% <i>V</i> _x +40 μ V		
				(220~1100)V	<i>U</i> =0.0008% <i>V</i> _x +0.4mV		
		DC Curent		(50~220) μ A	<i>U</i> =0.005% <i>I</i> _x +6nA		
				220 μ A~2.2mA	<i>U</i> =0.005% <i>I</i> _x +7nA		
				(2.2~22)mA	<i>U</i> =0.005% <i>I</i> _x +40nA		
				(22~220)mA	<i>U</i> =0.006% <i>I</i> _x +0.7 μ A		
				220mA~2.2A	<i>U</i> =0.009% <i>I</i> _x +12 μ A		
		DC Resistance		(2.2~10)A	<i>U</i> =0.05% <i>I</i> _x +0.48mA		
				10 Ω、19 Ω	<i>U</i> _{rel} =3×10 ⁻⁵		
				100 Ω、190 Ω、1k Ω、1.9k Ω、10k Ω、19k Ω、100k Ω、190k Ω	<i>U</i> _{rel} =1.3×10 ⁻⁵		



No. CNAS L1423

第 46 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
		AC Voltage	ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	1M Ω 、 1.9M Ω	$U_{rel}=2.5 \times 10^{-5}$		
				10M Ω	$U_{rel}=5 \times 10^{-5}$		
				100mV~2.2V,(40Hz~20kHz)	$U=0.010\%V_x+8 \mu V$		
				(2.2~22)V,(40Hz~20kHz)	$U=0.006\%V_x+50 \mu V$		
				22V~220V,(40Hz~20kHz)	$U=0.008\%V_x+0.6mV$		
				(220~1000)V,(50Hz~1kHz)	$U=0.01\%V_x+3.5mV$		
		AC Curent		(220~1000)V,(1kHz~20kHz)	$U=0.020\%V_x+6mV$		
				(100~220) μ A,(40Hz~1kHz)	$U=0.025\%I_x+8nA$		
				220 μ A~2.2mA,(40Hz~1kHz)	$U=0.02\%I_x+35nA$		
				(2.2~22)mA,(40Hz~1kHz)	$U=0.02\%I_x+0.35 \mu A$		
				(22~220)mA,(40Hz~1kHz)	$U=0.02\%I_x+2.5 \mu A$		
				220mA~2.2A,(40Hz~1kHz)	$U=0.04\%I_x+35 \mu A$		
				(2.2~10)A,(40Hz~1kHz)	$U=0.06\%I_x+0.17mA$		
				(100~220) μ A,(1kHz~5kHz)	$U=0.04\%I_x+12nA$		
				220 μ A~2.2mA,(1kHz~5kHz)	$U=0.03\%I_x+0.11 \mu A$		



No. CNAS L1423

第 47 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
11	thermodynamic instrumentation calibrator		C.S. for Process Calibrators JJF1472	(2.2~22)mA,(1kHz~5kHz)	$U=0.03\%I_x+0.55\mu A$		
				(22~220)mA,(1kHz~5kHz)	$U=0.03\%I_x+3.5\mu A$		
				220mA~2.2A,(1kHz~5kHz)	$U=0.06\%I_x+80\mu A$		
				(2.2~10)A,(1kHz~5kHz)	$U=0.12\%I_x+0.38mA$		
		DC Voltage	C.S. for Process Calibrators JJF1472	Measurement:(20~220)mV	$U=0.008\%V_x+0.4\mu V$		
				Measurement:220mV~2.2V	$U=0.005\%V_x+0.7\mu V$		
				Measurement:(2.2~22)V	$U=0.004\%V_x+4\mu V$		
				Measurement:(22~220)V	$U=0.0055\%V_x+40\mu V$		
				Output:(20~200)mV	$U=0.009\%V_x+0.1\mu V$		
				Output:200mV~20V	$U=0.0045\%V_x+0.4\mu V$		
				Output:(20~100)V	$U=0.009\%V_x+40\mu V$		
				Measurement:(100~220) μA	$U=0.006\%I_x+6nA$		
		DC Current	C.S. for Process Calibrators JJF1472	Measurement:220 μA ~2.2mA	$U=0.005\%I_x+7nA$		
				Measurement:(2.2~22)mA	$U=0.005\%I_x+40nA$		
				Measurement:(22~220)mA	$U=0.006\%I_x+0.7\mu A$		
				Output:(2~20)mA	$U=0.006\%I_x+4nA$		



No. CNAS L1423

第 48 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

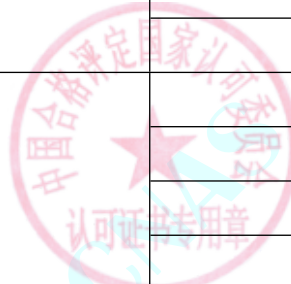
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date	
		DC Resistance	V.R. of Amperemeters, Voltmeters, Wattmeters and Ohmmeters JJG124	Output:(20~200)mA	$U=0.006\%I_x+1\text{ }\mu\text{ A}$			
				Measurement:10Ω~100kΩ	$U_{\text{rel}}=0.03\%$			
				Output:(10~200)Ω	$U=0.008\%R_x+0.2\text{m}\Omega$			
				Output:200Ω~2kΩ	$U=0.008\%R_x+2\text{m}\Omega$			
				Output:(2~20)kΩ	$U=0.008\%R_x+20\text{m}\Omega$			
				Output:(20~200)kΩ	$U=0.008\%R_x+0.2\Omega$			
		Temperature		Thermal Resistor Measurement:(-200~0)℃	$U=0.05\text{ }^{\circ}\text{C}$			
				Thermal Resistor Measurement:(0~850)℃	$U=0.05\text{ }^{\circ}\text{C}\sim 0.1\text{ }^{\circ}\text{C}$			
				Thermal Resistor Output:(-200~850)℃	$U=0.03\text{ }^{\circ}\text{C}$			
				Thermocouple Output:(300~1300)℃	$U=0.1\text{ }^{\circ}\text{C}$			
				Thermocouple Measurement:(300~1300)℃	$U=0.03\text{ }^{\circ}\text{C}$			
		Frequency		10Hz~100kHz	$U_{\text{rel}}=0.002\%$			
12	Voltmeter、 Amperemeter、 Wattmeter	DC voltage	75mV~750V	$U_{\text{rel}}=0.03\%$				
		AC voltage	75mV~750V,(45Hz~400Hz)	$U_{\text{rel}}=0.03\%$				
			75mV~750V,(400Hz~1000Hz)	$U_{\text{rel}}=0.1\%$				



No. CNAS L1423

第 49 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date	
		DC Current		1mA～50A	<i>U</i> _{rel} =0.04%			
		AC Current		1mA～50A,(45Hz～400Hz)	<i>U</i> _{rel} =0.04%			
				1mA～50A,(400Hz～1000Hz)	<i>U</i> =0.1%			
				DC Watt-hour	75mV～750V,1mA～50A			<i>U</i> _{rel} =0.05%
		AC Watt-hour		75mW～37500W,(45Hz～400Hz)	<i>U</i> _{rel} =0.06%			
				75mW～37500W,(400Hz～1000Hz)	<i>U</i> =0.15%			
13	Earth Resistance Meters	Resistance	V.R. of Earth Resistance Meters JJG366	(0.01～0.1) Ω	<i>U</i> _{rel} =6%			
				(0.1～1) Ω	<i>U</i> _{rel} =0.8%			
				1 Ω～10k Ω	<i>U</i> _{rel} =0.5%			
14	D.C. Bridges	resistance	V.R. of D.C. Bridges JJG125	(1～100)m Ω	<i>U</i> _{rel} =6×10 ⁻⁵			
				100m Ω～10k Ω	<i>U</i> _{rel} =4×10 ⁻⁵			
				10k Ω～1M Ω	<i>U</i> _{rel} =5×10 ⁻⁵			
15	Withstanding Voltage Testers	ACI	V.R. of Withstanding Voltage Testers JJG795	(0.5～100)mA,50Hz	<i>U</i> _{rel} =0.7%			
		ACV		(1～15)kV,50Hz	<i>U</i> _{rel} =0.7%			
		DCI		(0.5～100)mA	<i>U</i> _{rel} =0.7%			
		DCV		(1～10)kV	<i>U</i> _{rel} =0.7%			
		Time		(10～90)s	<i>U</i> _{rel} =0.7%			



No. CNAS L1423

第 50 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
16	Verification Instrument for Electrocardiograph and Electroencephalograph	Voltage	V.R. of Verification	10mV~5V	$U_{rel}=0.3\%$		
		Frequency	Instrument for Electrocardiograph and Electroencephalograph	(0.1~200)Hz	$U_{rel}=0.3\%$		
		Time	JJG749	(0.01~10)s	$U_{rel}=0.2\%$		
17	High Voltage and Value D.C. Resistors	Resistance	V.R. of High Voltage and Value D.C. Resistors JJG1072	100 Ω ~ 1M Ω	$U_{rel}=0.07\%$		
				(1~ 100)M Ω	$U_{rel}=0.1\%$		
				100M Ω ~ 1G Ω	$U_{rel}=0.3\%$		
				(1~10)G Ω	$U_{rel}=0.6\%$		
				(10~100)G Ω	$U_{rel}=1\%$		
				(100~1000)G Ω	$U_{rel}=2\%$		
18	High Insulation Resistance Meters	Resistance	V.R. of High Insulation Resistance Meters JJG690	1k Ω ~ 10M Ω	$U_{rel}=0.4\%$		
				(10~100)M Ω	$U_{rel}=0.8\%$		
				100M Ω ~ 1G Ω	$U_{rel}=2\%$		
				(1~10)G Ω	$U_{rel}=3\%$		
				(10~250)G Ω	$U_{rel}=6\%$		
				(100~1000)V	$U_{rel}=1.2\%$		
19	Electronic Insulating Resistance Meters	Resistance	V.R. of Electronic Insulating Resistance Meters JJG1005	1k Ω ~ 100M Ω	$U_{rel}=0.7\%$		
				100M Ω ~ 1G Ω	$U_{rel}=1.2\%$		
				(1~10)G Ω	$U_{rel}=3\%$		



