



SOUTHWEST RESEARCH INSTITUTE™

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Institute Calibration Laboratory
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Certificate of Calibration

0972-01

Submitted By: DIV20
Address: TI
Contact: RON GREEN
Manufacturer Model: METTLER PM480
Description: BALANCE
Serial No: N45601
Asset No: 002478
Procedure: CLCP-WT-001, DEC/99

Work Order: 444057458
Date Issued: Feb 9, 2004
Calibration Date: Feb 9, 2004
****Calibration Due:** Aug 9, 2004
Calibration Location: B51
Environment: Temp. 70.0°F Hum. 53 %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.

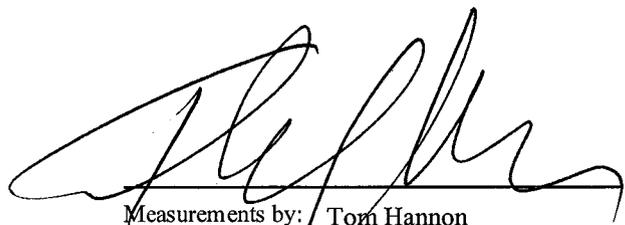
**Calibration interval is determined by the client and does not assure the instrument will remain within tolerance until this date. Any number of factors may cause the instrument to be out of tolerance before the next calibration date.

Remarks: None

Standards Used

Asset	Manufacturer	Model	Description	Cal Due
001712	RICE LAKE	100G	WEIGHT, CLASS S	Jun 23, 04
001713	RICE LAKE	200G	WEIGHT, CLASS S	Jun 20, 04
001714	RICE LAKE	200G	WEIGHT, CLASS S	Jun 20, 04


Approved by: Walt Hill
Metrology Group Leader
m:\a2la1.rpt Rev date 15, August 02


Measurements by: Tom Hannon
Metrology Technician

Southwest Research Institute
 Calibration Laboratory
 Calibration Data Sheet

Work Order 444057458	Mfr. Mettler	Technician TJH
Asset No. 002478	Model PM480	Procedure CLGP-WT-001, 12/99
Serial No. N45601	Type Balance	Cal Date 09-Feb-04

Location: Bldg. 51

Ambient Conditions: 70 F 53 %RH 14.32 PSIA

Operational Check: Limits +/- : 0.02 g **Uncertainty:** 0.01 g

STD Mass Load	As Found Indication	Instrument Error
100.00 g	100.01 g	0.01 g

Post Calibration Check:

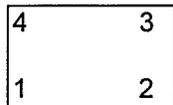
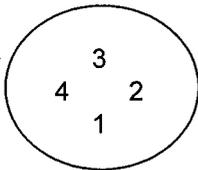
STD Mass Load	Post calibration Indication	Instrument Error	Results
100.00 g	100.01 g	0.01 g	Pass

Repeatability Check: Mass Load: 100.00 g

1	100.01 g	6	100.01 g
2	100.01 g	7	100.01 g
3	100.01 g	8	100.01 g
4	100.01 g	9	100.01 g
5	100.01 g	10	100.01 g

Std Deviation	Tolerance
0.000 g	0.006 g

Off-Centerline Check: Mass Load: 200.00 g **Uncertainty:** 0.001 g



	Indication	Instrument Error	+/- Limits	Results
1	-0.001 g	0.00 g	0.006	Pass
2	-0.001 g	0.00 g	0.006	Pass
3	0.001 g	0.00 g	0.006	Pass
4	0.001 g	0.00 g	0.006	Pass

Non-Linearity Check: Range: 400.00 g **Uncertainty:** 0.01 g

STD Mass Load	Indication	Instrument Error	+/- Limits	Results
0.00 g	0.00 g	0.00 g	0.01	Pass
100.00 g	100.01 g	0.01 g	0.01	Pass
200.00 g	100.01 g	0.01 g	0.01	Pass
300.00 g	100.01 g	0.01 g	0.01	Pass
400.00 g	100.01 g	0.01 g	0.01	Pass

Remarks: Readability is 0.001g (80g) and 0.01g (410g).

END OF REPORT