

Scope of Accreditation



ACCREDITATION NO: 11087

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FACILITIES: Public testing service

**This laboratory complies with the requirements of ISO/IEC 17025 (2005)
The uncertainty of measurement is reported as an expanded uncertainty having a level of confidence of 95% unless stated otherwise**

1.01 Limit gauges

- .01 Plain plug gauges
Including compliance with BS 969 and AS 1997
with least uncertainties of measurement of -
1.2 μm from 1 mm to 100 mm
2.1 μm from 100 mm to 200 mm
- .02 Plain ring gauges
Including compliance with BS 969 and AS 1997
with least uncertainties of measurement of -
2.6 μm from 2 mm to 5 mm
1.2 μm from 5 mm to 50 mm
2.0 μm from 50 mm to 200 mm
- .03 Plain gap gauges
1 mm to 300 mm
with least uncertainties of measurement of -
(2.6 + 0.01 L) μm where L is the gap in mm
- .11 Parallel screw plug gauges
Major diameter and simple pitch diameter only
with least uncertainties of measurement of -
4.0 μm from 2 mm to 150 mm
- .12 Parallel screw ring gauges
Minor diameter and simple pitch diameter only,
with least uncertainties of measurement of -
4.7 μm from 2 mm to 150 mm
- .21 Taper screw plug gauges
Simple pitch diameter only,
with least uncertainties of measurement of -
4.7 μm from 3 mm to 150 mm
- .22 Taper screw ring gauges
Simple pitch diameter only,
with least uncertainties of measurement of -
4.7 μm from 3 mm to 150 mm

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1.02 Jigs, fixtures, cutting tools and components

Types requiring measurements similar to those covered under 1.01 and 1.03 including angle, form and linear measurements up to 1.5 m with least uncertainties of measurement of -

- 0.2 μm from 0.01 to 100 mm
- 0.5 μm to 1.2 μm from 100 to 1000 mm
- 30 μm from 1000 to 1500 mm

.01 Jigs and fixtures
.21 Components
As in 1.02.01

1.03 Engineering metrology equipment

.03 Straightedges
Including compliance with AS 1003 and JIS B7514
with least uncertainties of measurement of -

- 2.2 μm from 250 mm to 500 mm
- 2.6 μm from 500 mm to 1000 mm
- 4.4 μm from 1000 mm to 1500 mm

.04 Squares
Including compliance with BS 939 and JIS B7526
with least uncertainties of measurement of -

- 2.6 μm from 75 mm to 200 mm
- 3.1 μm from 200 mm to 400 mm
- 3.9 μm from 400 mm to 700 mm

.06 Bevel protractors
Including compliance with AS B139
with least uncertainties of measurement of -

- 4 minutes of arc for Bevel Protractors from 150 mm to 300 mm
- 0.03 degrees for Digital Protractors from 150 mm to 300 mm

.08 Precision spirit levels
Type 1, 10 seconds of arc sensitivity for compliance with AS 2054
with least uncertainties of measurement of -

- 3 seconds of arc

.21 Micrometer heads
Including compliance with AS 2328
with least uncertainties of measurement of -

- 0.4 μm up to 100 mm

.22 External micrometers
Up to 1000 mm including compliance with AS 2102 and BS 870
with least uncertainties of measurement of -

- (1.3 + 0.005 L) μm where L is the length in mm

.23 Internal micrometers
Including compliance with AS 2101 and BS 959
with least uncertainties of measurement of -

- 2.5 μm from 5 mm to 300 mm
- 4.6 μm from 300 to 600 mm
- 8.7 μm from 600 to 1000 mm

.24 Depth micrometers
Including compliance with BS 6468 and JIS B7544
with least uncertainties of measurement of -

- 3.2 μm from 25 mm to 300 mm

.25 Electronic indicators, dial gauges and test indicators
Dial gauges including compliance with AS 2103 and BS 907
with least uncertainties of measurement of -

