



No. 077

South China National Centre of Metrology
華南國家計量測試中心

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CLIENTELE : Public
服務對象 : 公眾

ACCREDITED TEST CATEGORIES : Calibration Services 校正服務
認可測試類別

SCOPE OF ACCREDITATION : As shown on the following pages 詳見後頁
認可範圍

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TEST CATEGORY 測試類別	ITEMS, MATERIALS OR PRODUCTS TESTED 測試項目、材料或產品	SPECIFIC TESTS OR PROPERTIES MEASURED 特定測試或量度的特性	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)* 以不確定度表示最佳測量能力(\pm)*
CALIBRATION SERVICES 校正服務	Mechanical metrology instruments : - - Angle measurement equipment :- - Angle gauges 0° to 360° - Angular polygons 360° - Levels - bubble level, DS1 & DS3 - automatic level, DSZ1 & DSZ3 - Levels, 0.001 mm/m to 0.2 mm/m - split image type - electronic type - frame type and rod type - Level rules, 0.5 mm/m to 10 mm/m - Optical theodolites - DJ ₁ & DJ ₂ - DJ ₆ - Precise angle dividing tables 360° - Protractors 360° - Division 2° - Division 5° - Division 10° - Dial type	Verification of angle gauge to the following grades in accordance with JIG 70-2004 :- Grade 0 Grade 1 and 2 Verification of angular polygon in accordance with JIG 283-2007 Verification of level in accordance with JIG 425-2003 using standard light tube Verification of level in accordance with JIG 103-2005 using small angle measurement machine Verification of level in accordance with JIG 103-2005 using small angle measurement machine Verification of level in accordance with JJF 1084-2002 using level tester Verification of level rule in accordance with JJF 1085-2002 Verification of optical theodolite in accordance with JIG 414-2003 using parallel light tube Verification of precise angle dividing table in accordance with JIG 472-2007 Verification of universal bevel protractor in accordance with JIG 33-2002	1.2 seconds of arc (level of confidence P = 99%) 1.8 seconds of arc (level of confidence P = 99%) 0.4 second of arc 2.7 seconds of arc 2.4 seconds of arc 0.002 mm/m 0.001 mm/m for a resolution of 0.001 mm/m 0.014 mm/m for a resolution of 0.01 mm/m 4 % 8 % 0.2 second of arc 1.5 second of arc 0.08 second of arc (level of confidence P = 99%) 1 minute of arc 2.5 minutes of arc 5 minutes of arc 2 minutes of arc

* A REPORTED UNCERTAINTY WILL BE THAT FOR THE INSTRUMENT ITSELF DURING CALIBRATION PLUS THE APPROPRIATE MEASUREMENT CAPABILITY OF THE LABORATORY. THE UNCERTAINTIES ARE BASED ON AN ESTIMATED LEVEL OF CONFIDENCE OF 95%.

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CALIBRATION SERVICES (cont'd) 校正服務(續上)	Mechanical metrology instruments :- (cont'd) - Dimension measurement equipment :- (cont'd) - Feeler gauges 0.02 mm to 1.00 mm - Gauge blocks 0.5 mm to 100 mm 0.5 mm to 100 mm 125 mm to 500 mm 600 mm to 1000 mm - Height calipers up to 2000 mm - Inductive micrometers ±1 mm - Level rods 3 m to 5 m - Micrometers - External 0 mm to 500 mm - Internal 50 mm to 2000 mm - Numerically controlled machine tools 0 m to 2 m 0 m to 10 m	Verification of feeler gauge in accordance with JJG 62-2007 Verification of gauge block to the following grades in accordance with JJG 146-2003:- Grade 3 (by electronic comparator) Grade 3 (by contact interferometer) Grade 3 (by interferometer) Grade 4 (by length measurement machine) Verification of height caliper in accordance with JJG 31-1999 graduation interval of 0.01 mm graduation interval of 0.02 mm graduation interval of 0.05 mm Verification of inductive micrometers in accordance with JJG 396-2002 Verification of level rod in accordance with JJG 8-1991 Verification of micrometer with measuring range up to 500 mm in accordance with JJG 21-2008 Verification of internal micrometer in accordance with JJG 22-2003 Numerically controlled machine tools - determination of accuracy and repeatability of positioning in accordance with GB/T 17421.2-2000	1 μm 0.07 μm to 0.17 μm 0.09 μm to 0.17 μm 0.2 μm to 0.6 μm 1.1 μm to 1.8 μm (level of confidence P = 99%) 0.01 mm to 0.07 mm 0.01 mm to 0.07 mm 0.03 mm to 0.07 mm 0.03 μm for a resolution of 0.1 μm 0.07 μm for a resolution of 0.2 μm 0.20 μm for a resolution of 0.5 μm 0.28 μm for a resolution of 1 μm 0.7 μm for a resolution of 2 μm 2 μm for a resolution of 5 μm to 10 μm 0.7 to 0.9 mm 0.7 μm to 2.1 μm (digital type) 1.1 μm to 5.1 μm (division type) 2 μm to 15 μm 4 μm 29 μm

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CALIBRATION SERVICES (cont'd) 校正服務(續上)	Mechanical metrology instruments : - (cont'd) - Dimension measurement equipment :- (cont'd) - Projectors with a reading range of 0 mm to 200 mm - Steel rules 0 mm to 2000 mm - Steel tapes 0 m to 200 m - Thickness gauges - Coating thickness gauges - Eddy current type, 12 μ m to 1250 μ m - Magnetic resistance type, 12 μ m to 1250 μ m - Ultrasonic type 0 mm to 200 mm - Film thickness gauges 0 mm to 5 mm 0 mm to 10 mm 0 mm to 30 mm - Three coordinates measuring machines 0 m to 2 m	Verification of projector in accordance with JJF 1093-2002 over the following ranges:- 0 mm to 25 mm 0 mm to 100 mm 0 mm to 200 mm Verification of steel rule in accordance with JJG 1-1999 Verification of steel tape in accordance with JJG 4-1999 Verification of eddy current thickness gauge in accordance with JJG 818-2005 Verification of magnetic resistance thickness gauge in accordance with JJG 818-2005 Verification of ultrasonic thickness gauge in accordance with JJF 1126-2004 Calibration of film thickness gauge according to in-house method FFC200001/06 Graduation interval of 0.001 mm Graduation interval of 0.01 mm Graduation interval of 0.1 mm Verification of three coordinate measuring machine in accordance with JJF 1064-2004	1.2 μ m 1.4 μ m 1.7 μ m 0.05 mm to 0.08 mm 0.2 mm to 2.9 mm 0.4 μ m ($h \leq 50 \mu$ m) 0.6% of reading ($h > 50 \mu$ m) 0.4 μ m ($h \leq 50 \mu$ m) 0.6% of reading ($h > 50 \mu$ m) 0.02 mm to 0.2 mm 0.8 μ m to 2.2 μ m 4 μ m to 10 μ m 0.02 mm 0.5 μ m to 7.1 μ m

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CALIBRATION SERVICES (cont'd) 校正服務(續上)	Temperature measurement instruments - Digital thermometers up to 0.01 °C readability	Calibration of temperature in accordance with in-house method FFR 199903/08 over the following ranges :- -40°C to 5°C 5°C to 95°C 95°C to 250°C	0.024 °C 0.023 °C 0.044 °C

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