



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

**Servicios Integrales de Mantenimiento
Empresarial S.A. de C.V.**

**Ave. Churubusco 3870
Col. Coyoacan C.P. 64510
Monterrey, Nuevo León, México**

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 20 September 2026

Certificate Number: L2289



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Servicios Integrales de Mantenimiento Empresarial S.A. de C.V.

Ave. Churubusco 3870
Col. Coyoacan C.P. 64510
Monterrey, Nuevo León, México
Guillermo Guajardo (01-81) 8299-1500

CALIBRATION

Valid to: September 20, 2026

Certificate Number: L2289

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH Measuring Devices	4 pH 7 pH 10 pH	0.023 pH 0.035 pH 0.041 pH	Accredited Buffer Solutions, Fluke 52 Thermometer with Probe
Conductivity Measuring Devices	1 000 μ S/cm 1 413 μ S/cm 100 000 μ S/cm	4.9 μ S/cm 5.1 μ S/cm 310 μ S/cm	Accredited Conductivity Solutions, Fluke 52 Thermometer with Probe

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source	50 Hz (29 to 329.99) μ A (0.33 to 3.299) mA (3.3 to 32.99) mA (33 to 329.999) mA (0.33 to 2.199) A (2.2 to 11) A	1.1 μ A 4 μ A 38 μ A 0.31 mA 1.2 mA 7.9 μ A	Fluke 5500A Multiproduct Calibrator
	1 kHz (29 to 329.99) μ A (0.33 to 3.299) mA (3.3 to 32.99) mA (33 to 329.999) mA (0.33 to 2.199) A (2.2 to 11) A	1.8 μ A 7.7 μ A 39 μ A 0.38 mA 1.2 mA 22 mA	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Measure	1 A 50 Hz 1 kHz	1.2 mA 1.2 mA	Keithley 2100 6.5 Digit Multimeter
	3 A 50 Hz 1 kHz	3.5 mA 4.1 mA	
DC Current – Source	(0.33 to 3.299 99) mA (3.3 to 32.999 9) mA (33 to 329.999) mA (0.33 to 2.199 99) A (2.2 to 10) A	0.12 μ A 1.3 μ A 17 μ A 0.17 mA 7.4 mA	Fluke 5500A Multiproduct Calibrator
	10 mA 100 mA 1 A 3 A	7.2 μ A 55 μ A 0.35 mA 1.6 mA	
DC Current – Measure	(0 to 11.99) Ω (12 to 32.999) Ω (33 to 119.999) Ω (0.12 to 1.199 99) k Ω (1.2 to 11.999 9) k Ω (12 to 100) k Ω (0.1 to 1) M Ω (1 to 3.3) M Ω (3.3 to 10) M Ω (10 to 30) M Ω (30 to 100) M Ω (100 to 300) M Ω	0.97 μ Ω 1.4 μ Ω 2.4 m Ω 9.9 m Ω 98 m Ω 1 Ω 11 Ω 54 Ω 0.64 k Ω 1.8 k Ω 52 k Ω 0.18 M Ω	Fluke 5500A Multiproduct Calibrator
	(0 to 100) Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω 10 M Ω 100 M Ω	4.2 m Ω 72 m Ω 0.12 Ω 2 Ω 24 Ω 0.52 k Ω 20 k Ω	
DC Resistance – Measure			Keithley 2100 6.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of RTD Indicators	Pt 385, 100 Ω (-200 to 600) $^{\circ}\text{C}$	0.025 $^{\circ}\text{C}$	Fluke 5500A Multiproduct Calibrator
	Pt 385, 200 Ω (-200 to 600) $^{\circ}\text{C}$	0.021 $^{\circ}\text{C}$	
	Pt 385, 500 Ω (-200 to 600) $^{\circ}\text{C}$	0.044 $^{\circ}\text{C}$	
	Pt 385, 1 k Ω (-200 to 600) $^{\circ}\text{C}$	0.059 $^{\circ}\text{C}$	
	Pt 3916, 100 Ω (-200 to 600) $^{\circ}\text{C}$	0.01 $^{\circ}\text{C}$	
	Pt 3926, 100 Ω (-200 to 600) $^{\circ}\text{C}$	0.034 $^{\circ}\text{C}$	
	PtNi 385, 120 Ω (-80 to 250) $^{\circ}\text{C}$	0.015 $^{\circ}\text{C}$	
	Cu 427, 10 Ω (-80 to 250) $^{\circ}\text{C}$	0.067 $^{\circ}\text{C}$	
AC Voltage – Source	(33 to 329.999) mV 10 Hz	0.14 mV	Fluke 5500A Multiproduct Calibrator
	50 Hz	70 μV	
	1 kHz	70 μV	
	10 kHz	76 μV	
	20 kHz	0.15 mV	
	50 kHz	0.35 mV	
	100 kHz	0.85 mV	
	500 kHz	0.93 mV	
	(0.33 to 3.299 99) V 10 Hz	1.4 mV	
	50 Hz	0.71 mV	
	1 kHz	0.71 mV	
	10 kHz	0.85 mV	
	20 kHz	1.3 mV	
