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Registration No. CNAS L0893

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

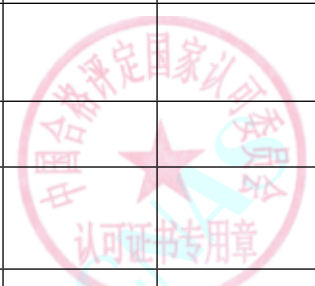
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CHINA NATIONAL ACCREDITATION SERVICE FOR CONFORMITY ASSESSMENT  
SCHEDULE OF ACCREDITATION CERTIFICATE

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
一、几何量测量仪器							
1	Hand-held Laser Distance Meters	Geometric Quantity	V.R.of Hand-held Laser Distance Meters JJG 966	(0~50)m	$U=0.59\text{mm}+8 \times 10^{-6}L$		
2	Laser Tracker 3-Dimensional Measuring System	Geometric Quantity	C.S. for Laser Tracker 3-Dimensional Measuring System JJF1242	(0~54.3)m	$U=5 \times 10^{-4}\text{mm}+1.5 \times 10^{-6}L$		
3	Terrestrial Laser Scanners	Geometric Quantity	Calibration Specification for Terrestrial Laser Scanners JJF 1406	(0~54.3)m	$U=0.6\text{mm}$		
4	High-precision Line Scale	Length	V. R. of High-precision Line Scale JJG 73	(0~1000)mm	$U=0.1 \mu\text{m}+1 \times 10^{-7}L(k=3)$		
5	Special Scale-bar's Length	Length	C.S. for the Special Scale-bar's Length JJF(chuan) 125	(0~5)m	$U=7 \mu\text{m}+3 \times 10^{-6}L$		
6	*Laser Interferometric Comparator	length	V. R. of Laser Interferometric Comparator JJG 331	(0~1000)mm	$U=0.10 \mu\text{m}+4 \times 10^{-7}L(k=3)$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
7	Rotating Lasers	angle	C. S. for Rotating Lasers JJF 1166	$(-3.4 \sim +3.4)^\circ$	$U=4''$		
8	Laser Interferometers	Length	V. R. of Laser Interferometers JJG 739	$(0 \sim 54.3) \text{ m}$	$U=0.15 \mu \text{ m} + 1 \times 10^{-7} L$		
9	Laser Micrometers	Length	C.S. for Laser Micrometers JJF 1663	$(-3 \sim +3) \text{ mm}$	$U=0.012\% \text{ FS}$		
				$(-100 \sim +100) \text{ mm}$	$U=0.008\% \text{ FS}$		
10	ballbar	Length	C. S. for Ballbar NIMTT(CM) 139	$(100 \sim 500) \text{ mm}$	$U=0.25 \mu \text{ m} + 6 \times 10^{-7} L$		
11	Standard stick of Measuring spheres	Length	V. R. for Standard stick of Measuring spheres JJG (jun gong) 177	$(0 \sim 2000) \text{ mm}$	$U=3.0 \mu \text{ m}$		
12	Frequency Modulated Laser Range Finder	length	C. S. for Frequency Modulated Laser Range Finder JJF(jun gong)172	$(0 \sim 54.3) \text{ m}$	$U=5 \times 10^{-3} \text{ mm} + 2.7 \times 10^{-4} L$		
13	Laser tracker	length	Calibration specification for the large scale coordinate measurement system-laser tracker GJB 8624	$(0 \sim 54.3) \text{ m}$	$U=5 \times 10^{-4} \text{ mm} + 1.5 \times 10^{-6} L$		
14	Linear displacement measuring device	Length	V. R. of grating linear displacement measuring device JJG 341	$(0 \sim 1) \text{ m}$	$U=0.27 \mu \text{ m}$		
				$(> 1 \sim 54.3) \text{ m}$	$U=1 \mu \text{ m} + 5 \times 10^{-7} L$		
15	Level Rod	Length	Verification Regulation of Level Rod JJG 8	$(0 \sim 5) \text{ m}$	$U=5 \mu \text{ m} + 4 \times 10^{-6} L$		
16	Invar Bar-Coded Levelling Staffs	Length	Verification Regulation of Invar Bar-Coded Levelling Staffs JJG 2102-2013 JJG 2102	$(0 \sim 5) \text{ m}$	$U=5 \mu \text{ m} + 4 \times 10^{-6} L$		
二、力学测量仪器							
1	Verification	Frequency	Verification Regulation of	$(0.1 \sim 5000) \text{ Hz}$	$U_{\text{rel}}=0.2\%$		

