



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

TAI YI ELECTRONICS & SURVEILLANCE CO., LTD. CALIBRATION LABORATORY

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CALIBRATION

Valid To: August 31, 2025

Certificate Number: 6277.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 4}:

I. Chemical

Parameter/Equipment	Range	CMC ² (±)	Comments
pH – Measuring Equipment ³	4 pH 7 pH 10 pH	0.02 pH 0.02 pH 0.03 pH	pH buffer solutions Calibrated electric pH meter
Conductivity – Measuring Equipment	Nominal 84 µS/cm Nominal 1413 µS/cm Nominal 12880 µS/cm	0.83 % 0.78 % 0.78 %	Conductivity standard solution
Viscometer – Measuring Equipment (Rotational Devices)	Nominal 10 cP Nominal 100 cP Nominal 1000 cP Nominal 5000 cP Nominal 12500 cP Nominal 30000 cP Nominal 60000 cP Nominal 100 000 cP	0.32 % 0.35 % 0.38 % 0.39 % 0.44 % 0.42 % 0.41 % 0.52 %	Viscosity standard solution

II. Dimensional

Parameter/Equipment	Range	CMC ² (±)	Comments
Vernier Caliper – Resolution: 0.02 mm Resolution: 0.05 mm	Inside & Outside Diameter: Up to 600 mm Up to 600 mm	0.02 mm 0.05 mm	Caliper checker
Dial Caliper – Resolution: 0.01 mm Resolution: 0.02 mm Resolution: 0.05 mm	Inside & Outside Diameter: Up to 200 mm Up to 300 mm Up to 300 mm	0.02 mm 0.04 mm 0.05 mm	Caliper checker
Digital Caliper	Inside & Outside Diameter: Up to 600 mm	0.02 mm	Caliper checker
Indicator	Measuring Range: Up to 1 mm Up to 12.7 mm Up to 25.4 mm Up to 50 mm	0.00085 mm 0.00089 mm 0.0011 mm 0.0015 mm	I-checker
Angle (Rotation Device, Encoder,- Anemometer Wind Direction, Wind Direction Sensor)	(0 to 360)°	0.43°	Anemometer
Angle (Ultrasonic Anemometer, Wind Direction Sensor)	(0 to 360)°	0.93°	Anemometer @Air velocity 10 m/s

III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
DC Voltage – Generate ³	(1 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (100 to 1000) V (1 to 5) kV (5 to 10) kV	19 µV/V 8.3 µV/V 6.9 µV/V 9.3 µV/V 12 µV/V 0.74 mV/V 0.73 mV/V	(Includes calibration of meter accuracy) Multifunction calibrators Precision high voltage meter Precision high voltage probe
DC Voltage – Measure ³	(1 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (100 to 1000) V (1 to 5) kV (5 to 10) kV	12 µV/V 4.9 µV/V 5.0 µV/V 7.0 µV/V 9.1 µV/V 0.73 mV/V 0.73 mV/V	Reference multimeter Precision high voltage meter Precision high voltage probe
DC Current – Generate ³	(1 to 100) µA (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A (1 to 10) A (10 to 100) A	0.13 mA/A 58 µA/A 56 µA/A 92 µA/A 0.26 mA/A 0.69 mA/A 0.25 mA/A	(Includes calibration of meter accuracy) Multifunction calibrators Transconductance amplifier
Clamp-On	10 mA to 10 A (10 to 100) A (100 to 2000) A	0.39 mA/A 0.32 mA/A 0.21 mA/A	Multifunction calibrators with current coil

