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CERTIFICATE OF ACCREDITATION

This is to attest

CALTEKGROUP B SDN BHD

UNIT 6 GROUND FLOOR SPG 501 BANGUNAN ZAINUDDIN & AZIZAH, JALAN TUTONG JALAN TELANAI
BRUNEI MUARA, BA2312, BRUNEI

Calibration Laboratory CL-298

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories.* This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date January 21, 2025

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Accredited to ISO/IEC 17025:2017 *Effective Date January 21, 2025*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
Mechanical			
Vacuum Measurement Devices (Digital/Analogue Vacuum Gauges, Transducers/ Transmitters)	-13 psi to 0 psi	0.09 psi	Digital Pressure Gauge and Vacuum Pump by Comparison Method
Pressure Measurement Devices (Digital / Analogue Pressure Gauges, Transducers, Transmitters, Switches)	0 psi to 30 psi 30 psi to 2000 psi 2000 psi to 15000 psi	0.02 psi 1.2 psi 69 psi	Digital Pressure Gauge and Pneumatic/ Hydraulic Pressure Comparator Pump by Comparison Method
Thermal			
Temperature Sensor with/without Indicator	-30 °C to 100 °C 100 °C to 250 °C 250 °C to 400 °C 250 °C to 600 °C	0.16 °C 0.41 °C 0.6 °C 1.9 °C	RTD / Thermocouple with indicator and Dry Block by Comparison Method
Glass Thermometer	-30 °C to 100 °C	0.2 °C	RTD with indicator and Liquid Bath by Comparison Method
Bath (Liquid/Dry), Incubators, Autoclave, Temperature Enclosure Chambers Ovens Furnace.	-30 °C to 100 °C 100 °C to 250 °C 250 °C to 600 °C	0.27 °C 0.5 °C 1.7 °C	RTD / Thermocouple probe with Digital Indicator (Direct measurement by Single Sensor Method)
IR Thermometer	35 °C to 100 °C 100 °C to 400 °C	1.2 °C 1.8 °C	Thermocouple with Data logger and Black body source by Comparison Method
Thermohydrometer/ Humidity Meters /	5 °C to 50 °C @50 %RH	0.49 °C	Using Temperature & Humidity Meter with Humidity

** If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
Data Logger Humidity Transmitters	10 %RH to 95 %RH @ (20 °C to 50 °C)	2.1 %RH	Chamber by Comparison Method
Electrical – DC/LF			
DC Voltage Generate[3]	1 mV to 100 mV 100 mV to 1000 V	0.01 % 0.007 %	Using Electrical Multiproduct Calibrator by Direct Method
DC Current Generate[3]	10 µA to 1 mA 1 mA to 100 mA 100 mA to 1 A 1 A to 10 A 10 A to 500 A	0.021 % 0.016 % 0.04 % 0.073 % 0.27 %	Using Electrical Multiproduct Calibrator and Current Coil 50 Turn by Direct Method
DC Resistance Generate[3]	1 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 290 MΩ	0.03 % 0.02 % 0.03 % 0.31 % 0.01 %	Using Electrical Multiproduct Calibrator by Direct Method
AC Voltage Generate[3] (50 Hz to1 kHz)	30 mV to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1000 V	0.25 % 0.04 % 0.05 % 0.07 % 0.07 %	Using Electrical Multiproduct Calibrator by Direct Method
AC Current Generate[3] (50 Hz to1 kHz)	33 µA to 1 mA 1 mA to 100 mA 100 mA to 1 A 1 A to 10 A 10 A to 500 A	1.0 % 0.18 % 0.15 % 0.40 % 0.44 %	Using Electrical Multiproduct Calibrator and Current Coil 50 Turn by Direct Method
Capacitance Generate[3]	(1 kHz) 350 pF to 1nF 1 nF to 10 nF 10 nF to 100 nF (100 Hz) 100 nF to 1 µF 1 µF to 100 µF 100 µF to 1000 µF	 1.7 % 0.7 % 0.4 % 0.43 % 0.75 % 1.2 %	Using Electrical Multiproduct Calibrator by Direct Method
Frequency Generate[3]	10 Hz to 100 kHz	0.01 %	Using Electrical Multiproduct Calibrator by Direct Method
DC Voltage Measure[4]	10 µV to 1000 V	0.01 %	Using 6½ Precision Digital Multimeter by Comparison Method

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
DC Voltage Measure[4] (continued)	1 kV to 10 kV 10 kV to 25 kV	17 % 7 %	Using High Voltage Probe Fluke 80K-40 and 4½ Precision Digital Multimeter by Comparison Method
DC Current Measure[4]	1 mA to 100 mA 100 mA to 1 A 1 A to 10 A	0.06 % 0.08 % 0.03 %	Using 6½ Precision Digital Multimeter by Comparison Method
AC Current Measure[4] @ 50 Hz	1 mA to 100 mA 100 mA to 1 A 1 A to 10 A	0.17 % 0.16 % 0.25 %	Comparison Method using 6½ Precision Digital Multimeter
AC Voltage Measure[4] @ 50Hz	100 µV to 100 mV 0.1 V to 1000 V	4.7 % 0.10 %	Using 6½ Precision Digital Multimeter by Comparison Method
	1 kV to 10 kV 10 kV to 25 kV	16 % 8.2 %	Using High Voltage Probe Fluke 80K-40 and 4½ Precision Digital Multimeter by Comparison Method
Frequency Measure[4]	1 Hz to 1000 Hz 1 kHz to 100 kHz	0.58 % 0.06 %	Using 6½ Precision Digital Multimeter by Comparison Method
Resistance Measure[4]	1 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 100 kΩ 100 kΩ to 10 MΩ 10 MΩ to 290 MΩ	0.68 % 0.12 % 0.12 % 0.12 % 3.9 %	Using 6½ Precision Digital Multimeter by Comparison Method
Capacitance Measure[4]	1 nF to 1000 nF 1 µF to 1 mF	0.57 % 1.5 %	Using 6½ Precision Digital Multimeter by Comparison Method
Earth Tester/ Insulation Tester	1 Ω 10 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 100 MΩ 200 MΩ 2 GΩ	1.9 % 0.71 % 1.2 % 1.2 % 1.2 % 1.5 % 1.5 % 3.5 % 4.5 %	Using Resistance Box by Direct Method

[1]The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

[2]When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

[3]Capability is suitable for the calibration of measuring devices in the stated ranges.

[4]Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.