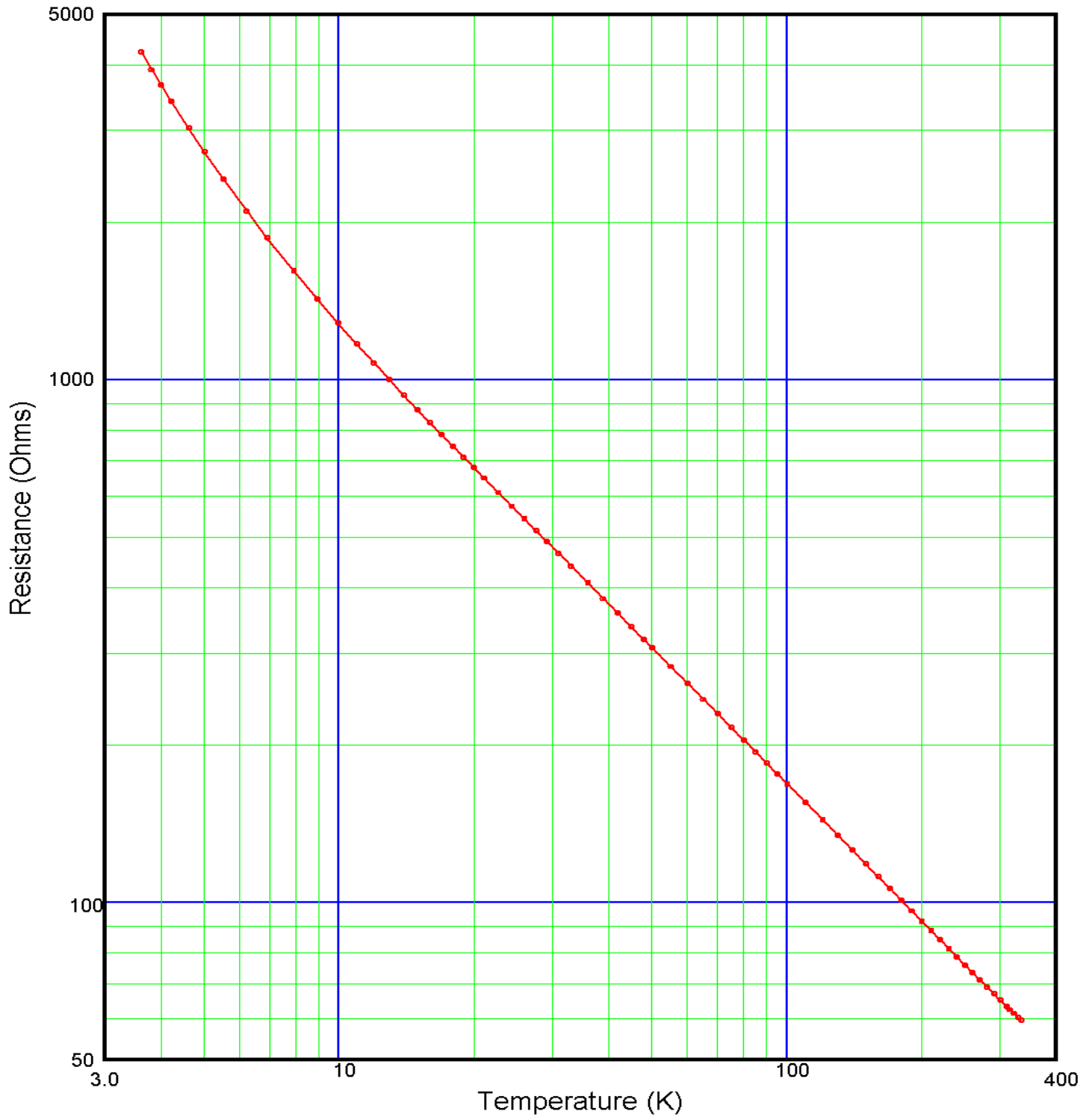


DATA PLOT

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%



TEST DATA

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

Index	Temperature (K)	Resistance (Ω)	Index	Temperature (K)	Resistance (Ω)
1	3.61139	4243.40	41	75.1875	216.307
2	3.81530	3919.79	42	80.2022	204.628
3	4.00017	3665.60	43	85.2114	194.226
4	4.21258	3414.07	44	90.2222	184.910
5	4.61175	3029.78	45	95.2275	176.498
6	5.00061	2731.85	46	100.235	168.839
7	5.51392	2422.73	47	110.227	155.509
8	6.21412	2105.59	48	120.213	144.213
9	6.90635	1869.68	49	130.225	134.506
10	7.91850	1615.39	50	140.197	126.094
11	8.93099	1428.13	51	150.178	118.711
12	9.94021	1284.36	52	160.167	112.182
13	10.9437	1170.45	53	170.146	106.367
14	11.9465	1077.44	54	180.134	101.155
15	12.9480	999.936	55	190.116	96.4722
16	13.9495	934.137	56	200.108	92.2216
17	14.9460	877.781	57	210.102	88.3665
18	15.9482	828.397	58	220.106	84.8378
19	16.9445	785.053	59	230.094	81.6119
20	17.9435	746.353	60	240.112	78.6487
21	18.9442	711.694	61	250.114	75.9192
22	19.9460	680.381	62	260.118	73.3935
23	21.0566	649.021	63	270.119	71.0610
24	22.6760	608.596	64	280.099	68.9020
25	24.3090	573.056	65	290.125	66.8770
26	25.9212	542.095	66	300.047	65.0139
27	27.5229	514.683	67	310.026	63.2605
28	29.1168	490.317	68	314.982	62.4310
29	30.9015	465.741	69	321.244	61.4249
30	32.9748	440.317	70	328.746	60.2708
31	35.9487	408.676	71	333.734	59.5332
32	38.9275	381.494			
33	41.9209	357.857			
34	44.9304	337.059			
35	47.9553	318.628			
36	49.9841	307.471			
37	55.0447	282.939			
38	60.0937	262.326			
39	65.1334	244.766			
40	70.1624	229.592			



POLYNOMIAL EQUATION

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Useful Range of Fit:

