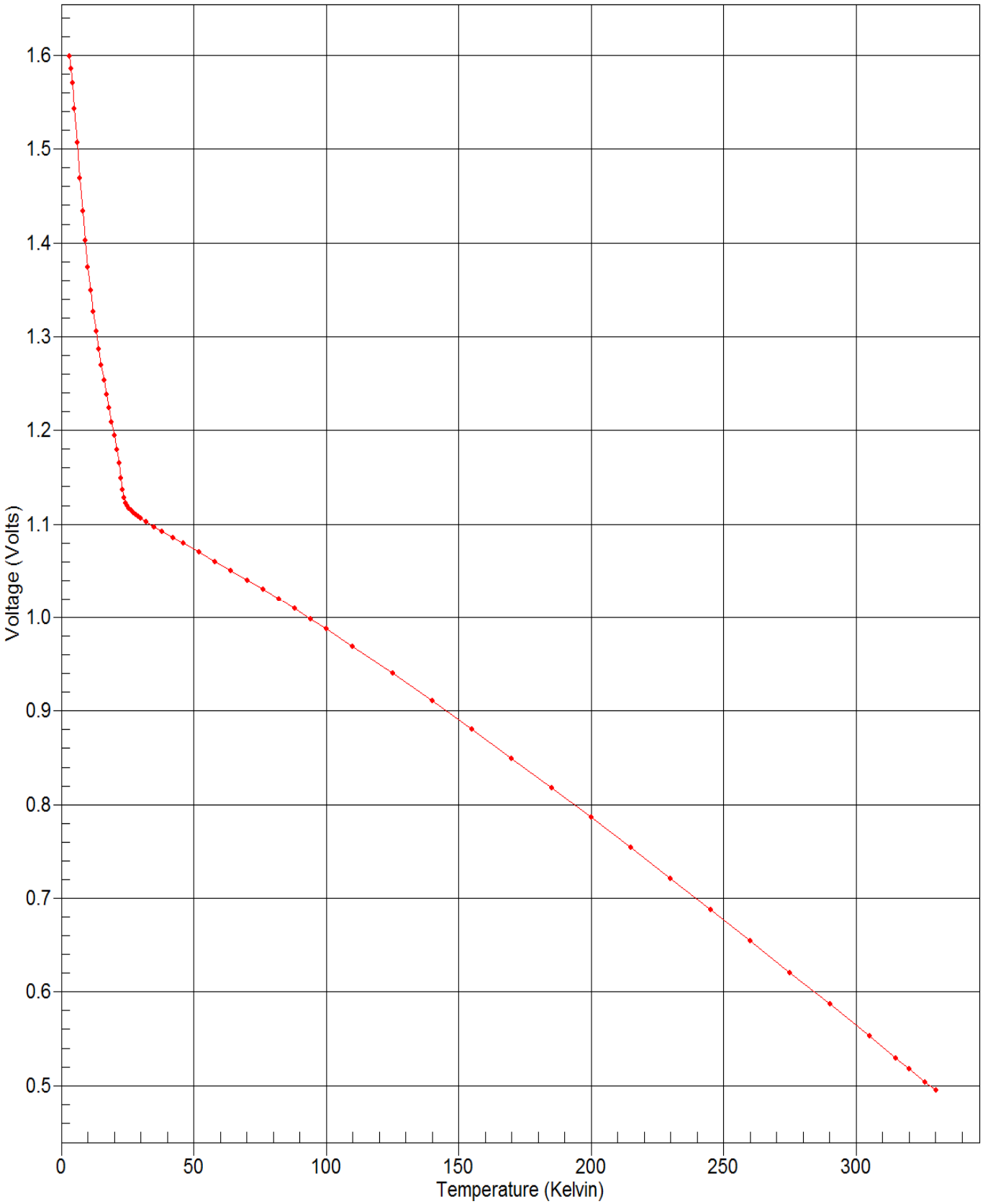
DATA PLOT

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K



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Sales: (614) 891-2244 • Fax: (614) 891-1392 • sales@lakeshore.com • www.lakeshore.com

