Name: Shandong Institute of Metrology

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Registration No. CNAS L0854

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

Effective Date: 2026-09-21 Expiry Date: 2030-02-03

SCHEDULE 5 ACCREDITED CALIBRATION AND MEASUREMENT CAPABILITY SCOPE

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

№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
1、Length measuring instrument							
1	*Coordinate Measuring Machines	Length	C.S.for Coordinate Measuring Machines JJF 1064	(0～1500）mm	U=0.3 μm +1.5×$10^{-6}L$		
2	*Bore Dial Indicators	Length	C.S.for Bore Dial Indicators JJF 1102	(2～450)mm/Dividing：0.01mm	U=4 μm		
				(10～400)mm/Dividing:0.001mm	U=1.2 μm		
3	Squares	Verticality	V.R.of Squares JJG 7	Wide seat squres$H$（63～100)mm	U=0.9 μm		
				Wide seat squres$H$ (125～200)mm	U=1.4 μm		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Wide seat squrres*H* (250～315)mm	*U*=1.8 μ m		
				Wide seat squrres*H*(400～500)mm	*U*=2.4 μ m		
				Linear steel squares：*H*（150～200）mm	*U*=1.4 μ m		
				Linear steel squares：*H*（150～500）mm	*U*=0.05mm		
				Linear steel squares：*H*（400～500）mm	*U*=2.4 μ m		
		length		Linear steel squares(0～500)mm	*U*=0.05mm		
4	*Common Normal Micrometer	Length	V.R.of Common Normal Micrometer JJG 82	(0～25)mm	*U*=1.1 μ m		
				(25～100)mm	*U*=1.3 μ m		
				(100～200)mm	*U*=1.9 μ m		
				Proof bar:25mm、50mm	*U*=0.7 μ m		
				Proof bar:75mm、100mm	*U*=0.9 μ m		
				Proof bar: (125～175)mm	*U*=1.0 μ m		
5	*Micrometer	Length	V.R. of Micrometer JJG 21	(0～25)mm	*U*=1.1 μ m		
				(25～100)mm	*U*=1.3 μ m		
				(100～200）mm	*U*=1.9 μ m		
				(200～300）mm	*U*=2.7 μ m		
				(300～500)mm	*U*=4.0 μ m		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				Proof bar:25mm、50mm	U=0.7 μ m		
				Proof bar:75mm、100mm	U=0.9 μ m		
				Proof bar: (125～200)mm	U=1.0 μ m		
				Proof bar: (225～450)mm	U=1.2 μ m		
6	*Dial Test Indicator	Length	V.R.of Dial Test Indicator JJG 35	(0～1)mm/d：0.01	U=3 μ m		
				(0～0.4)mm/d ：0.001mm	U=0.7 μ m		
7	*Depth Micrometers	Length	V.R.of Depth Micrometers JJG 24	(0～25)mm	U=1.1 μ m		
				(25～100)mm	U=1.3 μ m		
				(100～200)mm	U=1.9 μ m		
				(200～300)mm	U=2.7 μ m		
8	*Callipers for WeldingInspection	Length	Calibration Specification for Welding Inspection Callipers JJF 2161	(0～10)mm	U=21 μ m		
		Angle		(0～150)°	U=8′		
9	*Straight Edges	straightness	C.S.for Straight Edges JJF 1097	(400～5000)mm	U=0.2μm+0.3L		
10	*Micrometers with Gauge	Length	V.R.of Micrometers with Gauge JJG 427	(0～25)mm	U=1.1 μ m		
				(25～100)mm	U=1.3 μ m		
11	*Gear Tooth Calipers	Length	C.S.for Gear Tooth Calipers JJF 1072	module(1～50)mm	U=10 μ m		
12	*Micrometers with DialComparator	Length	V. R. of Micrometers with Dial Comparator and Indication Snap Gauge JJG	(0～50)mm	U=1.1 μ m		
				(50～100)mm	U=1.3 μ m		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
			26	(100～200）mm	U=1.8 μm		
13	*Height Measuring Instrument with Digital Display	Length	C.S.for Height Measuring Instrument with Digital Display JJF1254	(0～50)mm	U=0.4 μm		
				(50～1000)mm	U=0.7 μm +1.2×$10^{-6}L$		
14	*Vernier/dial type angle ruler	Angle	C.S.for General Bevel Protractors JJF 1959	(0～360)°	U=2′		
15	*Depth Dial Gauge	Length	V. R. of Depth Dial Gauge JJG 830	(0～300)mm	U=2.4 μm		
16	*Current Calipers	Length	V.R.of Current Calipers JJG 30	(0～300)mm	U=0.01mm		
				(300～500)mm	U=0.01mm		
				(500～1000)mm	U=0.02mm		
				(1000～2000)mm	U=0.03mm		
17	Feeler Gauges	Length	V.R.of Feeler Gauges JJG 62	(0.02～0.10)mm	U=2.0 μm		
				(0.10～3.00) μm	U=2.7 μm		
18	*Micrometers with Measuring Range from 500mm to 3000mm	Length	C.S.for Micrometers with Measuring Range from 500mm to 3000mm JJF 1088	(500～1000)mm	U=7.2 μm		
				(1000～1500)mm	U=9.4 μm		
				(1500～2000)mm	U=12 μm		
19	*Combined Type Angle Rules	Length	C.S.for Combined Type Angle Rules JJF 1132	(0～100）mm	U=0.03mm		
		Angle		(0～180）°	U=4′		
20	*Height Caliper	Length	V. R. of Height Caliper JJG 31	(0～300)mm	U=0.01mm		
				(300～500)mm	U=0.01mm		

