

Name: Jiangsu Huayi Testing Technology Co., Ltd.

Address: Building 4, No.6, Changshan Road, Zhangjiagang Free Trade Zone, Suzhou, Jiangsu, China

Registration No. CNAS L20961

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

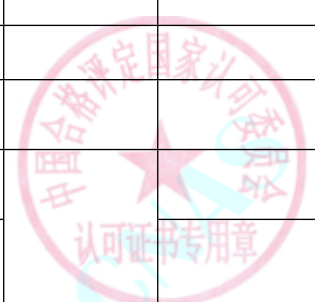
Effective Date: 2024-06-11 Expiry Date: 2030-06-10

CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT
SCHEDULE OF ACCREDITATION CERTIFICATE

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 |
|-----------|--|-----------|---|--|---------------------------------------|------|----------------|
| Geometric | | | | | | | |
| 1 | Steel Measuring Tapes | Length | V.R. of Steel Measuring Tapes JJG 4 | (0~50)m | $U=0.09\text{mm}+1.5 \times 10^{-5}L$ | | |
| 2 | Steel Rule | Length | V.R. of Steel Rule JJG 1 | (0~2000)mm | $U=0.04\text{mm}+3 \times 10^{-5}L$ | | |
| 3 | Fiber Tape | Length | V.R. of Fiber Tapes and Measuring Ropes JJG 5 | (0~50)m | $U=0.2\text{mm}+1.7 \times 10^{-4}L$ | | |
| 4 | Pi Tapes | Length | C.S. for Pi Tapes JJF 1423 | $D:(9 \sim 1500)\text{mm}$ | $U=0.013\text{mm}+1 \times 10^{-5}D$ | | |
| 5 | *Toolmaker's Microscope | Length | V.R. of Toolmaker's Microscope JJG 56 | (0~200)mm | $U=0.3 \mu\text{m}+5 \times 10^{-6}L$ | | |
| 6 | *Reading Microscope and Measuring Microscope | Length | V.R. of Reading Microscope and Measuring Microscope JJG 571 | Reading Microscope:(0~8)mm | $U=0.5 \mu\text{m}$ | | |
| | | | | Measuring Microscope: vertical (0~50) mm, horizontal (0~13) mm | $U=1.8 \mu\text{m}$ | | |



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| 7 | *Projectors | Length | C.S. for Projectors JJF 1093 | (0~300)mm | $U=1.0 \mu\text{m}+5.7 \times 10^{-6}L$ | | |
| 8 | *Projectors for Detecting the Notch of Test Sample | Length | C.S. for Projectors for Detecting the Notch of Test Sample JJF(Zhe) 1133 | Arc Radius:(10~60)mm | $U=8 \mu\text{m}$ | | |
| | | Angle | | V-notch Angle:(40~50) | $U=5'$ | | |
| | | Magnification factor | | 50× | $U_{\text{rel}}=0.34\%$ | | |
| 9 | *Biological Microscopes | Length | C.S. for Biological Microscopes JJF 1402 | (0~10)mm | $U=4 \mu\text{m}$ | | |
| | | Magnification factor | | $5 \times \sim 100 \times$ | $U_{\text{rel}}=1.2\%$ | | |
| 10 | *Metallurgical Microscopes | Length | C.S. for Metallurgical Microscopes JJF 1914 | (0~10)mm | $U=3 \mu\text{m}$ | | |
| | | Magnification rate | | $5 \times \sim 100 \times$ | $U_{\text{rel}}=1.0\%$ | | |
| 11 | *Stereomicroscope | Magnification factor | C.S. for Stereomicroscope JJF(Min)1063 | $0.7 \times \sim 100 \times$ | $U_{\text{rel}}=0.5\%$ | | |
| 12 | *Imaging Probe Measuring Machines | Length | C.S. for Imaging Probe Measuring Machines JJF 1318 | X axis,Y axis:(0~500)mm | $U=1.1 \mu\text{m}+2 \times 10^{-6}L$ | | |
| | | | | Z axis:(0~200)mm | $U=1.5 \mu\text{m}+2.5 \times 10^{-6}L$ | | |
| 13 | Gauge Blocks | Length | V.R. of Gauge Blocks JJG 146 | (0.5~100)mm | $U=0.32 \mu\text{m}+2.7 \times 10^{-6}L$ | | |
| | | | | (100~1000)mm | $U=0.30 \mu\text{m}+2.7 \times 10^{-6}L$ | | |
| 14 | Micrometers of Measuring Inside Dimension | Length | C.S. for Micrometers of Measuring Inside Dimension JJF 1411 | Internal Micrometer:(5~150)mm | $U=1.5 \mu\text{m}+8 \times 10^{-6}L$ | | |
| | | | | Three-point Internal Micrometer:(6~100)mm | $U=1.2 \mu\text{m}+8 \times 10^{-6}L$ | | |
| 15 | *Micrometer | Length | V.R. of Micrometer JJG 21 | (0~100)mm | $U=1.0 \mu\text{m}$ | | |
| | | | | (100~300)mm | $U=1.5 \mu\text{m}$ | | |



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| | | | | (300~500)mm | $U=2.0 \mu\text{m}$ | | |
| | | | | Calibrating Rod:(25~475)mm | $U=0.35 \mu\text{m}+3.2 \times 10^{-6}L$ | | |
| 16 | *Point Micrometers | Length | C.S. for Point Micrometers JJF(Zhe) 1045 | (0~100)mm | $U=1.0 \mu\text{m}$ | | |
| | | | | Calibrating Rod:(25~75)mm | $U=0.35 \mu\text{m}+3.2 \times 10^{-6}L$ | | |
| 17 | *Small Anvil Micrometer | Length | C.S. for Small Anvil Micrometer JJF(Zhe) 1131 | (0~100)mm | $U=1.0 \mu\text{m}$ | | |
| | | | | Calibrating Rod:(25~75)mm | $U=0.35 \mu\text{m}+3.2 \times 10^{-6}L$ | | |
| 18 | *Circle Anvil Micrometer | Length | C.S. for Circle Anvil Micrometer JJF(Zhe) 1132 | (0~100)mm | $U=1.0 \mu\text{m}$ | | |
| | | | | Calibrating Rod:(25~75)mm | $U=0.35 \mu\text{m}+3.2 \times 10^{-6}L$ | | |
| 19 | *Thickness Gauges | Length | C.S. for Thickness Gauges JJF 1255 | (0~30)mm | $U=2 \mu\text{m}$ | | |
| 20 | *Depth Micrometers | Length | V.R. of Depth Micrometers JJG 24 | (0~100)mm | $U=1.4 \mu\text{m}$ | | |
| | | | | (100~300)mm | $U=3.0 \mu\text{m}$ | | |
| 21 | *Micrometers with Dial Comparator and Indication Snap Gauge | Length | V.R. of Micrometers with Dial Comparator and Indication Snap Gauge JJG 26 | Micrometers with Dial Comparator:(0~25)mm | $U=0.6 \mu\text{m}$ | | |
| | | | | Micrometers with Dial Comparator:(25~100)mm | $U=1.2 \mu\text{m}$ | | |
| | | | | Indication Snap Gauge:(0~200)mm | $U=0.8 \mu\text{m}$ | | |
| 22 | *Depth Dial Gauge | Length | V.R. of Depth Dial Gauge JJG 830 | (0~50)mm | $U=2.2 \mu\text{m}$ | | |
| 23 | *Dial Gauges | Length | V.R. of Dial Gauges JJG 34 | Dial Gauges Reading in 0.01mm:(0~10)mm | $U=4 \mu\text{m}$ | | |

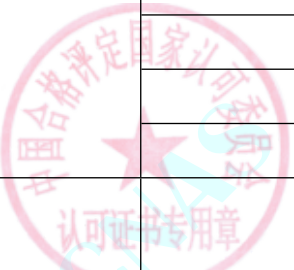
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| | | | | Dial Gauges Reading in 0.01mm:(0~50)mm, 10mm < S ≤ 50mm | U=8 μ m | | |
| | | | | Dial Gauges Reading in 0.001mm:(0~1)mm | U=1.5 μ m | | |
| | | | | Dial Gauges Reading in 0.001mm:(0~10)mm, 1mm < S ≤ 10mm | U=2.2 μ m | | |
| | | | | Dial Gauges Reading in 0.001mm:(0~30)mm, 10mm < S ≤ 30mm | U=3.3 μ m | | |
| 24 | *Dial Test Indicator | Length | V.R. of Dial Test Indicator JJG 35 | Dial Test Indicator Reading in 0.01mm:(0~1)mm | U=3.1 μ m | | |
| | | | | Dial Test Indicator Reading in 0.001mm:(0~0.4)mm | U=0.9 μ m | | |
| 25 | *Current Caliper | Length | V.R. of Current Calipers JJG 30 | (0~300)mm | U=0.01mm | | |
| | | | | (300~600)mm | U=0.02mm | | |
| | | | | (600~1000)mm | U=0.03mm | | |
| | | | | (1000~2000)mm | U=0.04mm | | |
| 26 | *Drop Test Machine for Packages | Length | V.R. of Drop Test Machine for Packages JJG(Yue)045 | (0~2000)mm | U=1mm | | |
| 27 | *Height Caliper | Length | V.R. of Height Caliper JJG 31 | (0~300)mm | U=0.01mm | | |



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| | | | | (300~600)mm | U=0.02mm | | |
| | | | | (600~1000)mm | U=0.03mm | | |
| 28 | Surface Profile Gauges | Length | C.S. for Surface Profile Gauges JJF 1476 | (0~6.5)mm | U=1.7 μ m | | |
| 29 | *Wide Face Caliper | Length | C.S. for Wide Face Caliper JJF(Zhe)1172 | (0~300)mm | U=0.02mm | | |
| 30 | *Digital Step Gauge | Length | C.S. for Digital Step Gauge JJF(Zhe)1130 | (-50~+50)mm | U=0.01mm | | |
| 31 | *Step Gauge | Length | C.S. for Step Gauge JJF(Ji)154 | Digital Step Gauge:(0~50)mm | U=0.01mm | | |
| | | | | Vernier Step Gauge:(0~50)mm | U=0.02mm | | |
| | | | | Setting-values Step Gauge:(1~10)mm | U=5 μ m | | |
| 32 | *Conductor Percentage Elongation Instrument | Length | V.R. of Conductor Percentage Elongation Instrument JJG(Yue)005 | (0~10)mm | U=0.02mm | | |
| | | | | (10~300)mm | U _{rel} =0.2% | | |
| | | Speed | | (4~6)mm/s | U=0.2mm/s | | |
| | | Elongation | | 10%~70% | U _{rel} =0.2% | | |
| 33 | *Carbonization Depth Measuring Instruments and Calipers | Length | C.S. for Carbonization Depth Measuring Instruments and Calipers JJF 1721 | Carbonization Depth Measuring Instruments:(0~8)mm | U=0.08mm | 中国合格评定国家认可委员会 认可证书专用章 | |
| | | | | Carbonization Depth Measuring Calipers:(0~70)mm | U=0.01mm | | |
| 34 | Square Gauge | Verticality | V.R. of Square Gauge JJG 1046 | H:(100~400)mm | U=0.6 μ m | | |

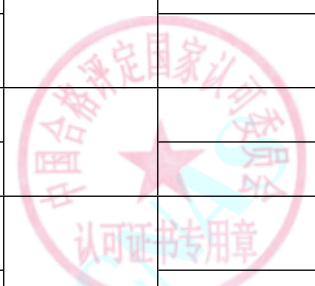


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| 35 | Squares | Length | V.R. of Squares JJG 7 | L:(0~400)mm | $U=0.15\text{mm}+2\times 10^{-4}L$ | except for Cylindrical Squares, Rectangular Squares and Knife-edge Squares | |
| | | Verticality | | H:(50~400)mm | $U=1.6\mu\text{m}+6\times 10^{-6}H$ | | |
| 36 | General Bevel Protractors | Angle | C.S. for General Bevel Protractors JJF 1959 | (0~360)° | $U=2'$ | | |
| 37 | Frame Levels and Shaft Levels | Angle | C.S. for Frame Levels and Shaft Levels JJF 1084 | Scale Interval :(0.02~0.10)mm/m | $U_{\text{rel}}=7\%$ | | |
| 38 | Straight Edges | Straightness | C.S. for Straight Edges JJF 1097 | L:(300~1000)mm | $U=0.6\mu\text{m}$ | | |
| | | | | L:(1000~2000)mm | $U=1.1\mu\text{m}$ | | |
| 39 | *Surface Plates | Flatness | V.R. of Surface Plates JJG 117 | 160mm×100mm~630mm×400mm | $U=1.6\mu\text{m}$ | | |
| | | | | 630mm×400mm~1000mm×630mm | $U=1.8\mu\text{m}$ | | |
| | | | | 1000mm×630mm~1600mm×1000mm | $U=2.0\mu\text{m}$ | | |
| | | | | 1600mm×1000mm~2000mm×1000mm | $U=2.6\mu\text{m}$ | | |
| 40 | Feeler Gauges | Length | V.R. of Feeler Gauges JJG 62 | (0.02~0.10)mm | $U=1.3\mu\text{m}$ | | |
| | | | | (0.10~3.00)mm | $U=2.6\mu\text{m}$ | | |
| 41 | *Wedge-Shape Filler Gauge | Length | C.S. for Wedge-Shape Filler Gauge JJF 1548 | Type I Wedge-Shape Filler Gauge:(0~60)mm | $U=11\mu\text{m}$ | | |
| | | | | Type II Wedge-Shape Filler Gauge:(0~15)mm | $U=11\mu\text{m}$ | | |

