

# Scope of Accreditation For Alteq de México S.A. de C.V.

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In recognition of a successful assessment to ISO/IEC 17025:2005 to the following Calibration and Measurement Capabilities, accreditation has been granted to **Alteq de México S.A. de C.V.** for the following:

Accreditation granted through: **February 10, 2018**

## Calibration

### Amount of Substance – pH/Conductivity

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
pH Meters, Controllers, Recorders and Simulators @ 25°C	4 pH 7 pH 10 pH	0.0058 pH 0.0058 pH 0.0058 pH	Certified Buffer Solutions
pH Meters, Controllers, Recorders and Simulators	(0 to 14) pH	0.024 pH	pH Simulator
	(-1 000 to 1 000) mV	1 mV	Calibrator
Conductivity Meters. Controllers and Recorders @ 25°C	100 µS/cm 147 µS/cm 500 µS/cm 1 000 µS/cm 1 413 µS/cm 10 000 µS/cm	0.6 µS/cm 0.5 µS/cm 2 µS/cm 4 µS/cm 0.021 µS/cm 0.04 µS/cm	Certified Conductivity Standards

### Electrical – Capacitance

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Capacitance Source	(3.3 to 10) nF	0.6 % of reading	Fluke Calibrator 5500A
	(10 to 30) nF	0.58 % of reading	
	(30 to 100) nF	0.35 % of reading	
	(100 to 300) nF	0.35 % of reading	
	(0.3 to 1) µF	0.35 % of reading	
	(1 to 3) µF	0.46 % of reading	
	(3 to 10) µF	0.47 % of reading	
	(10 to 30) µF	0.51 % of reading	
	(30 to 100) µF	0.61 % of reading	
	(100 to 300) µF	0.81 % of reading	
	(300 to 1 000) µF	1 % of reading	

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Capacitance Measure	(1 to 40) nF	2.7% of reading	Extech 380282 DMM
	(40 to 400) nF	2.7 % of reading	
	(400 to 1 000) nF	2.4 % of reading	
	(1 000 to 4 000) nF	2.1 % of reading	
	(4 to 40) $\mu$ F	2.2 % of reading	
	(40 to 400) $\mu$ F	2.4 % of reading	
	(400 to 900) $\mu$ F	3.6 % of reading	

**Electrical – Current**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
DC Current Measure	(0 to 200) $\mu$ A	0.15 % of reading	6 ½ DMM KEITHLEY
	(0.2 to 2) mA	0.079 % of reading	
	(2 to 20) mA	0.078 % of reading	
	(20 to 200) mA	0.078 % of reading	
	(0.21 to 2) A	0.14 % of reading	Fluke 45 4½ DMM Clamp Meter Fluke 375
	(2 to 10) A	0.28 % of reading	
	(10 to 550) A	2.2 % of reading	
AC Current Measure 45 Hz to 1 kHz	(0 to 200) $\mu$ A	12 % of reading	6 ½ DMM KEITHLEY
	(0.2 to 2) mA	0.18 % of reading	
	(2 to 20) mA	0.18 % of reading	
	(20 to 200) mA	0.18 % of reading	
	(0.2 to 2) A	0.34 % of reading	Fluke 45 4½ DMM Clamp Meter Fluke 375
	(2 to 10) A	1.2 % of reading	
	(10 to 550) A	2.6 % of reading	
DC Current Source	(0 to 3.3) mA	0.018 % of reading	Fluke Calibrator 5500A
AC Current Source 45 Hz to 1 kHz	(3.3 to 33) mA	0.02 % of reading	
	(33 to 300) mA	0.011 % of reading	
	(0.3 to 1) A	0.035 % of reading	
	(1 to 11) A	0.066 % of reading	
	(11 to 550) A	0.86 % of reading	Fluke 5500A/COIL
	(0.3 to 3.3) mA	0.18 % of reading	Fluke Calibrator 5500A
	(3.3 to 33) mA	0.18 % of reading	
	(33 to 330) mA	0.10 % of reading	
	(0.3 to 1) A	0.13 % of reading	
(1 to 11) A	0.35 % of reading	Fluke 5500A/COIL	
(11 to 550) A	0.92 % of reading		

**Electrical – Inductance**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Inductance Source 100 Hz and 1 kHz	(1 to 10) mH	2.1 % of reading	Inductance Substituter
	(10 to 100) mH	6.9 % of reading	
	(0.1 to 1) H	0.021 % of reading	
	(1 to 10) H	0.067 % of reading	