4.00K to 24.3K
3667. Ohms to 573.1 Ohms

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

ZL = 2.71153951179 ZU = 3.62771394231

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	11.996909	2.6535E-04	45210.92
1	-11.197484	4.0975E-04	-27327.93
2	3.468624	3.9742E-04	8727.87
3	-0.755292	3.7510E-04	-2013.58
4	0.102983	3.6111E-04	285.18
5	-0.003510	3.4919E-04	-10.05
6	-0.001384	3.4142E-04	-4.05

$Z = \text{Log}(\text{resistance})$

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

Temp. (K) = $\sum A_i \cdot \text{COS}(i \cdot \text{ARCCOS}(X))$, where $0 \leq i \leq 6$
and the A_i 's are the coefficients in the table above.



POLYNOMIAL EQUATION

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
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	4243.400	3.61139	3.61085	0.54
2	3919.789	3.81530	3.81517	0.13
3	3665.595	4.00017	4.00136	-1.19
4	3414.068	4.21258	4.21383	-1.25
5	3029.776	4.61175	4.61015	1.60
6	2731.850	5.00061	4.99943	1.18
7	2422.733	5.51392	5.51336	0.56
8	2105.587	6.21412	6.21434	-0.22
9	1869.684	6.90635	6.90938	-3.03
10	1615.386	7.91850	7.91921	-0.71
11	1428.133	8.93099	8.92943	1.56
12	1284.356	9.94021	9.93818	2.03
13	1170.447	10.94373	10.94278	0.95
14	1077.439	11.94650	11.94669	-0.19
15	999.9359	12.94804	12.94905	-1.01
16	934.1370	13.94948	13.95115	-1.67
17	877.7815	14.94603	14.94702	-0.99
18	828.3966	15.94818	15.94738	0.80
19	785.0525	16.94446	16.94360	0.86
20	746.3535	17.94353	17.94390	-0.37
21	711.6939	18.94422	18.94390	0.32
22	680.3814	19.94596	19.94554	0.42
23	649.0206	21.05656	21.05675	-0.19
24	608.5956	22.67604	22.67659	-0.56
25	573.0560	24.30905	24.30859	0.46
26	542.0945	25.92122	25.92078	0.45
27	514.6826	27.52294	27.52342	-0.47