No. CNAS L1423

第 51 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				(10~250)G Ω	<i>U</i> _{rel} =6%		
		Voltage		(100~5000)V	<i>U</i> _{rel} =1.2%		
20	Megohmmeter	Resistance	V.R. of Megohmmeter JJG622	1k Ω ~ 1M Ω	<i>U</i> _{rel} =4%		
				1M Ω ~ 1G Ω	<i>U</i> _{rel} =3%		
				(1~10)G Ω	<i>U</i> _{rel} =4%		
		Voltage		(100~5000)V	<i>U</i> _{rel} =1.2%		
21	Loop Resistance Tester and DC Resistance Meters	Resistance	V.R. of Loop Resistance Tester and DC Resistance Meters JJG1052	0.001m Ω ~ 60 Ω	<i>U</i> _{rel} =0.15%		
		Current		(1~600)A	<i>U</i> _{rel} =0.3%		
22	Earth-Continuity Testers	DC Resistance	V.R. of Earth-Continuity Testers JJG984	(0.01~0.1)m Ω	<i>U</i> _{rel} =6%		
				(0.1~1)m Ω	<i>U</i> _{rel} =3%		
				(1~1000)m Ω	<i>U</i> _{rel} =0.9%		
		AC Resistance		(0.01~0.1)m Ω ,50Hz	<i>U</i> _{rel} =11%		
				(0.1~1)m Ω ,50Hz	<i>U</i> _{rel} =5%		
				(1~1000)m Ω ,50Hz	<i>U</i> _{rel} =0.9%		
		DC Current		(2~60)A	<i>U</i> _{rel} =0.2%		
		AC Current		(2~60)A,50Hz	<i>U</i> _{rel} =0.4%		
23	DC Stabilized Power Supply	DC Voltage	C.S.for DC Stabilized Power Supplies JJF 1597	100mV~650V	<i>U</i> _{rel} =3×10 ⁻⁵		
		DC Current		(1~20)mA	<i>U</i> _{rel} =5×10 ⁻⁵		
				20mA~20A	<i>U</i> _{rel} =1×10 ⁻⁴		



No. CNAS L1423

第 52 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

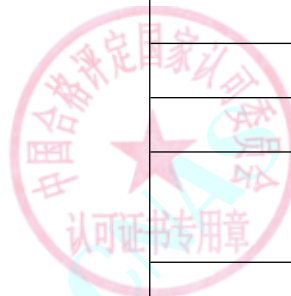
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				(20~200)A	<i>U</i> _{rel} =3×10 ⁻⁴		
				(200~550)A	<i>U</i> _{rel} =1.5×10 ⁻⁴		
24	A. C. High voltage divider	AC Voltage	Verification regulation of power frequency high voltage divider JJG496	(10~200)kV,50Hz	<i>U</i> _{rel} =0.24%		
25	D. C. High voltage divider	DC Voltage	Verification regulation of DC high voltage divider JJG1007	(10~200)kV	<i>U</i> _{rel} =0.12%		
26	*Power Analyzers	DC Voltage	C.S. for Power Analyzers JJF2040	(0.2~1000)V	<i>U</i> _{rel} =0.01%		
		AC Voltage		(0.2~1000)V (45Hz~1kHz)	<i>U</i> _{rel} =0.01%		
		DC Curent		1mA~100A	<i>U</i> _{rel} =0.01%		
		AC Curent		1mA ~100A (45Hz~1kHz)	<i>U</i> _{rel} =0.02%		
		DC Power		0.2mW~20kW	<i>U</i> _{rel} =0.02%		
		AC Power		0.2mW~20kW (45Hz~65Hz)	<i>U</i> _{rel} =0.01%		
		Phase		-180° ~180° (45Hz~65Hz)	<i>U</i> =0.003°		
				-180° ~180° (1kHz)	<i>U</i> =0.12°		
		Frequency		45Hz~1kHz	<i>U</i> _{rel} =0.002%		
6、Time and Frequency							
1	*The Telephone Charge Timer of Private Branch Exchange System	Time	V.R. of The Telephone Charge Timer of Private Branch Exchange System JJG(JI)26	(1~2000)s	<i>U</i> =0.3s		



No. CNAS L1423

第 53 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	Crystal Oscillators Inside the Electrical Measuring Instruments	Frequency	C.S. for Crystal Oscillators Inside the Electrical Measuring Instruments JJF1984	5 MHz、10MHz	$U_{rel}=2 \times 10^{-10}$		
3	Stopwatches	Time	V.R. of Stopwatches JJG237	Electronic Stopwatch:(1~3600)s	$U=0.02s$		
				Electronic Stopwatch:1d	$U=0.04s$		
				Mechanical stopwatch:(3~1800)s	$U=0.08s$		
7、Ionizing Radiation							
1	*X-ray Flaw Detectors	Air kerma rate	V.R. of X-ray Flaw Detectors JJG40	5mGy/s~1Gy/min	$U_{rel}=10\%$		
2	*Medical Diagnostical X-Ray Radiation Source for Spiral Computed Tomography(CT)	CTDI	V.R. of Medical Diagnostical X-Ray Radiation Source for Spiral Computed Tomography(CT) JJG961	0.1mGy~1Gy	$U_{rel}=8\%$		
		Spatial resolution		(0.4~2)mm	$U=0.05mm$		
		low contrast resolution		(2.5~7.5)mm	$U=0.05mm$		
3	*X-ray Security Inspection Equipment	Graphic resolution	C.S.for X-ray Security Inspection Equipment JJF1275	Cu:(0.20~22.20)mm	$U=0.24mm$		
		Penetration		Steel: (4~38)mm	$U=0.24mm$		
		Material resolution		Al: (1~60) mm	$U=0.14mm$		
				Plastic: (1~5)mm, Organic glass: (80~120) mm	$U=0.14mm$		
				Steel: (0.2~14)mm	$U=0.14mm$		



No. CNAS L1423

第 54 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		leakage radiation		(0.1~500) mGy/h	$U_{rel}=15\%$		
4	*Medical Electron Accelerator Radiation Source	absorbed dose	V.R. of Medical Electron Accelerator Radiation Source JJG589	(0.01~500)cGy	$U_{rel}=3.5\%$		
5	*Medical Diagnostic X-ray Radiation Source	air kerma rate	V.R. of Medical Diagnostic X-ray Radiation Source JJG744	(0.01~1000) cGy/min	$U_{rel}=7\%$		
		resolution		(0.6~5.0)Lp/mm	$U=0.04\text{Lp/mm}$		
		X-ray tube voltage		(40~150)kV	$U_{rel}=5\%$		
6	*X-ray Radiation Sources for Medical Computed Radiography System and Digital Radiography System	air kerma	V.R. of X-ray Radiation Sources for Medical Computed Radiography System and Digital Radiography System JJG1078	(0.001~19.999)cGy	$U_{rel}=7\%$		
		X-ray tube voltage		(40~150)kV	$U_{rel}=5\%$		
		Spatial resolution		(0.6~5.0)Lp/mm	$U=0.04\text{Lp/mm}$		
7	*Medical Diagnostic X-ray Radiation Sources for Medical Digital Subtraction Angiography	Air kerma rate	V.R. of Medical Diagnostic X-ray Radiation Source for Medical Digital Subtraction Angiography JJG 1067	(0.01~1000) cGy/min	$U_{rel}=7\%$		
		X-ray tube voltage		(40~150)kV	$U_{rel}=5\%$		
		Spatial resolution		(0.6~5.0)Lp/mm	$U=0.04\text{Lp/mm}$		
8	*Magnetic Yoke Detectors	Magnetization current	C.S. for Magnetic Yoke Detectors JJF1458	(0.1~2000) A	$U_{rel}=3.5\%$		
		Promote force		(30~300) N	$U_{rel}=4\%$		
9	*Low Background Alpha/Bate Measuring Instruments	Detection efficiency	V.R. of the Low Background Alpha/ Beta Measuring Instruments JJG853	$\alpha : (2 \times 10^4 \sim 1.2 \times 10^5)(\text{min} \cdot 2 \pi \text{ sr})^{-1}$	$U_{rel}=4\%$		
				$\beta : (2 \times 10^4 \sim 1.2 \times 10^5)(\text{min} \cdot 2 \pi \text{ sr})^{-1}$	$U_{rel}=4\%$		



No. CNAS L1423

第 55 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

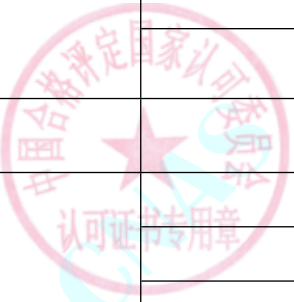
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
10	* γ Ray Spectrometers of Scintillation Detectors	Activity	Calibration Specitication of γ Ray Spectrometer of Scintillation Detectors JJF1744	($10 \sim 1 \times 10^4$) Bq	$U_{rel}=5.2\%$	Accredited only for γ Ray Spectrometers of NaI Scintillation Detectors	
8、photology							
1	Color Standard Plates	chroma	V.R. of Colour Standard Plates JJG453	Stimulus value Y: (0.0~100.0)	$U=1.8$		
				Chromatic coordinates x、y: (0~1.000)	$U=0.005$		
2	Reference Filter for Calibration Spectrophotometer	Wavelength Transmittance Absorbency	V.R. of Reference Filter for Calibration Spectrophotometer JJG1034	Absorption type: (190~900)nm	$U=0.3\text{nm}$		
		Wavelength Transmittance Absorbency		Interference type: (360~900)nm	$U=0.4\text{nm}$		
		Wavelength Transmittance Absorbency		1%~60%	$U=0.4\%$		
		Wavelength Transmittance Absorbency		0~3	$U=0.006$		
3	Whiteness Meter	Blue Light Whiteness WB	V.R. of Whiteness Meters JJG512	$R_{457} : (50 \sim 95)$	$U=1.0$		
				Working whiteboard : $R_{457}:(50 \sim 95)$	$U=1.8$		
4	*Colorimeters and Color Difference Meters	chroma	V.R. for Colorimeters and Colour Difference Meters JJG595	Stimulus value Y: (0.0~100.0)	$U=0.8$		
				Chromatic coordinates x、y: (0~1.000)	$U=0.006$		