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				(500～1000)mm	U=0.02mm		
				(1000～1500)mm	U=0.03mm		
21	*Snap Gauges Reading in0.01mm	Length	V.R.of Snap Gauges Reading in 0.01mm JJG 109	(0～1000)mm	U=4 μ m		
22	Steel Rule	Length	V.R.of Steel Rule JJG 1	(0～300)mm	U=0.03mm		
				(300～1000)mm	U=0.05mm		
23	Steel MeasuringTapes	Length	V. R. of Steel MeasuringTapes JJG 4	(0～200)m	U=0.1mm+2×$10^{-6}L$		
24	*Dial Snap Gauges	Length	C.S.for Dial Snap Gauges JJF 1253	(5～100)mm	U=0.01mm		
25	*Dial Gauges	Length	V.R.of Dial Gauges JJG 34	(0～10)mm/Dividing ：0.01mm	U=5 μ m		
				(10～50)mm/Dividing ：0.01mm	U=11 μ m		
				Dial gage:(0～2)mm	U=1.5 μ m		
26	*Surface Plates	Flatness	V. R. of Surface Plates JJG 117	(300×300～800×500)mm	U=1.2 μ m		
				(800×500～1600×1000)mm	U=2.4 μ m		
				(1600×1000～2500×1600)mm	U=4.2 μ m		
				(2500×1600～4000×2500)mm	U=9.6 μ m		
27	*Thickness Gauges	Length	C.S.for Thickness Gauges JJF 1255	(0～30)mm	U=2.0 μ m		
28	*Magnetic and Eddy Current Measuring	Length	V.R.of Magnetic and Eddy Current Measuring Instrument for Coating	(52.9～100) μ m	U=0.9 μ m		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Instrument for Coating Thickness		Thickness JJG 818	(100～250) μ m	U=2.0 μ m		
				(250～500) μ m	U=4.0 μ m		
				(500～1012) μ m	U=8.0 μ m		
29	Fiber Tapes And Measuring Ropes	Length	V. R. of Fiber Tapes and Measuring Ropes JJG5	(0～5)m	U=1.6mm		
				(5～10)m	U=2.6mm		
				(10～15)m	U=3.2mm		
				(15～20)m	U=3.8mm		
				(20～25)m	U=4.2mm		
				(25～30)m	U=4.6mm		
				(30～35)m	U=5.0mm		
				(35～40)m	U=5.4mm		
				(40～45)m	U=6.0mm		
				(45～50)m	U=6.4mm		
30	Gauge Blocks	Length	V. R. of Gauge Blocks JJG 146	(0.5～100)mm	U=0.5 μ m+5×$10^{-6}L$(k=2.7)		
31	*Length Measuring Instrument	Length	C.S.for Length Measuring Instrument JJF1189	(0～1000)mm	U=0.1 μ m＋3.5×$10^{-6}L$		
32	Cylindrical thread Gaudes	Length	C.S. for Cylindrical thread Gaudes JJF 1345	M(3～100)mm	U=3 μ m	Accredited only for single pitch diameter of plug gauge	

