Purchase Order: 132789

Report: 86130

Standard Meter Lab. Inc.

Certificate of Calibration

Accredited

ACCREDITED
#CL-146

Customer: XYZ Incorporated
Address: 1234 Dead End Rd. Any City, CA 12345

Contact: Joe Customer

Instrument Identification

System ID: 1012428
Serial #: 60640104
Tool #: N/A
Property #: N/A
Instrument: Fluke Electronics #87 (Accredited) Multimeter, True RMS
Range: Multi Function

Test Results

Service Performed: Calibration
Technician: Robert S. Ehlers
Date Calibrated: 02/07/2014
Date Due: 02/07/2015
Location of Calibration: In House
Laboratory: Standard Meter Lab
Address: 236 Rickenbacker Circle Livermore, CA 94551
As Found Condition: In Tolerance
As Left Condition: In Tolerance
Environmental Conditions: 69.3 Deg.F 34.5% RH
Instruction Used: 17-20AQ-299

Technical Remarks

Condition: Received in good condition.

Analysis: Verified accuracy in accordance with the listed calibration instruction.

Calibration Standards

ID#	Manufacturer	Model	Description	Due Date	NIST#
1000154	Fluke Electronics	5522A/GHZ	Calibrator, Multi Function	06/25/2014	81533

Calibrations are performed using standards traceable to NIST. Our calibration system complies with ANSI/NCSL Z540-1 and ISO/IEC 17025. This Information applies only to the instrument identified above and may not be reproduced, except in full, without prior written consent. Reported uncertanties are expressed as expanded values at approximately the 95% confidence level using a coverage factor of K=2. There is no implied warranty that the instrument will maintain its specified tolerances during the calibration interval due to possible drift, environment or other factors beyond our control.