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
DC Current – Measure ³	(1 to 100) μ A (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A (1 to 10) A (10 to 100) A	38 μ A/A 32 μ A/A 33 μ A/A 70 μ A/A 0.24 mA/A 0.52 mA/A 0.18 mA/A	Reference multimeter Multiple current shunt
Clamp-On	10 mA to 10 A (10 to 100) A (100 to 2000) A	0.39 mA/A 0.32 mA/A 0.21 mA/A	Precision current transducer
Resistance – Generate Fixed Points	10 $\mu\Omega$ 100 $\mu\Omega$ 1 m Ω 10 m Ω 100 m Ω 1 Ω 10 Ω 100 Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω 10 M Ω 100 M Ω	3.9 m Ω/Ω 0.62 m Ω/Ω 0.22 m Ω/Ω 0.37 m Ω/Ω 0.26 m Ω/Ω 0.21 m Ω/Ω 31 $\mu\Omega/\Omega$ 17 $\mu\Omega/\Omega$ 15 $\mu\Omega/\Omega$ 14 $\mu\Omega/\Omega$ 17 $\mu\Omega/\Omega$ 37 $\mu\Omega/\Omega$ 64 $\mu\Omega/\Omega$ 0.30 m Ω/Ω	Multifunction calibrators Multiple current shunt standard resistance

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
DC Current – Shunt ³	(1 to 10) A (10 to 100) A	0.25 mV/V 0.25 mV/V	Reference multimeter Multifunction calibrators Transconductance amplifier
DC Power – Generate ³	50 mW to 10 kW	0.95 mW/W	Multifunction calibrators
Resistance – Generate ³	(10 to 100) $\mu\Omega$ (0.1 to 1) m Ω (1 to 10) m Ω (10 to 100) m Ω (0.1 to 1) Ω (1 to 10) Ω (10 to 100) Ω 100 Ω to 1 k Ω (1 to 10) k Ω (10 to 100) k Ω 100 k Ω to 1 M Ω (1 to 10) M Ω (10 to 100) M Ω 100 M Ω to 1 G Ω (1 to 10) G Ω (10 to 100) G Ω 100 G Ω to 1 T Ω	0.97 m Ω / Ω 0.66 m Ω / Ω 0.47 m Ω / Ω 0.27 m Ω / Ω 0.24 m Ω / Ω 0.13 m Ω / Ω 45 $\mu\Omega$ / Ω 28 $\mu\Omega$ / Ω 28 $\mu\Omega$ / Ω 28 $\mu\Omega$ / Ω 38 $\mu\Omega$ / Ω 0.37 m Ω / Ω 1.2 m Ω / Ω 1.1 m Ω / Ω 2.4 m Ω / Ω 12 m Ω / Ω 27 m Ω / Ω	(Includes calibration of meter accuracy) Multiple current shunt standard resistance Decade resistor High resistance
Resistance – Measure ³	(10 to 100) $\mu\Omega$ (0.1 to 1) m Ω (1 to 10) m Ω (10 to 100) m Ω (0.1 to 1) Ω (1 to 10) Ω (10 to 100) Ω 100 Ω to 1 k Ω (1 to 10) k Ω (10 to 100) k Ω 100 k Ω to 1 M Ω (1 to 10) M Ω (10 to 100) M Ω 100 M Ω to 1 G Ω (1 to 10) G Ω (10 to 100) G Ω 100 G Ω to 1 T Ω	1.7 m Ω / Ω 1.3 m Ω / Ω 0.70 m Ω / Ω 0.29 m Ω / Ω 0.31 m Ω / Ω 15 $\mu\Omega$ / Ω 13 $\mu\Omega$ / Ω 11 $\mu\Omega$ / Ω 10 $\mu\Omega$ / Ω 11 $\mu\Omega$ / Ω 30 $\mu\Omega$ / Ω 43 $\mu\Omega$ / Ω 0.28 m Ω / Ω 0.68 m Ω / Ω 1.7 m Ω / Ω 1.9 m Ω / Ω 17 m Ω / Ω	Reference multimeter Multiple current shunt High resistance meter