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33	Wooden Rule	Length	V.R.of Wooden Rule JJG 2	(0～500)mm	U=0.2mm		
				(500～1000)mm	U=0.4mm		
34	*Articulated arm coordinate measuring machines	Length	C.S.for Articulated arm coordinate measuring machines JJF1408	R:(0～1000)mm	U=9 μ m		
2、Temperature measuring instrument							
1	Base Metal Thermocouples	Temperature	C.S.for Base Metal Thermocouples JJF1637	（-30～300）℃	U=0.3℃		
2	Liquid-in-Glass Thermometers for Working	Temperature	V.R.of Liquid-in-Glass Thermometers for Working JJG130	（-30～300）℃	U=0.08℃	Accredited only for ordinary thermometer	
3	Bimetallic Thermometers	Temperature	C.S.for Bimetallic Thermometers JJF 1908	（-30～300）℃	U=0.2℃		
4	Digital Thermometer	Temperature	C.S.for Digital Thermometer JJF（su）95	（-30～300）℃	U=0.1℃		
5	*Digital Temperature Indicators and Controllers	Temperature	V.R.of Digital Temperature Indicators and Controllers JJG617	J：（-40～0）℃	U=0.5℃	Except for:Time Proportioning Control and PID Controller	
				J：（0～800）℃	U=0.3℃		
				K：（-200～0）℃	U=0.7℃		
				K：（0～1000）℃	U=0.4℃		
				K：（1000～1372）℃	U=0.6℃		
				T：（-250～0）℃	U=0.7℃		
				T：（0～400）℃	U=0.3℃		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				E：（-250～-100）℃	U=0.7℃		
				E：（-100～1000）℃	U=0.5℃		
				R：（-20～0）℃	U=2.1℃		
				R：（0～1767）℃	U=1.4℃		
				S：（-20～0）℃	U=2.1℃		
				S：（0～1767）℃	U=1.4℃		
				B：（600～800）℃	U=1.4℃		
				B：（800～1000）℃	U=1.5℃		
				B：（1000～1820）℃	U=1.8℃		
				C：（0～1000）℃	U=0.7℃		
				C：（1000～2316）℃	U=2.7℃		
				N：（-200～0）℃	U=0.9℃		
				N：（0～1300）℃	U=0.5℃		
				Pt100：（-200～0）℃	U=0.2℃		
				Pt100：（0～400）℃	U=0.3℃		
				Pt100：（400～800）℃	U=0.4℃		
				Cu50：（-50～150）℃	U=0.6℃		
		Voltage		（0.1～20）V	U=0.03%FS		
		Current		（0.1～24）mA	U=0.03%FS		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
6	*Analogue Temperature Indicators and Controllers	Temperature	V.R.of Analogue Temperature Indicators and Controllers JJG951	J:（--40～0）℃	U=0.5℃	Except for:Time Proportioning Control and PID Controller	
				J：（0～800）℃	U=0.3℃		
				K：（-200～0）℃	U=0.7℃		
				K：（0～1000）℃	U=0.4℃		
				K：（1000～1372）℃	U=0.6℃		
				T：（-250～0）℃	U=0.7℃		
				T：（0～400）℃	U=0.3℃		
				E：（-250～-100）℃	U=0.7℃		
				E：（-100～1000）℃	U=0.5℃		
				R：（-20～0）℃	U=2.1℃		
				R：（0～1767）℃	U=1.4℃		
				S：（-20～0）℃	U=2.1℃		
				S：（0～1767）℃	U=1.4℃		
				B：（600～800）℃	U=1.4℃		
				B：（800～1000）℃	U=1.5℃		
				B：（1000～1820）℃	U=1.8℃		
				C：（0～1000）℃	U=0.7℃		
				C：（1000～2316）℃	U=2.7℃		
				N：（-200～0）℃	U=0.9℃		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				N：（0～1300）℃	U=0.5℃		
				Pt100：（-200～0）℃	U=0.2℃		
				Pt100：（0～400）℃	U=0.3℃		
				Pt100：（400～800）℃	U=0.4℃		
				Cu50：（-50～150）℃	U=0.6℃		
		Voltage		（0.1～20）V	U=0.03%FS		
		Current		（0/1～24）mA	U=0.03%FS		
7	Mechanical Thermo hygrometers/Meteorological liquid-in-class thermometers	Temperature	V.R.of Mechanical Thermo hygrometers JJG205	(5～50)℃	U=0.2℃		
		Relative Humidity		30%～90% (20℃)	U=0.9%～1.1%		
8	*Liquid Constant Temperature Testing Equipment	Temperature	M.S.for Temperature Performance of Liquid Constant Temperature Testing Equipment JJF2019	（0～100）℃	U=0.2℃		
9	*Environmental Testing Equipment	Temperature	C.S.for the Equipment of the Environmental Testing for Temperature and Humidity parameters JJF1101	（-80～300）℃	U=0.3℃		
		Relative Humidity		10%～95%（20℃）	U=2.0%		
10	*Salt Mist Testing Chambers	Salt fog settlement rate	Calibration Specification for Salt Mist Testing Chamber JJF 2168	(1～2)ml/h・80cm^2	U=0.2ml/(h・80cm^2)		
		Temperature		（35～55）℃	U=0.3℃		
11	Radiation Thermometers	Temperature	V.R.of Radiation Thermometers JJG856	（50～100）℃	U=0.7℃		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (*k*=2)	Note	Effective Date
				（100～400）℃	*U*=1.2℃		
				（400～600）℃	*U*=1.6℃		
12	Temperature Itinerant Detecting Instrument	Temperature	C.S.for Temperature and Humidity Itinerant Detecting Instrument JJF1171	（-80～300）℃	*U*=（0.03～0.04）℃		
				(300～1200)℃	*U*=(0.4～0.6)℃		
		Relative Humidity		10%～90% (20℃)	*U*=0.9%～1.1%		
13	Sheathed Thermocouples	Temperature	C.S.of the Sheathed Thermocouples JJF1262	(-30～300)℃	*U*=0.3 ℃		