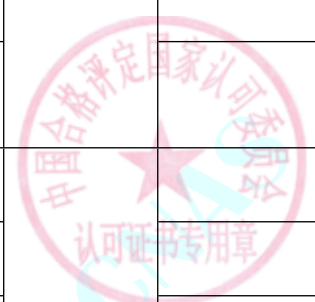


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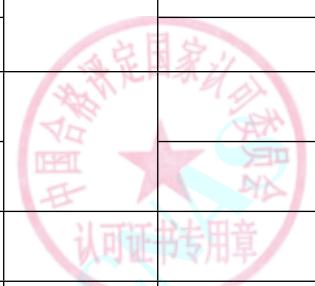
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| | | | | Digital Wedge-Shape Filler Gauge:(0~40)mm | U=11 μm | | |
| 42 | Plain Limit Gauges | Length | V.R. of Plain Limit Gauges JIG 343 | Plug Gauges:(1~100)mm | U=0.8 μm | | |
| | | | | Ring Gauges and Caliper Gauges:(5~100)mm | U=1.1 μm | | |
| 43 | *Microcator | Length | V.R. of Microcator JIG 118 | Microcator with Scale Interval 1 μm:(-100~+100) μm | U=0.2 μm | | |
| | | | | Microcator with Scale Interval 2 μm:(-60~+60) μm | U=0.3 μm | | |
| | | | | Microcator with Scale Interval 5 μm:(-150~+150) μm | U=0.6 μm | | |
| | | | | Microcator with Scale Interval 10 μm:(-300~+300) μm | U=1.2 μm | | |
| | | | | Small Microcator with Scale Interval 1 μm:(-60~+60) μm | U=0.2 μm | | |
| | | | | Small Microcator with Scale Interval 2 μm:(-100~+100) μm | U=0.3 μm | | |
| 44 | *Comparators of Machine Type | Length | V.R. of Comparators of Machine Type JIG 39 | Scale Interval 1 μm:(-100~+100) μm | U=0.2 μm | | |
| | | | | Scale Interval 2 μm:(-120~+120) μm | U=0.3 μm | | |
| | | | | Scale Interval 5 μm:(-150~+150) μm | U=0.6 μm | | |



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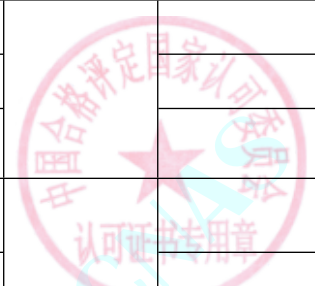
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| | | | | Scale Interval 10 μ m:(-1~+1)mm | U=1.2 μ m | | |
| 45 | Fineness of Grind Gage | Length | V.R. of Fineness of Grind Gage JJG 905 | (0~25) μ m | U=0.5 μ m | | |
| | | | | (25~100)mm | U=0.7 μ m | | |
| | | | | (100~150)mm | U=1.2 μ m | | |
| 46 | Radius Gauges | Length | V.R. of Radius Gauges JJG 58 | R:(1~25)mm | U=6 μ m | | |
| 47 | Test Sieves | Length | C.S. for Test Sieves JJF 1175 | Test Sieves with Metal Wire Cloth:(0.04~4)mm | U=2.3 μ m | | |
| | | | | Test Sieves with Metal Wire Cloth:(4~125)mm | U=0.04mm | | |
| | | | | Test Sieves with Metal Perforated Plate:(1~4)mm | U=2.3 μ m | | |
| | | | | Test Sieves with Metal Perforated Plate:(4~125)mm | U=0.04mm | | |
| 48 | Callipers for Welding Inspection | Length | V.R. of Callipers for Welding Inspection JJG 704 | (0~60)mm | U=0.03mm | | |
| | | Angle | | (0~160)° | U=8' | | |
| 49 | Cylindrical Thread Gauges | Length | C.S. for Cylindrical Thread Gauges JJF 1345 | Thread Plug Gauges:M0.7~M100 | U=2.2 μ m | | |
| | | | | Thread Ring Gauges:M5~M100 | U=4.0 μ m | | |
| 50 | *Dial Snap Gauges | Length | C.S. for Dial Snap Gauges JJF 1253 | (0~200)mm,Span:(5~100)mm | U=0.015mm | | |
| 51 | *Ultrasonic Thickness | Length | C.S. for Ultrasonic Thickness Instruments JJF 1126 | (0~15)mm | U=0.02mm | | |



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| | Instruments | | | (15~75)mm | U=0.03mm | | |
| | | | | (75~200)mm | U=0.06mm | | |
| 52 | *Magnetic and Eddy Current Measuring Instrument for Coating Thickness | Length | V.R. of Magnetic and Eddy Current Measuring Instrument for Coating Thickness JJG 818 | (0~2000) μ m | U=0.2 μ m+4.3×10 ⁻³ H | | |
| | | | | Thickness Sheets:(10~50) μ m | U=0.2 μ m | | |
| | | | | Thickness Sheets:(50~2000) μ m | U _{rel} =0.4% | | |
| 53 | *Rubber and Plastic Film Gage | Length | C.S. for Rubber and Plastic Film Gage JJF 1488 | Plastic Film Gage:(0~1)mm | U=1.7 μ m | | |
| | | | | Rubber Film Gage:(0~30)mm | U=2.7 μ m | | |
| 54 | *Laser Diameter Measuring Gauges | Length | C.S. for Laser Diameter Measuring Gauges JJF 1250 | (0~30)mm | U=1.3 μ m | | |
| | | | | Standard gauge:(0.1~30)mm | U=0.3 μ m | | |
| 55 | *Moulds | Length | C.S. for Moulds JJF 1307 | (40~300)mm | U=0.05mm | | |
| | | | | (300~600)mm | U=0.08mm | | |
| 56 | *Extensometer | Length | V.R. of Extensometer JJG 762 | Elongation:(0~0.3)mm | U=0.6 μ m | | |
| | | | | Elongation:(0.3~25)mm | U _{rel} =0.2% | | |
| | | | | Standard Distance:(10~300)mm | U=0.08mm | | |
| 57 | Wet Film Thickness Gauges | Length | C.S. for Wet Film Thickness Gauge JJF 1484 | Wheel Gauges:(0~125) μ m | U=0.4 μ m | | |
| | | | | Wheel Gauges:(125~1000) μ m | U=2.0 μ m | | |



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| | | | | Comb Gauges:(100~3000) μ m | U=2.4 μ m | | |
| 58 | Film Cross-cut Tester | Length | C.S. for Film Cross-cut Tester JJF(Su)196 | Tooth Spacing:(1~3)mm | U=3 μ m | | |
| | | Angle | | (20~30)° | U=2' | | |
| Thermotics | | | | | | | |
| 1 | Working Noble Metal Thermocouples | Temperature | V.R. of Working Noble Metal Thermocouples JJG 141 | 419.527°C | U=0.8°C | Use only bipolar methods and Only calibrate R-type and S-type thermocouples | |
| | | | | 660.323°C | U=0.8°C | | |
| | | | | 1084.62°C | U=0.8°C | | |
| 2 | Base Metal Thermocouples | Temperature | C.S. for Base Metal Thermocouples JJF 1637 | (-40~300)°C | U=0.3°C | | |
| | | | | (300~1200)°C | U=0.9°C | | |
| 3 | Working Copper/Copper-Nickel Thermocouple | Temperature | V.R. of the Working Copper/Copper-Nickel Thermocouple JJG 368 | (-80~300) °C | U=0.3°C | | |
| 4 | Sheathed Thermocouples | Temperature | C.S. for Sheathed Thermocouples JJF 1262 | (-40~300)°C | U=0.3°C | | |
| | | | | (300~1100)°C | U=1.1°C | | |
| 5 | Industry Platinum and Copper Resistance Thermometers | Temperature | V.R. of Industry Platinum and Copper Resistance Thermometers JJG 229 | Platinum resistance:(-80~300)°C | U=(0.05~0.08)°C | | |
| | | | | Copper resistance:(-50~150)°C | U=(0.05~0.08)°C | | |



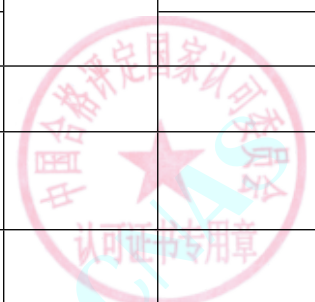
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| 6 | Standard Mercury-in-Glass Thermometers | Temperature | V.R. of Standard Mercury-in-Glass Thermometers JJG 161 | (-60~100)°C | U=0.03°C | | |
| | | | | (100~300)°C | U=0.04°C | | |
| 7 | Liquid-in-Glass Thermometers for Working | Temperature | V.R. of Liquid-in-Glass Thermometers for Working JJG 130 | (-80~100)°C | U=0.03°C | | |
| | | | | (100~300)°C | U=0.04°C | | |
| 8 | Electric Contact Mercury-in-Glass Thermometers | Temperature | V.R. of the Electric Contact Mercury-in-Glass Thermometers JJG 131 | (-30~300)°C | U=0.15°C | | |
| 9 | Bimetallic Thermometers | Temperature | C.S. for Bimetallic Thermometers JJF 1908 | (-80~100)°C | U=0.3°C | | |
| | | | | (100~300)°C | U=0.4°C | | |
| 10 | Filled System Thermometers | Temperature | C.S. for Filled System Thermometers JJF 1909 | (-80~100)°C | U=0.3°C | | |
| | | | | (100~300)°C | U=0.4°C | | |
| 11 | Digital Thermometer | Temperature | C.S. for Digital Thermometer JJF(Su) 95 | (-80~100)°C | U=0.03°C | | |
| | | | | (100~200)°C | U=0.04°C | | |
| | | | | (200~300)°C | U=(0.05~0.3)°C | | |
| | | | | (300~1200)°C | U=(0.3~0.8)°C | | |
| 12 | Thermistor Thermometers | Temperature | C.S. of Thermistor Thermometers JJF 1379 | (-50~200)°C | U=0.1°C | | |
| 13 | Thermometers of WBGT-index Meters | Temperature | C.S. for Thermometers of WBGT-index Meters JJF 1407 | (5~120)°C | U=0.3°C | | |
| 14 | *Temperature Calibrator | Temperature | C.S. of Temperature Indicators and Simulators by Electrical Simulation and Measurement JJF 1309 | Thermocouple Input: (-200~1800)°C | U=(0.3~1.1)°C | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|-------------|---|---|-------------------------------|--|----------------|
| | | | | Thermocouple Output: (-200~1300)°C | U=0.1°C | | |
| | | | | Thermal resistance Input: (-200~800)°C | U=0.2°C | | |
| | | | | Thermal resistance Output: (-200~800)°C | U=0.1°C | | |
| 15 | *Recorders for Industrial-Process Measurement | Temperature | V.R. of the Recorders for Industrial-Process Measurement JJG 74 | With thermocouple:(-200~1800)°C | U=(0.3~1.1)°C | | |
| | | | | With thermal resistance:(-200~800)°C | U=0.2°C | | |
| 16 | Temperature Data Acquisition Instruments | Temperature | C.S. of Temperature Data Acquisition Instruments JJF 1366 | (-80~300) °C | U=0.12°C | Do not calibrate an unsealed, built-in sensor acquisition instrument | |
| 17 | Temperature Itinerant Detecting Instrument | Temperature | C.S. for Temperature Itinerant Detecting Instrument JJF 1171 | (-60~100)°C | U=0.03°C | | |
| | | | | (100~300)°C | U=0.04°C | | |
| 18 | *Analogue Temperature Indicators and Controllers | Temperature | V.R. of Analogue Temperature Indicators and Controllers JJG 951 | With thermocouple:(-200~1800)°C | U=(0.3~1.2)°C | | |
| | | | | With thermal resistance:(-200~800)°C | U=0.2°C | | |
| 19 | *Digital Temperature Indicators and Controllers | Temperature | V.R. of Digital Temperature Indicators and Controllers JJG 617 | With thermocouple:(-200~1800)°C | U=(0.3~1.1)°C | | |
| | | | | With thermal resistance:(-200~800)°C | U=0.2°C | | |
| | | | | With Sensor:(-80~300)°C | U=0.1°C | Field calibration | |