Order of Fit = 6 RMS error of fit = 1.09 mK
Largest absolute error = -3.03 mK at data point no. 9



POLYNOMIAL EQUATION

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Useful Range of Fit:

24.3K to 110.K
573.1 Ohms to 155.5 Ohms

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

ZL = 2.12874070095 ZU = 2.8122584977

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	63.833909	8.6597E-04	73713.40
1	-52.885529	1.4079E-03	-37562.71
2	11.647856	1.2898E-03	9030.84
3	-1.697650	1.1518E-03	-1473.93
4	0.157811	1.0938E-03	144.28

$Z = \text{Log}(\text{resistance})$

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

Temp. (K) = $\sum A_i \cdot \text{COS}(i \cdot \text{ARCCOS}(X))$, where $0 \leq i \leq 4$
and the A_i 's are the coefficients in the table above.



POLYNOMIAL EQUATION

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

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

	R Meas. (Ω)	T Meas. (K)	T Eq. (K)	T diff. (mK)
23	649.0206	21.05675	21.05640	0.36
24	608.5956	22.67659	22.67576	0.84
25	573.0560	24.30859	24.30832	0.27
26	542.0945	25.92122	25.92164	-0.42
27	514.6826	27.52294	27.52626	-3.32
28	490.3172	29.11679	29.11581	0.99
29	465.7408	30.90154	30.90144	0.10
30	440.3170	32.97483	32.97560	-0.78
31	408.6758	35.94872	35.94766	1.06
32	381.4940	38.92748	38.92817	-0.69
33	357.8571	41.92088	41.92010	0.79
34	337.0594	44.93039	44.93039	0.00
35	318.6275	47.95535	47.95616	-0.81
36	307.4710	49.98411	49.97957	4.54
37	282.9386	55.04466	55.04182	2.84
38	262.3262	60.09372	60.09537	-1.64
39	244.7660	65.13343	65.13354	-0.11
40	229.5915	70.16243	70.16340	-0.97
41	216.3073	75.18752	75.19612	-8.60
42	204.6282	80.20225	80.20543	-3.18
43	194.2265	85.21136	85.21449	-3.13
44	184.9095	90.22221	90.21606	6.15
45	176.4982	95.22753	95.21786	9.67
46	168.8391	100.23522	100.23561	-0.39
47	155.5088	110.22668	110.22469	1.98
48	144.2126	120.21313	120.22139	-8.26
49	134.5057	130.22548	130.22275	2.73

Order of Fit = 4 RMS error of fit = 3.62 mK
Largest absolute error = 9.67 mK at data point no. 45



POLYNOMIAL EQUATION

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

Polynomial Type: Chebychev
Useful Range of Fit:

110.K to 325.K
155.5 Ohms to 60.84 Ohms

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

ZL = 1.7747591342 ZU = 2.2467402921

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	195.546580	1.7645E-03	110820.99
1	-116.687869	2.7464E-03	-42487.83
2	18.499450	2.4639E-03	7508.14
3	-2.495661	2.3991E-03	-1040.26
4	0.413136	2.3938E-03	172.59
5	-0.069097	2.3638E-03	-29.23
6	0.014700	2.2727E-03	6.47

$Z = \text{Log}(\text{resistance})$

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

Temp. (K) = $\sum A_i \cdot \text{COS}(i \cdot \text{ARCCOS}(X))$, where $0 \leq i \leq 6$
and the A_i 's are the coefficients in the table above.