14	Electric Contact Mercury-in-Glass Thermometers	Temperature	V.R.of Electric Contact Mercury-in-Glass Thermometers JJG131	（-30～100）℃	*U*=0.05℃		
				（100～300）℃	*U*=0.08℃		
15	Filled System Thermometers	Temperature	C.S.for Filled System Thermometers JJF 1909	（-30～300）℃	*U*=0.2℃		
16	*Oxygen bomb,air bomb aging test oven	Temperature	V.P.for test equipment of rubber plastic wire and cable -Part 9: Oxygen bomb,air bomb aging test oven JB/T 4278.9	(0～300)℃	*U*=0.3℃		
17	Temperature Transmitter	Temperature	C.S.of the Temperature Transmitter JJF1183	Pt100：（-30～300）℃（With temperature sensors）	*U*=0.25℃		
				J/N/K：（-30～300）℃（With temperature sensors）	*U*=0.5℃		
				E：（-30～300）℃（With temperature sensors）	*U*=0.5℃		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				T：（-30～300）℃（With temperature sensors）	U=0.5℃		
				Pt100：（-200～100）℃（Without Temperature Sensor）	U=0.4℃		
				Pt100：（100～600）℃（Without Temperature Sensor）	U=0.5℃		
				Pt100：（600～800）℃（Without Temperature Sensor）	U=0.6℃		
				K：（-200～0）℃（Without Temperature Sensor）	U=1.1		
				K：（0～1000）℃（Without Temperature Sensor）	U=0.8℃		
				K：（1000～1370）℃（Without Temperature Sensor）	U=1.0℃		
				J：（-40～0）℃（Without Temperature Sensor）	U=0.9℃		
				J：（0～800）℃（Without Temperature Sensor）	U=0.7℃		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (*k*=2)	Note	Effective Date
				T：（-200～0）℃（Without Temperature Sensor）	*U*=1.0℃		
				T：（0～400）℃（Without Temperature Sensor）	*U*=0.6℃		
				E：（-250～-100）℃（Without Temperature Sensor）	*U*=0.9℃		
				E：（-100～1000）℃（Without Temperature Sensor）	*U*=0.7℃		
				N：（-200～0）℃（Without Temperature Sensor）	*U*=1.4℃		
				N：（0～1300）℃（Without Temperature Sensor）	*U*=0.9℃		
18	Digital Temperature-hygrometers	Temperature	Calibration Specification for Digital Temperature-hygrometers JJF 1076	(5～50)℃	*U*=0.2℃		
		Relative Humidity		10%～90%	*U*=0.9%～1.1%		
3、Mechanics measuring instrument							
1	*Electronic Balances	Mass	C.S. for Electronic Balances JJF 1847	(1 ～100)mg	*U*=0.1mg		
				(0.1～10)g	*U*=0.1mg		
				(10～500)g	*U*=(0.1～1.5)mg		
				(0.5～30)kg	*U*=1.5mg～0.2g		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
2	Weight	Quality	V.R. of weights JJG 99	1g，2g，5g，10g，20g，50g	U=0.2mg		
				100g	U=0.4mg		
				200g	U=0.6mg		
				500g	U=2mg		
				1kg	U=4mg		
				2kg	U=7mg		
				5kg	U=17mg		
				10kg	U=83mg		
				20kg	U=0.1g		
3	*Table Balances	Mass	V.R.for Table Balances JJG 156	(0.1～10)g	U=0.03g		
				(10～500)g	U=(0.03～0.1)g		
				(0.5～2)kg	U=0.3g		
				(2～5)kg	U=1g		
4	*Digital Indicating Weighing Instruments	Mass	V.R.for Digital Indicating Weighing Instruments JJG 539	(0.1～10)g	U=0.06g		
				(0.01～1)kg	U=(0.06～0.6)g		
				(1～50)kg	U=(0.6～3)g		
				(50～100)kg	U=(3～9)g		
				(100～500)kg	U=(9～70)g		
5	*Metallic Brinell	Hardness	V.R.of Metallic Brinell	(75～125)HBW10/1000	U_{rel}=3.0%		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Hardness Testers		Hardness Testers JJG 150	(125～225)HBW10/3000	U_{rel}=2.0%		
6	*Metallic Rockwell Hardness Testers	Hardness	V.R.of Metallic Rockwell HardnessTesting Machines（Scales A,B,C,D,E,F,G,H,K,N,T） JJG 112	(20～70)HRC	U=0.8HRC		
7	*Digital Pressure Gauges	Pressure	V.R.of Digital Pressure Gauges JJG 875	(-0.1～60)MPa	U=0.1%FS		
				(60～250)MPa	U=0.2%FS		
8	*Elastic Element Pressure Gauges,Pressure-Vacuum Gauges and Vacuum Gauges for General Use	Pressure	V.R.of Elastic Element Pressure Gauges, Pressure-Vacuum Gauges and Vacuum Gauges for General Use JJG 52	(-0.1～250) MPa	U=0.5%FS		
9	Working Dynamometers	Force	V.R.of Working Dynamometers JJG 455	(1～5000) N	U_{rel}=0.3%		
10	Torque Wrenches	Torque	V.R.of Torque Wrenches JJG 707	(2～1000)Nm	U_{rel}=1.0%		
11	*Analogue Indicating Weighing Instruments	Mass	V.R.of Analogue Indicating Weighing Instruments JJG 13	(1～3)kg	U=1.2g		
				(3～10)kg	U=3g		
				(10～20)kg	U=6g		
12	*Non-self-Indicating Weighing Instruments	Mass	V.R.of Non-self-Indicating Weighing Instruments JJG 14	(1～20)kg	U=0.3g		
				(20～50)kg	U=2g		
				(50～100)kg	U=10g		

