

Name: National Institute of Measurement and Testing Technology

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Registration No. CNAS L0893

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

Effective Date: 2025-04-07 Expiry Date: 2030-11-10

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
I Geometry measuring instrument							
1	Terrestrial Laser Scanners	Geometric Quantity	C. S. for Terrestrial Laser Scanners JJF 1406	(0~54.3)m	$U=0.6\text{ mm}$		
2	High-precision Line Scale	Length	V. R. of High-precision Line Scale JJG 73	(0~1000)mm	$U=0.2\text{ }\mu\text{ m}+1.5\times 10^{-6}L(k=3)$		
3	Special Scale-bar' s Length	Length	C.S. for the Special Scale-bar' s Length JJF(chuan) 125	(0~5)m	$U=7\text{ }\mu\text{ m}+3\times 10^{-6}L$		
4	*Laser Interferometric Comparators	length	C. S. for Laser Interferometric Comparators JJF 1913	(0~1000)mm	$U=0.11\text{ }\mu\text{ m}+4\times 10^{-7}L(k=3)$		
5	Rotating Lasers	angle	C. S. for Rotating Lasers JJF 1166	$-3.4^{\circ}\sim+3.4^{\circ}$	$U=4''$		



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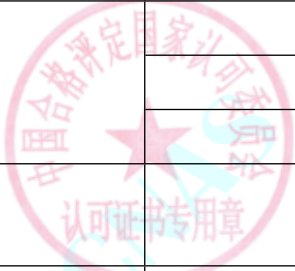
No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
6	Laser Interferometers (Measure Length)	Length	V. R. of Laser Interferometers JJG 739	(0~80)m	$U=0.2 \mu m+1 \times 10^{-7}L$		
7	Laser Micrometers	Length	C.S. for Laser Micrometers JJF 1663	(-100~+100)mm	$U=0.008\%FS$		
8	Ball-bar Indicators	Length	C. S. for Ball-bar Indicators JJF 1978	(-1~+1)mm	$U=0.25 \mu m$		
9	Standard stick of Measuring spheres	Length	V. R. for Standard stick of Measuring spheres JJG (jun gong) 177	(10~2000)mm	$U=3.0 \mu m$		
10	Laser tracker	Length	C. S. for the large scale coordinate measurement system-laser tracker GJB 8624, Calibration Specification for Laser Tracker 3-Dimensional Measuring System JJF 1242	(0~160)m	$U=0.8 \mu m+1 \times 10^{-7}L$		
				点对点长度:(0~2.4)m	$U=5 \mu m$		
11	Linear Displacement Measuring Device	Length	V. R. of Linear Displacement Measuring Device JJG 341	(0~54.3)m	$U=1 \mu m+5 \times 10^{-7}L$		
12	Level Rod	Length	V. R. of Level Rod JJG 8	(0~3.5)m	$U=5 \mu m+4 \times 10^{-6}L$		
13	Invar Bar-Coded Levelling Staffs	Length	V. R. of Invar Bar-Coded Levelling Staffs JJG(ce hui) 2102	(0~5)m	$U=5 \mu m+4 \times 10^{-6}L$		
14	Measuring wheels	length	C. S. for Measuring wheels JJF (liao) 384	(0.5~100)m	$U_{rel}=0.1\%$		
				D:(100~300)mm	$U=0.06mm$		
				Runout:(0~10)mm	$U=0.1mm$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
15	Water Level Gauge	Length	V. R. of Water Level Gauge JJG (jiao tong) 168	(0.2~300)m	U=0.22mm+2×10 ⁻⁵ L		
16	Large-Scale Laser Scanners Base on Spherical Coordinate	Length	Calibration Specification for Large-Scale Laser Scanners Base on Spherical Coordinate JJF (jun gong) 283	(0~50)m	U=0.028mm		
17	Handheld laser rangefinder	Length	Handheld laser rangefinder verification procedure JJG 966	D:(0~200)m	U=0.60mm+1×10 ⁻⁵ D		
18	Ultrasonic rangefinder	Length	Verification Regulation of Ultrasonic Ranger JJG 928	(0~50)mm	U=0.02m		
19	Femtosecond Laser Distance Meter	Length	Verification Regulation for 80mFemtosecond Laser Distance Meter JJG(军工)255	(0~80)m	U=0.44 μ m+3.4×10 ⁻⁷ L		
20	Three-Dimensional Building Measuring Devices	Length	Calibration Specification forThree-Dimensional Building Measuring Devices JJF(鄂)88	(0~50)m	U=0.5mm		
21	Frequency Modulated Laser Range Finder	Length	Calibration Specification for Frequency Modulated Laser Range Finder JJF(军工)172	D:(0~160)m	U=1.5 μ m+1.4×10 ⁻⁷ D		
22	Tape Extensometer	Force Value	Calibration Specification forTape Extensometer JJF (赣) 020	(60~120)N	U=0.05N		
		Length		(0~500)mm	U=0.01mm		
				(0.5~50)m	U=0.1mm+1×10 ⁻⁴ L		
23	Dynamic Heterodyne Interferometer	Length	Calibration Specification for Fast Dynamic Heterodyne Interferometer JJF (黑) 07	(0~50)m	U=0.2 μ m+1×10 ⁻⁷ L		
Mechanics measuring instrument							



