

# Fluke Corporation

Everett, Washington 98206  
USA

## Certificate of Calibration

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The Fluke Corporation, NQA ISO 9001:2008 ISO Certification No 10100, certifies that the instrument identified herein was calibrated in accordance with applicable Fluke calibration procedures. Their calibrations processes are ISO-9001 controlled and are designed to verify the instrument was within its published specifications at the time of calibration.

This calibration is traceable to the SI through recognized national measurement institutes, radiometric techniques, consensus standards, or natural physical constants. The calibration has been completed in accordance with the Fluke Quality System document QSD 111.0. This certificate applies to only the item identified and shall not be reproduced other than in full, without the specific written approval by Fluke Corporation. The user is obliged to have the object recalibrated at appropriate intervals.

In the attached measurement results, measurement error may be expressed with units, (measurement error equals measured result subtracted from the reference value) or as a proportion of the measurement error to the reference value expressed as percent.

Quality Assurance Manager  
Fluke Corporation



### For customer use only

Please fill in appropriate dates as indicated:

Date Instrument Received: \_\_\_\_\_

Date Calibration Due: \_\_\_\_\_

P/N 4368946 6/2013

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## Production Verification Test Data

Model: 1653B Serial Number: 2589029 Date: 2013-12-08

Function	Applied Stimulus	Response	Low Limit	High Limit	Units
VAC	0.4 V @ 60 Hz	0.4	0.1	0.7	(V)
VAC	230 V @ 50 Hz	229.7	227.9	232.1	(V)
VAC	495 V @ 50 Hz	494.3	490.7	499.3	(V)
RLO	20 ohm range at 19.65 ohm	19.63	19.33	19.97	(ohm)
RLO	200 ohm range at 196.5 ohm	196.3	193.3	199.7	(ohm)
RLO	2000 ohm range at 1965 ohm	1963	1933	1997	(ohm)
RLO	Test Current 200 mA at 2 ohm	0.21	0.20	0.25	(A)
RISO	Test Voltage 500 V	546	500	550	(V)
RISO	Insulation Resistance 0.5M ohm	0.5	0.2	0.8	(Mohm)
RISO	Insulation Resistance 225M ohm	228	200	251	(Mohm)
RISO	Test Current 1 mA at Rnom of 500 Kohm	0.00102	0.0010	0.0011	(A)
RISO	Test Voltage 1000 V	1037	1000	1100	(V)
RISO	Insulation Resistance 0.1M ohm	0.1	0.0	0.4	(Mohm)
RISO	Insulation Resistance 1M ohm	1.0	0.7	1.3	(Mohm)
RISO	Insulation Resistance 195M ohm	195.4	191.8	198.2	(Mohm)
RISO	Insulation Resistance 900M ohm	901	810	990	(Mohm)
RISO	Test Current 1 mA at Rnom of 1 Mohm	0.00102	0.0010	0.0011	(A)
Z1	Line-Neutral 0.47 ohm at 230V/50Hz	0.44	0.43	0.51	(ohm)
Z1	Line-Neutral 17.88 ohm at 230V/50Hz	17.87	17.48	18.28	(ohm)
Z1	Line-Neutral 180.0 ohm at 110V/60Hz	178.6	174.6	185.4	(ohm)
Z1	Line-Line 1800 ohm at 240V/50Hz	1767	1692	1908	(ohm)
RCD deltaT	Tripping Speed Test at 30 mA	296	291	299	(mS)
RCD deltaT	Tripping Speed Current at 30mA	0.032	0.030	0.033	(A)
RCD deltaT	Tripping Speed Test at 1000 mA	297	291	299	(mS)
RCD deltaT	Tripping Speed Current at 1000 mA	1.043	1.000	1.100	(A)
RCD Idelta	10 mA RCD Trip Current at 750 msec	PASS			
RE	Compliance Voltage 25V	-24	20	30	(V)
RE	Frequency	128	124	132	(Hz)
RE	200 ohm Range at 0.5 ohm	0.5	0.0	1.0	(ohm)
RE	2000 ohm Range at 1800 ohm	1794	1727	1873	(ohm)
Phase Seq.	Correct Sequence "1-2-3"	PASS			
Phase Seq.	Incorrect Sequence "3-2-1"	PASS			