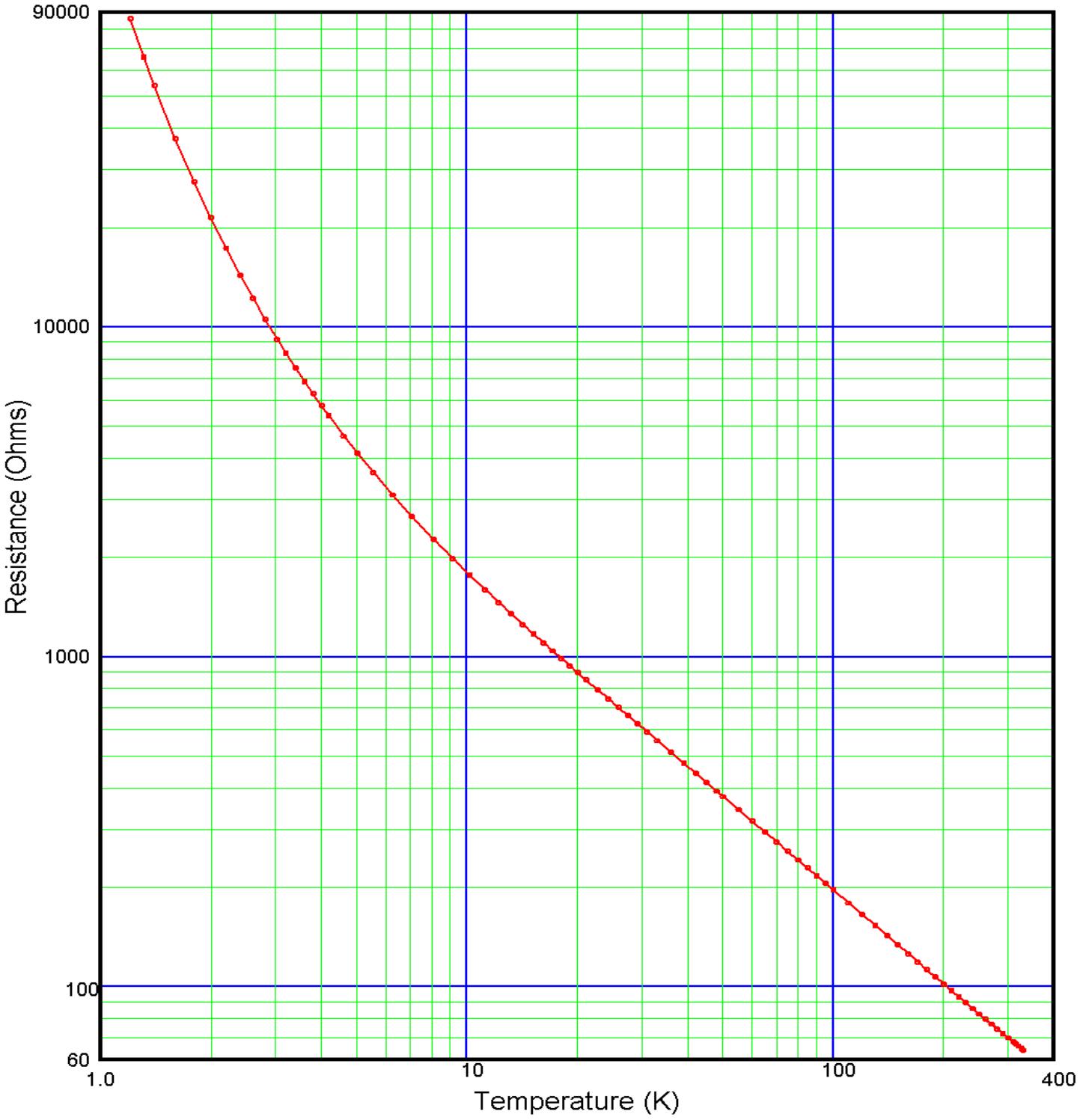
DATA PLOT

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%



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TEST DATA

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Index	Temperature (K)	Resistance (Ω)	Index	Temperature (K)	Resistance (Ω)
1	1.20438	85972.6	46	42.0767	443.686
2	1.30934	65960.7	47	45.0733	415.811
3	1.40092	53842.7	48	48.0670	391.335
4	1.59949	37224.3	49	50.0641	376.609
5	1.79919	27560.8	50	55.0580	344.336
6	1.99872	21459.9	51	60.0622	317.234
7	2.19928	17317.4	52	65.0652	294.284
8	2.40136	14375.7	53	70.0640	274.551
9	2.60250	12225.3	54	75.0473	257.392
10	2.81019	10545.8	55	80.0489	242.264
11	3.03164	9174.69	56	85.0468	228.864
12	3.19984	8341.25	57	90.0417	216.915
13	3.39809	7523.91	58	95.0346	206.190
14	3.60001	6836.61	59	100.026	196.466
15	3.79986	6265.55	60	110.218	179.310
16	4.00450	5769.82	61	120.026	165.443
17	4.18638	5389.86	62	130.029	153.360
18	4.61787	4665.36	63	140.029	142.968
19	5.02763	4135.93	64	150.028	133.922
20	5.54066	3625.55	65	160.023	125.934
21	6.25849	3095.95	66	170.024	118.876
22	7.07463	2661.20	67	180.037	112.583
23	8.09936	2270.78	68	190.036	106.951
24	9.13042	1985.32	69	200.042	101.878
25	10.1619	1767.73	70	210.054	97.2860
26	11.1840	1597.71	71	220.057	93.1195
27	12.1943	1460.98	72	230.061	89.3249
28	13.2001	1347.82	73	240.067	85.8359
29	14.1921	1253.73	74	250.059	82.6556
30	15.1785	1173.09	75	260.068	79.7099
31	16.1582	1103.22	76	270.067	76.9972
32	17.1342	1042.07	77	280.075	74.4827
33	18.1078	987.787	78	290.063	72.1555
34	19.0839	939.116	79	300.090	69.9838
35	20.0599	895.280	80	310.092	67.9705
36	21.1403	851.512	81	315.105	67.0071
37	22.7190	795.078	82	320.110	66.0784
38	24.3081	745.644	83	326.087	65.0129
39	25.9115	701.799	84	330.108	64.3156
40	27.5329	662.679			
41	29.1579	627.633			
42	30.9782	592.631			
43	33.0894	556.811			
44	36.0967	512.847			
45	39.0846	475.746			

POLYNOMIAL EQUATION

