

Name: Shandong Institute of Metrology

Address: No.146, Gangxing Road, Licheng District, Jinan, Shandong, China

Registration No. CNAS L0854

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

Effective Date: 2026-04-21 Expiry Date: 2030-02-03

SCHEDULE 5 ACCREDITED CALIBRATION AND MEASUREMENT CAPABILITY SCOPE

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

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1、Geometric measuring instrument							
1	Linear Displacement Sensors	Length	Calibration Specification for Linear Displacement Sensors JJF 1305	(0~50) m	U=0.02%FS	Except for: Vibrating String(Strain) Linear Displacement Sensors	
2	Hand-held Laser Distance Meters	Length	Verification Regulation of Hand-held Laser Distance Meters JJG 966	(0~50) m	U=0.6mm		
3	Level Rod	Length	Verification Regulation of Level Rod JJG 8	(0~3) m	U=5.0 μm	Only for Invar Level Rod	
2、Temperature measuring instrument							
1	*Electric contact mercury-in-glass	Temperature	Verification regulation of the electric contact mercury in	(-30~0)℃	U=0.09℃		

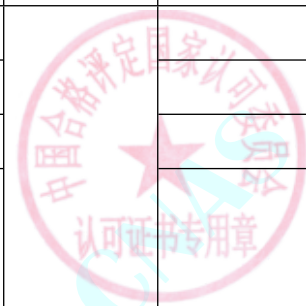
No. CNAS L0854

第 1 页 共 127 页

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



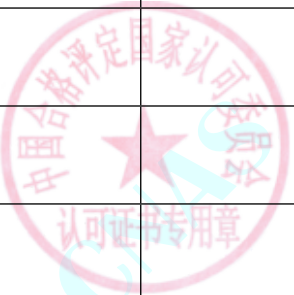
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	thermometers		glass thermometers JJG131	(0~100)℃	U=0.08℃		
				(100~200)℃	U=0.18℃		
				(200~300)℃	U=0.4℃		
2	Standard Mercury-in-Glass Thermometer	Temperature	Verification Regulation of Standard Mercury-in-Glass Thermometer JJG 161	(-60~200)℃	U=0.04℃		
				(200~300)℃	U=0.05℃		
3	*Liquid-in-Glass Thermometers for Working	Temperature	Verification Regulation of Liquid-in-Glass Thermometers for Working JJG 130	(-80~-30)℃	U=0.09℃		
				(-30~0)℃	U=0.07℃		
				(0~150)℃	U=0.022℃		
				(150~200)℃	U=0.10℃		
				(200~300)℃	U=0.11℃		
				(300~600)℃	U=0.2℃		
4	Standard Clinical Thermometer	Temperature	Verification Regulation of Standard Clinical Thermometer JJG881	(35~45)℃	U=0.03℃		
5	*Industry Platinum and Copper Resistance Thermometer	Temperature	Standard Specification for Industrial Platinum Resistance Thermometers E1137/E1137M-08, A standard Test Methods for Testing Industrial Resistance Thermometers E644-11, Verification Regulation of Industry Platinum and Copper Resistance Thermometers JJG 229	(-180~-80)℃	U=0.1℃		
				(-80~100)℃	U=0.037℃		
				(100~300)℃	U=0.061℃		
				(300~600)℃	U=0.2℃		



No. CNAS L0854

第 2 页 共 127 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
6	*Temperature Transmitter	Temperature	Calibration specification of the temperature Transmitter JJF 1183	With RTD: (-80~300) °C	U=0.08°C		
				With TC: (300~1200) °C	U=1.8°C		
				No sensor: (4~20) mA	U=0.009mA		
7	*Digital thermometers	Temperature	Calibration Specification Of Digital Thermometer JJF (Chuan) 139	(-180~-80)°C	U= (12~14) mK		
				(-80~500)°C	U= (14~20) mK		
				(500~1200)°C	U=1.1°C		
				-196°C	U=10mK		
				-38.8344°C	U=11mK		
				0.01°C	U=10mK		
				231.928°C	U=12mK		
				419.527°C	U=14mK		
				660.323°C	U=16mK		
8	*Bimetallic thermometers	Temperature	Calibration Specification for Bimetallic thermometers JJF 1908	(-80~500)°C	U=0.5°C		
9	*Filled system thermometers	Temperature	Calibration Specification for Filled system thermometers JJF 1909	(-80~500)°C	U=0.5°C		
10	Winding Temperature Indicators for Transformer	Temperature	Calibration Specification for Winding Temperature Indicators for transformer JJF (Lu) 110	temperature: (-20~160) °C	U=0.3°C		



No. CNAS L0854

第 3 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Thermal simulation temperature rise : (0~40) °C	U=0.5 °C		
11	*Temperature Switches	Temperature	Calibration Specification for Temperature Parameters of Temperature Switches JJF1632	action temperature error: (-30~300) °C On-off temperature error: (-30~300) °C	U=0.3 °C U=0.4 °C		
12	*Thermistor tester	Temperature	Calibration Specification of Thermistor Thermometers JJF1379	(-50~-5) °C (-5~40) °C (40~200) °C	U=2.5mK U=1mK U=2.5mK		
13	Standard Platinum Resistance Thermometer	Temperature	Verification Regulation of Standard Platinum Resistance Thermometer JJG 160	(-189.3442~0.01) °C (0.01~660.323) °C	U= (5.0~0.8) mK U= (0.8~6.2) mK		
14	*Fixed-Point Devices for Standard Platinum Resistance Thermometer	Temperature	Calibration Specification of Fixed-Point Devices for Standard Platinum Resistance Thermometer JJF 1178	(-189.3442~0.01) °C (0.01~660.323) °C	U= (0.9~0.5) mK U= (0.5~3.3) mK		
15	Temperature and Humidity itinerant detecting instrument	Temperature	Calibration Specification for Temperature and Humidity Itinerant Detecting Instruments JJF 1171	(-80~300) °C (300~1200) °C 5%~95%	U=0.04 °C U=0.8 °C U=0.6%		
16	the surface thermometers	Temperature	Calibration specification for the surface thermometers JJF 1409	(-50~600) °C	U=1.0 °C		



No. CNAS L0854

第 4 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
17	Surface Platinum Resistance Thermometers	Temperature	Calibration Specification for Surface Platinum Resistance Thermometers JJF 2137	$(-60 \sim 600)^{\circ}\text{C}$	$U=1.0^{\circ}\text{C}$		
18	*surface heat source	Temperature	Calibration specification for the surface thermometers JJF1409 Appendix D, Calibration specification for surface heat source SDIM/CJGWD 006, Calibration Specification of Surface Temperature Sources JJF (Lu) 137	Indication error: $(-50 \sim 600)^{\circ}\text{C}$	$U=(0.08 \sim 0.26)^{\circ}\text{C}$		
				Uniformity: $(-50 \sim 600)^{\circ}\text{C}$	$U=(0.13 \sim 0.32)^{\circ}\text{C}$		
				Stability: $(-50 \sim 600)^{\circ}\text{C}$	$U=(0.10 \sim 0.12)^{\circ}\text{C}$		
19	*Soldering Iron Thermometers	Temperature	Calibration Specification for Soldering Iron Thermometers JJF1629	$(50 \sim 600)^{\circ}\text{C}$	$U=1.0^{\circ}\text{C}$		
20	*Digital Temperature Indicators and Controllers	Temperature	V.R. of Digital Temperature Indicators and Controllers JJG617	J: $(-200 \sim 0)^{\circ}\text{C}$	$U=0.10^{\circ}\text{C}$		
				J: $(0 \sim 800)^{\circ}\text{C}$	$U=0.10^{\circ}\text{C}$		
				J: $(800 \sim 1200)^{\circ}\text{C}$	$U=0.10^{\circ}\text{C}$		
				K: $(-200 \sim 0)^{\circ}\text{C}$	$U=0.16^{\circ}\text{C}$		
				K: $(0 \sim 1000)^{\circ}\text{C}$	$U=0.10^{\circ}\text{C}$		
				K: $(1000 \sim 1372)^{\circ}\text{C}$	$U=0.12^{\circ}\text{C}$		
				T: $(-250 \sim 0)^{\circ}\text{C}$	$U=0.16^{\circ}\text{C}$		
				T: $(0 \sim 400)^{\circ}\text{C}$	$U=0.06^{\circ}\text{C}$		
				E: $(-250 \sim -100)^{\circ}\text{C}$	$U=0.10^{\circ}\text{C}$		



No. CNAS L0854

第 5 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				E: (-100~1000)°C	$U=0.06^{\circ}\text{C}$		
				R: (-20~0)°C	$U=0.60^{\circ}\text{C}$		
				R: (0~1700)°C	$U=(0.44\sim0.20)^{\circ}\text{C}$		
				S: (-20~0)°C	$U=0.30^{\circ}\text{C}$		
				S: (0~1700)°C	$U=(0.21\sim0.12)^{\circ}\text{C}$		
				B: (600~800)°C	$U=0.20^{\circ}\text{C}$		
				B: (800~1000)°C	$U=0.15^{\circ}\text{C}$		
				B: (1000~1800)°C	$U=0.12^{\circ}\text{C}$		
				C: (0~1000)°C	$U=0.18^{\circ}\text{C}$		
				C: (1000~2300)°C	$U=(0.16\sim0.38)^{\circ}\text{C}$		
				N: (-200~0)°C	$U=0.12^{\circ}\text{C}$		
				N: (0~1300)°C	$U=0.06^{\circ}\text{C}$		
				Pt100: (-200~0)°C	$U=0.06^{\circ}\text{C}$		
				Pt100: (0~400)°C	$U=0.06^{\circ}\text{C}$		
				Pt100: (400~800)°C	$U=0.06^{\circ}\text{C}$		
				Cu50: (-50~150)°C	$U=0.1^{\circ}\text{C}$		
21	*Temperature indicators	Temperature	C.S.of Temperature indicators JJF1664	J: (-200~0)°C	$U=0.10^{\circ}\text{C}$		
				J: (0~800)°C	$U=0.10^{\circ}\text{C}$		
				J: (800~1200)°C	$U=0.10^{\circ}\text{C}$		

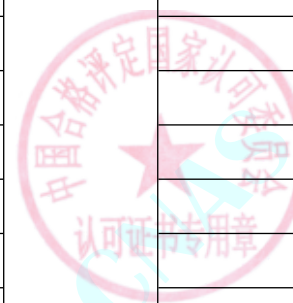


No. CNAS L0854

第 6 页 共 127 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
				K: (-200~0)°C	U=0.16°C		
				K: (0~1000)°C	U=0.10°C		
				K: (1000~1372)°C	U=0.12°C		
				T: (-250~0)°C	U=0.16°C		
				T: (0~400)°C	U=0.06°C		
				E: (-250~-100)°C	U=0.10°C		
				E: (-100~1000)°C	U=0.06°C		
				R: (-20~0)°C	U=0.60°C		
				R: (0~1700)°C	U=(0.44~0.20)°C		
				S: (-20~0)°C	U=0.30°C		
				S 型: (0~1700)°C	U=(0.21~0.12)°C		
				B: (600~800)°C	U=0.20°C		
				B: (800~1000)°C	U=0.15°C		
				B: (1000~1800)°C	U=0.12°C		
				C: (0~1000)°C	U=0.18°C		
				C: (1000~2300)°C	U=(0.16~0.38)°C		
				N 型: (-200~0)°C	U=0.12°C		
				N 型: (0~1300)°C	U=0.06°C		
				Pt100: (-200~0)°C	U=0.06°C		



No. CNAS L0854

第 7 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
22	*Recorders for Industrial process Measurement	Temperature	V.R. of the Recorders for Industrial process Measurement JJG74	Pt100:(0~400)°C	U=0.06°C		
				Pt100:(400~800)°C	U=0.06°C		
				Type Cu50: (-50~150) °C	U=0.1°C		
				J: (-200~0)°C	U=0.10°C		
				J: (0~800)°C	U=0.10°C		
				J: (800~1200)°C	U=0.10°C		
				K: (-200~0)°C	U=0.16°C		
				K: (0~1000)°C	U=0.10°C		
				K: (1000~1300)°C	U=0.12°C		
				T: (-250~0)°C	U=0.16°C		
				T: (0~400)°C	U=0.06°C		
				E: (-250~-100)°C	U=0.10°C		
				E: (-100~1000)°C	U=0.06°C		
				R: (-20~0)°C	U=0.60°C		
				R: (0~1700)°C	U=(0.44~0.20)°C		
				S: (-20~0)°C	U=0.30°C		
				S: (0~1700)°C	U=(0.21~0.12)°C		
				B: (600~800)°C	U=0.20°C		
				B: (800~1000)°C	U=0.15°C		



No. CNAS L0854

第 8 页 共 127 页

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

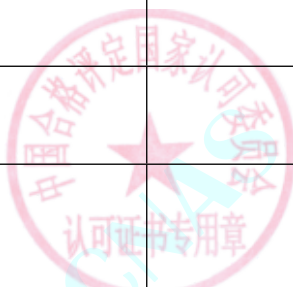
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				B:(1000~1800)℃	U=0.12℃		
				C:(0~1000)℃	U=0.18℃		
				C:(1000~2300)℃	U=(0.16~0.38)℃		
				N:(-200~0)℃	U=0.12℃		
				N:(0~1300)℃	U=0.06℃		
				Pt100:(-200~0)℃	U=0.06℃		
				Pt100:(0~400)℃	U=0.06℃		
				Pt100:(400~800)℃	U=0.06℃		
				Cu50:(-50~150)℃	U=0.1℃		
23	*imitate temperature indicators	Temperature	verification regulation of imitate temperature indicators JJG 951	IPRT: (-200~850)℃	U=1.2℃		
				thermocouple : (-200~1600)℃	U=1.0℃		
24	*Temperature Calibrator	Temperature	Calibration Specification of Temperature Indicators and Simulators by Electrical Simulation and Measurement JJF1309	IPRT:(-200~850)℃	U= (0.002~0.086) °C		
				thermocouple : (-200~2300)℃	U= (0.010~0.11) °C		
25	*environment test equipment	Temperature	Calibration Specification for Environment Testing Equipment for Temperature and Humidity Parameters JJF 1101	(-80~100)℃	U=0.15℃		
				(100~300)℃	U=0.30℃		
		Relative humidity		10%~98%	U=1.6%		
26	*Thermostatic bath	Temperature	Measurement and Test Norm of Metrological Characteristics of	Uniformity: (-196~-10) °C	U=0.003℃		



No. CNAS L0854

第 9 页 共 127 页

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

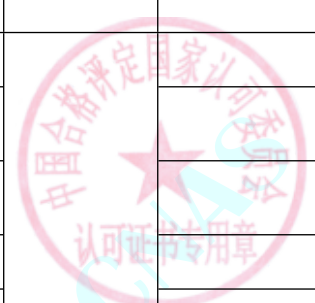
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Thermostatic Baths for Temperature Calibration JJF 1030		Uniformity: (-10~ 40) °C	U=0.26mK		
				Uniformity: (40~ 660) °C	U=0.003 °C		
				volatility: (-196~ 10) °C	U=0.005 °C		
				volatility: (-10~40) °C	U=0.27mK		
				volatility: (40~660) °C	U=0.005 °C		
		Rate of temperature change		(0~5) °C/min	U=0.03 °C/min		
27	*Box-type Resistance Furnace	Temperature	C.S.of the Box-type Resistance Furnace JJF1376	Deviation: (50~ 1100) °C	U=1.4 °C		
				Stability: (50~1100) °C	U=1.4 °C		
				Uniformity: (50~ 1100) °C	U=1.8 °C		
				Maximum temperature difference: (50~ 1100) °C	U=1.8 °C		
28	*Thermometers of Clinic Autoclave	Temperature	Calibration Specification for Thermometers of Clinic Autoclave JJF 1308	(-40~140) °C	U=0.3 °C		
29	*microwave digestion instrument	Temperature	Calibration Specification for Temperature Parameters of Microwave Digestion Instrument JJF 2143	(30~240) °C	U=0.3 °C		
30	Standard Platinum-	Temperature	Standard Platinum-10% Rhodium/Platinum	419.527 °C	U=0.5 °C		

No. CNAS L0854

第 10 页 共 127 页



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

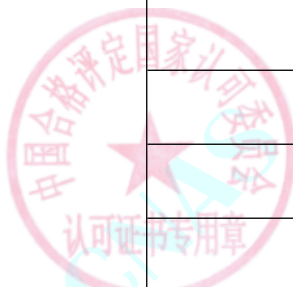
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Rhodium10 /Platinum Thermocouple		Thermocouple JJG 75	660.323℃	U=0.5℃		
				1084.62 (30~240)℃	U=0.4℃		
31	Standard Platinum-30% Rhodium/Platinum-6% Rhodium Thermocouple	Temperature	Verification Regulation of the Standard Platinum-30% Rhodium/Platinum-6% Rhodium Thermocouple JJG 167	(1100~1500)℃	U=1.9℃		
32	*Short Base Metal Thermocouples	Temperature	Calibration Specification for Short Base Metal Thermocouples JJF1991	(-40~300)℃	U=0.3℃		
				(300~1000)℃	U=1.1℃		
33	*Continuous Thermocouples	Temperature	Calibration Specification for Continuous Thermocouples JJF1631	(80~300)℃	U=1.4℃		
				(300~800)℃	U=2.1℃		
34	*Base Metal Thermocouple	Temperature	Calibration Specification for Base Metal Thermocouple JJF 1637,Standard Test Method for Calibration of Thermocouples By Comparison Techniques ASTM E220	(-40~600)℃	U=0.2℃	(1200-1300) ℃ is only applicable to ASTM E220.	
				(600~1200)℃	U=0.9℃		
				(1200~1300)℃	U=1.2℃		
35	working noble metal thermocouple	Temperature	Working Noble Metal Thermocouples JJG 141,Standard Test Method for Calibration of Thermocouples By Comparison Techniques ASTM E220	S、R: (0~300)℃	U=0.2℃		
				S、R: (300~1100) ℃	U=0.5℃		
				S、R: (1100~1300) ℃	U=1.1℃		
				B: (1100~1200)℃	U=2.0℃		
				B: (1200~1500)℃	U=2.1℃		



No. CNAS L0854

第 11 页 共 127 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	*Sheathed Thermocouples	Temperature	Calibration Specification for Sheathed Thermocouples JJF 1262, Standard Test Method for Calibration of Thermocouples By Comparison Techniques ASTM E220	(-40~600)°C	U=0.2°C	(1100-1300)°C is only applicable to ASTM E220	
				(600~1100)°C	U=0.9°C		
				(1100~1300)°C	U=1.2°C		
37	*thermocouple calibration furnace	Temperature	Testing Specification of Temperature Uniformity in Thermocouple Calibration Furnaces JJF 1184	(300~1500)°C	U=0.3°C		
38	*thermocouple Compensating Cables	Temperature	Standard for Calibration of Thermocouple Compensating Cables JJF (Xin) 46	(-40~200) °C	U=0.04°C		
39	*Auto-measuring system of thermocouples and resistance thermometers	Temperature	Calibration Specification for Auto-measuring System of Thermocouples and Resistance Thermometers JJF 1098	(0~100)°C	U=0.052°C		
				(100~300)°C	U=0.090°C		
				(300~1200)°C	U=0.5°C		
		Parasitic potential		(0~10) μV	U=0.04μV		
40	*Temperature block calibrators	Temperature	C.G. of the Temperature block calibrators JJF1257	Deviation: (-80~400) °C	U=0.12°C		
				Deviation: (400~1100) °C	U=0.6°C		
				Volatility (-80~400) °C	U=0.01°C		
				Volatility (400~1100) °C	U=0.2°C		



No. CNAS L0854

第 12 页 共 127 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
				Temperature differences between wells: (-80~400) °C	U=0.01 °C		
				Temperature differences between wells: (400~1100) °C	U=0.2 °C		
				Axial temperature uniformity: (-80~400) °C	U=0.02 °C		
				Axial temperature uniformity: (400~1100) °C	U=0.3 °C		
41	Precision dew-point hygrometers	Dew point temperature	Verification Regulation of Precision dew-point hygrometers JJG 499	(-90~70) °C	U=0.12 °C		
42	*Mechanical Thermo-hygrometers	Temperature	Verification Regulation of Mechanical Thermo-hygrometers JJG 205	(5~50) °C	U=0.4 °C		
		Relative humidity		30%~50%	U=1.0%		
				50%~70%	U=1.2%		
				70%~95%	U=1.4%		
43	*Digital Temperature-hygrometers	Temperature	Calibration Specification for Digital Temperature-hygrometers JJF1076	(-30~95) °C	U=0.16 °C		
		Relative humidity		10%~95%	U=0.6%~0.8%		
44	Precision dew-point hygrometers	Dew point temperature	Calibration Specification for Resistance and Capacitance Dew Point Hygrometer JJF 1272	(-80~-50) °C	U=0.4 °C		
				(-50~20) °C	U=0.3 °C		
45	Electric	Temperature	Verification Regulation of	(0~50) °C	U=0.04 °C		



No. CNAS L0854

第 13 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Ventilation Psychrometer	Relative humidity	Electric Ventilation Psychrometer JJG 993	20%~50%	U=1.0%		
				50%~70%	U=1.3%		
				70%~95%	U=1.5%		
46	*Temperature and Humidity Standard Chambers	Temperature	Calibration Specification for Temperature and Humidity Standard Chambers JJF 1564	Uniformity:(0~50)°C	U=0.05°C		
				Stability:(0~50)°C	U=0.02°C		
		Rate of temperature change		(0~5)°C/min	U=0.03°C/min		
		Relative humidity		Uniformity:10%~90%	U=0.5%		
				Stability:10%~90%	U=0.1%		
		Rate of relative humidity change		0%/min~10%/min	U=0.2%/min		
47	Thermometers of WBGT-index Meters	Temperature	Calibration Specification for Thermometers of WBGT-index Meters JJF 1407	(0~130)°C	U=0.2°C		
48	Refrigerator thermometer	Temperature	Calibration Specification for the Refrigerator Thermometer JJF(LIAO) 377	(-40~30)°C	U=0.3°C		
49	*temperature Data Acquisition Instruments	Temperature	Calibration Specification of Temperature Data Acquisition Instruments JJF 1366	(-50~300)°C	U=0.05°C		
50	Thermal imager	Temperature	Calibration specification for thermal imagers JJF1187	(-30~62.5)°C	U=0.5°C		
				(62.5~600)°C	U _{rel} =0.8%		



No. CNAS L0854

第 14 页 共 127 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	Radiation Thermometer	Temperature	Radiation Thermometers JJG 856	$(-30 \sim 62.5) ^\circ\text{C}$	$U=0.5 ^\circ\text{C}$		
				$(62.5 \sim 2200) ^\circ\text{C}$	$U_{\text{rel}}=0.8\%$		
52	*Infrared Thermometers for Measurement of Human Temperature	Temperature	Calibration Specification of Infrared Thermometers for Measurement of Human Temperature JJF 1107	$(30 \sim 50) ^\circ\text{C}$	$U=0.16 ^\circ\text{C}$		
53	*Blackbody radiation source	Temperature	Verification Regulation of Reference Blackbody Radiator for Radiation Thermometry form $-50 ^\circ\text{C}$ $\sim 300 ^\circ\text{C}$ JJG (Jungong) 180, Bath Reference Blackbody Radiator for Radiation Thermometry form $-50 ^\circ\text{C}$ $\sim 1000 ^\circ\text{C}$ JJG (Jungong) 162, Verification Regulation of Reference	$(-50 \sim 20) ^\circ\text{C}$	$U=0.3 ^\circ\text{C}$		
				$(30 \sim 300) ^\circ\text{C}$	$U=0.8 ^\circ\text{C}$		
				$(400 \sim 500) ^\circ\text{C}$	$U=1.2 ^\circ\text{C}$		
				$(600 \sim 900) ^\circ\text{C}$	$U=1.9 ^\circ\text{C}$		
				$(1000 \sim 1200) ^\circ\text{C}$	$U=1.5 ^\circ\text{C}$		
				$(1300 \sim 1600) ^\circ\text{C}$	$U=1.8 ^\circ\text{C}$		
				$(1700 \sim 2000) ^\circ\text{C}$	$U=2.1 ^\circ\text{C}$		



No. CNAS L0854

第 15 页 共 127 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
			Blackbody Radiator for Radiation Thermometry form 800℃~3000℃ JJG (Jungong) 161, Calibration Specification for Blackbody Radiation Sources of Radiation Thermometry from -10℃ to 200℃ JJF1552, Calibration Specification for Thermotechnical Blackbody Radiation Sources from 200℃ to 2000℃ JJF(Lu)140	(2100~3000)℃	U=3.3℃		
54	*Liquid Constant Temperature Testing Equipment	Temperature	Measurement Specification for Temperature Performance of Liquid Constant Temperature Testing Equipment JJF2019	Deviation: (-80~300)℃	U=0.2℃		
				Uniformity: (-80~300)℃	U=0.02℃		
				Stability: (-80~300)℃	U=0.04℃		
55	*Salt Mist Testing Chamber	Temperature	Calibration Specification for Salt Mist Testing Chamber JJF 2168	(0~100)℃	U=0.20℃		
		Sedimentation rate		(0~3)mL/(h • 80cm ²)	U=0.13mL/(h • 80cm ²)		
56	*Dissolution Testers	Temperature	C.S.for Dissolution Testers JJF(Zhe)1096	(0~50)℃	U=0.20℃		
		Rotating speed		(20~300)r/min	U _{rel} =0.9%		
57	temperature calibration devices for Polymerase Chain reaction analyzers	temperature	Calibration Specification for Temperature Calibration Devices for Polymerase Chain Reaction Analyzers JJF 1821	(0~120)℃	U=0.04℃		



No. CNAS L0854

第 16 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
58	*Cold Storage and Cold Storage of Drug Circulation	Temperature	Standard Specification for Calibration of Temperature Field Test of Cold Storage and Cold Storage of Drug Circulation JJF(Hei)04	(2~10)℃	U=0.16℃		
59	Passive Medical Cold Boxes	Temperature	Calibration Specification for Temperature Parameter of Passive Medical Cold Boxes JJF 1676	(-20~20)℃	U=0.13℃		
60	*Dry Block Digester	Temperature	Verfication Regulation of Dry Block Digester JJG（Yue）029	(0~300) ℃	U=0.2℃		
		time		(0~60) min	U=0.7s		
61	*Calibration device for disintegration time limit tester	temperature	Calibration specification for disintegration time limit tester JJF 1449	(0~100) ℃	U= (0.08~0.12) ℃		
		length		(0~150) mm	U=0.06mm		
		Time		Timer time: (1~600) s	U=0.5s		
				Disintegration time:513s	U _{rel} =11%		
62	*Fiber-optic Distributed Thermometers	Temperature	Calibration Specification for Fiber-optic Distributed Thermometers JJF1630	(-20~100) ℃	U=0.3℃		
63	*Hot Air Aging Test Equipments	Temperature	Calibration Specification for Hot Air Aging Test Equipments JJF(Su)265	(25~500) ℃	U=0.2 ℃		
		ventilation rate		(1~200) times /h	U=1 time/h		
64	*Vacuum Ovens	Temperature	Calibration Specification for Vacuum Ovens JJF(Ming)1093	(25~300) ℃	U=0.6℃		
		pressure		Absolute pressure: (0.1~101) kPa	U=1.0kPa		
65	*Constant Temperature and	Temperature	Calibration Specification for Environment Parameters of	(5~30) ℃	U=0.16℃	Accredited only for level	



