



Report of Calibration
for
Ruthenium Oxide Thermometer
Model No. RO600
Typical Response

Calibration Excitation: 0.03 microamps AC (0.05 to 0.08K)
0.3 microamps AC (0.08 to 2.0K)
10 microamps DC (2.0 to 20.0K)

Calibration Range: 0.05 to 20.0K

Record of Revisions						
Rev	ECN#	Description	Rev by	Date	Appr by	Date
-		Initial Release	JWS	11/21/05	<i>JWS</i>	<i>12/15/05</i>

Scientific Instruments, Inc.
4400 W. Tiffany Drive, West Palm Beach, Florida 33407 U.S.A.

Ph: (561) 881-8500 • Fax: (561) 881-8556



Ruthenium Oxide Thermometer Interpolation Tables

RO600

Typical Response

0.05 to 2.0K

$$\frac{1}{T} = a + bR \ln R + cR^2 \ln R$$

T = Temperature in Kelvin

R = Resistance in Ohms

$$a = -0.77127$$

$$b = 1.0068E - 4$$

$$c = -1.072E - 9$$

T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]
0.05	29072.86	0.27	5482.79	0.49	3550.93	0.71	2810.45	0.93	2416.56
0.06	22792.03	0.28	5329.10	0.50	3503.33	0.72	2787.41	0.94	2402.97
0.07	19034.37	0.29	5186.07	0.51	3457.57	0.73	2764.99	0.95	2389.66
0.08	16462.45	0.30	5052.62	0.52	3413.56	0.74	2743.17	0.96	2376.63
0.09	14571.49	0.31	4927.81	0.53	3371.19	0.75	2721.93	0.97	2363.86
0.10	13114.91	0.32	4810.82	0.54	3330.37	0.76	2701.23	0.98	2351.35
0.11	11954.86	0.33	4700.93	0.55	3291.02	0.77	2681.07	0.99	2339.09
0.12	11007.22	0.34	4597.50	0.56	3253.06	0.78	2661.41	1.00	2327.06
0.13	10217.44	0.35	4499.97	0.57	3216.41	0.79	2642.24	1.10	2218.67
0.14	9548.42	0.36	4407.85	0.58	3181.01	0.80	2623.55	1.20	2128.07
0.15	8973.98	0.37	4320.70	0.59	3146.79	0.81	2605.31	1.30	2051.19
0.16	8475.06	0.38	4238.11	0.60	3113.70	0.82	2587.50	1.40	1985.13
0.17	8037.48	0.39	4159.74	0.61	3081.68	0.83	2570.12	1.50	1927.75
0.18	7650.42	0.40	4085.27	0.62	3050.68	0.84	2553.15	1.60	1877.43
0.19	7305.49	0.41	4014.41	0.63	3020.65	0.85	2536.57	1.70	1832.94
0.20	6996.06	0.42	3946.90	0.64	2991.54	0.86	2520.36	1.80	1793.33
0.21	6716.86	0.43	3882.51	0.65	2963.32	0.87	2504.53	1.90	1757.83
0.22	6463.61	0.44	3821.02	0.66	2935.94	0.88	2489.05	2.00	1725.82
0.23	6232.80	0.45	3762.25	0.67	2909.36	0.89	2473.91		
0.24	6021.54	0.46	3706.01	0.68	2883.56	0.90	2459.10		
0.25	5827.42	0.47	3652.13	0.69	2858.49	0.91	2444.61		
0.26	5648.41	0.48	3600.49	0.70	2834.13	0.92	2430.44		

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2.0 to 20K

$$\frac{1}{T} = a + bR^2 \ln R + cR^3$$

T = Temperature in Kelvin

R = Resistance in Ohms

$$a = -0.3199412$$

$$b = 5.74884E - 8$$

$$c = -8.8409E - 11$$

2.0 to 10K

T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]
2.00	1723.48	3.70	1422.68	5.40	1303.93	7.10	1239.60	8.80	1199.11
2.10	1693.20	3.80	1412.95	5.50	1299.11	7.20	1236.72	8.90	1197.19
2.20	1665.53	3.90	1403.69	5.60	1294.45	7.30	1233.91	9.00	1195.31
2.30	1640.15	4.00	1394.87	5.70	1289.95	7.40	1231.17	9.10	1193.47
2.40	1616.77	4.10	1386.45	5.80	1285.59	7.50	1228.50	9.20	1191.67
2.50	1595.16	4.20	1378.41	5.90	1281.38	7.60	1225.90	9.30	1189.90
2.60	1575.12	4.30	1370.72	6.00	1277.29	7.70	1223.37	9.40	1188.17
2.70	1556.48	4.40	1363.35	6.10	1273.34	7.80	1220.89	9.50	1186.48
2.80	1539.09	4.50	1356.30	6.20	1269.50	7.90	1218.48	9.60	1184.81
2.90	1522.82	4.60	1349.53	6.30	1265.78	8.00	1216.12	9.70	1183.19
3.00	1507.58	4.70	1343.03	6.40	1262.17	8.10	1213.82	9.80	1181.59
3.10	1493.26	4.80	1336.79	6.50	1258.66	8.20	1211.57	9.90	1180.03
3.20	1479.78	4.90	1330.79	6.60	1255.26	8.30	1209.38	10.00	1178.49
3.30	1467.06	5.00	1325.01	6.70	1251.95	8.40	1207.23		
3.40	1455.05	5.10	1319.45	6.80	1248.73	8.50	1205.13		
3.50	1443.68	5.20	1314.09	6.90	1245.61	8.60	1203.08		
3.60	1432.91	5.30	1308.92	7.00	1242.56	8.70	1201.07		

10 to 20K

T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]	T[K]	R[Ohms]
10.00	1178.49	12.00	1152.97	14.00	1134.51	16.00	1120.53	18.00	1109.57
10.50	1171.23	12.50	1147.82	14.50	1130.66	16.50	1117.55	18.50	1107.19
11.00	1164.61	13.00	1143.05	15.00	1127.06	17.00	1114.74	19.00	1104.94
11.50	1158.55	13.50	1138.63	15.50	1123.69	17.50	1112.08	19.50	1102.79
								20.00	1100.75

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