



Attn: Quality Control

MANUFACTURER: OHM-LABS, INC
DESCRIPTION: RESISTANCE STANDARD
MODEL: 111
SERIAL:

PROCEDURE: RS CAL
LAB ENVIRONMENT: 23 °C / 43 %RH
CALIBRATION DATE:
CALIBRATION DUE:

| | <u>MEASURED VALUE</u> | <u>UNCERTAINTY</u> |
|-------|-----------------------|--------------------|
| 200 V | 99.994 49 GIGAOHMS | 55 μΩ / Ω |
| 500V | 99.995 32 GIGAOHMS | 55 μΩ / Ω |

THERMISTOR: 10,877 Ω AT 23.009 °C

| ID | Description | <u>STANDARDS USED</u> | |
|--------|------------------------|-----------------------|-------------|
| | | Make & Model | Cal Due |
| AS3110 | RESISTANCE STANDARD | OHM-LABS 111 | 22/JUL/2011 |
| AS3303 | THERMOMETER | ASL F26 | 30/APR/2011 |
| AS3400 | HIGH RESISTANCE BRIDGE | OHM-LABS DSB | 30/JUL/2011 |
| AS3522 | MULTIMETER | FLUKE 8840A | 12/MAR/2012 |

COMMENTS:

Ohm-Labs, Inc. certifies that this resistance standard has been calibrated using standards traceable to a recognized national measurement institute, or derived by a ratio type self-calibration technique. The reported uncertainty uses a coverage factor of k=2, giving an approximate 95% confidence level. This uncertainty is at the time of test only, and does not take into account transit, usage, drift over time or other factors affecting stability. This certificate shall not be reproduced, except in full, without written permission by Ohm-Labs, Inc.

Performed by: _____
Technician

Reviewed by: _____
Quality Manager





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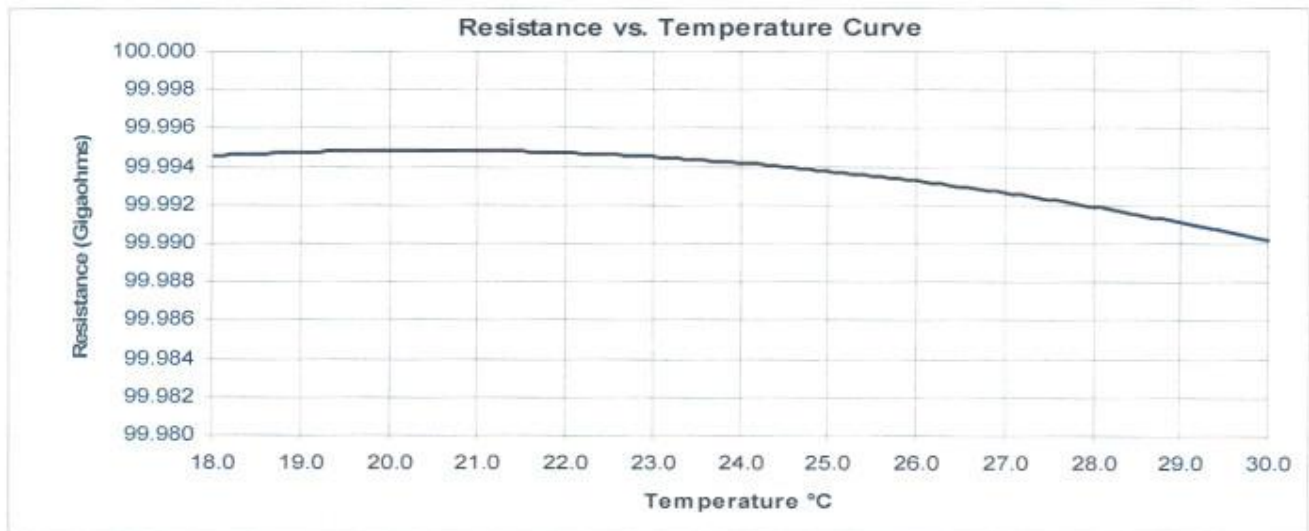
TEMPERATURE COEFFICIENTS OF RESISTANCE, REFERENCED TO 23.0 °C