No. CNAS L0854

第 17 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Humidity Laboratories	Relative humidity	Constant Temperature and Humidity Laboratories	30%~80%	$U=1.3\%$	7 and below	
		Illumination	JJF2058	(20~1000) lx	$U=83$ lx		
		Wind speed		(0.2~20.0) m/s	$U=0.24$ m/s		
		Noise		(40~120) dB	$U=4.0$ dB		
		Pressure		(0.1~40) Pa	$U=1.0$ Pa		
		Cleanliness		(10~3.52×10 ⁷) per/m ³	$U_{rel}=20\%$		
66	*Drug Stability Illumination Test Chambers	Temperature	Calibration Specification of Drug Stability Illumination Test Chambers JJF (Chuan) 175	(10~65) °C	$U=0.16^{\circ}\text{C}$		
		Relative humidity		10%~90%	$U=2.0\%$		
		illumination		(10~10000) lx	$U=1.7 \times 10^2$ lx		
		irradiance		(50~100) μW/cm ²	$U=12$ μW/cm ²		
67	*Cold Chain Logistics Facilities and Equipment	Temperature	Calibration Specification for Temperature and Humidity Parameters of Cold Chain Logistics Facilities and Equipment JJF (Zhe) 1200	(-30~30) °C	$U=0.7^{\circ}\text{C}$		
		Relative humidity		30%~95%	$U=1.4\%$		
68	*Ozone Aging Test Chambers	Temperature	Calibration Specification for Ozone Aging Test Chambers JJF2051	(0~100) °C	$U=0.7^{\circ}\text{C}$		
		Relative humidity		10%~100%	$U=2.4\%$		
		Concentration		(0~400) μmol/mol	$U=(0.19\sim27)$ μmol/mol		
69	*Temperature/Humidity/Vibration Combined	Temperature	Calibration Specification for Temperature/Humidity/Vibration Combined Environmental	(-80~200) °C	$U=0.3^{\circ}\text{C}$		
		Relative humidity		10%~98%	$U=1.0\%$		



No. CNAS L0854

第 18 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Environmental Testing System	wind speed	Testing System JJF1270	(0.5~30) m/s	$U=0.42\text{m/s}$		
		acceleration amplitude		(10~200) m/s ²	$U_{\text{rel}}=5\%$		
70	*Portable Humidity Generators	Temperature	Calibration Specification for Portable Humidity Generators JJF2176	(5~50) °C	$U=0.12\text{°C}$		
		Relative humidity		5%~95%	$U=0.42\%\sim0.92\%$		
71	*Divided Flow Humidity Generator	Temperature	Calibration Specification for Divided Flow Humidity Generator JJF (Jungong) 42	(5~50) °C	$U=0.12\text{°C}$		
		Relative humidity		10%~90%	$U=1.6\%$		
		Dew point temperature		(-70~20) °C	$U=0.30\text{°C}$		
72	Low-frost Point Humidity Generators	Dew point temperature	Calibration Specification for Low-frost Point Humidity Generators JJF2192	(-75~-70) °C	$U=0.28\text{°C}$		
				(-70~-50) °C	$U=0.18\text{°C}$		
				(-50~-20) °C	$U=0.10\text{°C}$		
				(-20~20) °C	$U=0.20\text{°C}$		
73	*Ice Point Thermostats	Temperature	Calibration Specification for Ice Point Thermostats JJF2188	0°C	$U=0.015\text{°C}$		
74	Precision Measuring Instruments of Platinum Resistance Thermometers	Temperature	Calibration Specification for Precision Measuring Instruments of Platinum Resistance Thermometers JJF2189	Temperature measurement bridge method: (-196~660)°C	$U=1.8\text{mK}$		
				Standard resistance method: (-196~660)°C	$U=1.5\times10^{-4}\text{ }\Omega$		



No. CNAS L0854

第 19 页 共 127 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
75	*Gas-Phase Liquid Nitrogen Storage System	Temperature	Calibration Specification for Gas-Phase Liquid Nitrogen Storage System of Temperature Parameters JJF (Chuan) 220	(-196~0) °C	U=0.32 °C		
76	*Pharmaceutical Vacuum Freeze Dryer	Temperature	Calibration Specification for Pharmaceutical Vacuum Freeze Dryer JJF (Chuan) 190	deviation: (-55~60) °C	U=0.2°C		
				Uniformity: (-55~60) °C	U=0.2°C		
		pressure		Absolute pressure: (1~100) Pa	U _{rel} =15%		
77	*Temperature Measurement System	Temperature	Calibration Specification for Temperature Measurement System 2023- JJF (Xin) 101	(-80~400) °C	U=0.05°C		
				(400~1100) °C	U=0.6°C		
78	*Carbon Dioxide Incubators	Temperature	Calibration Specification of Carbon Dioxide Incubators JJF (Jin) 127	(15~55) °C	U=0.20°C		
		Concentration		0%~20%	U=0.52%		
79	*High Temperature Thermostatic Baths	Temperature	Calibration Specification of High Temperature Thermostatic Baths 2025— JJF (Lu) 209	Temperature uniformity of heat pipe slots: (300~660)°C	U=9mK		
				Temperature uniformity of salt baths: (300~660) °C	U=5mK		
				Stability:(300~660)°C	U=5mK		
80	*Rotary Evaporators	Temperature	Calibration Specification for Rotary Evaporators JJF (Meng) 082	(25~100) °C	U=0.4°C		
		pressure		(-100~0) kPa	U=0.08kPa		
		rotational speed		(20~200) r/min	U=0.7r/min		




No. CNAS L0854

第 20 页 共 127 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
81	*Insulating Glass Dew Point Analyzer	Temperature	Calibration Specification for Insulating Glass Dew Point Analyzer JJF (Min) 1112	Semiconductor refrigeration: (-60~-5) °C	U=0.4℃		
				Dry ice refrigeration: (-60~-5) °C	U=0.1℃		
82	*Medicinal Sterilizing and Drying Tunnel	Temperature	Calibration Specification for Temperature Parameters of Medicinal Sterilizing and Drying Tunnel JJF (JIN) 110	(100~400) °C	U=1.5℃		
83	*Weighing System of Constant Temperature and Humidity	Temperature	Calibration Specification for Weighing System of Constant Temperature and Humidity JJF(Ning)46	(10~50) °C	U=0.13℃		
		Relative humidity		10%~95%	U=1.9%		
		Mass		(0.001~220) g	U=0.07mg		
84	*DC Bridges for Measuring Temperature	Resistance	Verification Regulation of the DC bridges for Measuring Temperature JJG 484	1m Ω ~0.1 Ω	U _{rel} =7.9×10 ⁻⁴ ~7.3×10 ⁻³		
				(0.1~1) Ω	U _{rel} =1.9×10 ⁻⁴ ~7.9×10 ⁻⁴		
				(1~10) Ω	U _{rel} =1.2×10 ⁻⁵ ~8.1×10 ⁻⁵		
				10 Ω ~1M Ω	U _{rel} =3.4×10 ⁻⁶ ~8.5×10 ⁻⁶		
3、Mechanics measuring instrument							
1	weights	mass	weights JJG99	(1~500)mg	U=(0.0011~0.0025)mg		
				(1~500)g	U=(0.004~0.08)mg		
				(1~20)kg	U=(0.26~7)mg		
				(20~2000)kg	U=7mg~11g		



№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
2	*Analogue indicating weighing instruments	Mass	Verification Regulation of Analogue Indicating Weighing Instruments JJG 13	5g~10kg, $e=(10\sim50)$ g	$U=(1.2\sim6)$ g		
				(10~120)kg, $e=(100\sim500)$ g	$U=(12\sim59)$ g		
3	*Non-self-indicating Weighing Instruments	Mass	Verification Regulation of Non-self-indicating Weighing Instruments JJG 14	(0.005~100)kg, $e=(5\sim50)$ g	$U=(0.6\sim9)$ g		
				(100~1000)kg, $e=(50\sim500)$ g	$U=(6\sim82)$ g		
				(1~10)t, $e=(1\sim5)$ kg	$U=(0.12\sim0.9)$ kg		
				(10~50)t, $e=(10\sim20)$ kg	$U=(1.2\sim4)$ kg		
4	*Digital Indicating Weighing Instruments	Mass	Verification Regulation of Digital Indicating Weighing Instruments JJG 539	1g~30kg, $e=(1\sim10)$ g	$U=(0.06\sim1.8)$ g		
				(30~1000)kg, $e=(20\sim500)$ g	$U=(1.2\sim65)$ g		
				(1~10)t, $e=(1\sim5)$ kg	$U=(0.06\sim0.7)$ kg		
				(10~100)t, $e=(10\sim20)$ kg	$U=(0.6\sim6)$ kg		
				(100~200)t, $e=(50\sim100)$ kg	$U=(2.9\sim13)$ kg		
5	*Automatic instruments for weighing road vehicle in motion	mass	Verification Regulation of Automatic instruments for road vehicle in motion JJG 907	(0.1~150)t	$U_{rel}=0.6\%$		
6	*Continuous totalizing automatic weighing instruments(Belt weigher)	mass	Verification Regulation of Continuous totalizing automatic weighing instruments (Belt weigher) JJG 195	(0.02~6000)t/h	$U_{rel}=0.08\%$		



No. CNAS L0854

第 22 页 共 127 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	*Automatic gravimetric filling instruments	mass	Verification Regulation of Automatic gravimetric filling instruments JJG 564	0.1g~100t	$U_{rel}=0.08\%$		
8	*Discontinuous totalizing automatic instrument	mass	Verification Regulation of Discontinuous totalizing automatic Instrument JJG 648	50kg~100t	$U_{rel}=0.06\%$		
9	*Mechanical Balances	mass	Verification Regulation for Mechanical Balances JJG 98	1mg~20g, $d=0.01\text{mg}$	$U=(0.0023\sim0.008)\text{mg}$		
				1mg~20g, $d=0.1\text{mg}$	$U=(0.018\sim0.3)\text{mg}$		
				1mg~20kg, $d=(0.2\sim100)\text{mg}$	$U=(0.024\sim6)\text{mg}$		
10	*Table Torsion Balance	mass	Verification Regulation for Table Torsion Balance JJG 1130	1mg~100g	$U=(1.2\sim2.8)\text{mg}$		
11	*electronic balance	mass	Calibration Specification for Electronic Balances JJF 1847	1mg~500g, $e=(0.001\sim0.1)\text{mg}$	$U=(0.001\sim0.25)\text{mg}$		
				500g~5kg, $e=(1\sim10)\text{mg}$	$U=(0.6\sim8)\text{mg}$		
				(5~20)kg, $e=(20\sim50)\text{mg}$	$U=(1.2\sim30)\text{mg}$		
				(20~100)kg, $e=(0.1\sim0.2)\text{g}$	$U=(0.006\sim0.16)\text{g}$		
				(100~1000)kg, $e=(1\sim5)\text{g}$	$U=(0.06\sim1.6)\text{g}$		
12	*mass comparators	mass	Calibration specification for mass comparators JJF1326	1mg~2000kg, $e=0.1\mu\text{g}\sim10\text{g}$	$U_R=0.06\mu\text{g}\sim5.8\text{g}$, $U_E=0.06\mu\text{g}\sim5.8\text{g}$, $U_S=1.0\mu\text{g}\sim5.9\text{g}$		
13	*Torsion Balance	mass	Verification Regulation of Torsion Balance JJG 46	1mg~100mg	$U=(0.002\sim0.005)\text{mg}$		



No. CNAS L0854

第 23 页 共 127 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	*Table Balance	mass	V.R.of Table Balance JJG 156	1mg~5kg	$U=(0.012\sim0.6)g$		
15	*Relative Density Balance for Liquid	relative density	Verification Regulation of Relative Density Balance for Liquid JJG 171	0.1~2.0000	$U=0.00011$		
16	*Nuclear Conveyor Belt Scale	mass	Calibration Specification for Nuclear Conveyor Belt Scales JJF 1848	(0.02~1000)t/h	$U_{rel}=0.08\%$		
17	*Thermogravimetric Moisture Meters	mass	Verification Regulation of Thermogravimetric Moisture Meters JJG 658	1mg~2000g	$U=(0.6\sim6)mg$		
18	*Digital Weighing Indicators(Weighing Indicators)	Number of verification scale intervals	Verification Regulation of Digital Weighing Indicators(Weighing Indicators) JJG 649	100~10000	$U_{rel}=0.001\%\sim0.012\%$		
19	*Pressure Transmitter	Pressure	Verification Regulation of Pressure Transmitter JJG882	(-0.1~250)MPa	$U=0.016\%FS$	On-site calibration limit Class 0.1 and below	
20	*Digital Pressure Gauges	Pressure	Verification Regulation of Digital Pressure Gauges JJG875	(-0.1~250)MPa	$U=0.008\%FS$	On-site calibration limit Class 0.1 and below	
21	*Pressure Transducer(static)	Pressure	Verification Regulation of Pressure Transducer(Static) JJG860	(-0.1~250)MPa	$U=0.04\%FS$	On-site calibration limit Class 0.1 and below	



No. CNAS L0854

第 24 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
22	Standard Piston Gauge	Pressure	Verification Regulation of Liquid-medium Piston Gauge JJG59	(0.06~250)MPa	$U_{rel}=0.015\%$		
23	*Elastic Element Pressure Gauges	Pressure	Verification Regulation of Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use JJG52	(-0.1~250)MPa	$U=0.3\%FS$		
24	*Elastic Element Precise Pressure Gauges	Pressure	Verification Regulation of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG49	(-0.1~250)MPa	$U=0.08\%FS$		
25	*Liquid Level Measuring Device	Length	Verification Regulation of Liquid Level Measuring Device JJG971	Direct (0~1.8) m	$U=0.9mm$		
				Simulate: (0~20) m	$U=2.3mm$		
26	*Pressure Controllers	Pressure	Verification Regulation of Pressure Controllers JJG544	(-0.1~7)MPa	$U=0.3\%FS$		
27	Industrial Thermal Conductivity Vacuum Gauges	Pressure	Calibration Specification for Industrial Thermal Conductivity Vacuum Gauges JJF1050	$(1 \times 10^{-3} \sim 1 \times 10^5)Pa$	$U_{rel}=5\% \sim 0.3\%$		
28	Ionization Vacuum Gauge	Pressure	Calibration Specification for Ionization Vacuum Gauge JJF1062	$(1 \times 10^{-3} \sim 9 \times 10^{-1})Pa$	$U_{rel}=5\% \sim 0.6\%$		
29	Piezoresistive Vacuum Gauge	Pressure	Verification Regulation of Piezoresistive Vacuum Gauge JJG932	$(5 \times 10^2 \sim 1 \times 10^5) Pa$	$U_{rel}=5\% \sim 0.3\%$		
30	Special weight	mass	Calibration Specification for Special Weight JJF (LU) 194	1mg~20kg	$U=(0.0011 \sim 26)mg$		
				(20~1000)kg	$U=(0.13 \sim 4.4)g$		



No. CNAS L0854

第 25 页 共 127 页

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

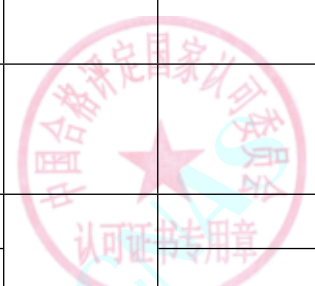
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
31	*Electromagnetic balance	mass	Calibration Specification for Electromagnetic Balances JJF 1940	(100~1000)kg, d=10mg~1g	$U=5.8\text{mg}\sim 0.58\text{g}$		
32	*Automatic Quantitative Loading Vehicle Systems	mass	Verification Regulation of Automatic Quantitative Loading Vehicle Systems JJG 1170	50kg~100t	$U_{\text{rel}}=0.05\%$		
33	*Concrete Batching Scales	mass	Verification Regulation of Concrete Batching Scales JJG 1171	5kg~10t	$U_{\text{rel}}=0.07\%$		
34	*Taking Blood Electronic Scale	Mass	Verification Regulation of Taking Blood Electronic Scale JJG 815	100g~2kg	$U=(0.12\sim 0.16)\text{g}$		
35	*Steelyard scales	Mass	Verification Regulation of Steelyard scales JJG 17	25g~250kg	$U=(0.12\sim 59)\text{g}$		
36	*Electronic Price Computing Scales	mass	Verification Regulation of Electronic Price Computing Scales (for Trial Implementation) JJG 1204	1g~100kg, $e=(1\sim 50)\text{g}$	$U=(0.12\sim 8.2)\text{g}$		
37	*for Automatic Ash Determination Equipment	mass	Calibration Specification for Automatic Ash Determination Equipment JJF 2217	weighing: 1mg~2kg	$U=(0.003\sim 1.0)\text{mg}$		
				Ash : (0.01~35)%	$U=1.0\%$		
38	*Electronic Solid Density Balances	mass	Calibration Specification for Electronic Solid Density Balances JJF 2166	1g~20kg, $e=1\text{mg}\sim 10\text{g}$	$U=4\text{mg}\sim 14\text{g}$		
		density		(7.88~8.05) g/m ³	$U=(0.004\sim 0.014)\text{ g/m}^3$		



No. CNAS L0854

第 26 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
39	*Solid object	mass	Calibration specification for Solid object mass SDIM/CJGLY05	1g~3000kg	$U=0.58\text{mg}\sim 0.93\text{kg}$	Calibration of mass values is only applicable to solid objects used with supporting dedicated equipment or independently	
40	Tachometer	Rotational speed	Verification Regulation of Tachometer JJG 105	(20~30000)r/min	$U_{\text{rel}}=6.6\times 10^{-5}$		
41	Constant Revolution Speed Sources	Speed	Calibration Specification for Constant Revolution Speed Sources JJF 2121	(100~250) r/min	$U_{\text{rel}}=0.2\%$		
42	Electromagnetic Sensors of Rotational Speed	Speed	Calibration Specification for Electromagnetic Sensors of Rotational Speed JJF 1871	(30~10000) r/min	$U_{\text{rel}}=0.05\%$		
43	elevator overspeed governor testers	speed	Calibration Specification for Elevator Overspeed Governor Testers JJF 1374	(1~19.9999)m/s	$U_{\text{rel}}=0.4\%$		
44	Dynamometer for measuring instrument	force	Calibration Specification for Working Force Measuring Machines for Special Purposes JJF 1134	(1.5~15)N	$U_{\text{rel}}=0.5\%$		
45	Standard dynamometer	Force	V.R of Standard dynamometer JJG 144	0.2N~600kN	$U_{\text{rel}}=0.015\%$		
				600kN~10MN	$U_{\text{rel}}=0.15\%$		
46	Work dynamometer	Force	V.R of Work dynamometer JJG 455	0.2N~10MN	$U_{\text{rel}}=0.2\%$		

No. CNAS L0854

第 27 页 共 127 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
47	Force cell	Force	V.R of Force cell JJG 391	0.2N~600kN	$U_{rel}=0.015\%$		
				600kN~10MN	$U_{rel}=0.15\%$		
48	Weighting cell	mass	V.R of Load cell JJG 669	(0.01~50)t	$U_{rel}=0.07\%$		
49	Build-up force standard machine	Force value	Verification Regulation of Build-up Force Standard Machines JJG 1116	(1~1000) kN	$U_{rel}=0.05\%$		
50	*Electronic Universal Testing Machine	Force	Specification for force value calibration of testing machines ASTM E4, Specification for calibration of displacement	1N~2MN	$U_{rel}=0.15\%$		
		Speed		(0.1~600)mm/min	$U_{rel}=0.3\%$		
		Displacement		(1~1000)mm	$U_{rel}=0.4\%$		



No. CNAS L0854

第 28 页 共 127 页

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

在线扫码获取验证

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Coaxiality	measuring systems and devices for material testing machines ASTM E2309/E2309M,Calibration Specification for Test Structures and Specimen Alignments under Tensile and Compressive Loads ASTM E1012,Calibration Specification for Rate of Material Testing Machine ASTM E2658,Testing of static uniaxial testing machines-part 1: Testing and calibration of force measuring systems for tension and/or pressure testing machines GB/T 16825.1,Metallic materials-calibration of static uniaxial testing machines-part 1: specification for calibration of tension pressure testing machines-force measurement systems ISO 7500-1,Metallic materials-calibration of static uniaxial testing machines-part 1: Specification for the calibration of force measurement systems for tension/pressure testing machines EN ISO7500-1,Tension and pressure testing machines-method of	0.5%~25%	U=1.0%		



在线扫码获取验证

No. CNAS L0854

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

No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
51	*Electro-hydraulic Servo Universal Testing Machine	Force	Calibration Specification for Force of Testing Machines ASTM E4, Calibration	0.1kN~2MN	$U_{rel}=0.15\%$		
			Specification for Test Structures and Specimen	2MN~3MN	$U_{rel}=0.35\%$		
		Moving Speed		(0.1~600)mm/min	$U_{rel}=0.3\%$		

CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT
SCHEDULE OF ACCREDITATION CERTIFICATE

No. CNAS L0854

第 30 页 共 127 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
		Coaxiality	Alignments under Tensile and Compressive Loads ASTM E1012, Testing of Static Uniaxial Testing Machines- part 1: Testing and calibration for Tension and (or) Pressure Testing Machines of Measuring Force Systems GB/T 16825.1, Calibration for Static Uniaxial Testing Machines of Metallic Materials Part 1: Calibration Specification for Tensile Pressure Testing Machines of Force Measurement Systems ISO 7500-1, Testing method for force measuring system of Tension, Compression Testing Machines JIS B7721, Calibration for Static Uniaxial Testing Machines of Metallic Materials Part 1: Calibration Specifications for Force Measurement Systems of Tensile/pressure Testing Machines EN ISO 7500-1, Check the Coaxiality of Metal Material and Testing Machine GB/T 34104, Calibration Specification for Rate of Material Testing Machine ASTM E2658, Verification Regulation of Electro-hydraulic Servo Universal	0.5%~25%	U=1.0%		

No. CNAS L0854

第 31 页 共 127 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
52	*Tension,Compression and Universal testing machine	Force	Calibration Specification for Displacement measuring system and apparatus of	1N~2MN	U _{rel} =0.15%		
		2MN~30MN		U _{rel} =0.35%			
		Displacement	Material Testing Machine ASTM	(10~1000)mm	U _{rel} =0.4%		

CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT
SCHEDULE OF ACCREDITATION CERTIFICATE



No. CNAS L0854

第 32 页 共 127 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
		Coaxiality	E2308/E2309M,Calibration Specification for Force of Testing Machines ASTM E4,Calibration Specification for Test Structures and Specimen Alignments under Tensile and Compressive Loads ASTM E1012,Testing of Static Uniaxial Testing Machines-part 1: Testing and calibration for Tension and (or) Pressure Testing Machines of Measuring Force Systems GB/T 16825.1,Calibration for Static Uniaxial Testing Machines of Metallic Materials Part 1: Calibration Specification for Tensile Pressure Testing Machines of Force Measurement Systems ISO 7500-1,Calibration for Static Uniaxial Testing Machines of Metallic Materials Part 1: Calibration Specifications for Force Measurement Systems of Tensile/pressure Testing Machines EN ISO 7500-1,Tension and pressure testing machines-methods for testing of force measuring systems JIS B7721,Check the coaxiality of metal material and testing machine GB/T 34104,Verification	0.5%~25%	U=1.0%		



No. CNAS L0854

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	
53	*Bending tester	Force	V.R of Bending Test Machine JJG 476	(600～6000) N	<i>U</i> _{rel} =0.4%			
		Testing Force Rate		(45～55) N/s	<i>U</i> _{rel} =0.5%			
54	hydraulic jack	Force	V.R of hydraulic jack JJG 621	(100～10000)kN	<i>U</i> _{rel} =0.6%			
55	*Pendulum impact testing machine	energy	Metallic materials-charpy pendulum impact test-part 2: Verification of testing machines ISO 148-2, Metallic materials-charpy pendulum impact test-part 2: Verification of testing machines EN ISO 148-2, Standard Test methods for notched bar impact testing of metallic , Appendix A1, A2 ASTM E23 Appendix A1, A2, Metallic materials-charpy impact test-verification of testing machines JIS B7722, Verification of pendulum-type impact testing machines GB/T 3808, Verification Regulation of Pendulum impact testing machine JJG 145	(10～300) J	<i>U</i> _{rel} =1.5%～1.7%			
		Pendulum torque		(50～450)Nm	<i>U</i> _{rel} =0.14%			
		Initial potential energy of pendulum		(150～750)J	<i>U</i> _{rel} =0.2%			
		Length		(4～50)mm	<i>U</i> =0.03mm			
				50mm～1m	<i>U</i> _{rel} =0.1%			
		Angle		0° ～180°	<i>U</i> =6'			
56	*Torsion Testing Machines	Torque	Standard Practice for Torque Calibration of Testing Machines ASTM E2624, Verification Regulation of Torsion Testing Machines JJG 269	(0.5～5000) Nm	<i>U</i> _{rel} =0.5%			Except for torsionmeter
		Angle		5° ～360°	<i>U</i> _{rel} =0.4%			



No. CNAS L0854

第 34 页 共 127 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
57	*falling weight impact testing machine	Weight	Calibration Specification for Falling Weight Impact Testing Machines JJF 1445	1g~10kg	$U_{rel}=0.2\%$	Accredited only for compliance with GB/T 5137.1 and GB/T 9639.1	
		Length		(0.1~5) m	$U_{rel}=0.2\%$		
58	*axial force fatigue testing machine	force	Testing of static uniaxial testing machines-part 1: Testing and calibration of force measuring systems for	Static force: (0.5~500) kN	$U_{rel}=0.4\%$		
				Cyclic forces: (0.5~500) kN	$U_{rel}=0.7\%$		



No. CNAS L0854

第 35 页 共 127 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
		Coaxiality	tension and/or pressure testing machines GB/T 16825.1,Metallic materials-calibration of static uniaxial testing machines-part 1: tensile pressure testing machines-calibration specification ISO 7500-1,Metallic materials-calibration of static uniaxial testing machines, part 1: Tension/pressure testing machines-calibration specification for force measurement systems EN ISO 7500 -1,Calibration specification for force values of testing machines ASTM E4,Metal material testing machine loading coaxiality test GB/T 34104,Specification for calibration of test structures and specimen alignments under tensile and compressive loads ASTM E1012,Specification for constant amplitude dynamic force calibration of axial fatigue testing machines ASTM E467,Specification for dynamic force calibration in uniaxial fatigue testing of	0.5%~25%	U=1.0%		



No. CNAS L0854

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

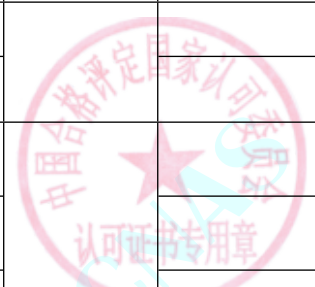
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
59	*Extensometers	Lenth	Metallic materials- calibration of extensometers systems used in uniaxial testing ISO 9513, Metallic materials- calibration of extensometers systems used in uniaxial testing EN ISO 9513, Standard practice for calibration and classification of extensometer system ASTM E83, Metallic materials — Calibration of extensometers systems used in uniaxial testing GB/T 12160, Verification Regulation of Extensometers JJG 762	Deformation: (0.1~0.3) mm	$U=0.6\mu\text{m}$		
				Deformation: (0.3~25) mm	$U_{\text{rel}}=0.17\%$		
				Gauge Length: (5~500) mm	$U=0.06\text{mm}$		
60	*High-Temperature Creep and Stress-Rupture Testing Machines	Force Value	Verification Regulation of High-Temperature Creep and Stress-Rupture Testing Machines JJG 276	(0.1~500)kN	$U_{\text{rel}}=0.15\%$		
		Coaxiality		0.5%~25%	$U=1.0\%$		
		Temperature		(100~1100) °C	$U=1.4^{\circ}\text{C}$		
		Time		(0.5~1)h	$U_{\text{rel}}=0.02\%$		
61	*Torquemeter	torque	V.R of Torquemeter JJG 797	(0.5~5000) Nm	$U_{\text{rel}}=0.12\%$		
				(5000~20000) Nm	$U_{\text{rel}}=0.3\%$		
62	Wrench with measurement of torque	torque	V.R of Wrench with measurement of torque JJG 707	(0.5~3000) Nm	$U_{\text{rel}}=0.5\%$		
63	*Hydraulic Torque Wrench		V.R.of Hydralic Torque Bench JJG (Xin) 16	(500~30000) Nm	$U_{\text{rel}}=0.6\%$		