	50 kHz	2.9 mV	
	100 kHz	9.9 mV	
	500 kHz	11 mV	
	(3.3 to 32.999 9) V 10 Hz	17 mV	
	50 Hz	7.2 mV	
	1 kHz	7.2 mV	
	10 kHz	11 mV	
	20 kHz	15 mV	
	50 kHz	37 mV	
	100 kHz	37 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source	(33 to 329.999) V		Fluke 5500A Multiproduct Calibrator
	50 Hz	90 mV	
	1 kHz	90 mV	
	10 kHz	0.11 V	
	18 kHz	0.13 V	
	(330 to 1 000) V		
	50 Hz	0.37 V	
	1 kHz	0.37 V	
	5 kHz	0.32 V	
	8 kHz	0.37 V	
AC Voltage – Measure	100 mV		Keithley 2100 6.5 Digit Multimeter
	50 Hz	18 μ V	
	1 kHz	18 μ V	
	100 kHz	83 μ V	
	1 V		
	50 Hz	0.12 mV	
	1 kHz	0.11 mV	
	100 kHz	0.84 mV	
	10 V		
	50 Hz	0.6 mV	
	1 kHz	0.75 mV	
	100 kHz	25 mV	
	100 V		
	50 Hz	7 mV	
	1 kHz	9.1 mV	
	750 V		
	50 Hz	92 mV	
	1 kHz	73 mV	
DC Voltage – Source	(0 to 329.999 9) mV	2.1 μ V	Fluke 5500A Multiproduct Calibrator
	(0.33 to 3.299 999) V	19 μ V	
	(3.3 to 32.999 99) V	0.31 mV	
	(33 to 329.999 9) V	3.1 mV	
	(330 to 1 000) V	7.7 mV	
DC Voltage – Measure	100 mV	2.8 μ V	Keithley 2100 6.5 Digit Multimeter
	1 V	35 μ V	
	10 V	0.12 mV	
	100 V	2.5 mV	
	1 000 V	22 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices, Controllers, and Recorders ¹	Type B (600 to 1 800) °C	0.14 °C	Fluke 5500A Multiproduct Calibrator, Fluke 725 Process Calibrator
	Type E (-250 to 1 000) °C	0.42 °C	
	Type J (-250 to 1 200) °C	0.4 °C	
	Type K (-200 to 1 371) °C	0.29 °C	
	Type L (-200 to 900) °C	0.31 °C	
	Type N (-200 to 1 300) °C	0.34 °C	
	Type R (0 to 1 767) °C	0.47 °C	
	Type S (0 to 1 767) °C	0.39 °C	
	Type T (-250 to 400) °C	0.53 °C	
	Type U (-200 to 600) °C	0.47 °C	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pin Gages ²	(0.05 to 12.7) mm	0.85 µm	Gage Chek Digital Readout with Probe
Thread Wires	(0.046 to 4.7) mm	0.85 µm	Gage Chek Digital Readout with Probe
Micrometer Setting Standards	25 mm	0.85 µm	Comparison to Gage Blocks with Gage Chek Digital Readout with Probe
	50 mm	0.86 µm	
	75 mm	0.87 µm	
	100 mm	0.91 µm	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Micrometer Setting Standards	125 mm 150 mm 175 mm 200 mm 225 mm 250 mm	0.94 μm 0.92 μm 0.95 μm 0.97 μm 1 μm 1.45 μm	Gage Chek Digital Readout with Probe
Gage Block ²	(1 to 100) mm	(0.24 + 0.004 4L) μm	ASME Grade 0 Gage Blocks, Gage Chek Digital Readout with Probe
Metal Thickness Standards	(0.04 to 1) mm	0.85 μm	Gage Chek Digital Readout with Probe
Thread Plug Gages Pitch Diameter	(0.5 to 25) mm	3.4 μm	Micrometer and Thread Measuring Wires
Plastic Coating Thickness Standards	(24 to 509) μm	0.85 μm	Gage Chek Digital Readout with Probe
Test Sieve	24 μm to 75 mm	1 μm	Profile Projectors
Surface Plates Local Area Flatness Only	(250 x 250) mm to (2 500 x 1 600) mm	0.85 μm	Gage Chek Digital Display and Repeat Reading Gage
Indicator Testers/Calibrators	(> 0 to 25) mm	0.86 μm	Gage Chek Digital Readout with Probe
Outside Micrometer ²	Up to 600 mm	(0.46 + 0.012L) μm	Gage Blocks
Inside Micrometer ²	(5 to 300) mm	(0.56 + 0.000 8L) μm	Gage Blocks
Depth Micrometers ²	Up to 300 mm	(0.55 + 0.000 8L) μm	Gage Blocks
Calipers ² (Vernier, Dial and Digital)	Up to 600 mm	(7 + 0.000 4L) μm	Gage Blocks
Dial and Digital Indicators	(> 0 to 25.4) mm	1.1 μm	Indicator Tester (Micrometer Head)
Test Indicator	(> 0 to 2) mm	1.2 μm	Indicator Tester (Micrometer Head)
Bore Gage	(0.95 to 25.4) mm	1.3 μm	Indicator Tester (Micrometer Head)