- (1.5 + 0.01L) μm where L is the length in mm from 1 mm to 50 mm

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Digital Indicator Systems/Dial Test Indicators
with least uncertainties of measurement of -
0.4 μm from 0.01 mm to 25 mm
0.5 μm from 25 mm to 50 mm

Thickness gauges
with least uncertainty of measurement of -
0.005 mm up to 25 mm
0.007 mm above 25 mm up to 50 mm
.26 Bore gauges
with least uncertainty of measurement of -
4.6 μm from 2 mm to 110 mm
.27 Electronic and vernier callipers
Up to 1000 mm including compliance with JIS B 7507
with least uncertainties of measurement of -
(8.7 + 0.06 L) μm where L is the length in mm

Digital calliper gauges (10 μm reading) up to 1000 mm
with least uncertainties of measurement of -
(10 + 0.02 L) μm where L is the length in mm
.28 Electronic and vernier height and depth gauges
Including compliance with BS 1643, JIS B7517 and JIS B7518
with least uncertainties of measurement of -
4 μm from 100 mm to 600 mm
.29 Feeler gauges
Including compliance with AS 1655
with least uncertainties of measurement of -
2 μm
.30 Extensometers
Including compliance with AS 1545
with least uncertainties of measurement of -
(1 + 0.5 L) μm where L is the extension in mm
.31 Steel rules and measuring tapes
Steel rules up to 2 m
with least uncertainties of measurement of -
0.04 mm up to 1 m;
0.07 mm from 1 to 2 m
Retractable steel pocket rules to 16 m
with least uncertainties of measurement of -
0.5 mm
Tapes up to 32 m
with least uncertainties of measurement of -
0.2 mm up to 8 m;
0.6 mm from 8 to 16 m;
1 mm from 16 to 24 m;
2 mm from 24 to 32 m
.32 Micrometer setting gauges
Including compliance with BS 870
with least uncertainties of measurement of -
1.3 μm from 25 mm to 100 mm
2.9 μm from 100 mm to 300 mm
4.5 μm from 300 mm to 500 mm

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5.9 μm from 500 mm to 750 mm
7.6 μm from 750 mm to 1000 mm

1.05 Surface topography

.02 Roundness
Evaluation of roundness,
with least uncertainties of measurement of -
0.28 μm from 2 to 110 mm

1.08 Length and angle standards

.04 Gauge blocks and accessories
Including compliance with AS 1457, grade 2
With least uncertainties of measurement of -
0.10 μm from 0.5 mm to 10 mm
0.12 μm from 10 mm to 25 mm
0.15 μm from 25 mm to 50 mm
0.18 μm from 50 mm to 75 mm

0.21 μm from 75 mm to 100 mm

1.09 Precision instruments

.38 Dial gauge calibrators
with least uncertainties of measurement of -
0.4 μm from 0.01 to 25 mm

1.11 Masses

.01 Mass standards
with least uncertainties of measurement of -
20 μg from 1 mg to 2 g;
30 μg from 2 g to 10 g;
50 μg above 10 g to 50 g;
70 μg above 50 g to 100 g;
0.2 mg above 100 g to 200 g;
4.5 mg above 200 g to 2 kg
5 mg above 2 to 5 kg
7.5 mg above 5 to 10 kg
0.2 g above 10 to 20 kg
.03 Determination of mass
with least uncertainties of measurement of -
based on 1.11.01

1.12 Weighing devices

.01 Precision laboratory balances
with least uncertainties of measurement of -
2 in 10^5 or 10 μg (whichever is greater) from 1 mg to 1 g;
1.5 in 10^6 or 20 μg (whichever is greater) above 1 g and up to 1 kg
.02 Industrial balances
with least uncertainties of measurement of -
10 mg up to 5 kg;
5 in 10^6 or 80 mg (whichever is greater) above 5 and up to 40 kg
.03 Industrial weighing appliances
Class 3 and 4 instruments including compliance with NMI NITP 6.1-6.4 National Instrument Test
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with least uncertainties of measurement of -
1 in 10^4 up to 25 t