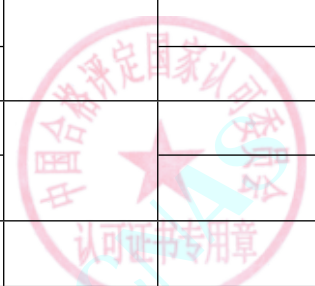


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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|---|----------------------|--|---|----------------------------|---|----------------|
| | | | | Without Sensor:(-200~1300)°C | U=(0.4~1.3)°C | only for temperature transmitters without sensors | |
| 21 | *Temperature Indicator | Temperature | C.S. for Temperature Indicators JJF 1664 | With thermocouple:(-200~1800)°C With thermal resistance:(-200~800)°C | U=(0.3~1.1)°C U=0.2°C | | |
| 22 | *Thermostatic Baths for Temperature Calibration | Temperature | Measurement and Test Norm of Metrological Characteristics of Thermostatic Baths for Temperature Calibration JJF 1030 | Uniformity:(-80~300)°C | U=0.004°C | | |
| | | | | Volatility:(-80~300)°C | U=0.005°C | | |
| | | | | Deviation of Temperature Rise(Fall)Rate:(0.1~1)°C/min | U=0.2°C/min | | |
| 23 | *Temperature Block Calibrators | Temperature | Calibration Guideline of the Temperature Block Calibrators JJF 1257 | (-80~400)°C | U=0.06°C | | |
| | | | | (400~1200)°C | U=0.9°C | | |
| 24 | *Dry Bath Incubator for biological experiments | Temperature | C.S. for Dry Bath Incubator for biological experiments JJF(Zhe) 1149 | Deviation:(-10~150)°C | U=0.12°C | | |
| | | | | Uniformity:(-10~150)°C | U=0.12°C | | |
| | | | | Volatility:(-10~150)°C | U=0.07°C | | |
| 25 | *Vacuum Drying Chamber | Temperature | C.S. for Temperature and Pressure of Vacuum Drying Chamber JJF(Su) 177 | (40~150)°C | U=0.6°C | | |
| | | Vacuum leakproofness | | (10~101)kPa | U=1.6kPa | | |
| 26 | *Box -type Resistance Furnace | Temperature | C.S. for Box-type Resistance Furnace JJF 1376 | (300~1000)°C | U=1.6°C | | |
| 27 | *Steam Sterilizers | Temperature | C.S. for Temperature and Pressure of Stream Sterilizer | (0~140)°C | U=0.13°C | | |



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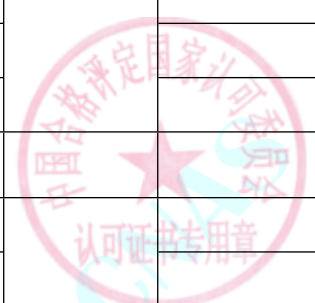
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|-----------------------------|---|--------------------------------|--------------------------------|------------------------|----------------|
| | | Pressure | JJF(Su)96 | (10~400)kPa | U=1.6kPa | | |
| 28 | *Salt Mist Testing Chambers | Temperature | C.S. for salt mist testing chambers JJF(Zhe) 1125 | (5~60)°C | U=0.2°C | | |
| | | Salt fog sedimentation rate | | (1~2)mL/(80cm ² ·h) | U=0.4mL/(80cm ² ·h) | | |
| 29 | *Environmental Testing Equipment | Temperature | C.S. for Environmental Testing Equipment for Temperature and Humidity Parameters JJF 1101 | (-80~300)°C | U=0.3°C | | |
| | | Humidity | | (10~95)%RH | U=1.4%RH | | |
| 30 | *Liquid Constant Temperature Testing Equipment | Temperature | Measurement Specification for Temperature Performance of Liquid Constant Temperature Testing Equipment JJF 2019 | Deviation:(-80~300)°C | U=0.3°C | | |
| | | | | Uniformity:(-80~300)°C | U=0.02°C | | |
| | | | | Volatility:(-80~300)°C | U=0.04°C | | |
| 31 | *Dry Block Digester | Temperature | V.R. of Dry Block Digester JJG(Yue) 029 | (20~300)°C | U=0.4°C | | |
| | | Time | | (0~10)min | U=0.7s | | |
| 32 | Radiation Thermometers | Temperature | V.R. of Radiation Thermometers JJG 856 | (-30~150)°C | U=0.5°C | | |
| | | | | (150~1200)°C | U=(1.2~5.8)°C | | |
| 33 | Thermal Imagers | Temperature | C.S. for Thermal Imagers JJF 1187 | (-30~150)°C | U=0.9°C | | |
| | | | | (150~1200)°C | U=(0.9~4.1)°C | | |
| 34 | Mechanical Thermo hygrometers | Temperature | V.R. of Mechanical Thermo hygrometers JJG 205 | (10~50)°C | U=0.3°C | 合格评定国家认可委员会 认可证书专用章 | |
| | | Humidity | | (30~90)%RH (20°C) | U=1.6%RH | | |
| 35 | Digital Temperature-hygrometers | Temperature | C.S. for Digital Temperature-hygrometers JJF 1076 | (10~50)°C | U=0.3°C | | |
| | | Humidity | | (10~95)%RH (20°C) | U=1.6%RH | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|-----------|---|-----------|---|-------------|-------------------------------|--|----------------|
| Mechanics | | | | | | | |
| 1 | Weights | Mass | V.R. of Weights JJG 99 | (1~500)mg | $U=(0.010\sim0.04)\text{mg}$ | | |
| | | | | (1~200)g | $U=(0.05\sim0.4)\text{mg}$ | | |
| | | | | (0.2~2)kg | $U=(0.4\sim10)\text{mg}$ | | |
| 2 | *Mechanical Balance | Mass | V.R. of Mechanical Balances JJG 98 | 1mg~20g | $U=(0.08\sim0.12)\text{mg}$ | | |
| | | | | 20g~1kg | $U=(0.12\sim2.2)\text{mg}$ | | |
| | | | | 1kg~30kg | $U=(2.2\sim58)\text{mg}$ | | |
| 3 | *Electronic Balance | Mass | C.S. for Electronic Balances JJF 1847 | 1mg~200g | $U=(0.03\sim0.41)\text{mg}$ | | |
| | | | | 200g~5kg | $U=(0.41\sim23)\text{mg}$ | | |
| | | | | (5~30)kg | $U=(23\sim74)\text{mg}$ | | |
| 4 | *Torsion Balance | Mass | V.R. of Torsion Balance JJG 46 | (5~50)mg | $U=(0.008\sim0.49)\text{mg}$ | | |
| | | | | (50~2500)mg | $U=(0.49\sim1.6)\text{mg}$ | | |
| 5 | *Table Balances | Mass | V.R. for Table Balances JJG 156 | 0.1g~100g | $U=0.035\text{g}$ | | |
| | | | | 100g~1kg | $U=0.21\text{g}$ | | |
| | | | | (1~20) kg | $U=3.3\text{g}$ | | |
| 6 | *Table Torsion Balance | Mass | V.R. for Table Torsion Balance JJG 1130 | 10mg~100g | $U=3\text{mg}$ |  | |
| 7 | *Non-self-indicating Weighing Instruments | Mass | V.R. of Non-self-indicating Weighing Instruments JJG 14 | 20g~2kg | $U=0.67\text{g}$ | | |
| | | | | (2~30) kg | $U=(0.67\sim20)\text{g}$ | | |
| | | | | (30~1000)kg | $U=(0.02\sim0.24)\text{kg}$ | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|------------|--|---------------|-------------------------------|------|----------------|
| 8 | *Digital Indicating Weighing Instrument | Mass | V.R. for Digital Indicating Weighing Instruments JJG 539 | 2g~30kg | $U=(0.03\sim 2.3)g$ | | |
| | | | | (30~300)kg | $U=(2.3\sim 28)g$ | | |
| | | | | (300~1000)kg | $U=28g\sim 0.12kg$ | | |
| 9 | *Analogue Indicating Weighing Instruments | Mass | V.R. of Analogue Indicating Weighing Instruments JJG 13 | 20g~100kg | $U=0.23g\sim 0.67g$ | | |
| | | | | (2~100) kg | $U=0.67g\sim 0.13kg$ | | |
| 10 | Working Glass Container | Capability | V.R. of Working Glass Container JJG 196 | (0.1~1)mL | $U=0.003mL$ | | |
| | | | | (1~10)mL | $U=0.006mL$ | | |
| | | | | (10~50)mL | $U=0.008mL$ | | |
| | | | | (50~200)mL | $U=0.020mL$ | | |
| | | | | (200~500)mL | $U=0.05mL$ | | |
| | | | | (500~1000)mL | $U=0.08mL$ | | |
| | | | | (1000~2000)mL | $U=0.16mL$ | | |
| 11 | Special Glassware | Capability | V.R. of Special Glassware JJG 10 | (0.1~1)mL | $U=0.01mL$ | | |
| | | | | (1~10)mL | $U=0.02mL$ | | |
| | | | | (10~100)mL | $U=0.03mL$ | | |
| 12 | *Elastic Element Precise Pressure Gauges and Vacuum Gauges | Pressure | V.R. of Elastic Element Precise Pressure Gauges and Vacuum Gauges JJG 49 | (-0.1~100)MPa | $U=0.1\%FS$ | | |



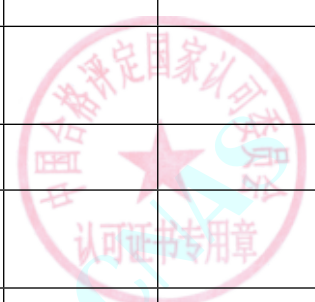
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|-----------|--|---------------|----------------------------|------|----------------|
| 13 | *Elastic Element Pressure Gauges, 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 | (-0.1~100)MPa | U=0.4%FS | | |
| 14 | *Digital Pressure Gauges | Pressure | V.R. of Digital Pressure Gauge JJG 875 | (-0.1~60)MPa | U=0.05%FS | | |
| | | | | (60~100)MPa | U=0.08MPa | | |
| 15 | *Pressure Controllers | Pressure | V.R. of Pressure Controllers JJG 544 | (-0.1~100)MPa | U=0.07%FS | | |
| 16 | *Pressure Transmitters | Pressure | V.R. of Pressure Transmitters JJG 882 | (-0.1~60)MPa | U=0.03%FS | | |
| | | | | (60~100)MPa | U=0.06MPa | | |
| 17 | Pressure Regulators with Bourdon Tube Pressure Gauge | Pressure | C.S. for Pressure Regulators with Bourdon Tube Pressure Gauge JJF 1328 | (0~25)MPa | U=0.5%FS | | |
| 18 | Liquid Manometers for Working | Pressure | V.R. of Liquid Manometers for Working JJG 540 | (0~20)kPa | U=0.3%FS | | |
| 19 | Precision Liquid Manometers of Cistern and U-tube | Pressure | V.R. of Precision Liquid Manometers of Cistern and U-tube JJG 241 | (-2.5~2.5)kPa | U=0.1%FS | | |
| 20 | Tilting Tube Micromanometers | Pressure | V.R. of Tilting Tube Micromanometers JJG 172 | (-2~2)kPa | U=0.4%FS | | |
| 21 | *Pointer Type Micro-differential Pressure Gauge | Pressure | V.R. of Pointer Type Micro-differential Pressure Gauge JJG(Yue) 020 | (-30~30)kPa | U=0.7%FS | | |
| 22 | *Working Dynamometers | Force | V.R. of Working Dynamometers JJG 455 | (1~500)N | U _{rel} =0.2% | | |



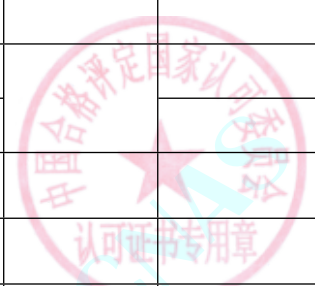
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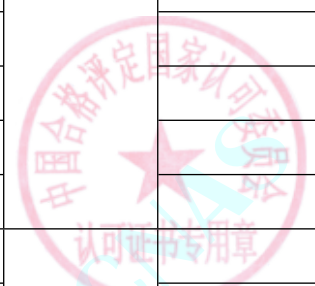
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|---|--------------|---|----------------|----------------------------|------|----------------|
| | | | | (0.5~10)kN | $U_{rel}=0.5\%$ | | |
| 23 | *Working Force Measuring Machines for Special Purpose | Force | C.S. for Working Force Measuring Machines for Special Purposes JJF 1134 | 10N~1000kN | $U_{rel}=0.3\%$ | | |
| | | | | (1000~3000)kN | $U_{rel}=0.4\%$ | | |
| 24 | *Tension、Compression and Universal Testing Machines | Force | V.R. of Tension,Compression and Universal Testing Machines JJG 139 | (0.01~1000)kN | $U_{rel}=0.3\%$ | | |
| | | | | (1000~3000)kN | $U_{rel}=0.4\%$ | | |
| | | Displacement | | (10~30)mm | $U_{rel}=0.34\%$ | | |
| | | | | (30~100)mm | $U=0.5\text{mm}$ | | |
| 25 | *Electronic Universal Testing Machine | Force | V.R. of Electronic Universal Testing Machine JJG 475 | (0.01~1000)kN | $U_{rel}=0.3\%$ | | |
| | | | | (1000~3000)kN | $U_{rel}=0.4\%$ | | |
| | | Displacement | | (10~30)mm | $U_{rel}=0.34\%$ | | |
| | | | | (30~500)mm | $U=0.5\text{mm}$ | | |
| | | Speed | | (10~30)mm/min | $U_{rel}=0.4\%$ | | |
| | | | | (30~500)mm/min | $U=0.5\text{mm/min}$ | | |
| 26 | *Electro-hydraulic Servo Universal Testing Machines | Force | V.R. of Electro-hydraulic Servo Universal Testing Machines JJG 1063 | (0.01~1000)kN | $U_{rel}=0.3\%$ | | |
| | | | | (1000~3000)kN | $U_{rel}=0.4\%$ | | |
| 27 | *Hydraulic Jacks | Force | V.R. of Hydraulic Jacks JJG 621 | (1~3000)kN | $U_{rel}=1.0\%$ | | |
| 28 | *Torque Wrenches | Torque | V.R. of Torque Wrenches JJG 707 | (2~3000)Nm | $U_{rel}=1.4\%$ | | |
| 29 | *Working Torque-meters | Torque | V.R. of Working Torque-meters JJG 1146 | (0.1~1000)Nm | $U_{rel}=0.4\%$ | | |