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Height Gages ² (Vernier, Dial and Digital)	Up to 600 mm	$(8.6 + 0.001\ 3L)\ \mu\text{m}$	Gage Blocks
Steel Rules ²	Up to 1 000 mm	$(0.6 + 0.001\ 5L)\ \mu\text{m}$	Rule Standard and Reticule
Tape Measure ^{2,3}	Up to 50 m	$(1.7 + 0.092L)\ \text{mm}$	Rule Standard and Reticule
Reticules ²	Up to 20 mm	$(5.9 + 0.02L)\ \mu\text{m}$	Profile Projectors
Coating Thickness Gages ²	(0.024 to 0.509) mm	$(1.2 + 3.36L)\ \mu\text{m}$	Gage Chek Digital Readout and Probe
Profile Projectors ^{2,5} X, Y axis error	Up to 50 mm Up to 200 mm	$(0.58 + 0.11L)\ \mu\text{m}$ $(0.034 + 0.17L)\ \mu\text{m}$	Standard Glass Scales, Standard Angle Blocks
Angle Error	(> 0 to 90)°	0.037°	
Microscopes ²	Up to 1 mm Up to 50 mm Up to 200 mm	0.58 μm $(0.58 + 0.006L)\ \mu\text{m}$ $(0.58 + 0.011L)\ \mu\text{m}$	Standard Glass Scales
Levels: Vertical Deviation	Level Size Up to 300 mm	$(2.71 + 0.000\ 9L)\ \mu\text{m}$	Gage Chek Digital Readout Plate Grade AA
Protractor	(> 0 to 90)°	0.65°	Angle Blocks Standard
Surface Roughness Gage (Ra)	~ 2.94 μm	0.038 μm	Precision Roughness Specimen

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Hardness Testing Machines ¹	HRBW Low Mid High HRC Low Mid High	0.4 HRBW 0.29 HRBW 0.44 HRBW 0.42 HRC 0.37 HRC 0.38 HRC	Indirect Verification per ISO 6508-2 using Hardness Test Blocks
Compression & Tensile Testers, Force Gauges ²	(92 to 510) kgf (204 to 2 039) kgf (459 to 4 589) kgf	0.11 % of reading + 0.13 kgf 0.12 % of reading + 0.33 kgf 0.37 % of reading + 9.1 kgf	Per ISO 7500-1:2004 using Load Cell with Digital Indicator