No. CNAS L1423

第 56 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
5	Illuminance Meter	Illuminance	V.R. of Illuminance Meter JJG245	(10~1000)lx	$U_{rel}=1.5\%$		
				(1000~3000)lx	$U_{rel}=2.0\%$		
6	Clarity Test Equipment	Illuminance	C.S. for Clarity Test Equipment JJF1287	(100~3000)lx	$U_{rel}=11\%$		
7	Abbe Refractometer	Index of refraction	V.R. of Abbe Refractometer JJG625	1.47~1.67	$U=8.4 \times 10^{-5}$		
		Index of refraction		0.007~0.021	$U=1.7 \times 10^{-4}$		
8	*Lovibond Comparable Colorimeter	Chromaticity (Lovibond)	V.R. of Lovibond Comparable Colorimeter JJG758	R、Y: (0.1~1.0) Lovibond Unit	$U=0.1$ Lovibond Unit		
				R、Y: (1.0~10.0) Lovibond Unit	$U=0.4$ Lovibond Unit		
				R、Y: (10.0~79.9) Lovibond Unit	$U=0.8$ Lovibond Unit		
9	Ultraviolet Irradiance Meters	ultraviolet irradiance	V.R. of Ultraviolet Radiometers JJG879	UV-A1: (250~1000) $\mu\text{W}/\text{cm}^2$	$U_{rel}=15\%$		
				UV-365: (250~1000) $\mu\text{W}/\text{cm}^2$	$U_{rel}=15\%$		
				UV-254: (50~200) $\mu\text{W}/\text{cm}^2$	$U_{rel}=15\%$		
				UV-310: (50~200) $\mu\text{W}/\text{cm}^2$	$U_{rel}=15\%$		
10	*Ringelmann blacknesses	Ringelmann black	C.S. for Ringelmann Blacknesses JJF(Ji)54	1~5	$U_{rel}=3.8\%$ (for Transmittance)		
11	*Diffuse Transmission Visual Densitometers	Density	V.R. of Diffuse Transmission Visual Densitometers JJG920	(0.01~2.00)	$U=0.02$		
				(2.00~4.00)	$U=0.025$		
				(4.00~5.00)	$U=0.03$		



No. CNAS L1423

第 57 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
12	*Light box	Illuminance	C. S. for Standard Light Source Boxes JJF(FZ)055	D_{65} : (30~5000) lx	$U_{rel}=5\%$		
		Color temperature		(2300~10000) K	$U_{rel}=3\%$		
13	*Reflectometers	Reflectivity	C.S. for reflectometers JJF1232	Reflectivity: 50~95	$U=1.8$		
14	*Gloss meters	Gloss	C.S. Specular Gloss Meters and Gloss Platers JJG696	(3~100)GU	$U=1.3GU$		
15	*Hazemeter	Haze	C.S. for Hazemeter JJF 1303	0.5~30	$U=0.01$		
		Scale of Transmission		0.9~0.95			
16	*Infrared wavelength standard filter	Wavelength	Calibration Specification of Infrared Standard Filters JJF 1750	(3500 ~500) cm^{-1}	$U=0.62 \text{ cm}^{-1}$		
17	*Water Colorimeters	Chroma	C.S. for Water Colorimeters JJF 1689	(0.1~500)PCU	$U_{rel}=2\%$		
9、chemistry							
1	Dissolved Oxygen Meters	Concentration	V.R. of Dissolved Oxygen Meters JJG291	(5~15)mg/L	$U=0.14 \text{ mg/L}$		
2	Working Capillary Viscometer	kinematic viscosity	V.R. of Routine Capillary Viscometers JJG155	(2~1×10 ⁵) mm^2/s	$U_{rel}=0.3\% \sim 0.6\%$		
3	Rotational Viscometers	dynamic viscosity	V.R. of Rotational Viscometers JJG1002	(2~10000) $\text{mPa} \cdot \text{s}$	$U_{rel}=1.1\%$		
4	*Fourier Transform Infrared Spectrometers	Wave Number	C.S. for Fourier Transform Infrared Spectrometers JJF1319	(900~4000) cm^{-1}	$U=0.60\text{cm}^{-1}$		
5	*Carbon Monoxide Detectors	Concentration	V.R. of Carbon Monoxide Detectors JJG915	(1~1000) × 10 ⁻⁶ mol/mol	$U_{rel}=3\%$		



No. CNAS L1423

第 58 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
6	*Ammonia Gas Detectors	Concentration	V.R. of Ammonia Gas Detectors JJG1105	$(1 \sim 100) \times 10^{-6}$ mol/mol	$U_{\text{rel}}=3.2\%$		
7	*Digital Refractometers	Sugar Content	C.S. for Digital Refractometers ZB/JLY(Yuan)05	$(0.1 \sim 50)\%$	$U_{\text{rel}}=0.5\%$		
		Refractive index		1.3330~1.6580	$U_{\text{rel}}=0.02\%$		
8	*Elemental analyzers	content	C.S. for Elemental Analyzers JJF1321	Kjeldahl nitrogen determination apparatus N: $(26.17 \sim 46.67)\%$	$U_{\text{rel}}=2.4\%$		
				coal C: $(50 \sim 85)\%$	$U_{\text{rel}}=0.64\%$		
				coal H: $(0.1 \sim 5)\%$	$U_{\text{rel}}=2.4\%$		
				coal N: $(0.1 \sim 2)\%$	$U_{\text{rel}}=3.0\%$		
				steel O: $(0.0008 \sim 0.0075)\%$	$U_{\text{rel}}=6.5\%$		
				steel N: $(0.0049 \sim 0.034)\%$	$U_{\text{rel}}=4.5\%$		
				steel H: $(0.00007 \sim 0.00054)\%$	$U_{\text{rel}}=12\%$		
9	*Residual Chlorine Meters	Concentration	C.S. for Residual Chlorine Meters JJF1609	total residual chlorine: $(0.1 \sim 50)$ mg/L	$U_{\text{rel}}=1.9\%$		
				free residual chlorine: $(0.1 \sim 10)$ mg/L	$U_{\text{rel}}=2.5\%$		
10	*Copper Content Analyzers and Iron Content Analyzers	Concentration	C.S. for Copper Content Analyzers and Iron Content Analyzers JJF(Ji)64	Cu: $(1 \sim 200)$ $\mu\text{g/L}$	$U_{\text{rel}}=1.0\%$		
				Fe: $(1 \sim 200)$ $\mu\text{g/L}$	$U_{\text{rel}}=1.0\%$		
11	*Ultraviolet Fluorescence Sulfur Analyzers	Concentration	C.S. for Ultraviolet Fluorescence Sulfur Analyzers JJF1685	$(0 \sim 10)$ mg/L	$U=0.16$ mg/L		
				$(10 \sim 100)$ mg/L	$U_{\text{rel}}=3.6\%$		



No. CNAS L1423

第 59 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				(100~1000) mg/L	<i>U</i> _{rel} =2.8%		
12	*On-line pH meters	pH Value	C.S. for On-line pH Meters JJF1547	Electric measuring part: 0~14	<i>U</i> =0.01		
				Instrument: 4~10	<i>U</i> =0.02		
		Volts		(-2000~2000) mV	<i>U</i> =0.2mV		
13	Flow Cup Viscometers	Kinematic viscosity	V.R. of Flow Cup Viscometers JJG743	(10~1000) mm ² /s	<i>U</i> _{rel} =3%		
14	*Dissolution Meter	Temperature	C.S. of Dissolution Testers JJF (Ji) 08	(15~45)°C	<i>U</i> =0.6°C		
		Rotate speed		(0~100)r/min	<i>U</i> =0.9 r/min		
15	*Flame Photometer	Detection limit	V.R. of Flame Photometer JJG630	K: ≤0.004mmol/L	<i>U</i> =0.001mmol/L		
				Na: ≤0.008mmol/L	<i>U</i> =0.004mmol/L		
16	*Flow Analyzers with Spectrophotography	Wavelength	C.S. for Analyzers with Spectrophotography JJF1568	(190~1100)nm	<i>U</i> =0.6nm		
		Detection limit		Volatile phenols in water ≤0.002mg/L	<i>U</i> _{rel} =48%		
				Hexavalent chromium ≤0.004mg/L	<i>U</i> _{rel} =48%		
				Sulfide≤0.005mg/L	<i>U</i> _{rel} =48%		
				Total phosphorus≤0.01mg/L	<i>U</i> _{rel} =48%		
				Total nitrogen≤0.04mg/L	<i>U</i> _{rel} =48%		
				Ammonia nitrogen ≤0.04mg/L	<i>U</i> _{rel} =48%		
				Anionic surfactant ≤0.05mg/L	<i>U</i> _{rel} =48%		