F010-04-00_B 06/21/2011

TEST DATA

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K

Index	Temp. (K)	Voltage (V)	Excitation	Index	Temp. (K)	Voltage (V)	Excitation
1	3.19698	1.59930	10µA±0.1%	36	42.1723	1.08580	10µA±0.1%
2	3.69726	1.58549	10µA±0.1%	37	46.1610	1.07947	10µA±0.1%
3	4.20319	1.57014	10µA±0.1%	38	52.1569	1.06987	10µA±0.1%
4	5.00304	1.54333	10µA±0.1%	39	58.1481	1.06015	10µA±0.1%
5	6.00488	1.50735	10µA±0.1%	40	64.1454	1.05028	10µA±0.1%
6	7.06689	1.46855	10µA±0.1%	41	70.1474	1.04024	10µA±0.1%
7	8.07749	1.43376	10µA±0.1%	42	76.1402	1.03004	10µA±0.1%
8	9.08851	1.40236	10µA±0.1%	43	82.1279	1.01967	10µA±0.1%
9	10.0994	1.37429	10µA±0.1%	44	88.1301	1.00909	10µA±0.1%
10	11.1147	1.34897	10µA±0.1%	45	94.1184	0.998361	10µA±0.1%
11	12.1277	1.32613	10µA±0.1%	46	100.117	0.987435	10µA±0.1%
12	13.1362	1.30548	10µA±0.1%	47	110.120	0.968845	10µA±0.1%
13	14.1381	1.28675	10µA±0.1%	48	125.096	0.940203	10µA±0.1%
14	15.1264	1.26968	10µA±0.1%	49	140.098	0.910655	10µA±0.1%
15	16.1176	1.25363	10µA±0.1%	50	155.091	0.880395	10µA±0.1%
16	17.1029	1.23843	10µA±0.1%	51	170.098	0.849478	10µA±0.1%
17	18.0868	1.22368	10µA±0.1%	52	185.099	0.818031	10µA±0.1%
18	19.0671	1.20918	10µA±0.1%	53	200.089	0.786121	10µA±0.1%
19	20.0494	1.19452	10µA±0.1%	54	215.085	0.753773	10µA±0.1%
20	21.0393	1.17896	10µA±0.1%	55	230.084	0.721026	10µA±0.1%
21	21.8319	1.16501	10µA±0.1%	56	245.082	0.687926	10µA±0.1%
22	22.6253	1.14893	10µA±0.1%	57	260.092	0.654471	10µA±0.1%
23	23.2221	1.13687	10µA±0.1%	58	275.104	0.620702	10µA±0.1%
24	23.8207	1.12805	10µA±0.1%	59	290.115	0.586652	10µA±0.1%
25	24.4255	1.12276	10µA±0.1%	60	305.112	0.552368	10µA±0.1%
26	25.0359	1.11942	10µA±0.1%	61	315.141	0.529319	10µA±0.1%
27	25.6465	1.11698	10µA±0.1%	62	320.143	0.517782	10µA±0.1%
28	26.4625	1.11440	10µA±0.1%	63	326.141	0.503918	10µA±0.1%
29	27.2862	1.11224	10µA±0.1%	64	330.160	0.494616	10µA±0.1%
30	28.1028	1.11033	10µA±0.1%				
31	29.1182	1.10816	10µA±0.1%				
32	30.1372	1.10612	10µA±0.1%				
33	32.1661	1.10234	10µA±0.1%				
34	35.1813	1.09709	10µA±0.1%				
35	38.1831	1.09215	10µA±0.1%				

Calibration Data Uncertainty

The uncertainties of the measured calibration data for Lake Shore's sensors are summarized in the table below. The values given are the combined uncertainty of the temperature measurement and the resistance or voltage measurement expressed as an equivalent temperature uncertainty in millikelvin (mK). Note that the values are the calibration uncertainty only and do not include the stability of the temperature sensor. The uncertainty analysis has followed the guidelines for determining measurement uncertainty as outlined in the ISO Guide to the Expression of Uncertainty in Measurement, NIST Technical Note 1297, and ANSI/NCSL Z540-2-1997. Since the uncertainty varies with temperature due to the variation of the sensor sensitivity and excitation, the table gives typical values at several different temperatures throughout the range of the calibration. The uncertainty is based on an approximate 95% confidence level with a coverage factor k = 2.