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Torque Wrenches and Tools	(2.5 to 28.3) N·m (25.0 to 271.2) N·m (168.6 to 1 695) N·m	0.46 % of reading 0.15 % of reading 0.12 % of reading	Per NMX-CH-6789- IMNC-2006 using Torque Transducers with Digital Indicator
Mass Artifacts	(1 to 200) mg 500 mg to 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	65 µg 67 µg 77 µg 85 µg 0.1 mg 0.15 mg 0.27 mg 0.52 mg 6.3 mg 7.8 mg 12 mg 27 mg 72 mg 95 mg	Weight Set OIML E2 and F1
Pressure/Vacuum Gages (air, water and oil mediums)	(-12 to 30) psi	0.009 % of reading + 0.021 psi	Portable Pressure Calibrator
Pressure/Vacuum Gages (air, water, and oil mediums)	Up to 300 psig Up to 10 000 psig	0.014 % of reading + 0.017 psi 1.2 psi	Comparison to Standard Digital Pressure Gage
Weighing Systems 0.1 mg resolution	(> 0 to 200) g	0.18 mg	OIML Class E2 weight set and internal calibration procedure utilized in the calibration of the weighing system.
Weighing Systems 1 mg resolution	(> 0 to 400) g (> 0 to 1 000) g	1.4 mg 2.8 mg	OIML Class F1 weight set and internal calibration procedure utilized in the calibration of the weighing system.
10 mg resolution	(> 0 to 500) g (> 0 to 1) kg (> 0 to 2) kg (> 0 to 6) kg	10 mg 10 mg 11 mg 19 mg	
0.1 g resolution	(> 0 to 12) kg (> 0 to 40) kg	0.11 g 0.15 g	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Weighing Systems 10 g resolution 100 g resolution 200 g resolution 500 g resolution	(> 0 to 100) kg (> 0 to 500) kg (> 0 to 1 000) kg (> 0 to 5 000) kg	10 g 102 g 204 g 510 g	OIML Class M2 weight set and internal calibration procedure utilized in the calibration of the weighing system.
Dynamic Viscosity: Viscometers	(15 to 40) mPa·s (cP) (45 to 130) mPa·s (cP) (150 to 450) mPa·s (cP) (350 to 1 189) mPa·s (cP) (4 700 to 5 430) mPa·s (cP)	0.51 mPa·s (cP) 1.94 mPa·s (cP) 5.7 mPa·s (cP) 17 mPa·s (cP) 26 mPa·s (cP)	Accredited Viscosity Solutions, Fluke 51 Thermometer with Probe
Kinematic Viscosity: Saybolt Viscometers, Viscosity Cups (ISO, Zahn, Ford, Shell)	(17 to 45) mm ² /s (cSt) (50 to 155) mm ² /s (cSt) (185 to 530) mm ² /s (cSt) (420 to 1 390) mm ² /s (cSt)	0.48 mm ² /s (cSt) 2.4 mm ² /s (cSt) 8 mm ² /s (cSt) 19 mm ² /s (cSt)	Accredited Viscosity Solutions, Fluke 51 Thermometer with Probe
Volume – Micropipettes & Piston Pipettes	(0.1 to 1) ml (1 to 10) ml	3.4 µl 29 µl	Gravimetric Method using Balances, Digital Thermometer, Barometer
Volume - Pycnometers	(10 to 100) ml	6.1 µl	Gravimetric Method using Balances, Digital Thermometer, Barometer
Volume – Pipettes	(1 to 10) ml (10 to 100) ml	6.1 µl 15 µl	Gravimetric Method using Balances, Digital Thermometer, Barometer
Volume – Burettes	(1 to 10) ml (10 to 100) ml	58 µl 0.14 ml	Gravimetric Method using Balances, Digital Thermometer, Barometer
Volume – Condensation flask	(1 to 10) ml (10 to 100) ml (100 to 1 000) ml (1 000 to 2 000) ml	15 µl 58 µl 0.29 ml 0.58 ml	Gravimetric Method using Balances, Digital Thermometer, Barometer
Volume – Test tubes, Flask, Beakers, Jars, Graduated Containers	(1 to 10) ml (10 to 100) ml (100 to 1 000) ml (1 000 to 2 000) ml	15 µl 58 µl 0.29 ml 0.58 ml	Gravimetric Method using Balances, Digital Thermometer, Barometer