Parameter/Range	Frequency	CMC ^{2, 6} (±)	Comments
AC Voltage – Generate ³ (10 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (100 to 1000) V (1 to 5) kV (5 to 10) kV	40 Hz to 10 kHz 60 Hz 60 Hz	0.29 mV/V 0.17 mV/V 0.17 mV/V 0.17 mV/V 0.27 mV/V 1.5 mV/V 1.4 mV/V	(Includes calibration of meter accuracy) Multifunction calibrators Precision high voltage meter Precision high voltage probe
AC Voltage – Measure ³ (10 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (100 to 1000) V (1 to 5) kV (5 to 10) kV	40 Hz to 10 kHz 60 Hz 60 Hz	0.23 mV/V 0.16 mV/V 0.16 mV/V 0.16 mV/V 0.18 mV/V 1.5 mV/V 1.4 mV/V	Reference multimeter Precision high voltage meter Precision high voltage probe
AC Current – Generate ³ (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A (1 to 10) A (10 to 100) A Clamp – On 10 mA to 10 A (10 to 100) A (100 to 2000) A	40 Hz to 1 kHz 60 Hz 40 Hz to 1 kHz 60 Hz 60 Hz	0.61 mA/A 0.61 mA/A 0.59 mA/A 1.0 mA/A 1.3 mA/A 0.40 mA/A 0.44 mA/A 0.36 mA/A 0.29 mA/A	(Includes calibration of meter accuracy) Multifunction calibrators Transconductance amplifier Multifunction calibrators with current coil
AC Current – Measure ³ (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A (1 to 10) A (10 to 100) A	40 Hz to 1 kHz 60 Hz	0.59 mA/A 0.59 mA/A 0.58 mA/A 0.96 mA/A 1.2 mA/A 0.28 mA/A	Reference multimeter Multiple current shunt

Parameter/Range	Frequency	CMC ^{2, 6} (±)	Comments
AC Current – Measure ³ (cont) Clamp – On 10 mA to 10 A (10 to 100) A (100 to 2000) A	40 Hz to 1 kHz 60 Hz 60 Hz	0.44 mA/A 0.36 mA/A 0.29 mA/A	Precision current transducer
AC Current – Shunt ³ (1 to 10) A (10 to 100) A	60 Hz	0.55 mV/V 0.44 mV/V	Reference multimeter Multifunction calibrators transconductance Amplifier
AC Power – Generate ³ PF = 1 50 mW to 10 kW	60 Hz	2.3 mW/W	Multifunction calibrators
AC Power – Measure ³ PF = 1 50 mW to 10 kW	60 Hz	1.6 mW/W	Precision power analyzer

Parameter	Range	CMC ^{2, 6} (±)	Comments
Oscilloscopes – Amplitude (1 kHz Square wave) @1 MΩ @50 Ω	10 mV to 100 V 10 mV to 5 V	0.6 % 0.6 %	Oscilloscope calibrator & active Head
Oscilloscopes – Time Mark	400 ps to 1 s	0.05 %	Oscilloscope calibrator & active head

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
Defibrillator Analyzer– Pacemaker Ampere Pulse Width Pulse per Minutes	(10 to 100) mA (5 to 50) ms (30 to 240) PPM	0.058 A/A 0.058 s/s 0.058 Hz/Hz	Function generator
ECG – Measure	(30 to 300) BPM	0.0058 Hz/Hz	Oscilloscope
Energy – Defibrillator Monophasic Biphasic	(1 to 10) J (10 to 360) J (1 to 10) J (10 to 200) J	84 mJ/J 17 mJ/J 84 mJ/J 18 mJ/J	Defibrillator analyzer
Energy – Defibrillator Analyzer Monophasic Biphasic	(1 to 10) J (10 to 360) J (1 to 10) J (10 to 200) J	80 mJ/J 10 mJ/J 80 mJ/J 10 mJ/J	Defibrillator calibrator
Electrical Calibration of Thermocouple Indicating Instrument – Generate & Measure ³ TYPE B TYPE E TYPE J TYPE K TYPE N TYPE R TYPE S	(600 to 1820) °C (-250 to 0) °C (0 to 1000) °C (-200 to 0) °C (0 to 1200) °C (-250 to 0) °C (0 to 1372) °C (-250 to 0) °C (0 to 1300) °C (0 to 1768) °C (0 to 1768) °C	0.99 °C 0.90 °C 0.32 °C 0.90 °C 0.32 °C 0.90 °C 0.32 °C 0.90 °C 0.32 °C 0.99 °C 0.99 °C	Calibrator with ITS-90 table conversion, temperature simulator

