Issue date: 25 September 2022
Valid until: 23 October 2025

NO: SAMM 375

LABORATORY LOCATION:
(PERMANENT LABORATORY)

UCAL TECH'S (M) SDN. BHD.
NO. 8, 8A, JALAN SHAHBANDAR 2
TAMAN UNGKU TUN AMINAH
81300 SKUDAI, JOHOR BAHRU
JOHOR DARUL TAKZIM
MALAYSIA

FIELDS OF CALIBRATION: **DIMENSIONAL, MASS, PRESSURE, ELECTRICAL & TEMPERATURE**

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

*** The uncertainty covered by the CMC is expressed as the expanded uncertainty corresponding to a coverage probability of approximately 95 % and have a coverage factor of *k*=2 unless stated otherwise.**

SCOPE OF CALIBRATION: DIMENSIONAL

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty (±)*	Remarks
External micrometer	25 mm **25 mm spindle travel for** 50 mm to 100 mm 100 mm to 175 mm frame	1.0 µm 1.5 µm 2.0 µm	Measurement of instrument error, and parallelism and flatness of measuring faces reference to JIS B7502:2016. Setting rod must be provided by customer.
Caliper (External & Internal)	up to 300 mm 300 mm to 600 mm	15 µm 18 µm	Measurement of instrument error reference to JIS B7507:2016
Height gauge	up to 600 mm	20 µm	Measurement of instrument error and parallelism of reference surface with measuring surface of scriber reference to JIS B7517:2018

SCOPE OF CALIBRATION: DIMENSIONAL

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty (±)*	Remarks
Digital displacement indicator	up to 50 mm 50 mm to 100 mm	1.8 µm 12 µm	Calibrated using gauge block as standard
Plain plug gauge / Plain cylinder gauge (diameter only)	0.3 mm to 25 mm 25 mm to 50 mm	2 µm 3 µm	Calibrated using gauge block as standard and micrometer as comparator with reference to JIS B7420:1997
Feeler gauge	0.005 mm to 3 mm	1.8 µm	Calibrated using digital displacement indicator as standard with reference to JIS B7524:2008
Dial test indicator	0 mm to 2 mm	3 µm	Calibrated using gauge tester as standard with reference to JIS B7533:1990
Dial gauge	Up to 5 mm 5 mm to 20 mm	2.5 µm 6.5 µm	Calibrated by using gauge tester as standards with reference to JIS B7503:2017 Measurement of error of indication and repeatability only.
Thickness gauge	Up to 15 mm 15 mm to 50 mm	2 µm 10 µm	Calibrated by using gauge block as standard with reference to JIS B7519:1994
Thread plug gauge	0 mm to 25 mm 25 mm to 50 mm 50 mm to 75 mm	Major diameter: 1.8 µm Pitch diameter: 2.8 µm Major diameter: 2.0 µm Pitch diameter: 2.8 µm Major diameter: 2.5 µm Pitch diameter: 3.0 µm	Calibrated by using three-wire set and micrometer as standards with reference to JIS B0261:2004

Signatories:

1. **Manivannan A/L Subramaniam**
2. **Bhavani A/P Gopal Krishnan**

SCOPE OF CALIBRATION: DIMENSIONAL

SITE: CATEGORY I

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty (±)*	Remarks
Measuring microscope (individual axis only)	Individual X and Y axis only Up to 300 mm	0.008 mm	Calibrated by using glass scale as standards with reference to JIS B 7153:1995
Surface plate flatness	500 mm x 500 mm 750 mm x 500 mm 1000 mm x 750 mm 2000 mm x 1000 mm	3 µm 4.2 µm 5 µm 7.5 µm	Calibrated using Precision Level Meter (Inclinometer) with reference to JIS B7513:1992

Signatories:

1. **Manivannan A/L Subramaniam**
2. **Bhavani A/P Gopal Krishnan**