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Useful Range of Fit:

1.40K	to	14.2K
5.395e+4 Ohms	to	1254. Ohms

Lower and Upper limits of Log(resistance) used in computing Chebychev coefficients:

ZL = 3.04266169622 ZU = 4.93436024488

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	5.458013	3.5327E-04	15449.78
1	-6.297343	5.6559E-04	-11134.13
2	2.855297	4.9593E-04	5757.44
3	-1.086845	4.9821E-04	-2181.48
4	0.350385	4.7042E-04	744.84
5	-0.092838	4.3931E-04	-211.33
6	0.018789	4.2816E-04	43.88

Z = Log(resistance)

X = ((Z-ZL)-(ZU-Z))/(ZU-ZL)

Temp. (K) = ΣA_i* COS(i * ARCCOS(X)), where 0 <= i <= 6
and the A_i's are the coefficients in the table above.

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POLYNOMIAL EQUATION

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Temp. (K) vs. Log(resistance)

	R Meas. (Ω)	T Meas. (K)	T Eq. (K)	T diff. (mK)
1	85972.64	1.20438	1.20546	-1.08
2	65960.75	1.30934	1.30667	2.68
3	53842.71	1.40092	1.40103	-0.11
4	37224.34	1.59949	1.60244	-2.94
5	27560.83	1.79919	1.80033	-1.14
6	21459.85	1.99872	1.99748	1.24
7	17317.38	2.19928	2.19735	1.93
8	14375.72	2.40136	2.39955	1.81
9	12225.30	2.60250	2.60155	0.94
10	10545.76	2.81019	2.81058	-0.40
11	9174.693	3.03164	3.03274	-1.10
12	8341.247	3.19984	3.20072	-0.88
13	7523.910	3.39809	3.39924	-1.15
14	6836.609	3.60001	3.60097	-0.96
15	6265.553	3.79986	3.80088	-1.02
16	5769.818	4.00450	4.00559	-1.09
17	5389.858	4.18638	4.18755	-1.17
18	4665.363	4.61787	4.61637	1.50
19	4135.930	5.02763	5.02600	1.63
20	3625.548	5.54066	5.53784	2.83
21	3095.946	6.25849	6.25669	1.80
22	2661.200	7.07463	7.07570	-1.06
23	2270.776	8.09936	8.10155	-2.18
24	1985.316	9.13042	9.13144	-1.02
25	1767.732	10.16193	10.16229	-0.36
26	1597.715	11.18398	11.18312	0.87
27	1460.982	12.19430	12.19398	0.32
28	1347.819	13.20007	13.20124	-1.17
29	1253.730	14.19206	14.19076	1.30
30	1173.092	15.17850	15.17724	1.27
31	1103.219	16.15823	16.15951	-1.28