T (K)	Uncertainty (± mK)												
	GR	Cernox (CX)					RX			Platinum		RF-800	Diode
		1010	1030	1050	1070	1080	102A	103A	202A	100 Ω	25 Ω	27 Ω	
1.4	4	4	4	4			4	4	4			5	7
4.2	4	4	4	4	4		4	6	5			5	5
10	4	5	5	4	4		10	15	12			7	6
20	8	10	9	8	8	8	35	35	28	9	10	13	9
30	9	13	11	9	9	9	76	61	46	9	9	14	31
50	11	18	14	12	12	11				10	10	13	37
100	20	29	22	17	16	14				11	12	12	32
300		78	60	46	45	36				24	24	25	35
400		124	94	74	72	60				45	45	45	49
500										51	51		54

Polynomial Fit Uncertainty

When a sensor is used to measure temperature, a polynomial fit to the measured calibration data is often used to convert the sensor resistance (R) or voltage (V) to a temperature (T). How well the polynomial represents the sensor calibration data is another source of uncertainty when using the sensor. In the polynomials provided with this set of calibration data, the standard deviation of the fit can be used as an estimate of this additional temperature uncertainty. The standard deviation of fit is determined from the following equation:

$$\sigma_{fit}^{\,2} = \frac{\sum_{i=1}^{N} (T_i - T_{icalc})^2}{N-n} = \frac{N}{N-n}(\Delta T_{RMS})^2$$

where

σ_{fit} = standard deviation of the fit
T_i = measured temperature for point i
T_{icalc} = the temperature calculated from the polynomial equation for point i
N = number of data points in fit range
n = number of fit coefficients
ΔT_{RMS} = root mean square deviation of fit

A value of ΔT_{RMS} is given for each range of fit.

POLYNOMIAL EQUATION

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K

Polynomial Type: Chebychev
Useful Range of Fit:

4.00 K	to	25.1 K
1.576 Volts	to	1.119 Volts

Lower and Upper limits of Voltage used in computing Chebychev coefficients:
ZL = 1.114404124 ZU = 1.599303853

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	12.750326	3.4345E-03	3712.48
1	-10.863488	5.1811E-03	-2096.77
2	1.740505	4.8681E-03	357.53
3	-0.255428	4.9498E-03	-51.60
4	-0.152211	4.9108E-03	-31.00
5	-0.105282	4.8049E-03	-21.91
6	0.180770	4.6891E-03	38.55
7	-0.199820	4.5834E-03	-43.60
8	0.163569	4.5051E-03	36.31
9	-0.120672	4.4997E-03	-26.82
10	0.082424	4.5443E-03	18.14
11	-0.058114	4.7191E-03	-12.31
12	0.040251	4.8953E-03	8.22
13	-0.023828	4.7972E-03	-4.97
14	0.018649	4.4584E-03	4.18

Z = Voltage

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

Temp. (K) = ΣA_i* COS(i * ARCCOS(k)), where 0 <= i <= 14
and the A_i's are the coefficients in the table above.