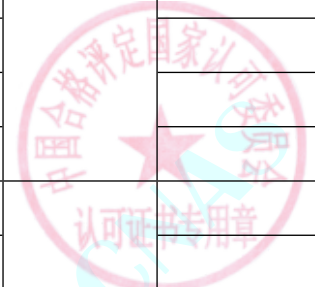
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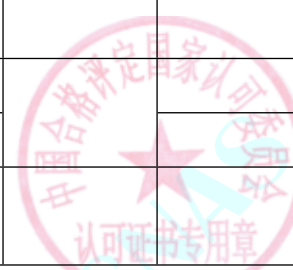
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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
	Regulation of Vibration meters	Acceleration	Vibration meters JIG 676	(0.1~300) m/s <sup>2</sup>	U <sub>rel</sub> =1.0%		
		Velocity		(0.1~50)cm/s	U <sub>rel</sub> =1.0%		
		Displacement		(0.01~10)mm	U <sub>rel</sub> =1.0%		
2	*Hydraulic Jacks	Force	Verification Regulation of Hydraulic Jacks JIG 621	(0.01~30)MN	U <sub>rel</sub> =0.5%		
3	Acceleration Sensor	Acceleration	Piezoelectrlc Accelerometer JIG 233	f:16.25Hz a:(0.1~300)m/s <sup>2</sup>	U <sub>rel</sub> =0.5%		
				f:160Hz a:(0.1~300)m/s <sup>2</sup>	U <sub>rel</sub> =0.5%		
				f:(0.1~5000)Hz a:(0.1~300)m/s <sup>2</sup>	U <sub>rel</sub> =1.0%		
4	Differential Pressure Flowmeters	flow	V. R. of Differential Pressure Flowmeters JIG 640	DN50~DN300,(16~6128)m <sup>3</sup> /h	U <sub>rel</sub> =0.45%~0.76%		
5	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 <sub>rel</sub> =0.13%		
6	Standard Dynamometers	Force	Verification Regulation of Standard Dynamometers JIG 144	(10N~1MN)	U <sub>rel</sub> =0.002%		
				(>1~3)MN	U <sub>rel</sub> =0.05%		
				(>3~10)MN	U <sub>rel</sub> =0.1%		
				(>10~30)MN	U <sub>rel</sub> =0.2%		
7	Load Cell	mass	Verification Regulation of Load Cell JIG 669	(1kg~100t)	U <sub>rel</sub> =0.002%		
				(>100~300)t	U <sub>rel</sub> =0.05%		
				(>300~500)t	U <sub>rel</sub> =0.1%		



No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
8	Force Transducers	Force	Verification Regulation of Force Transducers JJG 391	(10N~1MN)	$U_{rel}=0.002\%$		
				(>1~3)MN	$U_{rel}=0.05\%$		
				(>3~10)MN	$U_{rel}=0.1\%$		
				(>10~30)MN	$U_{rel}=0.2\%$		
9	Working Dynamometers	Force	Verification Regulation of Working Dynamometers JJG 455	(10N~1MN)	$U_{rel}=0.002\%$		
				(>1~3)MN	$U_{rel}=0.05\%$		
				(>3~10)MN	$U_{rel}=0.1\%$		
				(>10~30)MN	$U_{rel}=0.2\%$		
10	Velocity Flow Meter	flow	V. R. of Velocity Flow Meter JJG 198	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.22\%~0.30\%$		
11	Gas Displacement Meters	flow	V. R. of Gas Displacement Meters JJG 633	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.28\%~0.22\%$		
12	Turbine Flowmeter	flow	V. R. of Turbine Flowmeter JJG 1037	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.22\%~0.31\%$		
13	Target Flowmeter	flow	V. R. of Target Flowmeter JJG 461	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.28\%~0.42\%$		
14	Critical Flow Venturi Nozzle	flow	V. R. of Critical Flow Venturi Nozzle JJG 620	(0.016~1.6) m <sup>3</sup> /h	$U_{rel}=0.20\%$		
				(>1.6~1300) m <sup>3</sup> /h	$U_{rel}=0.16\%$		
15	Vortex Precession Flowmeters	flow	V. R. of Vortex Precession Flowmeters JJG 1121	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.22\%~0.30\%$		