Order of Fit = 6 RMS error of fit = 1.46 mK
Largest absolute error = -2.94 mK at data point no. 4

POLYNOMIAL EQUATION

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Useful Range of Fit:

14.2K	to	80.0K
1254. Ohms	to	242.3 Ohms

Lower and Upper limits of Log(resistance) used in computing Chebychev coefficients:

ZL = 2.33628865687 ZU = 3.16464475732

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	41.708267	4.7195E-04	88374.68
1	-37.402672	7.7139E-04	-48487.68
2	9.208417	7.0083E-04	13139.29
3	-1.504628	6.5655E-04	-2291.72
4	0.205222	6.3173E-04	324.86
5	-0.017622	6.0746E-04	-29.01
6	-0.004606	5.8896E-04	-7.82
7	0.001471	5.8648E-04	2.51

Z = Log(resistance)

X = ((Z-ZL)-(ZU-Z))/(ZU-ZL)

Temp. (K) = ΣA_i* COS(i * ARCCOS(X)), where 0 <= i <= 7
and the A_i's are the coefficients in the table above.

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POLYNOMIAL EQUATION

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Temp. (K) vs. Log(resistance)

	R Meas. (Ω)	T Meas. (K)	T Eq. (K)	T diff. (mK)
27	1460.982	12.19398	12.19385	0.13
28	1347.819	13.20124	13.20155	-0.31
29	1253.730	14.19076	14.19124	-0.48
30	1173.092	15.17850	15.17734	1.17
31	1103.219	16.15823	16.15842	-0.20
32	1042.072	17.13423	17.13365	0.58
33	987.7872	18.10775	18.10819	-0.44
34	939.1162	19.08395	19.08440	-0.45
35	895.2795	20.05993	20.06031	-0.38
36	851.5121	21.14033	21.14084	-0.51
37	795.0780	22.71899	22.71922	-0.22
38	745.6440	24.30807	24.30771	0.35
39	701.7990	25.91146	25.91205	-0.59
40	662.6789	27.53290	27.52976	3.14
41	627.6334	29.15790	29.15647	1.43
42	592.6308	30.97820	30.97981	-1.61
43	556.8114	33.08938	33.09089	-1.50
44	512.8473	36.09667	36.09842	-1.76
45	475.7457	39.08461	39.08349	1.12
46	443.6858	42.07671	42.07892	-2.21
47	415.8106	45.07328	45.07234	0.94
48	391.3348	48.06703	48.06560	1.43
49	376.6088	50.06410	50.06120	2.90
50	344.3365	55.05799	55.05602	1.97
51	317.2343	60.06219	60.06913	-6.95
52	294.2837	65.06522	65.06694	-1.72
53	274.5511	70.06405	70.05930	4.75
54	257.3919	75.04728	75.04649	0.79
55	242.2644	80.04894	80.04907	-0.13
56	228.8640	85.04678	85.04900	-2.21
57	216.9145	90.04171	90.04075	0.96

Order of Fit = 7 RMS error of fit = 2.01 mK
Largest absolute error = -6.95 mK at data point no. 51

POLYNOMIAL EQUATION

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Useful Range of Fit:

80.0K	to	325.K
242.3 Ohms	to	65.20 Ohms

Lower and Upper limits of Log(resistance) used in computing Chebychev coefficients:

ZL = 1.80831618387 ZU = 2.4386232303

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	174.954302	2.1919E-03	79816.74
1	-126.100597	3.3989E-03	-37100.21
2	24.405930	3.2574E-03	7492.47
3	-3.779251	3.0762E-03	-1228.54
4	0.705130	2.9331E-03	240.40
5	-0.142875	2.9337E-03	-48.70
6	0.019431	2.8747E-03	6.76

Z = Log(resistance)

X = ((Z-ZL)-(ZU-Z))/(ZU-ZL)

Temp. (K) = ΣA_i* COS(i * ARCCOS(X)), where 0 <= i <= 6
and the A_i's are the coefficients in the table above.