No. CNAS L0854

第 37 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
64	*Electric and Pneumatic Toeque Wrenches		Calibration Specification for Electric and Pneumatic Toeque Wrenches JJF 1610	(5~5000) Nm	$U_{rel}=0.7\%$		
65	Standard torque wrench		Verification Regulation of Standard Torque Wrench JJG 1103	(0.5~5000) Nm	$U_{rel}=0.07\%$		
66	Standard torque meter	torque	Verification Regulation of Standard torque -meter JJG 557	(0.5~5000) Nm	$U_{rel}=0.07\%$		
				(5000~20000) Nm	$U_{rel}=0.4\%$		
67	Working torque meter	torque	Verification Regulation of Working torque meter JJG 1146	(0.5~5000) Nm	$U_{rel}=0.1\%$		
				(5000~20000) Nm	$U_{rel}=0.4\%$		
68	High Strength Bolt Testers	Torque	Calibration Specification for High Strength Bolt Testers JJF 1478	(1~2000) Nm	$U_{rel}=0.1\%$	Use only the parts method	
		Force value		(1~500) kN	$U_{rel}=0.2\%$		
69	Coast-down Time Testers	Speed	Calibration Specification for Coast-down Time Testers JJF 1360	(5~120)km/h	$U_{rel}=0.03\%$		
		Time		(1~150)s	$U=1.7ms$		
		Length		(10~500)mm	$U=0.03mm$		
70	*Equipment of Power Measuring	torque	Verification Regulation of Equipment of Power Measuring JJG 653	(1~3000)Nm	$U_{rel}=0.3\%$		
		Rotational speed		(100~10000)r/min	$U_{rel}=0.2\%$		
71	Measuring Vibration Instruments	Acceleration	Verification Regulation of Vibration Meters JJG 676	(1~100) m/s ² , (5~5000) Hz	$U_{rel}=2.1\%$		
		Speed		(2~300) mm/s, (5~1000) Hz	$U_{rel}=2.1\%$		
		Displacement		(0.02~2) mm, (5~400) Hz	$U_{rel}=2.4\%$		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Frequency		5Hz~5kHz	$U_{rel}=0.2\%$		
72	*Electrodynamic Vibration Testing Systems	Frequency	Verification Regulation of Electrodynamic Vibration Testing Systems JJG948	5Hz~2kHz	$U_{rel}=0.02\%$		
		Acceleration		(5~2000)Hz, (1~1000)m/s ²	$U_{rel}=3\%$		
		Distortion degree		(0.1~100)%	$U=3\%$		
		Power spectral density		(0.01~2)g ² /Hz	$U_{rel}=7\%$		
		Root Mean Square		(1~100)grms	$U_{rel}=2\%$		
73	*Particle Impact Noise Detection	Acceleration	Calibration Specification for PIND JJF1220	Vibration: (10~300)m/s ² , (5 Hz~2 kHz)	$U_{rel}=3\%$		
				Impact: (1×10 ² ~2×10 ⁴)m/s ²	$U_{rel}=5\%$		
74	Piezoelectric Accelerometer	Acceleration	Verification Regulation for Piezoelectric Accelerometer JJG 233	Reference point: (0.1~100)m/s ² , 160Hz	$U_{rel}=1.0\%$		
				Passband: (0.1~100)m/s ² , (1~5000)Hz	$U_{rel}=2.0\%$		
75	*Mechanical Vibrator	Acceleration	Verification Regulation of Mechanical Vibrator JJG 189	(2~300) m/s ² , (20~2000) Hz	$U_{rel}=2.6\%$		
		Frequency		(20~2000) Hz	$U_{rel}=0.2\%$		
76	vibration displacement transducer	displacement	Verification Regulation of Vibration Displacement Transducer JJG 644	Static: (0.01~25) mm	$U_{rel}=0.2\%$		
				Dynamic: (0.01~10) mm, (20~2000) Hz	$U_{rel}=2.2\%$		
77	*Shock and Bump Testing Machines	Acceleration	Verification Regulation of Shock and Bump Testing	(1×10 ² ~2×10 ⁴)m/s ²	$U_{rel}=5\%$		

No. CNAS L0854

第 39 页 共 127 页



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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Time	Machines JJG 1174	(0.1~20)ms	$U_{rel}=5\%$		
78	Dynamic Signal Analyzer	Frequency	Verification Regulation of dynamic signal analyzer JJG 834	0.1Hz~200kHz	$U_{rel}=3 \times 10^{-5}$		
		Spectrum amplitude		(0.1~10)V	$U_{rel}=0.3\%$		
		Spectral density		(0.01~1000)V ² /Hz	$U_{rel}=1\%$		
79	Pile Dynamic Measuring Instrument	Acceleration	Calibration Specification of Pile Dynamic Measuring Instrument JJG930	(1~100)m/s ² , (20~2000)Hz	$U_{rel}=2.1\%$		
80	*Metallic Rockwell hardness testers	Hardness	Metallic materials -- Rockwell scale -- Part 2: Calibration and calibration of testing machines and indenters ISO 6508-2, Standard test methods for Rockwell hardness of metallic materials appendix A1 ASTM E18, Metallic materials -- Rockwell scale -- Part 2: Calibration and calibration of testing machines and indenters EN ISO 6508-2, Testing of Rockwell scale JIS	(20~70)HRC	$U=0.6\text{HRC}$		
				(20~88)HRA	$U=0.6\text{HRA}$		
				(20~100)HRBW	$U=0.6\text{HRBW}$		
				(89~91)HR15N	$U=0.8\text{HR15N}$		
				(74~80)HR30N	$U=0.8\text{HR30N}$		
				(32~61)HR45N	$U=0.8\text{HR45N}$		
				(88~93)HR15TW	$U=0.8\text{HR15TW}$		
				(70~82)HR30TW	$U=0.8\text{HR30TW}$		
				(55~72)HR45TW	$U=0.7\text{HR45TW}$		
		Force value	B7726, Verification Regulation of Metallic Rockwell hardness testers (Scales A, B, C, D, E, F, G, H, K, N, T) JJG 112	(29.42~1471)N	$U_{rel}=0.2\%$		
		Length		(5~200) μm	$U=0.3 \mu\text{m}$		
		Angle		(0~120)°	$U=0.1^\circ$		



No. CNAS L0854

第 40 页 共 127 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
81	*Metallic Brinell Hardness Testers	Hardness	Metallic Materials-brinell scale, Part 2: Calibration and calibration of testing machines ISO 6506-2, Metallic materials -- Brinell scale -- Part 2: Verification and calibration of testing machines EN ISO 6506-2, Standard test method for Brinell hardness of metallic materials, Appendix A1, A3 ASTM E10, Testing of Brinell scale JIS B7724, Verification Regulation of Metallic Brinell hardness testers JJG 150	(75~125)HBW2.5/62.5	$U_{rel}=1.6\%$		
				(75~650)HBW2.5/187.5	$U_{rel}=0.8\%$		
				(75~125)HBW5/250	$U_{rel}=0.6\%$		
				(75~650)HBW5/750	$U_{rel}=1.0\%$		
				(75~125)HBW10/1000	$U_{rel}=0.9\%$		
				(75~650)HBW10/3000	$U_{rel}=0.8\%$		
		Force value	materials, Appendix A1, A3 ASTM E10, Testing of Brinell scale JIS B7724, Verification Regulation of Metallic Brinell hardness testers JJG 150	(0.6~30)kN	$U_{rel}=0.2\%$		
		Length		(0.01~6)mm	$U=3\ \mu\text{m}$		
		Time		(2~30)s	$U=0.2\text{s}$		
82	*Metallic Vickers hardness testers	Hardness	Metallic materials-Vickers hardness test, part 2: Verification and calibration of testing machines ISO 6507-2, Metallic materials-Vickers hardness test, part 2: Verification and calibration of testing machines EN ISO 6507-2, Method of microhardness test for materials, Appendix A1 ASTM E384, Vickers and Knoop hardness test methods for metallic materials Appendix A1 ASTM E92, Testing of Vickers	(175~800)HV0.1	$U_{rel}=2.5\%\sim 2.8\%$		
				(175~800)HV0.2	$U_{rel}=2.3\%\sim 3.8\%$		
				(175~800)HV0.3	$U_{rel}=2.1\%\sim 2.5\%$		
				(175~800)HV0.5	$U_{rel}=2.5\%\sim 3.4\%$		
				(175~800)HV1	$U_{rel}=2.5\%\sim 2.8\%$		
				(175~800)HV5	$U_{rel}=1.3\%\sim 1.5\%$		
				(175~800)HV10	$U_{rel}=0.8\%\sim 1.0\%$		
				(175~800)HV30	$U_{rel}=1.1\%\sim 1.3\%$		
				(700~800)HV50	$U_{rel}=1.1\%$		
		Force value		(1~1000)N	$U_{rel}=0.2\%$		



No. CNAS L0854

第 41 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Length	hardness test JIS B7725, Verification	(0.01~1)mm	$U=0.6\text{ }\mu\text{m}$		
		Time	Regulation of Metallic Vickers hardness testers JJG 151	(2~30)s	$U=0.2\text{s}$		
83	Shore hardness tester	hardness	Verification Regulation of Shore hardness tester JJG 346	(26~99)HSD	$U=(0.9\sim 1.4)\text{HSD}$	Only calibrate Type C and Type D	
84	Shore A Durometers	Force	Verification Regulation of Shore A Durometers JJG 304	(2050~8050)mN	$U=36\text{mN}$		
		Length		(0.76~1.4)mm	$U=8\text{ }\mu\text{m}$		
		Angle		$34.25^{\circ}\sim 35.75^{\circ}$	$U=15'$		
85	Leeb hardness tester	hardness	Verification Regulation of Leeb hardness tester JJG 747	(490~830)HLD	$U=9\text{HLD}$		
				(460~630)HLG	$U=9\text{HLG}$		
86	D-type Shore hardness tester	Force	Verification Regulation of Shore D Durometers JJG 1039	(5~50)N	$U=85\text{mN}$		
		Length		(0.1~3.5)mm	$U=4\text{ }\mu\text{m}$		
		Angle		$(29\sim 31)^{\circ}$	$U=15'$		
87	Metallic Rockwell Hardness Reference Blocks	Hardness	Verification Regulation of Metallic Rockwell Hardness Reference Blocks(Scales A,B,C,D,E,F,G,H,K,N,T) JJG 113	(20~88) HRA	$U=0.4\text{HRA}$		
				(20~100)HRBW	$U=0.5\text{HRBW}$		
				(20~70)HRC	$U=0.5\text{HRC}$		
				(20~91)HRN	$U=0.6\text{HRN}$		
				(12~93)HRTW	$U=0.6\text{HRTW}$		



No. CNAS L0854

第 42 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
88	Standard Vickers hardness block	Hardness	Verification Regulation of Vickers Hardness Reference Blocks JJG 148	(100~1000)HV(9.807N $\leq F \leq 294.2$ N)	$U_{rel}=1.2\%$		
89	Standard Metallic Brinell hardness block	Hardness	Verification Regulation of Metallic Brinell Hardness Reference Blocks JJG 147	(8~650)HBW, $F \geq 1839$ N	$U_{rel}=0.8\%$		
90	Working glass hydrometers	density	Verification Regulation of Working glass hydrometers JJG 42	(650~1950) kg/m ³	$U=0.2$ kg/m ³		
		Alcohol by Volume		(0~100)%	$U=0.05\%$		
91	Standard glass hydrometers	density	Verification Regulation of Standard glass hydrometers JJG 86	Second-class standard densitometer: (650~1500)kg/m ³	$U=0.15$ kg/m ³		
92	Laboratory oscillation-type liquid density meters	Density	Calibration Specification for Laboratory Oscillation-type Liquid Density Meters JJF 2165	(650~2000)kg/m ³	$U=0.032$ kg/m ³		
93	Hand Saccharimeter	Concentration	Verification Regulation of Hand Saccharimeter(Content-meter)and Hand Refractometer JJG 820	1%~60%	$U=0.3\%$	Only for instruments with an accuracy level of 0.5% or below	
94	Immersion Oscillation-type Electronic Liquid Density Meters	density	Calibration Specification for Immersion Oscillation-type Electronic Liquid Density Meters JJF 1866	(650~1950) kg/m ³	$U=0.2$ kg/m ³		
95	*Heat Metering Device from Heat Source to Heating Network	Flow	Online Calibration Specification of Heat Metering Device from Heat Source to Heating Network JJF (LU) 111	(1~8000)m ³ /h	$U_{rel}=0.6\%$		
		Temperature		(0~180)°C	$U_{rel}=1\%$		



No. CNAS L0854

第 43 页 共 127 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
96	*Test Equipment for Vehicle Speed Radar Measurement Meters	Speed	Verification Regulation of Test Equipment for Vehicle Speed Radar Measurement Meters JJG 771	(20~200)km/h	$U=0.1\text{km/h}$		
		Frequency		100MHz~18GHz	$U_{\text{rel}}=1\times 10^{-8}$		
97	*Traffic Loop-based Speed Meters	Speed	Verification Regulation of Verification Equipment for Traffic Loop-based Speed Meters JJG 1076	(10~200)km/h	$U=0.1\text{km/h}$		
		Frequency		1MHz、5MHz、10MHz	$U=1\text{Hz}$		
		Time		(100~3600)ms	$U_{\text{rel}}=4\times 10^{-8}$		
98	Digital Barometers	Pressure	Verification Regulation of Digital Barometers JJG 1084	(100~1200)hPa	$U=0.13\text{hPa}$		
99	aneroid barometer and aneroid barograph	Pressure	Verification Regulation of Aneroid Barometer & Aneroid Barograph JJG 272	(500~1060)hPa	$U=0.5\text{hPa}$		
4、Acoustics measuring instrument							
1	Sound Level Meters	Sound Pressure Level	V.R.of Sound Level Meters JJG 188	Pressure field: (20~135) dB, 10 Hz~200Hz	$U=0.6\text{dB}$		
				Pressure field: (20~135) dB, 250 Hz~400Hz	$U=0.4\text{ dB}$		
				Free field: (20~135) dB, (500~1250)Hz	$U=0.4\text{dB}$		
				Free field: (20~135) dB, (1.6~10)kHz	$U=0.6\text{ dB}$		
				Free field: (20~135) dB,(12.5~20)kHz	$U=1.0\text{ dB}$		



No. CNAS L0854

第 44 页 共 127 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	Personal Sound Exposure Meters	Sound Pressure Level	V.R.of Sound Exposure Meters JJG 980	pressure field: (20~135) dB, 63 Hz~200Hz	U=0.6dB		
				Pressure field: (20~135) dB, 250 Hz~400Hz	U=0.4dB		
				free field: (20~135) dB, 500 Hz~1250Hz	U=0.4dB		
				Pressure field: (20~135) dB, 1600 Hz~8000Hz	U=0.6dB		
		Sound Exposure		Sound Signal:10Pa ² h, 1kHz	U _{rel} =9%		
				Electric signal:1Pa ² h, 4kHz	U _{rel} =6%		
3	Noise Dosimeters	Sound Pressure Level	V.R.of Noise Dosimeters JJG 655	pressure field: (20~135) dB, 63Hz~200Hz	U=0.6dB		
				pressure field: (20~135) dB, 250 Hz~400Hz	U=0.4dB		
				free field: (20~135) dB, 500 Hz~1250Hz	U=0.4dB		
				free field: (20~135) dB, 1600 Hz~8000Hz	U=0.6 dB		
		Noise Dose		0.1%~100%, 4kHz	U _{rel} =6%		
4	Sound Calibrators	Sound Pressure Level	V.R.of Sound Calibrators JJG 176	(94~124) dB, 31.5 Hz~160Hz	U=0.2 dB		



No. CNAS L0854

第 45 页 共 127 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
				(94~124) dB, 160 Hz~1250Hz	U=0.1 dB		
		Frequency		31.5 Hz~16kHz	U _{rel} =0.01%		
		Total distortion+noise		0.03%~5%	U=12%FS		
5、Electromagnetic measuring instrument							
1	*Loop resistance tester	Resistance	Verification Regulation of Loop Resistance Testers JJG 1052	10 μ Ω ~600m Ω	U _{rel} =0.06%		
		Current		100mA~600A	U _{rel} =0.058%		
		Time		10s~600s	U _{rel} =2.4%		
2	*DC Resistance Meters	Resistance	Verification Regulation of DC Resistance Meters JJG 1205	10 μ Ω ~20 Ω	U _{rel} =0.024%		
				20 Ω ~100 Ω	U _{rel} =0.06%		
				100 Ω ~111111.11 Ω	U _{rel} =0.013%		
		Current		100mA~600A	U _{rel} =0.058%		
3	*DC. digital low resistance tester	Resistance	V.R. of DC. Low Resistance Meters JJG 837	10 μ Ω ~20 Ω	U _{rel} =0.024%		
				20 Ω ~100 Ω	U _{rel} =0.06%		
				100 Ω ~111111.11 Ω	U _{rel} =0.013%		
4	*Tesers of Winding Temperature Rise	Resistance	C.S. for Online Tesers of Winding Temperature Rise JJF 1540	10m Ω ~20 Ω	U _{rel} =0.024%		
				20 Ω ~100 Ω	U _{rel} =0.06%		
				100 Ω ~111111.11 Ω	U _{rel} =0.013%		
5	Instrument Transformer Test	Ratio error	V.R. of Instrument Transformer Test Set JJG 169	0.01%~20%	U _{rel} =0.34%		

No. CNAS L0854

第 46 页 共 127 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
	Set	Phase displacement		0.05' ~ 500'	$U_{rel}=0.34\%$		
6	*Dielectric Loss tester	Dielectric Loss capacity	V.R. of The High Voltage Dielectric Loss tester JJG1126	0%~10% 100pF~500nF	$U=0.003\%\sim 0.057\%$ $U_{rel}=0.06\%\sim 0.14\%$		
7	*Current Transformers	Current Ratio error	V.R. of Current Transformers of Measuring Service JJG 313	(0.1~5000)A/(1A、5A), 5% I_n (0.1~5000)A/(1A、5A), (20%~120%) I_n	$U=0.0034\%$ $U=0.0026\%$		
		Phase displacement		(0.001~99.9)', 5% I_n (0.001~99.9)', (20%~120%) I_n	$U=0.11'$ $U=0.072'$		
8	*Voltage transformers	Voltage Ratio error	V.R. of Voltage transformers of Measuring Service JJG 314	(57.74~10000)V/(57.74、100、150)V, 20% U_n (57.74~10000)V/(57.74、100、150)V, 50% U_n (57.74~10000)V/(57.74、100、150)V, (80%~120%) U_n (10~220)kV/(57.74、100、150)V, 20% U_n (10~220)kV/(57.74、100、150)V, 50% U_n (10~220)kV/(57.74、100、150)V, (80%~120%) U_n	$U=0.005\%$ $U=0.004\%$ $U=0.003\%$ $U=0.024\%$ $U=0.018\%$ $U=0.012\%$		



No. CNAS L0854

第 47 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Phase displacement		(220~400)kV/(57.74、100、150)V, 20% U_n	$U=0.012\%$		
				(220~400)kV/(57.74、100、150)V, 50% U_n	$U=0.009\%$		
				(220~400)kV/(57.74、100、150)V, (80%~120%) U_n	$U=0.06\%$		
				(-99.99~+99.99)' , (57.74~10000)V/(57.74、100、150)V, 20% U_n	$U=0.16'$		
				(-99.99~+99.99)' , (57.74~10000)V/(57.74、100、150)V, 50% U_n	$U=0.12'$		
				(-99.99~+99.99)' , (57.74~10000)V/(57.74、100、150)V, (80%~120%) U_n	$U=0.09'$		
				(-99.99~+99.99)' , (10~220)kV/(57.74、100、150)V, 20% U_n	$U=0.8'$		
				(-99.99~+99.99)' , (10~220)kV/(57.74、100、150)V, 50% U_n	$U=0.6'$		
				(-99.99~+99.99)' , (10~220)kV/(57.74、100、150)V, (80%~120%) U_n	$U=0.4'$		



No. CNAS L0854

第 48 页 共 127 页

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

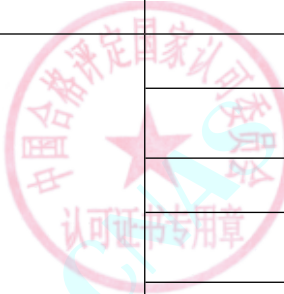

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, 20% U_n	$U=5'$		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, 50% U_n	$U=4'$		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, (80%~120%) U_n	$U=3'$		
9	*Current Transformers in Power System	Ratio error	Instrument Transformers— Part 3: Current Transformers in Power System JJG 1189.3	(0.1~5000)A/(1A、 5A), 1% I_n	$U=0.003\%$		
				(0.1~5000)A/(1A、5A), (5%~120%) I_n	$U=0.002\%$		
		Phase displacement		(-99.99~+99.99) ' , (0.1~5000)A/(1A、 5A), 1% I_n	$U=0.09'$		
				(-99.99~+99.99) ' , (0.1~5000)A/(1A、 5A), (5%~120%) I_n	$U=0.05'$		
10	*varied voltage bridge Transformer's Turn Ratio Test Sets	Voltage ratio type	V.R. of varied voltage bridge JJG970	single phase: 1~10000	$U_{rel}=0.018\%$		
				three phase: 10、100	$U_{rel}=0.061\%$		
11	*Burden Box of Instrument Transformers	Impedance	C.S. for Burden Box of Instrument Transformers JJF1264	same phase: (0~100) Ω , $\cos \phi = 0.8$ 、 $\cos \phi = 1$	$U=(0.0002\sim 0.36)\Omega$		



No. CNAS L0854

第 49 页 共 127 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
		Admittance		orthogonal: (0~100) Ω , $\cos \phi =0.8$ 、 $\cos \phi =1$	$U=(0.0002\sim 0.36)\Omega$		
				same phase: (0~100) Ω ,orthogonal: 0 Ω , $\cos \phi =1$	$U=(0.0002\sim 0.1)\Omega$		
				same phase: (0~100)mS, $\cos \phi =0.8$ 、 $\cos \phi =1$	$U=(0.0002\sim 0.36)\text{mS}$		
				orthogonal: (0~100)mS, $\cos \phi =0.8$ 、 $\cos \phi =1$	$U=(0.0002\sim 0.36)\text{mS}$		
				same phase: (0~100)mS,orthogonal: 0mS, $\cos \phi =1$	$U=(0.0002\sim 0.1)\text{mS}$		
12	*Digital earth-resistance tester	Resistance	V.R. of Earth Resistance Meter JJG 366	10m $\Omega \sim 100\text{m} \Omega$	$U_{\text{rel}}=5.8\%$		
				100m $\Omega \sim 1 \Omega$	$U_{\text{rel}}=0.58\%$		
				1 $\Omega \sim 100 \Omega$	$U_{\text{rel}}=0.12\%$		
				100 $\Omega \sim 20\text{k} \Omega$	$U_{\text{rel}}=0.058\%$		
13	*Withstanding Voltage Tester	Voltage	V.R. of Withstanding Voltage Testers JJG 795	500V~15kV	$U_{\text{rel}}=0.59\%$		
				500V~15kV(45Hz~65Hz)	$U_{\text{rel}}=1.2\%$		
		Current		500 μ A~200mA	$U_{\text{rel}}=0.59\%$		
				500 μ A~200mA(45Hz~65Hz)	$U_{\text{rel}}=1.2\%$		
		Time		10s~900s	$U_{\text{rel}}=1.2\%$		



No. CNAS L0854

第 50 页 共 127 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	*Clamp grounding resistance tester	Resistance	V.R. of Clamp Earth Resistance JJG 1054	10m Ω ~ 100m Ω	$U_{rel}=5.8\%$		
				100m Ω ~ 100 Ω	$U_{rel}=0.12\% \sim 0.6\%$		
				100 Ω ~ 2k Ω	$U_{rel}=0.058\%$		
		Current		100mA ~ 100A	$U_{rel}=0.03\%$		
15	*lightning protection device	DC Voltage	Calibration Specification for Lightning Protection Component Testers JJF 2177	(5 ~ 2000) V	$U_{rel}=0.2\% \sim 0.3\%$		
		DC Current		1mA	$U_{rel}=0.2\% \sim 0.3\%$		
		DC leakage current		(1 ~ 20) μ A	$U_{rel}=0.25\% \sim 11\%$		
16	*Watt-hour meters with high voltage terminals	Electrical energy	V.R. of Watt-hour meters with high voltage terminals JJG (lu) 89	50V ~ 10kV, 1A ~ 1000A	$U_{rel}=0.034\%$		
17	*Relay protection tester	交流电压	V.R. of Testers for Relaying Protection JJG 1112	20mV ~ 1000V(45Hz ~ 65Hz)	$U_{rel}=0.05\%$		
		DC voltage		20mV ~ 1000V	$U_{rel}=0.01\%$		
		AC current		100 μ A ~ 120A(45Hz ~ 65Hz)	$U_{rel}=0.05\%$		
		DC current		100 μ A ~ 30A	$U_{rel}=0.05\%$		
		Phase		0° ~ 360°	$U=0.04^\circ$		
		time		1 μ s ~ 4200s	$U_{rel}=0.02\%$		
		Frequency		1Hz ~ 10MHz	$U_{rel}=0.002\%$		
18	*High pressure paint film continuity tester	DC voltage	Standard for Calibration of High Pressure Paint Film Continuity Tester SDIM/CJGDX 22	500V ~ 5kV	$U_{rel}=0.6\%$		
		DC current		100 μ A ~ 300mA	$U_{rel}=1.2\%$		



No. CNAS L0854

第 51 页 共 127 页

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

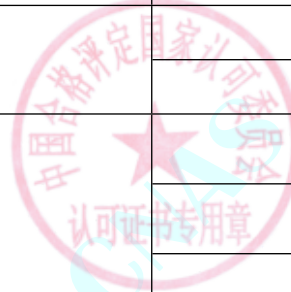
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
19	*Digital high pressure watch	AC voltage	C.S. for Withstanding Voltage Testers JJF(LU) 60	0.1kV~10kV(45Hz~65Hz)	$U_{rel}=0.008\%$		
				10kV~60kV(45Hz~65Hz)	$U_{rel}=0.014\%$		
				60kV~400kV(45Hz~65Hz)	$U_{rel}=0.06\%$		
				400kV~1000kV(45Hz~65Hz)	$U_{rel}=1.2\%$		
		DC voltage		0.1kV~30kV	$U_{rel}=0.024\%$		
				30kV~200kV	$U_{rel}=0.12\%$		
				200kV~1000kV	$U_{rel}=0.6\%$		
20	*Frequency high voltage divider	ratio	V.R. of High-voltage Divider at Power Frequency JJG 496	(0.1kV~10kV) / (10V~1kV) (45Hz~65Hz)	$U_{rel}=0.008\%$		
				(10kV~60kV) / (10V~1kV) (45Hz~65Hz)	$U_{rel}=0.014\%$		
				(60kV~400kV) / (10V~1kV) (45Hz~65Hz)	$U_{rel}=0.06\%$		
				(400~1000)kV/(10~1000)V,(45Hz~65Hz)	$U_{rel}=1.2\%$		
21	*DC high voltage divider	ratio	V.R. of DC High Voltage Dividers JJG 1007	0.1kV~30kV/10V~1kV	$U_{rel}=0.024\%$		
				30kV~200kV/10V~1kV	$U_{rel}=0.12\%$		
				200kV~1000kV/10V~1kV	$U_{rel}=0.6\%$		