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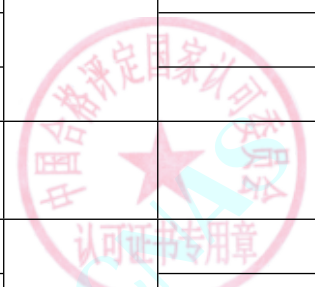
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|-----------|---|---------------|----------------------------|------|----------------|
| 30 | Calibration Instrument for Torque Wrenches | Torque | V.R. of Calibration Instrument for Torque Wrenches JJG 797 | (0.1~1000)Nm | $U_{rel}=0.4\%$ | | |
| 31 | *Metallic Brinell Hardness Tester | Hardness | V.R. of Metallic Brinell Hardness Testers JJG 150 | (75~125)HBW | $U_{rel}=1.4\%$ | | |
| | | | | (125~225)HBW | $U_{rel}=1.3\%$ | | |
| | | | | (225~650)HBW | $U_{rel}=1.0\%$ | | |
| 32 | *Portable Brinell Hardness Testers | Hardness | C.S. for Portable Brinell Hardness Testers JJF 1595 | (100~400)HBS | $U_{rel}=2.5\%$ | | |
| | | | | (75~125)HBW | $U_{rel}=2.4\%$ | | |
| | | | | (125~225)HBW | $U_{rel}=2.5\%$ | | |
| | | | | (225~650)HBW | $U_{rel}=2.3\%$ | | |
| 33 | *Metallic Rockwell Hardness Testing Machines | Hardness | V.R. of Metallic Rockwell Hardness Testing Machines(Scales A,B,C,D,E,F,G,H,K,N,T) JJG 112 | (80~88)HRA | $U=0.5HRA$ | | |
| | | | | (85~100)HRBW | $U=0.5HRBW$ | | |
| | | | | (20~70)HRC | $U=0.6HRC$ | | |
| | | | | (89~91)HR15N | $U=0.6HR15N$ | | |
| | | | | (42~80)HR30N | $U=0.8HR30N$ | | |
| | | | | (32~61)HR45N | $U=0.8HR45N$ | | |
| | | | | (88~93)HR15TW | $U=0.7HR15TW$ | | |
| | | | | (70~82)HR30TW | $U=0.7HR30TW$ | | |
| 34 | *Portable Rockwell Hardness Testers | Hardness | C.S. for Portable Rockwell Hardness Testers JJF 1594 | (80~88)HRA | $U=0.6HRA$ | | |
| | | | | (85~100)HRBW | $U=0.6HRBW$ | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|---|-----------|---|---------------|----------------------------|--|----------------|
| | | | V.R. of Rockwell Hardness Testing Machine JJG 944 | (20~70)HRC | U=0.7HRC | | |
| | | | | (89~91)HR15N | U=0.7HR15N | | |
| | | | | (42~80)HR30N | U=0.9HR30N | | |
| | | | | (32~61)HR45N | U=0.9HR45N | | |
| | | | | (88~93)HR15TW | U=0.8HR15TW | | |
| | | | | (70~82)HR30TW | U=0.8HR30TW | | |
| 35 | *Metallic Webster Hardness Testing Machines | Hardness | V.R. of Metallic Webster Hardness Testing Machine JJG 944 | (8~18)HWA | U=0.3HWA | | |
| 36 | *Ultrasonic Hardness Testers | Force | C.S. of Ultrasonic Hardness Testers JJF 1436 | (10~100)N | U _{rel} =0.5% | | |
| | | Hardness | | (200~800)HV | U _{rel} =1.6% | | |
| 37 | *Type A Barcol Hardness Testers | Hardness | V.R. of Type A Barcol Hardness Testers JJG 610 | (42~46)HBa | U=0.6HBa | | |
| | | | | (83~88)HBa | U=1.3HBa | | |
| 38 | *Pencil Hardness Testers | Mass | C.S. for Pencil Hardness Testers JJF(SH) 007 | (400~500)g | U=0.7g | | |
| | | | | (500~1100)g | U=1.2g | | |
| | | Angle | | (40~50)° | U=0.3° | | |
| 39 | *Tablet Hardness Tester Needle Tube | Force | C.S. for Tablet Hardness Tester Needle Tube JJF(E) 46 | (10~500)N | U _{rel} =0.4% |  | |
| 40 | *Equotip Hardness tester | Hardness | V.R. of Equotip Hardness tester JJG 747 | (521~629)HLD | U=6HLD | | |
| | | | | (777~815)HLD | U=7HLD | | |



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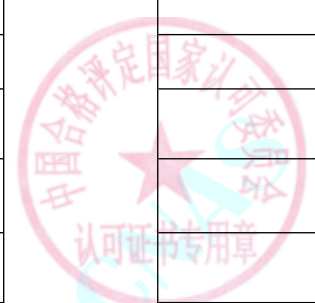
| № | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|---|-----------|---|-----------------|-------------------------------|------|----------------|
| | | | | (469~503)HLG | $U=5HLG$ | | |
| | | | | (566~602)HLG | $U=6HLG$ | | |
| 41 | *Metallic Vickers Hardness Testers | Hardness | V.R. of Metallic Vickers Hardness Testers JJG 151 | (175~225)HV0.05 | $U_{rel}=3.7\%$ | | |
| | | | | (400~600)HV0.1 | $U_{rel}=3.2\%$ | | |
| | | | | (700~800)HV0.2 | $U_{rel}=3.2\%$ | | |
| | | | | (700~800)HV0.5 | $U_{rel}=3.6\%$ | | |
| | | | | (700~800)HV1 | $U_{rel}=3.0\%$ | | |
| | | | | (175~225)HV5 | $U_{rel}=1.4\%$ | | |
| | | | | (700~800)HV5 | $U_{rel}=1.5\%$ | | |
| | | | | (400~600)HV10 | $U_{rel}=1.4\%$ | | |
| | | | | (400~600)HV30 | $U_{rel}=1.4\%$ | | |
| 42 | Shore A Durometers | Hardness | V.R. of Shore A Durometers JJG 304 | (0~100)HA | $U=0.4HA$ | | |
| | | Force | | (1~8)N | $U=0.026N$ | | |
| 43 | Shore D Durometers | Hardness | V.R. of Shore D Durometer JJG 1039 | (0~100)HD | $U=0.4HD$ | | |
| | | Force | | (5~50)N | $U=0.07N$ | | |
| 44 | Shore AO Durometers | Hardness | C.S. for Shore AO Durometers JJF 1312 | (0~100)HAO | $U=0.4HAO$ | | |
| | | Force | | (1~8)N | $U=0.026N$ | | |
| 45 | *Constant Acceleration Centrifugal Test | Length | V.R. of Constant Acceleration Centrifugal Test Machines JJG 972 | (10~150)mm | $U=0.12mm$ | | |
| | | | | (150~5000)mm | $U_{rel}=0.3\%$ | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|------------------|---|------------------|---|----------------------------|----------------------------|--|----------------|
| | Machines | Revolution Speed | | (100~30000) r/min | $U_{rel}=0.12\%$ | | |
| 46 | *Medical Centrifuges | Revolution Speed | C.S. for Medical Centrifuges JJF 2004 | (100~30000) r/min | $U_{rel}=0.12\%$ | | |
| | | Time | | (0~3600)s | $U=0.5s$ | | |
| | | Temperature | | (-20~50)°C | $U=0.6^{\circ}C$ | | |
| 47 | Medical Centrifuges | Revolution Speed | C.S. for Electromagnetic Sensors of Rotational Speed JJF 1871 | (30~100)r/min | $U=0.03r/min$ | | |
| | | | | (100~10000)r/min | $U_{rel}=0.013\%$ | | |
| 48 | Linear Velocity Measuring Instrument | Speed | C.S. for Linear Velocity Measuring Instrument JJF 1801 | Contact type: (0.5~4) m/s | $U=0.01m/s$ | | |
| | | | | Two-point type: (1~30) m/s | $U_{rel}=0.1\%$ | | |
| 49 | Tachometers | Rotating Speed | V.R. of Tachometers JJG 105 | (30~30000)r/min | $U_{rel}=0.03\%$ | | |
| Electromagnetism | | | | | | | |
| 1 | *Amperemeters, Voltmeters, Wattmeters and Ohmmeters | DC Voltage | Amperemeters, Voltmeters, Wattmeters and Ohmmeters JJG 124 | 20mV~75mV | $U_{rel}=0.3\%$ |  | |
| | | | | 75mV~1000V | $U_{rel}=0.11\%$ | | |
| | | DC Current | | 100μA~20A | $U_{rel}=0.16\%$ | | |
| | | AC Voltage | | 20mV~75mV, (45Hz~65Hz) | $U_{rel}=0.3\%$ | | |
| | | | | 75mV~1000V, (45Hz~65Hz) | $U_{rel}=0.11\%$ | | |
| | | AC Current | | 100μA~20A, (45Hz~65Hz) | $U_{rel}=0.16\%$ | | |
| | | DC Resistance | | 1Ω~20Ω | $U_{rel}=0.65\%$ | | |



| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|-------------------------------|------------|--|---------------------------|-------------------------------|------------------------|----------------|
| | | | ilac-M | 20 Ω ~ 1M Ω | $U_{rel}=0.15\%$ | | |
| | | AC Power | | 1W~20kW, (45Hz~65Hz) | $U_{rel}=0.9\%$ | | |
| | | DC Power | | 1W~20kW | $U_{rel}=0.87\%$ | | |
| 2 | *DC Stabilized Power Supplies | DC Voltage | C.S. for DC Stabilized Power Supplies JJF 1597 | 0.1V~1000V | $U_{rel}=0.011\%$ | | |
| | | DC Current | | 1mA~100mA | $U_{rel}=0.06\%$ | | |
| | | | | 0.1A~1000A | $U_{rel}=0.04\%$ | | |
| 3 | *AC Standard Voltage Source | AC Voltage | V.R. for AC Standard Voltage Source JJG(JG) 71 | 10mV~10V, (10Hz~2kHz) | $U_{rel}=0.011\%$ | | |
| | | | | 10V~100V, (10Hz~2kHz) | $U_{rel}=0.027\%$ | | |
| | | | | 100V~1000V, (10Hz~1kHz) | $U_{rel}=0.031\%$ | | |
| | | | | 100V~1000V, (1kHz~2kHz) | $U_{rel}=0.12\%$ | | |
| | | Frequency | | 10Hz~300kHz | $U_{rel}=0.012\%$ | | |
| 4 | *Withstanding Voltage Testers | DC Voltage | V.R. of Withstanding Voltage Testers JJG 795 | 0.1kV~15kV | $U_{rel}=0.7\%$ | 合格评定国家认可委员会 认可证书专用章 | |
| | | AC Voltage | | 0.1kV~15kV, (50Hz、60Hz) | $U_{rel}=0.8\%$ | | |
| | | DC Current | | 0.2mA~200mA | $U_{rel}=0.7\%$ | | |
| | | AC Current | | 0.2mA~200mA, (50Hz、60Hz) | $U_{rel}=0.8\%$ | | |
| | | Time | | 10s~30s | $U_{rel}=1.0\%$ | | |
| | | | | 30s~900s | $U_{rel}=0.6\%$ | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty ($k=2$) | Note | Effective Date |
|----|--|------------|--|-----------------------------------|-----------------------------------|------|----------------|
| 5 | *High-voltage Withstanding Voltage Tester | DC Voltage | V.R. of High-voltage Withstanding Voltage Tester JJG(JG) 18 | 1kV~50kV | $U_{rel}=0.8\%$ | | |
| | | AC Voltage | | 1kV~50kV, (50Hz、 60Hz) | $U_{rel}=1.2\%$ | | |
| | | DC Current | | 0.2mA~200mA | $U_{rel}=0.7\%$ | | |
| | | AC Current | | 0.2mA~200mA, (50Hz、60Hz) | $U_{rel}=0.7\%$ | | |
| | | Time | | 10s~900s | $U=0.3s$ | | |
| 6 | *AC Peak Voltmeters | AC Voltage | V.R. of AC Peak Voltmeters JJG 1168 | 1V~1.4kV, (10Hz~ 500Hz) | $U_{rel}=0.08\%$ | | |
| 7 | *Dielectric Strength Detector of Insulating Oils | AC Voltage | V.R. of Dielectric Strength Detector of Insulating Oils JJG (Ji) 112 | 1kV~50kV, (45Hz~ 65Hz) | $U_{rel}=1.4\%$ | | |
| | | Velocity | | 0.2kV/s~10kV/s | $U_{rel}=3.0\%$ | | |
| 8 | *Clamp Ammeters | DC Current | C.S. for Clamp Ammeters JJF 1075 | 0.1A~20A | $U_{rel}=0.1\%$ | | |
| | | | | 20A~1000A | $U_{rel}=0.24\%$ | | |
| | | AC Current | | 0.1A~20A, (45Hz~ 400Hz) | $U_{rel}=0.2\%$ | | |
| | | | | 20A~1000A, (45Hz~ 400Hz) | $U_{rel}=0.35\%$ | | |
| 9 | *AC Standard Current Source | AC Current | V.R. for AC Standard Current Source JJG(JG) 70 | 100 μ A~100mA, (45Hz~2kHz) | $U_{rel}=0.05\%$ | | |
| | | | | 100mA~1A, (45Hz~ 2kHz) | $U_{rel}=0.06\%$ | | |
| | | | | 1A~100A, (50Hz、 60Hz) | $U_{rel}=0.12\%$ | | |
| 10 | *Clamp Ammeters for Measurement | AC Current | V.R. of Clamp Ammeters for Measurement of Leakage | 1mA~10A, (40Hz~ 400Hz) | $U_{rel}=0.11\%$ | | |