No. CNAS L1423

第 60 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Cyanide in water $\leq 0.002\text{mg/L}$	$U_{\text{rel}}=48\%$		
17	Ozone Gas Analyzers	Concentration	V.R. of Ozone Gas Analyzers JJG1077	$(0.10 \sim 1.00) \times 10^{-6}\text{mol/mol}$	$U_{\text{rel}}=2.5\%$		
				$(1.00 \sim 400) \times 10^{-6}\text{mol/mol}$	$U_{\text{rel}}=1.7\%$		
18	*Thermogravimetric analyzers	Temperature	V.R. of Thermogravimetric Analyzers JJG1135	Melting temperature: $(100 \sim 500)^{\circ}\text{C}$	$U=1.4^{\circ}\text{C}$		
				Curie Point Temperature: $(200 \sim 500)^{\circ}\text{C}$	$U=3.0^{\circ}\text{C}$		
19	*Gel permeation chromatographs	Molecular weight	V.R. of Gel Permeation Chromatographs JJG342	Glucan : $(10^3 \sim 5.56 \times 10^5)\text{g/mol}$	$U_{\text{rel}}=8.6\%$		
20	*Bromine Number and Bromine Index Meters	Bromine Index Meters	C.S. for Bromine Number and Bromine Index Meters JJF1569	$(1 \sim 560)\text{mg}/100\text{g}$	$U=(0.9 \sim 28)\text{mg}/100\text{g}$		
		Bromine Number		$(1 \sim 120)\text{g}/100\text{g}$	$U=(0.8 \sim 6)\text{g}/100\text{g}$		
21	*Calibration specification for chlorine Alarm	concentration	C.S. for Chlorine Alarm Detectors JJF1433	$(1 \sim 100) \times 10^{-6}\text{mol/mol}$	$U_{\text{rel}}=2.8\%$		
22	Dust Concentration Measuring Instruments	concentration	V.R. Dust Concentration Measuring Instruments JJG846	$(0.1 \sim 10)\text{mg}/\text{m}^3$	$U_{\text{rel}}=6.0\%$		
23	*Polymerase chain reaction analyze	Temperature	C.S. for Polymerase chain reaction analyze JJF1527	$(30 \sim 100)^{\circ}\text{C}$	$U=0.40^{\circ}\text{C}$		
		concentration		$(1 \times 10 \sim 2.2 \times 10^{10})\text{copies}/\mu\text{L}$	$U_{\text{rel}}=8.2\%$		



№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
24	*Static light scattering particle size analyzers	Grain size	C.S. for Static Light Scattering Particle Size Analyzers JJF1211	D ₅₀ : (1~20)μm	U _{rel} =3%		
25	*Industrial Analyzers	Ash content	Industrial Analyzers JJG1140	(0.5~15) %	U=0.11%		
				(15~30) %	U=0.17%		
				(30~35) %	U=0.21%		
		Volatile matter content		(0.5~20) %	U=0.25%		
				(20~40) %	U=0.35%		
				Temperature	(104~110) °C		U=0.5°C
		(805~910) °C			U=0.9°C		
		Mass		1g	U=0.2mg		
26	*Gas phase molecular absorption spectrometer	Detection Limitation	Calibration specification for gas phase molecular absorption spectrometer JJF(Ji)113	ammonia nitrogen≤0.02 mg/L	U=0.003 mg/L		
				total nitrogen ≤0.05 mg/L	U=0.005 mg/L		
				nitrate nitrogen ≤0.006 mg/L	U=0.002 mg/L		
				nitrite nitrogen≤0.003 mg/L	U=0.002 mg/L		
				sulfide≤0.005 mg/L	U=0.004 mg/L		
27	*Coal Moisture Analyzer	Total moisture	Coal Moisture Analyzer JJF(Xiang) 21	(1~10) %	U=0.28%		
				(10~30) %	U=0.31%		



No. CNAS L1423

第 62 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
		General test coal sample moisture		(0.5~5) %	<i>U</i> =0.23%		
				(5~10) %	<i>U</i> =0.25%		
				(10~30) %	<i>U</i> =0.30%		
		Temperature		(105~110) °C	<i>U</i> =0.2 °C		
		Mess		(1~10) g	<i>U</i> =0.2mg		
28	Calibration Specification for Aerosol Photometers	Flow	Calibration Specification for Aerosol Photometers JJF 1800	(0.1~50) L/min	<i>U</i> _{rel} =1.5%		
		Mass concentration		(0.01~100) μ g/L	<i>U</i> _{rel} =12%		
29	DIN 53211-4 Coating Viscometers	Correction factor	Calibration Specification for DIN 53211-4 Coating Viscometers JJF (Ji) 114	0.95~1.05	<i>U</i> _{rel} =3%		
30	*Disintegration Analyzers	Temperature	Calibration Specification for Disintegration Analyzers JJF 1449	37°C	<i>U</i> =0.4 °C		
		time		Relative timing error: 60s	<i>U</i> _{rel} =0.8%		
				Set time: (300~ 1000) s	<i>U</i> _{rel} =0.5%		
				Disintegration time: (300~1000) s	<i>U</i> _{rel} =13%		
		length		55mm	<i>U</i> =0.6 mm		
31	*Flue Gas Analyzers	Concentration	V.R. of Flue Gas Analyzers JJG968	CO: (1~900)×10 ⁻⁶ mol/mol	<i>U</i> _{rel} =1.2%		
				NO: (5~1000) ×10 ⁻⁶ mol/mol	<i>U</i> _{rel} =2.2%		
				SO ₂ : (1~900) ×10 ⁻⁶ mol/mol	<i>U</i> _{rel} =2.2%		



№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				O ₂ : (1~30)%	$U_{\text{rel}}=1.4\%$		
32	*Total Organic Carbon Analyzer	Concentration	V.R. of Total Organic Carbon Analyzer JJG821	Inorganic carbon: (0.05~1000)mg/L	$U_{\text{rel}}=2.4\%$		
				Organic carbon:(0.05~1000)mg/L	$U_{\text{rel}}=2.4\%$		
33	Formaldehyde Gas Analyzers	Concentration	V.R. of Formaldehyde Gas Analyzers JJG1022	$(0.02 \sim 1.50) \times 10^{-6}$ mol/mol	$U_{\text{rel}}=3.2\%$		
34	*Carbon Dioxide Detectors	Concentration	C.S. For Carbon Dioxide Detectors JJF(Ji)66	(0.1~90)%	$U_{\text{rel}}=1.1\%$		
35	*Samplers for Stack Dust	Flow	V.R. of Samplers for Stack Dust JJG680	(0.1~100) L/min	$U_{\text{rel}}=2.0\%$		
36	*Dust Sampler	Flow	V.R. of Dust Samplers JJG520	(0.1~40) L/min	$U_{\text{rel}}=2.0\%$		
37	*Air Sampler	Flow	V.R. of Air Samplers JJG956	(100~6000) mL/min	$U_{\text{rel}}=1.5\%$		
38	Bomb Calorimeter	Caloricity	V.R. of the Bomb Calorimeter JJG672	(5000~40000)J/g	$U_{\text{rel}}=0.2\%$		
39	*Melting-Point-Measurement Instruments	Temperature	V.R. of Melting-Point-Measurement Instruments JJG701	(30~300)°C	0.2°C/min: $U=0.2^\circ\text{C}$; 1.0°C/min: $U=0.3^\circ\text{C}$		
40	*Carbon-Sulfur Analyzer	Content	V.R. of Carbon-Sulfur Analyzers JJG395	C: (0.100~1.000)%	$U=0.008\%$		
				C: (>1.00~3.00)%	$U=0.02\%$		
				S:(0.010~0.100) %	$U=0.002\%$		
41	*Total Suspended Particulates Sampler	Flow	V.R. of Total Suspended Particulates Sampler JJG943	(80~1200) L/min	$U_{\text{rel}}=1.2\%$		
42	*Formaldehyde Measurement instrument	Wavelength	V.R. of Formaldehyde Measurement instrument JJG(Ji) 31	(200~1100)nm	$U=0.7 \text{ nm}$		
		Concentration		(0.02~1000) mg/L	$U_{\text{rel}}=3.5\%$		

No. CNAS L1423

第 64 页 共 85 页



The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
43	*Silicate Analyzer	Concentration	C.S. for Silicate Analyzers JJF 1539	(0~100)μg/L	$U=2.3\mu\text{g/L}$		
				(>100~1000)μg/L	$U=3.3\mu\text{g/L}$		
44	*Phosphate Analyzer	Concentration	C.S. for Phosphate Analyzer JJF 1567	(1~1000) mg/L	$U_{\text{rel}}=0.4\%\sim 1.3\%$		
45	*Chemical Oxygen Demand(COD)Meters	Concentration	V.R. of Chemical Oxygen Demand (COD) Meters JJG975	(1~1000)mg/L	$U_{\text{rel}}=3.0\%$		
		Concentration		(100~200)°C	$U=0.4^{\circ}\text{C}$		
46	*Atomic Fluorescence Spectrophotometers	Detection limit	V.R. for Atomic Fluorescence Spectrophotometers JJG939	As≤0.4ng	$U=0.02\text{ng}$		
				Sb≤0.4ng	$U=0.04\text{ng}$		
47	*Quadrupole Inductively Coupled Plasma Mass Spectrometer	Detection limit	C.S. for Quadrupole Inductively Coupled Plasma Mass Spectrometers JJF1159	In≤10ng/L	$U=0.08\text{ng/L}$		
				Bi≤10ng/L	$U=0.06\text{ng/L}$		
				Be≤30ng/L	$U=1.0\text{ng/L}$		
48	*Instrument for KF Coulometry Titration	Water Content	V.R. of Instrument for KF Coulometry Titration JJG1044	(10~5000) μ g	$U_{\text{rel}}=1.8\%$		
49	*Zone of inhibition measurement instrument	Length	C.S. for Antibiotics Potency Analyzers JJF 1614	(10.000~25.000)mm	$U=0.036\text{ mm}$	Tube dish method only	
50	*Morie Osmolarity Determinator	Molar Concentration	V.R. of Osmometers JJG1089	(100~300)mOsmol/kg	$U=1.8\text{ mOsmol/kg}$		
				(300~700)mOsmol/kg	$U_{\text{rel}}=0.6\%$		
51	*Mercury Analyzers	Detection limit	V.R. of Mercury Analyzers JJG548	Absorption Type: ≤ 1.0ng	$U_{\text{rel}}=4.6\%$		
				Fluorescence type: ≤ 0.1ng	$U_{\text{rel}}=5.0\%$		