No. CNAS L0854

第 52 页 共 127 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		
22	*High voltage electrostatic voltmeter	AC voltage	V.R. of High Voltage Electrostatic Voltage meters JJG 494	0.1kV~10kV(45Hz~65Hz)	<i>U</i> _{rel} =0.008%				
				10kV~60kV(45Hz~65Hz)	<i>U</i> _{rel} =0.014%				
				60kV~400kV(45Hz~65Hz)	<i>U</i> _{rel} =0.06%				
				400kV~1000kV(45Hz~65Hz)	<i>U</i> _{rel} =1.2%				
		DC voltage		0.1kV~30kV	<i>U</i> _{rel} =0.024%				
				30kV~200kV	<i>U</i> _{rel} =0.12%				
				200kV~1000kV	<i>U</i> _{rel} =0.6%				
23	Static tester	DC voltage	C.S. for Contactless Electrostatic Voltage Measuring Instruments JJF1517	500V~20kV	<i>U</i> _{rel} =2.2%				
24	*Dielectric Strength Detector of Insulating Oils	AC voltage	Calibration Specification For Dielectric Strength Detector of Insulating Oils JJF（Meng）062	0.1kV~100kV(45Hz~65Hz)	<i>U</i> _{rel} =0.06%				
25	*On-load tap-changer tester	resistance	Calibration Specification of Transformer On-load Tap-changer Testers JJF（Zhe）	100mΩ~100Ω	<i>U</i> _{rel} =0.2%				
		time		1ms~250ms	<i>U</i> _{rel} =0.3%				
26	*Power Frequency Rise Voltage Test Device	AC voltage	Calibration Specification of Power Frequency Withstand Voltage Test Devices JJF(Lu)120	0.1kV~10kV（45Hz~65Hz）	<i>U</i> _{rel} =0.008%				
				10kV~60kV（45Hz~65Hz）	<i>U</i> _{rel} =0.014%				
				60kV~400kV（45Hz~65Hz）	<i>U</i> _{rel} =0.06%				



No. CNAS L0854

第 53 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				400kV~1000kV (45Hz~65Hz)	$U_{rel}=1.2\%$		
27	*DC high voltage generator	voltage	Standard for Calibration of DC High Voltage Generators SDIM/CJGDX 20	0.1kV~30kV	$U_{rel}=0.024\%$		
				30kV~200kV	$U_{rel}=0.12\%$		
				200kV~1000kV	$U_{rel}=0.6\%$		
28	*Cable fault tester	voltage	Calibration Specification for Cable fault tester SDIM/CJGDX 35	500V~200kV	$U_{rel}=4\%$		
29	*Ultra low frequency high voltage generator	AC voltage	Calibration Specification for Ultra low frequency high voltage generator SDIM/CJGDX 36	500V~400kV (0.02Hz、0.05Hz、0.1Hz)	$U_{rel}=4\%$		
30	*High Current Generator	AC Current	C.S. for High Current Generator JJF(Jixie)1037	(5~5000)A, (45Hz~65Hz)	$U_{rel}=4.4 \times 10^{-4}$		
31	*Insulating Oil Dielectric Dissipation Factor and Volume Resistivity Testers	Dielectric loss factor	C.S. for Insulating Oil Dielectric Dissipation Factor and Volume Resistivity Testers JJF 1618	0.005%~10%	$U_{rel}=0.003\% \sim 0.031\%$		
		capacitance		50pF、100pF	$U_{rel}=0.12\%$		
		High-voltage power supply(AC Voltage)		100~20kV (45Hz~65Hz)	$U_{rel}=0.2\%$		
		High-voltage power supply(DC Voltage)		100~20kV	$U_{rel}=0.2\%$		
		Volume resistivity		100k $\Omega \cdot m \sim 100G \Omega \cdot m$	$U_{rel}=0.3\% \sim 2.4\%$		
		temperature		-80℃~300℃	$U=0.2^\circ C$		



No. CNAS L0854

第 54 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
32	*Power-frequency Electrics Fields	electric field intensity	Calibration Specification of Power-frequency Electrics Fields SDIM/CJGDX45	(1~10000)V/m,(45Hz~ 65Hz)	$U_{rel}=1.4\%$		
33	*Oftriple- frequency generators	Output voltage	C.S. for Triple-frequency Generators JJF 2001	1V~1000V(150Hz)	$U_{rel}=0.3\%$		
		Output frequency		10Hz~400Hz	$U_{rel}=0.2\%$		
		Time		0.01s~3600s	$U_{rel}=0.6\%$		
34	*Lightning Counter Tester	Peak output voltage	Calibration Specification of Lightning Counter Tester SDIM/CJGDX47	100V~2kV	$U_{rel}=3\%$		
35	*Ground Resistance Tester of Ground Grid	Resistance	V.R. of Ground Resistance Tester of Ground Grid JJG(Lu) 96	10m Ω ~ 100m Ω	$U_{rel}=0.24\% \sim 0.63\%$		
				100m Ω ~ 11.11 Ω	$U_{rel}=0.12\% \sim 0.13\%$		
		Current frequency		40Hz~400Hz	$U=0.1Hz$		
36	*Earth-Continuity Testers	Current	V.R. of Earth-Continuity Testers JJG 984	AC: (0.1~1)A, (45Hz~65Hz)	$U_{rel}=0.70\% \sim 0.18\%$		
				DC:(0.1~1)A	$U_{rel}=0.20\% \sim 0.07\%$		
				AC: (1~10)A, (45Hz~65Hz)	$U_{rel}=0.70\% \sim 0.17\%$		
				DC: (1~10)A	$U_{rel}=0.18\% \sim 0.07\%$		
				AC: (10~100)A, (45Hz~65Hz)	$U_{rel}=0.23\% \sim 0.13\%$		
				DC: (10~100)A	$U_{rel}=0.17\% \sim 0.07\%$		
				AC: (60~600)A, (45Hz~65Hz)	$U_{rel}=0.23\% \sim 0.13\%$		



No. CNAS L0854

第 55 页 共 127 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
		Resistance		DC: (60~600)A	$U_{rel}=0.17\%\sim 0.07\%$		
				AC:1A:1m $\Omega \sim 60\Omega$, (45Hz~65Hz)	$U_{rel}=1.0\%\sim 0.17\%$		
				DC:1A:1m $\Omega \sim 60\Omega$	$U_{rel}=0.5\%\sim 0.17\%$		
				AC:10A:0.1m $\Omega \sim 6000m\Omega$, (45Hz~65Hz)	$U_{rel}=1.0\%\sim 0.12\%$		
				DC:10A:0.1m $\Omega \sim 6000m\Omega$	$U_{rel}=0.5\%\sim 0.07\%$		
				AC:100A:0.01m $\Omega \sim 600m\Omega$, (45Hz~65Hz)	$U_{rel}=1.5\%\sim 0.17\%$		
				DC:100A:0.01m $\Omega \sim 600m\Omega$	$U_{rel}=0.5\%\sim 0.17\%$		
				AC:600A:0.001m $\Omega \sim 60m\Omega$, (45Hz~65Hz)	$U_{rel}=7.0\%\sim 0.17\%$		
				DC:600A:0.001m $\Omega \sim 60m\Omega$	$U_{rel}=0.5\%\sim 0.17\%$		
37	*High voltage DC resistance meter	Resistance	V.R. of High Voltage and Value D.C. Resistance JJG 1072	100 $\Omega \sim 1M\Omega$	$U_{rel}=0.046\%$		
				1M $\Omega \sim 10M\Omega$	$U_{rel}=0.046\%\sim 0.066\%$		
				10M $\Omega \sim 100M\Omega$	$U_{rel}=0.066\%\sim 0.11\%$		
				100M $\Omega \sim 1G\Omega$	$U_{rel}=0.11\%\sim 0.21\%$		
				1G $\Omega \sim 10G\Omega$	$U_{rel}=0.21\%\sim 0.41\%$		
				10G $\Omega \sim 100G\Omega$	$U_{rel}=0.41\%\sim 1\%$		
				100G $\Omega \sim 1T\Omega$	$U_{rel}=1\%$		



No. CNAS L0854

第 56 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				1T Ω ~ 11T Ω	$U_{rel}=1\% \sim 2\%$		
		Resistance		50V~10kV	$U_{rel}=0.058\%$		
38	*Static wrist / foot ring tester, surface resistance tester	Resistance	C.S. for Surface Resistance Tester JJF 1285	100 Ω ~ 1T Ω	$U_{rel}=0.24\% \sim 2.3\%$		
		Voltage		10V~250V	$U_{rel}=1.3\% \sim 3.6\%$		
39	*Static wrist / foot ring tester	Resistance	Calibration Specification of Wrist Strap and Footwear Tester JJF（electronic）31502	100k Ω ~ 1G Ω	$U_{rel}=0.81\% \sim 3.4\%$		
40	*Megohmmeter tester (meter)	Resistance	V.R. of Megohmmeter JJG 622	5k Ω ~ 100M Ω	$U_{rel}=0.25\% \sim 1.3\%$		
				100 M Ω ~ 100G Ω	$U_{rel}=1.3\% \sim 2.5\%$		
		Voltage		10V~10kV	$U_{rel}=0.58\%$		
41	*High insulation resistance tester(meter)	Voltage	Calibration Specification of High Insulation Resistance Meters JJF 2225	10V~1kV	$U_{rel}=1.2\% \sim 3.5\%$		
		Resistance		0.1k Ω ~ 10M Ω	$U_{rel}=0.63\%$		
				10M Ω ~ 100M Ω	$U_{rel}=0.82\%$		
				100M Ω ~ 1G Ω	$U_{rel}=1.3\%$		
				1G Ω ~ 1T	$U_{rel}=2.4\%$		
42	*Electronic insulation ohmmeter	Resistance	V.R. of Megohmmeter JJG 1005	100 Ω ~ 1T Ω	$U_{rel}=0.24\% \sim 2.4\%$		
		Voltage		10V~10kV	$U_{rel}=1.2\% \sim 1.5\%$		
43	*Electric shock prevention and protection tester	Voltage	Calibration Specification of Electric Shock Protection Tester SDIM/CJGDX43	20V~1000V	$U_{rel}=1.4 \times 10^{-3}$		
44	*Amperemeter,	DC Voltage	V. R.of Amperemeter,	2mV~1000V	$U_{rel}=1.3 \times 10^{-4}$		



No. CNAS L0854

第 57 页 共 127 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
	Voltmeter Wattmeter and Ohmmeter	AC Voltage	Voltmeter Wattmeter and Ohmmeter JJG 124	200mV~1000V (45~65)Hz	$U_{rel}=1.9 \times 10^{-4}$		
		DC Current		500 μ A~30A	$U_{rel}=1.4 \times 10^{-4}$		
		AC Current		5mA~100A(45~65)Hz	$U_{rel}=2.4 \times 10^{-4}$		
		DC Power		100W~100kW	$U_{rel}=2.0 \times 10^{-4}$		
				200mV~1000)V(0.005~100)A	$U_{rel}=1.8 \times 10^{-4}$		
		AC Power		(57.74~400)V,(0.1~100)A ,(45~65)Hz	$U_{rel}=2.4 \times 10^{-4}$		
45	*50Hz Single-phase Phasometer	Phase	Verification Regulation of 50Hz Single-phase Phasometer JJG 440	0° ~360°	$U=0.04^{\circ}$		
46	*Calibrator Using Multimeter	AC Voltage	Calibration Specification for Digital AC Electrical Parameters Meter JJF1491	(10~1000)V,(40Hz~1kHz)	$U_{rel}=3 \times 10^{-4}$		
		AC Current		(0.01~100)A,(40Hz~1kHz)	$U_{rel}=3 \times 10^{-4}$		
		AC Power		0.1W~120kW,(40Hz~1kHz)	$U_{rel}=3 \times 10^{-4}$		
		Frequency		40Hz~1kHz	$U_{rel}=7 \times 10^{-4}$		
		Power factor		0~1	$U=0.001$		
47	*Calibrator Using Multimeter	Voltage	Calibration Specification of calibrators for Electrical Meters JJF 1284	DC: (0.01~10) V	$U_{rel}=5.8 \times 10^{-6} \sim 6.7 \times 10^{-5}$		
				DC: (10~1000) V	$U_{rel}=6.7 \times 10^{-5} \sim 8.2 \times 10^{-5}$		
				AC: (0.01~10) V, (10Hz~20kHz)	$U_{rel}=5.9 \times 10^{-5} \sim 1.3 \times 10^{-4}$		
				AC: (10~1000) V, (10Hz~20kHz)	$U_{rel}=1.3 \times 10^{-4} \sim 1.6 \times 10^{-4}$		



No. CNAS L0854

第 58 页 共 127 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
		Current		DC: (0.0001~1) A	$U_{rel}=6.6 \times 10^{-5} \sim 2.0 \times 10^{-4}$		
				DC: (1~100) A	$U_{rel}=5 \times 10^{-5} \sim 2 \times 10^{-4}$		
				AC: (0.0001~1) A, (10Hz~20kHz)	$U_{rel}=3.6 \times 10^{-4} \sim 8.1 \times 10^{-4}$		
				AC: (1~100) A, (45Hz~65Hz)	$U_{rel}=5 \times 10^{-4}$		
		Resistance		10 Ω ~100M Ω	$U_{rel}=5.8 \times 10^{-5} \sim 8.6 \times 10^{-5}$		
		Frequency		10Hz~20kHz	$U_{rel}=7 \times 10^{-4}$		
48	*Mesuring transducers for converting a.c.electrical quantities in to d.c. electrical quantities	Voltage	Power Frequency A.C.Electrical Quantities Measuring Transducers JJG 126	(0.02~1000) V	$U_{rel}=3 \times 10^{-4}$		
		Current		(0.005~100) A	$U_{rel}=3 \times 10^{-4}$		
		Power		2W~22kW	$U_{rel}=3 \times 10^{-4}$		
49	*Clampmetor	Voltage	Calibration Specification of calibrators for Electrical Meters JJF 1284	(0.02~10)V, 45Hz~65Hz	$U_{rel}=5.9 \times 10^{-5} \sim 1.3 \times 10^{-4}$		
				(10~1000)V, 45Hz~65Hz	$U_{rel}=1.3 \times 10^{-4} \sim 1.6 \times 10^{-4}$		
		Current		(0.1~1)A, 45Hz~65Hz	$U_{rel}=3.6 \times 10^{-4} \sim 8.1 \times 10^{-4}$		
				(1~10)A, 45Hz~65Hz	$U_{rel}=5 \times 10^{-4}$		
		Resistance		10 Ω ~100M Ω	$U_{rel}=5.8 \times 10^{-5} \sim 8.6 \times 10^{-5}$		
50	*Clamp VA-phase meter	AC Voltage	Calibration Specification for Clamp Phase Volt-Ampere Meters JJF2227	(0.2~500) V, (45Hz~400Hz)	$U_{rel}=6.6 \times 10^{-4} \sim 2 \times 10^{-3}$		
		AC Current		(0.005~10)A, (45Hz~400Hz)	$U_{rel}=6.6 \times 10^{-4} \sim 4 \times 10^{-3}$		



No. CNAS L0854

第 59 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Phase		0° ~ 359.9°	$U=0.04^\circ$		
				(45~65)Hz	$U_{rel}=5.8 \times 10^{-4}$		
51	*Peak value voltage meter	Voltage	verification regulation of AC peak voltmeter JJG 1168	峰值: (0.35~1.4)kV,(10Hz~500Hz)	$U_{rel}=3.6 \times 10^{-4}$		
52	Standard Cell	Electric potential	Verification Regulation of Standard Cell JJG 153	(1.0186000~1.0186700) V	$U=1.4 \mu V$		
53	*DC Potentionmeters	Voltage	Verification Regulation of D.C. XComparator Potentiometers JJG 123	-0.01111110V ~ 2.1111110V	$U_{rel}=4.7 \times 10^{-5} \sim 9.2 \times 10^{-5}$		
54	*The D.C. bridges	Resistance	Verification Regulation of the DC bridges for Measuring Temperature JJG 125	(1~100)mΩ	$U_{rel}=7.9 \times 10^{-4} \sim 7.3 \times 10^{-3}$		
				(0.1~1)Ω	$U_{rel}=1.9 \times 10^{-4} \sim 7.9 \times 10^{-4}$		
				(1~10)Ω	$U_{rel}=1.2 \times 10^{-5} \sim 8.1 \times 10^{-5}$		
				10Ω ~ 1MΩ	$U_{rel}=3.4 \times 10^{-6} \sim 8.5 \times 10^{-6}$		
55	*D.C. Rsistance box	Resistance	Verification Regulation of D.C. Resistance Box JJG 982	1mΩ ~ 0.1Ω	$U_{rel}=2.8 \times 10^{-3} \sim 2.8 \times 10^{-2}$		
				(0.1~1)Ω	$U_{rel}=5.9 \times 10^{-4} \sim 5.8 \times 10^{-3}$		
				(1~10)Ω	$U_{rel}=1.2 \times 10^{-4} \sim 1.2 \times 10^{-3}$		
				10Ω ~ 1MΩ	$U_{rel}=3.4 \times 10^{-6} \sim 1.2 \times 10^{-5}$		
				1MΩ ~ 100MΩ	$U_{rel}=5 \times 10^{-4} \sim 9 \times 10^{-4}$		
56	D.C. Standard Resistance	Resistance	DC Standard Resistors JJG 166	1Ω	$U_{rel}=1.7 \times 10^{-6}$		
				1mΩ, 10kΩ	$U_{rel}=4.2 \times 10^{-6}$		
				0.1Ω, 10Ω, 100Ω, 1kΩ	$U_{rel}=3.7 \times 10^{-6}$		



No. CNAS L0854

第 60 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				0.01 Ω	$U_{rel}=3.4 \times 10^{-6}$		
				100k Ω	$U_{rel}=7.4 \times 10^{-6}$		
57	DC magneto electric galvanometer	current division value Resistance	Verification Regulation of the DC Magnetoelectric Galvanometers JJG 495	$(3 \times 10^{-10} \sim 5 \times 10^{-6}) A/mm$ 10 $\Omega \sim 100k \Omega$	$U_{rel}=6.3 \times 10^{-5}$ $U_{rel}=0.001\%$		
58	*AC Resistance Box	Resistance	Calibration specification for AC resistance boxes JJF 1636	1m $\Omega \sim 0.1 \Omega$	$U_{rel}=6.0 \times 10^{-3} \sim 6.0 \times 10^{-4}$		
				(0.1 ~ 1) Ω	$U_{rel}=1.2 \times 10^{-3} \sim 1.2 \times 10^{-4}$		
				(1 ~ 10) Ω	$U_{rel}=1.2 \times 10^{-4} \sim 1.2 \times 10^{-3}$		
				10 $\Omega \sim 1M \Omega$	$U_{rel}=6.8 \times 10^{-6} \sim 5.9 \times 10^{-5}$		
59	*DC Shunt	Resistance	Verification Regulation of DC Shunts JJG1069	0.01m $\Omega \sim 10 \Omega$, 5A $\sim 10000A$	$U_{rel}=1.7 \times 10^{-4} \sim 3 \times 10^{-6}$		
60	*Standard Capacitor	Capacitance	Verification Regulation of Standard Capacitors JJG 183	1pF $\sim 1 \mu F$, (100Hz $\sim 10kHz$)	$U_{rel}=0.03\%$		
61	*Capacitor	Capacitance	Calibration Specification for Capacitance Boxes JJF 2237	1pF $\sim 1 \mu F$, (100Hz $\sim 10kHz$)	$U_{rel}=0.03\%$		
62	*Standard Inductor	inductance	Verification Regulation of Standard Inductors JJG 726	0.1mH $\sim 1H$, (1kHz)	$U_{rel}=0.03\%$		
63	*Inductance box	inductance	Calibration Specification for Inductance Boxes JJF 2238	0.1mH $\sim 1H$, (1kHz)	$U_{rel}=0.03\%$		
64	*Ac impedance test	inductance	Verification regulation for wide range digital RCL meter GJB 8817	10 μH , (1kHz)	$U_{rel}=0.3\%$		
				100 μH , 1mH, 10mH, 0.1H, 1H, (1kHz)	$U_{rel}=0.03\%$		
		capacity		1pF $\sim 1 \mu F$, (1kHz)	$U_{rel}=0.06\%$		



No. CNAS L0854

第 61 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Resistance	ilac-MRA INTERNATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	$0.1\ \Omega \sim 1\ \Omega$, (1kHz)	$U_{\text{rel}}=0.3\%$		
				$1\ \Omega \sim 10\ \Omega$, (1kHz)	$U_{\text{rel}}=0.15\%$		
				$10\ \Omega \sim 1\text{M}\ \Omega$, (1kHz)	$U_{\text{rel}}=0.06\%$		
		dielectric loss factor		$0.1 \sim 1$, (1kHz)	$U_{\text{rel}}=0.12\% \sim 0.2\%$		
65	*V.E.for resistance	Resistance	Calibration Specification for AC&DC Resistance Simulators JJF 1723	DC: $(0.0001 \sim 100)\ \Omega$	$U_{\text{rel}}=1 \times 10^{-4} \sim 3 \times 10^{-4}$		
				AC: $(0.0001 \sim 100)\ \Omega$, (45Hz~65Hz)	$U_{\text{rel}}=2 \times 10^{-4} \sim 8 \times 10^{-4}$		
		Current		DC: $(0.1 \sim 100)\text{A}$	$U_{\text{rel}}=1 \times 10^{-4} \sim 3 \times 10^{-4}$		
				AC: $(0.1 \sim 100)\text{A}$, (45Hz~65Hz)	$U_{\text{rel}}=2 \times 10^{-4} \sim 8 \times 10^{-4}$		
66	*VDR DC Parameter Testers	dc reference current	Calibration Specification for VDR Testers SDIM/CJGDX28	$(0.1 \sim 1)\text{mA}$	$U_{\text{rel}}=5.8 \times 10^{-4} \sim 9.8 \times 10^{-5}$		
		varistor voltage		$(10 \sim 1000)\text{V}$	$U_{\text{rel}}=8.4 \times 10^{-5} \sim 1.2 \times 10^{-4}$		
		leakage current		$(0.1 \sim 1)\text{mA}$	$U_{\text{rel}}=1 \times 10^{-3} \sim 1 \times 10^{-4}$		
67	*Multi-function Standard Source	DC Voltage	Calibration Specification for Multifunction Standard Sources JJF 1638	$(1 \sim 200)\text{mV}$	$U_{\text{rel}}=0.00085\% \sim 0.04\%$		
				$(0.2 \sim 1000)\text{V}$	$U_{\text{rel}}=0.0003\% \sim 0.0007\%$		
		DC Current		$10\ \mu\text{A} \sim 100\ \mu\text{A}$	$U_{\text{rel}}=0.002\% \sim 0.0096\%$		
				$0.1\text{mA} \sim 100\text{A}$	$U_{\text{rel}}=0.0013\% \sim 0.0035\%$		
		AC Voltage		$10\text{mV} \sim 200\text{mV}$, (10Hz~40Hz)	$U_{\text{rel}}=0.007\% \sim 0.033\%$		
				$0.2\text{V} \sim 200\text{V}$, (10Hz~40Hz)	$U_{\text{rel}}=0.005\% \sim 0.017\%$		



No. CNAS L0854

第 62 页 共 127 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
				200V~1000V,(10Hz~40Hz)	$U_{rel}=0.008\%\sim0.016\%$		
				10mV~200mV,(40Hz~20kHz)	$U_{rel}=0.003\%\sim0.019\%$		
				0.2V~200V,(40Hz~20kHz)	$U_{rel}=0.0019\%\sim0.0031\%$		
				200V~1000V,(40Hz~20kHz)	$U_{rel}=0.0029\%\sim0.0032\%$		
				10mV~200mV,(20kHz~100kHz)	$U_{rel}=0.006\%\sim0.043\%$		
				0.2V~200V,(20kHz~100kHz)	$U_{rel}=0.003\%\sim0.007\%$		
				200V~1000V,(20kHz~100kHz)	$U_{rel}=0.01\%\sim0.038\%$		
				10mV~200mV,(100kHz~500kHz)	$U_{rel}=0.02\%\sim0.13\%$		
				0.2V~200V,(100kHz~500kHz)	$U_{rel}=0.012\%\sim0.038\%$		
				10mV~200mV,(500kHz~1MHz)	$U_{rel}=0.08\%\sim0.19\%$		
				0.2V~200V,(500kHz~1MHz)	$U_{rel}=0.07\%\sim0.09\%$		
		AC Current		10 μ A~100 μ A,(100Hz~10kHz)	$U_{rel}=0.084\%\sim0.54\%$		
				100 μ A~10mA,(10Hz~10kHz)	$U_{rel}=0.084\%\sim0.30\%$		



No. CNAS L0854

第 63 页 共 127 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
		DC. Resistance		10mA~100A,(10Hz~40Hz)	$U_{rel}=0.005\%\sim 0.018\%$		
				10mA~100A,(40Hz~1kHz)	$U_{rel}=0.003\%\sim 0.007\%$		
				10mA~100A,(1kHz~10kHz)	$U_{rel}=0.003\%\sim 0.023\%$		
				1Ω~20Ω	$U_{rel}=0.001\%\sim 0.0054\%$		
				20Ω~200kΩ	$U_{rel}=0.0008\%\sim 0.0010\%$		
				200kΩ~20MΩ	$U_{rel}=0.0009\%\sim 0.0062\%$		
				20MΩ~200MΩ	$U_{rel}=0.01\%\sim 0.052\%$		
				200MΩ~1GΩ	$U_{rel}=0.15\%\sim 0.52\%$		
68	*Digital Clamp Meter	DC Voltage	Calibration Specification of Clamp Ammeters JJF1075	(20~330)mV	$U_{rel}=5.5\times 10^{-4}\sim 3\times 10^{-3}$		
				330mV~3.3V	$U_{rel}=4.6\times 10^{-4}\sim 3\times 10^{-3}$		
				(3.3~33)V	$U_{rel}=6.2\times 10^{-4}\sim 3\times 10^{-3}$		
				(33~330)V	$U_{rel}=5.2\times 10^{-4}\sim 3\times 10^{-3}$		
				(330~1000)V	$U_{rel}=7.6\times 10^{-4}\sim 3\times 10^{-3}$		
		AC Voltage		(100~330)mV,(45Hz~10kHz)	$U_{rel}=7.8\times 10^{-4}\sim 3.2\times 10^{-3}$		
				330mV~3.3V,(45Hz~10kHz)	$U_{rel}=5.8\times 10^{-4}\sim 3\times 10^{-3}$		
				(3.3~33)V,(45Hz~10kHz)	$U_{rel}=7.1\times 10^{-4}\sim 3.1\times 10^{-3}$		
				(33~330)V,(45Hz~10kHz)	$U_{rel}=8\times 10^{-4}\sim 3.1\times 10^{-3}$		



No. CNAS L0854

第 64 页 共 127 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 Current	ilac-M	(330~1000)V,(45Hz~10kHz)	$U_{rel}=9.7 \times 10^{-4} \sim 3.1 \times 10^{-3}$			
				(100~330)mA	$U_{rel}=9.2 \times 10^{-4} \sim 3.1 \times 10^{-3}$			
				330mA~2.2A	$U_{rel}=8.8 \times 10^{-4} \sim 3.1 \times 10^{-3}$			
				(2.2~11)A	$U_{rel}=1.5 \times 10^{-3} \sim 3.3 \times 10^{-3}$			
				(11~1000)A	$U_{rel}=1.3 \times 10^{-3} \sim 3.2 \times 10^{-3}$			
		AC Current		(100~330)mA,(45Hz~400Hz)	$U_{rel}=1.4 \times 10^{-3} \sim 3.7 \times 10^{-3}$			
				330mA~2.2A,(45Hz~400Hz)	$U_{rel}=1.9 \times 10^{-3} \sim 3.9 \times 10^{-3}$			
				(2.2~11)A,(45Hz~400Hz)	$U_{rel}=1.4 \times 10^{-3} \sim 3.6 \times 10^{-3}$			
				(11~1000)A,(45Hz~400Hz)	$U_{rel}=1.3 \times 10^{-3} \sim 3.2 \times 10^{-3}$			
				DC Resistance	(10~11) Ω		$U_{rel}=1.3 \times 10^{-3} \sim 9.1 \times 10^{-3}$	
					(11~33) Ω		$U_{rel}=1.1 \times 10^{-3} \sim 3.5 \times 10^{-3}$	
					(33~330) Ω		$U_{rel}=1.1 \times 10^{-3} \sim 6.2 \times 10^{-3}$	
					330 Ω ~3.3k Ω		$U_{rel}=1.0 \times 10^{-3} \sim 3.1 \times 10^{-3}$	
		(3.3~33)k Ω			$U_{rel}=1.1 \times 10^{-3} \sim 3.1 \times 10^{-3}$			
		(33~330)k Ω			$U_{rel}=8.2 \times 10^{-4} \sim 3.1 \times 10^{-3}$			
		330k Ω ~3.3M Ω			$U_{rel}=7.3 \times 10^{-4} \sim 3 \times 10^{-3}$			
		(3.3~11)M Ω		$U_{rel}=1.1 \times 10^{-3} \sim 3.2 \times 10^{-3}$				