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16	Verification Facility of Compressed Hydrogen Dispensers	Flow	C. S. of Verification Facility of Compressed Hydrogen Dispensers NIMTT(CM) 014	(0.1~10) kg/min	$U_{rel}=0.24\%$		
17	*Weights	Mass	V. R. of Weighs JJG 99	50kg~3t	$U=(0.1\sim 15)g$		
18	Thermal Mass Gas Flowmeters	flow	V. R. of Thermal Mass Gas Flowmeters JJG 1132	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.22\%\sim 0.30\%$		
19	Velocity Sensor	Velocity	Verification Regulation of Electromagnetic Velocity Transducer JJG 134	$f:16.25Hz, v:(0.1\sim 50)cm/s$	$U_{rel}=0.5\%$		
				$f:(0.1\sim 5000)Hz$ $v:(0.1\sim 50)cm/s$	$U_{rel}=1.0\%$		
20	Displacement Sensor	Displacement	Verification Regulation of Vibration Displacement Transducer JJG 644	Dynamic: $f:16.25Hz,$ $d:(0.01\sim 10)mm$	$U_{rel}=0.5\%$		
				Dynamic: $f:(0.1\sim 5000)Hz$ $d:(0.01\sim 10)mm$	$U_{rel}=1.0\%$		
21	Environmental vibratin level analyzer	Vibration Level	Noise—Vibration Meter for Measuring Envrionmental Pollution JJG 921	(1~80)Hz	$U_{rel}=1.0\%$		
22	Vortex-shedding Flowmeter	flow	V. R. of Vortex-shedding Flowmeter JJG1029	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.22\%\sim 0.30\%$		
23	Ultrasonic Flowmeters	flow	V. R. of Ultrasonic Flowmeters JJG1030	DN50~DN300,(16~6128)m <sup>3</sup> /h	$U_{rel}=0.22\%\sim 0.30\%$		
24	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	$U_{rel}=0.12\%$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
25	Gas Mass Flow Meters	Flow	Calibration Specification of Gas Mass Flow Meters NIMTT(CM) 067	DN1~DN40, (0.1~80) kg/min	$U_{rel}=0.16\%$		
三、声学测量仪器							
1	Measuring hydrophone	Sensitivity level	Standard Hydrophones in the Frequency Range 500 Hz to 1 MHz(Free-field Comparison Method) JJG 185	(-270~-180)dB, 1kHz~1MHz	$U=1.5dB$		
2	Standard hydrophone	Sensitivity level	Verification Regulation of Standard Hydrophones in the Frequency Range 1 kHz~1 MHz JJG 1017,Standard Hydrophones in the Frequency Range 0.5 MHz to 5 MHz (Two-transducer Reciprocity Method) JJG 1070	(-220~-160)dB, (1~100)kHz	$U=0.7dB$		
				(-220~-160)dB, > 100kHz~5MHz	$U=0.9dB$		
3	Omnidirectional Sound Sources	directivity index	Calibration Specification for Omnidirectional Sound Sources JJF 1468	(-60~60)dB, (100~800)Hz	$U=0.4dB$		
		sound power level		(-60~60)dB, (1~5)kHz	$U=1.0dB$		
				(40~140)dB, (100Hz~5kHz)	$U=0.6dB$		
四、电磁测量仪器							
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)	$U=2.0dB$		

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五、电离辐射测量仪器							
1	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, 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	$U_{rel}=0.8\%$		
		Kerma		(0.01~10)Gy	$U_{rel}=1.8\%$		
		Exposure Rate		(1~1000)×258 μC/(kg·min)	$U_{rel}=2.0\%$		
2	phantom for Medical Spiral Computed Tomography(CT)	density	phantom for Medical Spiral Computed Tomography(CT) NIMTT(CM) 038	(0.1~3) g/cm <sup>3</sup>	$U=0.008\text{g/cm}^3$		
		the CT number		-1000HU~1000HU	9.0HU		
		length		(0.15~20) mm	$U=0.01\text{mm}$		
3	Phantom used in Computed Radiography (CR) and Digital Radiography (DR)	low contrast	Phantom used in Computed Radiography (CR) and Digital Radiography (DR) NIMTT(CM) 036	0.1%~20%	$U=0.12\%$		
		length		(0.01~500) mm	$U=0.002\text{mm}$		
4	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) °	$U=0.1^\circ$		
5	Daily Checker	Absorbed dose	Calibration Specification for Daily Checker NIMTT(CM) 046	0.5Gy~2.5Gy	$U=0.024\text{Gy}$		



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No	Instrument	Measurand	Calibration Method	Range	Expanded Uncertainty (k=2)	Note	Effective Date
6	Dosimetry system for $\beta$ radiation Protection	Dose equivalents	Dosimetry system for $\beta$ radiation Protection NIMTT(CM) 044	100 $\mu$ Sv~1 Sv	$U_{rel}=5.6\%$		
7	Radon Measuring Instruments	Activity	verification regulation of Radon Measuring Instruments JIG 825	(100~12000) Bq/m <sup>3</sup>	$U_{rel}=7.1\%$		



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