◿ MesaLabs

CERTIFICATE OF CALIBRATION - NIST TRACEABILITY

(Refer to instruction manual for further details of calibration)

DeltaCal Serial Number:	169059	**Date:**	20-Mar-21

Calibration Technician :   Jan Oviedo

Critical Venturi Flow Meter: Max Uncertainity = 0.346%

Serial Number: 1A CEESI NVLAP NIST Data File 07BGI-0001
Serial Number: 2A CEESI NVLAP NIST Data File 07BGI-0003
Serial Number: 5C COX Nist Data File CCAL33222 - 5 C
Serial Number: 4A CEESI NVLAP NIST Data File 07BGI-0002
Serial Number: 3A CEESI NVLAP NIST Data File 07BGI-0004

Room Temperature:	+- 0.03°C from -5°C - 70°C	**Room Temperature:**	23.60 °C
Brand:	Telatemp	**Serial Number:**	358921
Std Cal Date:	28-Apr-20	**Std Cal Due Date:**	28-Apr-21

DeltaCal :
Ambient Temperature (set):   23.60 °C
Aux (filter) Temperature (set):   23.60 °C

Barometric Pressure and Absolute Pressure

Vaisala Model:	PTB330(50-1100)	Digital Accuracy:	0.03371%
Serial Number:	C4310002		
Std Cal Date:	13-Mar-20	**Std Cal Due Date:**	13-Mar-21

DeltaCal :
Barometric pressure (set):   764 mm of Hg

Results of Venturi Calibration
Flow Rate (Q) vs. Pressure Drop (ΔP).   Where: Q=Lpm, ΔP= Cm of H2O

$Q=$ 3.92442 ΔP ^ 0.51619   Overall Uncertainty: 0.35%
$Q=$ 3.84226 ΔP ^ 0.52874   Overall Uncertainty: 0.35%

Date Placed In Service   _____
(To be filled in by operator upon receipt)
Recommended Recalibration Date   _____
(12 months from date placed in service)

Mesa Labs   10 Park Place   Butler, NJ 07405
NIST Traceable Calibration Facility, ISO 9001:2008 Registered

To Check a DeltaCal
1.5-19.5   VER 4.00P

Date	Technician
3/20/2021	Jan Oviedo

Maximum allowable error at any flow rate is .75%.
Serial No.   169059

	Reading Abs. P Crit. Vent. mm of Hg	Room Temp	CV Qa Flow Lpm	BP= Qa deltaCal Indicated	764 mm of Hg % Error
# 2	142.60	23.60	1.583	1.588	0.30
	219.58	23.60	2.464	2.459	-0.19
	329.66	23.60	3.723	3.720	-0.07
	404.04	23.60	4.573	4.586	0.28
	479.93	23.60	5.441	5.448	0.13
	544.66	23.60	6.181	6.202	0.33
#1	184.80	23.80	7.235	7.216	-0.27
	275.30	23.80	10.852	10.816	-0.33
	348.91	23.80	13.794	13.769	-0.18
	414.94	23.80	16.433	16.406	-0.16
	490.71	23.80	19.461	19.486	0.13

Average %   **0.00**

To Check a DeltaCal   **Pre-Recertification**

1.5-19.5   VER 4.00P

Date	Technician
3/20/2021	Jan Oviedo

Maximum allowable error at any flow rate is .75%.
Serial No.   169059

	Reading Abs. P Crit. Vent. mm of Hg	Room Temp	CV Qa Flow Lpm	BP= 764.5 mm of Hg Qa deltaCal Indicated	% Error
# 2	142.66	23.60	1.583	1.613	1.90
	225.63	23.60	2.531	2.562	1.22
	320.17	23.60	3.612	3.621	0.26
	392.88	23.60	4.443	4.450	0.16
	501.83	23.60	5.688	5.670	-0.31
	549.18	23.60	6.229	6.215	-0.23
#1	187.10	23.50	7.315	7.330	0.21
	265.39	23.50	10.439	10.465	0.25
	337.95	23.50	13.334	13.390	0.42
	411.09	23.50	16.252	16.309	0.35
	482.49	23.50	19.101	19.230	0.68

Average %   0.45

As Received

	DUT	Standard	Difference		Allowable	Condition
Pres AMB mmhg	764.5	764.5	0		1	In Tolerance
Temp AMB °C	23.5	23.5	0		1	In Tolerance
Temp Filter °C	23.6	23.5	0.1		1	In Tolerance

REGISTER YOUR PRODUCT TODAY!

Mesa Labs' BGI instruments are precision measuring instruments designed to provide highly-accurate and repeatable measurements. Recognized worldwide for their accuracy, Mesa's products are manufactured and serviced in our ISO 17025-accredited laboratory offering ±0.08% Scope of Accreditation for gas flow by NVLAP of NIST. Harsh environments, accidental damage, environmental factors and simple time and use can, over time, impact the calibration of any instrument. Our NIST-traceable calibrations ensure all of your data readings are accurate and repeatable. Registering your product is the first step in maintaining world-class accuracy for your BGI instrument.

Visit bgi.mesalabs.com to complete the short form that will align your instrument with our product maintenance database. Once complete, you will be able to better manage your BGI fleet by receiving timely reminders at 45 and 15 days prior to the recommended calibration date of your instrument. In addition you will receive vital calibration and firmware/hardware updates. Taking the time to register ensures your instruments warranty claim information is properly documented in Mesa's database.

We recommend annual service and calibration of your BGI instrument as a periodic quality assurance measure, as well as to provide you and your organization with a defensible audit trail of premier quality.

WHAT IS INCLUDED IN FACTORY CALIBRATION?

Maintenance of your BGI instrument is actually a full product refurbishment and calibration performed by the same experienced technicians that build the new BGI instruments. Our ISO 17025/ANSI Z-540 accreditation and documented traceability ensures our accuracy claims are met. A Mesa factory calibration includes:

- Disassembly and inspection of the instrument for wear, defect, contaminants and damage
- Full cleaning, repair and/or replacement of parts as needed
- Battery test/replacement
- Upgraded firmware and hardware
- Temperature and pressure sensor calibration if required
- Multi-point flow calibration with adjustment
- NIST-traceable calibration certificate with As-Found (pre) and As-Left (post) data
- 90-day service warranty

FACTORY CALIBRATION vs. 3RD PARTY CALIBRATION LABORATORIES

Mesa Labs is the only laboratory that can perform a BGI calibration in the US. Third party calibration laboratories cannot adjust your instrument. These other labs can only perform verifications, not calibrations and will only issue a NIST-traceable certificate that identifies the instrument falls within claimed accuracy specifications.

This means that they cannot reset calibration points, perform repairs and maintenance with authorized parts, provide hardware and firmware updates or even check and change batteries.

Please feel free to contact us with any questions or concerns at csbutler@mesalabs.com or at 973-492-8400.