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				(100～500)kg	U=40g		
13	*Elastic Element Precise Pressure Gauges and Vacuum Gauges	Pressure	V.R. of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG49	(-100～-5) kPa	U=0.1%FS		
				(0.005～60) MPa	U=0.1%FS		
14	*Working Force Measuring Machines for Special Purpose	Force	C.S.for Working Force Measuring Machines for Special Purpose JJF 1134	20N～100kN	U_{rel}=0.4%		
15	*Electronic Universal testing Machines	Force	V.R. of Electronic Universal Testing Machine JJG 475	20N～100kN	U_{rel}=0.4%		
16	*Tension,Compression and Universal testing machines	Force	V.R.of Tension,Compression and Universal Testing Machines JJG 139	20N～100kN	U_{rel}=0.4%		
17	Locomotive Pipette	Volume	V.R.of Locomotive Pipette JJG 646	(10～50) μ L	U_{rel}=1.0%		
				(50～300) μ L	U_{rel}=0.6%		
				(300～1000) μ L	U_{rel}=0.4%		
				(1000～10000) μ L	U_{rel}=0.3%		
18	Working Glass Container	Volume	V.R.of Working Glass Container JJG 196	(0.05～0.25)mL	U=0.002mL		
				(0.5～2)mL	U=0.004mL		
				(2～5)mL	U=0.006mL		
				10mL	U=0.007mL		
				15mL	U=0.009mL		
				20mL	U=0.011mL		