POLYNOMIAL EQUATION

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K

Polynomial Type: Chebychev
Temp. (K) vs. Voltage

	V Meas. (V)	T Meas. (K)	T Eq. (K)	T diff. (mK)
1	1.599304	3.19698	3.19765	-0.67
2	1.585492	3.69726	3.69384	3.42
3	1.570139	4.20319	4.20921	-6.01
4	1.543326	5.00304	4.99603	7.01
5	1.507346	6.00488	6.01331	-8.43
6	1.468555	7.06689	7.05731	9.58
7	1.433758	8.07749	8.08286	-5.37
8	1.402356	9.08851	9.09377	-5.26
9	1.374291	10.09937	10.09130	8.07
10	1.348970	11.11470	11.11023	4.47
11	1.326127	12.12775	12.13483	-7.09
12	1.305475	13.13618	13.14388	-7.70
13	1.286745	14.13812	14.13562	2.50
14	1.269676	15.12637	15.11692	9.44
15	1.253625	16.11762	16.11178	5.84
16	1.238428	17.10287	17.10695	-4.07
17	1.223680	18.08682	18.09876	-11.94
18	1.209181	19.06712	19.07324	-6.13
19	1.194520	20.04942	20.03829	11.14
20	1.178964	21.03935	21.02333	16.01
21	1.165010	21.83188	21.84308	-11.20
22	1.148932	22.62534	22.64831	-22.98
23	1.136871	23.22208	23.19991	22.17
24	1.128054	23.82066	23.80146	19.20
25	1.122764	24.42553	24.44169	-16.17
26	1.119423	25.03594	25.05287	-16.93
27	1.116981	25.64650	25.64703	-0.53
28	1.114404	26.46254	26.45091	11.63

Order of Fit = 14 RMS error of fit = 11.04 mK
Largest absolute error = -22.98 mK at data point no. 22

POLYNOMIAL EQUATION

Calibration Report: 655117 | Sales Order: 70087
Sensor Model: DT-670-SD-4L | Serial Number: D6026639
Sensor Type: Silicon Diode | Temperature Range: 4.00K to 325K

Polynomial Type: Chebychev
Useful Range of Fit:

25.0 K	to	88.1 K
1.119 Volts	to	1.009 Volts

Lower and Upper limits of Voltage used in computing Chebychev coefficients:
ZL = 0.9874351464 ZU = 1.128054457

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	60.006270	8.3955E-03	7147.44
1	-39.975396	1.4733E-02	-2713.25
2	1.147872	1.4068E-02	81.59
3	1.543424	1.0038E-02	153.76
4	0.867278	7.3880E-03	117.39
5	0.337469	3.4537E-03	97.71
6	0.060064	3.8276E-03	15.69
7	-0.033830	7.0481E-03	-4.80
8	-0.065166	1.0014E-02	-6.51
9	-0.020312	1.0824E-02	-1.88
10	-0.031055	1.1218E-02	-2.77
11	-0.000112	8.7716E-03	-0.01
12	-0.016568	6.2942E-03	-2.63

Z = Voltage

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

Temp. (K) = ΣA_i* COS(i * ARCCOS(k)), where 0 <= i <= 12
and the A_i's are the coefficients in the table above.

POLYNOMIAL EQUATION

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K

Polynomial Type: Chebychev
Temp. (K) vs. Voltage

	V Meas. (V)	T Meas. (K)	T Eq. (K)	T diff. (mK)
24	1.128054	23.80146	23.81994	0.72
25	1.122764	24.44169	24.43326	-7.73
26	1.119423	25.05287	25.02239	13.54
27	1.116981	25.64650	25.64214	4.36
28	1.114404	26.46254	26.47152	-8.98
29	1.112238	27.28616	27.29625	-10.09
30	1.110332	28.10283	28.10702	-4.19
31	1.108162	29.11821	29.11359	4.61
32	1.106123	30.13725	30.12852	8.72
33	1.102335	32.16609	32.15731	8.77
34	1.097087	35.18127	35.19040	-9.13
35	1.092154	38.18311	38.19127	-8.17
36	1.085800	42.17232	42.16481	7.51
37	1.079471	46.16099	46.15639	4.60
38	1.069867	52.15688	52.16441	-7.53
39	1.060151	58.14812	58.14568	2.44
40	1.050283	64.14539	64.14236	3.03
41	1.040239	70.14735	70.15201	-4.65
42	1.030039	76.14025	76.13700	3.25
43	1.019669	82.12788	82.12928	-1.39
44	1.009093	88.13012	88.12975	0.38
45	0.9983614	94.11840	94.11846	-0.06
46	0.9874351	100.11746	100.11745	0.00