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POLYNOMIAL EQUATION

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Temp. (K) vs. Log(resistance)

	R Meas. (Ω)	T Meas. (K)	T Eq. (K)	T diff. (mK)
53	274.5511	70.05930	70.06207	-2.77
54	257.3919	75.04649	75.04435	2.14
55	242.2644	80.04907	80.04539	3.68
56	228.8640	85.04678	85.04609	0.70
57	216.9145	90.04171	90.04162	0.09
58	206.1899	95.03455	95.03097	3.59
59	196.4657	100.02575	100.03682	-11.07
60	179.3100	110.21847	110.22055	-2.08
61	165.4425	120.02605	120.02510	0.95
62	153.3604	130.02936	130.03674	-7.38
63	142.9684	140.02889	140.02312	5.77
64	133.9220	150.02832	149.99972	28.60
65	125.9344	160.02305	160.02430	-1.25
66	118.8764	170.02445	170.03158	-7.13
67	112.5832	180.03714	180.04636	-9.22
68	106.9512	190.03616	190.04827	-12.11
69	101.8784	200.04169	200.05074	-9.05
70	97.28600	210.05365	210.05988	-6.23
71	93.11948	220.05678	220.05626	0.53
72	89.32494	230.06059	230.03961	20.98
73	85.83589	240.06678	240.07327	-6.49
74	82.65557	250.05913	250.03764	21.49
75	79.70992	260.06786	260.06264	5.22
76	76.99715	270.06750	270.06508	2.41
77	74.48269	280.07516	280.08305	-7.89
78	72.15552	290.06257	290.07646	-13.90
79	69.98382	300.09004	300.10496	-14.92
80	67.97050	310.09164	310.07975	11.90
81	67.00708	315.10519	315.10549	-0.30
82	66.07837	320.10971	320.11624	-6.53
83	65.01290	326.08660	326.07715	9.45
84	64.31558	330.10835	330.10752	0.83

Order of Fit = 6 RMS error of fit = 10.01 mK
Largest absolute error = 28.60 mK at data point no. 64

INTERPOLATION TABLE

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Temp (K)	Res. (Ω)	dR/dT (Ω/K)	dlogR/dlogT	Temp (K)	Res. (Ω)	dR/dT (Ω/K)	dlogR/dlogT
1.400	53955.0	-1.0887e+5	-2.8249	15.50	1149.08	-72.781	-0.98175
1.500	44514.2	-81566.	-2.7485	16.00	1113.89	-68.056	-0.97756
1.600	37375.6	-62294.	-2.6667	16.50	1080.94	-63.804	-0.97393
1.700	31877.0	-48402.	-2.5813	17.00	1050.02	-59.951	-0.97062
1.800	27573.4	-38182.	-2.4925	17.50	1020.93	-56.453	-0.96768
1.900	24154.1	-30569.	-2.4046	18.00	993.515	-53.264	-0.96502
2.000	21397.0	-24837.	-2.3216	18.50	967.621	-50.352	-0.96269
2.100	19141.6	-20460.	-2.2447	19.00	943.122	-47.681	-0.96058
2.200	17272.0	-17075.	-2.1750	19.50	919.904	-45.227	-0.95873
2.300	15702.4	-14419.	-2.1120	20.00	897.863	-42.966	-0.95706
2.400	14370.2	-12305.	-2.0550	21.00	856.960	-38.943	-0.95430
2.500	13227.8	-10601.	-2.0035	22.00	819.790	-35.480	-0.95214
2.600	12239.6	-9210.3	-1.9565	23.00	785.847	-32.476	-0.95050
2.700	11377.6	-8063.7	-1.9136	24.00	754.714	-29.848	-0.94918
2.800	10620.5	-7107.9	-1.8739	25.00	726.044	-27.538	-0.94823
2.900	9950.96	-6304.9	-1.8374	26.00	699.549	-25.493	-0.94750
3.000	9355.49	-5623.0	-1.8031	27.00	674.983	-23.673	-0.94694
3.100	8823.00	-5041.5	-1.7714	28.00	652.139	-22.046	-0.94655
3.200	8344.49	-4541.0	-1.7414	29.00	630.837	-20.584	-0.94624
3.300	7912.56	-4107.7	-1.7132	30.00	610.924	-19.265	-0.94603
3.400	7521.08	-3730.6	-1.6865	31.00	592.266	-18.071	-0.94586
3.500	7164.87	-3400.6	-1.6612	32.00	574.746	-16.986	-0.94573
3.600	6839.63	-3110.4	-1.6371	33.00	558.261	-15.997	-0.94564
3.700	6541.67	-2854.0	-1.6142	34.00	542.722	-15.094	-0.94557
3.800	6267.86	-2626.6	-1.5924	35.00	528.050	-14.264	-0.94542
3.900	6015.52	-2424.1	-1.5716	36.00	514.173	-13.502	-0.94532
4.000	5782.34	-2242.9	-1.5516	37.00	501.026	-12.800	-0.94526
4.200	5365.67	-1934.7	-1.5144	38.00	488.555	-12.151	-0.94511
4.400	5004.68	-1683.3	-1.4799	39.00	476.708	-11.551	-0.94499
4.600	4689.40	-1476.2	-1.4481	40.00	465.439	-10.994	-0.94486
4.800	4411.84	-1304.3	-1.4190	42.00	444.473	-9.9953	-0.94450
5.000	4165.86	-1159.7	-1.3919	44.00	425.370	-9.1271	-0.94410
5.200	3946.46	-1037.4	-1.3669	46.00	407.892	-8.3677	-0.94367
5.400	3749.71	-932.88	-1.3434	48.00	391.839	-7.6992	-0.94315
5.600	3572.30	-843.42	-1.3222	50.00	377.043	-7.1086	-0.94268
5.800	3411.56	-765.81	-1.3020	52.00	363.361	-6.5834	-0.94215
6.000	3265.32	-698.11	-1.2828	54.00	350.672	-6.1143	-0.94154
6.500	2951.66	-563.72	-1.2414	56.00	338.871	-5.6949	-0.94111
7.000	2695.86	-464.32	-1.2056	58.00	327.865	-5.3170	-0.94059
7.500	2483.27	-389.24	-1.1756	60.00	317.578	-4.9761	-0.94013
8.000	2303.85	-330.87	-1.1489	65.00	294.568	-4.2564	-0.93922
8.500	2150.30	-285.03	-1.1267	70.00	274.769	-3.6840	-0.93852
9.000	2017.36	-248.05	-1.1066	75.00	257.542	-3.2240	-0.93889
9.500	1901.08	-218.01	-1.0894	77.35	250.186	-3.0384	-0.93937
10.00	1798.49	-193.13	-1.0739	80.00	242.393	-2.8457	-0.93921
10.50	1707.25	-172.42	-1.0604	85.00	228.981	-2.5298	-0.93907
11.00	1625.55	-154.89	-1.0481	90.00	217.009	-2.2662	-0.93984
11.50	1551.92	-139.99	-1.0373	95.00	206.253	-2.0421	-0.94059
12.00	1485.21	-127.18	-1.0275	100.0	196.534	-1.8505	-0.94155
12.50	1424.45	-116.11	-1.0189	105.0	187.705	-1.6849	-0.94249
13.00	1368.87	-106.42	-1.0107	110.0	179.649	-1.5409	-0.94347
13.50	1317.84	-97.920	-1.0031	115.0	172.266	-1.4149	-0.94455
14.00	1270.78	-90.465	-0.99664	120.0	165.475	-1.3039	-0.94557
14.50	1227.22	-83.907	-0.99139	125.0	159.206	-1.2056	-0.94656
15.00	1186.76	-78.040	-0.98639	130.0	153.401	-1.1180	-0.94748