POLYNOMIAL EQUATION

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

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

	R Meas. (Ω)	T Meas. (K)	T Eq. (K)	T diff. (mK)
45	176.4982	95.21786	95.22124	-3.38
46	168.8391	100.23561	100.23037	5.24
47	155.5088	110.22469	110.22191	2.78
48	144.2126	120.21313	120.22178	-8.65
49	134.5057	130.22548	130.22364	1.84
50	126.0936	140.19716	140.19809	-0.93
51	118.7111	150.17828	150.17725	1.03
52	112.1818	160.16656	160.15989	6.67
53	106.3672	170.14644	170.14609	0.36
54	101.1548	180.13440	180.14120	-6.80
55	96.47225	190.11638	190.11162	4.77
56	92.22158	200.10819	200.11323	-5.04
57	88.36650	210.10205	210.09413	7.91
58	84.83775	220.10641	220.10806	-1.65
59	81.61192	230.09398	230.10746	-13.47
60	78.64868	240.11156	240.10808	3.49
61	75.91920	250.11387	250.10790	5.98
62	73.39351	260.11775	260.12630	-8.56
63	71.06097	270.11896	270.11837	0.59
64	68.90195	280.09911	280.08128	17.83
65	66.87701	290.12506	290.12707	-2.01
66	65.01386	300.04720	300.04210	5.11
67	63.26049	310.02589	310.02973	-3.84
68	62.43098	314.98162	314.99752	-15.90
69	61.42492	321.24402	321.24808	-4.06
70	60.27081	328.74589	328.74290	2.99
71	59.53319	333.73422	333.72649	7.73

Order of Fit = 6 RMS error of fit = 7.03 mK
Largest absolute error = 17.83 mK at data point no. 64



INTERPOLATION TABLE

Calibration Report: 404406
 Sensor Model: CX-1050-SD-4L
 Sensor Type: Cernox Resistor
 Temperature Range: 4.00K to 325K

