



coastal instruments

MASS FLOW CONTROLLER SPECIALISTS

707 Enterprise Dr • Post Office Box 699 • Burgaw, North Carolina 28425 • (910) 259-4485

Certificate #:
NC00053846

Certificate Of Calibration

The following device has been calibrated in accordance with ANSI Z540-1-1994 and ISO/IEC-17025:2005 using instruments traceable to the National Institute of Standards and Technology

ALICAT SCIENTIFIC INC
7641 N. Business Park Drive
TUCSON AZ 85743
USA

STP Conditions: 25.0 °C @ 760 mmHg
Calibration Temperature 22.2° C ± 3° C
He pre-ship leak rate 0 x 10⁻⁶

Model: ALICAT SCIENTIFIC MW-40SLPM-D/5M
Serial Number: 220172
Range: 40000 sccm
Gas: N2
Inlet Pressure: N/A
Outlet Pressure: N/A
Positioning: HBD
Calibration Gas: N2, N2 CF = 1
Calibration Date: 11/14/2019
Issue Date: 11/14/2019

Initial Inspection

- No visible contamination

Services

- No disassembly required
- Calibrated and response tested at full scale flow IAW Document 005 (rev 09/06/16), "MFC Calibration"
- Expedite service

Parts Replaced

- No parts required

Comments

- We appreciate your business!
- PO #: 120784
- GAS = NatG-1
- The referenced DUT meets the Coastal Instruments internal quality specification for tolerance

Approved by: S. Bruce Benson, Quality Manager

As Found

Volt	%	Calc. Flow (sccm)	F.S. Dev.	Uncert
0.000	0	No Flow	0.00%	± 0.33%
1.25	25	9972	-0.07%	± 0.33%
2.50	50	19944	-0.14%	± 0.33%
3.75	75	29947	-0.13%	± 0.33%
5.00	100	39985	-0.04%	± 0.33%

As Left

Volt	%	Calc. Flow (sccm)	F.S. Dev.	Uncert
		No data taken		

Standard 1770 1/17/2019

expanded uncertainty of measurement = stated $u \cdot k(2)$

= 95.45% probability of coverage

% F.S. Dev = (Calculated - Target) / Full Scale * 100

Can you explain these uncertainties? The percent error is 0.28%. What is the final meter error? Is the reason the meter is rated for +/-0.6% because of the calibration uncertainty (0.33%)?

Linearity Deviation