Order of Fit = 12 RMS error of fit = 6.50 mK
Largest absolute error = 13.54 mK at data point no. 26

POLYNOMIAL EQUATION

Calibration Report: 655117 Sales Order: 70087
Sensor Model: DT-670-SD-4L Serial Number: D6026639
Sensor Type: Silicon Diode Temperature Range: 4.00K to 325K

Polynomial Type: Chebychev
Useful Range of Fit:

88.1 K	to	325. K
1.009 Volts	to	0.5066 Volts

Lower and Upper limits of Voltage used in computing Chebychev coefficients:
ZL = 0.4946159397 ZU = 1.030039109

Order	Coefficient	Std. Deviation of Coefficient	Ratio (Coeff./Std Dev.)
0	207.387350	1.4632E-04	1417377.23
1	-126.052299	2.1143E-04	-596198.92
2	-3.980766	2.0689E-04	-19241.29
3	-0.887266	2.1397E-04	-4146.76
4	-0.244927	2.1289E-04	-1150.50
5	-0.070660	2.0443E-04	-345.64
6	-0.013306	1.9677E-04	-67.63
7	-0.000809	1.9659E-04	-4.12
8	0.001382	1.9924E-04	6.94
9	0.001200	1.9901E-04	6.03

Z = Voltage

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

Temp. (K) = ΣA_i* COS(i * ARCCOS(k)), where 0 <= i <= 9
and the A_i's are the coefficients in the table above.

POLYNOMIAL EQUATION

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K

Polynomial Type: Chebychev
Temp. (K) vs. Voltage

	V Meas. (V)	T Meas. (K)	T Eq. (K)	T diff. (mK)
42	1.030039	76.13700	76.13990	0.35
43	1.019669	82.12928	82.12861	-0.73
44	1.009093	88.12975	88.12989	0.23
45	0.9983614	94.11840	94.11835	0.06
46	0.9874351	100.11746	100.11738	0.07
47	0.9688450	110.11962	110.11938	0.23
48	0.9402030	125.09573	125.09582	-0.09
49	0.9106548	140.09826	140.09863	-0.37
50	0.8803946	155.09121	155.09116	0.05
51	0.8494781	170.09814	170.09798	0.15
52	0.8180313	185.09865	185.09800	0.65
53	0.7861208	200.08924	200.09008	-0.84
54	0.7537729	215.08539	215.08521	0.18
55	0.7210257	230.08430	230.08452	-0.22
56	0.6879263	245.08242	245.08209	0.34
57	0.6544713	260.09202	260.09173	0.29
58	0.6207015	275.10427	275.10483	-0.56
59	0.5866517	290.11530	290.11500	0.30
60	0.5523683	305.11247	305.11306	-0.59
61	0.5293192	315.14063	315.13969	0.94
62	0.5177824	320.14312	320.14290	0.22
63	0.5039185	326.14090	326.14223	-1.34
64	0.4946159	330.16024	330.15957	0.67

Order of Fit = 9 RMS error of fit = 0.52 mK
Largest absolute error = -1.34 mK at data point no. 63

INTERPOLATION TABLE

Calibration Report: 655117 Sales Order: 70087
Sensor Model: DT-670-SD-4L Serial Number: D6026639
Sensor Type: Silicon Diode Temperature Range: 4.00K to 325K