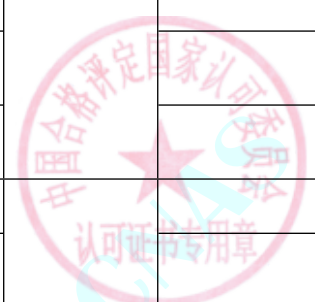


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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|-----------------|---|--------------------------------|----------------------------|------|----------------|
| | of Leakage Currents | | Currents JJG(Ji) 3007 | 10A~60A, (40Hz~400Hz) | $U_{rel}=0.2\%$ | | |
| | | DC Current | | 1mA~10A | $U_{rel}=0.11\%$ | | |
| | | | | 10A~60A | $U_{rel}=0.2\%$ | | |
| 11 | *Leakage Current Testers | AC Voltage | V.R. of Leakage Current Testers JJG 843 | 30V~300V, (50Hz、60Hz) | $U_{rel}=0.28\%$ | | |
| | | DC Voltage | | 30V~300V | $U_{rel}=0.05\%$ | | |
| | | DC Current | | 0.2mA~20mA | $U_{rel}=0.3\%$ | | |
| | | AC Current | | 3mA~25mA, (20Hz~50Hz) | $U_{rel}=1.2\%$ | | |
| | | | | 0.2mA~20mA, (50Hz、60Hz) | $U_{rel}=0.3\%$ | | |
| | | | | 0.1mA~40mA, (60Hz~100kHz) | $U_{rel}=1.2\%$ | | |
| | | | | 0.01mA~40mA, (100kHz~1MHz) | $U_{rel}=2.5\%$ | | |
| | | DC Resistance | | 100 Ω ~ 3000 Ω | $U_{rel}=1.2\%$ | | |
| | | Input Impedance | | 100 Ω ~ 3000 Ω , (20Hz~100kHz) | $U_{rel}=1.2\%$ | | |
| | | | | 100 Ω ~ 3000 Ω , (100kHz~1MHz) | $U_{rel}=2.4\%$ | | |
| 12 | *Welding Power Sources of DC Electric Welding Machines | DC Current | C.S. for Welding Power Sources of DC Electric | 1A~1000A | $U_{rel}=0.14\%$ | | |
| | | DC Voltage | Welding Machines JJF 1985 | 10V~141V | $U_{rel}=0.05\%$ | | |
| 13 | *Power Supply of | DC Current | C.S. for Power Supply of | 1A~1000A | $U_{rel}=0.14\%$ | | |



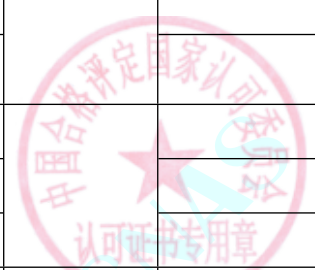
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|------------|--------------------------------------|-----------------|---|----------------------------|----------------------------|-----------------|----------------|
| | AC/DC Electric Welder | AC Current | AC/DC Electric Welder JJF(Jin) 02 | 1A~1000A, (50Hz、60Hz) | $U_{rel}=0.16\%$ | | |
| | | DC Voltage | | 10V~400V | $U_{rel}=0.05\%$ | | |
| | | AC Voltage | | 10V~400V, (50Hz、60Hz) | $U_{rel}=0.2\%$ | | |
| 14 | *Battery Internal Resistance Testers | DC Voltage | C.S. for Battery Internal Resistance Testers JJF 1620 | 0.1V~6V | $U_{rel}=0.001\%$ | | |
| | | | | 6V~800V | $U_{rel}=0.002\%$ | | |
| | | AC Resistance | | 1mΩ ~ 10mΩ, (1kHz) | $U_{rel}=0.4\%$ | | |
| | | | | 10mΩ ~ 3kΩ, (1kHz) | $U_{rel}=0.08\%$ | | |
| 15 | *Earth-Continuity Testers | DC Resistance | V.R. of Earth-Continuity Testers JJG 984 | 1mΩ ~ 10mΩ | $U_{rel}=0.66\%$ | | |
| | | | | 10mΩ ~ 1000mΩ | $U_{rel}=0.2\%$ | | |
| | | AC Resistance | | 1mΩ ~ 10mΩ, (45Hz~65Hz) | $U_{rel}=0.66\%$ | | |
| | | | | 10mΩ ~ 1000mΩ, (45Hz~65Hz) | $U_{rel}=0.3\%$ | | |
| | | | | DC Current | 1A~60A | $U_{rel}=0.1\%$ | |
| AC Current | 1A~60A, (45Hz~65Hz) | $U_{rel}=0.3\%$ | | | | | |
| 16 | *Earth Resistance Meters | Resistance | V.R. of Earth Resistance Meters JJG 366 | 0.1Ω ~ 10Ω | $U_{rel}=0.6\%$ | | |
| | | | | 10Ω ~ 100Ω | $U_{rel}=0.2\%$ | | |
| | | | | 100Ω ~ 2000Ω | $U_{rel}=0.4\%$ | | |
| 17 | *Clamp Earth Resistance Meters | Resistance | V.R. of Clamp Earth Resistance Meters JJG 1054 | 0.1Ω ~ 1Ω | $U_{rel}=1.1\%$ | | |



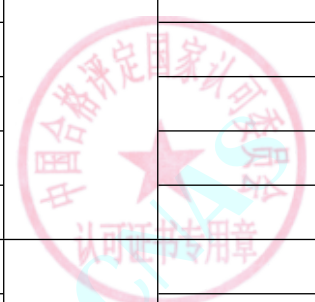
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|---------------|--|----------------|----------------------------|------|----------------|
| | | | | 1 Ω ~ 10 Ω | $U_{rel}=0.6\%$ | | |
| | | | | 10 Ω ~ 100 Ω | $U_{rel}=0.2\%$ | | |
| | | | | 100 Ω ~ 2000 Ω | $U_{rel}=0.4\%$ | | |
| 18 | DC Standard Resistors | DC Resistance | V.R. of DC Standard Resistors JJG 166 | 1 Ω ~ 1M Ω | $U_{rel}=0.006\%$ | | |
| | | | | 1M Ω ~ 10M Ω | $U_{rel}=0.02\%$ | | |
| | | | | 10M Ω ~ 100M Ω | $U_{rel}=0.06\%$ | | |
| 19 | D.C.Resistance Boxes | DC Resistance | V.R. of D.C. Resistance Boxes JJG 982 | 1 Ω ~ 10 Ω | $U_{rel}=0.08\%$ | | |
| | | | | 10 Ω ~ 10M Ω | $U_{rel}=0.009\%$ | | |
| | | | | 10M Ω ~ 100M Ω | $U_{rel}=0.05\%$ | | |
| 20 | *D.C. Low Resistance Meters | DC Resistance | V.R. of D.C. Low Resistance Meters JJG 837 | 0.1m Ω ~ 1m Ω | $U_{rel}=0.12\%$ | | |
| | | | | 1m Ω ~ 10m Ω | $U_{rel}=0.06\%$ | | |
| | | | | 10m Ω ~ 100k Ω | $U_{rel}=0.02\%$ | | |
| 21 | *Megohmmeter | DC Voltage | V.R. of Megohmmeter JJG 622 | 250V ~ 10kV | $U_{rel}=1.5\%$ | | |
| | | DC Resistance | | 100 Ω ~ 10M Ω | $U_{rel}=0.6\%$ | | |
| | | | | 10M Ω ~ 100M Ω | $U_{rel}=1.2\%$ | | |
| | | | | 100M Ω ~ 10G Ω | $U_{rel}=2.4\%$ | | |
| | | | | 10G Ω ~ 1T Ω | $U_{rel}=5.8\%$ | | |
| 22 | *Electronic Insulation Resistance Meters | DC Resistance | V.R. of Electronic Insulation Resistance Meters JJG 1005 | 100 Ω ~ 10M Ω | $U_{rel}=0.3\%$ | | |
| | | | | 10M Ω ~ 100M Ω | $U_{rel}=0.6\%$ | | |



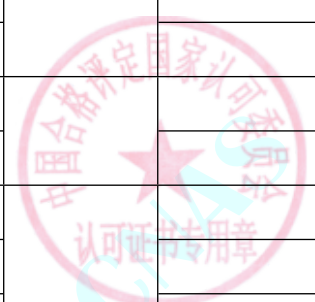
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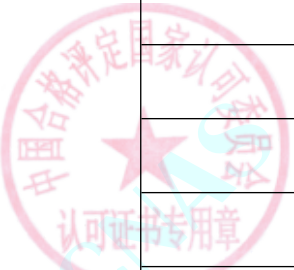
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------------------------------|---------------|--|----------------|----------------------------|------|----------------|
| | | DC Voltage | | 100M Ω ~ 1G Ω | $U_{rel}=1.2\%$ | | |
| | | | | 1G Ω ~ 10G Ω | $U_{rel}=2.4\%$ | | |
| | | | | 10G Ω ~ 1T Ω | $U_{rel}=5.8\%$ | | |
| | | | | 50V ~ 5000V | $U_{rel}=1.6\%$ | | |
| 23 | *High Insulation Resistance Meters | DC Voltage | V.R. of High Insulation Resistance Meters JJG 690 | 10V ~ 1000V | $U_{rel}=0.08\%$ | | |
| | | DC Resistance | | 0.1M Ω ~ 10M Ω | $U_{rel}=0.6\%$ | | |
| | | | | 10M Ω ~ 100M Ω | $U_{rel}=1.2\%$ | | |
| | | | | 100M Ω ~ 10G Ω | $U_{rel}=2.4\%$ | | |
| | | | | 10G Ω ~ 1T Ω | $U_{rel}=5.8\%$ | | |
| 24 | *Surface Resistance Tester | DC Resistance | C.S. for Surface Resistance Tester JJF 1285 | 1k Ω ~ 10M Ω | $U_{rel}=0.3\%$ | | |
| | | | | 10M Ω ~ 100M Ω | $U_{rel}=0.8\%$ | | |
| | | | | 100M Ω ~ 10G Ω | $U_{rel}=2.5\%$ | | |
| | | | | 10G Ω ~ 1T Ω | $U_{rel}=5.8\%$ | | |
| | | DC Voltage | | 9V ~ 250V | $U_{rel}=0.15\%$ | | |
| 25 | *Wrist Strap and Footwear Tester | DC Resistance | C.S. of Wrist Strap and Footwear Tester JJF (DZ) 31502 | 100k Ω ~ 10M Ω | $U_{rel}=0.3\%$ | | |
| | | | | 10M Ω ~ 200M Ω | $U_{rel}=1.2\%$ | | |
| 26 | *Loop Resistance Tester | DC Resistance | V.R. of Loop Resistance Tester and DC Resistance Meters JJG 1052 | 20 μ Ω ~ 20mΩ | $U_{rel}=0.095\%$ | | |
| | | | | 20mΩ ~ 2000mΩ | $U_{rel}=0.065\%$ | | |
| | | DC Current | | 1A ~ 30A | $U_{rel}=0.12\%$ | | |



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|---------------------------------------|--|-------------------|--|---|----------------------------|------|----------------|
| | | | | 30A~600A | $U_{rel}=0.074\%$ | | |
| 27 | *Safety Parameter Tester | DC Voltage | C.S. for Safety Parameter Tester JJF(DZ)0004 | Withstanding Voltage: 0.5kV~6kV | $U_{rel}=0.7\%$ | | |
| | | | | Insulation: 10V~100V | $U_{rel}=0.6\%$ | | |
| | | | | Insulation: 100V~1000V | $U_{rel}=0.02\%$ | | |
| | | Leakage: 30V~300V | | $U_{rel}=0.16\%$ | | | |
| | | AC Voltage | | Withstanding Voltage: 0.5kV~5kV, (45Hz~65Hz) | $U_{rel}=0.8\%$ | | |
| | | | | Leakage: 30V~300V, (45Hz~65Hz) | $U_{rel}=0.28\%$ | | |
| | | DC Current | | Withstanding Voltage: 0.2mA~50mA | $U_{rel}=0.7\%$ | | |
| | | | | Leakage: 0.2mA~10mA | $U_{rel}=0.3\%$ | | |
| | | AC Current | | Withstanding Voltage: 0.2mA~50mA, (45Hz~65Hz) | $U_{rel}=0.8\%$ | | |
| | | | | Leakage: 0.2mA~10mA, (45Hz~65Hz) | $U_{rel}=0.3\%$ | | |
| Earth-Continuity: 3A~10A, (45Hz~65Hz) | $U_{rel}=0.46\%$ | | | | | | |
| | Earth-Continuity: 10A~30A, (45Hz~65Hz) | $U_{rel}=0.26\%$ | | | | | |
| Time | 10s~30s | $U_{rel}=1.0\%$ | | | | | |

