



# SOUTHWEST RESEARCH INSTITUTE®

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



## Certificate of Calibration

0972-01

**Submitted By:** DIV20

**Address:** B57

**Contact:** DON BANNON

**Manufacturer / Model:** FLUKE / 52 II

**Description:** THERMOCOUPLE THERMOMETER

**Serial No:** 85480050

**Asset No:** 010636

**Procedure:** FLUKE 51,52,53,54 SERIES II - 22 MAR, 2006

**Work Order:** 303072412

**Date Issued:** Dec 27, 2006

**Calibration Date:** Dec 27, 2006

**\*Calibration Due:** Dec 27, 2007

**Calibration Location:** Bldg. 64

**Environment:** Temp. 70.0°F Hum. 36 %RH

**\*\*Data Type:** FOUND-LEFT

**DivID/Location:** 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/NC SL 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 client 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:** None

### Standards Used

Asset No.	Serial No.	Manufacturer	Model	Description	Cal Due
004164	6380025	FLUKE	5500A/SC300	CALIBRATOR	Jul 21, 07

Reviewed by: blt ( ) jrg ( ) pwc ( ) wgh ( )

Metrology Technician

m:\a2la1.rpt Rev date August 15, 2005

Measurements by: Joe Greagrey

Metrology Technician

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Measurement Report

Work Order:	303072412	Mfr:	Fluke	Technician:	JRG
Asset No:	010636	Model:	52 II	Cal Date:	27-Dec-06
Serial No:	85480050	Type:	Temperature Meter		
Remarks:					

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left		
Type J	°F	°F	°F	°F	°F	Result		
		-300	-299.4	0.6	1.1	0.57	Pass	
		110	110.1	0.1	0.6	0.31	Pass	
		525	525.0	0.0	0.8	0.37	Pass	
		940	939.8	0.2	1.0	0.37	Pass	
		1350	1350	0.0	1.2	0.37	Pass	
		°C	°C	°C	°C	°C		
		-200	-199.5	0.5	0.7	0.33	Pass	
		40	40.1	0.1	0.3	0.21	Pass	
		275	275.0	0.0	0.4	0.32	Pass	
		510	509.9	-0.1	0.6	0.32	Pass	
		750	749.9	-0.1	0.7	0.32	Pass	
	Type K	°F	°F	°F	°F	°F		
			-300	-299.5	0.5	1.1	0.57	Pass
			390	389.9	0.1	0.7	0.55	Pass
		1075	1074	1.0	1.0	0.55	Pass	
		1760	1760	0.0	1.4	0.55	Pass	
		2450	2449	1.0	1.7	0.84	Pass	
		°C	°C	°C	°C	°C		
		-150	-149.7	0.3	0.6	0.40	Pass	
		210	210.0	0.0	0.4	0.32	Pass	
		575	574.9	-0.1	0.6	0.32	Pass	
		940	939.8	-0.2	0.8	0.32	Pass	
		1300	1300	0.0	1.0	0.47	Pass	
Type T		°F	°F	°F	°F	°F		
			-370	-368.9	1.1	2.2	0.57	Pass
			0	0.1	0.1	0.5	0.55	Pass
		212	212.1	0.1	0.6	0.55	Pass	
		392	392.0	0.0	0.7	0.55	Pass	
		730	729.8	0.2	0.9	0.84	Pass	
		°C	°C	°C	°C	°C		
		-225	-224.3	0.7	1.4	0.40	Pass	
		32	32.0	0.0	0.3	0.32	Pass	
		100	100.1	0.1	0.4	0.32	Pass	
		200	200.0	0.0	0.4	0.32	Pass	
		390	389.9	-0.1	0.5	0.47	Pass	

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Measurement Report

Work Order:	303072412	Mfr:	Fluke	Technician:	JRG
Asset No:	010636	Model:	52 II		
Serial No:	85480050	Type:	Temperature Meter	Cal Date:	27-Dec-06

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left
Type E	°F	°F	°F	°F	°F	Result
	-230	-229.5	0.5	0.8	0.57	Pass
	32	32.2	0.2	0.3	0.55	Pass
	100	100.1	0.1	0.4	0.55	Pass
	900	899.9	0.1	0.8	0.55	Pass
	1800	1799	1.0	1.2	0.84	Pass
	°C	°C	°C	°C	°C	
	-145	-144.7	0.3	0.7	0.40	Pass
	0	0.2	0.2	0.5	0.32	Pass
	40	40.1	0.1	0.5	0.32	Pass
	500	499.9	-0.1	0.8	0.32	Pass
	950	949.8	-0.2	1.0	0.47	Pass
Difference	°F	°F	°F	°F	°F	
T1-T2	0	-0.2	-0.2	1.0	.012	Pass
	°C	°C	°C	°C	°C	
T1-T2	0	0.0	0.0	0.6	.012	Pass
T2 Type J	°F	°F	°F	°F	°F	
	-300	-299.1	0.9	1.1	0.57	Pass
	110	110.2	0.2	0.6	0.31	Pass
	525	525.1	0.1	0.8	0.37	Pass
	940	939.9	0.1	1.0	0.37	Pass
	1350	1350.0	0.0	1.2	0.37	Pass
	°C	°C	°C	°C	°C	
	-200	-199.5	0.5	0.7	0.33	Pass
	40	40.2	0.2	0.3	0.21	Pass
	275	275.1	0.1	0.4	0.32	Pass
	510	510.0	0.0	0.6	0.32	Pass
	750	749.9	-0.1	0.7	0.32	Pass
Type K	°F	°F	°F	°F	°F	
	-300	-299.0	1.0	1.1	0.57	Pass
	390	390.3	0.3	0.7	0.55	Pass
	1075	1075.0	0.0	1.0	0.55	Pass
	1760	1760.0	0.0	1.4	0.55	Pass
	2450	2449.0	1.0	1.7	0.84	Pass
	°C	°C	°C	°C	°C	
	-150	-149.7	0.3	0.6	0.40	Pass
	210	210.0	0.0	0.4	0.32	Pass
	575	574.9	-0.1	0.6	0.32	Pass
	940	939.8	-0.2	0.8	0.32	Pass
	1300	1300.0	0.0	1.0	0.47	Pass

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Serial No:	85480050	Type:	Temperature Meter		

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left
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	0	0.0	0.0	0.5	0.55	Pass
	212	212.0	0.0	0.6	0.55	Pass
	392	391.9	0.1	0.7	0.55	Pass
	730	729.9	0.1	0.9	0.84	Pass
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Type E	°F	°F	°F	°F	°F	
	-230	-229.6	0.4	0.8	0.57	Pass
	32	32.1	0.1	0.3	0.55	Pass
	100	100.0	0.0	0.4	0.55	Pass
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	°C	°C	°C	°C	°C	
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	0	0.1	0.1	0.5	0.32	Pass
	40	40.0	0.0	0.5	0.32	Pass
	500	499.9	-0.1	0.8	0.32	Pass
	950	949.8	-0.2	1.0	0.47	Pass

END OF REPORT