**Electrical – Power**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Sound Pressure Level Source (simulation) @ 1 kHz	(-30 to 60) dB	0.23 % of reading	Fluke Calibrator 5500A
Sound Pressure Level Measure (simulation) @ 1 kHz	(80 to 130) dB	0.61 % of reading	Fluke Calibrator 5500A

**Electrical – Resistance**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Resistance Measure	(2 to 20) Ω	0.063 % of reading	6 ½ DMM KEITHLEY
	(20 to 200) Ω	0.026 % of reading	
	(200 to 1 000) Ω	0.017 % of reading	
	(1 to 20) kΩ	0.015 % of reading	
	(20 to 200) kΩ	0.02 % of reading	
	(200 to 1 000) kΩ	0.034 % of reading	
	(1 to 20) MΩ	0.16 % of reading	
Resistance Source	(20 to 330) MΩ	3.1 % of reading	Fluke Calibrator 5500A
	(1 to 10) Ω	0.092 % of reading	
	(10 to 30) Ω	0.062 % of reading	
	(30 to 100) Ω	0.024 % of reading	
	(100 to 300) Ω	0.014 % of reading	
	(0.3 to 1) kΩ	0.015 % of reading	
	(1 to 3) kΩ	0.011 % of reading	
	(3 to 10) kΩ	0.015 % of reading	
	(10 to 30) kΩ	0.011 % of reading	
	(30 to 100) kΩ	0.017 % of reading	
	(100 to 300) kΩ	0.014 % of reading	
	(0.3 to 1) MΩ	0.021 % of reading	
	(1 to 3) MΩ	0.017 % of reading	
(3 to 10) MΩ	0.066 % of reading		

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Resistance Source	(10 to 30) MΩ	0.12 % of reading	Fluke Calibrator 5500A
	(30 to 100) MΩ	0.51 % of reading	
	(100 to 300) MΩ	0.51 % of reading	
	(300 to 1 000)MΩ	1.1 % of reading	Resistance Substituter
RTD Simulation <sup>1</sup> Pt 385.100 Ω	(-190 to 800) °C	0.23 °C	Fluke Calibrator 5500A
Pt 3916.100 Ω	(-190 to 600) °C	0.23 °C	
Pt 3926.100 Ω	(0 to 400) °C	0.12 °C	
Cu.10 Ω	(0 to 200) °C	0.3 °C	
Ni.120 Ω	(0 to 200) °C	0.14 °C	
RTD Measure <sup>1</sup> Pt 385.100 Ω	(-190 to 800) °C	0.32 °C	Altek Calibrator 211
Pt 3916.100 Ω	(-190 to 600) °C	0.21 °C	
Pt 3926.100 Ω	(0 to 400) °C	0.21 °C	
Cu.10 Ω	(0 to 200) °C	0.58 °C	
Ni.120 Ω	(0 to 200) °C	0.17 °C	

**Electrical – Voltage**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
DC Volts Source	(33 to 329) mV	0.0066% of reading	Fluke Calibrator 5500A
	(0.329 to 3.29) V	0.0053 % of reading	
	(3.29 to 32.9) V	0.0053 % of reading	
	(32.9 to 329) V	0.0058 % of reading	
	(329 to 1 000) V	0.0058 % of reading	
	(1 to 6) kV	2.3 % of reading	Hypot Tester 3565D
AC Volts Source 45 Hz to 10 kHz	(3 to 33) mV	0.11 % of reading	Fluke Calibrator 5500A
	(33 to 330) mV	0.049 % of reading	
	(0.33 to 3.3) V	0.059 % of reading	
	(3.3 to 33) V	0.071 % of reading	
	(33 to 330) V	0.075 % of reading	
	(330 to 1 000) V	0.059 % of reading	
AC Volts Source 50 to 60 Hz	(1 to 5) kV	2.5 % of reading	Hypot Tester 3565D
DC Volts Measure	(2 to 200) mV	0.0094 % of reading	6 ½ DDM KEITHLEY
	(0.2 to 2) V	0.0064 % of reading	
	(2 to 20) V	0.0065 % of reading	

