SOUTHWEST RESEARCH INSTITUTE®
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Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-4834

# Certificate of Calibration

ACCREDITED
Calibration Laboratory
Certificate #0972-01

**Cost Center:** DIV20
**Mail Stop:** B51
**Customer:** DON BANNON
**Manufacturer/Model:** FISHER SCIENTIFIC / 14-983-10B
**Description:** THERMOMETER, GLASS
**Serial Number:** 12609
**Asset Number:** 012609
**Procedure:** THERMOMETERS, GLASS - 11 SEP 06

**Work Order:** 303084866
**Date Issued:** 23-Dec-2008
**Date Calibrated:** 23-Dec-2008
***Date Due :** 23-Mar-2009
****Results:** FOUND-LEFT
**Temperature:** 74°F
**Humidity:** 40 %

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, 2005, 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, American Association for Laboratory Accreditation (A2LA) 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 customer 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** +/- 1°C

## Standards Used

| Asset # | Manufacturer | Model | Description | Cal Date | Due Date |
|---|---|---|---|---|---|
| 009137 | HART SCIENTIFIC | 1575 | SUPER THERMOMETER | 18-Nov-2008 | 18-May-2009 |
| 013908 | HART SCIENTIFIC | 5628 | SPRT | 20-Feb-2008 | 20-Feb-2010 |

Reviewed By: (✓) srk ( ) mar ( ) wgh
Laboratory Quality Manager
m:\A2LA OCT_08.rpt

Calibrated By: Joe Greagrey
Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

| | | | | | |
|---|---|---|---|---|---|
| Work Order: | 303084866 | Mfr: | Fisher-Scientific | Technician: | JRG |
| Asset No: | 012609 | Model: | 14-983-10B | | |
| Serial No: | 12609 | Type: | Thermometer | Cal Date: | 23-Dec-08 |
| Remarks: | No accuracy is provided by manufacturer. +/- 1 °C resolution is used as the accuracy specification. | | | | |
| Total Immersion | | | | | |

| Function/Range | Test Point | TI Reading | Difference | +/-Limit | +/-Uncertainty | Found/Left |
|---|---|---|---|---|---|---|
| Temperature | °C | °C | °C | °C | °C | Result |
| | -20.05 | -19.5 | 0.6 | 1.0 | 0.58 | Pass |
| | -0.08 | 0.5 | 0.6 | 1.0 | 0.58 | Pass |
| | 50.01 | 50.0 | 0.0 | 1.0 | 0.58 | Pass |
| | 100.01 | 100.2 | 0.2 | 1.0 | 0.58 | Pass |

END OF REPORT