No. CNAS L0854

第 65 页 共 127 页

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

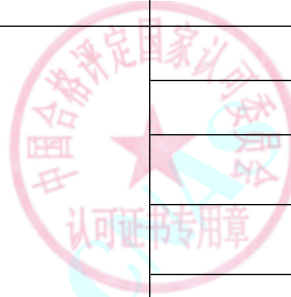
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(11~33)MΩ	U _{rel} =1.4×10 ⁻³ ~3.3×10 ⁻³		
				(33~110)MΩ	U _{rel} =5.9×10 ⁻³ ~6.7×10 ⁻³		
				(110~330)MΩ	U _{rel} =5.9×10 ⁻³ ~6.7×10 ⁻³		
69	*Multimeters	DC Voltage	Calibration Specification for Multimeters JJF 1587	(1~200)mV	U _{rel} =0.0009%~0.05%		
				(0.2~1000)V	U _{rel} =0.0002%~0.0008%		
		DC Current		10 μ A~100 μ A	U _{rel} =0.01%~0.06%		
				0.1mA~100A	U _{rel} =0.0023%~0.051%		
		AC Voltage		10mV~200mV,(10Hz~40Hz)	U _{rel} =0.007%~0.033%		
				0.2V~200V,(10Hz~40Hz)	U _{rel} =0.005%~0.017%		
				200V~1000V,(10Hz~40Hz)	U _{rel} =0.008%~0.016%		
				10mV~200mV,(40Hz~20kHz)	U _{rel} =0.003%~0.019%		
				0.2V~200V,(40Hz~20kHz)	U _{rel} =0.0019%~0.0031%		
				200V~1000V,(40Hz~20kHz)	U _{rel} =0.0029%~0.0032%		
				10mV~200mV,(20kHz~100kHz)	U _{rel} =0.006%~0.043%		
				0.2V~200V,(20kHz~100kHz)	U _{rel} =0.003%~0.007%		
				200V~1000V,(20kHz~100kHz)	U _{rel} =0.01%~0.038%		



No. CNAS L0854

第 66 页 共 127 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
			ilac-M CNAS CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF APPROVED CERTIFICATE	10mV~200mV,(100kHz~500kHz)	$U_{rel}=0.02\%\sim 0.13\%$		
				0.2V~200V,(100kHz~500kHz)	$U_{rel}=0.012\%\sim 0.038\%$		
				10mV~200mV,(500kHz~1MHz)	$U_{rel}=0.08\%\sim 0.19\%$		
				0.2V~200V,(500kHz~1MHz)	$U_{rel}=0.07\%\sim 0.09\%$		
		AC Current		0.1mA~100A,(10Hz~40Hz)	$U_{rel}=0.005\%\sim 0.018\%$		
				0.1mA~100A,(40Hz~1kHz)	$U_{rel}=0.003\%\sim 0.007\%$		
				0.1mA~100A,(1kHz~10kHz)	$U_{rel}=0.003\%\sim 0.023\%$		
		Resistance		1 Ω ~ 10 Ω	$U_{rel}=0.0021\%\sim 0.009\%$		
				10 Ω ~ 100k Ω	$U_{rel}=0.0008\%\sim 0.0011\%$		
				100k Ω ~ 100M Ω	$U_{rel}=0.0018\%\sim 0.010\%$		
70	*Scope Meter	DC Voltage	Calibration Specification for Multimeters JJF 1587	(10~200)mV	$U_{rel}=0.0009\%\sim 0.0046\%$		
				(0.2~1000)V	$U_{rel}=0.0002\%\sim 0.0008\%$		
		AC Voltage		10mV~200mV,(10Hz~40Hz)	$U_{rel}=0.007\%\sim 0.033\%$		
				0.2V~200V,(10Hz~40Hz)	$U_{rel}=0.005\%\sim 0.017\%$		
				200V~1000V,(10Hz~40Hz)	$U_{rel}=0.008\%\sim 0.016\%$		



No. CNAS L0854

第 67 页 共 127 页

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

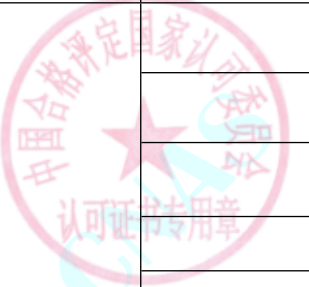
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				10mV~200mV,(40Hz~20kHz)	$U_{rel}=0.003\%\sim 0.019\%$		
				0.2V~200V,(40Hz~20kHz)	$U_{rel}=0.0019\%\sim 0.0031\%$		
				200V~1000V,(40Hz~20kHz)	$U_{rel}=0.0029\%\sim 0.0032\%$		
				10mV~200mV,(20kHz~100kHz)	$U_{rel}=0.006\%\sim 0.043\%$		
				0.2V~200V,(20kHz~100kHz)	$U_{rel}=0.003\%\sim 0.007\%$		
				200V~1000V,(20kHz~100kHz)	$U_{rel}=0.01\%\sim 0.038\%$		
				10mV~200mV,(100kHz~500kHz)	$U_{rel}=0.02\%\sim 0.13\%$		
				0.2V~200V,(100kHz~500kHz)	$U_{rel}=0.012\%\sim 0.038\%$		
				10mV~200mV,(500kHz~1MHz)	$U_{rel}=0.08\%\sim 0.19\%$		
				0.2V~200V,(500kHz~1MHz)	$U_{rel}=0.07\%\sim 0.09\%$		
		Resistance		1 $\Omega \sim 10 \Omega$	$U_{rel}=0.0021\%\sim 0.009\%$		
				10 $\Omega \sim 100k \Omega$	$U_{rel}=0.0008\%\sim 0.0011\%$		
				100k $\Omega \sim 100M \Omega$	$U_{rel}=0.0018\%\sim 0.0010\%$		
		Time		0.2ns~10s	$U_{rel}=0.12\%$		



No. CNAS L0854

第 68 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Amplitude		5mV~200V	$U_{rel}=0.56\%$		
		Band width		50kHz~100MHz	$U_{rel}=5.8\%$		
		Rise time		200ps~35ns	$U_{rel}=6\%$		
71	*Nanovoltmeters	DC Voltage	Calibration Specification of Nanovoltmeters JJF 2296	0.1mV~1mV	$U_{rel}=5\times 10^{-6}\sim 7\times 10^{-6}$		
				1mV~100mV	$U_{rel}=6\times 10^{-6}\sim 8\times 10^{-6}$		
72	*the DC Resistive Volt Ratio BOX	Voltage ratio	Verification Regulation of the DC Resistive Volt Ratio Box JJG 531	Ratio: 10	$U_{rel}=1.7\times 10^{-5}$		
				Ratio: 100	$U_{rel}=2.1\times 10^{-5}$		
				Ratio: 200	$U_{rel}=1.4\times 10^{-5}$		
				Ratio: 500	$U_{rel}=1.1\times 10^{-5}$		
73	AC Current-Voltage Converter	AC Current	Calibration specification of AC current-voltage converters SDIM/CJGDX49	0.01A~20A	DC OUTPUT: $U_{rel}=3.1\times 10^{-5}\sim 8\times 10^{-5}$; AC OUTPUT: $U_{rel}=1.0\times 10^{-4}\sim 1.3\times 10^{-4}$		
				20A~100A	DC OUTPUT: $U_{rel}=4\times 10^{-5}\sim 5\times 10^{-5}$; AC OUTPUT: $U_{rel}=1.0\times 10^{-4}\sim 1.9\times 10^{-4}$		
74	*AC and DC instrument calibration device	Voltage	Calibration Specification for Verification Equipment of Electrical Measuring Devices JJF 1923	(0.02~1000)V,(45Hz~65Hz)	$U_{rel}=5.9\times 10^{-5}\sim 1.6\times 10^{-4}$		
		Current		(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2\times 10^{-4}\sim 5.9\times 10^{-4}$		
		Power		(57.7~380)V,(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2\times 10^{-4}\sim 1.3\times 10^{-4}$		
		Power factor		0.0001~1.0000	$U=0.0001\sim 0.00015$		
		Distortion		0.005%~30%,(45Hz~65Hz)	$U_{rel}=10\%$		



№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Frequency		(45~65)Hz	$U_{\text{rel}}=1.2 \times 10^{-4}$		
		Voltage		(0.02~1000)V	$U_{\text{rel}}=5.8 \times 10^{-6} \sim 8.2 \times 10^{-5}$		
		Current		(0.0001~30)A	$U_{\text{rel}}=6.6 \times 10^{-5} \sim 2.0 \times 10^{-4}$		
75	*Tri-phase power factor meter	Power factor	Calibration Specification for Digital AC Electrical Parameters Meter JJF1491	0~1	$U=0.001$		
		Phase		$0^{\circ} \sim 360^{\circ}$	$U=0.04^{\circ}$		
76	DC Low Current Meters	Current	Verification Regulation for DC Low Current Meters JJG (军工) 200	10pA~1nA	$U_{\text{rel}}=0.23\% \sim 0.58\%$		
				1nA~100nA	$U_{\text{rel}}=0.11\% \sim 0.13\%$		
				$0.1 \mu\text{A} \sim 10 \mu\text{A}$	$U_{\text{rel}}=0.013\% \sim 0.06\%$		
77	*Zinc-oxide Arrester Testers	Voltage	Calibration Specification for Zinc-oxide Arrester Testers JJF 2194	(0.02~10) V, (40Hz~70Hz)	$U_{\text{rel}}=1.3 \times 10^{-3} \sim 8.2 \times 10^{-4}$		
				(10~1000) V, (40Hz~70Hz)	$U_{\text{rel}}=5.8 \times 10^{-4}$		
		Current		(0.0001~1) A, (40Hz~70Hz)	$U_{\text{rel}}=8.6 \times 10^{-4}$		
		Phase angel		$0^{\circ} \sim 90^{\circ}$	$U=0.04^{\circ}$		
78	*Digital RCD tester	Current	Calibration Specification for Residual Current Operated Protective Device Operated Characteristic Tester JJF 1283	(10~2500) mA	$U=0.13\text{mA} \sim 3.1\text{mA}$		
		time		(20~5000) ms	$U=0.2\text{ms}$		
79	*Artificial breakdown devices of wire and cable sparks testing machine	Current	Calibration Specification of Artificial Breakdown Devices of Wire and Cable Sparks Testing Machine SDIM/CJGDX44	DC: $20 \mu\text{A} \sim 1\text{A}$	$U_{\text{rel}}=8 \times 10^{-5} \sim 3.7 \times 10^{-4}$		
				AC: $20 \mu\text{A} \sim 1\text{A}$, (45Hz~65Hz)	$U_{\text{rel}}=1.0 \times 10^{-4} \sim 3.7 \times 10^{-4}$		
		Resistance		$10 \Omega \sim 10\text{M} \Omega$	$U_{\text{rel}}=6 \times 10^{-6}$		

No. CNAS L0854

第 70 页 共 127 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
		Capacity		(1~1000)pF, (1kHz)	$U_{rel}=2 \times 10^{-3}$		
		Time		0.1ms~10s	$U_{rel}=1.3\%$		
80	*Resistance strain gauge	strain variable Frequency response	Verification Regulation ofThe resistance strain gauge JJG 623	(0.1~100000)μ ε (-3~3)dB, (10 Hz~500kHz)	$U_{rel}=0.1\%$ $U=0.14\text{dB}$		
81	*Tesla-Meter	Magnetic field intensity	Calibration Specification of (1mT~2.5T) Magnetometer JJF 1832	(10~300)mT (300~2000) mT	$U_{rel}=0.14\%$ $U_{rel}=0.13\%$		
82	*Magnetic field intensity -Meter	Magnetic field intensity	Calibration specification for magnetic magnetometer JJF 1656	(0.05~5)mT	$U_{rel}=2.4\%$		
83	*Electric meters calibrator	Voltage	Calibration Specification of calibrators for Electrical Meters JJF 1284	DC: (0.02~10)V	$U_{rel}=5.8 \times 10^{-6} \sim 6.7 \times 10^{-5}$		
				DC: (10~1000)V	$U_{rel}=6.7 \times 10^{-5} \sim 8.2 \times 10^{-5}$		
				AC: (0.02~10)V,(10Hz~20kHz)	$U_{rel}=5.9 \times 10^{-5} \sim 1.3 \times 10^{-4}$		
				AC: (10~1000)V,(10Hz~20kHz)	$U_{rel}=1.3 \times 10^{-4} \sim 1.6 \times 10^{-4}$		
		Current		DC: (0.0001~1)A	$U_{rel}=6.6 \times 10^{-5} \sim 2.0 \times 10^{-4}$		
				DC: (1~30)A	$U_{rel}=5 \times 10^{-5}$		
				AC: (0.0001~1)A,(10Hz~20kHz)	$U_{rel}=3.6 \times 10^{-4} \sim 8.1 \times 10^{-4}$		
				AC: (1~100)A,(45Hz~65Hz)	$U_{rel}=5 \times 10^{-4}$		
		Resistance		10 Ω ~100M Ω	$U_{rel}=5.8 \times 10^{-5} \sim 8.6 \times 10^{-5}$		



No. CNAS L0854

第 71 页 共 127 页

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

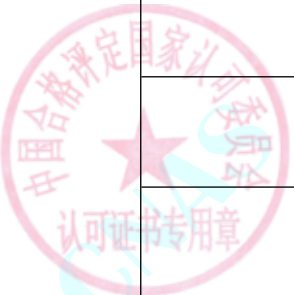
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
84	*Alternating Current Watt-hour Meter	Electrical energy	Verification Regulation of Electrical Meters for Measuring Alternating-current Electrical Energy JJG 596	(57.7~380)V, (0.005~100)A, $\cos \phi = 1.0$	$U_{rel} = 0.03\%$		
				(57.7~380)V, (0.005~100)A, $\cos \phi = 0.5L$	$U_{rel} = 0.04\%$		
				(57.7~380)V, (0.005~100)A, $\cos \phi = 0.8C$	$U_{rel} = 0.04\%$		
		Time		Daily error: $(-10 \sim 10)$ s/d	$U = 0.06s/d$		
85	*Tri-phase multifunction electrical meter	Electrical energy	Verification Regulation of multi-rate Electricity Meters for measuring alternating-current Electrical energy JJG 691	(57.7~380)V, (0.005~100)A, $\cos \phi = 1.0$	$U_{rel} = 0.03\%$		
				(57.7~380)V, (0.005~100)A, $\cos \phi = 0.5L$	$U_{rel} = 0.04\%$		
				(57.7~380)V, (0.005~100)A, $\cos \phi = 0.8C$	$U_{rel} = 0.04\%$		
		Time		Daily Error: $(-10 \sim 10)$ s/d	$U = 0.06s/d$		
86	Multi-user electrical meter	Electrical energy	Verification Regulation of Multi-users Electrical Meters JJG (鲁) 80	Single phase: (57.7~380)V, (0.005~100)A, $\cos \phi = 1.0$	$U_{rel} = 0.03\%$		
				Single phase: (57.7~380)V, (0.005~100)A, $\cos \phi = 0.5L$	$U_{rel} = 0.04\%$		
				Single phase: (57.7~380)V, (0.005~100)A, $\cos \phi = 0.8C$	$U_{rel} = 0.05\%$		
				3P4W: (57.7~380)V, (0.005~100)A, $\cos \phi = 1.0$	$U_{rel} = 0.03\%$		



No. CNAS L0854

第 72 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=0.5L$	$U_{rel}=0.04\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=0.8C$	$U_{rel}=0.04\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{rel}=0.03\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=0.5L$	$U_{rel}=0.04\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=0.8C$	$U_{rel}=0.04\%$		
87	*Reference Meters for Electrical Energy	Electrical energy	Verification Regulation of Reference Meters for Electrical Energy JJG 1085	(57.7~380)V,(0.2~150)A,3P4W,1P,cos $\phi=1$,sin $\phi=1$	$U_{rel}=0.8 \times 10^{-4}$		
				(57.7~380)V,(0.02~0.2)A,3P4W,1P,cos $\phi=1$,sin $\phi=1$	$U_{rel}=1.0 \times 10^{-4}$		
				(57.7~380)V,(0.02~150)A,3P3W,cos $\phi=1$,sin $\phi=1$	$U_{rel}=1.0 \times 10^{-4}$		
				(57.7~380)V,(0.005~0.02)A,3P4W,1P,cos $\phi=1$,sin $\phi=1$	$U_{rel}=1.2 \times 10^{-4}$		



No. CNAS L0854

第 73 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				(57.7~380)V,(0.005~0.02)A,3P3W,cos ϕ $=1$,sin $\phi=1$	$U_{rel}=1.4 \times 10^{-4}$		
				(57.7~380)V,(0.003~0.005)A,3P4W,3P3W,cos $\phi=1$,sin $\phi=1$	$U_{rel}=2.1 \times 10^{-4}$		
				(57.7~380)V,(0.001~0.003)A,3P4W,3P3W,1P, cos $\phi=1$,sin $\phi=1$	$U_{rel}=2.4 \times 10^{-4}$		
				(57.7~380)V,(0.0003~0.001)A,3P4W,3P3W,1P, cos $\phi=1$,sin $\phi=1$	$U_{rel}=3.3 \times 10^{-4}$		
				(57.7~380)V,(0.02~150)A,3P4W,1P,cos $\phi:0.5L,0.5C,0.8C$,sin $\phi:0.5L,0.5C$	$U_{rel}=1.4 \times 10^{-4}$		
				(57.7~380)V,(0.02~150)A,3P3W,cos $\phi:0.5L,0.5C,0.8C$,sin $\phi:0.5L,0.5C$	$U_{rel}=1.5 \times 10^{-4}$		
				(57.7~380)V,(0.005~0.02)A,3P4W,1P,3P3W,c os $\phi:0.5L,0.5C,0.8C$,sin $\phi:0.5L,0.5C$	$U_{rel}=1.7 \times 10^{-4}$		
				(57.7~380)V,(0.003~0.005)A,3P4W,3P3W,cos $\phi:0.5L,0.5C,0.8C$,sin $\phi:0.5L,0.5C$	$U_{rel}=2.4 \times 10^{-4}$		



No. CNAS L0854

第 74 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
88	Harmonic analyzer	Fundamental voltage	Verification Regulation of Verification code for Power quality analyzer JJG (鲁) 97	(10~400)V,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
		Fundamental Frequency		(45~65)Hz	$U_{rel}=1.2 \times 10^{-4}$		
		The harmonic		0.1%~50%,(2second~60second)	$U_{rel}=0.03\%$		
		Flicker		Rate of change: 1~1620	$U_{rel}=1 \times 10^{-3} \sim 3 \times 10^{-3}$		
		Current		(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		Power		(0.0001~120)kW,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 1.3 \times 10^{-4}$		
		Power factor		0.0002~1.0000	$U=0.0001 \sim 0.00015$		
89	*digital Electrical parameters testing meter	Voltage	Calibration Specification for Digital AC Electrical Parameters Meter JJF1491	(57.7~380)V,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
		Current		(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		Power		(0.0002~120)kW,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 1.3 \times 10^{-4}$		
		Power factor		0.0001~1.0000	$U=0.0001 \sim 0.00015$		
		Frequency		(45~65)Hz	$U_{rel}=1.2 \times 10^{-4}$		
90	*Leakage Current testers	DC Current	Verification Regulation of Leakage Current testers JJG 843	(0.02~100)mA	$U_{rel}=0.01\% \sim 0.04\%$		
		AC Current		(0.02~100)mA,(45Hz~65Hz)	$U_{rel}=0.02\% \sim 0.05\%$		
		DC Voltage		(0.02~400)V	$U_{rel}=0.01\% \sim 0.02\%$		
		AC Voltage		(0.02~400)V,(45Hz~65Hz)	$U_{rel}=0.01\% \sim 0.5\%$		



No. CNAS L0854

第 75 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		DC Resistance		800 Ω ~ 10k Ω	$U_{rel}=0.002\%$		
		AC Impedance		100 Ω ~ 2.5k Ω , (20Hz ~ 1MHz)	$U_{rel}=0.35\%$ ~ 0.70%		
		frequency response characteristics of transfer impedance		(0 ~ 65)dB, (20Hz ~ 1MHz)	$U=0.02$ dB ~ 0.04 dB		
91	*Medical Leakage Current Testers	DC Current	Verification Regulation of Medical Leakage Current Testers JJG 1188	(0.02 ~ 100)mA	$U_{rel}=0.01\%$ ~ 0.04%		
		AC Current		(0.02 ~ 100)mA, (50Hz, 60Hz)	$U_{rel}=0.02\%$ ~ 0.05%		
		DC Voltage		(0.02 ~ 400)V	$U_{rel}=0.01\%$ ~ 0.02%		
		AC Voltage		(0.02 ~ 400)V, (50Hz, 60Hz)	$U_{rel}=0.01\%$ ~ 0.5%		
		Resistance		800 Ω ~ 2k Ω	$U_{rel}=0.002\%$		
		Impedance		100 Ω ~ 2.5k Ω , (10Hz ~ 1MHz)	$U_{rel}=0.35\%$ ~ 0.70%		
		frequency response characteristics of transfer impedance		(0 ~ 65)dB, (10Hz ~ 1MHz)	$U=0.02$ dB ~ 0.04 dB		
92	*Power Analyzer	AC Voltage	Calibration Specification of Power Analyzers JJF 2040	0.01V ~ 1000V, (40Hz ~ 10kHz)	$U_{rel}=1.2 \times 10^{-4}$		
		AC Current		(0.005 ~ 80)A, (16Hz ~ 850Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
				(80 ~ 100)A, (45Hz ~ 65Hz)	$U_{rel}=2 \times 10^{-4}$		



No. CNAS L0854

第 76 页 共 127 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
		AC power		5mW~80kW,(16Hz~850Hz)	$U_{rel}=1.2\times10^{-4}\sim1.3\times10^{-4}$		
		Phase		$0^{\circ}\sim360^{\circ}$	$U=0.005^{\circ}$		
		Frequency		40Hz~10kHz	$U_{rel}=1.2\times10^{-4}$		
		DC Voltage		10mV~1000V	$U_{rel}=4.5\times10^{-5}\sim4.6\times10^{-4}$		
		DC Current		0.02mA~600A	$U_{rel}=1.2\times10^{-4}\sim1.0\times10^{-3}$		
		DC power		10mV~1000V/0.02mA~600A	$U_{rel}=1.2\times10^{-4}$		
93	*Standard Digital Power Meters	AC power	Calibration Specification for Standard Digital Power Meters JJF 2226	ACV:15V~600V ACI:1mA~100A $0^{\circ}\sim360^{\circ}$ 45Hz~65Hz	$U_{rel}=1.2\times10^{-4}\sim1.3\times10^{-4}$		
		DC power		DCV:10mV~1000V DCI:10 μ A~600A	$U_{rel}=1.2\times10^{-4}$		
94	*Equipment for AC Electrical Energy Meter	AC Voltage	Verification Regulation of Verification Equipment for AC Electrical Energy Meter JJG 597	(57.7~380)V,(45Hz~65Hz)	$U_{rel}=0.9\times10^{-4}$		
		AC Current		(0.0003~0.001)A,(45Hz~65Hz)	$U_{rel}=1.5\times10^{-4}$		
				(0.001~0.005)A,(45Hz~65Hz)	$U_{rel}=1.2\times10^{-4}$		
				(0.005~150)A,(45Hz~65Hz)	$U_{rel}=1.2\times10^{-4}$		
				(150~800)A,(45Hz~65Hz)	$U_{rel}=2.9\times10^{-4}$		
		AC Power	(57.7~380)V,(0.0003~0.001)A,($0^{\circ}\sim360^{\circ}$,45Hz~65Hz)	$U_{rel}=1.5\times10^{-4}$			



No. CNAS L0854

第 77 页 共 127 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
				(57.7~380)V,(0.005~100)A,(0°~360°,45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
				(57.7~380)V,(0.005~150)A,(0°~360°,45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
				(57.7~380)V,(150~800)A,(0°~360°,45Hz~65Hz)	$U_{rel}=2.9 \times 10^{-4}$		
		AC Electrical energy		(57.7~380)V,(0.0003~0.001)A,cos $\phi=1$,sin $\phi=1L,1C$	$U_{rel}=1.5 \times 10^{-4}$		
				(57.7~380)V,(0.001~0.005)A,cos $\phi=1$,sin $\phi=1L,1C$	$U_{rel}=1.2 \times 10^{-4}$		
				(57.7~380)V,(0.005~150)A,cos $\phi=1$	$U_{rel}=8 \times 10^{-5}$		
				(57.7~380)V,(0.001~0.005)A,cos $\phi=0.5L,0.8C,0.5C$,sin $\phi=0.5L,0.5C$	$U_{rel}=1.5 \times 10^{-4}$		
				(57.7~380)V,(0.005~150)A,cos $\phi=0.5L,0.8C,0.5C$,sin $\phi=1L,1C,0.5L,0.5C$	$U_{rel}=1.2 \times 10^{-4}$		
				(57.7~380)V,(150~800)A,cos $\phi=1,0.5L,0.8C,0.5C$,sin $\phi=1L,1C,0.5L,0.5C$	$U_{rel}=2.9 \times 10^{-4}$		



No. CNAS L0854

第 78 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Power factor		0.0001~1.0000	$U=0.0001\sim0.00015$		
		Frequency		(45~65)Hz	$U_{rel}=1.2\times10^{-4}$		
95	*Harmonics Analyzing Instruments at Power Frequency	AC Voltage	Verification Regulation of Calibration Specification for Harmonics Analyzing Instruments at Power Frequency JJF 1667	(57.7~380)V,(45Hz~65Hz)	$U_{rel}=1.2\times10^{-4}$		
		AC Current		(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2\times10^{-4}\sim5.9\times10^{-4}$		
		AC Power		(57.7~380)V,(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2\times10^{-4}\sim1.3\times10^{-4}$		
		Power factor		0.0001~1.0000	$U=0.0001\sim0.00015$		
		Distortion		0.005%~30%,(45Hz~65Hz)	$U_{rel}=10\%$		
		Frequency		(45~65)Hz	$U_{rel}=1.2\times10^{-4}$		
		Harmonic		2second~50second	$U_{rel}=1\times10^{-3}$		
96	*A.C Charging Point for Electric Vehicle	AC Electrical energy	Verification Regulation of AC Charge Spots for Electric Vehicles(for Trial Implementation) JJG 1148	$3\times(57.7\sim220)$ V,(5mA~63A) ,(45~65) Hz	$U_{rel}=0.2\%$		
		Clock Time		China Standard Time	$U=2s$		
97	*Off-board Charger for Electric Vehicle	DC Electrical energy	Verification Regulation of Off-board Charger for Electric Vehicle(for Trial Implementation) JJG 1149	(200~1000)V,(1~250)A	$U_{rel}=0.2\%$		
		Clock Time		China Standard Time	$U=2s$		
98	*Calibrator of AC Charging Piles for Electric Vehicles	AC Electrical energy	Calibrator of AC Charging Piles for Electric Vehicles JJG1193	$3\times(57.74V\sim264V)$; $3\times(0.1A\sim63A)$; $0^\circ\sim360^\circ$, (45Hz~65Hz)	$U_{rel}=2\times10^{-4}$		
		AC Voltage		$3\times(57.74V\sim264V)$, (45Hz~65Hz)	$U_{rel}=1.4\times10^{-4}$		