.04 Hopper Weighing Systems

Class 3 and 4 instruments including compliance with NMI NITP 6.1-6.4 National Instrument Test Procedures

with least uncertainties of measurement of -
1 on 10^4 up to 25 t

1.19 Barometers

Calibration in the range 70 to 120 kPa

with least uncertainties of measurement of -
13 Pa

1.20 Pressure and vacuum measuring devices

Absolute Pressure calibrations of Pneumatic devices

with least uncertainties of measurement of -

13 Pa from 0.01 kPa to 120 kPa

14 Pa from 120 kPa to 240 kPa

0.010% of reading from 240 kPa to 3700 kPa

0.0175% of reading from 3700 kPa to 7100 kPa

Absolute Pressure calibrations of Hydraulic devices

with least uncertainties of measurement of -

0.01% of reading or 0.08 kPa (whichever is greater) from 600 kPa to 6100 kPa

0.01% of reading or 1.3 kPa (whichever is greater) from 6100 kPa to 120.1 MPa

0.25% of reading from 120.1 MPa to 200.1 MPa

Calibration of Pneumatic devices

with least uncertainties of measurement of -

0.01% of reading or 0.8 Pa (whichever is greater) from -100 kPa to -1.5 kPa

1 Pa from -1.5 kPa to -0.001 kPa

1 Pa from 0.001 kPa to 1.5 kPa

0.01% of reading or 0.8 Pa (whichever is greater) from 1.5 kPa to 100 kPa

0.01% of reading from 100 kPa to 700 kPa

0.01% of reading from 700 kPa to 3600 kPa

0.0175% of reading from 3600 kPa to 7000 kPa

Calibration of Hydraulic devices

with least uncertainties of measurement of -

0.01% of reading or 0.08 kPa (whichever is greater) from 500 kPa to 6000 kPa

0.01% of reading or 1.3 kPa (whichever is greater) from 6000 kPa to 120 MPa

0.25% of reading from 120 MPa to 200 MPa

.01 Pressure gauges

Including test gauges as defined in AS 1349

.02 Vacuum gauges (bourdon tube)

.11 Pressure transducers

.13 Pressure recorders

.21 Mercury manometers

.22 Other liquid manometers

.23 Digital manometers

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1.23 Force measuring devices

Calibration of force measuring systems such as force measuring rings for soils testing and devices used in pre and post-stressing jacks and jacking systems used for stressing tendons in concrete based on 1.26.01 and 1.26.02
Calibration of working force standards at forces from 0.5 N up to 20 kN to Class 1 requirements of AS 2193

with least uncertainties of measurement of -
0.006%

- .01 Calibrating devices
- .02 Elastic force measuring devices
- .04 Load cells

1.24 Speed measuring devices

.12 Vehicle speed dynamometers
Calibration of vehicle speed and distance measuring unit
with least uncertainties of measurement of -
0.34 km/h in the range 20 to 180 km/h for speed
1 m over a distance of 1 km for distance

1.25 Torque measuring devices

.01 Torque wrenches
Calibration in the range 0.1 to 50,000 Nm, and
with least uncertainties of measurement of -
0.5% from 0.1 to 5,500 Nm, and
On-site calibrations at Keswick facility
1.0% from 5,500 to 50,000 Nm
.02 Torque transducers
Calibration in the range 0.1 to 50,000 Nm,
with least uncertainties of measurement of -
0.2% from 0.1 to 5,500 Nm, and
0.5% from 5,500 to 50,000 Nm.