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Infrared (IR) Thermometers	28 °C 50 °C 100 °C 150 °C 200 °C 250 °C 300 °C 350 °C 400 °C	0.61 °C 0.61 °C 1.3 °C 2.1 °C 2.6 °C 3.3 °C 3.9 °C 4.7 °C 5.6 °C	Black Body Source, Fluke 5500A Multiproduct Calibrator w/ Type K Probe; $\lambda = (8 \text{ to } 14) \mu\text{m}$, $\epsilon = 0.95$
IR Black Bodies	28 °C 50 °C 100 °C 200 °C 300 °C 400 °C 500 °C 600 °C	0.95 °C 1.1 °C 1.3 °C 2.6 °C 3.9 °C 5.6 °C 7.1 °C 8.8 °C	Fluke 5500A Multiproduct Calibrator w/ Type K Probe
Humidity Meters, Recorder, Thermo Hygrometers (humidity function)	(12 to 85) %RH	2.5 % of reading + 1.2 %RH	Vaisala Humidity Meter, Humidity Chamber
Thermocouple Probes and Systems (Types B, E, J, K, N, R, S, T and U)	(100 to 1 200) °C	2.2 °C	Comparison in Furnace with Fluke 1523 Thermometer, Reference Thermocouple
Resistance Temperature Detectors (RTD) Probes and Systems	(100 to 600) °C	1.2 °C	Comparison in Furnace with Fluke 1523 Thermometer, Fluke 5606 PRT
Thermocouple and RTD Probes and Systems and Bi-Metallic Thermometers	0 °C (Fusion Point Ice)	0.36 °C	Comparison with Fluke 1523 Thermometer, Fluke 5606 PRT
Thermocouple and RTD Probes and Systems and Bi-Metallic Thermometers	(-30 to 160) °C	0.12 °C	Comparison with Fluke 1523 Thermometer, Fluke 5606 PRT, Circulator Baths
	(28 to 400) °C	0.09 % of reading + 0.72 °C	Drywell Calibrator

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Liquid in Glass Thermometers	0 °C (Fusion Point Ice)	0.12 °C	Comparison with Fluke 1523 Thermometer, Fluke 5606 PRT, Ice Bath
Liquid in Glass Thermometers	(-30 to 160) °C	0.15 °C	Comparison with Fluke 1523 Thermometer, Fluke 5606 PRT, Circulator Baths
Direct Reading and other Thermometers	(30 to 400) °C	0.79 °C	Drywell Calibrator
Thermo Hygrometers (temperature function)	(15 to 45) °C	0.29 °C	Comparison with Fluke 52II Thermometer with Probe, Temperature Chamber
Climatic Chambers: Ovens, Furnaces, Mufflers, Incubators, Etc. (error of indication)	(0 to 800) °C	0.23 % of reading + 0.62 °C	Fluke 5500A Multiproduct Calibrator, Type K Probe
Temperature Baths	(0 to 400) °C	0.23 % of reading + 0.62 °C	Fluke 5500A Multiproduct Calibrator, Type K Probe
Drywells	(28 to 600) °C	0.23 % of reading + 0.62 °C	Fluke 5500A Multiproduct Calibrator, Type K Probe

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rotational Speed – Rotational Equipment (lap counters, centrifuges, laboratory agitators/shakers, etc.) ²	(50 to 2 000) rpm (2 000 to 10 000) rpm (10 000 to 26 000) rpm	5 rpm 2.1 rpm 4.9 rpm	Comparison to Master Optical Tachometer/Counter
Rotational Speed – Tachometers ² (Contact and Non-Contact)	(500 to 10 000) rpm	3.6 rpm	Comparison to Standard Optical Tachometer/Counter, rpm generator

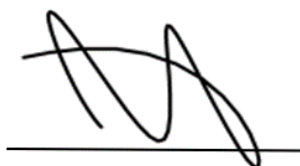
Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Timers and Stopwatches ¹	Up to 24 hr	600 ms	Comparison to Citizen DX9116-A Digital Stopwatch

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. 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. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. L = length in millimeters; rpm = revolutions per minute.
3. Authorized Calibration Technicians: Santos Azael Campos Hernandez, Francisco Javier Pruneda Morales, Juan Fernando Cortez Rodriguez, Maricela Escamilla Coronado, Deyvis Alexander Leon Perez, Judith Nohemi Ramos Garcia, Saul Aldhair Marquez Garcia.
4. This scope is formatted as part of a single document including Certificate of Accreditation No. L2289.



Jason Stine, Vice President