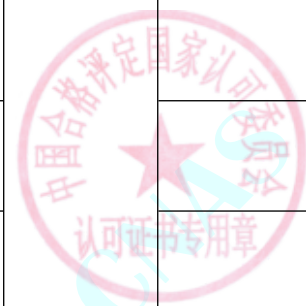


No. CNAS L0854

第 79 页 共 127 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
		AC Current		$3 \times (0.1\text{A} \sim 63\text{A}),$ (45Hz~65Hz)	$U_{\text{rel}}=1.6 \times 10^{-4}$		
		Clock Time		China Standard Time	$U=0.1\text{s}$		
99	*Static harmonic meters of active electrical energy for working	AC Electrical energy	Verification Regulation of Static harmonic meters of active electrical energy for working JJG 1106	Single phase: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{\text{rel}}=0.6\%$		
				Single phase: (57.7~380)V,(0.005~100)A,cos $\phi=0.5\text{L}$	$U_{\text{rel}}=0.6\%$		
				Single phase: (57.7~380)V,(0.005~100)A,cos $\phi=0.8\text{C}$	$U_{\text{rel}}=0.6\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{\text{rel}}=0.6\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=0.5\text{L}$	$U_{\text{rel}}=0.6\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=0.8\text{C}$	$U_{\text{rel}}=0.6\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{\text{rel}}=0.6\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=0.5\text{L}$	$U_{\text{rel}}=0.6\%$		



No. CNAS L0854

第 80 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=0.8C$	$U_{rel}=0.6\%$		
100	*Digital Input AC Electricity meter	AC Electrical energy	Verification Regulation of Digital Input AC Electricity meters JJG 1210	Single phase: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{rel}=0.07\%$		
				Single phase: (57.7~380)V,(0.005~100)A,cos $\phi=0.5L$	$U_{rel}=0.09\%$		
				Single phase: (57.7~380)V,(0.005~100)A,cos $\phi=0.8C$	$U_{rel}=0.10\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{rel}=0.07\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=0.5L$	$U_{rel}=0.09\%$		
				3P4W: (57.7~380)V,(0.005~100)A,cos $\phi=0.8C$	$U_{rel}=0.10\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=1.0$	$U_{rel}=0.07\%$		
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=0.5L$	$U_{rel}=0.09\%$		



No. CNAS L0854

第 81 页 共 127 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
				3P3W: (57.7~380)V,(0.005~100)A,cos $\phi=0.8C$	$U_{rel}=0.10\%$		
					$U=0.1s$		
101	*Watt-hour meter and the pt secondary voltage drop tester	AC Voltage	Calibration Specification for Field Calibration Tester Of AC Electric Energy Meter JJF (皖) 148	57.7V~380V,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
		AC Current		(0.005~100)A,Cross-core: (100~800)A (45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		AC Power		(0.02~240)kW,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		Power factor		0.0001~1.0000	$U=0.0001 \sim 0.00015$		
		Frequency		(45~65)Hz	$U_{rel}=1.2 \times 10^{-4}$		
		AC Electrical energy		(57.7~380)V,(0.005~100)A, Cross-core:(100~800)A,cos $\phi=1.0$	$U=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
				(57.7~380)V, (0.005~100)A, Cross-core:(100~800)A,cos $\phi=0.5L(C)$	$U=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
				((57.7~380)V, (0.005~100)A, Cross-core:(100~800)A,cos $\phi=0.8L(C)$	$U=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		Harmonic voltage		(50~302)V, 2 to 50 times	$U_{rel}=1.5 \times 10^{-4}$		



No. CNAS L0854

第 82 页 共 127 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
		Harmonic current		(0.1~24)A,2 to 50 times	$U_{rel}=1.5\times 10^{-4}$		
		Harmonic power		(50~302)V,(0.1~24)A,2 to 50 times	$U_{rel}=2\times 10^{-4}$		
102	*Power frequency Magnetic Field Generator	AC Current	Calibration Specification for Power Frequency Magnetic Field Simulators JJF 1737	(0.01~2000)A,(50Hz~60Hz)	$U_{rel}=1.9\%$		
		Magnetic field intensity		1A/m~1200A/m	$U_{rel}=3.1\%$		
103	*Electronic meters for measuring direct-current electrical energy	DC Electrical energy	Electronic meters for measuring direct-current electrical energy JJG 842	1mV~1000V, 0.1mA~600A	$U_{rel}=0.06\%$		
		Time		Daily Error: (-10~10)s/d	$U=0.06s/d$		
104	*Verification Device of DC Electric Energy Meter	DC Voltage	Verification Equipment for DC Electrical Energy Meters JJG1186	10mV~1100V	$U_{rel}=0.6\times 10^{-4}$		
		DC Current		Direct Access:1 μ A~600A;Small Signal: (1mV~10V)	$U_{rel}=0.6\times 10^{-4}$		
		DC Power		10mV~1100V,Direct Access:1 μ A~600A;Small Signal: (1mV~10V)	$U_{rel}=0.8\times 10^{-4}$		
		DC Electrical energy		10mV~1100V,Direct Access:1 μ A~600A;Small Signal: (1mV~10V)	$U_{rel}=0.8\times 10^{-4}$		
		ripple		Voltage: 1mV~100V,(1Hz~5kHz)	$U_{rel}=2.1\times 10^{-4}$		
				Current:1mA~2A,(1Hz~5kHz)	$U_{rel}=5.3\times 10^{-4}$		



No. CNAS L0854

第 83 页 共 127 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
105	Calibrator of Off-board Chargers for Electric Vehicles	DC Electrical energy	Calibrator of Off-board Chargers for Electric Vehicles JJG1192	1mV~1150V, 1A~600A	$U_{rel}=1.4 \times 10^{-4}$		
		DC Voltage		1mV~1150V	$U_{rel}=1.3 \times 10^{-4}$		
		DC Current		1A~600A	$U_{rel}=1.3 \times 10^{-4}$		
		Clock Time		China Standard Time	$U=0.1s$		
106	*Static Electrical Meters connected via Electronic Transformer	AC Electrical energy	Verification Regulation of Static Electrical Meters connected via Electronic Transformer JJG (冀) 131	3P4W: $3 \times (57.7 \sim 380)V, 3 \times (0.005 \sim 100)A, \cos \phi = 1.0$	$U_{rel}=0.03\%$		
				3P4W: $3 \times (57.7 \sim 380)V, 3 \times (0.005 \sim 100)A, \cos \phi = 0.5L$	$U_{rel}=0.04\%$		
				3P4W: $3 \times (57.7 \sim 380)V, 3 \times (0.005 \sim 100)A, \cos \phi = 0.8C$	$U_{rel}=0.04\%$		
				3P3W: $3 \times (57.7 \sim 380)V, 3 \times (0.005 \sim 100)A, \cos \phi = 1.0$	$U_{rel}=0.03\%$		
				3P3W: $3 \times (57.7 \sim 380)V, 3 \times (0.005 \sim 100)A, \cos \phi = 0.5L$	$U_{rel}=0.04\%$		
				3P3W: $3 \times (57.7 \sim 380)V, 3 \times (0.005 \sim 100)A, \cos \phi = 0.8C$	$U_{rel}=0.04\%$		
				Daily error: $(-10 \sim 10) s/d$	$U=0.06s/d$		
		Time					
107	*Electrolytic Capacitor Leakage	leakage current	Verification Regulation of Electrolytic Capacitor	$1 \mu A \sim 0.5A$	$U_{rel}=0.003\% \sim 0.08\%$		



No. CNAS L0854

第 84 页 共 127 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
	Current Tester	voltage	Leakage Current Tester JJG (DZ) 306003	(1~1000) V	$U_{rel}=0.0007\%\sim 0.001\%$		
108	*AC、DC Stable Source	DC Voltage	C.S.for DC Specification Stabilized Power Supplies JJF1597,C.S for stable character of AC voltage stable source JJF(Defence)85	(0.1~1000) V	$U_{rel}=0.13\%\sim 0.014\%$		
		DC Current		10mA~50A	$U_{rel}=0.06\%\sim 0.3\%$		
				(50~1000) A	$U_{rel}=0.24\%$		
		AC Voltage		100mV~1000V,10Hz~ 1kHz	$U_{rel}=0.43\%\sim 0.16\%$		
		AC Current		(0.1~10) A,50Hz~ 400Hz	$U_{rel}=0.6\%\sim 0.2\%$		
				(10~100) A,50Hz~ 400Hz	$U_{rel}=0.2\%\sim 0.3\%$		
				(100~1000) A,50Hz	$U_{rel}=0.3\%$		
		Frequency		10Hz~1kHz	$U_{rel}=0.05\%$		
		Voltage Distortion		0.03%~30%	$U_{rel}=12\%$		
		RippleVoltage		0.1mV~200mV	$U_{rel}=12\%\sim 0.1\%$		
		Load Regulation		DC: (0.1~1000) V	$U_{rel}=0.05\%\sim 0.01\%$		
				AC: (0.1~1000) V	$U_{rel}=0.4\%$		
109	*Clamp Ammeters	Current	C.S.of Clamp Ammeters JJF1075	0.1A~2000A,50Hz	$U_{rel}=0.09\%\sim 0.29\%$		
		DC Current		0.1A~2000A	$U_{rel}=0.07\%\sim 0.27\%$		
110	*Documenting Process Calibrator	DC Voltage input	C.S.for Process Calibrators JJF1472	1mV~200mV	$U_{rel}=0.0009\%\sim 0.018\%$		
				0.2V~2V	$U_{rel}=0.0006\%\sim 0.024\%$		
				2V~20V	$U_{rel}=0.00043\%\sim 0.00068\%$		



No. CNAS L0854

第 85 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				20V~200V	$U_{rel}=0.00043\%\sim 0.00060\%$		
				200V~1000V	$U_{rel}=0.00061\%\sim 0.00080\%$		
		AC Voltage input		(10~200)mV (40Hz~20kHz)	$U_{rel}=0.033\%\sim 0.056\%$		
				0.2V~2V,(40Hz~ 20kHz)	$U_{rel}=0.0057\%\sim 0.0098\%$		
				2V~20V,(40Hz~ 20kHz)	$U_{rel}=0.0055\%\sim 0.0081\%$		
				20V~200V,(40Hz~ 20kHz)	$U_{rel}=0.0056\%\sim 0.0065\%$		
				200V~1000V,(50Hz~ 1kHz)	$U_{rel}=0.0064\%\sim 0.0085\%$		
		DC Current input		(0.2~2)mA	$U_{rel}=0.0045\%\sim 0.0081\%$		
				(2~20)mA	$U_{rel}=0.0043\%\sim 0.0045\%$		
				(20~200)mA	$U_{rel}=0.0043\%\sim 0.0053\%$		
				0.2A~2A	$U_{rel}=0.010\%\sim 0.046\%$		
				2A~10A	$U_{rel}=0.023\%\sim 0.15\%$		
		Resistance input		1 Ω ~ 10 Ω	$U_{rel}=0.0021\%\sim 0.009\%$		
				10 Ω ~ 100k Ω	$U_{rel}=0.0008\%\sim 0.00011\%$		
				100k Ω ~ 100M Ω	$U_{rel}=0.0018\%\sim 0.0010\%$		
		frequency input		1Hz~500kHz	$U_{rel}=0.006\%$		
		DC Voltage output		(1~200)mV	$U_{rel}=0.00018\%\sim 0.00074\%$		



No. CNAS L0854

第 86 页 共 127 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
				0.2V~2V	$U_{rel}=0.00067\%\sim 0.00011\%$		
				2V~20V	$U_{rel}=0.000011\%\sim 0.000067\%$		
				20V~200V	$U_{rel}=0.00014\%\sim 0.00097\%$		
				200V~1000V	$U_{rel}=0.0016\%\sim 0.0052\%$		
		DC Current output		(0.2~2.2)mA	$U_{rel}=0.0010\%\sim 0.0031\%$		
				(2~20)mA	$U_{rel}=0.0012\%\sim 0.0032\%$		
				(20~200)mA	$U_{rel}=0.0043\%\sim 0.0084\%$		
				0.2A~2A	$U_{rel}=0.021\%\sim 0.029\%$		
				2A~10A	$U_{rel}=0.049\%\sim 0.067\%$		
		Resistance output		1 Ω ~ 2 Ω	$U_{rel}=0.0032\%\sim 0.006\%$		
				2 Ω ~ 20 Ω	$U_{rel}=0.003\%\sim 0.029\%$		
				20 Ω ~ 200 Ω	$U_{rel}=0.003\%\sim 0.029\%$		
				200 Ω ~ 2K Ω	$U_{rel}=0.003\%\sim 0.029\%$		
				2k Ω ~ 20k Ω	$U_{rel}=0.003\%\sim 0.029\%$		
				20k Ω ~ 200k Ω	$U_{rel}=0.022\%\sim 0.17\%$		
				0.2M Ω ~ 2M Ω	$U_{rel}=0.0060\%\sim 0.0074\%$		
				2M Ω ~ 20M Ω	$U_{rel}=0.014\%\sim 0.033\%$		
				20M Ω ~ 100M Ω	$U_{rel}=1.2\%\sim 1.6\%$		
		frequency output		1Hz~500kHz	$U_{rel}=0.002\%$		



No. CNAS L0854

第 87 页 共 127 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
111	*Pointer Multimeter	DC Voltage	V.R.of Amperemeters, Voltmeters, Wattmeters and Ohmmeters JJG124	1mV~1000V	$U_{rel}=1.0\%\sim 0.2\%$		
		AC Voltage		10mV~1000V, 50Hz	$U_{rel}=1.0\%\sim 0.2\%$		
		DC Current		10 μ A~20A	$U_{rel}=1.0\%\sim 0.2\%$		
		AC Current		10 μ A~20A, 50Hz	$U_{rel}=1.0\%\sim 0.2\%$		
		Resistance		10 Ω ~10M Ω	$U_{rel}=1.0\%$		
112	*Welding Power Sources of DC Electric Welding Machine, Welding Power Sources of DC/AC Electric Welding Machine	DC voltage	Calibration Specification for Welding Power Sources of DC Electric Welding Machines JJF 1985	1V~100V	$U_{rel}=0.5\%$		
		DC current		1A~1000A	$U_{rel}=0.5\%$		
113	*Transformer Winding Deformation Testers	scan frequency	Calibration Specification for Transformer Winding Deformation Testers JJF (ZHE) 1138	1kHz~1MHz	$U_{rel}=0.002\%$		
		frequency response		-80dB~20dB	$U=0.2\text{dB}$		
114	*Voltage Transformers in Power System	ratio error	Instrument Transformers — Part4: Voltage Transformers JJG 1189.4	(57.74~10000)V/(57.74、100、150)V, 20% U_n	$U=0.005\%$		
				(57.74~10000)V/(57.74、100、150)V, 50% U_n	$U=0.004\%$		
				(57.74~10000)V/(57.74、100、150)V, (80%~120%) U_n	$U=0.003\%$		
				(10~220)kV/(57.74、100、150)V, 20% U_n	$U=0.024\%$		



No. CNAS L0854

第 88 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				(10~220)kV/(57.74、100、150)V, 50% U_n	$U=0.018\%$		
				(10~220)kV/(57.74、100、150)V, (80%~120%) U_n	$U=0.012\%$		
				(220~400)kV/(57.74、100、150)V, 20% U_n	$U=0.12\%$		
				(220~400)kV/(57.74、100、150)V, 50% U_n	$U=0.088\%$		
				(220~400)kV/(57.74、100、150)V, (80%~120%) U_n	$U=0.059\%$		
		Phase displacement		(-99.99~+99.99)' , (57.74~10000)V/(57.74、100、150)V, 20% U_n	$U=0.16'$		
				(-99.99~+99.99)' , (57.74~10000)V/(57.74、100、150)V, 50% U_n	$U=0.12'$		
				(-99.99~+99.99)' , (57.74~10000)V/(57.74、100、150)V, (80%~120%) U_n	$U=0.09'$		
				(-99.99~+99.99)' , (10~220)kV/(57.74、100、150)V, 20% U_n	$U=0.8'$		



No. CNAS L0854

第 89 页 共 127 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
				(-99.99~+99.99) ' , (10~220)kV/(57.74、 100、150)V, 50%U _n	U=0.6'		
				(-99.99~+99.99) ' , (10~220)kV/(57.74、 100、150)V, (80%~ 120%)U _n	U=0.4'		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, 20%U _n	U=4.7'		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, 50%U _n	U=3.6'		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, (80%~120%)U _n	U=2.4'		
				115	*Transformer Loss Measuring System		active power
AC Voltage	5×10 ⁴ kW~3.175× 10 ⁵ kW,(45Hz~ 65Hz)	U _{rel} =0.072%					
	3.175×10 ⁵ kW~2×10 ⁶ kW,(45Hz~ 65Hz)	U _{rel} =0.14%					
	57.74V~10kV,(45Hz~ 65Hz)	U _{rel} =0.024%					
	10kV~63.51kV,(45Hz~ 65Hz)	U _{rel} =0.036%					



No. CNAS L0854

第 90 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				63.51kV~ 400kV,(45Hz~ 65Hz)	$U_{rel}=0.070\%$		
		AC Current		(0.1~5000)A,(45Hz~ 65Hz)	$U_{rel}=0.024\%$		
116	*High voltage distribution detection device	AC Voltage	Calibration specification for high-voltage distribution detection devices SDIM/CJGDX51	57.74V~10kV,(45Hz~ 65Hz)	$U_{rel}=0.024\%$		
				10kV~110kV,(45Hz~ 65Hz)	$U_{rel}=0.036\%$		
		AC Current		(0.1~5000)A,(45Hz~ 65Hz)	$U_{rel}=0.024\%$		
		Phase		$0^{\circ} \sim 360^{\circ}$	$U=0.04^{\circ}$		
		AC Power		5.774W~ 5×10^4 kW,(45Hz~ 65Hz)	$U_{rel}=0.048\%$		
				5×10^4 kW~ 5.5×10^5 kW,(45Hz~ 65Hz)	$U_{rel}=0.072\%$		
		ratio difference		0.01%~10%	$U_{rel}=0.34\%$		
		phase difference		(0.05~500)'	$U_{rel}=0.34\%$		
117	*Current Transformer Test Set of Digital Comparison	Ratio error	Calibration Specification for Current Transformer Test Set of Digital Comparison SDIM/CJGDX52	0.01%~10%	$U_{rel}=0.34\%$		
		Phase displacement		(0.05~500)'	$U_{rel}=0.34\%$		
		Input impedance		(0.01~0.5) Ω	$U_{rel}=0.5\%$		
118	*Motor Vehicle Point-to-point Speed	AC Voltage	Verification Regulation of Motor Vehicle Point-to-point Speed Measurement	1V~57.74kV	$U_{rel}=0.06\%$		
		AC Current		5A~5000A	$U_{rel}=0.06\%$		



No. CNAS L0854

第 91 页 共 127 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 Systems	Current transformer ratio	Systems JJF(MIN) 1108	(5A~5000A)/(5A、1A)	$U_{rel}=0.03\%$		
		Voltage transformer ratio		(0.1~400)kV/(0.1、0.1/ $\sqrt{3}$)kV	$U_{rel}=0.09\%$		
		Ratio error		0.01%~10%	$U=0.06\%$		
		Phase displacement		(0.05~500)′	$U=2.4′$		
		Secondary loop load		(0.1~10000) Ω	$U_{rel}=0.1\%$		
119	*Testing Instrument of Transformer Secondary Loop Voltage Drops and Loads	Ratio error	Calibration Specification for Testing Instrument of Transformer Secondary Loop Voltage Drops and Loads JJF 1619	$\pm (0.01\% \sim 10\%)$	$U_{rel}=0.34\%$		
		Phase displacement		$\pm (0.01′ \sim 500′)$	$U_{rel}=0.34\%$		
		impedance		(0.01~10) Ω	$U_{rel}=0.12\%$		
		admittance		(0.01~10)mS	$U_{rel}=0.12\%$		
120	*Calibration Specification for Generator Rotor AC Impedance Tester	AC Voltage	Calibration Specification for Generator Rotor AC Impedance Tester JJF(新) 56	0.01V~1000V,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
		AC Current		(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		AC Power		5mW~600kW,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 1.3 \times 10^{-4}$		
		Frequency		45Hz~65Hz	$U_{rel}=1.2 \times 10^{-4}$		
		AC Impedance		(0.001~1000) Ω ,(45Hz~65Hz)	$U_{rel}=2.8 \times 10^{-4}$		
121	*Calibration Specification for Transformer	AC Voltage	Calibration Specification for Transformer Characteristic Tester JJF (新) 58	0.01V~1000V,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		



No. CNAS L0854

第 92 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
	Characteristic Tester	AC Current	ilac-M	(0.005~100)A,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		AC Power		5mW~600kW,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 1.3 \times 10^{-4}$		
		Power factor		0.0001~1.0000	$U=0.0001 \sim 0.00015$		
		Frequency		45Hz~65Hz	$U_{rel}=1.2 \times 10^{-4}$		
122	*Automatic Detection System for Fire Emergency Lighting	Emergency conversion time	Calibration Specification for Automatic Detection System of Fire Emergency Luminaires SDIM/CJGDX54	0.01ms~10s	$U=1.2\text{ms}$		
		Emergency working hours		1min~120min	$U=0.2\text{s} \sim 0.6\text{s}$		
		Discharge voltage		0.1V~30V	$U_{rel}=0.08\%$		
		Charging Voltage		0.1V~30V	$U_{rel}=0.08\%$		
		Discharge Current		10mA~10A	$U_{rel}=0.08\%$		
		Charging Current		10mA~10A	$U_{rel}=0.08\%$		
		Test Voltage		1V~750V	$U_{rel}=0.4\%$		
123	*Measuring Transducers for Covering DC Electrical Quantities	DC Voltage	V.R. of Measuring Transducers for Covering DC Electrical Quantities JJG(Defence)191	10mV~1000V	$U_{rel}=0.005\% \sim 0.01\%$		
		DC Current		10 μ A~2000A	$U_{rel}=0.01\% \sim 0.1\%$		
124	*Voltage Monitor	AC Voltage	Calibration Specification of Voltage Monitor JJF (zhe)1098	(10~500) V,50Hz	$U_{rel}=3 \times 10^{-4}$		
		Error of time of day		(-10~10)s	$U=0.01\text{s}$		



No. CNAS L0854

第 93 页 共 127 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
125	Reference Meters for DC Electrical Energy	DC Electrical energy	V. R. for Reference Meters for DC Electrical Energy JJG1187	(100mV~1000V)/(10mA~600A), Small Signal: 1mV~3V	$U_{rel}=0.8 \times 10^{-4}$		
126	Stangard DC Power Sources	DC Power	V.R. for Stangard DC Power Sources JJG(yue)064	1mV~1000V/10 μ A~100A	$U_{rel}=0.8 \times 10^{-4}$		
		DC Voltage		1mV~1000V	$U_{rel}=0.6 \times 10^{-4}$		
		DC Current		10 μ A~100A	$U_{rel}=0.6 \times 10^{-4}$		
127	*Clamp Ammeters for Measurement of Leakage Currents	ACCurrent	Verification Regulation of Clamp Ammetersfor Measurement of Leakage Currents JJG（Ji）3007	1mA~11A ,(45Hz~440Hz)	$U_{rel}=0.12\%$		
				11A~60A,(45Hz~440Hz)	$U_{rel}=0.3\%$		
		DCCurrent		1mA~11A	Urel=0.12%		
				11A~60A	$U_{rel}=0.3\%$		
128	*Charge Amplifiers	Equivalent Input Charge Noise	Verification Regulation of Charge Amplifiers JJG 338	(0.01~10000)pC	$U_{rel}=0.50\%$		
		Normalized Error		-100%~100%,(10mV~20V)	$U=0.65\%$		
		Gain Tolerance		-100%~100%,(10mV~20V)	$U=0.65\%$		
		Linearity Error		-100%~100%,(10mV~20V)	$U=0.65\%$		
		Distortion		0.005%~30%,(20Hz~20kHz)	$U_{rel}=6\%$		
				0.005%~30%,(20kHz~110kHz)	$U_{rel}=12\%$		



No. CNAS L0854

第 94 页 共 127 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
		Amplitude-frequency characteristic		-100%~100%,(10mV~20V, 20Hz~110kHz)	$U=0.65\%$		
				-180° ~180°, 20Hz~110kHz	$U=3.8^\circ$		
129	*Motor Running Parameter Tester	AC voltage	Calibration Specification for Motor Running Parameter Tester JJF (Su) 234	(1~750)V,(45Hz~66Hz)	$U_{rel}=1.2 \times 10^{-4}$		
		AC current		(1~500)A,(45Hz~66Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		AC power		1W~300kW,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4} \sim 5.9 \times 10^{-4}$		
		Power factor		0.0001~1.0000,(45Hz~65Hz)	$U=0.0001 \sim 0.00015$		
		Three-phase unbalance		0.001%~20%,(45Hz~65Hz)	$U_{rel}=1.7 \times 10^{-4} \sim 2.1 \times 10^{-4}$		
130	*Clamp Digital Phase voltammeters	AC voltage	Calibration Specification for Clamp Digital Phase voltammeters JJF (Ji) 210	0.1V~600V,(45Hz~65Hz)	$U_{rel}=1.2 \times 10^{-4}$		
		AC current		0.1A~500A,(45Hz~65Hz)	$U_{rel}=5.9 \times 10^{-4}$		
		AC power		10mW~300kW,(45Hz~65Hz)	$U_{rel}=5.9 \times 10^{-4}$		
		Phase		0° ~360°, (45Hz~65Hz)	$U=0.04^\circ$		
131	*Electric energy metering device	AC Electric energy	Inspection regulation of electric energy metering device on-site installation DL/T 1664	(57.7~380)V,(0.005~800)A,cos $\phi=1.0$	$U=0.07\% \sim 0.3\%$		
				(57.7~380)V,(0.005~800)A,cos $\phi=0.5L(C)$	$U=0.08\% \sim 0.3\%$		
				(57.7~380)V,(0.005~800)A,cos $\phi=0.8L(C)$	$U=0.08\% \sim 0.3\%$		



No. CNAS L0854

第 95 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Clock Time		China Standard Time	$U=1.8s$		
		Ratio difference of current transformer		$(0.1 \sim 5000)A/(1A、5A), 1\%I_n$	$U=0.003\%$		
		Phase difference of current transformer		$(0.1 \sim 5000)A/(1A、5A), (5\% \sim 120\%)I_n$	$U=0.002\%$		
				$(-99.99 \sim +99.99)'$, $(0.1 \sim 5000)A/(1A、5A), 1\%I_n$	$U=0.09'$		
				$(-99.99 \sim +99.99)'$, $(0.1 \sim 5000)A/(1A、5A), (5\% \sim 120\%)I_n$	$U=0.05'$		
		Voltage transformer ratio difference		$(57.74 \sim 10000)V/(57.74、100、150)V, 20\%U_n$	$U=0.005\%$		
				$(57.74 \sim 10000)V/(57.74、100、150)V, 50\%U_n$	$U=0.004\%$		
				$(57.74 \sim 10000)V/(57.74、100、150)V, (80\% \sim 120\%)U_n$	$U=0.003\%$		
				$(10 \sim 220)kV/(57.74、100、150)V, 20\%U_n$	$U=0.024\%$		
				$(10 \sim 220)kV/(57.74、100、150)V, 50\%U_n$	$U=0.018\%$		
				$(10 \sim 220)kV/(57.74、100、150)V, (80\% \sim 120\%)U_n$	$U=0.012\%$		



No. CNAS L0854

第 96 页 共 127 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
		Phase difference of voltage transformer		(220~400)kV/(57.74、 100、150)V, 20% U_n	$U=0.012\%$		
				(220~400)kV/(57.74、 100、150)V, 50% U_n	$U=0.088\%$		
				(220~400)kV/(57.74、 100、150)V, (80%~ 120%) U_n	$U=0.059\%$		
				(-99.99~+99.99) ' , (57.74~ 10000)V/(57.74、100、 150)V, 20% U_n	$U=0.16'$		
				(-99.99~+99.99) ' , (57.74~ 10000)V/(57.74、100、 150)V, 50% U_n	$U=0.12'$		
				(-99.99~+99.99) ' , (57.74~ 10000)V/(57.74、100、 150)V, (80%~120%) U_n	$U=0.09'$		
				(-99.99~+99.99) ' , (10~220)kV/(57.74、 100、150)V, 20% U_n	$U=0.8'$		
				(-99.99~+99.99) ' , (10~220)kV/(57.74、 100、150)V, 50% U_n	$U=0.6'$		
				(-99.99~+99.99) ' , (10~220)kV/(57.74、 100、150)V, (80%~ 120%) U_n	$U=0.4'$		