Temp (K)	Volts (V)	dV/dT (mV/K)	Temp (K)	Volts (V)	dV/dT (mV/K)
4.000	1.57647	-30.617	37.00	1.09407	-1.6339
4.200	1.57024	-31.711	38.00	1.09245	-1.6150
4.400	1.56379	-32.733	39.00	1.09084	-1.6014
4.600	1.55716	-33.608	40.00	1.08925	-1.5917
4.800	1.55036	-34.336	42.00	1.08607	-1.5836
5.000	1.54343	-34.916	44.00	1.08290	-1.5858
5.200	1.53640	-35.388	46.00	1.07973	-1.5911
5.400	1.52928	-35.796	48.00	1.07654	-1.5981
5.600	1.52209	-36.138	50.00	1.07334	-1.6047
5.800	1.51483	-36.416	52.00	1.07012	-1.6110
6.000	1.50752	-36.629	54.00	1.06689	-1.6174
6.500	1.48916	-36.697	56.00	1.06365	-1.6244
7.000	1.47096	-35.992	58.00	1.06039	-1.6320
7.500	1.45327	-34.694	60.00	1.05712	-1.6403
8.000	1.43631	-33.097	65.00	1.04886	-1.6633
8.500	1.42021	-31.334	70.00	1.04049	-1.6869
9.000	1.40497	-29.637	75.00	1.03199	-1.7111
9.500	1.39056	-28.030	77.35	1.02796	-1.7230
10.00	1.37692	-26.551	80.00	1.02337	-1.7364
10.50	1.36398	-25.195	85.00	1.01463	-1.7612
11.00	1.35170	-23.950	90.00	1.00576	-1.7866
11.50	1.34002	-22.804	95.00	0.996766	-1.8112
12.00	1.32889	-21.730	100.0	0.987651	-1.8350
12.50	1.31827	-20.724	105.0	0.978417	-1.8582
13.00	1.30815	-19.778	110.0	0.969070	-1.8806
13.50	1.29849	-18.902	115.0	0.959613	-1.9021
14.00	1.28923	-18.119	120.0	0.950051	-1.9226
14.50	1.28035	-17.427	125.0	0.940389	-1.9421
15.00	1.27179	-16.821	130.0	0.930632	-1.9606
15.50	1.26352	-16.297	135.0	0.920784	-1.9782
16.00	1.25548	-15.847	140.0	0.910851	-1.9949
16.50	1.24766	-15.478	145.0	0.900837	-2.0107
17.00	1.23999	-15.204	150.0	0.890745	-2.0257
17.50	1.23244	-15.011	155.0	0.880581	-2.0400
18.00	1.22497	-14.868	160.0	0.870346	-2.0536
18.50	1.21756	-14.784	165.0	0.860046	-2.0665
19.00	1.21017	-14.780	170.0	0.849682	-2.0788
19.50	1.20276	-14.881	175.0	0.839259	-2.0905
20.00	1.19527	-15.124	180.0	0.828777	-2.1019
21.00	1.17961	-16.423	185.0	0.818240	-2.1130
22.00	1.16176	-19.654	190.0	0.807648	-2.1236
23.00	1.14113	-20.070	195.0	0.797005	-2.1337
24.00	1.12617	-9.6375	200.0	0.786312	-2.1432
25.00	1.11959	-4.6283	205.0	0.775573	-2.1524
26.00	1.11579	-3.1872	210.0	0.764788	-2.1615
27.00	1.11296	-2.5648	215.0	0.753958	-2.1704
28.00	1.11056	-2.2531	220.0	0.743084	-2.1791
29.00	1.10841	-2.0744	225.0	0.732168	-2.1874
30.00	1.10639	-1.9604	230.0	0.721211	-2.1954
31.00	1.10448	-1.8739	235.0	0.710215	-2.2030
32.00	1.10264	-1.8116	240.0	0.699181	-2.2106
33.00	1.10085	-1.7665	245.0	0.688109	-2.2180
34.00	1.09910	-1.7261	250.0	0.677001	-2.2253
35.00	1.09739	-1.6900	255.0	0.665857	-2.2324
36.00	1.09572	-1.6589	260.0	0.654677	-2.2394