No. CNAS L1423

第 65 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
52	*Continuous Emission Monitoring Systems of Flue Gas Emitted from stationary source	Concentration of particulate	C.S. for Continuous Emission Monitoring Systems of Flue Gas Emitted from stationary source JJF1585	(0~50)mg/m ³	$U=1.1\text{mg/m}^3$		
				(>50~2500)mg/m ³	$U_{\text{rel}}=3\%$		
		Concentration		SO ₂ : (0~250) μmol/mol	$U=2.1\text{ μmol/mol}$		
				NO: (0~250) μmol/mol	$U=2.1\text{ μmol/mol}$		
				O ₂ : (0.5~25)%	$U_{\text{rel}}=6\%$		
		Flow rate		(1~30)m/s	$U_{\text{rel}}=3\%$		
		Temperature		(10~400)°C	$U=0.6\text{°C}$		
		Humidity		10%RH~95%RH	$U=6\%\text{RH}$		
		Pressure		(-2~2)kPa	$U=0.010\text{kPa}$		
53	*Particulate Analyzer	Particle count	C.S. For Particulate Analyzer JJF1290	(1000~3000)/mL	$U_{\text{rel}}=5.2\%$		
54	Airborne Particle Counter	particle concentration	C.S. for Airborne Particle Counter JJF1190	(1000~100000) particle/28.3L	$U_{\text{rel}}=10\%$		
		particle size		(1~100)%	$U_{\text{rel}}=11\%$		
55	*Oxygen Detectors	Concentration	C.S. for Oxygen Detectors JJF(Ji)65	(1~30)%	$U_{\text{rel}}=1.7\%$		
56	*Atomic Absorption Spectrophotometers	detectability	V.R. of Atomic Absorption Spectrophotometers JJG694	Determination of copper by flame method: $\leq 0.02\text{ μg/mL}$	$U=0.008\text{ μg/mL}$		
				Determination of cadmium by atomization: $\leq 4\text{pg}$	$U=1.0\text{pg}$		
	*Ultraviolet,	Wavelength	V.R. of Ultraviolet, Visible, Near-	(190~340)nm	$U=0.4\text{nm}$		



No. CNAS L1423

第 66 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Infrared Spectrophotometers	Scale of Transmission	Infrared Spectrophotometers JJG178	(340~900)nm	$U=0.5\text{nm}$		
				(900~2600)nm	$U=1.0\text{nm}$		
				(5~35)%	$U=0.3\%$		
58	*Polarimeter	Optical rotation	V.R. of Polarimeter and Polarimetric Saccharimeter JJG536	(-72~+72)°	$U=0.004^\circ$	Don't working Polarimetric Sugar Meter	
59	Hand Saccharimeter (Content-meter) and Hand Refractometer	Sugar Content	V.R. of Hand Saccharimeter (Content-meter) and Hand Refractometer JJG820	(1~60)%	$U_{\text{rel}}=2\%$		
		Refractive index		1.3330~1.5200	$U=0.0030$		
60	*Dispersive Infrared Spectrophotometers	Wave Number	V.R. of Dispersive Infrared Spectrophotometers JJG681	(900~2000) cm^{-1}	$U=0.9\text{ cm}^{-1}$		
				(>2000~4000) cm^{-1}	$U=1.7\text{ cm}^{-1}$		
61	*Ion Chromatograph	Minimum Detection Concentration	V.R. of Ion Chromatographs JJG823	Conductivity detector(Chloride ion): $\leq 0.02\text{ }\mu\text{g/mL}$	$U=0.001\text{ }\mu\text{g/mL}$		
				Conductivity detector(Lithium ion): $\leq 0.02\text{ }\mu\text{g/mL}$	$U=0.001\text{ }\mu\text{g/mL}$		
				Ultraviolet-Visible detector(Nitrite ion) $\leq 0.02\text{ }\mu\text{g/mL}$	$U=0.001\text{ }\mu\text{g/mL}$		
62	*Gas Chromatography and mass spectrometry	SNR	C.S. for Gas Chromatography-Mass Spectrometers JJF1164	IT、SQ、TQ: $\geq 10:1$	$U_{\text{rel}}=15\%$		
				TOF、EOT: $\geq 50:1$	$U_{\text{rel}}=15\%$		



No. CNAS L1423

第 67 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
63	*Folium Chromatography Scanner	Concentration	C.S. for Thin Layer Chromatography Scanners JJF 1712	(0.01~0.05) mg/mL	$U=0.0019\text{mg/mL}$		
64	*Emission Spectrometer	Detectability	V.R. of Emission Spectrometer JJG768	ICP-AES Zn $\leq 0.01\text{mg/L}$	$U=0.0008\text{mg/L}$		
				ICP-AES Ni $\leq 0.03\text{mg/L}$	$U=0.0032\text{ mg/L}$		
				ICP-AES Mn $\leq 0.005\text{mg/L}$	$U=0.0033\text{ mg/L}$		
				ICP-AES Cr $\leq 0.02\text{mg/L}$	$U=0.0040\text{ mg/L}$		
				ICP-AES Cu $\leq 0.02\text{mg/L}$	$U=0.0018\text{ mg/L}$		
				ICP-AES Ba $\leq 0.005\text{mg/L}$	$U=0.0003\text{ mg/L}$		
				Direct reading spectrometer C $\leq 0.02\%$	$U=0.0008\%$		
				Direct reading spectrometer Si $\leq 0.02\%$	$U=0.0021\%$		
				Direct reading spectrometer Cr $\leq 0.01\%$	$U=0.0004\%$		
				Direct reading spectrometer Mn $\leq 0.02\%$	$U=0.0005\%$		
65	*Turbidimeter	Turbidity	V.R. of Turbidimeters JJG880	(0.1~400)NTU	$U_{\text{rel}}=3.1\%$		
66	*Conductivity meter	conductivity	V.R. of Electrolytic Conductivity Meters JJG376	Electronic unit: (0.05~1 $\times 10^5$) $\mu\text{ S/cm}$	$U=0.08\%\text{FS}$		



No. CNAS L1423

第 68 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Instrument: 100 μS/cm~200mS/cm	U _{rel} =0.42%		
67	*Laboratory pH Meters	Acidity	V.R. of Laboratory pH Meters JJG119	Electric :0~14	U=0.0008		
		Volts		Instrument: 4~10	U=0.01		
					(-2000~2000) mV		
68	*Automatic Potentiometric Titrators	potential	V.R. of Automatic Potentiometric Titrators JJG814	(-2000~2000)mV	U=0.2mV		
		Concentration		0.1mol/L	U _{rel} =0.5%		
69	*Carbon Monoxide and Carbon Dioxide Infrared Gas Analyzer	Concentration	V.R. of Carbon Monoxide and Carbon Diaxide Infrared Gas Analyzer JJG635	CO: (1~900)×10 ⁻⁶ mol/mol	U _{rel} =2%		
		Concentration		CO: (0.1~6) %	U _{rel} =2%		
					CO ₂ : (0.1~90) %		U _{rel} =1.1%
70	*Sulfur Dioxide Gas Detectors	Concentration	V.R. of Sulfur Dioxide Gas Detectors JJG551	(1~900) ×10 ⁻⁶ mol/mol	U _{rel} =2.5%		
				(0.1~5) %	U _{rel} =2.5%		
71	*Sulfur Hydrogen Gas Detectors	Concentration	V.R. of Sulfur Hydrogen Gas Detectors JJG695	(1~200)×10 ⁻⁶ mol/mol	U _{rel} =3%		
72	*Oil Concentration in Water Analyzer	Concentration	V.R. of Analyzers for Oil Content in Water JJG950	(1~1000)mg/L	U _{rel} =3.1%		
73	*Laboratory Ion Meters	Ion Concentration	V.R. of Laboratory Ion Meters JJG757	Electric : 0~14	U=0.01		
		potential		Instrument: : 2~4	U=0.02		
					(-2000~2000)mV		U=0.5mV
74	*Determinators for Total Sulfur in Coal	Sulfur content	V.R. of Determinators for Total Sulfur in Coal JJG1006	(0.1~1.00) %	U=0.06%		
				(1.00~4.00) %	U=0.12%		

No. CNAS L1423

第 69 页 共 85 页



The scope of the accreditation in Chinese remains the definitive version.

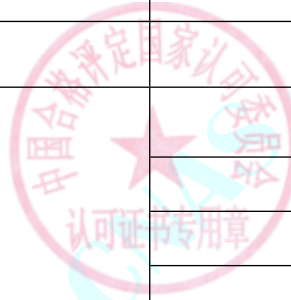
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				(4.00~6.00) %	$U=0.23\%$		
		Temperature		(1100~1500) °C	$U=2.4\text{ }^{\circ}\text{C}$		
75	*Alarmer Detectors of Combustible Gas	Concentration	V.R. of Alarmer Detectors of Combustible Gas JJG693	(1~100)%LEL	$U_{\text{rel}}=1.6\%$		
76	*Gold Gauge Utilizing X-ray Fluorescence Spectrometry	content	C.S. of Gold Gauge Utilizing X-ray Fluorescence Spectrometry JJF1133	Au: (37.52~99.89)% Ag:(0.10~2.53)%	$U=(0.06\sim0.20)\%$ $U=(0.04\sim0.10)\%$		
77	*Alarm Detector of Sulfur Hexafluoride	Concentration	Calibration Specification for the Alarm Detector of Sulfur Hexafluoride JJF1263	(1~1000) $\times 10^{-6}$ mol/mol	$U_{\text{rel}}=2.2\%$		
78	*Electrochemical oxygen meter	concentration	V.R. of electrochemical oxygen measuring instruments JJG 365	0.1%~30%	$U_{\text{rel}}=1.3\%$		
79	*Acrylonitrile gas detector	Concentration	Specifcation for calibration of acrylonitrile gas detectors ZB/JLY (Institute) 15	(0.01~100) $\mu\text{ mol/mol}$	$U_{\text{rel}}=2.4\%$		
80	*Real time PCR	Threshold number of cycles	C.S. for real time fluorescence quantitative PCR instrument	0~45	$U=0.8$		
		Temperature	ZB/JLY(Institute)18	(30~100) °C	$U=0.40^{\circ}\text{C}$		
81	Calibration Specification for PM _{2.5} Mass Concentration Measurement Instruments	Flow rate		(5~80) L/min	$U_{\text{rel}}=1.9\%$		
		concentration	C.S. for PM _{2.5} Mass Concentration Measurement Instruments JJF1659	(10~1000) $\mu\text{ g/m}^3$	$U_{\text{rel}}=12\%$		