Sales Order: 8789
 Serial Number: X25116
 Sensor Excitation: 2mV±50%

Temp (K)	Res. (Ω)	dR/dT (Ω/K)	dlogR/dlogT	Temp (K)	Res. (Ω)	dR/dT (Ω/K)	dlogR/dlogT
4.000	3667.33	-1275.6	-1.3913	37.00	398.612	-9.3094	-0.86412
4.200	3429.34	-1109.8	-1.3592	38.00	389.532	-8.8570	-0.86402
4.400	3221.45	-973.32	-1.3294	39.00	380.887	-8.4377	-0.86396
4.600	3038.48	-859.97	-1.3019	40.00	372.646	-8.0479	-0.86386
4.800	2876.23	-765.10	-1.2768	42.00	357.269	-7.3461	-0.86359
5.000	2731.46	-684.86	-1.2536	44.00	343.203	-6.7336	-0.86328
5.200	2601.50	-616.45	-1.2322	46.00	330.284	-6.1962	-0.86297
5.400	2484.24	-557.62	-1.2121	48.00	318.376	-5.7214	-0.86259
5.600	2377.90	-506.98	-1.1939	50.00	307.363	-5.3007	-0.86229
5.800	2281.03	-462.71	-1.1765	52.00	297.143	-4.9254	-0.86194
6.000	2192.46	-423.88	-1.1600	54.00	287.635	-4.5891	-0.86155
6.500	2000.97	-346.04	-1.1241	56.00	278.763	-4.2877	-0.86134
7.000	1843.17	-287.89	-1.0933	58.00	270.465	-4.0153	-0.86106
7.500	1710.87	-243.18	-1.0660	60.00	262.685	-3.7688	-0.86083
8.000	1598.35	-208.35	-1.0428	65.00	245.199	-3.2459	-0.86045
8.500	1501.36	-180.59	-1.0224	70.00	230.053	-2.8275	-0.86033
9.000	1416.87	-158.16	-1.0046	75.00	216.794	-2.4873	-0.86047
9.500	1342.54	-139.74	-0.98880	77.35	211.114	-2.3489	-0.86063
10.00	1276.61	-124.46	-0.97495	80.00	205.080	-2.2068	-0.86085
10.50	1217.67	-111.63	-0.96261	85.00	194.649	-1.9727	-0.86146
11.00	1164.65	-100.76	-0.95171	90.00	185.292	-1.7753	-0.86227
11.50	1116.65	-91.465	-0.94196	95.00	176.848	-1.6069	-0.86322
12.00	1072.97	-83.451	-0.93331	100.0	169.183	-1.4626	-0.86452
12.50	1033.02	-76.489	-0.92555	105.0	162.189	-1.3377	-0.86601
13.00	996.334	-70.405	-0.91863	110.0	155.781	-1.2280	-0.86709
13.50	962.497	-65.051	-0.91241	115.0	149.887	-1.1317	-0.86826
14.00	931.180	-60.317	-0.90685	120.0	144.444	-1.0472	-0.86997
14.50	902.094	-56.106	-0.90184	125.0	139.399	-0.97239	-0.87195
15.00	874.998	-52.346	-0.89736	130.0	134.708	-0.90524	-0.87360
15.50	849.684	-48.970	-0.89332	135.0	130.335	-0.84481	-0.87505
16.00	825.972	-45.930	-0.88971	140.0	126.250	-0.79025	-0.87632
16.50	803.706	-43.179	-0.88646	145.0	122.424	-0.74083	-0.87744
17.00	782.750	-40.683	-0.88356	150.0	118.834	-0.69585	-0.87834
17.50	762.986	-38.409	-0.88095	155.0	115.459	-0.65481	-0.87906
18.00	744.309	-36.332	-0.87862	160.0	112.280	-0.61726	-0.87960
18.50	726.626	-34.428	-0.87654	165.0	109.281	-0.58282	-0.87997
19.00	709.855	-32.679	-0.87470	170.0	106.448	-0.55113	-0.88018
19.50	693.924	-31.068	-0.87306	175.0	103.766	-0.52193	-0.88023
20.00	678.766	-29.581	-0.87163	180.0	101.225	-0.49494	-0.88012
21.00	650.545	-26.927	-0.86922	185.0	98.8132	-0.46996	-0.87986
22.00	624.791	-24.635	-0.86745	190.0	96.5221	-0.44677	-0.87945
23.00	601.173	-22.647	-0.86645	195.0	94.3427	-0.42522	-0.87890
24.00	579.420	-20.893	-0.86540	200.0	92.2674	-0.40515	-0.87820
25.00	559.321	-19.338	-0.86435	205.0	90.2891	-0.38642	-0.87736
26.00	540.683	-17.967	-0.86397	210.0	88.4012	-0.36892	-0.87637
27.00	523.338	-16.745	-0.86391	215.0	86.5980	-0.35253	-0.87525
28.00	507.151	-15.647	-0.86387	220.0	84.8742	-0.33718	-0.87398
29.00	492.008	-14.656	-0.86387	225.0	83.2247	-0.32276	-0.87259
30.00	477.807	-13.760	-0.86394	230.0	81.6451	-0.30921	-0.87106
31.00	464.461	-12.945	-0.86401	235.0	80.1313	-0.29645	-0.86940
32.00	451.893	-12.202	-0.86407	240.0	78.6794	-0.28443	-0.86761
33.00	440.036	-11.523	-0.86414	245.0	77.2859	-0.27309	-0.86570
34.00	428.829	-10.900	-0.86418	250.0	75.9475	-0.26237	-0.86367
35.00	418.220	-10.326	-0.86413	255.0	74.6612	-0.25224	-0.86152
36.00	408.162	-9.7974	-0.86414	260.0	73.4241	-0.24266	-0.85927



INTERPOLATION TABLE

Calibration Report: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116
Sensor Excitation: 2mV±50%