Lake Shore Cryotronics, Inc. • 575 McCorkle Boulevard • Westerville, OH 43082
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INTERPOLATION TABLE

Calibration Report: 655117
Sensor Model: DT-670-SD-4L
Sensor Type: Silicon Diode

Sales Order: 70087
Serial Number: D6026639
Temperature Range: 4.00K to 325K

Temp (K)	Volts (V)	dV/dT (mV/K)
265.0	0.643463	-2.2462
270.0	0.632216	-2.2527
273.15	0.625114	-2.2567
275.0	0.620937	-2.2590
280.0	0.609627	-2.2651
285.0	0.598286	-2.2713
290.0	0.586914	-2.2774
295.0	0.575512	-2.2833
300.0	0.564082	-2.2887
305.0	0.552626	-2.2935
310.0	0.541147	-2.2982
315.0	0.529643	-2.3034
320.0	0.518113	-2.3087
325.0	0.506558	-2.3130

Lake Shore Cryotronics, Inc. • 575 McCorkle Boulevard • Westerville, OH 43082
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Sensor Model: DT-670-SD-4L Serial Number: D6026639
Sensor Type: Silicon Diode

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

Approximately 305 K:	0.553 V
Liquid Nitrogen:	1.028 V
Liquid Helium:	1.571 V

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

Recommended Operating Parameters:

For diode sensors calibrated by LSCI, the current is maintained at the constant values listed on the Test Data page. In order to minimize calibration offsets due to the nonlinear voltage-current relationship in the diode sensor, these same guidelines should be followed in using the sensor.

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F010-04-00_B 06/21/2011

BREAKPOINTS 340 FORMAT

Calibration Report: 655117 Sales Order: 70087
Sensor Model: DT-670-SD-4L Serial Number: D6026639
Sensor Type: Silicon Diode Temperature Range: 4.00K to 325K

Name: DT-670-SD-4L
Serial number: D6026639
Format: 2 ;Volts/Kelvin
Limit: 325.0
Coefficient: 1 ;Negative