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
Electrical Calibration of Thermocouple Indicating Instrument – Generate & Measure ³ (cont)			
TYPE T	(-250 to 0) °C (0 to 400) °C	0.90 °C 0.32 °C	Calibrator with ITS-90 table conversion, temperature simulator
Electrical Calibration of RTD Indicating Instrument – Generate & Measure ³			
PT100 JPT100 PT1000	(-200 to 850) °C (-200 to 600) °C (-200 to 850) °C	0.17 °C 0.17 °C 0.17 °C	Calibrator with IEC 751 & JIS C1604 table conversion, temperature simulator

IV. Fluid Quantities

Parameter/Equipment	Range	CMC ² (±)	Comments
Volume – Measuring Equipment			Gravimetric method
Pipettes, Graduated Pipettes, Glass Volumetric Pipettes, Moore Measuring Pipettes, Serum Measuring Pipettes	Up to 1 mL ≤ 2 mL ≤ 25 mL ≤ 50 mL ≤ 100 mL	1.2 µL 2.2 µL 11 µL 22 µL 52 µL	
Pipettes, One-Mark Pipettes, Single-Volume Pipettes, Glass Volumetric Pipettes, Bulb Pipettes	Up to 1 mL ≤ 10 mL ≤ 30 mL ≤ 50 mL ≤ 100 mL	1.2 µL 1.5 µL 2.6 µL 4.6 µL 8.3 µL	

Parameter/Equipment	Range	CMC ² (±)	Comments
Volume – Measuring Equipment cont.			Gravimetric method
Burettes	Up to 1 mL	2.2 µL	
Burets	≤ 2 mL	3.0 µL	
AutoZero Burettes	≤ 10 mL	4.3 µL	
Return-Flow Burettes	≤ 25 mL	5.7 µL	
	≤ 50 mL	11 µL	
Cylinders, Graduated Volumetric Cylinder, Volumetric Container, (Graduated) Measuring Cylinders, Vessels, Beakers, Maatbekers, Centrifuge Tubes Measuring Cup	Up to 0.2 mL ≤ 2 mL ≤ 5 mL ≤ 10 mL ≤ 50 mL ≤ 100 mL ≤ 250 mL ≤ 500 mL ≤ 1000 mL ≤ 2000 mL ≤ 5000 mL	0.22 µL 4.2 µL 0.011 mL 0.022 mL 0.042 mL 0.11 mL 0.21 mL 0.52 mL 1.1 mL 2.1 mL 4.2 mL	
Flasks, Volumetric Flasks, Volumetric Container, Specific gravity Bottle, One-Mark Volumetric Flasks, One-Mark(Volumetric) Flasks, Pycnometer, Pyknometer, Picnometer, Density Bottle, Lee Pycnometer, La Chatelier Pycnometer, Metal Pycnometer	Up to 5 mL ≤ 10 mL ≤ 25 mL ≤ 50 mL ≤ 100 mL ≤ 250 mL ≤ 500 mL ≤ 1000 mL ≤ 2000 mL ≤ 5000 mL	0.0044 mL 0.0045 mL 0.0074 mL 0.0090 mL 0.019 mL 0.034 mL 0.055 mL 0.092 mL 0.18 mL 0.38 mL	