1.26 Testing machines

.01 Tension and universal machines in tension
Calibration to the following classes of AS 2193 -
Class AA from 0.02 N up to 500 kN

with least uncertainties of measurement of -
0.1%

.02 Compression and universal machines in compression
Calibration to the following classes of AS 2193 -
Class AA from 0.02 N up to 2 MN;
Class A from 0.02 N up to 2 MN

with least uncertainties of measurement of -
0.1%

- .11 Vickers hardness machines
Partial and complete calibration from 9.8 to 1176 N to AS 1817 and similar specifications
- .12 Rockwell hardness machines
Partial and complete calibration except depth measuring device (clause 3.4) to AS 1815 and similar specifications
- .13 Brinell hardness machines
Partial and complete calibration to AS 1816 and similar specifications
- .14 Rockwell superficial hardness machines

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partial and complete calibration except depth measuring device (clause 3.4) to AS 2025 and similar specifications

.15 Vickers low-load hardness machines (HV 0.2 to HV 5)

Verification of forces from 9.8 to 49 N to ISO 146-1 and similar specifications

.16 Vickers micro-hardness machines (less than HV 0.2)

Verification of forces to ISO 146-2 and similar specifications

.21 Izod impact machines

partial and complete calibration to AS 1544 and similar specifications

.22 Charpy impact machines

partial and complete calibration to AS 1544, ASTM E23 (except striker dimensions) and similar specifications

.33 Rubber hardness meters (durometers)

Including compliance with AS 1683.15.2 and ASTM D2240

with least uncertainties of measurement of -

0.2 divisions

.99 Other testing machines

Rotational speed of Centrifuges

By in-house method - Test Procedures Manual 5 Section 2.21

with least uncertainties of measurement of -

0.1% or 2 rpm (whichever is greater) from 500 to 50,000 rpm

1.27 Ancillary mechanical testing equipment

.01 Portable Brinell measuring microscopes

.02 Indenters for hardness machines

Visual examination

1.32 Resistors, resistance boxes and potential dividers

.01 Precision resistors, resistance boxes and conductance boxes

with least uncertainties of measurement of -

10 $\mu\Omega/\Omega$ + 0.5 $\mu\Omega$ from 100 $\mu\Omega$ to 1 M Ω

50 $\mu\Omega/\Omega$ from 1 to 10 M Ω

0.1% from 10 to 100 M Ω

.02 Volt ratio boxes and potential dividers

with least uncertainties of measurement of -

10 $\mu\text{V}/\text{V}$ for volt ratio boxes to 100 V

50 $\mu\text{V}/\text{V}$ from 100 to 1 000 V

5 ppm + 5 x 10⁻⁷ for variable potential dividers with ratios of 10⁻⁷ to 1:1

.03 DC shunts

with least uncertainties of measurement of -

0.12% up to 20 A

.04 AC shunts

with least uncertainties of measurement of -
based on 1.39.04

1.36 Voltage standards

.01 Standard cells

with least uncertainties of measurement of -

5 μV

.11 Electronic e.m.f. reference devices

with least uncertainties of measurement of -

5 $\mu\text{V}/\text{V}$ at 1, 1.018 and 10 V

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1.38 Instrument calibrators

with measurement capabilities based on 1.39

- .01 D.C. voltage
- .02 A.C. voltage
- .11 D.C. current
- .12 A.C. current
- .51 Resistance

1.39 Indicating and recording instruments

.01 D.C. voltmeters

with least uncertainties of measurement of -

- 5 $\mu\text{V/V} + 2 \mu\text{V}$ up to 2 V
- 6 $\mu\text{V/V} + 2 \mu\text{V}$ from 2 V to 20 V
- 11 $\mu\text{V/V} + 2 \mu\text{V}$ from 20 V to 1000 V

.02 A.C. voltmeters

- 0.02% + 10 μV from 1 mV to 200 mV and 10 Hz to 10 kHz
- 0.04% + 15 μV from 1 mV to 200 mV and 10 kHz to 30 kHz
- 0.1% + 25 μV from 1 mV to 200 mV and 30 kHz to 100 kHz

- 0.02% + 25 μV from 200 mV to 2 V and 10 Hz to 100 Hz
- 0.015% + 25 μV from 200 mV to 2 V and 100 Hz to 2 kHz
- 0.017% + 25 μV from 200 mV to 2 V and 2 kHz to 10 kHz
- 0.04% + 25 μV from 200 mV to 2 V and 10 kHz to 30 kHz
- 0.08% + 200 μV from 200 mV to 2 V and 30 kHz to 100 kHz
- 0.5% + 2 mV from 200 mV to 2 V and 100 kHz to 1 MHz