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty ($k=2$)	Note	Effective Date
II Mechanics measuring instrument							
1	*Hydraulic Jacks	Force value	V. R. of Hydraulic Jacks JJG 621	10kN~30MN	$U_{rel}=0.5\%$		
2	Standard Dynamometers	Force value	V. R. of Standard Dynamometers JJG 144	10N~1MN	$U_{rel}=0.03\%$		
				(1~3)MN	$U_{rel}=0.05\%$		
				(3~10)MN	$U_{rel}=0.1\%$		
				(10~30)MN	$U_{rel}=0.2\%$		
3	Load Cell	Mass	V. R. of Load Cell JJG 669	1kg~100t	$U_{rel}=0.01\%$		
				(100~300)t	$U_{rel}=0.05\%$		
				(300~500)t	$U_{rel}=0.1\%$		
4	Force Transducers	Force value	V. R. of Force Transducers JJG 391	10N~1MN	$U_{rel}=0.003\%$		
				(1~3)MN	$U_{rel}=0.05\%$		
				(3~10)MN	$U_{rel}=0.1\%$		
				(10~30)MN	$U_{rel}=0.2\%$		
5	Working Dynamometers	Force value	V. R. of Working Dynamometers JJG 455	10N~1MN	$U_{rel}=0.05\%$		
				(1~3)MN	$U_{rel}=0.05\%$		
				(3~10)MN	$U_{rel}=0.1\%$		
				(10~30)MN	$U_{rel}=0.2\%$		
6	*Weights	Mass	V. R. of Weights JJG 99	50kg~3t	$U=(0.1\sim 15)g$		
7	Electromagnetic Velocity	Velocity	V. R. of Electromagnetic Velocity Transducer JJG 134	(0.1~50)cm/s, 16.25Hz	$U_{rel}=0.5\%$	Absolute measurement	