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INTERPOLATION TABLE

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517
Sensor Excitation: 2mV±50%

Temp (K)	Res. (Ω)	dR/dT (Ω/K)	dlogR/dlogT	Temp (K)	Res. (Ω)	dR/dT (Ω/K)	dlogR/dlogT
135.0	148.010	-1.0397	-0.94835	235.0	87.5619	-0.34775	-0.93329
140.0	142.991	-0.96938	-0.94911	240.0	85.8603	-0.33303	-0.93091
145.0	138.305	-0.90590	-0.94975	245.0	84.2301	-0.31919	-0.92841
150.0	133.922	-0.84840	-0.95026	250.0	82.6671	-0.30614	-0.92582
155.0	129.812	-0.79615	-0.95063	255.0	81.1675	-0.29383	-0.92313
160.0	125.953	-0.74850	-0.95083	260.0	79.7276	-0.28222	-0.92035
165.0	122.321	-0.70492	-0.95088	265.0	78.3442	-0.27125	-0.91750
170.0	118.897	-0.66495	-0.95074	270.0	77.0141	-0.26087	-0.91457
175.0	115.666	-0.62819	-0.95044	273.15	76.2023	-0.25462	-0.91270
180.0	112.611	-0.59430	-0.94994	275.0	75.7345	-0.25105	-0.91159
185.0	109.719	-0.56299	-0.94927	280.0	74.5028	-0.24175	-0.90855
190.0	106.977	-0.53399	-0.94842	285.0	73.3163	-0.23293	-0.90547
195.0	104.375	-0.50710	-0.94739	290.0	72.1727	-0.22457	-0.90234
200.0	101.903	-0.48209	-0.94618	295.0	71.0699	-0.21663	-0.89918
205.0	99.5513	-0.45881	-0.94480	300.0	70.0058	-0.20908	-0.89600
210.0	97.3122	-0.43710	-0.94325	305.0	68.9784	-0.20191	-0.89279
215.0	95.1780	-0.41681	-0.94155	310.0	67.9861	-0.19509	-0.88957
220.0	93.1419	-0.39784	-0.93969	315.0	67.0270	-0.18860	-0.88633
225.0	91.1976	-0.38007	-0.93769	320.0	66.0996	-0.18241	-0.88309
230.0	89.3393	-0.36340	-0.93556	325.0	65.2024	-0.17652	-0.87984