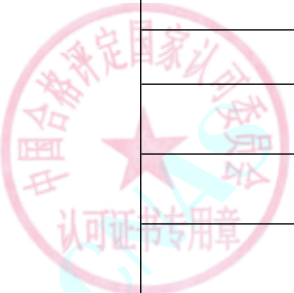


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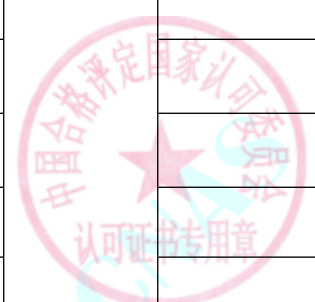
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|----------------------|-----------------------------|---------------------------------------|----------------------------|-------------------------------|------|----------------|
| | | DC Resistance | ilac-M | 30s~900s | $U_{rel}=0.6\%$ | | |
| | | | | 1MΩ~10MΩ | $U_{rel}=0.3\%$ | | |
| | | | | 10MΩ~100MΩ | $U_{rel}=0.6\%$ | | |
| | | | | 100MΩ~1GΩ | $U_{rel}=1.2\%$ | | |
| | | | | 1GΩ~10GΩ | $U_{rel}=2.4\%$ | | |
| | | Earth-Continuity Resistance | | 10mΩ~600mΩ, (45Hz~65Hz) | $U_{rel}=0.3\%$ | | |
| 28 | *Process Calibrators | DC Voltage | C.S. for Process Calibrators JJF 1472 | Output: 10mV~100mV | $U_{rel}=4.0 \times 10^{-5}$ | | |
| | | | | Output: 100mV~1V | $U_{rel}=1.1 \times 10^{-5}$ | | |
| | | | | Output: 1V~10V | $U_{rel}=8.6 \times 10^{-6}$ | | |
| | | | | Output: 10V~100V | $U_{rel}=1.1 \times 10^{-5}$ | | |
| | | | | Measurement: 10mV~100mV | $U_{rel}=1.2 \times 10^{-4}$ | | |
| | | | | Measurement: 100mV~1V | $U_{rel}=2.5 \times 10^{-5}$ | | |
| | | | | Measurement: 1V~10V | $U_{rel}=1.2 \times 10^{-5}$ | | |
| | | | | Measurement: 10V~100V | $U_{rel}=1.7 \times 10^{-5}$ | | |
| | | | | Measurement: 100V~300V | $U_{rel}=1.8 \times 10^{-5}$ | | |
| | | DC Current | | Output: 100μA~100mA | $U_{rel}=1.8 \times 10^{-4}$ | | |



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|----|------------|---------------|--------------------|-------------------------------|-------------------------------|------|----------------|---|------------------------------|
| | | | | Measurement: 10 μ A ~ 120 μ A | $U_{rel}=1.5 \times 10^{-3}$ | | | | |
| | | | | Measurement: 120 μ A ~ 1.2mA | $U_{rel}=2.2 \times 10^{-4}$ | | | | |
| | | | | Measurement: 1.2mA ~ 12mA | $U_{rel}=1.4 \times 10^{-4}$ | | | | |
| | | | | Measurement: 12mA ~ 100mA | $U_{rel}=2.2 \times 10^{-4}$ | | | | |
| | | Frequency | | | | | | Output: 1Hz ~ 50kHz | $U_{rel}=5.8 \times 10^{-3}$ |
| | | | | | | | | Measurement: 1Hz ~ 500kHz | $U_{rel}=1.2 \times 10^{-7}$ |
| | | | | | | | | Output: 1 Ω ~ 10 Ω | $U_{rel}=3.0 \times 10^{-5}$ |
| | | DC Resistance | | | | | | Output: 10 Ω ~ 100 Ω | $U_{rel}=2.4 \times 10^{-5}$ |
| | | | | | | | | Output: 100 Ω ~ 100k Ω | $U_{rel}=2.2 \times 10^{-5}$ |
| | | | | | | | | Measurement: 10 Ω ~ 120 Ω | $U_{rel}=1.2 \times 10^{-3}$ |
| | | | | | | | | Measurement: 120 Ω ~ 1.2k Ω | $U_{rel}=2.2 \times 10^{-4}$ |
| | | | | | | | | Measurement: 1.2k Ω ~ 12k Ω | $U_{rel}=6.0 \times 10^{-5}$ |
| | | | | | | | | Measurement: 12k Ω ~ 100k Ω | $U_{rel}=4.2 \times 10^{-5}$ |
| | | Temperature | | | | | | Thermal Resistance Output: -200°C ~ 800°C | $U=0.2^\circ\text{C}$ |
| | | | | | | | | Thermal Resistance Measurement: -200°C ~ 800°C | $U=0.2^\circ\text{C}$ |



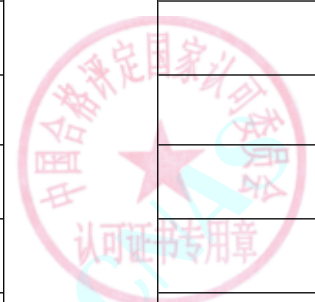
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------|------------------------------|-------------------------------------|---|-----------------------------|------|----------------|
| | | | | Thermo Couple Output: -150°C ~ 300°C | $U=0.2^{\circ}\text{C}$ | | |
| | | | | Thermo Couple Output: 300°C ~ 700°C | $U=0.3^{\circ}\text{C}$ | | |
| | | | | Thermo Couple Output: 700°C ~ 1200°C | $U=0.4^{\circ}\text{C}$ | | |
| | | | | Thermo Couple Measurement: -150°C ~ 300°C | $U=0.2^{\circ}\text{C}$ | | |
| | | | | Thermo Couple Measurement: 300°C ~ 700°C | $U=0.3^{\circ}\text{C}$ | | |
| | | | | Thermo Couple Measurement: 700°C ~ 1200°C | $U=0.4^{\circ}\text{C}$ | | |
| | | | | AC Voltage | 10mV ~ 12mV, (45Hz ~ 20kHz) | | |
| | | 12mV ~ 120mV, (45Hz ~ 20kHz) | $U_{\text{rel}}=2.4 \times 10^{-4}$ | | | | |
| | | 120mV ~ 120V, (45Hz ~ 20kHz) | $U_{\text{rel}}=1.7 \times 10^{-4}$ | | | | |
| | | 120V ~ 200V, (45Hz ~ 20kHz) | $U_{\text{rel}}=2.0 \times 10^{-4}$ | | | | |
| | | AC Current | 100 μA ~ 12mA, (45Hz ~ 5kHz) | $U_{\text{rel}}=4.2 \times 10^{-4}$ | | | |
| | | 12mA ~ 120mA, (45Hz ~ 1kHz) | $U_{\text{rel}}=2.4 \times 10^{-4}$ | | | | |
| | | 12mA ~ 120mA, (1kHz ~ 5kHz) | $U_{\text{rel}}=3.6 \times 10^{-4}$ | | | | |

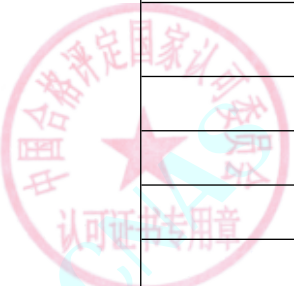


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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|------------|-----------------------------------|-------------------|---|------------------------------|-------------------------------|------|----------------|
| | | | | 120mA~200mA, (45Hz~5kHz) | $U_{rel}=6.0 \times 10^{-4}$ | | |
| 29 | Multifunction Standard sources | DC Voltage | C.S. for Multifunction Standard Sources JJF 1638 | 10mV~100mV | $U_{rel}=0.0028\%$ | | |
| | | | | 100mV~1V | $U_{rel}=0.00069\%$ | | |
| | | | | 1V~10V | $U_{rel}=0.00051\%$ | | |
| | | | | 10V~100V | $U_{rel}=0.00092\%$ | | |
| | | | | 100V~1000V | $U_{rel}=0.0015\%$ | | |
| | | AC Voltage | | 10mV~100V, (10Hz~ 2kHz) | $U_{rel}=0.016\%$ | | |
| | | | | 100V~1000V, (10Hz~ 2kHz) | $U_{rel}=0.032\%$ | | |
| | | | | 10mV~100V, (2kHz~ 10kHz) | $U_{rel}=0.026\%$ | | |
| | | | | 100V~1000V, (2kHz~ 10kHz) | $U_{rel}=0.036\%$ | | |
| | | | | 10mV~100V, (10kHz~20kHz) | $U_{rel}=0.039\%$ | | |
| | | | | 100V~1000V, (10kHz~20kHz) | $U_{rel}=0.054\%$ | | |
| | | DC Current | | 100 μ A~10mA | $U_{rel}=0.004\%$ | | |
| | | | | 10mA~100mA | $U_{rel}=0.013\%$ | | |
| | | | | 100mA~1A | $U_{rel}=0.11\%$ | | |
| AC Current | 10mA~100mA, (45Hz~2kHz) | $U_{rel}=0.096\%$ | | | | | |

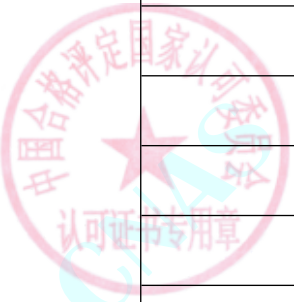


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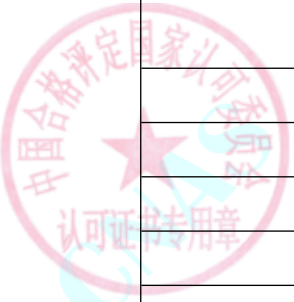
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|-----------------------|---------------|--|--------------------------|-------------------------------|------|----------------|
| | | DC Resistance | C.S. for Digital Source Meter J1F(Liao)223 | 100mA~1A, (45Hz~2kHz) | $U_{rel}=0.052\%$ | | |
| | | | | 10mA~100mA, (2kHz~10kHz) | $U_{rel}=0.13\%$ | | |
| | | | | 100mA~1A, (2kHz~10kHz) | $U_{rel}=0.09\%$ | | |
| | | | | 1Ω~10Ω | $U_{rel}=0.0027\%$ | | |
| | | | | 10Ω~1MΩ | $U_{rel}=0.0021\%$ | | |
| | | | | 1MΩ~10MΩ | $U_{rel}=0.0041\%$ | | |
| | | | | 10MΩ~100MΩ | $U_{rel}=0.023\%$ | | |
| 30 | *Digital Source Meter | DC Voltage | C.S. for Digital Source Meter J1F(Liao)223 | Output: 10mV~100mV | $U_{rel}=0.0028\%$ | | |
| | | | | Output: 100mV~1V | $U_{rel}=0.00069\%$ | | |
| | | | | Output: 1V~10V | $U_{rel}=0.00051\%$ | | |
| | | | | Output: 10V~100V | $U_{rel}=0.00092\%$ | | |
| | | | | Output: 100V~1000V | $U_{rel}=0.0015\%$ | | |
| | | | | Measurement: 10mV~50mV | $U_{rel}=0.006\%$ | | |
| | | | | Measurement: 50mV~120mV | $U_{rel}=0.003\%$ | | |
| | | | | Measurement: 120mV~12V | $U_{rel}=0.0015\%$ | | |
| | | | | Measurement: 12V~120V | $U_{rel}=0.0018\%$ | | |
| | | | | Measurement: 120V~1000V | $U_{rel}=0.0013\%$ | | |



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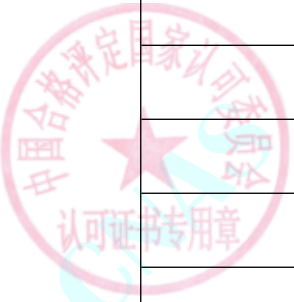
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------|---------------|---|------------------------------|-------------------------------|------|----------------|
| | | DC Current | ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE | Output: 100 μ A ~ 10mA | $U_{rel}=0.0076\%$ | | |
| | | | | Output: 10mA ~ 100mA | $U_{rel}=0.013\%$ | | |
| | | | | Output: 100mA ~ 1A | $U_{rel}=0.11\%$ | | |
| | | | | Output: 1A ~ 2A | $U_{rel}=0.039\%$ | | |
| | | | | Output: 2A ~ 10A | $U_{rel}=0.024\%$ | | |
| | | | | Measurement: 10 μ A ~ 50 μ A | $U_{rel}=0.026\%$ | | |
| | | | | Measurement: 50 μ A ~ 0.2mA | $U_{rel}=0.019\%$ | | |
| | | | | Measurement: 0.2mA ~ 120mA | $U_{rel}=0.015\%$ | | |
| | | | | Measurement: 120mA ~ 0.2A | $U_{rel}=0.030\%$ | | |
| | | | | Measurement: 0.2A ~ 1A | $U_{rel}=0.018\%$ | | |
| | | | | Measurement: 1.2A ~ 12A | $U_{rel}=0.036\%$ | | |
| | | | | Measurement: 12A ~ 30A | $U_{rel}=0.10\%$ | | |
| | | | | DC Resistance | 1 Ω | | |
| | | 10 Ω ~ 20 Ω | | | $U_{rel}=0.0083\%$ | | |
| | | 20 Ω ~ 200k Ω | | | $U_{rel}=0.0037\%$ | | |
| | | 200k Ω ~ 1M Ω | | | $U_{rel}=0.0026\%$ | | |
| | | 1M Ω ~ 10M Ω | | | $U_{rel}=0.0055\%$ | | |