α (ALPHA) = -2.60 E-06

β (BETA) = -5.04 E-07

TABLE OF CORRECTIONS IN PPM FROM MEASURED VALUE AT 23.0 °C

| Temp | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 18 | 0.5 | 0.7 | 0.9 | 1.1 | 1.4 | 1.5 | 1.7 | 1.9 | 2.1 | 2.2 |
| 19 | 2.4 | 2.5 | 2.6 | 2.8 | 2.9 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 |
| 20 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.3 | 3.3 | 3.3 |
| 21 | 3.2 | 3.1 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.5 | 2.4 | 2.3 |
| 22 | 2.1 | 1.9 | 1.8 | 1.6 | 1.4 | 1.2 | 1.0 | 0.7 | 0.5 | 0.3 |
| 23 | 0.0 | -0.3 | -0.5 | -0.8 | -1.1 | -1.4 | -1.7 | -2.1 | -2.4 | -2.8 |
| 24 | -3.1 | -3.5 | -3.9 | -4.2 | -4.6 | -5.0 | -5.5 | -5.9 | -6.3 | -6.8 |
| 25 | -7.2 | -7.7 | -8.2 | -8.7 | -9.2 | -9.7 | -10.2 | -10.7 | -11.3 | -11.8 |
| 26 | -12.4 | -12.9 | -13.5 | -14.1 | -14.7 | -15.3 | -15.9 | -16.6 | -17.2 | -17.8 |
| 27 | -18.5 | -19.2 | -19.9 | -20.5 | -21.2 | -21.9 | -22.7 | -23.4 | -24.1 | -24.9 |
| 28 | -25.6 | -26.4 | -27.2 | -28.0 | -28.8 | -29.6 | -30.4 | -31.2 | -32.1 | -32.9 |
| 29 | -33.8 | -34.7 | -35.6 | -36.4 | -37.3 | -38.3 | -39.2 | -40.1 | -41.0 | -42.0 |





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CALIBRATION DUE:

| | <u>MEASURED VALUE</u> | <u>UNCERTAINTY</u> |
|-------|-----------------------|--------------------|
| 200 V | 0.999 772 2 TERAHMS | 125 μΩ / Ω |
| 500V | 0.999 768 6 TERAHMS | 125 μΩ / Ω |

THERMISTOR: 10,882 Ω AT 23.077 °C

| ID | Description | <u>STANDARDS USED</u> | |
|--------|------------------------|-----------------------|-------------|
| | | Make & Model | Cal Due |
| AS3110 | RESISTANCE STANDARD | OHM-LABS 111 | 22/JUL/2011 |
| AS3303 | THERMOMETER | ASL F26 | 30/APR/2011 |
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Technician

Reviewed by _____
Quality Manager





CALIBRATION REPORT #

PO #

April 27, 2011

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 LAB ENVIRONMENT: 23 °C / 43 %RH
 CALIBRATION DATE:
 CALIBRATION DUE:

TEMPERATURE COEFFICIENTS OF RESISTANCE, REFERENCED TO 23.0 °C, AT 500 V

α (ALPHA) = -1.31 E-05

β (BETA) = -5.58 E-07

TABLE OF CORRECTIONS IN PPM FROM MEASURED VALUE AT 23.0 °C

| Temp | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
|------|-----|------|------|------|------|------|------|------|------|------|
| 18 | 52 | 51 | 50 | 50 | 49 | 48 | 47 | 46 | 46 | 45 |
| 19 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 36 |
| 20 | 35 | 34 | 33 | 32 | 31 | 29 | 28 | 27 | 26 | 25 |
| 21 | 24 | 23 | 22 | 21 | 20 | 19 | 17 | 16 | 15 | 14 |
| 22 | 13 | 11 | 10 | 9 | 8 | 6 | 5 | 4 | 3 | 1 |
| 23 | 0 | -1 | -3 | -4 | -5 | -7 | -8 | -10 | -11 | -12 |
| 24 | -14 | -15 | -17 | -18 | -20 | -21 | -23 | -24 | -26 | -27 |
| 25 | -29 | -30 | -32 | -33 | -35 | -36 | -38 | -40 | -41 | -43 |
| 26 | -45 | -46 | -48 | -50 | -51 | -53 | -55 | -56 | -58 | -60 |
| 27 | -62 | -63 | -65 | -67 | -69 | -71 | -72 | -74 | -76 | -78 |
| 28 | -80 | -82 | -84 | -86 | -87 | -89 | -91 | -93 | -95 | -97 |
| 29 | -99 | -101 | -103 | -105 | -107 | -109 | -111 | -113 | -115 | -118 |