No. CNAS L1423

第 70 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
82	*Volatile Organic Compounds Photo Ionization Detectors	Concentration	C. S. for Volatile Organic Compounds Photo Ionization Detectors JJF1172	$(0.1 \sim 2000) \times 10^{-6} \text{mol/mol}$	$U_{\text{rel}}=3\%$		
83	*Nitric Oxide and nitrogen dioxide gas detector	concentration	C.S. for Nitric Oxide and nitrogen dioxide gas detectors ZB/JLY（Institute）14	$(0.01 \sim 1000) \mu \text{ mol/mol}$	$U_{\text{rel}}=2.2\%$		
84	*Fluorescence Spectrophotometer	Wavelength	Fluorescence Spectrophotometer JJG 537	$(200 \sim 700) \text{ nm}$	$U_{\text{rel}}=4\%$		
		Detection Limitation		A 类, 硫酸奎宁: $\leq 5 \times 10^{-10} \text{g/ml}$	$U_{\text{rel}}=5\%$		
				B 类, 硫酸奎宁: $\leq 1 \times 10^{-8} \text{g/ml}$	$U_{\text{rel}}=5\%$		
85	PCR Instrument Optical Simulator	brightness	Calibration Specification for Optical Simulator of PCR Instrument ZB/JLY(Institute)19	$(1 \sim 1000) \text{cd/m}^2$	$U_{\text{rel}}=5.3\%$		
		Wavelength		$(400 \sim 720) \text{nm}$	$U=1.6 \text{nm}$		
86	*Water Quality On-line Analyzers of Total Phosphorus and Total Nitrogen	Concentration	V.R.of Water Quality On-line Analyzers of Total Phosphorus and Total Nitrogen JJG1094	P: $(0.1 \sim 1000) \text{mg/L}$	$U_{\text{rel}}=3.0\%$		
				N: $(0.1 \sim 500) \text{mg/L}$	$U_{\text{rel}}=3.0\%$		
87	*Open/Closed Cup Flash Point Testers	Temperature	C.S. for Open/Closed Cup Flash Point Testers JJF1384	$(70.8 \sim 232.2) ^\circ \text{C}$	$U=(4.6 \sim 8.2) ^\circ \text{C}$		
88	*Gas Chromatographs	sensitivity	V.R. of Gas Chromatographs JJG700	TCD: $\geq 800 \text{ mV} \cdot \text{mL/mg}$	$U_{\text{rel}}=10\%$		
		detectability		FID: $\leq 0.5 \text{ ng/s}$	$U_{\text{rel}}=8\%$		
				FPD(S): $\leq 5 \times 10^{-10} \text{g/s}$	$U_{\text{rel}}=8\%$		
				FPD(P): $\leq 1 \times 10^{-10} \text{g/s}$	$U_{\text{rel}}=8\%$		



No. CNAS L1423

第 71 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				NPD (N): $\leq 5 \times 10^{-12}$ g/s	$U_{\text{rel}}=8\%$		
				NPD (P): $\leq 1 \times 10^{-11}$ g/s	$U_{\text{rel}}=8\%$		
				ECD : ≤ 5 pg/mL	$U_{\text{rel}}=10\%$		
89	*Liquid Chromatographs	minimum detectable concentration	V.R. of Liquid Chromatographs JJG705	UV Detector/Diode-array Detector (naphthyl-methanol): $\leq 5 \times 10^{-8}$ g/mL	$U_{\text{rel}}=5\%$		
				RID Detector(cholesterol/methanol) : $\leq 5 \times 10^{-6}$ g/mL	$U_{\text{rel}}=6\%$		
				ESLD(cholesterol/methanol): $\leq 5 \times 10^{-6}$ g/mL	$U_{\text{rel}}=6\%$		
				fluorescence Detector(naphthyl-methanol) : $\leq 5 \times 10^{-6}$ g/mL	$U_{\text{rel}}=5\%$		
90	*Liquid Chromatography-Mass Spectrometer	SNR	C.S. for Liquid Chromatography-Mass Spectrometers JJF1317	triple quadrupole mass spectrometerESI+: ≥ 30	$U_{\text{rel}}=9.8\%$		
				triple quadrupole mass spectrometerESI-: ≥ 10	$U_{\text{rel}}=9.8\%$		
				triple quadrupole mass spectrometerAPCI+: ≥ 30	$U_{\text{rel}}=9.8\%$		
				Single Quad Mass SpectrometerESI+: ≥ 10	$U_{\text{rel}}=9.8\%$		
				Single Quad Mass SpectrometerESI-: ≥ 10	$U_{\text{rel}}=9.8\%$		



No. CNAS L1423

第 72 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

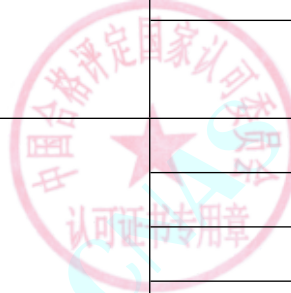
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Single Quad Mass Spectrometer APCI+: ≥ 10	$U_{\text{rel}}=9.8\%$		
				ion trap mass spectrometry ESI+: ≥ 10	$U_{\text{rel}}=9.8\%$		
				ion trap mass spectrometry ESI-: ≥ 10	$U_{\text{rel}}=9.8\%$		
				ion trap mass spectrometry APCI+: ≥ 10	$U_{\text{rel}}=9.8\%$		
91	*the Differential Scanning Calorimeter	Temperature	V.R. of the Differential Scanning Calorimeters JJG936	(156~575)°C	$U=1.0^{\circ}\text{C}$		
		Caloricity		(0~120)J/g	$U=1.4\text{J/g}$		
92	Verifying Meter for pH Meters	Voltage	V.R. of Verifying Meter for pH Meters JJG919	(-2000~2000)mV	$U=0.004\text{mV}$		
93	*Karl Fischer Volumetric Titrators for Water Content	Water Content	V.R. of Karl Fischer Volumetric Titrators for Water Content JJG1154	(0.1~5)%	$U_{\text{rel}}=3.0\%$		
94	*Natural Gas Calorific Value Meter	Caloricity	"Calibration Specification for Natural Gas Calorific Value Meter" JJF (Ji) 207	(30~38) MJ/m ³	$U_{\text{rel}}=0.2\%$		
10、Medical measurement instruments							
1	*Semiautomatic Clinical Chemistry Analyzers	Absorbency	V.R. of Semiautomatic Clinical Chemistry Analyzers JJG464	0.5~1.0	$U=0.01$		
2	Pulmonary Function Measuring	Vital Capacity	C.S. for the Pulmonary Function Measuring Instrument JJF1213	(2~10)L	$U_{\text{rel}}=1.0\%$		



No. CNAS L1423

第 73 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
	Instrument	forced vital capacity		(2~10)L	<i>U</i> _{rel} =1.0%		
		peak expiratory flow		(4~14)L/s	<i>U</i> _{rel} =3%		
		maximal voluntary ventilation		(0.5~250)L/min	<i>U</i> _{rel} =3%		
		gas concentration		20%~80%	<i>U</i> _{rel} =1.2%		
3	*Electrosurgical Generator	high-frequency current	C.S. for Electorsurgical Generator JJF1217	(0.001~0.5)A	<i>U</i> _{rel} =6%		
		output power		(5~300)W	<i>U</i> _{rel} =6%		
4	*Ventilators	tidal volume	C.S.for Ventilators JJF1234	(50~1000)m L	<i>U</i> _{rel} =5%		
		Ventilation frequency		(10~40)min ⁻¹	<i>U</i> _{rel} =3%		
		airway peak pressure		(1.0~3.0) kPa	<i>U</i> _{rel} =4%		
		PEEP		(1.0~2.0)kPa	<i>U</i> _{rel} =5%		
		inspiratory flow oxygen concentration		(21~100)%	<i>U</i> =1.5%		
5	*Cardiac Defibrillators	delivered energy	C.S.for Cardiac Defibrillators JJF1149	(2~100)J	<i>U</i> =2.5 J		
				(100~360)J	<i>U</i> _{rel} =6%		
		transcutaneous pacing pulse rate		(30~100)bpm	<i>U</i> =1bpm		
				(100~200)min ⁻¹	<i>U</i> _{rel} =1.2%		