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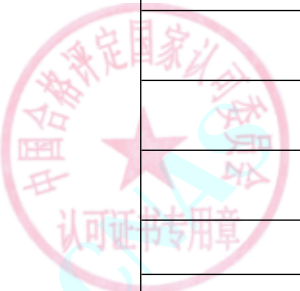
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|--------------------------------|------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|------|----------------|
| | | | | 10MΩ ~ 100MΩ | $U_{rel}=0.055\%$ | | |
| 31 | *Multimeters | DC Voltage | C.S. for Multimeters JJF 1587 | 10mV ~ 20mV | $U_{rel}=0.011\%$ | | |
| | | | | 20mV ~ 50mV | $U_{rel}=0.006\%$ | | |
| | | | | 50mV ~ 120mV | $U_{rel}=0.003\%$ | | |
| | | | | 120mV ~ 12V | $U_{rel}=0.0015\%$ | | |
| | | | | 12V ~ 120V | $U_{rel}=0.0018\%$ | | |
| | | | | 120V ~ 1000V | $U_{rel}=0.0013\%$ | | |
| | | AC Voltage | | 10mV ~ 20mV, (10Hz ~ 20kHz) | $U_{rel}=0.082\%$ | | |
| | | 10mV ~ 20mV, (20kHz ~ 50kHz) | | $U_{rel}=0.13\%$ | | | |
| | | 10mV ~ 20mV, (50kHz ~ 100kHz) | | $U_{rel}=0.30\%$ | | | |
| | | 20mV ~ 50mV, (10Hz ~ 20kHz) | | $U_{rel}=0.048\%$ | | | |
| | | 20mV ~ 50mV, (20kHz ~ 50kHz) | | $U_{rel}=0.080\%$ | | | |
| | | 20mV ~ 50mV, (50kHz ~ 100kHz) | | $U_{rel}=0.19\%$ | | | |
| | | 50mV ~ 120mV, (10Hz ~ 20kHz) | | $U_{rel}=0.028\%$ | | | |
| | | 50mV ~ 120mV, (20kHz ~ 50kHz) | | $U_{rel}=0.052\%$ | | | |
| 50mV ~ 120mV, (50kHz ~ 100kHz) | $U_{rel}=0.12\%$ | | | | | | |



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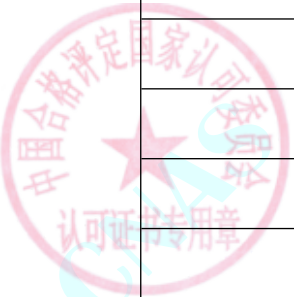
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------|------------|--------------------|----------------------------|-------------------------------|------|----------------|
| | | | | 120mV~1.2V, (10Hz~40Hz) | $U_{rel}=0.050\%$ | | |
| | | | | 120mV~1.2V, (40Hz~20kHz) | $U_{rel}=0.019\%$ | | |
| | | | | 120mV~1.2V, (20kHz~50kHz) | $U_{rel}=0.036\%$ | | |
| | | | | 120mV~1.2V, (20kHz~100kHz) | $U_{rel}=0.071\%$ | | |
| | | | | 1.2V~120V, (10Hz~40Hz) | $U_{rel}=0.033\%$ | | |
| | | | | 1.2V~120V, (40Hz~20kHz) | $U_{rel}=0.016\%$ | | |
| | | | | 1.2V~120V, (20kHz~50kHz) | $U_{rel}=0.028\%$ | | |
| | | | | 1.2V~120V, (50kHz~100kHz) | $U_{rel}=0.070\%$ | | |
| | | | | 120V~330V, (10Hz~20kHz) | $U_{rel}=0.018\%$ | | |
| | | | | 120V~330V, (20kHz~50kHz) | $U_{rel}=0.033\%$ | | |
| | | | | 120V~330V, (50kHz~100kHz) | $U_{rel}=0.15\%$ | | |
| | | | | 330V~500V, (10Hz~10kHz) | $U_{rel}=0.038\%$ | | |
| | | | | 500V~1000V, (10Hz~10kHz) | $U_{rel}=0.028\%$ | | |
| | | DC Current | | 10μA~50μA | $U_{rel}=0.026\%$ | | |
| | | | | 50μA~0.2mA | $U_{rel}=0.019\%$ | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------|------------|---|--------------------------------|-------------------------------|------|----------------|
| | | | ilac-MRA CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT SCHEDULE OF ACCREDITATION CERTIFICATE | 0.2mA~120mA | $U_{rel}=0.015\%$ | | |
| | | | | 120mA~0.2A | $U_{rel}=0.030\%$ | | |
| | | | | 0.2A~1.2A | $U_{rel}=0.018\%$ | | |
| | | | | 1.2A~12A | $U_{rel}=0.036\%$ | | |
| | | | | 12A~30A | $U_{rel}=0.10\%$ | | |
| | | AC Current | | 100 μ A~0.2mA, (45Hz~5kHz) | $U_{rel}=0.034\%$ | | |
| | | | | 100 μ A~0.2mA, (5kHz~10kHz) | $U_{rel}=0.19\%$ | | |
| | | | | 0.2mA~0.5mA, (45Hz~5kHz) | $U_{rel}=0.080\%$ | | |
| | | | | 0.2mA~0.5mA, (5kHz~10kHz) | $U_{rel}=0.20\%$ | | |
| | | | | 0.5mA~1.2mA, (45Hz~5kHz) | $U_{rel}=0.048\%$ | | |
| | | | | 0.5mA~1.2mA, (5kHz~10kHz) | $U_{rel}=0.17\%$ | | |
| | | | | 1.2mA~5mA, (45Hz~ 5kHz) | $U_{rel}=0.080\%$ | | |
| | | | | 1.2mA~5mA, (5kHz~ 10kHz) | $U_{rel}=0.20\%$ | | |
| | | | | 5mA~12mA, (45Hz~ 5kHz) | $U_{rel}=0.048\%$ | | |
| | | | | 5mA~12mA, (5kHz~ 10kHz) | $U_{rel}=0.17\%$ | | |

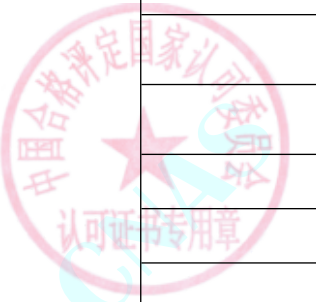


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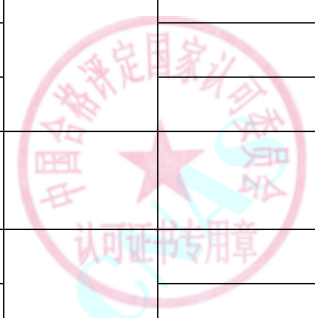
| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------|-----------|--------------------|--------------------------|----------------------------|------|----------------|
| | | | | 12mA~120mA, (45Hz~1kHz) | $U_{rel}=0.043\%$ | | |
| | | | | 12mA~120mA, (1kHz~5kHz) | $U_{rel}=0.070\%$ | | |
| | | | | 12mA~120mA, (5kHz~10kHz) | $U_{rel}=0.40\%$ | | |
| | | | | 120mA~0.2A, (45Hz~1kHz) | $U_{rel}=0.034\%$ | | |
| | | | | 120mA~0.2A, (1kHz~5kHz) | $U_{rel}=0.070\%$ | | |
| | | | | 120mA~0.2A, (5kHz~10kHz) | $U_{rel}=0.40\%$ | | |
| | | | | 0.2A~1.2A, (45Hz~1kHz) | $U_{rel}=0.034\%$ | | |
| | | | | 0.2A~1.2A, (1kHz~5kHz) | $U_{rel}=0.040\%$ | | |
| | | | | 0.2A~1.2A, (5kHz~10kHz) | $U_{rel}=0.40\%$ | | |
| | | | | 1.2A~2A, (45Hz~1kHz) | $U_{rel}=0.044\%$ | | |
| | | | | 1.2A~2A, (1kHz~5kHz) | $U_{rel}=0.050\%$ | | |
| | | | | 1.2A~2A, (5kHz~10kHz) | $U_{rel}=0.26\%$ | | |
| | | | | 2A~5A, (45Hz~1kHz) | $U_{rel}=0.040\%$ | | |
| | | | | 2A~5A, (1kHz~5kHz) | $U_{rel}=0.052\%$ | | |
| | | | | 2A~5A, (5kHz~10kHz) | $U_{rel}=0.26\%$ | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date | | |
|----|---|-----------------|--|-----------------------------|----------------------------|------|----------------|------------------------------|--------------------|
| | | | | 5A~10A, (45Hz~1kHz) | $U_{rel}=0.034\%$ | | | | |
| | | | | 5A~10A, (1kHz~5kHz) | $U_{rel}=0.052\%$ | | | | |
| | | | | 5A~10A, (5kHz~10kHz) | $U_{rel}=0.26\%$ | | | | |
| | | | | 10A~12A, (45Hz~1kHz) | $U_{rel}=0.020\%$ | | | | |
| | | | | 10A~12A, (1kHz~5kHz) | $U_{rel}=0.044\%$ | | | | |
| | | | | 10A~12A, (5kHz~10kHz) | $U_{rel}=0.24\%$ | | | | |
| | | | | 12A~30A, (45Hz~1kHz) | $U_{rel}=0.13\%$ | | | | |
| | | DC Resistance | | | | | | 1 Ω | $U_{rel}=0.012\%$ |
| | | | | | | | | 10 Ω ~ 20 Ω | $U_{rel}=0.0083\%$ |
| | | | | | | | | 20 Ω ~ 200k Ω | $U_{rel}=0.0037\%$ |
| | | | | | | | | 200k Ω ~ 1M Ω | $U_{rel}=0.0026\%$ |
| | | | | | | | | 1M Ω ~ 10M Ω | $U_{rel}=0.0055\%$ |
| | | | | | | | | 10M Ω ~ 100M Ω | $U_{rel}=0.055\%$ |
| 32 | *Online Testers of Winding Temperature Rise | DC Resistance | C.S. for Online Testers of Winding Temperature Rise JJF 1540 | 0.1 Ω ~ 10k Ω | $U_{rel}=0.05\%$ | | | | |
| 33 | *Impulse Voltage Testers for Winding Interturn Insulation | Peak Voltage | C.S. for Impulse Voltage Testers for Winding Interturn Insulation JJF 1691 | 0.1kV~15kV | $U_{rel}=2.8\%$ | | | | |
| | | wave front time | | 0.1 μ s~1.5 μ s | $U_{rel}=1.2\%$ | | | | |



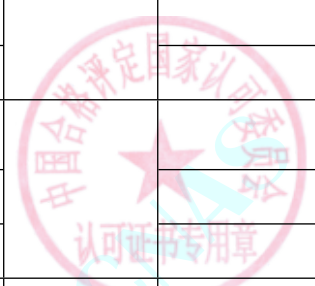
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|--------------------|---|--------------------|---|---|----------------------------|------|----------------|
| Time and frequency | | | | | | | |
| 1 | Stopwatches | Time Interval | V.R. of Stopwatches JJG 237 | Electronic Stopwatch: 1s~3600s | U=0.02s | | |
| | | | | Mechanic Stopwatch: 1s~1800s | U=0.1s | | |
| | | | | Pointer Electromotive Stopwatch: 1s~600s | U=10ms | | |
| 2 | Electronic time relay | Time Interval | C.S. for Electronic time relay JJF 1282 | 0.5s~9999s | U=3ms | | |
| Chemistry | | | | | | | |
| 1 | *Ultraviolet, Visible Spectrophotometers | Wave-length | V. R. of Ultraviolet, Visible, Near-Infrared Spectrophotometers JJG 178 | UV-Vis: (190~900) nm | U=0.32 nm | | |
| | | Transmittance | | 5%~38% | U=0.32% | | |
| 2 | *Fourier Transform Infrared Spectrometers | Wave Number | C.S. for Fourier Transform Infrared Spectrometers JJF 1319 | (400~4000) cm ⁻¹ | U=0.6 cm ⁻¹ | | |
| 3 | *Atomic Absorption Spectrophotometer | Limit of Detection | V. R. of Atomic Absorption Spectrophotometer JJG 694 | Cu: ≤0.02 μg/mL | U=0.0044 μg/mL | | |
| | | Wave-length | | (250~900) nm | U=0.14 nm | | |
| 4 | *Fluorescence Spectrophotometer | Detection Limit | V. R. of Fluorescence Spectrophotometer JJG 537 | class A: ≤5 × 10 ⁻¹⁰ g/mL | U _{rel} =12% | | |
| | | Wavelength | | (190~650) nm | U=0.5 nm | | |
| 5 | *Atomic Fluorescence | Detection Limit | V. R. for Atomic Fluorescence | As: ≤0.4 ng | U=0.04 ng | | |



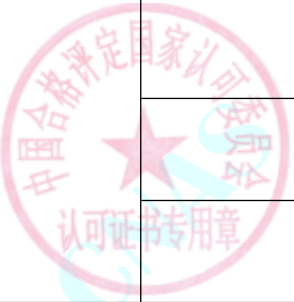
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|---|--------------------|---|--|----------------------------|-------------------------|----------------|
| | Spectrophotometer | | Spectrophotometers JJG 939 | Sb: ≤0.4 ng | U=0.04 ng | | |
| 6 | *Energy Dispersive X-Ray Fluorescence Spectrometers | Content | C. S. for Energy Dispersive X-Ray Fluorescence Spectrometers JJF 2024 | Cd:(5~150) mg/kg | U _{rel} =8.3% | Only for Plastic Matrix | |
| | | | | Cr:(50~1500) mg/kg | U _{rel} =6.9% | | |
| | | | | Hg:(50~1500) mg/kg | U _{rel} =6.9% | | |
| | | | | Pb:(50~1500) mg/kg | U _{rel} =6.4% | | |
| | | Limit of Detection | | Cd: ≤5 mg/kg | U _{rel} =7.4% | | |
| | | | | Cr: ≤50 mg/kg | U _{rel} =7.8% | | |
| | | | | Hg: ≤50 mg/kg | U _{rel} =8.4% | | |
| | | | Pb: ≤50 mg/kg | U _{rel} =8.0% | | | |
| 7 | *Emission Spectro-meter | Detection Limit | V. R. for Emission Spectrometer JJG 768 | Inductively-coupled Plasma Spectrometer:Zn ≤0.003 mg/L | U _{rel} =12% | | |
| | | | | Inductively-coupled Plasma Spectrometer:Ni ≤0.01 mg/L | U _{rel} =12% | | |
| | | | | Inductively-coupled Plasma Spectrometer:Mn ≤0.002 mg/L | U _{rel} =12% | | |
| | | | | Inductively-coupled Plasma Spectrometer:Cr ≤0.007 mg/L | U _{rel} =12% | | |
| | | | | Inductively-coupled Plasma Spectrometer:Cu ≤0.007 mg/L | U _{rel} =12% | | |