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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
	Transducer			(0.1~50)cm/s, (0.1~5000)Hz	<i>U</i> _{rel} =1.0%	method	
8	Vibration Displacement Transducer	Displacement	V. R. of Vibration Displacement Transducer JJG 644	Dynamic: (0.01~10)mm, 16.25Hz	<i>U</i> _{rel} =0.5%	Only calibrate contact displacement sensors	
				Dynamic: (0.01~10)mm, (0.1~5000)Hz	<i>U</i> _{rel} =1.0%		
9	Environmental Vibration Instruments	Acceleration	V. R. of Environmental Vibration Instruments JJG 921	(0.1~30)m/s ² , (1~80)Hz	<i>U</i> _{rel} =1.0%		
10	Vibration Meters	Frequency	V. R. of Vibration Meters JJG 676	(0.1~5000)Hz	<i>U</i> _{rel} =0.2%	Absolute measurement method	
		Acceleration		(0.1~300)m/s ²	<i>U</i> _{rel} =1.0%		
		Velocity		(0.1~50)cm/s	<i>U</i> _{rel} =1.0%		
		Displacement		(0.01~10)mm	<i>U</i> _{rel} =1.0%		
11	Piezoelectric Accelerometer	Acceleration	V. R. of Piezoelectric Accelerometer JJG 233	(0.1~300)m/s ² , 16.25Hz	<i>U</i> _{rel} =0.5%	Absolute measurement method	
				(0.1~300)m/s ² , 160Hz	<i>U</i> _{rel} =0.5%		
				(0.1~300)m/s ² , (0.1~5000)Hz	<i>U</i> _{rel} =1.0%		
				(0.1~300)m/s ² , (5000~10000)Hz	<i>U</i> _{rel} =2.0%		
				(0.1~300)m/s ² , (10000~20000)Hz	<i>U</i> _{rel} =3.0%		
		phase		-180° ~ 180° ,16.25Hz	<i>U</i> =0.5°		
				-180° ~ 180° ,160Hz	<i>U</i> =0.5°		
				-180° ~ 180° ,(0.1~5000)Hz	<i>U</i> =1.0°		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
				-180° ~ 180°, (5000 ~ 10000)Hz	$U=2.0^\circ$		
III Flow measuring instrument							
1	Differential Pressure Flowmeters	flow	V. R. of Differential Pressure Flowmeters JJG 640	DN50~DN300, (16~6000)m³/h	$U_{rel}=0.45\% \sim 0.76\%$		
2	Vortex-shedding Flowmeter	flow	V. R. of Vortex-shedding Flowmeter JJG1029	DN50~DN300, (16~6000)m³/h	$U_{rel}=0.22\% \sim 0.30\%$		
3	Turbine Flowmeter	flow	V. R. of Turbine Flowmeter JJG 1037	DN50~DN300, (16~6000)m³/h	$U_{rel}=0.22\% \sim 0.31\%$		
4	Target Flowmeter	flow	V. R. of Target Flowmeter JJG 461	DN50~DN300, (16~6000)m³/h	$U_{rel}=0.28\% \sim 0.42\%$		
5	Ultrasonic Flowmeters	flow	V. R. of Ultrasonic Flowmeters JJG1030	DN50~DN300, (16~6000)m³/h	$U_{rel}=0.22\% \sim 0.30\%$		
6	Critical Flow Venturi Nozzle	flow	V. R. of Critical Flow Venturi Nozzle JJG 620	(0.016~1.6) m³/h	$U_{rel}=0.20\%$		
				(>1.6~1300) m³/h	$U_{rel}=0.16\%$		
7	Vortex Precession Flowmeters	flow	V. R. of Vortex Precession Flowmeters JJG 1121	DN50~DN300, (16~6000)m³/h	$U_{rel}=0.22\% \sim 0.30\%$		
8	Verification Facility of Compressed Natural Gas Dispensers	Flow	C. S. for Master Meter Method Verification Facility of Compressed Natural Gas Dispenser JJF 1583	(1~80) kg/min	$U_{rel}=0.12\%$		
9	Verification Facility of Compressed Hydrogen Dispensers	Flow	C. S. of Verification Facility of Compressed Hydrogen Dispensers NIMTT(CM) 014	(0.1~10) kg/min	$U_{rel}=0.24\%$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
10	Gas Displacement Meters	flow	V. R. of Gas Displacement Meters JJG 633	DN50~DN300,(16~6000)m³/h	U _{rel} =0.28%~0.22%		
11	Thermal Mass Gas Flowmeters	flow	V. R. of Thermal Mass Gas Flowmeters JJG 1132	DN50~DN300,(16~6000)m³/h	U _{rel} =0.22%~0.30%		
12	Verification Facility of Liquefied Natural Gas Dispensers	Flow	C. S. of Verification Facility of Liquefied Natural Gas Dispensers NIMTT(CM) 069	(1~80) kg/min	U _{rel} =0.13%		
13	Gas Mass Flow Meters	Flow	Calibration Specification of Gas Mass Flow Meters NIMTT(CM) 067	DN1~DN40, (0.1~80) kg/min	U _{rel} =0.16%		
IV Electromagnetism measuring instrument							
1	*large current generator and tester	Alternating current	Calibration specification for large current generator and tester NIMTT(CM) 109	0.01A~100000A, (45Hz~65Hz)	U _{rel} =0.5%		
		Direct current		0.01A~10000A	U _{rel} =0.5%		
2	Absorbing Clamp	Insert Loss	calibration specification for Absorbing Clamp in the range of 30MHz-10GHz JJF1155	(0~30)dB,(30MHz~1GHz)	U=2.0dB		
3	Fluxgate Magenetometer	Magnetic induction intensity	Calibration Specification for Fluxgate Magenetometer JJF 1519	(10~250)μT	U _{rel} =0.05%		
				100nT~10μT	U=5nT		
V Ionizing radiation measuring instrument							
1	ionization chamber dosimeters used in radiotherapy	Absorbed Dose Rate to Water	verification regulation of ionization chamber dosimeters used in radiotherapy JJG 912	(0.01~10)Gy/min	U _{rel} =1.2%		
		Air Kerma Rate		(0.01~10)Gy/min	U _{rel} =0.8%		