Point 1: 9.06000e-02,500.000	Point 56: 1.12165, 24.600
Point 2: .110239,491.000	Point 57: 1.12362, 24.300
Point 3: .136555,479.500	Point 58: 1.12524, 24.100
Point 4: .179181,461.500	Point 59: 1.12716, 23.900
Point 5: .265393,425.500	Point 60: 1.12949, 23.700
Point 6: .349522,390.000	Point 61: 1.13226, 23.500
Point 7: .452797,346.000	Point 62: 1.13721, 23.200
Point 8: .506584,325.000	Point 63: 1.14726, 22.700
Point 9: .545764,308.000	Point 64: 1.15784, 22.200
Point 10: .582378,292.000	Point 65: 1.16754, 21.700
Point 11: .615307,277.500	Point 66: 1.17804, 21.100
Point 12: .647975,263.000	Point 67: 1.19077, 20.300
Point 13: .679248,249.000	Point 68: 1.20576, 19.300
Point 14: .709134,235.500	Point 69: 1.22643, 17.900
Point 15: .737653,222.500	Point 70: 1.24148, 16.900
Point 16: .763727,210.500	Point 71: 1.25309, 16.150
Point 17: .788473,199.000	Point 72: 1.26349, 15.500
Point 18: .811910,188.000	Point 73: 1.27345, 14.900
Point 19: .834044,177.500	Point 74: 1.28295, 14.350
Point 20: .854890,167.500	Point 75: 1.29285, 13.800
Point 21: .874467,158.000	Point 76: 1.30227, 13.300
Point 22: .892787,149.000	Point 77: 1.31211, 12.800
Point 23: .909870,140.500	Point 78: 1.32242, 12.300
Point 24: .925736,132.500	Point 79: 1.33323, 11.800
Point 25: .941379,124.500	Point 80: 1.34458, 11.300
Point 26: .955817,117.000	Point 81: 1.35649, 10.800
Point 27: .969086,110.000	Point 82: 1.36903, 10.300
Point 28: .982142,103.000	Point 83: 1.38223, 9.800
Point 29: .992231, 97.500	Point 84: 1.39475, 9.350
Point 30: 1.00039, 93.000	Point 85: 1.40789, 8.900
Point 31: 1.00844, 88.500	Point 86: 1.42173, 8.450
Point 32: 1.01640, 84.000	Point 87: 1.43626, 8.000
Point 33: 1.02425, 79.500	Point 88: 1.45321, 7.500
Point 34: 1.03200, 75.000	Point 89: 1.47450, 6.900
Point 35: 1.03965, 70.500	Point 90: 1.52216, 5.600
Point 36: 1.04720, 66.000	Point 91: 1.54419, 4.980
Point 37: 1.05466, 61.500	Point 92: 1.56056, 4.500
Point 38: 1.06236, 56.800	Point 93: 1.57281, 4.120
Point 39: 1.07109, 51.400	Point 94: 1.57646, 4.000
Point 40: 1.07974, 46.000	Point 95: 1.59690, 3.580
Point 41: 1.09051, 39.200	Point 96: 1.60756, 3.180
Point 42: 1.09439, 36.800	Point 97: 1.62125, 2.620
Point 43: 1.09739, 35.000	Point 98: 1.62945, 2.260
Point 44: 1.10014, 33.400	Point 99: 1.63516, 1.980
Point 45: 1.10281, 31.900	Point 100: 1.63943, 1.740
Point 46: 1.10522, 30.600	Point 101: 1.64261, 1.530
Point 47: 1.10738, 29.500	Point 102: 1.64430, 1.400
Point 48: 1.10924, 28.600	
Point 49: 1.11101, 27.800	
Point 50: 1.11269, 27.100	
Point 51: 1.11429, 26.500	
Point 52: 1.11578, 26.000	
Point 53: 1.11714, 25.600	
Point 54: 1.11869, 25.200	
Point 55: 1.12005, 24.900	

Note: Breakpoints outside of the calibration range were added from the standard curve. These extra points conform to reduced accuracy specifications and are added as a convenience to the customer.

BREAKPOINTS 91C/93C/330 FORMAT

Calibration Report: 655117 Sales Order: 70087
Sensor Model: DT-670-SD-4L Serial Number: D6026639
Sensor Type: Silicon Diode Temperature Range: 4.00K to 325K

Interpolation Method: Straight Line
Limit: 325.0 (Kelvin)
Format: 2 (Volts/Kelvin)
Number of Breakpoints: 37

No.	Units	Temperature (K)	No.	Units	Temperature (K)
1	0.147030	475.0	21	1.11050	28.0
2	0.218700	445.0	22	1.11296	27.0
3	0.326000	400.0	23	1.11579	26.0
4	0.490260	330.0	24	1.11959	25.0
5	0.506660	325.0	25	1.12617	24.0
6	0.575560	295.0	26	1.14113	23.0
7	0.643550	265.0	27	1.16176	22.0
8	0.710310	235.0	28	1.17961	21.0
9	0.775680	205.0	29	1.26308	15.5
10	0.828850	180.0	30	1.30751	13.0
11	0.870400	160.0	31	1.36298	10.5
12	0.910930	140.0	32	1.43486	8.0
13	0.940420	125.0	33	1.56492	4.4
14	0.969130	110.0	34	1.57629	4.0
15	0.996820	95.0	35	1.59237	3.8
16	1.02344	80.0	36	1.63785	1.9
17	1.04892	65.0	37	1.64411	1.4
18	1.07340	50.0			
19	1.09564	36.0			
20	1.10441	31.0			

Note: Breakpoints outside of the calibration range were added from the standard curve. These extra points conform to reduced accuracy specifications and are added as a convenience to the customer.