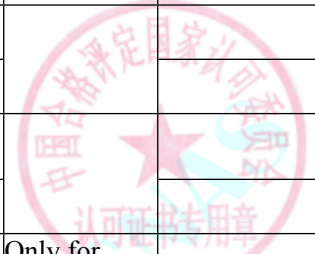


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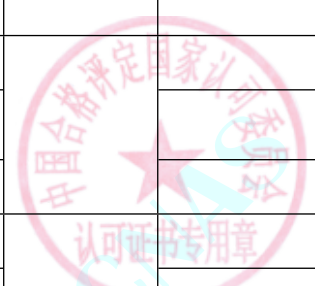
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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|---------------------------------|------------------|--|--|----------------------------|---------------------------|----------------|
| | | | | Inductively-coupled Plasma Spectrometer:Ba ≤ 0.007 mg/L | $U_{rel}=12\%$ | | |
| | | | | Direct-reading Spectromete:C ≤ 0.008 mg/L | $U=0.002\%$ | | |
| | | | | Direct-reading Spectrometer:Si $\leq 0.005\%$ | $U=0.002\%$ | | |
| | | | | Direct-reading Spectrometer:Mn $\leq 0.003\%$ | $U=0.001\%$ | | |
| | | | | Direct-reading Spectrometer:Cr $\leq 0.003\%$ | $U=0.001\%$ | | |
| | | | | Direct-reading Spectrometer:Ni $\leq 0.005\%$ | $U=0.002\%$ | | |
| | | | | Direct-reading Spectrometer:V $\leq 0.001\%$ | $U=0.0002\%$ | | |
| | | | | w | (190~800) nm | | |
| 8 | *Flame Photometer | Detection Limit | V.R.of Flame Photometer JJG 630 | K: ≤ 0.004 mmol/L | $U=0.0015$ mmol/L | | |
| | | | | Na: ≤ 0.008 mmol/L | $U=0.0024$ mmol/L | | |
| 9 | *Polarimeter and Sacchari-meter | Optical Rotation | V. R. of Polarimeter and Saccharimeter JJG 536 | $-90^{\circ} \sim 90^{\circ}$ | $U=0.006^{\circ}$ | | |
| | | Sugar Content | | $(-20 \sim 105)^{\circ} Z$ | $U=0.02^{\circ} Z$ | | |
| 10 | *Hand Saccharimeter | Content | V.R. of Hand Saccharimeter | 5%~55% | $U=0.2\% \sim 0.6\%$ | Only for Instruments with | |



| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|------------------------|----------------------------------|--|--|----------------------------|---|----------------|
| | and Hand Refractometer | Refractive Index | | $n_D: 1.3330 \sim 1.6580$ | $U=0.00043$ | accuracy of $\pm 1.0\%$ and $\pm 2.0\%$ | |
| 11 | *Gas Chromatograph | Detection Limit | V. R. of Gas Chromatograph JIG 700 | FID: ≤ 0.5 ng/s | $U_{rel}=6\%$ | | |
| | | | | FPD(S): ≤ 0.5 ng/s | $U_{rel}=6\%$ | | |
| | | | | FPD(P): ≤ 0.1 ng/s | $U_{rel}=6\%$ | | |
| | | | | ECD: ≤ 5 pg/mL | $U_{rel}=7\%$ | | |
| | | | | NPD(N): ≤ 5 pg/s | $U_{rel}=6\%$ | | |
| | | | | NPD(P): ≤ 10 pg/s | $U_{rel}=6\%$ | | |
| | | Sensitivity | | TCD: ≥ 800 mV · mL/mg | $U_{rel}=7\%$ | | |
| 12 | *Liquid Chromatograph | Minimum Detectable Concentration | V. R. of Liquid Chromatograph JIG 705 | UV-Vis/DAD: $\leq 5 \times 10^{-8}$ g/mL | $U_{rel}=7\%$ | | |
| | | | | FLD: $\leq 5 \times 10^{-9}$ g/mL | $U_{rel}=7\%$ | | |
| | | | | RID: $\leq 5 \times 10^{-6}$ g/mL | $U_{rel}=7\%$ | | |
| | | | | ELSD: $\leq 5 \times 10^{-6}$ g/mL | $U_{rel}=7\%$ | | |
| 13 | *Ion Chromatograph | Minimum Detectable Concentration | V. R. for Ion Chromatograph JIG 823 | ELCD: ≤ 0.02 μg/mL | $U_{rel}=5.0\%$ | | |
| | | | | UV-Detector: ≤ 0.02 μg/mL | $U_{rel}=5.3\%$ | | |
| | | | | ECD: ≤ 0.03 μg/mL | $U_{rel}=5.3\%$ | | |
| 14 | *Extrusion Plastometer | Temperature | V.R. for Extrusion Plastometer JIG 878 | (50~400)°C | $U=0.3$ °C | | |
| | | Mass | | (0.3~22) kg | $U=(0.6 \sim 1.8)$ g | | |



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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|-------------------------------------|------------------------|---|--|-------------------------------|------------------------------------|----------------|
| | | Time | | 10 s~600 s | $U=0.2$ s | | |
| | | Melt flow rate | | (1.79~6.78) g/10min | $U_{rel}=6.2\%$ | | |
| 15 | Flow Cup Viscosimeters | Correction coefficient | V. R. of Flow Cup Viscosimeters JJG 743 | 0.90~1.10 | $U_{rel}=1.0\%$ | | |
| 16 | Rotational Viscometer | Viscosity | V. R. of Rotational Viscometer JJG 1002 | (1~100000) mPa·s | $U_{rel}=(1.3~3.2)\%$ | | |
| 17 | Routine Capillary Viscometer | Viscosity | V.R.of Routine Capillary Viscometer JJG 155 | (1~1×10 ⁵) mm ² /s ² | $U_{rel}=(0.2~0.7)\%$ | | |
| 18 | *Laboratory pH Meters | pH | V. R. of pH Meter JJG 119 | Electric Meter:0~14 | $U=0.01$ | Except for 0.001 grade instruments | |
| | | Potential | | Instrument:3~10 | $U=0.02$ | | |
| | | Temperature | | (-2000~2000) mV | $U=0.3$ mV | | |
| 19 | *On-line pH Meters | pH | C.S for On-line pH Meters JJF 1547 | Electric Meter:0~14 | $U=0.01$ | | |
| | | Potential | | Instrument:3~10 | $U=0.02$ | | |
| | | Temperature | | (-2000~2000) mV | $U=0.3$ mV | | |
| 20 | *Automatic Potentio-metric Titrator | Potential | V. R. for Automatic Potentiometric Titrator JJG 814 | (-2000~2000) mV | $U=0.3$ mV | | |
| | | Capatility | | (1~100) mL | $U=0.005$ mL | | |
| | | Concentration | | NaOH:0.1 mol/L | $U_{rel}=1.1\%$ | | |
| 21 | *Laboratory Ion Meters | | V.R. of Laboratory Ion Meters JJG 757 | Electric Meter :0~14 | $U=0.01$ | | |
| | | | | Instrument (NaF) :2~4 | $U=0.02$ | | |

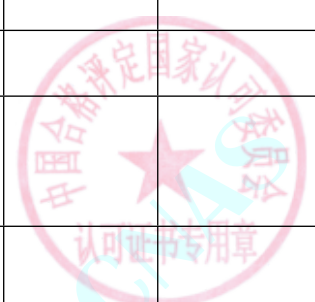


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| No | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty (k=2) | Note | Effective Date |
|----|--|---------------------------|---|---|--|------|----------------|
| | | Potential | | (-2000~2000) mV | U=0.3 mV | | |
| | | Temperature | | (5~60)°C | U=0.1°C | | |
| 22 | *Electrolytic Conductivity Meter | Electrolytic Conductivity | V. R. of Electrolytic Conductivity Meters JJG 376 | Electric Meter:(0.05~2×10 ⁵) μ S/cm Instrument:(100~2000) μ S/cm | U=0.06%FS U=0.21%FS | | |
| | | Temperature | | (0~50)°C | U=0.1°C | | |
| 23 | *Dissolution Tester | Temperature | C.S. for Dissolution Tester JJF(Wan) 24 | (0~50)°C | U=0.2°C | | |
| | | Speed | | (25~200) r/min | U _{rel} =2.4% | | |
| 24 | *Micro Oxygen Analyzers | Content of Oxygen | V. R. of Micro Oxygen Analyzers JJG 945 | (1~10) μ mol/mol (10~100) μ mol/mol (100~1000) μ mol/mol | U _{rel} =1.6% U _{rel} =0.9% U _{rel} =0.8% | | |
| 25 | *Zirconia Oxygen Analyzers | Content of Oxygen | V. R. of Zirconia Oxygen Analyzers JJG 535 | 0.1%~90% | U _{rel} =1.7%~0.9% | | |
| 26 | *Electrochemical Oxygen Meter | Consistence | V.R. of Electrochemical Oxygen Meter JJG 365 | 0.1%~90% | U _{rel} =1.5%~0.7% | | |
| 27 | *Paramagnetic Oxygen Analyzer | Content of Oxygen | V. R. of Paramagnetic Oxygen Analyzer JJG 662 | 0.1%~90% | U _{rel} =1.2%~0.8% | | |
| 28 | *Volatile Organic Compounds Photo Ionization Detectors | Concentration | C.S for Volatile Organic Compounds Photo Ionization Detectors JJF 1172 | (10~2000) μ mol/mol | U _{rel} =1.8%~1.4% | | |
| 29 | *Carbon Monoxide and Carbon Dioxide Infrared Gas | Concentration | V. R. of Carbon Monoxide and Carbon Dioxide Infrared Gas Analyzer JJG 635 | CO:(10~1000) μ mol/mol | U _{rel} =1.5% | | |



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| № | Instrument | Measurand | Calibration Method | Range | Expanded Uncertainty ($k=2$) | Note | Effective Date |
|----|--|-----------------|--|--|-----------------------------------|------|----------------|
| | Analyzer | | | CO ₂ :(100~5000) μ mol/mol | $U_{rel}=1.5\%$ | | |
| 30 | *Carbon Monoxide Detectors | Gas Consistence | V.R. of Carbon Monoxide Detectors JJG 915 | (10~1000) μ mol/mol | $U_{rel}=1.6\%$ | | |
| 31 | *The Alarmer Detectors of Combustible Gas | concentration | V.R. of Alarmer Detectors of Combustible Gas JJG 693 | Methane, Hydrogen, Isobutane:(5~65)%LEL | $U_{rel}=1.5\% \sim 1.1\%$ | | |
| 32 | *Sulfur Dioxide Gas Detectors | Concentration | V. R. of Sulfur Dioxide Gas Detectors JJG 551 | (10~2000) μ mol/mol | $U_{rel}=1.8\%$ | | |
| 33 | *Ammonia Gas Detectors | Concentration | V. R. of Ammonia Gas Detectors JJG 1105 | (10~1000) μ mol/mol | $U_{rel}=2.4\% \sim 2.2\%$ | | |
| 34 | *Sulfur Hydrogen Gas Detectors | Concentration | V. R. of Sulfur Hydrogen Gas Detectors JJG 695 | (10~100) μ mol/mol | $U_{rel}=2.7\% \sim 1.9\%$ | | |
| 35 | *Hydrogen Chloride GAs Detectors and Alarms | Gas Consistence | C.S for Hydrogen chloride gas detection alarm JJF 1888 | (10~100) μ mol/mol | $U_{rel}=2.9\% \sim 2.4\%$ | | |
| 36 | *liquid-borne particle counters | Particle Size | V.R.of liquid-borne particle counters JJG 1061 | D_{50} :(1~120) μ m | $U_{rel}=11\%$ | | |
| | | Concentration | | Oil Particle:(50~100000) mL ⁻¹ | $U_{rel}=11\%$ | | |
| | | | | Water Particle:(100~5000) mL ⁻¹ | $U_{rel}=4\%$ | | |
| 37 | *Static Light Scattering Particle Size Analyzers | Particle Size | C.S for Static Light Scattering Particle Size Analyzers JJF 1211 | D_{50} :(1~5) μ m | $U_{rel}=4.8\%$ | | |
| | | | | D_{50} :(5~20) μ m | $U_{rel}=2.1\%$ | | |
| | | | | D_{50} :(20~100) μ m | $U_{rel}=2.6\%$ | | |
| | | | | D_{50} :> 100 μ m | $U_{rel}=2.0\%$ | | |



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|----|-----------------------|---------------|--|--|-----------------------------------|------|----------------|
| 38 | *Particulate Analyzer | Concentration | C.S for Particulate Analyzer JJF 1290 | 5 μ m Particle size gear:(1500~3000) mL ⁻¹ | $U_{rel}=5\%$ | | |

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