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
DC Volts Measure	(20 to 200) V	0.0081 % of reading	6 ½ DDM KEITHLEY
	(200 to 1 000) V	0.0084 % of reading	
	(1 to 6) kV	2 % of reading	Fluke 80K-6
	(6 to 40) kV	2 % of reading	Fluke 80K-40
AC Volts Measure 45 Hz to 1 kHz	(0 to 200) mV	0.1 % of reading	6 ½ DDM KEITHLEY
	(0.2 to 2) V	0.075 % of reading	
	(2 to 20) V	0.089 % of reading	
	(20 to 200) V	0.094 % of reading	
	(200 to 750) V	0.14 % of reading	
AC Volts Measure 50 Hz to 60 Hz	(0.75 to 6) kV	5.1 % of reading	Fluke 80k-40
	(6 to 28) kV	4.5 % of reading	
Thermocouple Simulation <sup>1</sup> T Thermocouple	(0 to 390) °C	0.14 °C	Fluke Calibrator 5500A
J Thermocouple	(0 to 800) °C	0.23 °C	
K Thermocouple	(0 to 1 200) °C	0.4 °C	
E Thermocouple	(0 to 390) °C	0.21 °C	
B Thermocouple	(600 to 1 000) °C	0.33 °C	
R Thermocouple	(0 to 390) °C	0.4 °C	
S Thermocouple	(0 to 700) °C	0.47 °C	
Thermocouple Measure <sup>1</sup> T Thermocouple	(0 to 390) °C	0.16 °C	Altek Calibrator 422
J Thermocouple	(0 to 800) °C	0.21 °C	
K Thermocouple	(0 to 1 200) °C	0.42 °C	
E Thermocouple	(0 to 390) °C	0.23 °C	
B Thermocouple	(600 to 1 000) °C	0.34 °C	
R Thermocouple	(0 to 390) °C	0.43 °C	
S Thermocouple	(0 to 700) °C	0.4 °C	

**Length – Artifacts and Standards 1D**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Remarks
Pin Gages	(0.01 to 25.4) mm	0.87 µm	Digital Micrometer
Feeler Gages	(0.001 to 25.4) mm	0.87 µm	Digital Outside Micrometer
Gages blocks	(1 to 1 016) mm	(0.18 + 0.003 5L) µm	Gages blocks and digital indicators
Ring Gages	(5 to 300) mm	(0.57 + 0.002 2L) µm	Micrometer Heads and Digital Outside Micrometer (accessories)

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Remarks
Micrometer standards	(0 to 1 016) mm	(0.18 + 0.003 5L) μm	Gages blocks and indicators digital

**Length – Artifacts and Standards 2D**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Remarks
Squares	(5 to 90)°	0.082 °	Digital Protractor and Angle Blocks
Surface Plates (flatness only)	100 to 1 830 mm (Diagonal Length)	(0.2 + 0.005 3L) μm	Digital Indicator. Parallel Set and Gages Blocks
Radius Gages	(0 to 50.8) mm	1.2 μm	Micrometer Heads
Thread Plug Gages	M1x1 to M150x2	(1.3 + 0.008 5L) μm	Digital Micrometer and Thread pitch Master Inserts

**Length – Hand Tools and Precision Gages 1D**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Remarks
Inside Micrometers	(0 to 500) mm	(0.58 + 0.002 6L) μm	Gages Blocks
Micrometer Heads	(0 to 50.8) mm	0.62 μm	Gages Blocks
Digital and/Dial Calipers	(0 to 1 016) mm	(5.77 + 0.001 1L) μm	Gages Blocks
Hole Gages	(1 a 300) mm	(0.58 + 0.002 2L) μm	Gages Blocks
Height Gages	(0 to 1 016) mm	(0.58 + 0.003 2L) μm	Micrometer
Thickness Gages (plastic)	(0.024 to 5) mm	(0.18 + 0.26L) μm	Micrometer
Thickness Gages (steel)	(1 to 508) mm	(0.58 + 0.002 6L) μm	Film Gages
Measuring Tapes	(0.1 to 20) m	0.12 mm	Precision Rules
Precision Rules	(28 to 2 000) mm	(42 + 0.002L) μm	Steel Rule and Optical Mini Comparator
Digital and Dial Test Indicators	(1 to 100) mm	(0.58 + 0.001 1L) μm	Steel rule and zoom loupe with reticle
Digital Indicators	(0 to 50.8) mm	1.2 μm	Gages Blocks
Outside Micrometers Digital / Analog	(1 to 1 016) mm	(0.58 + 0.003 2L) μm	Micrometer Head
Depth Micrometers	(1 to 300) mm	(0.58 + 0.002 2L) μm	Gages Blocks

**Length – Hand Tools and Precision Gages 2D**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Remarks
Profile Projectors	(1 to 500) mm	(0.58 + 0.002 6L) μm	Rectangular and Angle Gages Blocks
Microscopes	(1 to 300) mm	(0.58 + 0.002 2L) μm	
Protractors	(1 to 180) °	0.019°	Angle Blocks
Precision Levels	1.57 mm/m	1.2 μm/m	Micrometer Head

**Mass – Density**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Density Measuring Device - Liquid	(0.6 to 1.6) g/cm <sup>3</sup>	0.000 62 g/cm <sup>3</sup>	Balances