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				25mL	U=0.012mL		
				50mL	U=0.017mL		
				100mL	U=0.021mL		
				(200～250)mL	U=0.05mL		
				500mL	U=0.08mL		
				1000mL	U=0.13mL		
				2000mL	U=0.20mL		
4、Electric Mechanics							
1	*Multi-function Standard Source	DC Voltage	C.S.for Multimeters JJF1587	10mV～20mV	U_{rel}=0.6%～0.3%		
				20mV～100mV	U_{rel}=0.3%～0.12%		
				100mV～1000V	U_{rel}=0.12%		
		AC Voltage		10mV～1000V（50Hz～400Hz）	U_{rel}=0.15%		
		DC Current		20μA～50μA	U_{rel}=0.3%0～.12%		
				50μA～20A	U_{rel}=0.12%		
		AC Current		1mA～20A （50Hz～400Hz）	U_{rel}=0.15%		
		Resistance		10Ω～100kΩ	U_{rel}=0.2%		
				100kΩ～1MΩ	U_{rel}=0.3%		
2	*Multimeter	DC Voltage	V.R.ofAmperemeters,Voltmeters,Wattmeters and	10mV～1000V	U_{rel}=0.3%		

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
		AC Voltage	Ohmmeters JJG124	10mV～1000V（50Hz～400Hz）	U_{rel}=0.35%		
		DC Current		20μA～20A	U_{rel}=0.3%		
		AC Current		1mA～20A（50Hz～400Hz）	U_{rel}=0.35%		
		Resistance		10Ω～100kΩ	U_{rel}=0.2%		
				100kΩ～1MΩ	U_{rel}=0.3%		
3	*Clamp Ammeters	AC Current	C.S. for Clamp Ammeters JJF 1075	0.1A～20A(50Hz~400Hz)	U_{rel}=0.1%～0.4%		
				20A～1000A(50Hz~400Hz)	U_{rel}=0.4%～1%		
		DC Current		0.1A～20A	U_{rel}=0.1%～0.3%		
				20A～1000A	U_{rel}=0.3%～0.5%		
4	*Earth Resistance Meters	Resistance	V.R.of Earth Resistance Meters JJG 366	0.1Ω～1Ω	U_{rel}= 0.6%		
				1Ω～100Ω	U_{rel}= 0.12%		
				100Ω～10kΩ	U_{rel}=0.06%		
5	*Wrist Strap and Footwear Tester	Resistance	C.S.for Wrist Strap and Footwear Tester JJF(electrical)31502	100kΩ～100MΩ	U_{rel}=0.3%		
				100MΩ～200MΩ	U_{rel}= 1.2%		
6	*Clamp Earth Resistance Meters	Resistance	V.R. of Clamp Earth Resistance Meters JJG1054	1Ω～10Ω	U_{rel}=0.3%		
				10Ω～100Ω	U_{rel}=0.3%		
				100Ω～200Ω	U_{rel}=0.5%		
				200Ω～400Ω	U_{rel}=1.0%		

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				400Ω～600Ω	U_{rel}=2.0%		
				600Ω～1500Ω	U_{rel}=3%		
7	*Digital Megohm-meter	Resistance	V.R. of Electronic Insulation Resistance Meters JJG 1005	100Ω～1MΩ	U_{rel}=0.15%		
				1MΩ～10MΩ	U_{rel}=0.26%		
				10MΩ～100MΩ	U_{rel}=0.58%		
				100MΩ～10GΩ	U_{rel}=1.2%		
				10GΩ～100GΩ	U_{rel}=2.4%		
				100GΩ～500GΩ	U_{rel}=5.8%		
		Voltage		(50～5000)V	U_{rel}=1.2%		
8	*Megohm-meter	Resistance	V.R. of Megohmmeter JJG 622	100Ω～1MΩ	U_{rel}=0.3%		
				1MΩ～10MΩ	U_{rel}=0.38%		
				10MΩ～100MΩ	U_{rel}=1%		
				100MΩ～10GΩ	U_{rel}=2%		
				10GΩ～100GΩ	U_{rel}=5%		
				100GΩ～500GΩ	U_{rel}=6%		
		Voltage		(50～5000)V	U_{rel}=1.5%		
9	*Megohm-Tester	Resistance	V.R.of High Insulation Resistance Meters JJG 690	100Ω～1MΩ	U_{rel}=0.15%		
				1MΩ～10MΩ	U_{rel}=0.26%		
				10MΩ～100MΩ	U_{rel}=0.58%		