<u>Temp (K)</u>	<u>Res. (Ω)</u>	<u>dR/dT (Ω/K)</u>	<u>dlogR/dlogT</u>	<u>Temp (K)</u>	<u>Res. (Ω)</u>	<u>dR/dT (Ω/K)</u>	<u>dlogR/dlogT</u>
265.0	72.2338	-0.23358	-0.85691	285.0	67.8924	-0.20166	-0.84654
270.0	71.0876	-0.22497	-0.85445	290.0	66.9017	-0.19465	-0.84374
273.15	70.3872	-0.21977	-0.85286	295.0	65.9453	-0.18797	-0.84086
275.0	69.9834	-0.21680	-0.85190	300.0	65.0215	-0.18161	-0.83793
280.0	68.9189	-0.20904	-0.84926	305.0	64.1287	-0.17555	-0.83493
				310.0	63.2655	-0.16977	-0.83187
				315.0	62.4306	-0.16426	-0.82877
				320.0	61.6226	-0.15899	-0.82563
				325.0	60.8403	-0.15396	-0.82244



THERMAL CYCLE TESTING

Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor

Serial Number: X25116

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:	64.0 Ω
Liquid Nitrogen:	211 Ω
Liquid Helium:	3410 Ω

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: 404406
Sensor Model: CX-1050-SD-4L
Sensor Type: Cernox Resistor
Temperature Range: 4.00K to 325K

Sales Order: 8789
Serial Number: X25116

Name: CX-1050-SD-4L

Serial number: X25116

Format: 4 ;Log Ohms/Kelvin

Limit: 325.

Coefficient: 1 ;Negative

Point 1: 1.78418,325.000
Point 2: 1.79085,319.000
Point 3: 1.79711,313.500
Point 4: 1.80350,308.000
Point 5: 1.81003,302.500

Point 56: 2.30496, 81.500
Point 57: 2.31426, 79.500
Point 58: 2.32378, 77.500
Point 59: 2.33355, 75.500
Point 60: 2.34358, 73.500

Point 111: 3.08745, 10.450
Point 112: 3.10598, 10.000
Point 113: 3.12559, 9.550
Point 114: 3.14407, 9.150
Point 115: 3.16358, 8.750

Point 6: 1.81671,297.000
Point 7: 1.82354,291.500
Point 8: 1.83052,286.000
Point 9: 1.83767,280.500
Point 10: 1.84498,275.000

Point 61: 2.35389, 71.500
Point 62: 2.36449, 69.500
Point 63: 2.37540, 67.500
Point 64: 2.38663, 65.500
Point 65: 2.39822, 63.500

Point 116: 3.18432, 8.350
Point 117: 3.20641, 7.950
Point 118: 3.22702, 7.600
Point 119: 3.24890, 7.250
Point 120: 3.27230, 6.900

Point 11: 1.85247,269.500
Point 12: 1.86013,264.000
Point 13: 1.86798,258.500
Point 14: 1.87529,253.500
Point 15: 1.88276,248.500

Point 66: 2.41018, 61.500
Point 67: 2.42316, 59.400
Point 68: 2.43467, 57.600
Point 69: 2.44654, 55.800
Point 70: 2.45881, 54.000

Point 121: 3.29737, 6.550
Point 122: 3.32437, 6.200
Point 123: 3.35272, 5.860
Point 124: 3.38160, 5.540
Point 125: 3.41095, 5.240

Point 16: 1.89040,243.500
Point 17: 1.89821,238.500
Point 18: 1.90621,233.500
Point 19: 1.91439,228.500
Point 20: 1.92277,223.500

Point 71: 2.47150, 52.200
Point 72: 2.48463, 50.400
Point 73: 2.49825, 48.600
Point 74: 2.51080, 47.000
Point 75: 2.52377, 45.400

Point 126: 3.44059, 4.960
Point 127: 3.47272, 4.680
Point 128: 3.50780, 4.400
Point 129: 3.54349, 4.140
Point 130: 3.56434, 4.000

Point 21: 1.93136,218.500
Point 22: 1.94015,213.500
Point 23: 1.94917,208.500
Point 24: 1.95842,203.500
Point 25: 1.96790,198.500

