



SOUTHWEST RESEARCH INSTITUTE™

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Institute Quality Systems
Institute Calibration Laboratory
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Certificate of Calibration

Submitted By: DIV20
Address: B57
Contact: DON BANNON
Manufacturer Model: BIOS DCL-M
Description: FLOW METER
Serial No: 1098
Asset No: 011734
Procedure: FLOW METERS, JUL/03

Work Order: 303068415
Date Issued: Mar 17, 2006
Calibration Date: Mar 17, 2006
****Calibration Due:** Mar 16, 2007
Calibration Location: Bldg. 64
Environment: Temp. 68.0°F Hum. 42 %RH
****Data Type:** FOUND-LEFT

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 1999, ANSI/NCSL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. **Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The client has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance. See Remarks or attached Measurement Report with the same Work Order number for data.

Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of k=2 to approximate a 95% confidence level.

Remarks: STP 70 Deg F 29.92 InHg 30 PSI - Cal'd at 0.1SLM 0.3SLM, 1.0SLM, 2.5LPM, and 4.0LPM

Standards Used

Asset	Manufacturer	Model	Description	Cal Due
007502	SIERRA	101 Cal Bench	GAS FLOW CALIBRATION SYSTEM	Dec 06, 06

Reviewed by: blt () jrg () pwc (✓) wgh ()
Metrology Technician
m:\Nona2la1.rpt Rev date 15, Aur. 05

Measurements by: Joe Greagrey
Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303068415	Mfr.	Bios	Technician	JRG
Asset No.	011734	Model	DC-Lite		
Serial No.	1098	Type.	Flow Meter	Cal Date.	17-Mar-06
Remarks:		Pm=	742.94	mmHg	Pressure In 30 PSI
STP 70 Deg F		Tc=	20		
29.92 InHg		K=	21.111	Accuracy=	2 % Rdg

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left
L/Min	L/Min	L/Min	L/Min	L/Min	L/Min	Result
	0.101	0.101	0.00	0.00	0.00029	Pass
	0.299	0.303	0.00	0.01	0.00029	Pass
	1.005	1.018	-0.01	0.02	0.00029	Pass
	2.512	2.544	-0.03	0.05	0.00029	Pass
	4.026	4.082	-0.06	0.08	0.00029	Pass
END OF REPORT						