



SOUTHWEST RESEARCH INSTITUTE®

6220 Culebra Road, P.O. Drawer 28510
Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-4834



Calibration Laboratory
Certificate #0972-01

Certificate of Calibration

Cost Center / Customer: DIV20 / DON BANNON

Mail Stop: B51

Manufacturer/Model: OMEGA / Type K

Description: THERMOCOUPLE

Serial Number: 11117

Asset Number: 011117

Procedure: TEMPERATURE PROBES - 5 JUN 06

Work Order: 303095528

Date Issued: 15-Jul-2010

Date Calibrated: 15-Jul-2010

* Date Due : 15-Jan-2011

** Results: FOUND-LEFT

Temperature: 76.0 °F

Humidity: 47 %RH

Barometer: N/A

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/NCCL 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. **Data type found in this certificate or attached measurement report must be interpreted as: Found-left - adjustment and/or repair was not performed, As-found - data is before unit is adjusted and/or repaired, As-left - data is after adjusted and/or repaired was performed. The customer has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance.

Measurement uncertainty calculated in accordance with the method described in the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM), for a confidence level of approximately 95 percent using a coverage factor of $k=2$.

Remarks: Cal'd at 900°, 1000°, and 1100 °C.

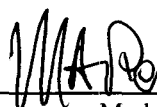
Standards Used

Asset #	Manufacturer	Model	Description	Cal Date	Due Date
010814	HART SCIENTIFIC	1529	THERMOCOUPLE THERMOMETER	4-Dec-2009	4-Dec-2010
013617	HART SCIENTIFIC	5650	THERMOCOUPLE, TYPE S	29-Dec-2009	29-Dec-2010


Walt Hill

Laboratory Manager

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Mark Romero

Metrology Technician

Southwest Research Institute
Calibration Laboratory
Measurement Report

Work Order:	303095528	Mfr.	Omega	Technician:	Mark Romero
Asset No.	011117	Model	Type K	Type Data:	Found-left
Serial No.	11117	Type.	Thermocouple	Cal Date:	15-Jul-10
Remarks:					

Function/Range	Test Point	TI Reading	Difference	+/- Limit	+/- Uncertainty	Result	% Limit
Temperature	°C	°C	°C	°C	°C		
	900.110	902.988	2.878	6.8	1.3	Pass	43%
	1000.321	1003.677	3.356	7.5	1.3	Pass	45%
	1100.670	1104.787	4.117	8.3	1.3	Pass	50%
END OF REPORT							