Point 76: 2.53722, 43.800
Point 77: 2.55117, 42.200
Point 78: 2.56567, 40.600
Point 79: 2.57979, 39.100
Point 80: 2.59447, 37.600

Point 26: 1.97764,193.500
Point 27: 1.98663,189.000
Point 28: 1.99583,184.500
Point 29: 2.00527,180.000
Point 30: 2.01495,175.500

Point 81: 2.60974, 36.100
Point 82: 2.62566, 34.600
Point 83: 2.64117, 33.200
Point 84: 2.65733, 31.800
Point 85: 2.67422, 30.400

Point 31: 2.02487,171.000
Point 32: 2.03507,166.500
Point 33: 2.04554,162.000
Point 34: 2.05630,157.500
Point 35: 2.06736,153.000

Point 86: 2.69063, 29.100
Point 87: 2.70776, 27.800
Point 88: 2.72573, 26.500
Point 89: 2.74312, 25.300
Point 90: 2.76136, 24.100

Point 36: 2.07875,148.500
Point 37: 2.09048,144.000
Point 38: 2.10121,140.000
Point 39: 2.11223,136.000
Point 40: 2.12357,132.000

Point 91: 2.78056, 22.900
Point 92: 2.79911, 21.800
Point 93: 2.81863, 20.700
Point 94: 2.83454, 19.850
Point 95: 2.84716, 19.200

Point 41: 2.13525,128.000
Point 42: 2.14727,124.000
Point 43: 2.15967,120.000
Point 44: 2.17247,116.000
Point 45: 2.18569,112.000

Point 96: 2.86025, 18.550
Point 97: 2.87384, 17.900
Point 98: 2.88688, 17.300
Point 99: 2.90042, 16.700
Point 100: 2.91451, 16.100

Point 46: 2.19766,108.500
Point 47: 2.20999,105.000
Point 48: 2.22274,101.500
Point 49: 2.23212, 99.000
Point 50: 2.24171, 96.500

Point 101: 2.92921, 15.500
Point 102: 2.94327, 14.950
Point 103: 2.95791, 14.400
Point 104: 2.97323, 13.850
Point 105: 2.98779, 13.350

Point 51: 2.25155, 94.000
Point 52: 2.26165, 91.500
Point 53: 2.27202, 89.000
Point 54: 2.28269, 86.500
Point 55: 2.29366, 84.000

Point 106: 3.00299, 12.850
Point 107: 3.01891, 12.350
Point 108: 3.03563, 11.850
Point 109: 3.05322, 11.350
Point 110: 3.06992, 10.900



BREAKPOINTS 91C/93C/330 FORMAT

Calibration Report: 404406
 Sensor Model: CX-1050-SD-4L
 Sensor Type: Cernox Resistor
 Temperature Range: 4.00K to 325K

Sales Order: 8789
 Serial Number: X25116

Interpolation Method: Lagrangian
 Limit: 325. (Kelvin)
 Format: 4 (Log Ohms/Kelvin)
 Number of Breakpoints: 47

No.	Units	Temperature (K)	No.	Units	Temperature (K)
1	1.78419	325.0	26	2.69068	29.1
2	1.78529	324.0	27	2.73294	26.0
3	1.80233	309.0	28	2.77574	23.2
4	1.82042	294.0	29	2.81871	20.7
5	1.83966	279.0	30	2.86131	18.5
6	1.86015	264.0	31	2.90277	16.6
7	1.88202	249.0	32	2.94462	14.9
8	1.90541	234.0	33	2.98635	13.4
9	1.93051	219.0	34	3.02723	12.1
10	1.95750	204.0	35	3.06997	10.9
11	1.98664	189.0	36	3.11032	9.9
12	2.01825	174.0	37	3.15133	9.0
13	2.05270	159.0	38	3.19253	8.2
14	2.09050	144.0	39	3.23322	7.5
15	2.13232	129.0	40	3.27242	6.9
16	2.17906	114.0	41	3.31659	6.3
17	2.23213	99.0	42	3.35813	5.8
18	2.29368	84.0	43	3.39519	5.4
19	2.36720	69.0	44	3.43639	5.0
20	2.42256	59.5	45	3.47056	4.7
21	2.48392	50.5	46	3.52140	4.3
22	2.51970	45.9	47	3.56435	4.0
23	2.56295	40.9			
24	2.60566	36.5			
25	2.64806	32.6			