Approval Person: Robert J. Smith - Quality Assurance Signature: Date: 02/07/2014

236 Rickenbacker Circle Livermore, CA 94551 P 925-449-0220 F 925-449-1704

Measurement Information

Parameter	Unit	Setpoint	As Found	As Left	Lower Tol.	Upper Tol.	OT?
Frequency Tests -			-	-			-
Freq, 200 Hz Range	Hz	100.00	99.99	99.99	99.98	100.02	No
Freq, 20 KHz Range	KHz	10.000	9.999	9.999	9.998	10.002	No
Freq, 200 KHz Range *	KHz	100.00	99.99	99.99	99.98	100.02	No
RU = < 2.5 ppm -			-	-			-
Expanded Uncertainty -			-	0.002% rdg			-
-			-	-			-
Duty Cycle (50)	%	50.0	50.0	50.0	42.0	58.0	No
-			-	-			-
DC Volt Tests -			-	-			-
V dc, 400 mV Range	mV DC	390.0	390.0	390.0	389.5	390.5	No
V dc, 4 V Range	V DC	1.000	1.000	1.000	0.998	1.002	No
V dc, 4 V Range	V DC	2.000	2.000	2.000	1.997	2.003	No
V dc, 4 V Range	V DC	3.000	3.000	3.000	2.996	3.004	No
V dc, 4 V Range	V DC	3.900	3.900	3.900	3.895	3.905	No
V dc, 40 V Range	V DC	39.00	39.00	39.00	38.95	39.05	No
V dc, 400 V Range	V DC	390.0	390.0	390.0	389.5	390.5	No
V dc, 1000 V Range	V DC	1000	1000	1000	998	1002	No
V dc, 400 V Range	V DC	-300.0	-300.0	-300.0	-300.4	-299.6	No
V dc, 1000 V Range *	V DC	-1000	-1000	-1000	-1002	-998	No
RU = 0.0195 V -			-	-			-
Expanded Uncertainty -			-	0.0019% rdg			-
-			-	-			-
AC Volt Tests -			-	-			-
V ac, 400 mV Range @ 50Hz	mV AC	390.0	388.8	388.8	386.9	393.1	No
V ac, 400 mV Range @ 400Hz	mV AC	390.0	389.8	389.8	386.9	393.1	No
V ac, 400 mV Range @ 5 kHz	mV AC	390.0	387.6	387.6	385.7	394.3	No
V ac, 400 mV Range @ 20 kHz	mV AC	390.0	391.1	391.1	381.8	398.2	No
V ac, 4 V Range @ 50 Hz	V AC	3.900	3.887	3.887	3.871	3.929	No
V ac, 4 V Range @ 400 Hz	V AC	3.900	3.894	3.894	3.857	3.943	No
V ac, 4 V Range @ 5 kHz	V AC	3.900	3.870	3.870	3.857	3.943	No
V ac, 4 V Range @ 20 kHz	V AC	3.900	3.876	3.876	3.818	3.982	No
V ac, 40 V Range @ 50 Hz	V AC	39.00	38.86	38.86	38.71	39.29	No
V ac, 40 V Range @ 400 Hz	V AC	39.00	38.96	38.96	38.57	39.43	No
V ac, 40 V Range @ 5 kHz	V AC	39.00	38.90	38.90	38.57	39.43	No
V ac, 40 V Range @ 20 kHz	V AC	39.00	38.85	38.85	38.18	39.82	No
V ac, 400 V Range @ 50 Hz	V AC	390.0	388.6	388.6	387.1	392.9	No
V ac, 400 V Range @ 400 Hz	V AC	390.0	389.7	389.7	385.7	394.3	No
V ac, 400 V Range @ 5 kHz	V AC	390.0	388.5	388.5	385.7	394.3	No
V ac, 400 V Range @ 10 kHz	V AC	390.0	386.7	386.7	381.8	398.2	No
V ac, 1 kV Range @ 50 Hz	V AC	1000	1002	1002	991	1009	No
V ac, 1 kV Range @ 400 Hz	V AC	1000	1004	1004	986	1014	No
V ac, 1 kV Range @ 5 kHz *	V AC	1000	999	999	986	1014	No
RU = 0.31 V -			-	-			-
Expanded Uncertainty -			-	0.0475% rdg			-
-			-	-			-
Resistance Tests -			-	-			-
Res, 400 Ohm Range	Ohms	390.0	390.0	390.0	389.1	390.9	No
Res, 4 kOhm Range	KOhm	3.900	3.900	3.900	3.891	3.909	No
Res, 40 kOhm Range	KOhm	39.00	39.00	39.00	38.91	39.09	No
Res, 400 kOhm Range	KOhm	390.0	389.6	389.6	389.1	390.9	No
Res, 4 MOhm Range	MOhm	3.900	3.900	3.900	3.891	3.909	No
Res, 40 MOhm Range *	MOhm	39.00	38.96	38.96	38.58	39.42	No
RU = 0.022 MOhm -			-	-			-
Expanded Uncertainty -			-	0.56% rdg			-
-			-	-			-
Conductance Test -			-	-			-
T1 Leads: 100M Ohm	nS	10.00	10.01	10.01	9.80	10.20	No
-			-	-			-
Diode Test -			-	-			-
Diode Test (3 V dc)	V DC	3.000	3.000	3.000	2.939	3.061	No
-			-	-			-
Capacitance Tests -			-	-			-
Capacitance (5.0 nF)	nF	5.00	5.34	5.34	4.60	5.40	No
Capacitance (0.05 uF)	uF	0.0500	0.0502	0.0502	0.0493	0.0507	No
Capacitance (0.5 uF)	uF	0.500	0.499	0.499	0.493	0.507	No
Capacitance (5.0 uF) *	uF	1.00	0.98	0.98	0.97	1.03	No
RU = 0.0035 uF -			-	-			-
Expanded Uncertainty -			-	0.4% rdg			-

-			-	-			-
DC Current Tests -			-	-			-
A dc, 400 uA Range	uA DC	100.0	100.2	100.2	99.6	100.4	No
A dc, 4000 uA Range	uA DC	1000	1000	1000	996	1004	No
A dc, 40 mA Range	mA DC	10.00	10.01	10.01	9.96	10.04	No
A dc, 400 mA Range	mA DC	100.0	99.9	99.9	99.6	100.4	No
A dc, 4000 mA Range	mA DC	1000	1000	1000	996	1004	No
A dc, 10 A Range *	A DC	10.00	10.00	10.00	9.96	10.04	No
RU = 0.0055 A -			-	-			-
Expanded Uncertainty -			-	0.058% rdg			-
-			-	-			-
AC Current Tests -			-	-			-
A ac, 400 uA Range (60 Hz)	uA AC	100.0	100.4	100.4	98.8	101.2	No
A ac, 4000 uA Range (60Hz)	uA AC	1000	1004	1004	988	1012	No
A ac, 40 mA Range (60 Hz)	mA AC	10.00	10.04	10.04	9.88	10.12	No
A ac, 400 mA Range (60 Hz)	mA AC	100.0	100.4	100.4	98.8	101.2	No
A ac, 4000 mA Range (60 Hz)	mA AC	1000	1004	1004	988	1012	No
A ac, 10 A Range (60 Hz) *	A AC	10.00	10.01	10.01	9.88	10.12	No
RU = 0.008 A -			-	-			-
Expanded Uncertainty -			-	0.08% rdg			-

End of Report