Parameter/Equipment	Range	CMC ² (±)	Comments
Piston Operated Volumetric Apparatus –Measuring Equipment			Gravimetric method
Micropipettes, Micro Pipettes, Multi-channel(Micro)Pipettes, Single-channel (Micro)Pipettes, Electronic Micropipettes, Piston (Micro)Pipettes, Pipettes	Up to 2.5 µL ≤ 10 µL ≤ 20 µL ≤ 100 µL ≤ 300 µL ≤ 1200 µL ≤ 5000 µL ≤ 10000 µL	0.016 µL 0.017 µL 0.019 µL 0.061 µL 0.12 µL 0.59 µL 1.3 µL 5.9 µL	
Syringes, Fixed Syringes, Gas Tight Syringes, Micro(liter) Syringes, Micro Injection Devices	Up to 1 µL ≤ 10 µL ≤ 25 µL ≤ 50 µL ≤ 100 µL ≤ 250 µL ≤ 1000 µL ≤ 5 mL ≤ 10 mL ≤ 100 mL	0.015 µL 0.022 µL 0.044 µL 0.084 µL 0.17 µL 0.42 µL 0.83 µL 4.2 µL 8.3 µL 83 µL	
Burets, Burettes, Titrators, Piston Apparatus, Automatic Titrators, (Automatic) Piston Burettes, Digital Bottleneck Burettes	Up to 1 mL ≤ 5 mL ≤ 10 mL ≤ 15 mL ≤ 20 mL ≤ 25 mL ≤ 50 mL	0.61 µL 0.66 µL 0.81 µL 1.1 µL 1.3 µL 6.1 µL 6.8 µL	
Dispensers, Electric Dispensers, Dilutors, (Automatic) Dilutors, (Automatic) Dilutors, (Bottle Top / Syringe) Dispensers, Liquid Handlers	Up to 10 µL ≤ 100 µL ≤ 200 µL ≤ 500 µL ≤ 1200 µL ≤ 2500 µL ≤ 5 mL ≤ 10 mL ≤ 25 mL ≤ 50 mL ≤ 100 mL	0.060 µL 0.061 µL 0.12 µL 0.30 µL 0.59 µL 1.5 µL 3.0 µL 5.9 µL 12 µL 30 µL 1.2 mL	

Parameter/Equipment	Range	CMC ² (±)	Comments
Density Meters – Measuring Equipment	(0.650 to 1.000 g/cm ³ (1.000 to 1.623) g/cm ³	0.00012 g/cm ³ 0.00013 g/cm ³	Standard solutions
Hydrometers – Measuring Equipment Hydrometers, Density Meters, Specific Gravity Meters, Specific Gravity (Relative Density) Hydrometers – Digital, Float Type Including but not limited to Relative Density & Other Related Conversions: g/ml, g/cm ³ , kg/m ³ , kg/L, Balling, NaCl, CaCl ₂ , Quevenne	(0.700 to 1.623) g/cm ³ (0.700 to 1.623) SG	0.0002 g/cm ³ 0.0002 SG	Density meter
Baumé Hydrometers – Measuring Equipment Including but not limited to Relative Density & Other Related Conversions: g/ml, g/cm ³ , kg/m ³ , kg/L, Balling, NaCl, CaCl ₂ , Quevenne	Up to 55 °Bé	0.08 °Bé	Density meter
Brix - Measuring Equipment Electric Sugar Meters, Brix Meters, Refractometers, Brix Refractometers, Brix Vernier Sugar Meters, (Hand Held) Brix Refractometers – Digital, Scale	(0 to 60) °Brix	0.04 °Brix	Density meter

Parameter/Equipment	Range	CMC ² (±)	Comments
Air Velocity– Measuring Equipment			
Anemometer, Vane, Cup, Thermal, Pitot, Ultrasonic Style, Air Velocity Transducer& Similar Equipment	(0.2 to 1) m/s (1 to 5) m/s (5 to 10) m/s (10 to 20) m/s (20 to 30) m/s	0.04 m/s 0.10 m/s 0.21 m/s 0.34 m/s 0.44 m/s	Wind tunnel, anemometer