**Mass – Force**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Dynamometers, Tensile Testing Machine and Load Cell (Tension and/or compression)	(0 to 49.03) N	0.0029 N	Standard Weights Set
	(0 to 98.06) N	0.0029 N	
	(0 to 245.16) N	0.0029 N	
	(0 to 490.33) N	0.0029 N	
	(0 to 980.66) N	0.029 N	
	(0 to 2 451.66) N	0.031 N	
	(0 to 8 904.43) N	0.2 N	Load Cell

**Mass – Hardness**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Direct verification of Durometer Hardness Tester types A, B, C, D, DO, and O			Digital Microscope and ASTM D2240
Indenter Extension	(0 to 5) mm	1.2 μm	
Indenter Diameter	(0 to 12) mm	1.2 μm	
Indenter Tip Radius		1.2 μm	
Indenter Tip Angle	(25 to 40) °	0.065 °	
Durometer Indenter Spring:			Electronic Balance and ASTM D2240
Types A, B and O Types C, D and DO	(0.55 to 8.05) N (4.445 to 44.45) N	0.29 N 0.29 N	
Rockwell Superficial Hardness Testers <sup>1</sup>	HR15N Low Mid High	0.71 HR15N 0.59 HR15N 0.58 HR15N	Indirect Verification per ASTM E18 using Hardness Test Blocks
Rockwell Superficial Hardness Testers <sup>1</sup>	HR15TW Low Mid High	0.62 HR15TW 0.59 HR15TW 0.58 HR15TW	Indirect Verification per ASTM E18 using Hardness Test Blocks
Rockwell Hardness Testers <sup>1</sup>	HRBw Low Mid High	1.2 HRBw 0.9 HRBw 0.74 HRBw	Indirect Verification per ASTM E18 using Hardness Test Blocks

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Rockwell Hardness Testers <sup>1</sup>	HRC		Indirect Verification per ASTM E18 using Hardness Test Blocks
	Low	0.69 HRC	
	Mid	0.67 HRC	
	High	0.66 HRC	

**Mass – Mass Artifacts**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Weights	20 mg	0.000 1 g	Standard Weight Class OIML E2 and OIML R 111-14
	50 mg	0.000 1 g	
	100 mg	0.000 1 g	
	200 mg	0.000 1 g	
	500 mg	0.000 1 g	
	1 g	0.000 1 g	Standard Weight Class OIML E2 and OIML R 111-14
	2 g	0.000 1 g	
	5 g	0.000 1 g	
	10 g	0.000 1 g	
	20 g	0.000 1 g	
	50 g	0.000 12 g	Standard Weight Class OIML E2 and F1 and OIML R 111-1
	100 g	0.000 15 g	
	200 g	0.000 16 g	
	500 g	0.008 4 kg	
	1 000 g	0.009 kg	
	2 000 g	0.011 kg	
	5 000 g	0.000 41 kg	
	10 000 g	0.000 42 kg	
	20 000 g	0.000 42 kg	

**Mass – Pressure/Low Vacuum**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Positive Pressure: Water Columns	(0 to 10) inH <sub>2</sub> O	0.056 inH <sub>2</sub> O	Water column
Positive Pressure: Transducers, Pressure Gages, Safety valve and Recorders	(0 to 30) psi	0.008 2 psi	Fluke Pressure Module and display unit
	(30 to 300) psi	0.032 psi	
	(300 to 1 500) psi	0.22 psi	
	(1 500 to 5 000) psi	0.54 psi	
	(5 000 to 15 000) psi	2.2 psi	



Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Vacuum Gages	(-20.2 to 0)	0.005 3 inHg	Fluke Pressure Module and display unit

**Mass – Scale and Balances**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Balances Resolution: 0.000 1 g	(20 to 210) g	0.000 1 g	Standard Weights Class OIML E2 and F1 NOM-010-SCFI-1994
Resolution: 0.1 g	(0.5 to 5 000) g	0.058 g	
Resolution: 1 g	(0.5 to 5 000) g	0.58 g	
Balance Resolution: 2 g	(5 to 20) kg	0.001 2 kg	Standard Weights Class OIML F1 and NOM-010-SCFI-1994
Scale Resolution: 10 g	20 to 500 kg	0.058 kg	Standard Weights Class OIML M2 and NOM-010-SCFI-1994