No. CNAS L0854

第 97 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, 20%U _n	U=4.7'		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, 50%U _n	U=3.6'		
				(-99.99~+99.99) ' , (220~ 400)kV/(57.74、100、 150)V, (80%~120%)U _n	U=2.4'		
132	*Welder Calibrator	DC Voltage	Calibration Specification for Welder Calibrator SDIM/CJGDX60	(1~1000)V	U _{rel} =0.01%		
		DC Current		1A~2000A	U _{rel} =0.01%~0.02%		
		AC Voltage		(1~1000)V, 50Hz	U _{rel} =0.02%		
		AC Current		1A~2000A, 50Hz	U _{rel} =0.02%~0.03%		
133	*Electrical Meters for Measuring Alternating-current Electrical Energy	AC Electric energy	On-site Inspection Regulation of Electrical Meters for Measuring Alternating-current Electrical Energy DL/T 1478	(57.7~380)V, (0.005~ 800)A, cos φ=1.0	U _{rel} =0.07%~0.3%		
				(57.7~380)V, (0.005~ 800)A, cos φ=0.5L(C)	U _{rel} =0.08%~0.3%		
				(57.7~380)V, (0.005~ 800)A, cos φ=0.8L(C)	U _{rel} =0.08%~0.3%		
		Clock Time		China Standard Time	U=1.8s		
134	*Anti - voltage tester calibration device	AC voltage	Calibration Specification for Withstanding Voltage Tester Calibrators JJF 2228	0.1kV~20kV, (45Hz~ 65Hz)	U _{rel} =0.02%		
		DC voltage		0.1kV~20kV	U _{rel} =0.03%		



No. CNAS L0854

第 98 页 共 127 页

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

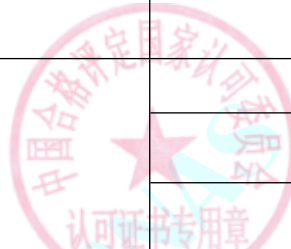
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
		Alternating current	ilac-M CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE	100μA~500mA,(45Hz~65Hz)	<i>U</i> _{rel} =0.06%		
		DC current		100μA~500mA	<i>U</i> _{rel} =0.03%		
		time		1s~999s	<i>U</i> _{rel} =0.12%		
		distortion		0.5%~10%,(45Hz~65Hz)	<i>U</i> _{rel} =6%		
		ripple ratio		0.5%~10%	<i>U</i> =0.06%		
6、Radio measuring instrument							
1	*Telephone Analyzer	Voltage feed	V.R of Telephone Analyzer JJG(lu) 68	48V	<i>U</i> _{rel} =5.0×10 ⁻⁴		
		Current feed		100 μ A~100mA	<i>U</i> _{rel} =4.2×10 ⁻⁴		
		DTMF level		-20dBm~-4dBm,(697~1633)Hz	<i>U</i> =0.26dB		
		DTMF Frequency		697Hz~1633Hz	<i>U</i> _{rel} =1.0×10 ⁻⁶		
2	*Signal Generator	Frequency	C.S. for Signal Generators JJF 1931	5kHz~20GHz	<i>U</i> _{rel} =6×10 ⁻⁸		
		Level		-127dBm~-80dBm,(150kHz~1.3GHz)	<i>U</i> =0.5dB		
				-80dBm~-40dBm,(150kHz~1.3GHz)	<i>U</i> =0.3dB		
				-40dBm~-0dBm,(150kHz~1.3GHz)	<i>U</i> =0.2dB		



No. CNAS L0854

第 99 页 共 127 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
		Modulation Amp		5%~99%, (<i>f</i> _c ::150kHz~1.3GHz, <i>f</i> _m : : 400Hz,1kHz)	<i>U</i> _{rel} =1.2%		
		Modulation Fre		100Hz~400kHz, (<i>f</i> _c : <i>f</i> _c :150kHz~1.3GHz, <i>f</i> _m : : 400Hz,1kHz)	<i>U</i> _{rel} =1.2%		
		Harmonic		-70dBc~-10dBc,(150kHz~1.3GHz)	<i>U</i> =1.8dB		
		Modulation Phase		1rad ~30rad, (<i>f</i> _c ::150kHz~1.3GHz)	<i>U</i> _{rel} =1.2%		
		Modulation and Demodulation Distortion		0.01%~100%	<i>U</i> _{rel} =8%		
		Internal Modulation Frequency		10Hz~100kHz	<i>U</i> _{rel} =6×10 ⁻⁸		
		Internal Modulation Amplitude		0.1V~10V,(10Hz~100kHz)	<i>U</i> _{rel} =1.2×10 ⁻³		
3	*Level Oscillator	Frequency	C.S. for JJF1982 Level Oscillator	200Hz~620kHz	<i>U</i> _{rel} =3.1×10 ⁻⁵		
		Voltage Level		-60dB~-30dB,(200Hz~620kHz)	<i>U</i> =0.5dB		
		Voltage Level		-30dB~20dB,(200Hz~620kHz)	<i>U</i> =0.3dB		



№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Harmonic		-10dBc~-60dBc,(600Hz~1.86MHz)	$U=0.8\text{dB}$		
4	*Selective Level Meter	Frequency	C.S. for Selective Level Meter JJF 1761	200Hz~620kHz	$U_{\text{rel}}=6 \times 10^{-6}$		
		Voltage Level		-60dB~20dB,(200Hz~620kHz)	$U=0.5\text{dB}$		
5	*Spectrum Analyzer	Frequency	Calibration Specification for Spectrum Analyzer JJF 1396	30Hz~18GHz	$U_{\text{rel}}=2.0 \times 10^{-7}$		
		Calibration Signal Level		-40dBm~0dBm,(1MHz~300MHz)	$U=0.2\text{dB}$		
		Reference Level		(-60~10)dBm,(1MHz~1GHz)	$U=0.2\text{dB}$		
		Absolute Amplitude		-30dBm~10dBm,(1MHz~18GHz)	$U=0.3\text{dB}$		
		Vertical Scale		(0~100)dB,(1MHz~1GHz)	$U=0.18\text{dB} \sim 0.30\text{dB}$		
		Resolution bandwidth		1Hz~10MHz	$U_{\text{rel}}=0.5\%$		
		Resolution bandwidth conversion impact		(-5~5)dB,(1MHz~1GHz)	$U=0.3\text{dB}$		
		Frequency response		(-5~5)dB,(250kHz~18GHz)	$U=0.3\text{dB}$		
6	*RF Communication Test Set	Frequency	C.S. for RF Communication Test Set JJF 1065	1Hz~1.3GHz	$U_{\text{rel}}=2.0 \times 10^{-7}$		
		output level		-120dBm~0dBm,(150kHz~1.3GHz)	$U=(0.18 \sim 0.42)\text{dB}$		



No. CNAS L0854

第 101 页 共 127 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
		Power measurement		-120dBm~0dBm,(250kHz~18GHz)	U=(0.18~0.42)dB		
		FM		100Hz~400kHz, (f _c ::150kHz~1.3GHz,f _m : 1kHz)	U _{rel} =1.2%~2.0%		
		AM		1%~99%, (f _c ::150kHz~1.3GHz , f _m : 1kHz	U _{rel} =1.2%~2.0%		
		Voltage		10mV~5V, (40Hz~200kHz)	U _{rel} =2.0%		
		Distortion		0.01%~30%,(10Hz~20kHz)	U _{rel} =3%~6%		
7	*Attenuator	Attenuation	Calibration Specification for Attenuators from Radio Frequency to Microwave Frequency JJF 2092	1dB~40dB, (250kHz~1.3GHz)	U=0.2dB		
		40dB~80dB, (250kHz~1.3GHz)	U=0.8dB				
8	*Oscilloscop Calibrator	DC Voltage	V.R.of Oscilloscope Calibrators JJG 278	20mV~200V, (1MΩ)	U _{rel} =1.2×10 ⁻⁵		
				20mV~5V, (50Ω)	U _{rel} =1.2×10 ⁻⁵		
		Square Voltage		20mV~200V, (1MΩ)	U _{rel} =1.7×10 ⁻⁴		
				20mV~5V, (50Ω)	U _{rel} =1.2×10 ⁻⁵		
		Time Marks		10ns~5s	U _{rel} =5.8×10 ⁻⁸		
		Pulse fast edge		600ps~35ns	U _{rel} =6.0%		
		Steady amplitude sinusoidal signal amplitude		10mV~5V,(50kHz)	U _{rel} =1.2×10 ⁻³		



No. CNAS L0854

第 102 页 共 127 页

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

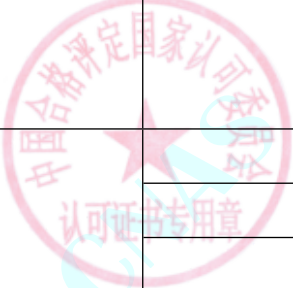
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date	
		Flatness of steady amplitude sinusoidal signal		-3dB~3dB, (50kHz~3GHz)	U=0.32dB			
		Frequency		1Hz~3GHz	U _{rel} =2×10 ⁻⁷			
9	*Electronic Voltmeter	Voltage	Verification Regulation of Electronic Voltmeter JJG 250	10mV~22V,(10Hz~1MHz)	U _{rel} =0.6%			
10	*Clock tester	Frequency	Calibration Specification for Clock Testers JJF 1662	1Hz~500kHz	U _{rel} =2×10 ⁻¹⁰			
		Time Interval		Daily Error: （-10~10）s	U=0.01s			
11	*LF Electronic Voltmeter	Voltage	Calibration Specification for Low-frequency Volt-meters JJF1925	10mV~300V,(10Hz~1MHz)	U _{rel} =0.5%~0.8%			
12	*Digital Oscilloscope	Time	V.R. of Digital Oscilloscope GJB 7691	0.2ns~10s （Digital）	U _{rel} =0.12%			
		Amplitude		5mV~200V,(1MΩ)	U _{rel} =0.56%			
				5mV~5V,(50Ω)	U _{rel} =0.56%			
				50kHz~3.2GHz	U _{rel} =5.8%			
		Rise time		200ps~35ns	U _{rel} =6%			
		Calibration signal amplitude		(0.3~5)V, (0.1 kHz~3 kHz)	U _{rel} =0.2%			
		Calibration signal frequency		0.1kHz~3kHz	U _{rel} =0.02%			
		Resistance		50Ω, 75Ω, 1MΩ	U _{rel} =0.1%			



No. CNAS L0854

第 103 页 共 127 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	
13	*TV Signal Generator	Amplitude	C.s. for Television Video Signal Generator JJF 1235	10mV~700mV	<i>U</i> _{rel} =0.6%			
		Phase		0° ~360°	<i>U</i> =0.6°			
14	*Function Generator	Frequency	V.R. of Function Generator JJG 840	10Hz~250MHz	<i>U</i> _{rel} =1×10 ⁻⁷			
		Level		5mV~55V,(1kHz)	<i>U</i> _{rel} =0.1%			
		Amplitude		-3dB~3dB,(100mV~10V,1kHz~250MHz)	<i>U</i> =0.2dB			
		Amplitude Flatness						
		Sine wave distortion factor		0.005%~30%,(10Hz~100kHz)	<i>U</i> _{rel} =8%			
		Rise Time		3ns~10 μ s	<i>U</i> _{rel} =3.5%			
		Pulse space ratio		1%~99%	<i>U</i> _{rel} =1%			
15	*TV Signal Field Strength Meter	Frequency	V.R. of TV Signal Field Strength Meter JJG 1057	48MHz~862MHz	<i>U</i> =0.01MHz			
		Amplitude		30dB μ V~120dB μ V,(48MHz~862MHz)	<i>U</i> =0.8dB			
		Bandwidth		250kHz~350kHz	<i>U</i> =1kHz			
16	*Near-Zone Electric-field Measuring Instruments	Electric-field intensity	V.R. for Near-Zone Electric-field Measuring Instruments JJG561	10V/m~150V/m,(100kHz~200MHz)	<i>U</i> _{rel} =15%			
17	*Analogue Oscilloscope	Time	V.R. of Analogue Oscilloscope JJG262	0.2ns~10s(Analog)	<i>U</i> _{rel} =1.5%			
		Amplitude		5mV~200V, (1M Ω)	<i>U</i> _{rel} =2.0%			
				5mV~5V, (50 Ω)	<i>U</i> _{rel} =2.0%			
		Band width		50kHz~3.2GHz	<i>U</i> _{rel} =5.8%			

No. CNAS L0854

第 104 页 共 127 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
		Rise time		200ps~35ns	<i>U</i> _{rel} =6%		
		Calibration signal amplitude		(0.3~5)V, (0.1 kHz~3kHz)	<i>U</i> _{rel} =0.2%		
		Calibration signal frequency		0.1kHz~3kHz	<i>U</i> _{rel} =0.02%		
18	*Wave recorder	DC Voltage	Calibration Specification for Waveform Recorders JJF1876	10mV~1000V	<i>U</i> _{rel} =0.02%		
		AC Voltage		10mV~1000V	<i>U</i> _{rel} =0.03%		
		Time		0.5ns~10s	<i>U</i> _{rel} =0.08%		
		Band width		10Hz~2MHz	<i>U</i> _{rel} =2.3%		
		Resistance		10 Ω ~12M Ω	<i>U</i> _{rel} =0.3%		
7、Time and frequency measuring instrument							
1	*Crystal Oscillators inside the Electrical Measurement Instruments	Frequency	Calibration Specification for Crystal Oscillators inside the Electrical Measurement Instruments JJF 1984	1MHz、5MHz、10MHz	<i>U</i> =1mHz		
2	*Time Calibrators	Time Space	V.R. of Time Calibrators JJG 601	1s~3600s	<i>U</i> _{rel} =5.8×10 ⁻⁸		
		Oscillator Frequency		5MHz,10MHz	<i>U</i> =1mHz		
3	*Time Interval Meters	Time	V.R. of Time Interval Meters JJG 238	20ns~1000s	<i>U</i> _{rel} =1.2×10 ⁻⁷ ~2.3×10 ⁻⁷		
		Frequency		5MHz、10MHz	<i>U</i> _{rel} =8×10 ⁻¹¹		
4	*Stopwatches	Time Interval	Calibration Specification for Stopwatches JJF 2195	Mechanical stopwatch: 1s~3600s	<i>U</i> =3.2ms		



No. CNAS L0854

第 105 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
				Electronic Stopwatch: 1s~86400s	$U=3.2\text{ms}\sim 7.4\text{ms}$		
				Dial Electric Second- meter: 100ms~1s	$U=6\text{ms}$		
				Dial Electric Second- meter: 1s~10s	$U=7\text{ms}$		
				Dial Electric Second- meter: 10s~60s	$U=10\text{ms}$		
				Dial Electric Second- meter: 60s~600s	$U=70\text{ms}$		
				Digital Electric Second- meter: 1ms~9999.999s	$U=0.2\text{ms}\sim 4\text{ms}$		
5	*Microwave frequency counter	Oscillator Frequency	V.R. of Microwave frequency counter JJG 841	5MHz、10MHz	$U_{\text{rel}}=8\times 10^{-11}$		
		Frequency		100kHz~18GHz	$U_{\text{rel}}=1\times 10^{-7}\sim 6\times 10^{-11}$		
		Input sensitivity		10mV~1V	$U=0.1\text{mV}$		
6	*Time Relay Tester	Time	Calibration Specification for Time Delay Relays JJF 1282	10ms~100s	$U=0.01\text{s}$		
				100s~9999s	$U_{\text{rel}}=1\times 10^{-5}$		
7	*Universal counter	Oscillator Frequency	Calibration Specification for Universal Counters JJF 2196	5MHz、10MHz	$U_{\text{rel}}=8\times 10^{-11}$		
		Frequency		0.1Hz~18GHz	$U_{\text{rel}}=4.2\times 10^{-7}\sim 2.7\times 10^{-10}$		
		period		1ns~10s	$U_{\text{rel}}=4.2\times 10^{-9}\sim 6.6\times 10^{-9}$		
		Input sensitivity		10mV~1V	$U=0.1\text{mV}$		
8	*Bullet Speed Measuring Devices	Measuring distance	C.S. of Bullet Speed Measuring Devices JJF 1808	200mm~2000mm	$U=0.5\text{mm}$		



No. CNAS L0854

第 106 页 共 127 页

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

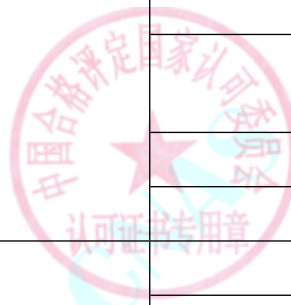
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		Speed		10m/s~1000m/s	U=0.01m/s		
9	*Residual current protection tester	Current	C.S. for Residual Current Operated Protective Device	20mA~2A, (45Hz~65Hz)	U _{rel} =5×10 ⁻⁴		
		Time	Operated Characteristic Tester JJF 1283	20ms~5s	U=0.2ms		
10	*Verification Regulation of Frequency Meter Used Indicator	Frequency	Verification Regulation of Frequency Meter Used Indicator JJG 603	10Hz~10kHz	U _{rel} =1.2×10 ⁻⁵		
11	*Industrial Explosive Detonation Speed Meter	Time	C.S.for Industrial Explosive Detonation Speed Meter WJ 9046	(1~1000) μ s	U=0.12 μ s		
				(1~10)ms	U=0.83 μ s		
				(10~100)ms	U=0.012ms		
				(100~1000)ms	U=0.083ms		
				(1~10)s	U=0.6ms		
		Frequency	10Hz~10MHz	U _{rel} =1.3×10 ⁻⁷			
8、Lonizing radiation measuring instrument							
1	Radon measuring instruments	Radon Volume Activity	Verification Regulation of Radon Measuring Instruments JJG 825	(370~20000) Bq/m ³	U _{rel} =8.0%		
9、Chemistry measuring instrument							
1	*Real-time Fluorescent Quantitative Polymerase Chain Reaction Analyzer	temperature	Calibration Specification for Real-Time Fluorescent Quantitative PolymeraseChain Reaction Analyzer JJF(Lu)138	(10~120)℃	U=0.25℃		
		threshol		0~45	U=1.1		



No. CNAS L0854

第 107 页 共 127 页

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

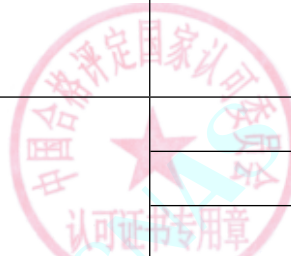
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	*Polymerase Chain Reaction Analyzers	Temperature	Calibration Specification for Polymerase Chain Reaction Analyzers JJF1527	(10~120)℃	U=0.25℃		
3	*Verifying Meter for Chromatography	DC Voltage	Verification Regulation of Verification Meter for Chromatograph JJG 937	(10~330)mV	$U_{\text{rel}}=9.7\times 10^{-5}\sim 5.1\times 10^{-4}$		
				330mV~3.3V	$U_{\text{rel}}=7.5\times 10^{-5}\sim 3.1\times 10^{-4}$		
				(3.3~10)V	$U_{\text{rel}}=8.5\times 10^{-5}\sim 3.1\times 10^{-4}$		
		DC Current		1mA	$U_{\text{rel}}=2\times 10^{-4}$		
		Resistance		(24~300)Ω	$U_{\text{rel}}=7\times 10^{-5}$		
10、Optical measuring instrument							
1	*Retroreflection Coefficient Meters for Motor Vehicle's Reflecting Marking	Coefficient of retroreflection	Calibration Specification of Retroreflection Coefficient Meters for Motor Vehicle's Reflecting Marking JJF 1747	(20~350)cd•lx ⁻¹ •m ⁻²	U _{rel} =3.4%		
11、Petroleum and chemical industry specific measuring instruments							
1	*Tester for Heat Deflection and Vicat Softening Temperature for Building Materials	Temperature	Calibration Specification for Tester for Heat Deflection and Vicat Softening Temperature for Building Materials JJF(JC) 175	(25~300)℃	U=0.22℃		
		Rate of temperature change		(1~150)℃/h	U=0.3℃/h		
		length		(1~10)mm	U=2μm		
		quality		(0.001~1)kg	U _{rel} =0.1%		
2	*Tester for Tyre Strength and Bead Unseating	force	Calibration Specification of Tester for Tyre Strength and Bead Unseating Resistance	(0.5~100)kN	U _{rel} =0.4%		
		Length		(5~400)mm	U=0.3mm		



No. CNAS L0854

第 108 页 共 127 页

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

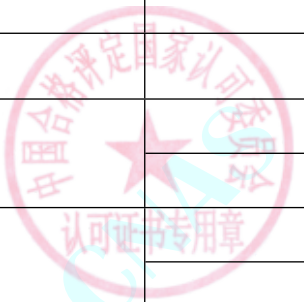
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Resistance	Speed	JJF1194	(47~53)mm/min	U=0.3mm/min		
3	*Drum Tester for Tyre Endurance and High Speed Test	force	Calibration Specification of Drum Testers for Tyre Endurance and High Speed Test JJF 1195	(0.5~60)kN	U _{rel} =0.4%		
		Length		(1680~1720)mm	U=0.6mm		
		Velocity		(30~320)km/h	U _{rel} =0.28%		
12、Motor vehicles special measuring instrument							
1	*Parking Brake Performance Testers for Vehicles	Force	Calibration Specification for Parking Brake Performance Testers for Vehicles JJF 1671	(10~100)kN	U _{rel} =0.3%		
2	*Filter-type smokemeters	smokemeters	V.R. of Filter-type smokemeters JJG 847	(1~10)BSU	U=0.3BSU		
3	Non contact automotive speedometer calibration device	Speed	Calibration Specification for Calibration Devices of Non-contact Automotive Speedmeters JJF 1486	(5.00~180.00)km/h	U _{rel} =0.05%		
		Distance		(1.00~999.99)m	U _{rel} =0.05%		
4	*Roller opposite force type brake tester	Force	V.R of Roller opposite force type brake tester JJG 906	(50~3000)daN	U _{rel} =0.6%		
5	*Tester for Wheel deviation of motorcycles	distance	Verification Regulation of Tester for Wheel deviation of motorcycles JJG 910	(-15~+15)mm	U=0.03mm		
6	*Calibrators of Motor Vehicle Engine Speed Measuring Instruments	force	Calibration Specification for Calibrators of Motor Vehicle Engine Speed Measuring Instruments JJF1196	(100~500)N	U _{rel} =0.9%		
		torque		(1~100)Nm	U _{rel} =1%		
		angle		(0.1~1080)°	U=0.9°		



No. CNAS L0854

第 109 页 共 127 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
7	*Transmittance Meter of Automobile	transmittance	Calibration Specification for Transmittance Meter of Automobile JJF 1225	(0.1~100.0)%	<i>U</i> =0.7%		
8	*Manipulating Force Tester for Automotive Brake	force	Calibration Specification for Manipulating Force Tester for Automotive Brake JJF 1169	(100~1000)N	<i>U</i> _{rel} =0.9%		
9	*Slipe Plate type automobile side slipe tester	Value of the side slipe	Verification Regulation of Slipe Plate type automobile side slipe tester JJG 908	(-10~+10)m/km	<i>U</i> =0.03m/km		
10	*Motor Vehicle Engine Speed Measuring Instruments	Rotational speed	Calibration Specification of Motor Vehicle Engine Speed Measuring Instruments JJF 1375	(500~6000)r/min	<i>U</i> _{rel} =0.5%		
11	Non-contact Automotive Speedmeter	speed	Calibration Specification for Non-contact Automotive Speedmeter JJF 1193	(5~180)km/h	<i>U</i> _{rel} =0.3%		
		Distance		(1~30)m	<i>U</i> =0.12m		
				(30~100)m	<i>U</i> _{rel} =0.3%		
12	*Headlamp testers for motor vehicle	Luminous intensity	V.R. of Headlamp testers for motor vehicle JJG 745	(5~60)kcd	<i>U</i> _{rel} =6%		
		angle		上 2° ~下 2° , 左 2° ~右 2°	<i>U</i> =5'		
13	*Roller type speedometer tester	speed	V.R of Roller type speedometer tester JJG 909	(10~60)km/h	<i>U</i> _{rel} =0.5%		
14	*Automotive Suspension Tester	Mass	Calibration Specification for Automotive Suspension Tester JJF1192	(200~1500)kg	<i>U</i> _{rel} =0.4%		
		Frequency		(10~30)Hz	<i>U</i> =0.05Hz		
15	Adhesion Coefficient Testers	Force	Calibration Specification for Adhesion Coefficient Testers JJF1551	(0.1~6)kN	<i>U</i> _{rel} =0.3%		
		Adhesion Coefficient		0.00~1.00	<i>U</i> =0.01		



No. CNAS L0854

第 110 页 共 127 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	*Zero Gas Generators	Gas Concentration	Calibration Specification for Zero Gas Generators JJF2159	CO:(0.1~20.0) $\times 10^{-6}$	$U_{rel}=0.4\%$		
				CO ₂ :(0.1~40.0) $\times 10^{-6}$	$U_{rel}=0.4\%$		
				C ₃ H ₈ :(0.1~40.0) $\times 10^{-6}$	$U_{rel}=0.4\%$		
				NO:(0.1~20.0) $\times 10^{-6}$	$U_{rel}=0.4\%$		
				NO ₂ :(0.1~20.0) $\times 10^{-6}$	$U_{rel}=0.4\%$		
				O ₂ :(0.1~25.0) $\times 10^{-2}$	$U_{rel}=0.5\%$		
		Temperature		(-40~20)°C	$U=0.6^{\circ}\text{C}$		
17	*Vehicle Contour Dimensions Testers	Length	Calibration Specification for Vehicle Contour Dimensions Testers JJF 1749	(1~50)m	$U_{rel}=0.28\%$		
18	*diesel vehicle nitrogen oxides measuring instrument	concentration	Calibration Specification for Diesel Vehicle Nitrogen Oxides (NO _x) Measuring Instrument JJF1873	NO:(1~4000) $\times 10^{-6}$	$U_{rel}=1.4\%$		
				CO ₂ :(0.1~18)%	$U_{rel}=1.2\%$		
				NO ₂ :(1~1000) $\times 10^{-6}$	$U_{rel}=2.3\%$		
		Convert Rate		(10~99.9)%	$U_{rel}=2.0\%$		
19	*Special Axle(Wheel) Load Scales for Motor Vehicle Test	mass	V.R of Special Axle(Wheel)Load Scale for Motor Vehicle Test JJG 1014	(100~3000)kg	$U_{rel}=0.5\%$		
20	*Measurement Devices of Bus Gangway and Access Passage	Height、Width	Calibration Specification for Measurement Devices of Bus Gangway and Access Passage JJF2047	(0~5)m	$U=1.5\text{mm}$		
		Thickness		(0~300)mm	$U=0.11\text{mm}$		
		Diameter		(50~1100)mm	$U=0.3\text{mm}$		



No. CNAS L0854

第 111 页 共 127 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
21	Calibration Specification Calibrators of Motor Vehicle Engine Speed Measuring Instruments	Speed	Calibration Specification for Motor Vehicle Engine Speed Measuring Instruments JJF2045	electrical signal:(500~6000)r/min	$U_{rel}=1.2\times 10^{-4}$		
				vibration shock signal:(500~6000)r/min	$U_{rel}=2.0\times 10^{-4}$		
22	Meteorological Devices of Motor Vehicle Test	Temperature	Calibration Specification for Meteorological Devices of Motor Vehicle Test JJF2214	(0~50)℃	$U=0.16℃$		
		Relative humidity		(10~95)%	$U=(0.6\sim 0.8)\%$		
		Air pressure		(100~1200)hPa	$U=0.2\text{hPa}$		
13、Construction and transportation specific measuring instrument							
1	*boiling box of cement	Length	Verification Regulation of Boiling Testing Box JJG (JT) 193	(20~410)mm	$U=0.6\text{mm}$		
		Time		(30~210)min	$U=0.1\text{min}$		
2	*Apparatus of Steady Measurements of Thermal Conductivity	Thermal Conductivity	Calibration Specification for Apparatus of Steady Measurements of Thermal Conductivity JJF 2220	Thermal Conductivity: (0.020~0.20) Wm ⁻¹ K ⁻¹ (Average Temperature: 20℃~60 ℃) ℃	$U_{rel}=3.1\%$	Accredited only for parametric method	
3	*Mixer for Cement Paste	Rotational speed	Calibration Specification for Mixer for Cement Paste JJF(JC)104	(50~135)r/min	$U=1\text{r/min}$		
		Time		(14~121)s	$U=0.3\text{s}$		
		Length		(5~7)mm	$U=0.04\text{mm}$		
4		Quantity	Calibration Specification for Constant Revolution Speed Source JJF (Lu) 166	(16~20)kg	$U=0.02\text{kg}$		
				(1~2)kg	$U_{rel}=0.02\%$		