V. Mechanical

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Pressure – Measuring Equipment ³			
Pneumatic	(0 to 100) kPa (0 to 4) MPa	0.015 kPa 0.00062 MPa	Pressure indicator, Pressure calibrator
Hydraulic	(0 to 7) MPa (7 to 70) MPa	0.0017 MPa 0.013 MPa	Pressure indicator
Differential	(-250 to 250) Pa (-2500 to 2500) Pa	0.9 Pa 1.2 Pa	Pressure indicator, Pressure calibrator
Barometer	(800 to 1100) hPa	0.18 hPa	Pressure indicator
Scales & Balances ³ (Repeatability & Eccentricity)	(1 to 500) mg >500 mg to 2 g (>2 to 5) g (>5 to 100) g (>100 to 200) g (>200 to 500) g >500 g to 2 kg (>2 to 5) kg (>5 to 6) kg (>6 to 15) kg (>15 to 30) kg	0.0031 mg 0.006 mg 0.009 mg 0.05 mg 0.09 mg 0.4 mg 1.2 mg 5 mg 8 mg 16 mg 29 mg	OIML Class E2 weights, OIML Class F1 weights

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Torque – Measuring Equipment			
Wrenches	(0.3 to 2) N·m	2.2 % (CW) 2.2 % (CCW)	Digital torque transducer with loader
	(2 to 10) N·m	1.0 % (CW) 1.1 % (CCW)	
	(10 to 25) N·m	1.2 % (CW) 1.1 % (CCW)	
	(25 to 150) N·m	0.83 % (CW) 0.81 % (CCW)	
	(150 to 1500) N·m	0.72 % (CW) 0.73 % (CCW)	
Screwdrivers	(0.3 to 1) N·m	1.5 % (CW) 1.6 % (CCW)	
	(1 to 4) N·m	0.97 % (CW) 0.95 % (CCW)	
	(4 to 10) N·m	1.1 % (CW) 1.1 % (CCW)	
Mass-Mass Standard, Weights & Weight Sets			OIML Class E2 weights
Metric, Fixed points	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg	0.0009 mg 0.0009 mg 0.0012 mg 0.0008 mg 0.0011 mg 0.0012 mg 0.0020 mg 0.0020 mg 0.003 mg	

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Mass-Mass Standard, Weights & Weight Sets cont.			OIML Class E2 weights
Metric, Fixed points	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.003 mg 0.005 mg 0.005 mg 0.03 mg 0.03 mg 0.03 mg 0.04 mg 0.07 mg 0.3 mg 0.3 mg 1.0 mg 3 mg 12 mg 16 mg	
Weights- Dead Weight	(1 to < 500) mg (0.5 to 5) g (>5 to 200) g (> 200 to 2000) g (>2 to 5) kg (>5 to 20) kg (>20 to 30) kg	0.014 mg 0.04 mg 0.15 mg 2.1 mg 4 mg 52 mg 0.14 g	OIML Class E2 weights

VI. Thermodynamics

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Temperature– Measure ³ (PRT,RTDs, Platinum Resistance Thermometer, Resistance Thermo Detector, Digital Thermometer, Ambient Thermometer, Liquid-in -glass Thermometer, Temperature Transmitter, Pointer Thermometer, Surface Thermometer, Thermocouple Thermometer Type B/E/J/K/N/R/S/T)	-196 °C (-95 to 50) °C (>50 to 300) °C (>300 to 600) °C (>600 to 1200) °C	0.066 °C 0.066 °C 0.092 °C 0.18 °C 0.76 °C	PRT with precision thermometer readout, R type thermocouple, temperature baths (oil, distilled water, alcohol, dry well)
Temperature – System Accuracy ³ (Temperature Controlled Chamber, Temperature Furnace, Freezers, Curing Tank, Oven, Chamber, & Liquid Bath, LN ₂ Tank)	-196 °C (-95 to 300) °C (>300 to 600) °C (>600 to 1200) °C	0.066 °C 0.081 °C 0.19 °C 0.76 °C	PRT with precision thermometer readout, R type thermocouple; liquid nitrogen
Uniformity Survey of Temperature ³	(-95 to -65) °C (>-65 to 105) °C (>105 to 180) °C (>180 to 250) °C (>250 to 500) °C	1.9 °C 1.2 °C 1.3 °C 1.7 °C 2.9 °C	Data acquisition, data logger, thermos hygrometer
Relative Humidity – Measure ³ (Hygrometer, Thermo Hygrometer, Temperature & Humidity Transmitter, Dry & Wet Bulb Thermometer, Temperature & Humidity Recorder, Thermo Hygrograph, Hair Hygrometer)	(1 to 10) %RH @ (20 to 40) °C (10 to 96) %RH @ (10 to 40) °C (>96 to 98) % RH @ (10 to 40) °C (10 to 98) %RH @ (40 to 90) °C	1.1 %RH 1.6 %RH 2.6 %RH 2.9 %RH	Thermo hygrometer, humidity meter humidity calibration systems