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				100MΩ～10GΩ	U_{rel}=1.2%		
				10GΩ～100GΩ	U_{rel}=2.4%		
				100GΩ～500GΩ	U_{rel}=5.8%		
		Voltage		10V~1kV	U_{rel}=0.1%		
10	Surface Resistance Tester	Resistance	C.S.for Surface Resistance Tester JJF1285	1kΩ～1MΩ	U_{rel}=0.15%		
				1MΩ～10MΩ	U_{rel}=0.26%		
				10MΩ～100MΩ	U_{rel}=0.58%		
				100MΩ～10GΩ	U_{rel}=1.2%		
				10GΩ～100GΩ	U_{rel}=2.4%		
				100GΩ～500GΩ	U_{rel}=5.8%		
		Voltage		10V～250V	U_{rel}=0.1%		
5、Chemical Mechanics							
1	*Ultraviolet,Visible Spectrophotometer	Wave- length	V.R.of Ultraviolet,Visible,Near-Infrared Spectrophotometers JJG 178	190 nm～900 nm	U=0.4 nm		
		Transmttance		5%～45%	U=0.4%		
2	*Atomic Absorption Spectrophotometer	Detected Limit	V.R.of Atomic Absorption Spectrophotometers JJG 694	Flame Atomization: ≤ 0.02 μg/mL (Cu)	U=0.0 1 μg/mL		
				Graphite Furnace Atomization: ≤4 pg (Cd)	U=0.5 pg		
3	*Inductively Coupled Plasma Emission	Detection Limit	V.R.of Emission Spectrometer JJG768	Zn: ≤0.003 mg/L	U=0.0008 mg/L		
				Ni: ≤0.01 mg/L	U=0.0010 mg/L		

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	Spectrometer			Mn: ≤0.002 mg/L	U=0.0011 mg/L		
				Cr: ≤0.007 mg/L	U=0.0016 mg/L		
				Cu: ≤0.007 mg/L	U=0.0012 mg/L		
				Ba: ≤0.001 mg/L	U=0.0002 mg/L		
4	*Gas Chromatography	Sensitivity	V.R.of Gas Chromatography JJG 700	TCD（benzene）: ≥800 mV • mL/mg	U_{rel}=4.3%		
		Detection Limit		FID（n-hexadecane）: ≤5×10^{-10} g/s	U_{rel}=4.4%		
				FPD: ≤5×10^{-10} g/s (S)、 ≤1×10^{-10} g/s (P)	U_{rel}=4.0%		
				NPD: ≤5×10^{-12} g/s (N)、≤1×10^{-11} g/s (P)	U_{rel}=4.1%		
				ECD: ≤1×10^{-12} g/mL	U_{rel}=4.0%		
5	*Liquid Chromatography	minimum detection	V.R.of Liquid Chromatography JJG 705	UV-VIS、DAD：≤5×10^{-8} g/mL	U_{rel}=5.6%		
				FLD ：≤5×10^{-9} g/mL	U_{rel}=5.6%		
				RID ：≤5×10^{-6} g/mL	U_{rel}=6.9%		
				ELSD ：≤5×10^{-6}g/mL	U_{rel}=6.9%		
6	*Ion Chromatograph	minimum detection	V.R. for Ion Chromatograph JJG823	Conductivity detector: ≤0.02 μg/mL (Cl^-)	U_{rel}=8%		
				Conductivity Detector: ≤0.02 μg/mL (Li^+)	U_{rel}=8%		

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				Ultraviolet visible detector: ≤0.02 μg/mL NO_2^-)(	U_{rel}=8%		
				Electrochemical detectorI: ≤0.02 μg/mL (I^-)	U_{rel}=8%		
7	*Gas Chromatograph-Mass Spectrometer	Sign-to-noise-ratio	C.S.for Gas Chromatography-Mass Spectrometers JJF 1164	EI^+: ≥10:1 (Ion trap, Single quadrupole, Triple quadrupole)	U_{rel}=15%		
				CI^+: ≥10:1 (Ion trap, Single quadrupole, Triple quadrupole)	U_{rel}=15%		
				CI^-: ≥10:1 (Ion trap, Single quadrupole)	U_{rel}=15%		
8	*Instrument for KF Coulometry Titration	Water Content	V.R. of Instrument for KF Coulometry Titration JJG 1044	(10～100) μg	U_{rel}=3.6%		
				(1000～5000) μg	U_{rel}=2.2%		
9	*Thermogravimetric Moisture Meter	Mass	V. R. of Thermogravimetric Moisture Meters JJG 658	1 mg～200 g	U=0.2 mg		
		Water Content		94%～96%			
10	Flow Cups Viscometer	Flow time	V.R of Flow Cup Viscometers JJG 743	(30～100)s	U_{rel}=2.6%		
11	Rotational Viscometer	Viscosity	V.R of Rotational Viscometer JJG 1002	(1～1.5×10^5)mPa·s	U_{rel}=2.8%		
12	*Extrusion Plastometer	Melt mass-flow rate	V.R of Extrusion plastometer JJG878	(1～7)g/10min	U=0.20 g/10min		
		Temperature		125℃～300℃	U=0.1℃		
13	*Laboratory pH Meters	pH	V.R.of Laboratory pH Meters JJG 119	Electric meter: 0～14	U=0.01	Except for class 0.001	
				Instrument: 4.00～9.18	U=0.02		

