



# SOUTHWEST RESEARCH INSTITUTE®

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Institute Quality Systems  
Institute Calibration Laboratory  
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Calibration Laboratory  
Certificate #0972-01

## Certificate of Calibration

**Submitted By:** DIV20

**Address:** B57

**Contact:** DON BANNON

**Manufacturer / Model:** FLUKE / 8050A

**Description:** MULTIMETER

**Serial No:** 5005078

**Asset No:** 001434

**Procedure:** FLUKE 8050A - 1 MAY 2006

**Work Order:** 303074241

**Date Issued:** May 1, 2007

**Calibration Date:** May 1, 2007

**\*Calibration Due:** May 1, 2008

**Calibration Location:** Bldg. 64

**Environment:** Temp. 70.0°F Hum. 48 %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/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 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
006413	7085202	FLUKE	5520A/SC1100	MULTI-PRODUCT CALIBRATOR	Mar 28, 08

*Scott Kish*

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

Metrology Technician

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

Measurements by: *Joe Greagrey*

Metrology Technician

Southwest Research Institute  
Calibration Laboratory  
Calibration Report

Work Order:	303074241	Mfr.	FLUKE	Technician	JRG
Asset No.	001434	Model	8050A	Cal Date.	01-May-07
Serial No.	5005078	Type.	VOLTMETER		
Remarks:					

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left	
DCV 200 mVolt	mVolts	mVolts	mVolts	mVolts	mVolts	Result	
	190.00	190.06	0.06	0.08	0.013	Pass	
	-190.00	-190.05	-0.05	0.08	0.013	Pass	
DCV 2 Volt	Volts	Volts	Volts	Volts	Volts		
	1.9000	1.9002	0.0002	0.0008	0.00012	Pass	
	-1.9000	-1.9002	-0.0002	0.0008	0.00012	Pass	
DCV 20 Volt	19.000	19.006	0.006	0.008	0.0012	Pass	
DCV 200 Volt	190.00	190.02	0.02	0.08	0.012	Pass	
DCV 1000 Volt	1000.0	1000.2	0.2	0.5	0.12	Pass	
ACV 200 mVolts	mVolts	mVolts	mVolts	mVolts	mVolts		
	100 Hz	190.00	190.13	0.13	1.05	0.04	Pass
	10 kHz	190.00	189.96	-0.04	1.05	0.04	Pass
	50 kHz	190.00	186.43	-3.57	9.80	0.09	Pass
ACV 2 Volt	Volts	Volts	Volts	Volts	Volts		
	SHORT INPUT	0.0000	0.0002	0.0002	0.0040	0.0012	Pass
	100 Hz	0.1000	0.0997	-0.0003	0.0015	0.00012	Pass
	100 Hz	1.9000	1.9008	0.0008	0.0105	0.00031	Pass
	10 kHz	1.9000	1.8998	-0.0002	0.0105	0.00031	Pass
	50 kHz	1.9000	1.8653	-0.0347	0.0980	0.00073	Pass
20 ACV	100 Hz	19.000	19.006	0.006	0.105	0.0023	Pass
	10 kHz	19.000	18.958	-0.042	0.105	0.0023	Pass
	50 kHz	19.000	18.743	-0.257	0.980	0.0085	Pass
200 ACV	100 Hz	190.00	190.10	0.10	1.05	0.053	Pass
	10 kHz	100.00	99.79	-0.21	0.60	0.032	Pass
ACV 750	100 Hz	750.0	750.4	0.4	4.8	0.30	Pass
	1 kHz	750.0	749.4	-0.6	4.8	0.30	Pass
200 mV dB Volts	dB	dB	dB	dB	dB		
	Short	-101	<-75 dB			Pass	
	10 mV @100 Hz	-37.78	-37.77	0.01	0.50	-94.26	Pass
	10 mV @10 kHz	-37.78	-37.77	0.01	0.50	-94.26	Pass
	1 V @100 Hz	2.22	2.23	0.01	0.15	-36.2	Pass
DC Amp	uAmp	uAmp	uAmp	uAmp	uAmp		
	200 uAmp	190.00	190.09	0.09	0.59	0.029	Pass
2 mAmp	mAmp	mAmp	mAmp	mAmp	mAmp		
	1.9000	1.8989	-0.0011	0.0059	0.00028	Pass	
	19.000	19.013	0.013	0.059	0.0027	Pass	
	190.00	190.19	0.19	0.59	0.027	Pass	
	1900.0	1902.0	2.0	5.9	0.89	Pass	

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Calibration Report

Work Order:	303074241	Mfr.	FLUKE	Technician	JRG
Asset No.	001434	Model	8050A	Cal Date.	01-May-07
Serial No.	5005078	Type.	VOLTMETER		

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left	
AC mAmp		mAmp	mAmp	mAmp	mAmp	Result	
20 mA	100 Hz	19.000	19.012	0.012	0.200	0.032	Pass
Ohm		Ohms	Ohms	Ohms	Ohms	Ohms	
200		0.00	0.02	0.02	0.04	0.012	Pass
		100.00	99.98	-0.02	0.14	0.013	Pass
		kOhms	kOhms	kOhms	kOhms	kOhms	
2 k		1.0000	0.9992	-0.0008	0.0012	0.00012	Pass
20 k		10.000	10.000	0.000	0.007	0.0012	Pass
200 k		100.00	99.98	-0.02	0.07	0.012	Pass
2000 k		1000.00	1000.2	0.20	2.80	0.13	Pass
		MOhms	MOhms	MOhms	MOhms	MOhms	
20 M		10.000	10.003	0.003	0.028	0.002	Pass
		nS	nS	nS	nS	nS	
2 mS	1 kOhm	1.0000	1.0008	0.0008	0.0015	0.00012	Pass
200nS	10MOhm	100.00	99.96	-0.04	0.70	0.0012	Pass

END OF REPORT

Don,

The rechargeable batteries used inside asset # 001434 are going bad. Bob spoke with Fluke this morning and the batteries are no longer available for replacement. The unit is presently calibrated; however, you may want to make plans for replacing the entire item in the near future.

*Joseph R Greagrey*

QA Technologist, CMI, CQT, CCT  
Institute Calibration Laboratory

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