**Mass – Torque**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Digital, Dial, Click and Preset Torque Meters (Clockwise and Counter Clockwise) <sup>1</sup>	(0.5 to 5.65) N·m (5 to 50) lbf·in	0.035 N·m 0.31 lbf·in	Torque Analyzer
Digital, Dial, Click and Preset Torque Meters (Clockwise and Counter Clockwise) <sup>1</sup>	(2.83 to 28.25) N·m (25 to 250) lbf·in	0.068 N·m 0.6 lbf·in	
Digital, Dial, Click and Preset Torque Meters (Clockwise and Counter Clockwise) <sup>1</sup>	(33.9 to 339.0) N·m (25 to 250) lbf·ft	0.78 N·m 0.58 lbf·ft	
Torque Analyzer and Calibrators (Clockwise and Counter Clockwise)	(0 to 43.8) N·m (0 to 32.4) lbf·ft	0.22 % of full scale	Standard Weights and torque arm
	(> 43.8 to 201.5) N·m (> 32.4 to 148.9) lbf·ft	0.1 % of full scale	
	(> 201.5 to 344.1) N·m (> 148.9 to 254.3) lbf·ft	0.11 % of full scale	
	(> 344.1 to 543.2) N·m (> 254.3 to 401.4) lbf·ft	0.16 % of full scale	
	(> 543.2 to 689.9) N·m (> 401.4 to 509.8) lbf·ft	0.2 % of full scale	

**Mass – Viscosity**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Viscosity Cups (ISO, Zahn, Ford, Shell) @ 25°C	33.97 cSt	0.15 cSt	Viscosity Solutions
	119.1 cSt	0.35 cSt	
	462.8 cSt	2 cSt	
Viscometers @ 15°C to 45°C	100 cSt	0.4 cSt	
	1 000 cSt	3 cSt	
	5 000 cSt	20 cSt	
	12 500 cSt	55 cSt	

**Mass – Volume**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Volume - Microsyringes	(0 to 100) µl	0.086 µl	Analytical Balance and Digital Balance
Volume - Pycnometers	(0 to 100) ml	0.12 µl	
Volume - Syringes	(0 to 200) ml	0.2 µl	
Volume - Test Tubes and Burettes	(0 to 5) ml	0.086 µl	
	(0 to 2 000) ml	5.8 ml	
Volume - Test Tubes and Jars	(0 to 5 000) ml	1.6 ml	
	(0 to 50 000) ml	1.2 ml	

**Thermodynamic – Infrared (IR) Temperature**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
IR Thermometers	(25 to 400) °C	4.1 °C	Blackbody
	(400 to 1 000) °C	10 °C	Blackbody and Digital Thermometer

**Thermodynamic – Humidity**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Humidity Meters and Recorders	(10 to 90) %RH	1 % RH	Thermo-hygrometer

**Thermodynamic – Thermometers and Probes**

Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Digital, Dial, RTD, Thermocouple and Bimetal Thermometers <sup>1</sup>	(-25 to 1 000) °C	1.2 °C	Type K Thermocouple and Fluke 52II
Temperature (wall thermometers, Recorder, thermocouple) <sup>1</sup>	(-25 to 50) °C	0.21 °C	RTD and Thermometer
Liquid in Glass	(-25 to 250) °C	0.21 °C	RTD and Thermometer

**Thermodynamic – Thermodynamic Sources**

Calibration Parameter/Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Ovens, Furnaces, Baths and Incubators	(-25 to 1 000) °C	1.2 °C	Type K Thermocouple and Fluke 52II

**Time and Frequency – Frequency / Period**

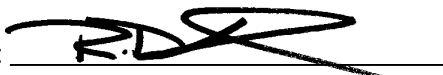
Calibration Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Remarks
Tachometers <sup>1</sup>	(60 to 96 000) rpm	1.2 rpm	Standard Digital Tachometer
Stopwatches, Timers <sup>1</sup>	0.2 ms to 86 400 s	5.8 ms	Standard Timers
Revolutions Counter <sup>1</sup>	(0 to 2 000) rpm	1.2 rpm	Direct Comparisons and Optical Counter
Frequency Source	(45 to 120) Hz (120 to 1 000) Hz (1 to 10) kHz (10 to 100) kHz	0.032 % of reading 0.032 % of reading 0.043 % of reading 0.3 % of reading	Fluke Calibrator 5500A
Frequency Measure	(45 to 1 000) Hz (1 to 10) kHz (10 to 100) kHz	0.044 % of reading 0.044 % of reading 0.3 % of reading	Keithley 6 ½ DMM

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and remarks. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 (k=2), corresponding to a confidence level of approximately 95%.

Notes:

- 1) Laboratory offers calibration services at the laboratory's own facilities and at the client or other agreed upon facilities.
- 2) *L* = length in mm

Approved by: \_\_\_\_\_



R. Douglas Leonard  
Chief Technical Officer

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