No. CNAS L1423

第 74 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

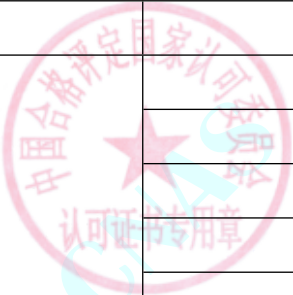
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Heart rate		(30~200)min ⁻¹	$U_{\text{rel}}=1.2\%$		
6	*Hemodialysis Equipment	dialysate conductivity	C.S.for Hemodialysis Equipment JJF 1353	(12.5~15.5)mS/cm	$U_{\text{rel}}=2.0\%$		
		dialysate temperature		(30~50)°C	$U=0.20^{\circ}\text{C}$		
		vein(artery) pressure		(-40~60)kPa	$U=0.4\text{kPa}$		
		dialysate flow		(250~750) mL/min	$U_{\text{rel}}=2.0\%$		
		acidity		4~10	$U=0.03$		
		Dialysate Pressure		(0~100)kPa	$U=0.4\text{kPa}$		
7	*Electromagnetic Radiation Source for Medical Magnetic Resonance Imaging	Spatial resolution	C.S.of Electromagnetic Radiation Source for Medical Magnetic Resonance Imaging JJF(Ji)48	(1~11)Lp/cm	$U=0.04\text{Lp/cm}$		
		Intensity of Magnetic Field		(0.2~3)T	$U_{\text{rel}}=3\%$		
8	*Baby Incubator	temperature	C.S.for Baby Incubator JJF1260	(28.0~40.0)°C	$U=0.3^{\circ}\text{C}$		
		relative humidity		40%~70%	$U=3.5\%$		
		noise		(30~40)dB	$U=3.5\text{dB}$		
		oxygen concentration		30%~40%	$U=2\%$		
9	*ELISA Analytical Instruments	Absorbency	V.R. of ELISA Analytical Instruments JJG861	0.2~1.5	$U=0.010$		
		Wavelength		(405~780)nm	$U=1.0\text{nm}$		
10	*Blood Cell Analyzer	Concentration of blood cells	V.R. of Blood Cell Analyzers JJG714	RBC: $(2\sim6)\times 10^{12}/\text{L}$	$U_{\text{rel}}=3.4\%$		



No. CNAS L1423

第 75 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date	
				WBC: (2~19)×10 ⁹ /L	<i>U</i> _{rel} =3.4%			
				HGB: (60~160)g/L	<i>U</i> _{rel} =3.4%			
				PLT: (90~500)×10 ⁹ /L	<i>U</i> _{rel} =3.4%			
11	*Urine Analyzers	pH	C.S. of Urine Analyzers JJF1129	6.0~8.0	<i>U</i> _{rel} =7.9%			
		PRO		(0.01~1.94) g/L	<i>U</i> _{rel} =7.9%			
		GLU		(0.1~40.5) mmol/L	<i>U</i> _{rel} =7.9%			
		SG		1.005~1.025	<i>U</i> _{rel} =7.9%			
12	*Analyzers	Concentration	V.R. for Electrolyte Analyzers JJG1051	K ⁺ : (1.50~7.50)mmol/L	<i>U</i> _{rel} =2.6%			
				Na ⁺ : (100.0~180.0)mmol/L	<i>U</i> _{rel} =2.2%			
				Cl ⁻ : (80~160)mmol/L	<i>U</i> _{rel} =2.0%			
				Li ⁺ : (0.40~2.00)mmol/L	<i>U</i> _{rel} =4.0%			
				iCa ²⁺ : (0.50~2.50)mmol/L	<i>U</i> _{rel} =4.0%			
11、Radio								
1	Alternating Current Bridge	Inductance	V.R. of Alternating Current Bridge JJG 441	100μH~10mH,1kHz	<i>U</i> _{rel} =0.1%			
				10mH~1H,1kHz	<i>U</i> _{rel} =0.08%			
		Capacitance		100pF~1 μ F,1kHz	<i>U</i> _{rel} =0.07%			
				AC Resistance	(0.1~1) Ω ,1kHz		<i>U</i> _{rel} =1.2%	
					(1~10) Ω ,1kHz		<i>U</i> _{rel} =0.12%	



No. CNAS L1423

第 76 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
				(10~100) Ω ,1kHz	<i>U</i> _{rel} =0.04%		
				(100~1000) Ω ,1kHz	<i>U</i> _{rel} =0.03%		
		Loss Factor		0.0001~0.1	<i>U</i> =0.12% <i>Rd</i> +0.0001		
2	Electronic Voltmeter	AC Voltage	V.R. of Electronic Voltmeter JJG 250	10mV~10V,(20Hz~500MHz)	<i>U</i> _{rel} =1.2%		
				(10~30)V,(20Hz~500MHz)	<i>U</i> _{rel} =1.9%		
3	C.S. of Digital Storage Oscilloscope	Time	C.S. of Digital Storage Oscilloscope JJF 1057	1ns~50s	<i>U</i> _{rel} =0.1%		
		DC Voltage		1mV	<i>U</i> _{rel} =3%		
				2mV	<i>U</i> _{rel} =1.5%		
				5mV	<i>U</i> _{rel} =0.7%		
				10mV	<i>U</i> _{rel} =0.5%		
				20mV	<i>U</i> _{rel} =0.4%		
				50mV~200V	<i>U</i> _{rel} =0.3%		
				Square Wave Voltage	5mV~200V		
		Band Width		10kHz~3.2GHz	<i>U</i> _{rel} =4.7%		
Rise time	70ps~20ns	<i>U</i> _{rel} =6.3%					
4	Analogue Oscilloscope	Time	V.R. of Analogue Oscilloscope JJG 262	1ns~5s	<i>U</i> _{rel} =0.2%		
		Voltage		(1~2)mV	<i>U</i> _{rel} =0.9%		
				(5~10)mV	<i>U</i> _{rel} =0.7%		



No. CNAS L1423

第 77 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date	
				20mV～220V	<i>U</i> _{rel} =0.6%			
		Band Width		10kHz～3.2GHz	<i>U</i> _{rel} =4.7%			
		Rise time		70ps～20ns	<i>U</i> _{rel} =6.3%			
5	Spectrum Analyzer	Frequency	C.S. For Spectrum Analyzer JJF1396	3Hz～40GHz(SPAN:1kHz)	<i>U</i> =1.0Hz			
				3Hz～40GHz(SPAN:10kHz)	<i>U</i> =10Hz			
				3Hz～40GHz(SPAN:100kHz)	<i>U</i> =0.1kHz			
				3Hz～40GHz(SPAN:1MHz)	<i>U</i> =1.0 kHz			
				3Hz～40GHz(SPAN:10MHz)	<i>U</i> =10 kHz			
				3Hz～40GHz(SPAN:100MHz)	<i>U</i> =0.1MHz			
				Sweep Span	100Hz～40GHz			<i>U</i> _{rel} =6×10 ⁻⁴
				Resolution Band	1Hz～10MHz			<i>U</i> _{rel} =0.21%
		Reference Level		(-90～10)dBm,100kHz～40GHz	<i>U</i> =0.10 dB			
		Vertical Display Scale		(0～100)dB	<i>U</i> =0.10 dB			
		Resolution Bandwidth Conversion Effect		(-3～3)dB,1Hz～10MHz	<i>U</i> =0.02 dB			
		Reference Frequency		10MHz	<i>U</i> _{rel} =5×10 ⁻⁹			



No. CNAS L1423

第 78 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Absolute Amplitude	ilac-M	(-30~10)dBm,(1MHz~6GHz)	$U=0.24$ dB		
		Calibration Signal Level		(-30~0)dBm,(1MHz~1GHz)	$U=0.24$ dB		
		Input Frequency Response		(-10~10)dBm,(3Hz~40GHz)	$U=0.28$ dB		
		Noise Sideband		(-150~-20) dBc/Hz Offset: 100Hz~1MHz,(10MHz~40GHz)	$U=1.8$ dB		
		INPUT VSWR		1~3,9kHz~8.5GHz	$U=0.03$		
		Sweep Time		1ms~1000s	$U_{rel}=6 \times 10^{-4}$		
6	*EMI Testing Receivers	frequency	C.S. for EMI Testing Receivers JJF 1144	9kHz~40GHz	$U_{rel}=2 \times 10^{-7}$		
		6 db bandwidth		200Hz~1MHz	$U_{rel}=1.4\%$		
		Voltage values		(0~120) dB μ V (9kHz~40GHz)	$U=0.3$ dB		
		Indicates a linear attenuator		(0~30) dB,(9kHz~40GHz)	$U=0.2$ dB		
		impulse response		(0~110) dB,(9kHz~40GHz)	$U=0.2$ dB		
		voltage standing wave ratio		(-20~40)dB,9kHz~1GHz	$U=1.2$ dB		
				1~3,9kHz~8.5GHz	$U=0.03$		
7	RF and Microwave Power	Calibration factor	C.S. for RF and Microwave Power Meters JJF 1887	70%~110%,100kHz~8.5GHz	$U_{rel}=3.6\%$		



No. CNAS L1423

第 79 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Meters	reflection coefficient		0~1,100kHz~8.5GHz	U=0.03		
8	function generator	frequency	Verification regulation of function generators JJG 840	0. 1Hz~250MHz	U _{rel} =8×10 ⁻⁹		
		amplitude		10mV~55V,(DC,1kHz)	U _{rel} =2×10 ⁻⁴		
		Flatness of sine wave amplitude		100 mV~10 V (peak to peak) ,1kHz~250MHz	U _{rel} =1.2%		
		rise time		1 ns~10 μ s	U _{rel} =7%		
		"Total harmonic distortion "		0.02%~1.0%,10Hz~100kHz	U _{rel} =13%		
12、Special measuring instruments for motor vehicles							
1	*Chassis Dynamometers for Automobile Emissions Testing	torsion	Calibration Specification of Chassis Dynamometers for Automobile Emissions Testing JJF 1221	(0.5~9.8) kN	U _{rel} =0.4%		
		speed		(0~120) km/h	U=0.1 km/h		
		time		(1~150)s	U=6ms		
2	Point-to-point Vehicle Speed Monitor System for Motor	speed	Verification Regulation of Point-to-point Vehicle Speed Monitor System for Motor JJG (Hei) 06	(20~180) km/h	U=0.9km/h		
		Time		(0~24) h	U=1.0s		
		distance		(1~100) km	U _{rel} =0.6%		
3	*Diesel Vehicle Nitrogen Oxides (NO _x)	Concentration	Calibration Specification for Diesel Vehicle Nitrogen Oxides (NO _x) Measuring Instruments JJF1873	NO:(230~4000)×10 ⁻⁶ mol/mol	U _{rel} =1.4%		
				NO ₂ :(1~1000)×10 ⁻⁶ mol/mol	U _{rel} =2.4%		
				CO ₂ :(2.0~18.0)×10 ⁻² mol/mol	U _{rel} =1.4%		