- 0.015% + 400 μV from 2 V to 20 V and 10 Hz to 100 Hz
- 0.01% + 400 μV from 2 V to 20 V and 100 Hz to 2 kHz
- 0.03% + 50 μV from 2 V to 20 V and 2 kHz to 10 kHz
- 0.07% from 2 V to 20 V and 10 kHz to 30 kHz
- 0.5% from 2 V to 20 V and 30 kHz to 1 MHz

- 0.015% + 5 mV from 20 V to 200 V and 10 Hz to 100 Hz
- 0.013% + 5 mV from 20 V to 200 V and 100 Hz to 10 kHz
- 0.028% + 5 mV from 20 V to 200 V and 10 kHz to 30 kHz
- 0.075% + 22 mV from 20 V to 200 V and 30 kHz to 100 kHz

- 0.015% + 31 mV from 200 V to 1000 V and 40 Hz to 10 kHz
- 0.03% + 50 mV from 200 V to 1000 V and 10 kHz to 30 kHz

.03 D.C. ammeters

Including clamp-on meters

- 0.03% from 10 μA to 15 A
- 0.25% from 15 A to 20 A
- 0.5% from 20 A to 200 A
- 1% up to 1 000 A using multi turn coil

.04 A.C. ammeters

Including clamp-on meters

- 0.05% from 15 μA to 3 A and 50 Hz to 5 kHz
- 0.15% from 15 μA to 1.5 A and 5 to 10 kHz
- 0.05% from 3 to 15 A and 50 Hz to 1 kHz
- 0.6% to 600 A at 50 Hz
- 1% to 1 000 A using multi turn coil - from 50 to 400 Hz

.09 Ohmmeters

with least uncertainties of measurement of -

As listed in 1.32.01

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.10 LCR meters

Calibration of Capacitance meters only, with least uncertainties of measurement of:

1% + 5 pF from 0.5 nF to 1100 μ F

.11 Galvanometers and null detectors

.81 Graphic recording instruments

1.40 Bridges, potentiometers, test sets

.11 A.C. bridges

.41 High voltage test sets

With least uncertainties of measurement of -

2.5% from 1000 V to 25 kV DC

2.5% from 1000 V to 22 kV at 50 Hz

1.41 Frequency and time measuring instruments and standards

.01 Frequency meters

with least uncertainties of measurement of -

1 in 10^6 from 1 Hz to 10 Hz

1 in 10^7 from 10 Hz to 100 MHz

.11 Counters

with least uncertainties of measurement of -

1 part in 10^7 up to 100 MHz

.13 Clocks and watches

with least uncertainties of measurement of -

0.05 seconds from 1 minute to 24 hours

.14 Stroboscopes

with least uncertainties of measurement of -

2 rpm from 20 rpm to 50 000 rpm

10 rpm from 50 000 rpm to 240 000 rpm

.15 Tachometers

with least uncertainties of measurement of -

1 rpm from 20 rpm to 10 000 rpm

2 rpm from 10 000 rpm to 240 000 rpm

.21 Frequency standards

with least uncertainties of measurement of -

as for 1.41.11

1.51 Electronic equipment

.30 Miscellaneous equipment and tests

Verification of Portable Appliance Testers,

with least uncertainties of measurement based on 1.32.01, Resistance

Verification of Residual Current Circuit Breaker Testers,

with least uncertainties of measurement of 3% + 1 digit for AC current and

2.5% + 1 ms for time

1.80 Calibration of temperature measuring equipment

.02 Base metal thermocouples

with least uncertainties of measurement of-

0.2 °C from -90 to -30 °C

0.25 °C from -30 to 100 °C

0.55 °C from 100 to 250 °C

2 °C from 250 to 960 °C

3 °C from 960 to 1300 °C

.05 Metallic resistance thermometers

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- with least uncertainties of measurement of -
 - 0.05 °C at 0 °C
 - 0.1 °C from -90 to -30 °C
 - 0.05 °C from -30 to 250 °C
 - 0.25 °C from 250 to 450 °C
 - 0.3 °C from 450 to 600 °C
- .06 Semi-conductor thermometers
- with least uncertainties of measurement of -
 - 1 °C from -90 to 150 °C
- .07 Surface probes
- with least uncertainties of measurement of -
 - 3.0 °C from 20 °C to 400 °C
- .11 Liquid-in-glass thermometers
- with least uncertainties of measurement of -
 - 0.05 °C at 0 °C
 - 0.1 °C from -90 to -30 °C
 - 0.05 °C from -30 to 250 °C
- .13 Radiation pyrometers
- with least uncertainties of measurement of -
 - 3.0 °C from -20 to 500 °C
- .21 Vapour pressure thermometers
- with least uncertainties of measurement of -
 - 0.5 °C or 1% of range (whichever is the greater)
- from -90 to 300 °C
- .22 Filled metal systems
- with least uncertainties of measurement of -
 - 0.5 °C or $\pm 1\%$ of range (whichever is the greater)
- from -90 to 300 °C
- .23 Bimetallic systems
- with least uncertainties of measurement of -
 - 0.5 °C or 1% of span (whichever is the greater)
- from -90 to 300 °C
- .41 Digital temperature indicator systems
- with least uncertainties of measurement of -
 - 0.05 °C at 0 °C
 - 0.1 °C from -90 to -30 °C
 - 0.05 °C from -30 to 250 °C
 - 0.3 °C from 250 to 400 °C
 - 0.4 °C from 400 to 700 °C
 - 0.6 °C from 700 to 960 °C
 - 3 °C from 960 to 1100 °C
 - 4 °C from 1100 to 1300 °C

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1.81 Calibration of ancillary temperature measuring instruments

- .02 Digital voltmeters
with least uncertainties of measurement of -
0.005% + 5 μ V up to 1 V DC
including resistance measurement up to 10 M Ω
- .03 Resistance bridges
with least uncertainties of measurement of -
0.002% or 3 $\mu\Omega$ (whichever is the greater) up to 100 Ω
0.005% from 100 Ω to 10 k Ω
- .04 Indicators, recorders and controllers
with least uncertainties of measurement of -
0.5 °C or 0.2% of temperature (whichever is greater) from -200 °C to 1800 °C
0.005% + 5 μ V for voltage up to 1 V DC

1.83 Hygrometry

- .10 Calibration of humidity measuring devices
with least uncertainties of measurement of -
2.0% RH in range 10% to 90% RH at an ambient temperature of 21 to 25 °C
- .20 Measurement of relative humidity
with least uncertainties of measurement of -
3.0% RH in the range 10% to 90% RH at an ambient temperature of 21 to 25 °C

1.84 Testing of controlled enclosures

- .01 Ovens and Furnaces
with least uncertainties of measurement of -
0.5 °C from -30 to 600 °C
4 °C from 600 to 1100 °C
by the methods of -
AS 2853 and similar test procedures
- .03 Autoclaves and sterilising ovens
Measurement of temperature and time characteristics -
with least uncertainties of measurement of -
0.5 °C from ambient to 300 °C
- .04 Industrial freezers
with least uncertainties of measurement of -
0.5 °C from -90 to 0 °C
- .05 Dry block calibrators
with least uncertainties of measurement of -
0.1 °C from -90 to 250 °C
0.2 °C from 250 to 960 °C
4 °C from 960 to 1300 °C
- .06 Baths
with least uncertainties of measurement of -
0.05 °C from -90 to 400 °C
0.2 °C from 400 to 500 °C

3.07 Power supplies and stabilisers

- .01 Power supplies

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(Scope Last Changed 14/03/17)