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Relative Humidity Generating Devices ³ (Environmental Chamber, Climate Chamber)	(10 to 96) %RH @ (10 to 40) °C	3.3 %RH	Thermo hygrometer, humidity meter
	(>96 to 98) % RH @ (10 to 40) °C	3.5 %RH	
	(10 to 98) %RH @ (40 to 90) °C	3.5 %RH	

VII. Time & Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Rotation Speed – Measure	Photo/Non-Contact (6 to 600) rpm (600 to 30 000) rpm (30 000 to 180 000) rpm	0.00078 rpm 0.039 rpm 0.24 rpm	Frequency counter
Rotation Speed – Measuring equipment	Photo/Non-Contact (6 to 600) rpm (600 to 30 000) rpm (30 000 to 180 000) rpm	0.00078 rpm 0.039 rpm 0.24 rpm	Function generator,
	Contact (6 to 600) rpm (600 to 5000) rpm (5000 to 30 000) rpm	0.090 rpm 0.62 rpm 3.7 rpm	Tachometer Tacho System
Rotation Device ³ – Digital/Mechanical Centrifuges	Rotation Device (6 to 600) rpm (600 to 5000) rpm (5000 to 30000) rpm	0.073 rpm 0.62 rpm 3.7 rpm	Tachometer
Stopwatches (Time Direct Comparison) ³	1s to 9 h 59 m 59.999 s	0.30 s	Stopwatches

Parameter/Equipment	Range	CMC ² (±)	Comments
Frequency – Time Base	10 MHz	Aging rate 1.2×10^{-9} Hz/Hz, yearly	Rubidium frequency frequency counter
	32768 Hz	1.8×10^{-6} Hz/Hz per second	Function generator, quartz watch clock analyzer
Frequency – Measuring equipment	0.1 Hz to 100 MHz 100 MHz to 40 GHz	2.4×10^{-9} Hz/Hz 4.0×10^{-10} Hz/Hz	(Includes calibration of meter accuracy) Rubidium frequency Signal generator
Frequency – Measure	0.1 Hz to 100 MHz 100 MHz to 40 GHz	2.4×10^{-9} Hz/Hz 4.0×10^{-10} Hz/Hz	Rubidium frequency Frequency counter
Frequency – Measuring equipment ³	0.1 Hz to 100 MHz	1.3×10^{-8} Hz/Hz	(Includes calibration of meter accuracy) Signal generator
Frequency – Measure ³	0.1 Hz to 100 MHz	1.3×10^{-8} Hz/Hz	Frequency counter

¹ This laboratory offers commercial calibration services and field services.

² Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the Calibration and Measurement Capability Uncertainty (CMC) found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the uncertainty introduced by the item being calibrated, (e.g., resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ This scope meets A2LA's *P112 Flexible Scope Policy*.

⁵ The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

⁶The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMC's are expressed as either a specific value that covers the full range or as a percentage or fraction of the reading plus a fixed floor specification.



Accredited Laboratory

A2LA has accredited

TAI YI ELECTRONICS & SURVEILLANCE CO., LTD. CALIBRATION LABORATORY

New Taipei City, REPUBLIC OF CHINA TAIWAN

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 7th day of August 2023.

A blue ink signature of Mr. Trace McInturff, written in a cursive style.

Mr. Trace McInturff Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 6277.01
Valid to August 31, 2025
Revised August 15, 2023

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.