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		Kerma		(0.01~10)Gy	$U_{\text{rel}}=1.8\%$		
2	ionization chamber dosimeters used in radiotherapy	Absorbed Dose Rate to Water	Calibration specification of water absorbed dose of dosimeters with ionization chambers as used in radiotherapy JJF 1743	(0.01~10)Gy/min	$U_{\text{rel}}=1.2\%$		
		Air Kerma Rate		(0.01~10)Gy/min	$U_{\text{rel}}=0.8\%$		
		Kerma		(0.01~10)Gy	$U_{\text{rel}}=1.8\%$		
3	phantom for Medical Spiral Computed Tomography(CT)	density	phantom for Medical Spiral Computed Tomography(CT) NIMTT(CM) 038	(0.1~3)g/cm ³	$U=0.008 \text{ g/cm}^3$		
		the CT number		-1000 HU~1000 HU	$U=9.0 \text{ HU}$		
		length		(0.15~20)mm	$U=0.01 \text{ mm}$		
4	Phantom used in Computed Radiography (CR) and Digital Radiography (DR)	low contrast	Calibration Specification for Phantoms Used in Computed Radiography (CR) and Digital Radiography (DR) JJF 1927	0.1%~20%	$U=0.12\%$		
		length		(0.01~500)mm	$U=0.002 \text{ mm}$		
5	Image Quality Inspection Tool for X-ray	length	Image Quality Inspection Tool for X-ray NIMTT(CM) 034	(0.01~500)mm	$U=0.002 \text{ mm}$		
		Angle		0° ~20°	$U=0.1^\circ$		
6	Daily Checker	Absorbed dose	Calibration Specification for Beam Quality Inspection Instruments of Radiation Therapy JJF 1928	0.5 Gy~2.5 Gy	$U=0.024 \text{ Gy}$		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date
7	Dosimetry system for β radiation Protection	Dose equivalents	Dosimetry system for β radiation Protection NIMTT(CM) 044	100 μ Sv~1 Sv	<i>U</i> _{rel} =5.6%		
8	Radon Measuring Instruments	Activity	verification regulation of Radon Measuring Instruments JJG 825	(350~30000)Bq/m ³	<i>U</i> _{rel} =7.2%		
9	X,y Radiographic Phantoms	density	Calibration Specification for X,y Radiographic Phantoms NIMTT(CM) 176	(0.95~1.41)g/cm ³	<i>U</i> =0.002 g/cm ³		
		length		(0.40~700)mm	<i>U</i> =0.004 mm		
		low contrast		(0.1~10)mm	<i>U</i> =0.009 mm		
				0.3%~3.0%	<i>U</i> =0.39%		
VI Acoustics measuring instrument							
1	Standard Hydrophones in the Frequency Range 1 kHz~1 MHz	Sound Pressure Levels	Verification Regulation of Standard Hydrophones in the Frequency Range 1 kHz~1 MHz JJG 1017	(60~160)dB, (1~100)kHz	<i>U</i> =0.9dB		
				(60~160)dB, 100kHz~1MHz	<i>U</i> =1.1dB		
2	Standard Hydrophones in the Frequency Range 0.5 MHz to 5 MHz	Sound Pressure Levels	Verification Regulation of Standard Hydrophones in the Frequency Range 0.5 MHz to 5 MHz (Two-transducer Reciprocity Method) JJG 1070	(60~160)dB, 0.5MHz~5MHz	<i>U</i> =1.1dB		
3	Standard Hydrophones in the Frequency Range 500 Hz to 1 MHz	Sound Pressure Levels	Verification Regulation of Standard Hydrophones in the Frequency Range 500 Hz to 1 MHz(Free-field Comparison Method) JJG 185	(60~160)dB, 500Hz~100kHz	<i>U</i> =0.7dB		
				(60~160)dB, 100kHz~1MHz	<i>U</i> =0.9dB		



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№	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (<i>k</i> =2)	Note	Effective Date		
4	Omnidirectional Sound Sources	Sound Pressure Levels	Calibration Specification for Omnidirectional Sound Sources JJF 1468	(60~95)dB, (100~ 800)Hz	<i>U</i> =0.4dB				
		sound power level		(60~95)dB, (1~5)kHz	<i>U</i> =1.0dB				
				(40~140)dB, (100Hz~ 5kHz)	<i>U</i> =0.6dB				
5	Underwater Sound Transducers in 1 kHz to 200 kHz	Sound Pressure Levels	Calibration Specification for Underwater Sound Transducers in 1 kHz to 200 kHz JJF 1861	(100~200)dB,1kHz~ 200kHz	<i>U</i> =1.5 dB				
		Equivalent Electric Admittance Magnitude		10 μ S~1S	<i>U</i> _{rel} =10%				
VII Special measuring instrument									
1	MRI phantom	length	Calibration Specification for MRI Phantoms NIMTT(CM) 174	(0.45~0.56)cm	<i>U</i> _{rel} =2.1%				
				(0.625~1)cm	<i>U</i> _{rel} =1.6%				
				(1.25~5)cm	<i>U</i> _{rel} =0.3%				
		length		(0.90~1.12)cm	<i>U</i> _{rel} =1.6%				
				(1.25~2)cm	<i>U</i> _{rel} =1.1%				
				(2.5~10)cm	<i>U</i> _{rel} =0.6%				
		length		(0~1) mm	<i>U</i> =0.011mm				
		length		(0~6) mm	<i>U</i> =0.070mm				
		length		(0~150)mm	<i>U</i> =0.060mm				



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