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		voltage		(-2000～2000)mV	U=0.3 mV		
14	*Automatic Potentiometric Titrato	voltage	V.R.of Automatic Potentionmetric Titrators JJG 814	(-2000～2000)mV	U=0.3 mV		
		Concentration		0.1mol/L	U_{rel}=0.5%		
15	*Electrolytic Conductance Meter	Electrolytic conductivity	V.R. of Electrolytic Conductance Meter JJG 376	Electric meter: (1～2.5×10^4) μ S·cm^{-1}	U_{rel}=0.2%		
				Instrument: (140～1500) μ S·cm^{-1}	U_{rel}=0.3%		
16	*Electrochemical Oxygen Meter	Concentration	V.R.of Electro-chemical Electrode Gas Oxygen Analyzer JJG365	(5～25)×10^{-2}mol/mol	U_{rel}=2%		
17	*Zirconia Oxygen Analyzer	concentration	V.R.of Zirconia Oxygen Analyzers JJG 535	(5～25)×10^{-2}mol/mol	U_{rel}=2%		
18	*Thermomagnetic Oxygen Analyzer	concentration	V.R.of Paramagnetic Oxygen Analyzers JJG662	(5～25)×10^{-2}mol/mo	U_{rel}=1.5%		
19	*Monooxide Carbon and Carbon Dioxide Infrared Gas Analyzer	Concentration	V.R.of Monooxide Carbon and Carbon Dioxide Infrared Gas Analyzer JJG635	CO: (1～1000)×10^{-6}mol/mol	U_{rel}=3%		
				CO_2:(0.01～1.00)×10^{-2}mol/mol	U_{rel}=3%		
20	*Carbon Monoxide Detector	concentration	V.R.of Carbon Monoxide Detectors JJG 915	(1～500)×10^{-6}mol/mol	U_{rel}=3%		
21	*Alarmer Detector of Combustible Gas	Concentration	V.R.of the Alarmer Detectors of Combustible Gas JJG 693	1%LEL～100%LEL	U_{rel}=2.3%	Accredited only for CH4、i-C4H10	
22	*Sulfur Dioxide Gas Detector	concentration	V.R.of Sulfur Dioxide Gas Detectors JJG 551	(1～100)×10^{-6}mol/mol	U_{rel}=3%		

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23	*Ammonia Gas Detector	concentration	V.R. of Ammonia Gas Detectors JJG 1105	(1～500)×10^{-6}mol/mol	U_{rel}=3%		
24	*Sulfur Hydrogen Gas Detector	concentration	V.R.of Sulfur Hydrogen Gas Detectors JJG 695	(1～100)×10^{-6}mol/mol	U_{rel}=3%		
25	*Alarmer Detector of Sulfur Hexafluoride	concentration	C.S. for the Alarmer Detector of Sulfur Hexafluoride JJF 1263	(1～500)×10^{-6}mol/mol	U_{rel}=2%		
26	*Chlorine Alarm Detector	concentration	C.S. for Chlorine Alarm Detectors JJF 1433	(1～100)×10^{-6}mol/mol	U_{rel}=3%		
27	*Melting-Point Measuring Instrument	Melting-Point	V.R.of Melting-point Measurement Instruments JJG701	(40～300)℃	U=0.3℃		
6、Optics measuring instruments							
1	*Specular Gloss Meters	Specular Gloss	V.R.of Specular Gloss Meters and Gloss Plates JJG696	(0～120)GU	U=1.3 GU	Except for standard Gloss meters	
2	*Colorimeters and Colour Difference Meter	Chroma	V.R.of Colorimeters and colour difference meters JJG595	Y: 0～100	U=2.2	Accredited only for d/0 optical condition	
				x、y: 0～0.9	U=0.007		
7、MotorVehicle special measuring instrument							
1	Tire Tread Depth Gauges	Length	C.S.for Tire Tread Depth Gauges JJF 1477	(0～30)mm	U=0.02mm		
8、Construction and transportation special measuring instrument							
1	Wedge-Shape Filler Gauges	Length	C.S.for Wedge-Shape Filler Gauges JJF1548	type Ⅱ：(0～15)mm	U=0.01mm		

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