Measurements International
Standards Calibration Laboratory

Certificate of Calibration

CERTIFICATE NO.: C1171111

CUSTOMER NAME

Belarusian State Institute of Metrology

CUSTOMER ADDRESS

Starovilenskiy Trakt 93, Minsk 220053, Belarus

MEASURAND

MODEL NO.: 9210B/1K S/N.: 1104081

MFG.: Measurements International DESCRIPTION: 1,000 Ohm Oil Resistor

CALIBRATION RANGE(S) OR POINTS COVERED BY THIS CERTIFICATE

The measurement was performed with a test current of 1 mA.

CALIBRATION PROCEDURE

CAL-11-15-04

REFERENCE STANDARD:

MODEL NO.: 9210A/1R S/N.: 1031203

MFG.: Measurements International DESCRIPTION: Primary 1 Ohm Standard Oil Resistor

CALIBRATION DATE: March 7, 2017 CERTIFICATE NO: ES-2017-0004-01

ENVIRONMENTAL CONDITIONS:

AMBIENT:

TEMPERATURE: 23 °C ± 2 °C

HUMIDITY: 22 % ± 10 %

BAROMETRIC PRESSURE: 101 kPa

OF MEASURAND:

TEMPERATURE: 25.00 °C ± 0.01 °C

HUMIDITY: _____ % ± _____ %

UNCERTAINTY OF MEASUREMENT

THE UNCERTAINTY OF MEASUREMENT IS ESTIMATED TO BE:

THE REPORTED UNCERTAINTY OF MEASUREMENT IS STATED AS THE COMBINED STANDARD UNCERTAINTY MULTIPLIED BY A COVERAGE FACTOR OF K = 2. THE MEASURED VALUE (y) AND THE ASSOCIATED UNCERTAINTY (U) REPRESENT THE INTERVAL (y±U) WHICH CONTAINS THE MEASURED QUANTITY WITH A PROBABILITY OF APPROXIMATELTY 95%. THE UNCERTAINTY WAS ESTIMATED USING ISO GUIDE TO THE EXPRESSION OF UNCERTAINTY IN MEASUREMENT (GUM) GUIDELINES. THE ESTIMATED UNCERTAINTY CONTAINS CONTRIBUTIONS ORIGINATING FROM THE MEASUREMENT STANDARD CALIBRATED BY A NATIONAL LABORATORY, FROM THE CALIBRATION METHOD, FROM THE ENVIRONMENTAL CONDITIONS AND FROM THE MEASURAND BEING CALIBRATED. THE LONG TERM BEHAVIOUR OF THE MEASURAND IS NOT INCLUDED.

CALIBRATED BY (SIGNATURE)	DATE OF CALIBRATION	AUTHORIZING SIGNATURE
	November 22-28, 2017	DATE OF ISSUE: Nov. 28, 2017

The reported measurements are traceable to national standards and thus to the SI units.

The Calibration Laboratory Assessment Services (CLAS) of the National Research Council of Canada (NRC) has assessed and certified specific calibration capabilities of this laboratory and traceability to the International System of Units (SI) or to standards acceptable to the CLAS program. This certificate of calibration is issued in accordance with the conditions of certification granted by CLAS and the conditions of accreditation (ISO/IEC 17025:2005) granted by the Standards Council of Canada (SCC). Neither CLAS nor SCC guarantee the accuracy of individual calibrations by accredited laboratories.

CLAS 2004-01

SCC Registrant No.: 536

Measurements International
Standards Calibration Laboratory

Certificate of Calibration

CERTIFICATE NO.:
C1171111

TEST RESULTS

The resistor (UUT) was calibrated by using a Direct Current Comparator Resistance Bridge, Model 6010, to compare it with a calibrated 1Ω resistor in an oil bath maintained at 25.000°C +/- 10mk.

The UUT was allowed to stabilize for minimum 48 hours. The measurement current was 1mA with a reversal rate of 12 seconds. Thirty-five (35) measurements with 25 measurements for statistics were taken. This was repeated 6 times, the type A uncertainty for the standard deviation of each measurement and the spread of values being inserted into the Uncertainty Analysis worksheet. The type B uncertainty for the measurement comes from the uncertainty of the 1Ω resistor. The type B and type A uncertainties are root sum squared and doubled to give expanded uncertainty.

The reported value of resistance is based on the results found when the UUT was in circulating oil at 25.000°C +/- 10mk.

Resistance (KOhms)	Uncertainty (μΩ/Ω)
0.99999759	0.25

The Alpha and Beta are reported as being 3.81359E-08 and 2.73658E-09 respectively @ 25C.

MEAN DATE OF MEASUREMENT: November 26, 2017

118 Commerce Drive, Prescott, Ontario K0E 1T0