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THERMAL CYCLE TESTING

Sensor Model: CX-1050-SD-1.4L Serial Number: X23517
Sensor Type: Cernox Resistor

This sensor was tested for repeatability through rapid thermal cycles from room temperature into liquid helium. During this test, the following four lead resistance values were recorded:

Room Temperature:	68.9Ω
Liquid Nitrogen:	250Ω
Liquid Helium:	5350Ω

The nitrogen and helium values were recorded in OPEN dewars, so precision comparisons with calibration values or other dip test values should not be made.

Recommended Operating Parameters:

For sensors calibrated by LSCI the current to the sensor is adjusted to maintain the sensor output voltage at the values listed below. In order to minimize possible self-heating errors, we suggest that these same guidelines be followed in using the sensor:

Above 1K:	1 to 3 mV
0.1 to 1K:	0.1 mV
Below 0.1K:	0.03 mV

Lead Identification:

NONE

To avoid possible damage to the sensor, do not exceed 1 Volt and do not exceed 100 mA current.

BREAKPOINTS 340 FORMAT

Calibration Report: 423509 Sales Order: 13426
Sensor Model: CX-1050-SD-1.4L Serial Number: X23517
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Name: CX-1050-SD-1.4L
Serial number: X23517
Format: 4 ;Log Ohms/Kelvin
Limit: 325.
Coefficient: 1 ;Negative