No. CNAS L1423

第 80 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
4	*Zero Gas Generators	Concentration	Calibration Specification for Zero Gas Generators ZB/JLY (yuan) 35	NO: $(0\sim 20)\times 10^{-6}$ mol/mol	$U=0.47\times 10^{-6}$ mol/mol		
				CO: $(0\sim 20)\times 10^{-6}$ mol/mol	$U=0.46\times 10^{-6}$ mol/mol		
				NO ₂ : $(0\sim 20)\times 10^{-6}$ mol/mol	$U=0.46\times 10^{-6}$ mol/mol		
				HC: $(0\sim 40)\times 10^{-6}$ mol/mol	$U=0.5\times 10^{-6}$ mol/mol		
				CO ₂ : $(0\sim 40)\times 10^{-6}$ mol/mol	$U=0.93\times 10^{-6}$ mol/mol		
				O ₂ : $(0\sim 25)\times 10^{-2}$ mol/mol	$U=0.48\times 10^{-6}$ mol/mol		
5	*Headlamp Testers for Motor Vehicle	luminous intensity	Verification Regulation of Headlamp Testers for Motor Vehicle JJG 745	$(5\sim 60)$ kcd	$U_{\text{rel}}=6.0\%$		
		Axis offset angle		Up1° ~Down2° , Left2° ~right2°	$U=6'$		
		Height		$(0.3\sim 1.5)$ m	$U=0.003$ m		
6	Motor Vehicle Testers for Steering Force and Steering Angle	Steering Angle	Calibration Specification of Motor Vehicle Testers for Steering Force and Steering Angle JJF1196	$0^{\circ}\sim 1080^{\circ}$	$U=1.0^{\circ}$		
		Steering Force		$(0.1\sim 1)$ kN	$U_{\text{rel}}=0.6\%$		
7	*Automobile Side Slip Testers	Front Wheel Side Slip	V.R. of Automobile Side Slip Testers JJG 908	$(-10\sim 10)$ m/km	$U=0.06$ m/km	合格评定国家认可委员会 认可证书专用章	
8	*Vehicle comprehensive performance tester	Time	Calibration specification for motor vehicle comprehensive performance tester JJF(Mechanical)1017	$(1\sim 1000)$ s	$U=0.02$ s		
		Speed		$(5\sim 300)$ km/h	$U=0.06$ km/h		
		Length		$0.1\text{m}\sim 10\text{km}$	$U_{\text{rel}}=0.09\%$		
9	*Vehicle Exhaust Emission	Concentration	V.R. of Vehicle Exhaust Emissions Measuring	HC: $(80\sim 2000)\times 10^{-6}$ mol/mol	$U_{\text{rel}}=1.3\%$		



№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Measuring Instruments		Instruments JJG688	CO: $(0.4\sim5)\times10^{-2}$ mol/mol	$U_{rel}=1.2\%$		
				CO ₂ : $(2.5\sim16)\times10^{-2}$ mol/mol	$U_{rel}=1.2\%$		
				NO: $(230\sim4000)\times10^{-6}$ mol/mol	$U_{rel}=1.2\%$		
				O ₂ : $(0.3\sim21)\times10^{-2}$ mol/mol	$U_{rel}=1.1\%$		
10	*Loading Method Automobile Brake Testers	Braking force	Loading Method Automobile Brake Testers JJG 1160	(1~50)kN	$U_{rel}=0.9\%$		
		Mass		(20~15000) kg	$U_{rel}=0.5\%$		
		Lifting Height		(0~500) mm	$U=0.4$ mm		
11	Automotive Controllability and Stability Testing Device	Angle	C.S. for Automotive Controllability and Stability Testing Device JJF (Machinery) 1045	-180° ~ + 180°	$U=0.05^{\circ}$		
		Angular velocity		-1000° /s~-0.1° /s	$U_{rel}=0.16\%$		
				0.1° /s~1000° /s	$U_{rel}=0.16\%$		
				Acceleration	(5~ 500) m/s ²		$U_{rel}=0.20\%$
13、Special measuring instruments for construction and transportation							
1	*Consistency testing instrument for concrete mixing	Vibration displacement	V.R. of consistency testing instrument for concrete mixing JJG(Su)50	0.5mm	$U_{rel}=4.2\%$		
		Vibration frequency		50Hz	$U_{rel}=1.0\%$		
2	*Apparatus of fluidity of cement mortar	Time	V.R.for Apparatus of Fluidity of Cement Mortar JJG(traffic)096	25s	$U=0.1$ s		
		Mass		(900~1500)g	$U=0.68$ g		
		displacement		(9~300)mm	$U=0.05$ mm		



No. CNAS L1423

第 82 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
3	*Vibrator for Compacting Mortar Specimen	Vibration displacement peak	C. S. of Vibrator for Compacting Mortar Specimen JJF1867	0.75mm	$U_{rel}=4.4\%$		
		Vibration frequency		(46.7~50)Hz	$U_{rel}=1.3\%$		
		Length		(40~160) mm	$U=0.05\text{mm}$		
		Mass		(2~6.5)kg	$U=1.9\text{g}$		
4	Measuring Instrument for Cement Bright Degumming Equipment	Frequency	V.R. of Measuring Instrument for Cement Bright Degumming Equipment JJG974	(20~100)Hz	$U_{rel}=0.4\%$		
		displacement		(0.1~1)mm, (40~100)Hz	$U_{rel}=2.0\%$		
		Rotate speed		(50~10000) r/min	$U_{rel}=0.2\%$		
5	*Cement Paste Mixer	Rotate speed	C.S. for Cement Paste Mixer JJF(Ji) 85	(60~300)r/min	$U=0.7\text{r/min}$		
		Time		(10~130) s	$U_{rel}=0.1\%$		
		Length		(0~160) mm	$U=0.05\text{mm}$		
6	*Mixing Mortars Mixer	Rotate speed	C.S. for Mixing Mortars Mixer JJF(Ji) 84	(60~300)r/min	$U=0.7\text{r/min}$		
		Time		(10~130) s	$U_{rel}=0.1\%$		
		Length		(0~300) mm	$U=0.05\text{mm}$		
7	*Marshall test machine for bituminous mixtures	Force	V.R of Marshall test machine for bituminous mixtures JJG(Transportation)066	(3~50)kN	$U_{rel}=0.4\%$		
		Length		(0~25) mm	$U=0.6\text{ }\mu\text{m}$		
8	*Calibration Specification for Instrument of Testing Mortar-	Length	C.S. for Instrument of Testing Mortar-strength by Penetration Resistance Method JJF1372	(1~50) mm	$U=0.03\text{mm}$		



No. CNAS L1423

第 83 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	strength by Penetration Resistance Method	Force		(780～820)N	$U_{rel}=0.4\%$		
9	*Asphalt Mixture's Mixing Machine	Rotate speed	V.R. of Asphalt Mixture's Mixing Machine JJG(Transportation)064	(30～500)r/min	$U=0.24r/min$		
		Time		(0～500)s	$U=0.12s$		
				(30～300)℃	$U=0.4^{\circ}C$		
10	*Sand Equivalent Tester	Oscillation frequency	V.R. of Sand Equivalent Tester JJG(JT) 137	(100～300)Times/minute	$U=0.54$ order/min		
		Length		(1～500) mm	$U=0.06mm$		
		Time		(10～1800) s	$U=0.12s$		
		Mass		(900～1500)g	$U=0.7g$		
11	*Los Angeles abrasion Testing Machine	Rotate speed	V.R. of Los Angeles Testing Machine JJG(Transportation)108	(20～100)r/min	$U=0.38r/min$		
		Length		(1～1000)mm	$U=0.26mm$		
		Mass		(0.3～5.1)kg	$U=1.92g$		
12	*Accelerated Polishing Machine	Rotate speed	V.R. of Accelerated Polishing Machine JJG(Transportation)051	(200～500)r/min	$U=0.5r/min$		
		Force		(100～1000)N	$U_{rel}=0.4\%$		
				(1～500)mm	$U=0.16mm$		
13	*Apparatus for Time of Setting of Concrete Mixture by Penetration Resistance	Force	V.R. of Apparatus for Time of Setting of Concrete Mixture by Penetration Resistance JJG(Transportation)095	(0.1～1.2) kN	$U_{rel}=0.5\%$		
		Size		(0～300)mm	$U=0.05mm$		
14	*The Concrete Content Measuring	Pressure	C.S. for The Concrete Content Measuring	(0～250)kPa	$U=0.3kPa$		



No. CNAS L1423

第 84 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Instrument	Capacity	Instrument JJF (Ji) 91	(0~7)L	U=12mL		
15	*Cement mortar specimen jolting table	Time	C.S of Cement mortar specimen jolting table complying with ISO 679 JJF(building materials)124	60s	U=0.1s		
		Mass		12.57kg	U _{rel} =0.4%		
16	*Calibration Specification for Rebound Test Hammer Calibrating Steel Anvil	Hardness		(58~62) HRC	U=0.8HRC		
		Mass	C.S. of Steel Anvil for Calibrating Rebound Hammer JJF (HuNan) 56	(15~50)kg	U=1.9g		
17	*Abrasion Resistance Instruments	Rotate speed	V.R of cement mortar and concrete wear resistance testing machine JJG (Transportation) 097	(30~1000)r/min	U=4r/min		
		Force		(50~500)N	U _{rel} =0.4%		
14、Special measuring instruments for electrical and electronic appliances							
1	Cable Fault Tester	Length	Calibration specification for cable fault flashover test instrument ZB/JLY (Yuan) 30	50m~50km	U _{rel} =0.2%		



No. CNAS L1423

第 85 页 共 85 页

The scope of the accreditation in Chinese remains the definitive version.