



SOUTHWEST RESEARCH INSTITUTE™

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Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-3692

Certificate of Calibration

Submitted By: DIV20

Address: B57

Contact: JIM PRIKRYL

Manufacturer Model: METTLER AE240

Description: BALANCE

Serial No: 101237

Asset No: 001439

Procedure: CLCP-WT-001, 12/99

Work Order: 444052192

Date Issued: Jan 30, 2003

Calibration Date: Jan 29, 2003

****Calibration Due:** Jul 29, 2003

Calibration Location: B57 LAB 106

Environment: Temp. 73.0°F Hum. 45 %RH

***As Found:** IN TOLERANCE

***As Left:** IN TOLERANCE

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 and ANSI/NCCL Z540-1-1994 which are equivalent to relevant requirements of the ISO 9000-1994 series of standards. This certificate may not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. The results of this calibration relate only to the individual instrument described above. This certificate shall not be used to claim product endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government.

Uncertainty evaluation includes the item under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor of k=2 to approximate a 95% confidence level. The calibration process provides a Test Uncertainty Ratio (TUR) of less than or equal to 25% (4:1) of the test limit unless otherwise stated in remarks or an attachment.

*The client has sole responsibility for determination of in/out of tolerance or compliance/noncompliance. An in/out of tolerance opinion is provided for your convenience based only on the Test Instrument (TI) reading(s) and limits as reported. The reported uncertainty relates only to the results at the time of calibration and does not imply any short or long term stability of the TI.

**Calibration interval is determined by the client and does not assure the instrument will remain within tolerance until this date. Any number of factors may cause the instrument to be out of tolerance before the next calibration date.

Remarks: None

Standards Used

Asset	Manufacturer	Model	Description	Cal Due
008160	RICE LAKE	100 G	WEIGHT, CLASS S	Jun 14, 03
008159	RICE LAKE	50 G	WEIGHT, CLASS S	Jun 14, 03
001710	RICE LAKE	20G	WEIGHT, CLASS S	Jun 14, 03
001708	RICE LAKE	10G	WEIGHT, CLASS S	Jun 14, 03

Approved by: Walt Hill

Metrology Group Leader

m:\Nona2\la1.rpt Rev date 15, August 02

Measurements by: Vince Morales

Metrology Technician

Southwest Research Institute
 Calibration Laboratory
 Calibration Data Sheet

Work Order 444052192	Mfr. Mettler	Technician Vincent Morales
Asset No. 001439	Model AE240	Procedure CLCP-WT-001, 12/99
Serial No. 101237	Type Balance	Cal Date 29-Jan-03

Location: Bldg. 57/ Lab 106

Ambient Conditions: 73 F 45 %RH 14.35 PSIA

Operational Check: Limits +/- : 0.0011 g **Uncertainty:** 0.0004 g

STD Mass Load	As Found Indication	Instrument Error
100.0000 g	100.0010 g	0.0010 g

Post Calibration Check:

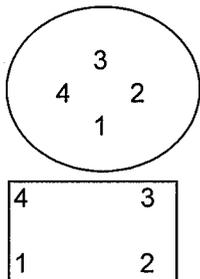
STD Mass Load	Post calibration Indication	Instrument Error	Results
100.0000 g	100.0001 g	0.0001 g	Pass

Repeatability Check: Mass Load: 80.0000 g

1	80.0002 g	6	80.0002 g
2	80.0002 g	7	80.0002 g
3	80.0002 g	8	80.0002 g
4	80.0002 g	9	80.0001 g
5	80.0002 g	10	80.0002 g

Std Deviation	Tolerance
0.0000 g	0.0002 g

Off-Centerline Check: Mass Load: 80.0000 g **Uncertainty:** 0.0004 g



	Indication	Instrument Error	+/- Limits	Results
1	0.0000 g	0.0000 g	0.0006	Pass
2	0.0001 g	0.0001 g	0.0006	Pass
3	0.0000 g	0.0000 g	0.0006	Pass
4	0.0003 g	0.0003 g	0.0006	Pass

Non-Linearity Check: Range: 200.0000 g **Uncertainty:** 0.0004 g

STD Mass Load	Indication	Instrument Error	+/- Limits	Results
0.0000 g	0.0000 g	0.0000 g	0.0006	Pass
50.0000 g	50.0001 g	0.0001 g	0.0006	Pass
100.0000 g	50.0000 g	0.0000 g	0.0006	Pass
150.0000 g	50.0000 g	0.0000 g	0.0006	Pass
200.0000 g	50.0001 g	0.0001 g	0.0006	Pass

Remarks: Readability is 0.01mg (41g) and 0.1mg (205g). Standards used 8160, 8159, 1710, and 1708.