Point 1: 1.81425,325.000	Point 56: 2.36948, 83.000	Point 111: 3.22142, 10.750
Point 2: 1.82139,319.000	Point 57: 2.37944, 81.000	Point 112: 3.24110, 10.300
Point 3: 1.82808,313.500	Point 58: 2.38963, 79.000	Point 113: 3.26188, 9.850
Point 4: 1.83491,308.000	Point 59: 2.40010, 77.000	Point 114: 3.28143, 9.450
Point 5: 1.84190,302.500	Point 60: 2.41083, 75.000	Point 115: 3.30203, 9.050
Point 6: 1.84904,297.000	Point 61: 2.42185, 73.000	Point 116: 3.32387, 8.650
Point 7: 1.85634,291.500	Point 62: 2.43317, 71.000	Point 117: 3.34707, 8.250
Point 8: 1.86381,286.000	Point 63: 2.44481, 69.000	Point 118: 3.37181, 7.850
Point 9: 1.87145,280.500	Point 64: 2.45680, 67.000	Point 119: 3.39493, 7.500
Point 10: 1.87928,275.000	Point 65: 2.46916, 65.000	Point 120: 3.41952, 7.150
Point 11: 1.88729,269.500	Point 66: 2.48191, 63.000	Point 121: 3.44583, 6.800
Point 12: 1.89475,264.500	Point 67: 2.49507, 61.000	Point 122: 3.47408, 6.450
Point 13: 1.90236,259.500	Point 68: 2.50868, 59.000	Point 123: 3.50457, 6.100
Point 14: 1.91016,254.500	Point 69: 2.52134, 57.200	Point 124: 3.53472, 5.780
Point 15: 1.91812,249.500	Point 70: 2.53440, 55.400	Point 125: 3.56526, 5.480
Point 16: 1.92628,244.500	Point 71: 2.54791, 53.600	Point 126: 3.59827, 5.180
Point 17: 1.93462,239.500	Point 72: 2.56188, 51.800	Point 127: 3.63177, 4.900
Point 18: 1.94316,234.500	Point 73: 2.57635, 50.000	Point 128: 3.66813, 4.620
Point 19: 1.95191,229.500	Point 74: 2.59136, 48.200	Point 129: 3.70502, 4.360
Point 20: 1.96087,224.500	Point 75: 2.60520, 46.600	Point 130: 3.74526, 4.100
Point 21: 1.97006,219.500	Point 76: 2.61951, 45.000	Point 131: 3.77912, 3.900
Point 22: 1.97947,214.500	Point 77: 2.63436, 43.400	Point 132: 3.80987, 3.730
Point 23: 1.98913,209.500	Point 78: 2.64976, 41.800	Point 133: 3.84281, 3.560
Point 24: 1.99903,204.500	Point 79: 2.66577, 40.200	Point 134: 3.87822, 3.390
Point 25: 2.00919,199.500	Point 80: 2.68138, 38.700	Point 135: 3.91416, 3.230
Point 26: 2.01963,194.500	Point 81: 2.69760, 37.200	Point 136: 3.95287, 3.070
Point 27: 2.02927,190.000	Point 82: 2.71449, 35.700	Point 137: 3.99216, 2.920
Point 28: 2.03915,185.500	Point 83: 2.73092, 34.300	Point 138: 4.03465, 2.770
Point 29: 2.04928,181.000	Point 84: 2.74803, 32.900	Point 139: 4.07778, 2.630
Point 30: 2.05966,176.500	Point 85: 2.76588, 31.500	Point 140: 4.12464, 2.490
Point 31: 2.07032,172.000	Point 86: 2.78455, 30.100	Point 141: 4.17223, 2.360
Point 32: 2.08127,167.500	Point 87: 2.80270, 28.800	Point 142: 4.22420, 2.230
Point 33: 2.09251,163.000	Point 88: 2.82168, 27.500	Point 143: 4.28152, 2.100
Point 34: 2.10407,158.500	Point 89: 2.84159, 26.200	Point 144: 4.34008, 1.980
Point 35: 2.11596,154.000	Point 90: 2.86090, 25.000	Point 145: 4.40481, 1.860
Point 36: 2.12820,149.500	Point 91: 2.88115, 23.800	Point 146: 4.47696, 1.740
Point 37: 2.13940,145.500	Point 92: 2.90249, 22.600	Point 147: 4.55063, 1.630
Point 38: 2.15089,141.500	Point 93: 2.92314, 21.500	Point 148: 4.63205, 1.520
Point 39: 2.16271,137.500	Point 94: 2.94489, 20.400	Point 149: 4.72256, 1.410
Point 40: 2.17487,133.500	Point 95: 2.96158, 19.600	Point 150: 4.73203, 1.400
Point 41: 2.18739,129.500	Point 96: 2.97563, 18.950	
Point 42: 2.20029,125.500	Point 97: 2.99021, 18.300	
Point 43: 2.21360,121.500	Point 98: 3.00536, 17.650	
Point 44: 2.22734,117.500	Point 99: 3.01992, 17.050	
Point 45: 2.24155,113.500	Point 100: 3.03504, 16.450	
Point 46: 2.25440,110.000	Point 101: 3.05079, 15.850	
Point 47: 2.26764,106.500	Point 102: 3.06585, 15.300	
Point 48: 2.28131,103.000	Point 103: 3.08152, 14.750	
Point 49: 2.29139,100.500	Point 104: 3.09788, 14.200	
Point 50: 2.30168, 98.000	Point 105: 3.11499, 13.650	
Point 51: 2.31224, 95.500	Point 106: 3.13128, 13.150	
Point 52: 2.32307, 93.000	Point 107: 3.14831, 12.650	
Point 53: 2.33420, 90.500	Point 108: 3.16619, 12.150	
Point 54: 2.34563, 88.000	Point 109: 3.18497, 11.650	
Point 55: 2.35738, 85.500	Point 110: 3.20276, 11.200	

BREAKPOINTS 91C/93C/330 FORMAT

Calibration Report: 423509
Sensor Model: CX-1050-SD-1.4L
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Sales Order: 13426
Serial Number: X23517

Interpolation Method: Lagrangian
Limit: 325. (Kelvin)
Format: 4 (Log Ohms/Kelvin)
Number of Breakpoints: 54

No.	Units	Temperature (K)	No.	Units	Temperature (K)
1	1.81426	325.0	31	3.20688	11.1
2	1.81544	324.0	32	3.27405	9.6
3	1.83367	309.0	33	3.34419	8.3
4	1.85301	294.0	34	3.40889	7.3
5	1.87358	279.0	35	3.47845	6.4
6	1.89551	264.0	36	3.54282	5.7
7	1.91894	249.0	37	3.60779	5.1
8	1.94404	234.0	38	3.67112	4.6
9	1.97100	219.0	39	3.74557	4.1
10	2.00005	204.0	40	3.81569	3.7
11	2.03146	189.0	41	3.87628	3.4
12	2.06557	174.0	42	3.94562	3.1
13	2.10280	159.0	43	3.99786	2.9
14	2.14369	144.0	44	4.05605	2.7
15	2.18901	129.0	45	4.12149	2.5
16	2.23978	114.0	46	4.19597	2.3
17	2.29755	99.0	47	4.23734	2.2
18	2.36462	84.0	48	4.28198	2.1
19	2.44483	69.0	49	4.33035	2.0
20	2.50527	59.5	50	4.38299	1.9
21	2.57639	50.0	51	4.44049	1.8
22	2.61955	45.0	52	4.50348	1.7
23	2.66786	40.0	53	4.64850	1.5
24	2.72267	35.0	54	4.73203	1.4
25	2.78599	30.0			
26	2.85932	25.1			
27	2.92903	21.2			
28	2.99951	17.9			
29	3.06869	15.2			
30	3.13636	13.0			