Temperature for Resistance Decades:

Res. (Ohms)	Temp. (K)
100	182.506
1000	12.948



BREAKPOINTS 234 FORMAT

Calibration Report: 404406
 Sensor Model: CX-1050-SD-4L
 Sensor Type: Cernox Resistor
 Temperature Range: 4.00K to 325K

Sales Order: 8789
 Serial Number: X25116

Maximum Temperature Error:

1.4 - 10K: 0.009K
 10 - 20K: 0.014K
 20 - 40K: 0.009K
 40 - 100K: 0.020K
 > 100K: 0.081K

BP #	Temp. (K)	Res. (Ω)	Log10 Res.	BP #	Temp. (K)	Res. (Ω)	Log10 Res.
1	311.003	63.09573	1.800	41	37.054	398.1072	2.600
2	294.339	66.06934	1.820	42	35.132	416.8694	2.620
3	278.744	69.18310	1.840	43	33.308	436.5158	2.640
4	264.101	72.44360	1.860	44	31.579	457.0882	2.660
5	250.343	75.85776	1.880	45	29.941	478.6301	2.680
6	237.379	79.43282	1.900	46	28.386	501.1872	2.700
7	225.147	83.17638	1.920	47	26.912	524.8075	2.720
8	213.599	87.09636	1.940	48	25.516	549.5409	2.740
9	202.664	91.20108	1.960	49	24.192	575.4399	2.760
10	192.317	95.49926	1.980	50	22.939	602.5596	2.780
11	182.507	100.0000	2.000	51	21.752	630.9573	2.800
12	173.202	104.7129	2.020	52	20.630	660.6934	2.820
13	164.375	109.6478	2.040	53	19.568	691.8310	2.840
14	155.990	114.8154	2.060	54	18.564	724.4360	2.860
15	148.023	120.2264	2.080	55	17.615	758.5776	2.880
16	140.453	125.8925	2.100	56	16.720	794.3282	2.900
17	133.258	131.8257	2.120	57	15.875	831.7638	2.920
18	126.413	138.0384	2.140	58	15.077	870.9636	2.940
19	119.905	144.5440	2.160	59	14.325	912.0108	2.960
20	113.716	151.3561	2.180	60	13.616	954.9926	2.980
21	107.835	158.4893	2.200	61	12.948	1000.000	3.000
22	102.248	165.9587	2.220	62	11.725	1096.478	3.040
23	96.945	173.7801	2.240	63	10.640	1202.264	3.080
24	91.910	181.9701	2.260	64	9.678	1318.257	3.120
25	87.127	190.5461	2.280	65	8.824	1445.440	3.160
26	82.592	199.5262	2.300	66	8.065	1584.893	3.200
27	78.290	208.9296	2.320	67	7.391	1737.801	3.240
28	74.210	218.7762	2.340	68	6.791	1905.461	3.280
29	70.343	229.0868	2.360	69	6.257	2089.296	3.320
30	66.678	239.8833	2.380	70	5.779	2290.868	3.360
31	63.202	251.1886	2.400	71	5.351	2511.886	3.400
32	59.909	263.0268	2.420	72	4.967	2754.229	3.440
33	56.789	275.4229	2.440	73	4.622	3019.952	3.480
34	53.834	288.4032	2.460	74	4.310	3311.311	3.520
35	51.034	301.9952	2.480	75	4.029	3630.781	3.560
36	48.378	316.2278	2.500	76	3.774	3981.072	3.600
37	45.863	331.1311	2.520				
38	43.482	346.7369	2.540				
39	41.223	363.0781	2.560				
40	39.083	380.1894	2.580				