No. CNAS L0854

第 112 页 共 127 页

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		Hardness	V.R of Concrete test hammer JJG 817	(58~62)HRC			
		length		(0.75~1.00)mm	$U=0.02\text{mm}$		
				(5~261)mm	$U=0.06\text{mm}$		
		Displacement		(10~100) N	$U_{\text{rel}}=0.15\%$		
5	Concrete test hammer	Value of the Concrete test hammer	V.R of Concrete test hammer JJG 817	72~90	$U_{\text{rel}}=0.7\%$		
		Length		Pointer length and working length of spring: (20.0~134.4)mm	$U=0.05\text{mm}$		
				Stretch length of spring: (75~140)mm	$U=0.1\text{mm}$		
		Force		(0.5~0.65)N	$U=0.06\text{N}$		
		Stiffness		(69~1100)N/m	$U_{\text{rel}}=2.9\%$		
6	Instrument of Testing Mortar-strength by Penetration Resistance Method	Force	Calibration Specification for Instrument of Testing Mortar-strength by Penetration Resistance Method JJF 1372	(792~808)N	$U_{\text{rel}}=0.5\%$		
		Length		(3.5~40)mm	$U=0.04\text{mm}$		
7	*Apparatus for Time of Setting of Concrete Mixture by Penetration Resistance	Force	Verification Regulation for Apparatus for Time of Setting of Concrete Mixture by Penetration Resistance JJG (JT) 095	(200~1000)N	$U_{\text{rel}}=0.4\%$		
		Length		(5.05~11.28)mm	$U=6\text{ }\mu\text{m}$		
				(25~160)mm	$U=0.06\text{mm}$		
8	*Asphalt Mixture's Marshall	Mass	Verification regulation for Asphalt Mixture's Marshall	(4.5~10.3)kg	$U=1.2\text{g}$		



No. CNAS L0854

第 113 页 共 127 页

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

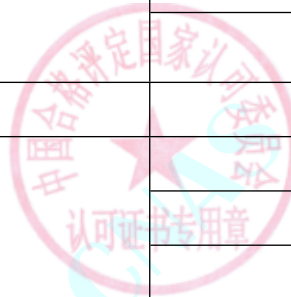
№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
	Compaction Test Apparatus	Lenth	Compaction Tset Apparatus JJG (JT) 065	(69~200)mm	<i>U</i> =0.06mm		
				(450~460)mm	<i>U</i> =1.2mm		
		Frequency		(55~65)min ⁻¹	<i>U</i> =0.5min ⁻¹		
9	*Marshall test machine for bituminous mixtures	Force	Verification Regulaation for Marshall test machine for bituminous mixtures JJG (JT) 066	(5~50)kN	<i>U</i> _{rel} =0.4%		
		Length		(0.5~10)mm	<i>U</i> =0.03mm		
		Speed		(45~55)mm/min	<i>U</i> =0.10mm/min		
10	*cement testing apparaatus of the onrmal consistency and setting time	Mass	Verification regulaation for cement testing apparaatus of the onrmal consistency and setting time JJG (JC) 105	(298~302)g	<i>U</i> =0.8g		
		Length		(1.1~75)mm	<i>U</i> =0.04mm		
				(75~82)mm	<i>U</i> =0.2mm		
		Angle		41° ~45°	<i>U</i> =6'		
11	*Jolting Table for Compacting Mortars Specimen	Time	Calibration Specification for Jolting Table for Compacting Mortars Specimen JJF(JC)124	(58~62)s	<i>U</i> =0.5s		
		Mass		(12~13)kg	<i>U</i> _{rel} =0.6%		
12	*Mixer for Mixing Mortars	Rotational speed	Calibration Specification for Mixer for Mixing Mortars JJF(JC)123	(60~128)r/min	<i>U</i> =1r/min		
		Time		(29~91)s	<i>U</i> =0.3s		
		Length		(7~9)mm	<i>U</i> =0.04mm		
13	*Compaction Instrument of Soil	Mass	Verification Regulaation for Compaction Instrument of Soil JJG (JT) 058	(2495~4505)g	<i>U</i> =1.2g		
		Lenth		(49~51)mm	<i>U</i> =0.03mm		
				(300~450)mm	<i>U</i> =0.3mm		



No. CNAS L0854

第 114 页 共 127 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
14	*Apparatus to Determine Chloride Coulomb Electric Flux and Rapid Chloride Migration Coefficient of Concrete	DC Voltage	Calibration Specification for Apparatus to Determine Chloride Coulomb Electric Flux and Rapid Chloride Migration Coefficient of Concrete JJF(Min)1053	(10~60)V	$U_{rel}=0.05\%$		
		DC Current		(2~200)mA	$U_{rel}=0.32\%$		
		Temperature		(5~95)℃	$U=0.10℃$		
		Time		60s~1h	$U=0.2s$		
15	*Steel bar tarnish measuring instrument	Voltage	Calibration Specification of steel bar tarnish measuring instrument JJF 1341	(0.02~2)V	$U_{rel}=0.3\%$		
		Current		(0.1~200)mA	$U_{rel}=0.4\%$		
16	*Soil resistivity Testers	resistance	Calibration Specification of Soil resistivity Testers SDIM/CJGDX 34	(0.01~0.1) Ω	$U_{rel}=5.8\%$		
				(0.1~100) Ω	$U_{rel}=0.12\%$		
				(100~20000) Ω	$U_{rel}=0.058\%$		
		resistivity		1.256 Ω·m~12.56 Ω·m	$U_{rel}=5.8\%$		
				12.56 Ω·m~125.6 Ω·m	$U_{rel}=0.58\%$		
				125.6 Ω·m~12.56 k Ω·m	$U_{rel}=0.13\%$		
				12.56 k Ω·m~2512 k Ω·m	$U_{rel}=0.076\%$		
14、Relectrical, electronic and electrical appliances special measuring instruments							
1	*Energy Efficiency Testing Apparatus of Room Air Conditioners Using Air-	AC Voltage	Calibration Specification for Energy Efficiency Testing Apparatus of Room Air Conditioners Using Air-Enthalpy Test Method JJF 1858	(5~50)V,45Hz~65Hz	$U_{rel}=0.28\%$		
				(50~600)V,45Hz~65Hz	$U_{rel}=0.06\%$		
		AC current		10mA~2A,45Hz~65Hz	$U_{rel}=0.2\%$		
				2A~20A,45Hz~65Hz	$U_{rel}=0.10\%$		

No. CNAS L0854

第 115 页 共 127 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
	Enthalpy Test Method			20A~60A,45Hz~65Hz	$U_{rel}=0.06\%$		
		AC Power		50mW~10000W,45Hz~65Hz	$U_{rel}=0.06\%$		
		temperature		(-60~0)°C	$U=0.10^{\circ}\text{C}$ (Platinum Resistance Thermometers); $U=0.30^{\circ}\text{C}$ (Thermocouple)		
				(0~50)°C	$U=0.02^{\circ}\text{C}$ (Platinum Resistance Thermometers); $U=0.17^{\circ}\text{C}$ (Thermocouple)		
				(50~200)°C	$U=0.08^{\circ}\text{C}$ (Platinum Resistance Thermometers); $U=0.26^{\circ}\text{C}$ (Thermocouple)		
		humidity		30%RH~50%RH	$U=1.5\%RH$		
				50%RH~90%RH	$U=1.6\%RH$		
		pressure		(5~1250)Pa	$U_{rel}=0.13\%$		
				1.25kPa~2.5MPa	$U_{rel}=0.06\%$		
				(2.5~10)MPa			
		flow		(0.3~1.8)m³/h	$U_{rel}=0.6\%$		
				(1.8~3.6)m³/h	$U_{rel}=0.28\%$		
				(3.6~4.8)m³/h	$U_{rel}=0.18\%$		
		wind speed		(0.2~0.8)m/s	$U_{rel}=20\%$		
				(0.8~10)m/s	$U_{rel}=2.8\%$		
				(10~20)m/s	$U_{rel}=1.8\%$		



No. CNAS L0854

第 116 页 共 127 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
		Cooling capacity		4411W	<i>U</i> _{rel} =2.0%		
		Total harmonic distortion of supply voltage		0.5%~10%, 45Hz~65Hz	<i>U</i> =0.3%		
		Mass		1g~30kg, e=1g~10g	<i>U</i> =(0.06~1.8)g		
				(30~1000)kg, e=20g~500g	<i>U</i> =(1.2~65)g		
		winding resistance		(1~200) Ω	<i>U</i> =0.2 Ω		
2	*Comprehensive test device for refrigerator performance	AC Voltage	Calibration Specification of Refrigerator Performance Measuring Apparatuses JJF 1994	(5~50)V,45Hz~65Hz	<i>U</i> _{rel} =0.28%		
				(50~600)V,45Hz~65Hz	<i>U</i> _{rel} =0.06%		
		AC Current		10mA~2A,45Hz~65Hz	<i>U</i> _{rel} =0.2%		
				2A~20A,45Hz~65Hz	<i>U</i> _{rel} =0.10%		
				20A~60A,45Hz~65Hz	<i>U</i> _{rel} =0.06%		
		AC Power		50mW~10000W,45Hz~65Hz	<i>U</i> _{rel} =0.06%		
		frequency		(40~45)Hz	<i>U</i> _{rel} =0.03%		
				(45~70)Hz	<i>U</i> _{rel} =0.02%		
		Power factor		0.1~1, 45Hz~65Hz	<i>U</i> =0.0012		
		temperature		(-60~0)°C	<i>U</i> =0.10°C (Platinum Resistance Thermometers); <i>U</i> =0.30°C (Thermocouple)		



No. CNAS L0854

第 117 页 共 127 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
				(0~50)°C	$U=0.02^{\circ}\text{C}$ (Platinum Resistance Thermometers); $U=0.17^{\circ}\text{C}$ (Thermocouple)		
				(50~200)°C	$U=0.08^{\circ}\text{C}$ (Platinum Resistance Thermometers); $U=0.26^{\circ}\text{C}$ (Thermocouple)		
		illuminance		(200~1000)lx	$U_{\text{rel}}=5.0\%$		
		Environmental temperature deviation		(0~10)°C	$U=0.18^{\circ}\text{C}$		
		Environmental humidity deviation		(0~10)%RH	$U=1.3\%\text{RH}$		
		pressure		(5~1250)Pa	$U_{\text{rel}}=0.13\%$		
				1250Pa~2.5MPa	$U_{\text{rel}}=0.06\%$		
				(2.5~10)MPa	$U=0.05\%\text{FS}$		
		Total harmonic distortion of supply voltage		(0.0~10.0)%0.5%~10%, 45Hz~65Hz	$U=0.3\%$		
		wind speed		(0.2~0.8)m/s	$U_{\text{rel}}=20\%$		
				(0.8~10)m/s	$U_{\text{rel}}=2.8\%$		
				(10~20)m/s	$U_{\text{rel}}=1.8\%$		



No. CNAS L0854

第 118 页 共 127 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	*Coil Number Testing Instructing	Coil Number	Calibration Specification for Coil Number Testing Instructing JJF (Zhe)1065	(10~21110) N	$U= (1\sim 12) N$		
4	*High voltage breaker mechanical characteristic tester	time	V.R. of High voltage Switch Operation Characteristic Testers JJG1120	10 μs ~999.99ms	$U_{rel}=0.24\%\sim 0.63\%$		
5	*Partial discharge tester	Apparent charge	C.S. for Partial Discharge Testers Based Pulse Current Method JJF1616	2pC~2000pC	$U_{rel}=1.6\%$		
		Frequency		50Hz~500kHz	$U_{rel}=1\times 10^{-7}$		
		Voltage		10mV~50V	$U_{rel}=1.2\%$		
		Calibration pulse generator discharge		(0.5~2000)pC	$U_{rel}=0.5\%$		
		Calibration pulse generator waveform rise time		10ns~500 μs	$U_{rel}=5\%$		
6	*Holiday Detector	Voltage	Calibration Specification of Holiday Detector JJF(Lu) 101	100V~40kV	$U_{rel}=2.4\%$		
7	*Impulse voltage tester	Voltage	Calibration Specification of Impulse Voltage Tester SDIM/CJGDX 17	100V~40kV	$U_{rel}=2.4\%$		
		time		0.1 μs ~5 μs	$U_{rel}=1\%$		
8	*Cable Fault Flashover Tester	Measuring Distance	Calibration Specification for Cable Fault Flashover Tester JJF(ZHE)1164	20m~20km	$U_{rel}=0.12\%$		



No. CNAS L0854

第 119 页 共 127 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	*Charge & Discharge of Battery Tester	Charge & Discharge of Voltage	Calibration Specification of of Battery Charge & Discharge Testers JJF2039	1V~1000V	$U_{rel}=0.05\%$		
		Charge & Discharge of Current		100mA~100A	$U_{rel}=0.1\%$		
				100A~1000A	$U_{rel}=0.3\%$		
10	*Interramp impact pressure tester	Peak shock voltage	Calibration Specification for interramp insulation impact voltage tester JJF 1691	(0.1~15)kV	$U_{rel}=2.6\%$		
		wave front time		0.1 μ s~2 μ s	$U_{rel}=5\%$		
11	*Impulse voltage divider	Partial pressure ratio	Calibration Specification for Impulse Measuring Systems—Impulse Voltage—Part 1: Impulse Voltage Dividers JJF 2028	10kV~2500kV/10V~10kV	$U_{rel}=1.2\%$		
		Time parameters		lightning-impulse: 0.8 μ s~60 μ s, switching-impulse: 20 μ s~4000 μ s	$U_{rel}=4.2\%$		
12	*High-frequency Spark test machine	AC voltage	C.S. for spark tester for wire and cable JJF (Mechanics)1047	500V~15kV, (500Hz~1MHz)	$U_{rel}=3\%$		
13	*Breakdown voltage tester	AC voltage	C.S. for Breakdown Voltage Tester SDIM/CJGDX 21	500V~10kV,(45Hz~65Hz)	$U_{rel}=1.2\%$		
		DC voltage		500V~50kV	$U_{rel}=0.6\%$		
14	*Battery Internal Resistance Testers	Resistance	C.S. for Battery Internal Resistance Testers JJF1620	1m Ω ~10m Ω	$U_{rel}=0.3\%$		
				10m Ω ~1 Ω	$U_{rel}=0.06\%$		
				1 Ω ~3k Ω	$U_{rel}=0.06\% \sim 0.09\%$		
		DC voltage		(0.1~1000) V	$U_{rel}=0.01\%$		
15	*DC Electronic load	DC Voltage	Calibration Specification for DCElectronic Loads JJF	(20~330)mV	$U_{rel}=9.7 \times 10^{-5} \sim 5.1 \times 10^{-4}$		

No. CNAS L0854

第 120 页 共 127 页



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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		DC Current	1462	330mV~3.3V	$U_{rel}=7.5 \times 10^{-5} \sim 3.1 \times 10^{-4}$		
				(3.3~33)V	$U_{rel}=8.2 \times 10^{-5} \sim 3.1 \times 10^{-4}$		
				(33~330)V	$U_{rel}=8.7 \times 10^{-5} \sim 3.1 \times 10^{-4}$		
				(330~1000)V	$U_{rel}=1.1 \times 10^{-4} \sim 3.1 \times 10^{-4}$		
				(0.1~3.3)mA	$U_{rel}=1.8 \times 10^{-4} \sim 4.4 \times 10^{-4}$		
				(3.3~33)mA	$U_{rel}=1.4 \times 10^{-4} \sim 3.6 \times 10^{-4}$		
				(33~330)mA	$U_{rel}=1.5 \times 10^{-4} \sim 3.8 \times 10^{-4}$		
				330mA~2.2A	$U_{rel}=3.8 \times 10^{-4} \sim 5.8 \times 10^{-4}$		
				(2.2~11)A	$U_{rel}=7.3 \times 10^{-4} \sim 9.2 \times 10^{-4}$		
				(11~500)A	$U_{rel}=1.4 \times 10^{-4} \sim 1.0 \times 10^{-3}$		
				DC Power	$U_{rel}=0.02\%$		
				Resistance	$U_{rel}=0.02\%$		
16	*AC Electronic Load	AC Voltage	Calibration Specification for AC Electronic Loads JJF 2236	1V~500V,(40Hz~1000Hz)	$U_{rel}=0.2\% \sim 0.5\%$		
		AC Current		0.1A~90A,(40Hz~1000Hz)	$U_{rel}=0.2\% \sim 0.5\%$		
		Power factor		0.5~1,(45Hz~65Hz)	$U=0.0012$		
		Resistance		10 Ω ~ 1000 Ω ,(40Hz~1000Hz)	$U_{rel}=0.5\% \sim 1\%$		
		AC Power		1W~7.5kW,(45Hz~65Hz)	$U_{rel}=0.5\% \sim 1\%$		
17	*Spark test machine	AC voltage	Calibration Specification for Spark Testers JJF 2239	0.1kV~100kV,(50Hz)	$U_{rel}=0.18\%$		

No. CNAS L0854

第 121 页 共 127 页



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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
		DC voltage		0.1kV~100kV	$U_{rel}=0.14\%$		
		peak ripple factor		0.01%~20%	$U=0.02\%$		
18	*Impulse Current Tester	Electric current	C.S. for Impulse Current Tester JJF (浙) 1110	20A~3kA	$U_{rel}=2\%$		
		Time		500ns~100 μ s	$U_{rel}=2\%$		
19	Electrostatic discharge generator	Peak voltage	C.S. for Electrostatic Discharge Simulators JJF 1397	500V~30kV	$U_{rel}=5\%$		
		Peak current		500mA~30A	$U_{rel}=5\%$		
		Rise time		100ps~10ns	$U_{rel}=13\%$		
20	*Fast transient burst generator	Peak voltage	C.S. for Electrical Fast Transient/Burst Simulators JJF 1672	500V~4kV	$U_{rel}=4\%$		
		Rise time		3ns~10ns	$U_{rel}=7\%$		
		Pulse width		35ns~100ns	$U_{rel}=5\%$		
		Pulse repetition frequency		1kHz~100kHz	$U_{rel}=2\%$		
		Pulse group period		250ms~350ms	$U_{rel}=2\%$		
		Pulse group duration		0.5ms~20ms	$U_{rel}=2\%$		
21	*Voltage sag, short interrupt and voltage change generator	The output voltage	C.S. for Voltage Dips, Short Interruptions and Voltage Variations Test Generators JJF 1673	50V~400V,(50Hz)	$U_{rel}=3\%$		
		time		1ms~60s	$U_{rel}=1.2\%$		
		Rise Time		100ns~100 μ s	$U_{rel}=2\%$		
		Phase		0° ~360°	$U=1.2^\circ$		



No. CNAS L0854

第 122 页 共 127 页

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

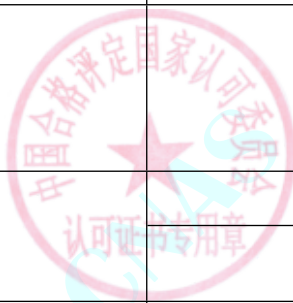
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
22	*Surge (shock) generator	Open circuit voltage	C.S. for Surge Simulators JJF 1741	100V~6kV	$U_{rel}=4\%$		
		Short circuit current		10A~2kA	$U_{rel}=4\%$		
		Front time		500ns~100 μ s	$U_{rel}=4\%$		
		duration		5 μ s~1000 μ s	$U_{rel}=4\%$		
23	*Damped oscillating wave generator	Voltage	C.S. for Damped Oscillatory Wave Simulators JJF 2016	100V~4kV	$U_{rel}=4\%$		
		Rise time		50ns~50s	$U_{rel}=4\%$		
		Short circuit current		10A~100A	$U_{rel}=4\%$		
		frequency		1kHz~1MHz	$U_{rel}=4\%$		
24	*glow-wire apparatus	Temperature	Calibration Specification of Glow-wire Apparatus JJF(JX) 1053	(960±15) °C	$U=2.0^{\circ}\text{C}$		
		Time		(0~60)min	$U=0.7\text{s}$		
25	*Leakage current tracing tester	Voltage	Calibration Specification of Leakage current tracing tester SDIM/CJGDX29	(10~1000)V	$U_{rel}=6\times 10^{-4}\sim 8\times 10^{-4}$		
		Current		100mA~1A	$U_{rel}=6\times 10^{-4}$		
26	*Ultrasonic Partial Discharge Testers	Cut-off frequency	Calibration Specification for Partial Discharge Testers—Part 1:Ultrasonic Partial Discharge Testers JJF 1856	20kHz~500kHz	$U_{rel}=0.2\%$		
		Voltage amplitude		0.01dB~80dB	$U=0.5\text{dB}$		
15、Meteorological and marine special measuring instrument							
1	bucket thermometers	Temperature	Verification Regulation of Bucket Thermometers JJG289	(-5~40) °C	$U=0.05^{\circ}\text{C}$		
2	Portable 3-cup Anemometers	Wind speed	Verification Regulation of Portable 3-cup Anemometers	(0.2~5)m/s	$U=0.05\text{m/s}$		



No. CNAS L0854

第 123 页 共 127 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
			JJG431	(5~30)m/s	$U_{rel}=1.0\%$		
3	Portable Induction Anemometer	Wind speed	Verification Regulation of Portable Induction Anemometer JJG515	(2~5) m/s	$U=0.05\text{m/s}$		
				(5~30) m/s	$U_{rel}=1.0\%$		
4	Contact Anemometer	Wind speed	Verification Regulation of Contact Anemometer JJG613	(2~5) m/s	$U=0.05\text{m/s}$		
				(5~40) m/s	$U_{rel}=1.0\%$		
		wind direction		$0^{\circ} \sim 360^{\circ}$	$U=3^{\circ}$		
5	Hot Ball shaped Anemometer	Wind speed	Calibration Specification for Thermo-anemoscopes JJF1939	(0.2~60) m/s	$U_{rel}=0.6\%$		
6	Mine Anemometer	Wind speed	Verification Regulation of Mine Anemometer JJG(煤炭)01	(0.3~5)m/s	$U=0.05\text{m/s}$		
				(5~30)m/s	$U_{rel}=1.0\%$		
7	Ultrasonic Anemometers	wind speed	Calibration Specification for Ultrasonic Anemometers JJF1934	(0.2~5) m/s	$U=0.05\text{m/s}$		
				(5~60) m/s	$U_{rel}=1.0\%$		
		wind direction		$0^{\circ} \sim 360^{\circ}$	$U=0.6^{\circ}$		
8	*wind tunnel	wind speed	Verification Regulation of Measuring Apparatus for Calibration of Mine Airspeed Measuring Instrument JJG (Mt) 02	(0.1~60) m/s	$U_{rel}=0.2\%$		
9	Cup Wind Speed Transducers	wind speed	Calibration Specification for Wind Speed Transducers of Automatic Weather Stations JJF1935	(0.2~5) m/s	$U=0.05\text{m/s}$		
				(5~60) m/s	$U_{rel}=1.0\%$		
10	Wheel Type	wind speed	Verification Regulation of	(2~5) m/s	$U=0.05\text{m/s}$		



No. CNAS L0854

第 124 页 共 127 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
	Digital Anemometers		Wheel Type Digital Anemometers JJG1194	(5~40) m/s	<i>U</i> _{rel} =1.0%		
11	Pitot Tubes	coefficient (L)	Verification Regulation of Pitot Tubes JJG518	L-type : 0.997~1.003 (Standard level)	<i>U</i> _{rel} =1.0%		
		L 型: 0.99~1.01 (working level)		<i>U</i> _{rel} =1.6%			
		coefficient (S)		S-type : 0.81~0.86	<i>U</i> _{rel} =1.6%		
12	Propeller Anemometer	wind speed	Calibration Specification for Propeller Anemometers JJF2011	(0.2~5) m/s	<i>U</i> =0.05m/s		
				(5~60) m/s	<i>U</i> _{rel} =1.0%		
		wind direction		0° ~360°	<i>U</i> =0.6°		
13	Fanning Mill Anemometers	wind speed	Calibration Specification for Fanning Mill Anemometers JJF1971	(1~5) m/s	<i>U</i> =0.05m/s		
				(5~30) m/s	<i>U</i> _{rel} =1.0%		
14	Seawater Temperature and Salinity Measuring Instrument	Temperature	Calibration Specification for Seawater Temperature and Salinity Measuring Instrument JJF2105	(-5~40) °C	<i>U</i> =0.01 °C		
		conductivity		(0~65) mS/cm	<i>U</i> =0.01mS/cm		
15	CTD Measuring Instruments	Temperature	Verification Regulation of CTD Measuring Instruments JJG763	(-5~40) °C	<i>U</i> =0.002 °C		
		conductivity		(0~65) mS/cm	<i>U</i> =0.003mS/cm		
		pressure		(0.05~100) MPa	<i>U</i> _{rel} =0.015%		
16	*Sea Electric Measuring Thermometer	Temperature	Verification Regulation of Sea Electric Measuring Thermometer JJG223	(-5~40) °C	<i>U</i> =1.3mK		



No. CNAS L0854

第 125 页 共 127 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
17	Wind Direction Sensor of Automatic Meteorological Station	wind direction	Verification Regulation of Wind Direction Sensor of Automatic Meteorological Station JJG1211	0° ~360°	U=0.6°		
16、Textiles and leather special measuring instrument							
1	*Vetical combustion tester	Time	C.S.of Vetical combustion tester JJF(FZ)068	(0~3600) s	U=0.2s		
		Angle		(0~90) °	U=0.2°		
		Mass		(5~500) g	U=0.1g		
		Length		(0~200) mm	U=0.1mm		
				(200~500) mm	U=0.8mm		
17、Railway specific measuring instrument							
1	Track Gages for Standard Gauge Railway	Length	Verification Regulation of Track Gages for Standard Gauge Railway JJG 219	(1410~1470) mm	U=0.08mm		
2	Wear Tools for Rail	Length	Verification Regulation of Wear Tools for Rail JJG 1127	(0~25) mm	U=0.06mm		
3	Measuring Rulers for Difference of Wheels Set Position and of Brake Discs Set Position of the Wheelsets for Railway	Length	Verification Regulation of Measuring Rulers for Difference of Wheels Set Position and of Brake Discs Set Position of the Wheelsets for Railway JJG 1110	(0~600)mm	U=0.03mm		



No. CNAS L0854

第 126 页 共 127 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	Inspecting Instruments for Railway Track	Length	Verification Regulation of Inspecting Instruments for Railway Track JJG 1090	(1410~1470)mm	$U=0.15\text{mm}$		
5	Rules for Measuring Center Height of Coupler for Railway Locomotive and Vehicle	Length	Verification Regulation of Rules for Measuring Center Height of Coupler for Railway Locomotive and Vehicle JJG 1150	(0~1000)mm	$U=0.15\text{mm}$		
6	Gauges for Measuring Distance between Inside Rim Faces of Wheels of Railway Locomotives and Vehicles	Length	Verification Regulation of Gauges for Measuring Distance between Inside Rim Faces of Wheels of Railway Locomotives and Vehicles JJG 1153	(1345~1365) mm	$U=0.036\text{mm}$		
7	Railway Switch Offset Rules	Length	Verification Regulation of Railway Switch Offset Rules JJG 1108	(100~1800) mm	$U=0.13\text{mm}$		
8	Ruler for Wheel-Diameter	Length	Verification Regulation of Measuring Instrument for Wheel-Diameter of Railway Locomotive and Vehicles—Part 1: Ruler for Wheel-Diameter JJG 1081.1	(760~860) mm	$U=0.042\text{mm}$	Only for Ruler for Metro Train Wheel-Diameter	



No. CNAS L0854

第 127 页 共 127 页

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