Temperature for Resistance Decades:

Res. (Ohms)	Temp. (K)
100	204.025
1000	17.879
10000	2.892

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BREAKPOINTS 234 FORMAT

Calibration Report: 423509 Sales Order: 13426
Sensor Model: CX-1050-SD-1.4L Serial Number: X23517
Sensor Type: Cernox Resistor
Temperature Range: 1.40K to 325K

Maximum Temperature Error:

1.4 - 10K:	0.007K
10 - 20K:	0.017K
20 - 40K:	0.007K
40 - 100K:	0.017K
> 100K:	0.075K

BP #	Temp. (K)	Res. (Ω)	Log10 Res.	BP #	Temp. (K)	Res. (Ω)	Log10 Res.
1	320.166	66.06934	1.820	51	27.617	660.6934	2.820
2	303.992	69.18310	1.840	52	26.306	691.8310	2.840
3	288.799	72.44360	1.860	53	25.058	724.4360	2.860
4	274.511	75.85776	1.880	54	23.872	758.5776	2.880
5	261.048	79.43282	1.900	55	22.742	794.3282	2.900
6	248.349	83.17638	1.920	56	21.668	831.7638	2.920
7	236.343	87.09636	1.940	57	20.647	870.9636	2.940
8	224.995	91.20108	1.960	58	19.676	912.0108	2.960
9	214.229	95.49926	1.980	59	18.754	954.9926	2.980
10	204.027	100.0000	2.000	60	17.879	1000.000	3.000
11	194.336	104.7129	2.020	61	16.260	1096.478	3.040
12	185.125	109.6478	2.040	62	14.804	1202.264	3.080
13	176.365	114.8154	2.060	63	13.495	1318.257	3.120
14	168.023	120.2264	2.080	64	12.322	1445.440	3.160
15	160.080	125.8925	2.100	65	11.270	1584.893	3.200
16	152.514	131.8257	2.120	66	10.326	1737.801	3.240
17	145.300	138.0384	2.140	67	9.480	1905.461	3.280
18	138.413	144.5440	2.160	68	8.721	2089.296	3.320
19	131.852	151.3561	2.180	69	8.039	2290.868	3.360
20	125.597	158.4893	2.200	70	7.427	2511.886	3.400
21	119.631	165.9587	2.220	71	6.877	2754.229	3.440
22	113.942	173.7801	2.240	72	6.382	3019.952	3.480
23	108.512	181.9701	2.260	73	5.936	3311.311	3.520
24	103.335	190.5461	2.280	74	5.532	3630.781	3.560
25	98.408	199.5262	2.300	75	5.167	3981.072	3.600
26	93.708	208.9296	2.320	76	4.836	4365.158	3.640
27	89.226	218.7762	2.340	77	4.536	4786.301	3.680
28	84.958	229.0868	2.360	78	4.262	5248.075	3.720
29	80.892	239.8833	2.380	79	4.013	5754.399	3.760
30	77.021	251.1886	2.400	80	3.784	6309.573	3.800
31	73.335	263.0268	2.420	81	3.575	6918.310	3.840
32	69.823	275.4229	2.440	82	3.383	7585.776	3.880
33	66.481	288.4032	2.460	83	3.206	8317.638	3.920
34	63.298	301.9952	2.480	84	3.043	9120.108	3.960
35	60.272	316.2278	2.500	85	2.892	10000.00	4.000
36	57.392	331.1311	2.520	86	2.563	12589.25	4.100
37	54.652	346.7369	2.540	87	2.290	15848.93	4.200
38	52.045	363.0781	2.560	88	2.062	19952.62	4.300
39	49.561	380.1894	2.580	89	1.870	25118.86	4.400
40	47.199	398.1072	2.600	90	1.705	31622.78	4.500
41	44.951	416.8694	2.620	91	1.562	39810.72	4.600
42	42.811	436.5158	2.640	92	1.437	50118.72	4.700
43	40.774	457.0882	2.660	93	1.326	63095.73	4.800
44	38.835	478.6301	2.680	94	1.234	79432.82	4.900
45	36.988	501.1872	2.700				
46	35.228	524.8075	2.720				
47	33.554	549.5409	2.740				
48	31.959	575.4399	2.760				
49	30.440	602.5596	2.780				
50	28.994	630.9573	2.800				

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